

**Married and cohabitating couples:  
Spousal similarity and spousal caregiving**  
Findings from the Nord-Trøndelag Health Study

by  
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*Series of dissertations submitted to the  
Faculty of Social Sciences, University of Oslo  
No. 400*

ISSN 1504-3991

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Cover: Inger Sandved Anfinssen.  
Printed in Norway: AIT Oslo AS.

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**Appendix II** Questionnaires from HUNT1

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## Acknowledgements

This thesis presents the results of my doctoral project at the Norwegian Institute of Public Health, Division of Mental Health. The work was performed with financing from the Norwegian Research Council. This thesis would not have been completed without the guidance, inspiration, support, and practical help provided by a number of people. Colleagues, friends, and family deserve special thanks!

First of all, I am grateful to all of the inhabitants of Nord-Trøndelag that took time to participate in HUNT, and to the team behind the HUNT study, who provided us with valuable data. I would also like to thank our collaborators in the Health and Memory Study for establishing a high-quality dementia registry (albeit a little bit late for use in this thesis 😊).

Kristian Tambs, I am so glad that you were required to be my main supervisor. I am greatly indebted to you. Thank you for generously sharing your expertise with me, and for teaching me on so many levels -from the whole process of research down to tiny mathematical details. You provided me with unique opportunities and challenges when you inspired me to look into the field of partner similarity while waiting for the dementia data. I am grateful for all of the methodological guidance, time, laughs, support, constructive criticism, and inspiration you have given me during these years. It is fun working with you!

I would also like to express my gratitude to my second supervisor, Ellen Langballe. Although our collaboration on the dementia project started at a later point in time than intended, you have played an important role in the finishing of this thesis. Thank you for your generous support, rapid responses, and valuable comments — and for being such a good colleague.

I would like to thank the Norwegian Institute of Public Health, and former Director Arne Holte, for giving me the opportunity to start as a “spire” at the Division of Mental Health. Director Ellinor Major, Kari Voll, and Grethe Hasselblad – thank you for making this an excellent workplace.

The division is full of people who made daily life during these years more instructive and enjoyable. First of all, my colleagues in the caregiver project, Mariann, Kamilla, Ingrid, and Fartein, it has been a great pleasure collaborating with you! Mariann, you are the reason that I was introduced to Arne in the first place, thank you for that! Thank you for endless talks and coffees, and for support in times of career crisis. And thank you for reading my manuscript without missing a single detail. Kamilla, I really miss you in Oslo. Thank you for your encouragement and big-hearted support along the way! You are the best!

I would like to thank all of my wonderful colleagues at the department of “Body and Mind”, PHPH. Thank you all for creating such a pleasant, motivating, and productive environment. I especially would like to thank director Bo Engdahl, who is also a co-author on one of my papers. Thank you for contributing your statistical expertise and for giving me a lightning course in R when it was most needed.

My other co-authors also deserve gratitude. Norun Krog, thank you for your valuable comments during the writing of my first article, and Espen Røysamb, thank you for pointing out the positive sides when my road towards the PhD went downhill for a moment.

I did not walk alone. Marites, it was very pleasant to have you by my side in the last months of this journey. You inspired me towards the final goal, and I am truly grateful.

Ragnhild and Mari, you two babbling and enjoyable colleagues! Thank you for sharing a wide array of frustrations and laughs with me, and for being so enthusiastic and helpful. You have become my dear friends. Ragnhild, I really missed you during the final stage of this project.

Huge thanks also go out to my family and friends outside the world of research: thank you for your enthusiastic support, whether or not you understood exactly what I was doing. I especially want to express my sincere gratitude to my parents for always believing in me and my skills. The distance from Oslo to Sandnes often feels much too long.

To both my parents and my parents-in-law: thank you for taking care of our son, Even, at times when it was much needed. Your help made the process much smoother for both Stian and me.

Last, but not least, I am deeply grateful to my dearest little family. Stian: you always have faith in me. Thank you for being there, and for sharing my ups and downs. Without your emotional and practical support, the completion of this project would have been impossible. I share this accomplishment with you.

Even: after a long day at work, it was wonderful to come home to you. With your joy and humour, every research problem was immediately forgotten. You put it all into a greater context, and helped me to keep things in perspective.

A final thank you goes to the little one growing inside my belly: you kicking and punching me was a clear reminder of why it was important to finish this project.

*Helga Ask, Oslo, June 2012*

## Summary

The general focus of this thesis is on partner associations. Interdependence has been suggested as a defining feature of close relationships (Kelley et al., 1983). More specifically, in couples there are relationships between partners' life situations, behaviors, feelings, and characteristics. Partners share their happiness and sorrow, as well as some of their habits. If one partner smokes, there is a high likelihood that the other partner smokes as well, and if one partner experiences depression, depressive symptoms might spill over to the other partner. Interdependence is especially evident when something bad (e.g., illness or disability) happens to one partner. Such life events can cause a loss of mental health and well-being not only for the affected individual, but also for the spouse.

In this thesis, partner associations and interdependence were investigated from two different perspectives: *spousal similarity* and *spousal caregiving*. Dyadic data from different waves of a population-based health screening, the North Trøndelag Health study (HUNT), of between 8,341 and 21,150 marital or cohabitating couples were used for all analyses. Couples were identified using prospective registry information from Statistics Norway (SN).

First, spousal similarity across relationship duration was investigated (Papers 1 and 2). We aimed to explore to what extent spousal similarity is due to non-random mating, and to what extent partners converge over the course of the relationship. The first paper focused on spousal similarity in lifestyle habits (smoking, alcohol consumption, and exercise), and the second paper focused on spousal similarity regarding psychological variables (mental health, life satisfaction, type A-personality, and optimism). By demonstrating significant correlations between future spouses measured many years before they entered into marriage/cohabitation, our results support the theory of non-random mating for all variables, except for the personality trait optimism. Significant convergence was also observed for all study variables during the time before entry into marriage/cohabitation. During the time after entry into marriage, various patterns of convergence and divergence were predicted for the different variables. Often, the first 15 years after marriage was marked by various levels of divergence, with a subsequent convergence after 25 years of marriage. However, late convergence was not observed for smoking or alcohol use.

Second, negative caregiver outcomes, measured as loss of mental health and well-being, were investigated among persons having a partner with a mental disorder (Paper 3), hearing loss (Paper 4), and dementia (Paper 5). For these purposes, the data were matched with information about mental health and hearing loss collected for the Nord Trøndelag

Hearing Loss Study (NTHLS) and information about dementia diagnoses collected for the Health and Memory study. Spouses of persons with mental disorder and dementia scored significantly lower on subjective well-being and higher on symptoms of anxiety and depression than did the remaining population. For the dementia caregivers, whether or not the spouse was living with their partner was an important moderating and mediating factor. The negative effect of being a spouse was not observed in the case of audiometric hearing loss. However, using self-reported hearing loss as a primary predictor, spouses scored significantly higher on mental distress and lower on well-being compared with spouses in the remaining population. This finding may indicate spousal similarity with regard to response style.

There is much to be learned from studying associations within couples. The results presented in the papers in this thesis indicate that spouses influence each other to some extent; however, many associations between couples appear to be present from the very beginning of a relationship. This thesis adds to the existing body of knowledge pertaining to illness and disability in marital dyads by estimating negative outcomes in a large population-based sample. As the population ages, one may expect an increase in the proportion of people experiencing illness or disabilities in their partner. Knowledge about initial partner similarity, couple convergence, and the consequences of caregiving provides important information for the development of effective interventions aimed at improving the situations of individuals with various disabilities or illnesses, as well as affected spousal caregivers.



## List of papers

### Paper 1\*

Ask H, Rognmo K, Torvik FA, Røysamb E, Tambs K (2012). Non-random mating and convergence over time for alcohol consumption, smoking, and exercise: The Nord-Trøndelag Health Study. *Behavior Genetics*, 42, 354-365.

### Paper 2

Ask H, Idstad M, Engdahl B, Tambs K (2012). Non-random mating and convergence over time for mental health, life-satisfaction, and personality: The Nord-Trøndelag Health Study. *Behavior Genetics*, Resubmitted after revision.

### Paper 3

Idstad M, Ask H, Tambs K (2010). Mental disorder and caregiver burden in spouses: The Nord-Trøndelag Health Study. *BMC Public Health*, 10, 516-522.

### Paper 4

Ask H, Krog NH, Tambs K (2010). Impact of hearing impairment on spousal mental health: The Nord-Trøndelag Health Study. *European Journal of Public Health* 20, 3, 271-275.

### Paper 5

Ask H, Langballe EM, Holmen J, Selbæk G, Saltvedt I, Tambs K (2012). Mental health and wellbeing in spouses of persons diagnosed with dementia: The HUNT study. *Manuscript submitted for publication*.

## Amendment

Since the submission of this dissertation to the Faculty of Social Sciences June 2012, Paper 2 has been published in *Behavior Genetics*, Volume 43, Issue 2, page 108-119.

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### \* Erratum to Paper 1

A weighting error in Paper 1 resulted in overly narrow confidence intervals for the parameter estimates. The correct intervals were reported in an erratum, published in the same volume of *Behavior Genetics* (Ask H, Rognmo K, Torvik F.A, Røysamb E, Tambs K, 2012. Erratum to: Non-random mating and convergence over time for alcohol consumption, smoking, and exercise: The Nord-Trøndelag Health Study. *Behavior Genetics*, 42, 508). When referring to analyses/results from Paper 1 throughout this thesis, we refer to the corrected results. For details about the procedures used in Paper 1 and in the Erratum, see Appendix I.



# 1. Introduction



## 1.1. Interdependence within couples

Relationships within couples play a central role for many people in adult life. Although the number of individuals living alone is rising, the majority of the population spends a large part of their lives living together with a partner. In 2001, more than 60% of the adult population of Norway was living in a marriage or cohabitation (Statistics Norway (SN), 2001). The desire to understand couple relationships is likely as old as humankind, even though the effort to study them scientifically is relatively new (Kelley et al., 1983). Close relationships are defined by interdependence, which is also known as pair relatedness, reciprocity, and mutuality (Kelley et al., 1983; Thompson & Walker, 1982). These concepts indicate the existence of connections between one partner's behaviors and characteristics and outcomes measured in the other partner. Partner associations can take many forms, and may be related to various fields of research. In fact, all research on dyadic partner relationships is in some way linked to the concept of interdependence.

Interdependence within couples was the general focus of this thesis. It was investigated from two different perspectives that conventionally belong to different research traditions. The first focus was on *spousal similarity* across relationship duration, with the aim of exploring to what extent spousal similarity is due to non-random mating, and to what extent partners converge over time. The second focus was on *spousal caregiving*, and aimed to estimate possible negative outcomes in terms of loss of mental health and well-being in caregivers. Although the two perspectives are related to different goals with diverse implications, the two fields of research both involve estimating connections between partners. An important difference between the two is that, for the purpose of spousal similarity, measures obtained from the partners are identical, while in the case of spousal caregiving, the illness or disability measured in one partner is thought to be related to other outcomes measured in the other partner. The two research traditions approach each other in cases in which the disease or disability measured in one partner is similar to the outcomes measured in the caregivers. One example is research considering loss of mental health in caregivers of persons with mental disorders. In such cases, a knowledge of theories explaining spousal similarity is important, and might provide insight into the literature on spousal caregiving (Bookwala & Schulz, 1996). Moreover, because many illnesses and disabilities are related to a loss of mental health in the affected individual, an understanding of processes that explain spousal similarity of mental health is important to all caregiving research that investigates mental health outcomes.

Although a quintessential feature of relationships is that partners' thoughts, feelings, and behaviors are causally connected, most relationship research is based on samples that include data from only one member of the dyad (Goodman & Shippy, 2002; Kashy, Campbell & Harris, 2006). The data material used in this thesis includes self-reported data from both spouses, and various associations between spouses are estimated to answer the research questions.

## **1.2. Theories of spousal similarity**

An enormous amount of research on several different phenotypes has demonstrated that romantic partners tend to be more similar to each other than would be expected by chance. Positive correlations of varying strength have been reported regarding demographic characteristics, such as age, race (McLemore, 1980), education (Heath et al., 1985), and socioeconomic variables (Price & Vandenberg, 1980; Tambs et al., 1989); physical health (Meyler, Stimpson, & Peek, 2007) and physical traits, such as weight, body mass index (Di Castelnuovo et al., 2008), and physical attractiveness (Price & Vandenberg, 1979); lifestyle variables, such as smoking (Di Castelnuovo et al., 2008; Meyler et al., 2007; Reynolds, Barlow, & Pedersen, 2006), alcohol consumption (Meyler et al., 2007; Reynolds et al., 2006), and exercise (Jurj et al., 2006; Macken, Yates, & Blancher, 2000; Price & Vandenberg, 1980; Simonen et al., 2002); mental health and psychiatric disorders (Galbaud du Fort et al., 1998; Mathews & Reus, 2001; Merikangas, 1982; Meyler et al., 2007); life satisfaction and subjective well-being (Bookwala & Schulz, 1996; Powdthavee, 2009; Schimmack & Lucas, 2006; Tambs & Moum, 1992); and other variables, such as social and political attitudes and general intelligence (Alford et al., 2011; Feng & Baker, 1994; Price & Vandenberg, 1980; Vandenberg, 1972). Although the levels of similarity observed in various studies have ranged from negligible to high, there is little evidence of negative spousal correlations. The lowest levels of similarity (often close to zero) have been reported for various personality traits (Dubuis-Stadelmann et al., 2001; Feng & Baker, 1994; Gattis et al., 2004; Price & Vandenberg, 1980; Rammstedt & Schupp, 2008; Tambs et al., 1991; Watson et al., 2004).

Despite the massive amount of evidence supporting spouse resemblance, little research has sought to investigate the sources of similarity between spouses. Theories regarding spousal similarity may be classified into two main types: (a) non-random mating causes initial similarity between spouses, and (b) experiences subsequent to partnering lead to convergence over time.

### **1.2.1. Non-random mating**

There are large cross-cultural differences in the social rules governing the selection of a partner. In countries where partner selection is an individual choice, it has long been wondered to what extent mating is random, and to what extent individuals meet or seek spouses that are similar or opposite to themselves with respect to various traits. In contrast to a popular adage that received much attention in early research within this field, the consensus of most researchers is that opposites don't attract. As early as 1912, Harris reviewed a number of statistical facts about human mating to conclude that on average, similar individuals tend to marry. The hypothesis that similarity breeds attraction is pervasive and has received considerable support.

Researchers have examined the conditions responsible for the assumed non-random mating. Non-random mating could be due to inbreeding, the mating and reproduction of two genetically related parents. However, inbreeding is a highly unlikely explanation for spousal similarity in the general population. Two other types of non-random mating are phenotypic assortative mating and social homogamy. Phenotypic assortative mating is the tendency for individuals to mate based on similarity in phenotypes or common phenotypic preferences, influenced by similar genetic dispositions (Heath & Eaves, 1985). Mating requires meeting, and people may be much more likely to meet and spend time with those who resemble them with respect to certain background characteristics. Social homogamy produces spousal concordance not because of selection on the basis of a given trait such as height, weight, or political views, but rather because spouses are similar in environmental factors not based on, but correlated with, the phenotype under study (Heath & Eaves, 1985). These factors could be related to social background, socioeconomic status, or the social environment. One example could be mating within and outside puritan religious groups resulting in phenotypic, but not genotypic, spouse resemblance for alcohol use. Members of these groups may be just as genetically inclined to drink alcohol, yet they drink much less than others.

Phenotypic assortative mating for genetically influenced traits will have implications for quantitative genetics, especially for the estimation of the relative importance of genetic and environmental influences in twin studies. The basis of twin studies is the comparison of two fundamentally different types of twin pairs, monozygotic (MZ) and dizygotic (DZ) twins. By comparing similarities between MZ and DZ twin pairs with regard to different measurable characteristics, it is possible to estimate the role of genes, common environment, and unique environment in these traits. Shared genetic similarity is specified to be 100% in MZ and 50%

in DZ twin pairs, and this ratio provides most of the leverage of twin studies. This fixed ratio of genetic similarity is based on the assumption of random mating, that is, no phenotypic correlation between the twins' biological parents for the trait under study. Phenotypic assortative mating for heritable variables would imply a genetic as well as an environmental spouse correlation, which further implies increased genetic and shared environmental correlations between parents and offspring, between siblings, and between DZ twins, because these first-degree relatives will share (on average) more than 50% of their segregating genes (Fisher, 1918; Heath, 1987). Regardless of the genetic similarity of the parents, MZ twins share 100% of the variable genetic code. If assortative mating is not included as a parameter in the twin model, the increase in DZ similarity will be confounded with estimates of shared environmental influences, and may bias estimates of heritability downward (Evans, Gillespie, & Martin, 2002; Fisher, 1918). The regularities and consequences of assortative mating were reviewed by Crow and Felsenstein in 1968.

### **1.2.2. Convergence over time**

Although individuals may enter into marriage with partners who are similar to themselves, it is also possible that similarity arises due to processes that take place after mating. The shared resource hypothesis (Smith & Zick, 1994) is one explanation for the expectation that couples will converge across relationship duration. Partners in married and cohabitating couples are similarly exposed to exogenous factors (e.g., financial resources, social networks, and marital conflicts). The shared environment translates into shared experiences that can be beneficial or detrimental to, for example, mental health and lifestyle.

Another reason for convergence between spouses is spousal interaction. Mates spend considerable time in each other's company, and may influence each other in various ways. The influence that one spouse exerts on the other is thought to be the primary reason for convergence in some cases, especially in the case of mental illness, referred to as emotional contagion (Goodman & Shippy, 2002). Mental illness of one partner is thought to have a direct effect on the mental health of the other (Bookwala & Schulz, 1996; Goodman & Shippy, 2002; Maes et al., 1998; van Grootheest et al., 2008). Emotional contagion is a possible explanation for spousal loss of mental health in some caregiver situations. If an illness or disability affecting one partner also leads to depression in the affected individual, then this situation may also cause symptoms of depression in the spouse.

The influence that one spouse has on the other may be viewed as a social control, especially in the case of lifestyle convergence. One spouse can attempt to control the other



partner's behaviors to keep him or her healthy, or influence the other to adopt healthier behaviors (Umberson, 1992). Individuals that smoke and drink a lot will most likely receive negative reactions regarding such lifestyle habits from a partner who does not participate in such habits to the same degree. Compared with single persons, married individuals tend to engage less in risky behaviors (e.g., not wearing seatbelts; drinking outside the home; and eating irregular, low-quality meals) (Schone & Weinick, 1998; Waite, 1995). This phenomenon may cause a similarity in healthy behaviors that may not have existed prior to marriage. No matter what actually causes partners to converge, a common feature is the expectation that similarity will increase with the duration of the relationship.

### **1.2.3. Deficits of previous studies about spousal similarity**

Few studies have been able to explicitly test concordance theories because data has been scarce or unsuitable. Most studies that have sought to test concordance theories have concluded that spousal similarity is due to non-random mating, and not to convergence (Di Castelnuovo et al., 2008; Feng & Baker, 1994; Galbaud du Fort et al., 1998; Humbad et al., 2010; Luo & Klohnen, 2005; Mascie-Taylor, 1989; McLeod, 1993b; Meyler et al., 2007; van Grootheest et al., 2008; Watson et al., 2004). However, it is difficult to design studies to draw ultimate conclusions of non-random mating because such conclusions can only be drawn by observing similarity in the most initial stages of relationships or, preferably, before the relationships have been established. One limitation of most previous research is that it measures spousal similarity in couples that have already been married for some time. Such similarity coefficients may be due to both non-random mating and convergence in the initial phases of the relationship. Some studies take similarity observed in engaged or newlywed couples as an indication of non-random mating (Allison et al., 1996; Anderson, Keltner, & John, 2003; Galbaud du Fort et al., 1998; Leonard & Das Eiden, 1999; Luo & Klohnen, 2005; Sutton, 1980; Watson et al., 2004). In general, these results corroborate those obtained with longer-married couples; the reported spousal similarity strengthens the theory of non-random mating. However, even in these studies there is a chance that early convergence is simply going undetected. Some studies have identified premarital or adolescent similarity in married partners through retrospective questions, which also suggests non-random mating as the primary explanation (Etcheverry & Agnew, 2009; Leonard & Das Eiden, 1999; Price & Vandenberg, 1980; Yamaguchi & Kandel, 1993). One study found support for non-random mating when similar smoking habits were observed in initial phases of relationships (Etcheverry & Agnew, 2009) Finally, evidence that spousal concordance does *not* increase

with relationship duration is often interpreted as support of the theory of non-random mating (Feng & Baker, 1994; McLeod, 1993a; 1993b).

Previous evidence of convergence has been inconsistent. A key feature of the convergence explanation is the expectation that similarity will increase with the length of the marriage. Increased spouse resemblance across relationship duration has been observed for mental health (Butterworth & Rodgers, 2005; Goodman & Shippy, 2002), life satisfaction (Anderson et al., 2003; Powdthavee, 2009; Schimmack & Lucas, 2006), and personality (Rammstedt & Schupp, 2008). Longitudinal data have shown that a change in one person's depressive symptoms is associated with a change in their partner's symptoms (Bookwala & Schulz, 1996; Siegel et al., 2004). However, the theory of convergence is not supported by the majority of the published literature (Price & Vandenberg, 1980; Tambs & Moum, 1992) with regard to personality (Humbad et al., 2010; Luo & Klohnen, 2005), mental health, and life satisfaction (du Fort, Kovess, & Boivin, 1994; Feng & Baker, 1994; McLeod, 1993b; van Grootheest et al., 2008). To the extent that spousal resemblance changes with relationship duration at all, that change often appears to involve variables with a certain amount of "plasticity", such as lifestyle variables, rather than more stable characteristics, such as personality traits. However, the possibility of rapid convergence early in the relationship is rarely explored. One study observed a relatively steep gradient of convergence at the beginning of marriage (Tambs & Moum, 1992), which might suggest some degree of premarital convergence. Focusing on the initial phases of romantic relationships, Anderson and colleagues observed early convergence in mental health (Anderson et al., 2003).

To safely distinguish between non-random mating and convergence, it is necessary to study relationships during their initial stages, or (preferably) before relationships have been established. Alford (2011) states that "the ideal research design would include a longitudinal sample of spouses before they met; however, this would require the ability to foresee the future, or to obtain a large enough sample that by chance a large number of persons would eventually meet and mate". The latter type of data has in fact been available in this thesis.

## **1.3. Negative caregiver outcomes**

### **1.3.1. Spousal caregivers**

When people develop disabilities or health problems in adult life, spouses are often the first to adopt the role of caregiver. A general definition of a spousal caregiver is someone who is responsible for care or assistance beyond what is required in the course of the normal everyday life of a partner because their partner is mentally ill, mentally handicapped, physically disabled, or experiencing health-related impairments caused by sickness or old age (Walker, Pratt, & Eddy, 1995). A wider definition of caregiving is provided by Pearlin and colleagues (1990), who point out that caregiving is embedded in all close relationships in which people attempt to protect or enhance each other's well-being. This broad use of the concept is in agreement with the categorization of caregivers in the papers comprising this thesis. Our data did not permit us clarify whether or not the partners actually provided extended care. We simply define a caregiver as a person who is married to or cohabitating with a person who has a disability/illness.

Caregiving is an increasingly important public health issue. Demographic shifts indicate that older people are living longer, and the success of modern medicine has reduced mortality as a result of acute illnesses, resulting in an increase in the number of persons living with chronic illnesses (Biegel, Sales, & Schulz, 1999). Because of these changes, the number of spousal caregivers, as well as the average age of caregivers, is increasing, especially in the context of age-related disabilities. Caregiving is complex and involves varying degrees of physical and emotional investment (Karantzas, 2012). The experiences and consequences of being a spousal caregiver vary depending on the nature of the illness or disability of the partner (Biegel et al., 1999). The present thesis focuses on spousal caregiving for partners with three very different disabilities: mental disorders, hearing impairment, and dementia. Regarding mental disorders, there were no diagnostic measures available, and participants in our sample were classified as having a mental disorder when they scored above a certain cut-off point on a measure of mental distress, together with two other indicators of mental disorders (reduced functionality and having sought professional help due to mental health problems). In spite of this limitation, cases identified by these criteria will from here on be labeled as having a mental disorder.

Major mental illnesses, such as affective disorders, typically emerge in late adolescence or early adulthood (Lefley, 1996). In contrast, hearing loss and dementia are both

age-related disabilities that usually occur in late adulthood. This difference suggests that spousal caregivers for persons with mental illness will typically involve younger spouses compared with partners of persons with hearing loss or dementia. Older caregivers might have a higher likelihood of experiencing declining health and functionality themselves, at the same time as they provide care to their spouse. For younger caregivers, the strain related to caregiving may increase as a result of several other competing roles, for example related to raising children or to work and career.

Mental disorders and dementia are both described as leading causes of disability worldwide (Ustun et al., 2004; World Health Organization (WHO) 2012). Aside from experiencing the suffering of a close person, caring for individuals with a mental disorder or dementia involves dealing with various aspects and consequences of disabilities, involving functional impairments such as the failure to perform household chores and provide self-care, cognitive and communicative impairments, and consequences involving changes in personality and behavior (Lefley, 1996; Tooth et al., 2008). Living with a partner who is experiencing hearing loss may involve a lesser need for practical assistance and a lower level of patient suffering compared with other disabilities. Reduction of the quality and quantity of couple communication is suggested as the main negative consequence of hearing loss in close relationships (Hetu, Jones, & Getty, 1993; Piercy & Piercy, 2002). It is quite likely that the majority of spouses of hearing-impaired persons would not refer to themselves as caregivers. Nevertheless, for theoretical and practical purposes I find it appropriate throughout this thesis to refer to spouses in all cases as caregivers. For the purpose of explaining possible negative caregiver outcomes, the same model of the caregiving process is used to guide all cases.

### **1.3.2. Caregiver burden**

In the literature concerning negative caregiver outcomes, especially when describing caregiving for persons with mental illness, the concept of caregiver burden is often used as an umbrella term to describe the physical, emotional, and economic consequences of providing care (Baronet, 1999; Loukissa, 1995; Magliano et al., 2005). *Caregiver burden* is an ample term, and several definitions have been used that exhibit extensive heterogeneity in relation to its meaning (Carretero et al., 2009; Poulshock & Deimling, 1984). A distinction has been made between the concepts of objective and subjective burden (Montgomery, Gonyea, & Hooyman, 1985; Schene, 1990). The former includes concrete and observable costs to the family (e.g., reduced social and family activities, financial difficulties, and employment status). Subjective burden refers to the attitudes and emotional reactions of the caregiver (e.g.,

low emotional mood, anxiety, or depression. In this thesis, the subjective burden is operationalized as symptoms of anxiety and depression and reduced subjective well-being. It has been argued that the concept of caregiver burden must be framed within a multi-dimensional process to reflect the complexity of the caregiving context (Carretero et al., 2009; Haley et al., 1987; Lefley, 1996; Poulshock & Deimling, 1984). The guiding theoretical model for the papers detailed in this thesis is the caregiver stress process model.

### **1.3.3. The caregiver stress process model**

Based on the stress and coping framework originally formulated by Lazarus and Folkman (1984), several models have identified caregiving as a stress process (Cohen, Kessler, & Gordon, 1997; Haley et al., 1987; Lawton et al., 1991; Pruchno et al., 1995; Schulz et al., 1987; Zarit, 1994). The stress process model that has had the greatest influence in the theoretical understanding of the process of the caregiver burden was developed by Pearlin and colleagues (Pearlin & Skaff, 1995; Pearlin, 1999; Pearlin et al., 1990; Pearlin, Aneshensel, & Leblanc, 1997; Aneshensel et al., 1995). The model describes caregiving as a chronic stress process that involves a chronic state (the disease/disability) with persistent, uncontrollable, and often unpredictable stressors. Stress emerges when the caregiver appraises the threat posed by the caregiving context as exceeding his or her resources and as threatening well-being. In this way, the caregiving context places the caregiver at risk for negative outcomes. Of particular interest for researchers, and also the focus of this thesis, are the mental health effects of caregiving. The stress process model was initially intended to model the stressors and strains of dementia caregiving. However, various stress process models have also been applied to caregiving processes for other chronic illnesses and disabilities, including hearing loss (Knussen et al., 2004; Knussen et al., 2005) and mental disorders (Greenberg et al., 1997; Szmukler et al., 1996). In all cases, changes in one person's health and functioning set off a chain reaction that affects the caregiver in many different areas.

Stress process models identify three major components in caregivers' experiences: primary stressors, secondary stressors, and outcomes. The starting point in the stress process is the primary stressors. They are associated with the root of the stress, namely the changes caused by the illness and disabilities (Pearlin et al., 1990). Objective stressors evolve directly from the needs of the patient and represent the actual tasks and amount of caregiving required. Surprisingly, much previous research has shown that the majority of objective primary stressors account for only a small portion of variance of caregiver health outcomes (Pinquart & Sörensen, 2003; Schulz et al., 1995; Zarit & Zarit, 2007). Coupled with the objective

conditions of caregiving are the caregiver's subjective appraisals of the caregiving situation. Role overload and a growing sense of loss of the relationship represent subjective stressors (Aneshensel et al., 1995; Pearlin et al., 1990) that may have a stronger influence on caregiver well-being (Goode et al., 1998).

Over time, the demands placed on the caregiver to address primary stressors can disrupt other areas of the caregiver's life (e.g., finances, work, family relationships, and social activities) (Aneshensel et al., 1995; Carretero et al., 2009; Zarit & Zarit, 2007). In the model, these consequences are termed secondary stressors. Primary and secondary stressors can have a direct, cumulative effect on the caregiver's health outcomes in multiple ways.

However, there are large individual differences in the effect of the caregiving experience (Badr, Acitelli, & Taylor, 2007). Caregivers with seemingly identical objective demands may differ tremendously regarding their level of burden. Combinations of background and contextual characteristics influence an individual's reaction to stressful situations and affect outcomes. Among the socio-demographic variables of the caregiver, young age, advanced age, being female, having low income and education level, having a job, and poor health have each been associated with high levels of burden (Bowman, Mukherjee, & Fortinsky, 1998; Carretero et al., 2009; Majerovitz, 2007; Navaie-Waliser et al., 2002; Pinquart & Sörensen, 2007; Schulz et al., 1995; Williams et al., 2008); however, results are inconsistent (Baronet, 1999; Croog, Sudilovsky, & Baume, 2006; Sörensen, et al., 2006). Social support, coping, personality, and faith have been suggested as potential mediating and/or moderating factors (Aneshensel et al., 1995; Biegel, Sales & Schulz, 1999; Zarit & Zarit, 2007).

#### **1.3.4. Deficits of previous studies about spousal caregiving**

The literature generally suggests that being a spousal caregiver to a person with mental disorders (Baronet, 1999; Fadden, Bebbington, & Kuipers, 1987; Loukissa, 1995; Ohaeri, 2003; Rose, 1996), hearing loss (Stephens, France, & Lormore, 1995; Wallhagen et al., 2004), or dementia (Cooper, Balamurali, & Livingston, 2007; Cuijpers, 2005; Pinquart & Sörensen, 2003; 2004; Schulz et al., 1995; Sörensen et al., 2006) is associated with loss of mental health and well-being.

Some study areas have received more attention than others. Research about caregiver burden has traditionally focused on serious, life-threatening illnesses, and dementia caregiving has been one of the most studied areas of caregiving. In the recent literature however, coupled with the deinstitutionalizing of mentally ill patients (Kuipers & Bebbington, 2004), negative outcomes in the caregivers of persons with mental disorders have received

more attention. Several papers focus on severe mental disorders, such as schizophrenia (Awad & Voruganti, 2008; Saunders, 2003) and bipolar disorder (Ogilvie, Morant, & Goodwin, 2005; Steele, Maruyama, & Galynker, 2010). Less attention has been paid to caregivers of persons with less severe mental disorders, such as anxiety and depression. There has also been little focus on the negative outcomes for partners of persons with less serious disabilities, such as hearing impairment.

Although there may be many differences in contexts and consequences when caring for people with mental disorders, hearing loss, or dementia, respectively, the research areas do have common features. Some themes have received less attention than others; the focus of much research, especially regarding dementia and hearing loss, has been on the female caregiver, with little attention given to the male caregiver. Although the majority of caregivers in these contexts are women, the extent to which women are affected more than men is unclear. The issue of gender differences deserves further attention. Moreover, sample sizes often do not permit researchers to differentiate spousal caregivers from other relatives or friends. Especially in the field of dementia caregiving, only a small number of studies have compared homogeneous samples of spousal caregivers. Although mental health is often studied as a negative caregiver outcome, only a few studies have included anxiety symptoms.

Some methodological limitations are common to all fields of caregiving research. Little has been done using large, population-based studies to quantify the emotional costs for caregivers. This is especially evident in the field of hearing loss, in which most research involves qualitative studies on young female spouses of workers affected by occupational, noise-induced hearing loss (e.g. Hallberg & Barrenas, 1993; Hetu, Jones, & Getty, 1993). Often, the studies depend on relatively small samples and suffer from a lack of control groups, which increases the risk that important confounders are not being controlled for. Inadequate covariate coverage may lead to overestimates of the unique stressors of caregiving. Most samples are not randomly drawn; persons with disabilities or diseases and their caregivers are selected from support groups, hospitals, self-help organizations, and service providers. This type of selection process involves a high risk of over-representing distressed caregivers (Schulz et al., 1995). Compared with studies that use more representative samples, clinical studies consistently report higher rates of mental distress among caregivers.

Another explanation for the higher estimates obtained in several clinical studies is that in the majority of studies, participants were aware of the purpose of the study. This situation may unintentionally direct the focus of the respondents toward negative aspects of the

caregiving situation, thereby resulting in the over-reporting of adverse effects. The negative focus may be enhanced further by the application of measures of caregiver burden that are directly linked to the caregiving situation (e.g., involving items such as “*I feel trapped by my caregiving role*”).

Methodological limitations may be a cause of some inconsistent results reported in the literature and explain the various levels of poor psychological health reported with respect to caregivers in different studies. There may also be systematic differences between societies, for instance due to varying degrees of public health service offered to families with an ill or disabled member. There is a need for large epidemiological studies aimed at characterizing a population at risk for negative health outcomes in caregiving situations.



## **2. Study aims**



This thesis has two goals: first, to obtain a better understanding of the extent to which spouses are similar regarding a number of characteristics, and why they are similar; second, to investigate how illness and health problems in one spouse affect mental health and well-being in the other. The aims are interrelated in the sense that events like illness in one partner may affect both spouses negatively, and may produce spousal similarity, particularly regarding mental health and well-being. Likewise, emotional contagion between spouses related to illness in the family may be part of the observed effects of caregiver burdens. Besides, in studies of caregiving, spousal convergence unrelated to illness may confound the effects of caregiver burdens.

Specific aims in the various papers are presented in Figure 1. In Papers 1 and 2, we explored the extent to which people select spouses similar to themselves, and to what extent partners become more similar to each other with relationship duration. The ability to differentiate between these two sources of similarity is important, both to enhance understanding of spousal interdependence, and due to possible implications for heritability estimates obtained from twin and family studies.

In Papers 3, 4, and 5, interdependence was explored in the context of partner caregiving. The main aim was to estimate loss of mental health and well-being in spouses of partners with different illnesses or disabilities. Negative spousal outcomes were estimated with respect to having a partner with mental illness, hearing impairment, or dementia.

**Figure 1. Specific aims in the papers comprising this thesis**

<p style="text-align: center;"><b>Paper 1</b></p> <p style="text-align: center;">To explore to what extent spousal similarities in smoking, alcohol use, and exercise are a result of non-random mating, and to what extent they are due to convergence over time.</p>
<p style="text-align: center;"><b>Paper 2</b></p> <p style="text-align: center;">To explore to what extent spousal similarities in mental health, life satisfaction, optimism, and type A personality are a result of non-random mating, and to what extent they are due to convergence over time.</p>
<p style="text-align: center;"><b>Paper 3</b></p> <p style="text-align: center;">To estimate the possible loss of mental health and well-being in spouses of persons with a mental disorder.</p>
<p style="text-align: center;"><b>Paper 4</b></p> <p style="text-align: center;">To estimate the possible loss of mental health and well-being in spouses of persons with hearing loss. To compare results based on audiometrically measured hearing loss with results based on a subjective measure of hearing loss.</p>
<p style="text-align: center;"><b>Paper 5</b></p> <p style="text-align: center;">To estimate the possible loss of mental health and well-being in spouses of persons with dementia. To address earlier suggested key mediator variables. To investigate personal and environmental factors related to vulnerability in the caregiving situation.</p>



## **3. Materials and methods**



### **3.1. Data materials**

Data materials were provided from four sources: the Nord-Trøndelag Health Study (HUNT), The Nord-Trøndelag Hearing Loss Study (NTHLS), the Health and Memory Study (HMS), and Statistics Norway (SN). Figure 1 provides a description of which data sources were included in the different papers.

#### **3.1.1. The Nord-Trøndelag Health Study (HUNT)**

HUNT represents one of the largest health screening studies ever performed. Three waves of data collection from the adult population of Nord-Trøndelag (NT) provide a unique database of personal medical histories: HUNT1 (1984-1986) (Holmen et al., 1990), HUNT2 (1995-1997) (Holmen et al., 2003), and HUNT3 (2005-2008). For details see the HUNT website ([www.hunt.ntnu.no](http://www.hunt.ntnu.no)).

Tuberculosis represented a severe health problem in Norway until the 1950s. Since 1952, teams from the National Mass Radiography Service (later renamed The National Health Screening Service, SHUS) regularly visited all Norwegian municipalities and carried out obligatory chest X-ray screenings on the total population older than school age (Bjartveit, 1997). The results were sent to the local health services, which took care of follow-up. Through its work, the SHUS built up a high level of confidence and support among the population (Bjartveit, 1997). After tuberculosis was no longer a major public health problem, the SHUS focused on several other common illnesses, particularly coronary heart disease. The first and second health screenings in NT, HUNT1 and HUNT2, were carried out by the SHUS in collaboration with the Norwegian Institute of Public Health (NIPH) and local health authorities.

HUNT1 was primarily initiated to evaluate a hypertension treatment programme within a Norwegian county. The county of NT was chosen because its demographic structure is fairly representative of Norway as a whole in terms of geography, economy, industry, sources of income, age distribution, morbidity, and mortality (Holmen et al., 2003). The county is mostly rural and sparsely populated, and the average income, the prevalence of higher education, and the prevalence of current smokers are a little lower than the average of Norway (Holmen et al., 2003). With a very stable and homogenous population, data from this county is suitable for epidemiological studies (Holmen et al., 2003). In addition to hypertension, main topics in HUNT1 were tuberculosis and other lung diseases, diabetes, and quality of life (Holmen et al., 1990). Similar to the earlier screenings performed by the SHUS,

the screening in HUNT1 was performed by teams visiting each municipality of the county. Blood samples; chest X-ray; and measures of blood pressure, heart rate, height, weight, and blood glucose level were obtained. Additional clinical measurements were performed in subsamples. Each participant completed at least two questionnaires.

For the purpose of the second health screening, HUNT evolved into a more comprehensive epidemiological study. The main objectives in HUNT2 were aimed at large public health issues, such as cardiovascular disease, diabetes, obstructive lung disease, osteoporosis, and mental health. In addition to the medical examination program from HUNT1, blood samples were collected for DNA extraction and a large number of laboratory tests, including cholesterol measurement. Waist and hip circumference were also measured. HUNT3 was similar to HUNT2, but included even more types of medical examination, in addition to the collection of urine samples. The number of issues included in the questionnaires was also greatly expanded from HUNT1 to HUNT3. The total number of questionnaire pages was four in HUNT1, eight in HUNT2, and 11 in HUNT3 (see Appendices II, III, and IV). Mental health was among the issues that were increasingly well represented in successive HUNT studies.

The entire NT population aged 20 years or older was invited to participate in each wave of data collection. An invitation letter was sent by mail attached to an information folder and a questionnaire (Q1). Q1 was completed prior to the health screening and returned at the screening site. A second questionnaire (Q2) was handed out at the screening site and returned by mail free of cost for the participant. Not all participants returned Q2, resulting in lower participation rates for these questionnaires. After each health screening, any serious findings (e.g., diabetes) were immediately reported to the participants and to their general practitioner. In HUNT2 and HUNT3, all participants also received feedback in the form of a health profile.

HUNT2 and HUNT3 also included separate health studies of adolescents aged 13-19 years, the YoungHUNT. YoungHUNT questionnaires were comprised of content that was quite different from the questionnaires for adults, and were completed at school. Data from YoungHUNT are not used in this dissertation.

Participation in HUNT was voluntary, and each participant signed a written consent form regarding the screening and the use of data for research purposes. They also consented to the linking of their data to other registries (Holmen et al., 2003). Of 84,675 individuals invited to participate in HUNT1, 91.2% returned Q1 and 75.5% returned Q2 (Holmen et al., 1990). This high response rate may reflect the trust that the SHUS had garnered among the

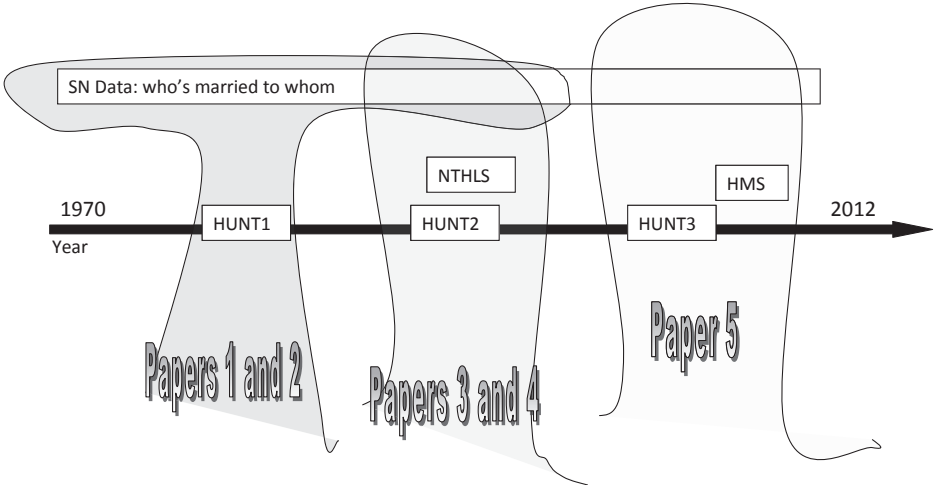


population. In addition, earlier tuberculosis screenings had been obligatory, and the population was (rightfully) informed that participation in those screenings constituted a duty to society because it prevented contagion of tuberculosis. Some participants may have believed that HUNT1 was also obligatory, or they may still have thought of participation in such screenings as a societal duty. Of 92,936 individuals invited to participate in HUNT2, 71.2% returned Q1 and 61.7% returned Q2 (Holmen et al., 2003). Of 93,860 individuals invited to participate in HUNT3, 54.1% returned Q1 and 43.7% returned Q2 (www.ntnu.no/hunt/oppmote).

**3.1.2. The Nord-Trøndelag Hearing Loss Study (NTHLS)**

The NTHLS was an integrated project included in HUNT2; 17 of the 24 municipalities in NT were invited to participate. In all but one of the 17 municipalities, the NTHLS was conducted at the HUNT2 screening, and almost all HUNT2 participants attended. In one municipality, however, the hearing examination took place after the HUNT2 screening, which caused a lower participation rate (42.1%). Hearing acuity was measured using audiometry, which tested each ear with eight frequencies from 250 Hz to 8000 Hz. In addition to the hearing examination, the NTHLS consisted of two questionnaires: one completed at the screening site while waiting for the hearing examination, and a second that was taken home after the examination and returned by prepaid mail. Out of 82,133 individuals invited to participate in the NTHLS, 62.8% participated.

**Figure 1. Data materials included in the papers comprising this thesis**



### **3.1.3. The health and memory study (HMS)**

The main goal of the HMS data collection was to register dementia diagnoses in the NT population, to be used together with previously collected HUNT data. The HMS data were collected using two procedures.

First, during 2008-2010, electronic patient journals in the two hospitals in NT were examined to find patients who had been registered with a dementia diagnosis. The use of standardized dementia diagnostic procedures was established in the hospitals in 1998. Specialists in geriatric medicine and old age psychiatry were responsible for the diagnostic work-up. To exclude uncertain cases, the data retrieved was checked for validity by experienced geriatricians and old age psychiatrists.

Second, during 2010-2011, all inhabitants residing in nursing homes in NT were invited to participate in an extensive health examination that focused on dementia diagnoses and related variables. Using interviews that were standardized for the assessment of cognitive decline and dementia, trained research nurses questioned the patients' primary nurse and primary family caregiver. The patients themselves participated in two simple tests of cognitive functions.

A total of 1332 dementia cases were identified: 104 cases were identified in both hospital and nursing home data, 727 were registered from hospital journals, and 501 were registered from nursing homes. Of all 1332 dementia cases identified, 404 were registered as married.

### **3.1.4. Registry information from Statistics Norway (SN)**

To identify partners and combine dyad data together, data collected for HUNT, NTHLS, and HMS were combined with longitudinal registry data from the government statistics agency, Statistics Norway (SN). In Norway, every individual has a unique 11-digit personal identification number that is provided at birth or upon immigration. Among other things, these numbers are used by the national authorities to record marriages in Norway, which are registered using the personal identification numbers of both partners for each year the couple remains married. This longitudinal information is stored by SN. For the purpose of our study, marriage information was available from 1970 to 2000 in Papers 1-4, and until 2010 in Paper 5. SN also provided information about sex, age, education, income, and place of residence, variables that were included as covariates in the analyses.

Non-married cohabitating couples were registered with their personal identification numbers based on residential address, registered at the time the cohabiting couple had a child. Every birth in Norway is registered by government directives, and residential address information is based on legally regulated citizen reports; hence, the cohabitation information is highly reliable. Cohabitation information (for couples with children only) was available for the period between 1992 and 2000, and until 2010 in Paper 5. No registry information was available to identify couples cohabitating without children; accordingly, these couples were not included in the sample.

HUNT1 and HUNT2 data were linked to SN data in 2000. This linkage made it possible to identify couples, establish their date of marriage, and merge partner data. Owing to data privacy, the data were anonymized by removing the personal identification numbers after being matched with the registry data. This data material includes information about who was married to whom until 2000. Data from the HMS and from HUNT 1-3 were again linked to registry data from SN in 2011. This database contains information about marriage and cohabitation until 2010.

### **3.1.5. Access to data**

All qualified researchers can apply for access to HUNT data. Norwegian projects applying for HUNT data must be approved by The Regional Committee for Medical Research in Norway (REK). Contracts between HUNT and the applying specify how the data will be used with regard to number of publications and types of research aims. The data used for this thesis were obtained from different application processes. The first, providing data for Papers 1-4, was part of a large caregiver project and another ongoing project at the NIPH, while Paper 5 was part of an extensive dementia epidemiology project, the HMS. The latter is a collaboration between HUNT, regional health authorities, Ageing and Health (Norwegian Centre for Research, Education and Service Development), and the NIPH. I originally planned to base my dissertation solely on data from the HMS; however, progress of the HMS was slower than planned, which made it necessary to apply data from the other projects, as well.

In the projects on which this thesis is based, we were allowed to have the HUNT data matched with data from a number of public registries, including data identifying spouses. The HUNT and registry data were made available to us in SPSS format. Preparation of this data for partner analyses required that the files be considerably restructured, which is part of the work included in this thesis. Most importantly, data regarding both parts of the dyads of

interest (couples existing at the time of HUNT1, HUNT2, or HUNT3, or future couples) were linked together. Each case in the data file consisted of data from both partners. Apart from the editing and restructuring of the data, the dissertational work has also included taking part in the planning and administration of the dementia project (HMS). I was involved in the HMS reference group, which consisted of members from the collaborating research institutions, beginning in 2008.

### **3.2. Sample**

All analyses in this thesis were performed on dyadic data involving data from both partners of participating couples. In preparing the data file for Papers 1 and 2, participants were matched with their latest registered partner before the year 2000. For all analyses except one, only Q2 participants from HUNT1 were included, which resulted in a sample of 21,150 couples. Of these couples, 19,599 were married/cohabitating at the time of the screening, while the remaining 1,551 couples entered into marriage/cohabitation during the following 14-16 years. Analyses regarding life satisfaction required only Q1 responses, resulting in a sample of 25,436 existing and 2,471 future couples.

For the purpose of Papers 3 and 4, data from partners registered at the time of HUNT2 participation were matched. In Paper 3, there were 9,740 couples with valid data regarding the outcome measures. Among these couples, there were 540 in which the index person (357 women and 183 men) most likely had a mental disorder. There were 13,678 couples with complete valid data available for analysis in Paper 4. However, because few persons younger than 45 years had severe hearing impairment, couples with index persons in this age group was excluded. Included in the analyses were 9,530 couples with male index persons and 8,607 couples with female index persons. The proportion of index persons with slight or disabling hearing impairment was 30.5% among men, and 16.2% among women.

In Paper 5, participants were matched with data from their registered partner at the time of participation in HUNT3. One hundred eighty-six couples included an index person with a dementia diagnosis. The dementia caregivers were compared to the rest of the couples in HUNT3 over the age of 55. For the purpose of all analyses except one, only respondents with valid data regarding all independent and outcome variables from Q2 were included in the sample, resulting in 160 dementia caregivers and 5,924 reference spouses. For the purpose of one analysis, the Q1 sample with valid data about life satisfaction was included; it comprised 182 dementia caregivers and 7,597 reference couples.

For several reasons, the sample included in Papers 3-5 are less than one-half the size of the samples included in Papers 1 and 2. One reason for this discrepancy is that the rates of participation in HUNT2 and HUNT3 were much lower than in HUNT1. Additionally, the outcome variables in Papers 3 and 4 are based on items from NTHLS, in which only 17 of the 24 municipalities participated, with an even lower response rate. For the purpose of Paper 3, only couples with valid Q2 data were included, further diminishing the size of the sample.

### **3.3. Measures**

Table 1 provides an overview of the measures included in the various papers, and describes whether measures were obtained from the index person or from the spouse. Although a few measures consisted of only one item (alcohol use, smoking, and life satisfaction), most involved two items or more. Owing to missing data within the various scales, the Expectation Maximization (EM) imputation option in SPSS was used to allow valid responses to predict missing responses for all participants with valid data regarding at least one-half of the items in a scale. In Paper 5, some additional steps were taken to include as many of the dementia cases as possible in the sample available for analyses. If the items' response categories differed within the same set of items, data were standardized before the items were summed.

#### **3.3.1. Lifestyle (HUNT1, Paper 1)**

Alcohol consumption was measured with one item, phrased: *"How often have you drunk alcohol (beer, wine, or spirits) during the last 14 days?"* Response categories were *'I am a total abstainer, never drink alcohol'*, *'I have not drunk alcohol, although I am not at total abstainer'*, *'I have drunk alcohol 1-4 times'*, *'I have drunk alcohol 5-10 times'*, and *'I have drunk alcohol more than 10 times'*; answers were scored 0-4 in the direction of increasing frequency. This item exhibits a correlation of 0.6 with a more comprehensive measure of alcohol consumption measured 11 years later (HUNT2), indicating high reliability.

Smoking habits were obtained using one single question: *"Do you smoke daily at the moment?"* Responses were *'no'* or *'yes'*, scored as 0 and 1, respectively.

Physical activity was measured using three items pertaining to frequency, duration, and intensity of exercise. The frequency question was phrased *"How often do you exercise (on average)?"*; response categories were *'never'*, *'less than once a week'*, *'once a week'*, *'2-3 times a week'*, and *'nearly every day'*, and were scored 0-4 in the direction of increasing frequency. Respondents who engaged in physical activity one or more times per week were

also queried about intensity, *“How hard do you exercise?”* (scored 1-3 with increasing intensity) and duration, *“How long do you exercise each time?”* (scored 1-4 with increasing duration). Respondents reporting low frequency were scored with zero on the two final questions. Cronbach’s alpha for the scale was 0.89. A sum score was calculated based on the three items.

### **3.3.2. Psychological variables** (HUNT1, Paper 2)

Life-satisfaction was measured as the mean value of two identical items repeated in Q1 and in Q2 (HUNT1), with a test-retest correlation of 0.68. The item was phrased *“When you think about your life at the moment, would you say that by and large you are satisfied with your life or are you mostly dissatisfied”*. Seven response categories ranged from *‘Extremely dissatisfied’* to *‘extremely satisfied’*, and were scored 1-7 in order of increasing satisfaction. The test-retest correlation with an identical item measured 11 years later was 0.43. Other studies have reported that responses to such questions are quite valid and fairly reliable (Scherpenzeel, 1995).

Global mental health (GMH) was a weighted sum of eight items (see Paper 2 for description). The weights were obtained using other material with data from 5,999 subjects. This material, described in detail elsewhere (Tambs & Moum, 1993), included items identical with the present GMH score together with the Hopkins Symptom Checklist (SCL-25) (Winokur et al., 1984). The latter is a well-validated and widely used checklist tapping symptoms of anxiety and depression. In a multivariate linear regression analysis, the eight GMH items predicted 66% of the variance in the SCL-25 (corresponding to a correlation of 0.81), indicating good validity for the GMH indicator. Coefficients obtained from the regression analysis were used as weights when constructing the GMH indicator. Cronbach’s alpha for the scale was 0.80. Collapsing the eight items into two summative indicators of nervousness and life satisfaction, the correlations between the indicators based on original and follow-up scores 10 to 38 months after HUNT1 were 0.71 and 0.68, respectively (Tambs & Moum, 1992).

Type A personality was measured as the sum of three items weighted by factor scores: *“Do you have a tendency to take your duties more seriously than other people?”* (five responses ranging from *‘No, on the contrary’* to *‘Yes, that’s exactly the way I am’*, scored 0-4 in order of increasing agreement), *“Would you say that over the last year you have pushed yourself or steadily urged yourself forward?”* (*‘Don’t know’*, *‘No’*, *‘Yes’*, scored as 0, 0, and 1, respectively), and *“Are you constantly short of time even when it comes to day-to-day*

tasks?" ('Never', 'Sometimes', 'Always or almost always', scored 1, 2, and 3, respectively). Follow-up 10 to 38 months after HUNT1 revealed a test-retest correlation of 0.55 (Tambis & Moum, 1992). Cronbach's alpha for the three items was 0.58.

Optimism was measured with three items in Q2 that were weighted by factor scores and summed. The items were phrased "Do you believe it is important to try to be happy with one's lot?", "Do you believe it is important to be able to lower sights?", and "Do you believe it is important to be cheerful at all times?" Five response categories ranged from 'particularly important' to 'of no importance whatsoever', and were scored 1-5 in order of decreasing importance. Cronbach's alpha was 0.65.

### **3.3.3. Relationship duration (D)** (SN, Papers 1 and 2)

As described in section 3.1.4, exact marriage information was available from 1976 until 2000, and cohabitation information (for couples with children only) was available for the period between 1992 and 2000 for the analyses in Papers 1 and 2. A value of relationship duration before or after entry into marriage/cohabitation (D) was estimated for all participating couples. D was calculated by subtracting the year of entry into marriage/cohabitation from the year of testing (during the period 1985-1987). The year of entry for cohabitating couples registered in 1992 was estimated based on the age of the oldest child. For example, a cohabitating couple with a 7-year-old child in 1992 would be coded as entering into cohabitation in 1985. For 13,920 couples already married in 1976, the exact year of marriage was not registered by the authorities. Therefore, D for these couples was estimated based on the wives' ages, calculated as the age minus the population mean for women getting married in Norway in 1974-1975 (24 years) (SN, 2011). For couples entering marriage/cohabitation after data collection, D was negatively scored, indicating years until entering marriage/cohabitation. The D variable was recoded into 16 categories, each scored by the mean duration value of the category.

### **3.3.4. Index persons' mental disorders** (HUNT 2 & NTHLS, Paper 3)

There is no diagnostic information available in HUNT. Therefore, strict criteria based on two indicators were used to identify index persons highly likely to suffer from a mental disorder.

Symptoms of anxiety and depression were measured with an abbreviated version of the SCL-25, included in one of the NTHLS questionnaires. This 10-item abbreviated version (SCL-10) includes four questions tapping anxiety and six tapping depression. The items pertain to the last two weeks, and were phrased: 'suddenly scared for no reason', 'feeling

*fearful*, *faintness, dizziness, or weakness*, *feeling tense or keyed up*, *blaming yourself for things*, *difficulty in falling asleep or staying asleep*, *feeling blue*, *feeling of worthlessness*, *feeling everything is an effort*, and *feeling hopeless about future*. Response categories ranged from *not at all* to *extremely* bothered, and were scored 1-4 in increasing order. The SCL-10 has demonstrated good psychometric properties in previous Norwegian studies and has been shown to correlate highly ( $r=0.97$ ) with the SCL-25 (Strand et al., 2003).

Two items were summed to provide another indicator of mental health problems. The items asked respondents to report their *“reduced functionality due to mental health problems”* (“A little”, “quite a deal”, “a lot”, scored 1, 2, and 3, respectively) and *“having sought professional help for a mental health problem”* (no or yes, scored 0 or 1, respectively).

A dichotomous variable (case/not case) was coded as positive if the following two criteria were met: 1) a score of 20 or higher on the SCL (range 10-40), and 2) a score of 1 or higher on an indicator of mental health problems. On average, the index persons defined as cases by this variable scored 1.48 standard deviations (SD) higher on anxiety and depression in HUNT1 11 years earlier, compared with the rest of the population. This group difference indicates that cases identified suffer from a severe and relatively persistent mental disorder.

### **3.3.5. Index persons' hearing loss** (HUNT2 & NTHLS, Paper 4)

Pure tone audiometry in the NTHLS was completed while participants were seated in semi-portable, dismountable sound attenuation booths, without hearing aid. The pure tone hearing threshold examinations for each ear included eight test frequencies from 0.25 to 8 kHz; however, for the analyses in Paper 4 only the mean value of the frequencies 0.5, 1, 2, and 4 kHz was used, as recommended by the WHO as a general measure for hearing acuity (Mathers, Smith, & Concha, 2003). Data from 100 randomly drawn retested participants exhibited high test-retest correlations (Borchgrevink, Tambs & Hoffman, 2005). The WHO classification of hearing impairment was used to compute pure tone averages in the ear with better hearing. Categories were defined as ‘no impairment’ ( $\leq 25$  decibels hearing level, dBHL), ‘slight impairment’ (26-40 dBHL), and ‘disabling impairment’ ( $\geq 41$  dBHL), according to the threshold level.

Self-reported hearing loss (SHL) was measured as the sum of two items. The first item, from HUNT2 Q2, asked respondents to indicate the extent to which their everyday functioning was impaired due to hearing impairment. Response categories were *‘slight’*, *‘moderate’*, and *‘severe’*, and were scored 1-3 in increasing order. Participants reporting no



impairment were scored 0. A second item, from the NTHLS questionnaire, was phrased “Do you have a hearing loss of which you are aware?”; responses were ‘no’ or ‘yes’, and were scored 0 and 1, respectively). SHL was categorized into two categories ‘no SHL’ (0-1) and ‘SHL’ (2-4).

**Table 1. Measures included in the papers comprising this thesis**

<i>Paper</i>	<i>Measures from index persons (I)</i>	<i>Measures from spouses (S)</i>	<i>Confounding, moderating and mediating variables</i>
1	-Alcohol use -Smoking -Exercise	-Alcohol use -Smoking -Exercise	-Relationship duration (I/S) -Age (I)
2	-Life satisfaction -Global mental health -Type A personality -Optimism	-Life satisfaction -Global mental health -Type A personality -Optimism	-Relationship duration (I/S) -Age (I)
3	-Mental disorder*	-Symptoms of anxiety/depression -Subjective well-being	-Age (S) -Education (S) -Years of marriage (S) -Living with persons < 18 yrs (S) -Somatic disease (I/S) -Alcohol problems (I/S)
4	-Audiometric hearing loss -Subjective hearing loss	-Symptoms of anxiety -Symptoms of depression -Subjective well-being	-Age (S) -Education (I+S) -Mental health (I) -Hearing loss (S)
5	-Dementia diagnosis	-Life satisfaction -Symptoms of anxiety -Symptoms of depression	-Sex (I/S) -Age (S) -Education (S) -Income (I/S) -Number of children (S) -Age difference (I/S) -Age difference (I/S) -Living with partner (I/S) -Subjective health (S) -Impaired functioning (S) -Cultural activities (S) -Social support (S) -Extraversion (S) -View of life (religion) (S) -Coping (meaning) (S) -Number of children (S) -Place of residence (S)

\* Mental disorder was classified based on a high score regarding symptoms of anxiety and depression, and having sought professional help for mental health problems or having reduced functionality due to mental health problems.

### **3.3.6. Index persons' dementia diagnoses** (HMS, Paper 5)

The strategies used to diagnose dementia differed in hospital and in nursing homes. Assessment of cognitive impairments in the hospitals included a medical history from patients/caregivers, clinical examination, blood sample, and computed tomography or magnetic resonance imaging scan. Neuropsychological assessment (Mini-Mental-State Examination (MMSE) and clock drawing test) and screening for depression were performed for most patients. The International classification of diseases (ICD10) was used to set the dementia diagnoses and to classify them into Alzheimer's disease (AD), vascular dementia (VaD), mixed AD/VaD, frontotemporal dementia, dementia with Lewy bodies, and other dementias.

The nursing home patients were assessed for impaired cognition (MMSE and Severe Impairment Battery), level of dementia (Clinical Dementia Rating Scale, CDR), and caregiver-rated impression of cognitive change (Informant Questionnaire on Cognitive Decline in the Elderly, IQ-CODE). Furthermore, a structured questionnaire regarding the debut and course of dementia symptoms was applied (for details, see [tinyurl.com/HMSDementia](http://tinyurl.com/HMSDementia)). Two physicians with wide experience in old age psychiatry independently made a diagnosis of dementia according to the ICD-10 using all available information. If these two physicians disagreed, the relevant cases were discussed and consensus was reached. For the purpose of our analysis, only a dichotomous variable indicating the presence ('1') or absence ('0') of a dementia diagnosis was used.

### **3.3.7. Negative caregiver outcomes** (NTHLS, HUNT 2 & 3, Papers 3, 4, and 5)

Mental health and well-being were included as outcome variables in Papers 3, 4, and 5. However, because various instruments were included in the two waves of data collection, the outcomes were measured differently. In Papers 3 and 4, symptoms of anxiety and depression were measured using the SCL-10 from NTHLS (see section 3.3.4). In Paper 3, the SCL-10 was used as a total scale, while in Paper 4 separate summative scores were computed for anxiety and depression. Cronbach's alpha was 0.85 for the total scale, 0.80 for the six-item depression score, and 0.67 and for the four-item anxiety score.

In HUNT3 (Paper 5), a combination of two other scales was used to measure symptoms of anxiety and depression: the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) and the CONOR Mental Distress Index (CMD). HADS is an established instrument used to assess symptoms of anxiety and depression (Snaith, 1986). It

consists of 14 four-point Likert-scaled items, seven for anxiety and seven for depression. However, the HADS items do not measure negative affectivity. Therefore, they were combined with CMD items. CMD contains three items assessing anxiety and four assessing depression. The scale is described in detail elsewhere (Søgaard et al., 2003). The items included in the total scales, 10 measuring anxiety and 11 measuring depressive symptoms, are described in Paper 5. Cronbach's alphas were 0.80 and 0.85 for the depression and anxiety scales, respectively. All scales indicating mental health were relatively skewed and were logarithmically (ln) transformed to approximate a normal distribution. The scores were standardized and used as continuous outcome measures.

An item identical to the life-satisfaction item described in section 3.3.2 was included in both HUNT2 and HUNT3. In Paper 5, responses to this item were standardized and included as an outcome variable. However, in Papers 3 and 4, the item was supplemented by two other questions measuring subjective well-being, each answered on a 7-point scale ranging from highly negative (score = 1) to highly positive (score = 7). The items were phrased: "*Would you say you are usually cheerful or dejected?*" and "*Do you mostly feel strong and fit, or tired and worn out?*" The items were standardized and added as a sum score indicator. This three-item indicator has been proven reliable in previous studies (Moum et al., 1990; Søgaard & Bech, 2009). Cronbach's alphas in male and female participants ranged from 0.77 to 0.89 in the two papers.

### **3.3.8. Confounding, moderating and mediating variables**

Various confounding and/or moderating variables were included in the different papers (Table 1). In paper 5, potential mediating variables were also included: living together with the partner (or not), subjective health, impaired functioning, cultural activities, and social support. This paper also tested for the moderating effect of variables other than the confounders already included: number of children, place of residence (living in one of the four towns or in the more rural areas of the county), extraversion, view of life (religion), and one coping-related item. Detailed description of all variables is provided in the papers.

### **3.4. Statistical analysis**

The matching of partner data resulted in a double entry data file, meaning that all respondents were included twice. In one set of records the husbands were index-persons and the wives were possible caregivers; in “mirrored” records the wives were index-persons and the husbands were possible caregivers. The statistical techniques used assume each observation to be completely independent of every other observation in the data set. Various strategies were employed in the five papers to avoid dependency in the data. Analyses in the first two papers were based on identical measures in both index-persons and spouses (Table 1). The file was restructured to a single-entry file simply by limiting the first person in the record to males and the second to females. In Papers 3 and 4, all analyses were run stratified by sex, thus avoiding the double-entry bias. However, in Paper 5, the sample size of the dementia case group did not permit stratification by sex. Therefore, in Paper 5 partners in reference couples were randomly assigned as either the index person or the spouse, while all demented persons were allocated as index persons.

#### **3.4.1. Papers 1 and 2**

Because the results presented in Paper 1 were biased by a weighing error, an erratum containing a slightly different analytic procedure and new results were published together with the article. The results presented in the erratum for Paper 1 were based on analyses almost identical to procedures in Paper 2. In both cases, polychoric correlations for various measures, adjusted for the effect of age, between partners in each of 16 groups of couples with various D were computed using the PRELIS computer program (Jöreskog & Sörbom, 1988). This program was used because it also calculates asymptotic standard errors of the estimates. However, the next step differed between the two papers. In Paper 1 we used SPSS (Version 17.0), while in Paper 2 we used the computer program R version 2.13.2 (R Development Core Team, 2011) to conduct the analyses. In Paper 1, a data file was generated, in which we weighted each z-transformed correlation with the inverse of the variance of the estimates. Rather than generating a constant value for each observation, we added an error term produced by the computer program, and generated a randomly fluctuating, normally distributed variable ( $SD = 1$ , and  $MEAN = \text{Fisher's } z\text{-transform of the observed correlation}$ ). Data were generated (simulated) in the same way for all 16 observed correlations. Unlike SPSS, the computer program R offers a nonlinear regression program with an option for weighting each observation. This option was used in Paper 2. Results using the two different

approaches were almost identical. In both papers, the z-transforms of the correlations, weighted by the inverse of the asymptotic standard error, were entered as data points for the dependent variable in non-linear segmented regression analysis with time until or since the year of entry (D) as the independent variable. The independent variable D was partitioned into years before ( $D_{\text{neg}}$ ) and years after ( $D_{\text{pos}}$ ) entry into marriage/cohabitation. Three alternative mathematical models were specified, which differed for the two intervals. They all specified only an exponential function for future couples ( $D_{\text{neg}}$ ), and a logarithmic (F1), a linear (F2), and a quadratic (F3) alternative for existing couples ( $D_{\text{pos}}$ ). The three full models were tested for all of the study variables. When at least one parameter was not statistically significant, we chose to simplify the model by specifying a linear effect for  $D_{\text{neg}}$ . The values estimated by the regression analyses were transformed from z-values back to r-values.

#### **3.4.2. Papers 3, 4, and 5**

Papers 3, 4, and 5 investigate negative caregiver outcomes, observed as loss of mental health and well-being in spouses of index persons with a mental disorder, hearing impairment, or dementia. Multivariate ANOVA (SPSS, GLM, Unianova) was conducted for each of the outcome measures separately, using the index persons' disability/illness as the primary predictor. All outcome variables were standardized before they were included in the analyses. This way, the unstandardized regression coefficients (b) show adjusted group mean differences in outcome variable between the group with a caregiver burden and the remaining sample, scaled as fractions of an SD.

In Papers 3 and 4, one set of analyses estimated the association between mental disorder/hearing impairment among male index persons and subjective burden in their female spouses, while the other estimated the relationship between mental disorder/hearing impairment in female index persons and subjective burden in their male spouses. In Paper 5, the total sample was included in the analysis, adjusting for the effect of gender. Confounders included in all papers were spousal age and education. A variety of confounders were also included in the papers (Table 1). In Paper 5, possible mediating effects were also tested. As a final step, all papers tested interaction terms between the disability/illness in the index person and the other variables included.



## 4. **Main findings**





#### **4.1. Results from Paper 1**

The results from Paper 1 indicate systematic spousal concordance for all survey variables: smoking, alcohol use, and exercise. Moderate similarity for all study variables (highest for smoking) was demonstrated in future couples measured on average 12 years before entry into marriage/cohabitation. These correlations, measured at a time when the likelihood of partners influencing each other is very low, indicate non-random mating.

The results suggest that convergence and divergence during adult life have different effects on various lifestyle factors. Results from the models with a linear increase specified for the time before entry into marriage/cohabitation suggested significant convergence before entry for all variables. The power of the data does not permit safe conclusions regarding the shape of the convergence function, although the authors suggest that an exponential function is most likely to be the correct one. After entry into marriage/cohabitation, spousal similarity in alcohol use appears to remain stable, similarity in exercise appears to increase, and spousal similarity in smoking clearly decreases with relationship duration. This decrease across relationship duration, and with decreasing birth year, may reflect secular trends for sex-specific smoking habits.

The main conclusion of the paper is that both non-random mating and convergence early in the relationship are sources of spousal similarity regarding lifestyle factors. Convergence and divergence after entry into marriage/cohabitation vary across lifestyle factors.

#### **4.2. Results from Paper 2**

In Paper 2, significant concordance was observed for all study variables: mental health, life satisfaction, type A behavior, and optimism. For all variables except optimism, initial correlations between future partners were low to moderate, typically around one-half the values estimated in existing couples, indicating both non-random mating and early convergence. Regarding optimism, the initial correlation was close to zero.

These results suggest that the duration of a relationship changes the magnitude of spousal correlation. Although the levels of spousal concordance differed among variables, the pattern of convergence/divergence was quite similar for all four variables. All survey variables demonstrated significant (linear) convergence between partners during the years before entrance into marriage, with optimism similarity increasing the most. The power of the

data does not permit safe conclusions regarding the shape of the convergence function, although an exponential curve appears to be the most realistic.

All four models demonstrated a u-shaped tendency of divergence/convergence after entry into marriage/cohabitation. There appeared to be a slight divergence during the first 20 years of marriage/cohabitation and a moderate convergence during the rest of life.

The main conclusion of the paper is that spousal similarity in mental health and personality traits can be explained by both non-random mating and convergence. Large portions of spousal similarity are explained by processes that occur soon after the spouses get to know each other.

### **4.3. Results from Paper 3**

Adjusting for several covariates, analyses in Paper 3 compared subjective symptoms of anxiety and depression and well-being in spouses of persons with a mental disorder with such symptoms and well-being in the rest of the married population. Results showed that 183 female spouses of men with a mental disorder reported approximately one-half of an SD more symptoms of anxiety and depression and one-third of an SD lower subjective well-being compared with the rest of the married women in the population. Three hundred fifty-seven male spouses of women with mental disorder reported one-third of an SD higher level of symptoms of anxiety and depression and one-third of an SD lower subjective well-being, compared with the remaining married men in the population. Female cases outnumbered their male counterparts. However, the association between a mental disorder in the index person and spousal negative outcomes appears to be similar in men and women, and the pattern is similar.

Although the results are highly statistically significant, the effect sizes are moderate. The moderate effect sizes do not imply that a large proportion of caregivers reach a symptom level that reflects clinical mental disorders. Testing for interaction effects did not yield any significant results, possibly owing to a lack of statistical power.

The main conclusion of the paper is that spouses of persons who have a mental disorder report significantly higher levels of symptoms of anxiety and depression and lower subjective well-being than do spouses of persons without a mental disorder, although effect sizes are moderate.

#### **4.4. Results from Paper 4**

Adjusted for spousal age, spousal hearing, and education, index persons' audiometric measures of hearing loss were not associated with mental health or well-being among either male or female spouses older than 44 years of age. Testing for interaction effects between the index person's and the spouse's audiometric hearing loss, and between hearing loss and spousal age, did not yield any significant results.

When all analyses were re-run using index persons' SHL as an independent variable, we observed four significant main effects in the expected direction on adjusted means of spousal mental health and subjective well-being. Results showed that female spouses of men with subjective hearing loss reported more symptoms of anxiety and depression and lower levels of subjective well-being compared with the rest of the married women in the population. Male spouses of women with subjective hearing loss reported significantly lower subjective well-being, compared with the rest of the male population. However, no adjusted difference between spouses of hearing-impaired and normally hearing persons exceeded 0.13 SD. When the GLM was re-run with the index persons' own mental health as a covariate, three of the four significant associations disappeared. Partner similarity in response bias might be one explanation for this change. The remaining significant relation was between SHL and symptoms of anxiety in female spouses (who reported 0.08 SD higher symptoms). Testing for interaction effects between the index person's and the spouse's subjective hearing loss, and between hearing loss and spousal age, did not yield any significant results.

The paper's main conclusion is that, contrary to previous results, audiometric hearing was not significantly associated with spousal mental health. Moderate relations between self-reported hearing and spousal mental health were observed.

#### **4.5. Results from Paper 5**

In this study, 160 spouses of persons with dementia were compared with the rest of the married population in NT older than 55 years of age. The results indicate that the presence of a partner with a dementia diagnosis is associated with moderately lower levels of life satisfaction (0.49 SD) and more symptoms of anxiety (0.19 SD) and depression (0.30 SD) than reported by spouses of elderly persons without dementia. The effect of the dementia diagnosis was present both at the crude level and after adjusting for demographic variables.

Of four possible mediating variables included in the analysis, the one with the clearest mediating effect was whether the spousal caregiver lives together with their partner or not.

The observed reduction in the main effect of dementia was largest for life satisfaction, reducing the effect with 0.18 SD.

Several possible moderator effects were tested by including interaction terms in the analysis. We observed no interaction effects that were statistically significant at the 0.01 level. However, one borderline significant interaction effect was observed between the dichotomous variable living alone/living together with a spouse with dementia and the dementia diagnosis. Living alone appeared to moderate the effect of having a partner with dementia on caregivers' depressive symptoms. Significantly higher depressive symptoms were observed only in caregiving partners who cohabitated with their partner with dementia. Contrary to common perceptions in the caregiving literature, our analysis revealed no moderating effect of sex.

This paper's main conclusion is that spouses of persons with dementia report significantly higher levels of symptoms of anxiety and depression and lower subjective well-being than do spouses of persons without dementia, although effect sizes are moderate.

## 5. Discussion



## **5.1. Interpretation of the main results**

### **5.1.1. Spousal similarity**

The goal of the first two papers described in this thesis was to estimate the relative contributions of non-random mating and convergence to an explanation of spousal similarity of various traits. Despite the similar statistical analyses performed, we chose to separate the results into two papers because of the different thematic focus and corresponding literature related to spousal similarity in lifestyle and in mental health, respectively. Interestingly, despite the distinction between the types of study variables, the results in the two papers had many common features. In agreement with previous research, the results indicated significant spousal concordance regarding all variables included. Although the level of similarity varied across variables, the same sources of spousal similarity were suggested. In line with conclusions drawn in earlier reviews (Di Castelnuovo et al., 2008; Meyler et al., 2007), our results demonstrated non-random mating for all study variables except optimism. Moreover, significant convergence during the period before entry into marriage was evident for all study variables. Due to data insufficiency, detection of early convergence has not been possible in previous research in this field, although it has been suggested by a few studies (Tambs & Moum, 1992; Anderson & Noble, 2005).

Theoretically, observed convergence between spouses may arise from the attrition of less similar couples from groups married for longer times (i.e., divorce). However, because our results regarding the time after entry into marriage/cohabitation indicate convergence, divergence, and stability across relationship duration, attrition will most likely not have affected our results. Another possibility is that changes in partner similarity across time may be due to differences between cohorts. Secular trends may be interpreted as convergence, which is suggested as an explanation for the decreasing similarity in smoking observed across relationship duration.

The level of similarity observed across all relationship durations and the convergence detected between partners illustrate some of the interdependence that exists between partners. The various patterns of convergence, divergence, and stability in spousal similarity across relationship duration observed in our papers may explain why other studies, using samples consisting of partners varying in relationship duration, draw inconsistent conclusions regarding spousal convergence.

### **5.1.2. Spousal caregiving**

The second goal in this thesis was to study the possible loss of mental health and well-being among spouses in three different caregiver settings: having a partner with a mental disorder, hearing impairment, or dementia. In accordance with, but not to the same extent than reported in previous studies (van Wijngaarden, Schene, & Koeter, 2004; Benazon, 2000; Fadden et al., 1987; Muscroft & Bowl, 2000; Wittmund et al., 2002; Cooper, Balamurali, & Livingston, 2007; Cuijpers, 2005; Pinquart & Sörensen, 2003; 2004; Schulz et al., 1995; Sörensen et al., 2006) our results demonstrated significant loss of mental health and well-being in spouses of persons with mental disorder, and dementia. Contrary to earlier findings (Stephens, France, & Lormore, 1995; Wallhagen et al., 2004), our results regarding hearing level indicated that mental health and wellbeing did not differ much as a consequence of partner hearing loss.

Of all interaction effects tested in the three papers, only one interaction effect came out significant. Higher depressive symptoms were observed only in spouses living together with their impaired partner, and not in spouses living alone. The absence of significant interaction effects in the other papers may be due to lack of power, as very large sample sizes are required for these kinds of analyses.

We were unable to statistically test whether partners of persons with a mental disorder or dementia experience significantly higher levels of symptoms of anxiety and depression and lower levels of well-being than partners of persons with hearing loss. However, the results of the three papers indicate that losses of mental health and well-being are greater when caring for a partner with a mental disorder or dementia, compared with hearing loss. This finding is in agreement with the suggestion that, in general, the more severe the illness, the greater the emotional impact on the caregivers (Biegel et al., 1991). The threat posed by the caregiving context may be more likely to exceed the caregivers' perceived resources in these situations, thereby leading to negative outcomes.

Dementia and hearing loss are both age-related disorders that affect one's ability to communicate. However, caring for a hearing-impaired person is likely to include less severe primary and secondary stressors than caring for a person diagnosed with dementia. Dementia caregivers must manage functional and cognitive impairment, and often deal with behavioral problems and personality changes in the people they care for (Tooth et al., 2008). The functional status of the care receiver may demand much time and effort from the spouse in the course of providing practical support. The caregiving situation for spouses of persons with



mental illness may be more comparable to that of dementia caregiving, most likely involving several stressors that affect the daily life of the partner. The caregiver's appraisal of their partner's suffering might also be higher in the context of caring for persons with dementia or a mental disorder, compared with hearing loss.

Although partners of persons with dementia or a mental disorder report significantly higher levels of symptoms of anxiety and depression and a lower level of well-being compared with the rest of the population, the effect sizes are small to moderate. One reason for these relatively small effects may be the use of a large population-based sample. Clinical studies are likely over-representing distressed caregivers (Schulz et al., 1997; Pinquart & Sörensen, 2003). Conversely, population-based studies with representative samples may underestimate the subjective burden of caregiving because they do not directly assess whether respondents actually provide care (Schulz et al., 1997). The only criterion for being a caregiver in our study was being a partner of an impaired person. There is no information available that can clarify whether or not the respondent provides care, or to what extent the caregiver's life is affected by the impairment of their spouse.

Several studies on caregiver burden involve measures of burden directly linked to the caregiving situation, such as caregiver stress or loss of control over one's life, which might result in over-reporting of adverse effects in these studies, because respondents would be mentally directed at focusing on problems concerning their close relatives' illness. In our study, subjective burden was measured by general measures of mental health: symptoms of anxiety and depression, and subjective well-being. These measures are less situation-specific than the outcome measures often used in projects designed only to examine caregiver burdens. Although the SCL-25 was originally designed as a "state" measure pertaining to the previous 14 days, self-report symptom scales like the SCL have displayed considerable temporal stability and appear to approximate a "trait"-like aspect (Kendler et al., 1995).

Gender-based differences have been a main topic in much of the caregiving literature. However, because of the dependency in the data, in which all individuals were treated both as index persons and as possible caregivers, there was no easy way for us to test the significance of the gender differences in Papers 3 and 4. The observed trend regarding partners of persons with subjective hearing loss or mental disorders is that female caregivers report a somewhat higher level of burden than male caregivers; however, comparing the values of the differences with the confidence intervals quite clearly indicates that these trends cannot be significant. Spousal subjective burden appear to be similar in men and women. In the study on dementia

caregivers, the possible moderating effect of sex was tested and found to be non-significant; however, the statistical power of the study only permitted the detection of rather strong differences between males and females.

### **5.1.3. Negative caregiver outcomes in light of observed spousal similarity**

It is important to consider the results of the caregiving papers as they relate to spousal similarity. A good illustration of the link between the two perspectives is provided by looking at the results suggesting loss of mental health in partners of persons with a mental disorder (Paper 3) as they relate to the observed spousal similarity for mental health (Paper 2). In Paper 3, the measure used to classify persons with mental disorders and the measure used to indicate depressive symptoms among partners are based on the same instrument, the SCL-10, although with additional variables and stricter criteria included with respect to the index person. Nevertheless, this similarity in measurement makes the research question in Paper 3 quite similar to the one in Paper 2, in which data from identical measures of mental health from both partners are used. The negative caregiver outcomes observed in Paper 3 may be understood as a part of the convergence effect observed in Paper 2, that the caregiving process causes partners to converge. Moreover, the observed caregiver burden could be confounded with spousal convergence not related to illness

In some versions of the stress process model of caregiving, the depressive mood of the index person is suggested as a primary stressor with an independent effect on the partner. This effect can be labeled emotional contagion, which clearly shows the overlap between the two perspectives of this thesis. Emotional contagion may explain some of the caregiver effect observed in the dementia study, in which persons living with their demented spouse showed a worse outcome than persons with a demented partner living in a nursing home. Because many dementia patients are depressed, this negative affect is likely to generate a depressive affect in the caregiver (Schulz et al., 1995).

What might represent a more important consideration regarding the caregiving results in Paper 3 is related to non-random mating. A moderate level of non-random mating for mental health and life satisfaction is suggested in Paper 2. Since the analyses in Paper 2 and Paper 3 are based on very similar samples (although obtained from HUNT1 in Paper 2 and from HUNT2 in Paper 3), one may presume that the level of non-random mating will be essentially the same for the couples included in Paper 3. Based on this assumption, a part of the caregiver effect observed in this study may actually have been present from the very beginning of the couple relationship. This possibility illustrates the importance of knowing the

level of non-random mating when estimating caregiving effects, particularly in cross-sectional studies. Without knowledge of the possible non-random mating between partners, the negative effects of caregiving might be overstated.

## **5.2. Methodological considerations**

### **5.2.1. The use of HUNT data**

The data used for the analyses in the present thesis were collected before the specific research questions were proposed, and not with a specific aim of studying spousal similarity and spousal caregiving. The use of pre-existing data to answer research questions imparts several advantages, as well as some important limitations. First of all, pre-existing data represents a threat to the ideal deductive positivistic research process (Hofferth, 2005). Ideally, research begins with a question and the development of a theory and various hypotheses to test. Subsequently, data are collected with a main goal of testing the hypotheses. The research questions and variables included in our study were partly determined by what data were available; spousal similarity was investigated for accessible traits and characteristics. If we had collected data for this specific purpose, then other variables could have been included, as well as more comprehensive measures of personality. However, our research questions were informed by an underlying theoretical framework to guide the process, and these specific research questions led to the various data set combinations that were used in the caregiving papers.

There are also major advantages associated with the use of pre-existing data sources. In addition to requiring less money and less time, it provides us with huge amounts of information from a large sample. The data from HUNT in combination with registry data from SN offer rich opportunities to explore a wide variety of topics. However, the use of pre-existing data sets deprives us of control over the selection of items and measurement instruments. This situation makes it especially important to evaluate the quality of the measurements used, and to ensure that the fit between the research questions and the data is a good one (Hofferth, 2005; Kiecolt & Nathan, 1985).

### **5.2.2. The quality of measurements**

Except for the measure of audiometric hearing loss and the dementia diagnoses, this thesis is based on participants' self-reports. Inherent in all survey research are possible biases due to respondents checking wrong boxes, misunderstandings, social desirability, and wishes to

answer the questions in agreement with the perceived goal of the survey. Regarding this latter point, one advantage using data from HUNT is that the self-reported measures were obtained without participant knowledge of the specific research aims. Few other studies on spousal similarity and spousal caregiving have data reported under such contextual neutrality as does HUNT. Except for the overarching health issue, the content of the questionnaires does not strongly lead the attention of the participants in a certain direction. For instance, a questionnaire study presented to the participants as a study of caregiver burdens may lead the responders to “over-focus” on problems related to such burdens when reporting well-being. This approach might result in an inflated estimate of lost well-being among caregivers. In HUNT, it is difficult for participants to predict the research questions, which are often decided after the data has been collected.

People’s responses to surveys will be influenced by their reporting style. People that are generally depressed and dissatisfied tend to evaluate most things, including for example their hearing, more negatively than do happier people. For the sample included in Paper 3, there was some covariance between self-reported hearing and other types of self-reported functional disabilities (e.g., vision), after adjusting for age and sex. The most logical explanation for such a correlation is correlated measurement error. As a result of spouse concordance, such a reporting style can even be correlated within couples.

As a result of cost-efficiency assessments, epidemiological surveys often employ measures consisting of a limited number of items. Alcohol consumption, smoking, and life-satisfaction were measured with only one item each. Scales of various lengths, ranging from two to 11 items, were used to measure the other constructs. It is important to evaluate the quality of the measures regarding both precision and accuracy.

Reliability refers to the degree of accuracy and stability of a given measurement instrument (Kerlinger & Lee, 2000). Reliability may be estimated through a variety of methods; the most commonly used is Cronbach’s alpha (Cronbach, 1951), which provides an index of internal consistency in a given instrument. Cronbach’s alpha was calculated for all measurement scales in the papers described. Reported alphas ranged from 0.58 to 0.89. The majority of the measures exceeded 0.70, indicating a satisfactory level of internal consistency (Nunnally, 1978). However, the reliability estimates for type A personality (0.58), optimism (0.65), and the SCL-based measure of symptoms of anxiety (0.67) displayed lower internal consistency. Several factors may influence the reliability coefficients, including the length of the measurement instrument. The alpha increases as more items are included in a scale. The

scales measuring Type A personality and optimism included only three items, while four symptoms of anxiety were included in the SCL measure. When the items on a scale are measured on categorical levels with fewer than six categories in addition to a skewed distribution of scores, Cronbach's alpha has also been shown to underestimate inter-item reliability (Gadermann, Guhn, & Zumbo, 2008). The Type A and optimism scales consisted of five response categories, while the SCL-10 involved four response alternatives.

Moreover, the construction of the scale will influence the estimated reliability. The SCL-10 was constructed by selecting the items that, when combined, explained a maximum of variance of the scores from the complete SCL-25 instrument. The optimal combination of items for the generation of a short-form version in terms of maximizing the correlation between the (weighted) sum of the selected items and the original instrument will not consist of the items with the highest inter-correlations. On the contrary, in order to cover all sub-domains that usually exist in psychological measures or traits, the items included in the short scale will be those that measure something different from each other. This dilemma, in which internal consistency is sacrificed for the sake of a high correlation with the original instrument, highlights a problem with the use of internal consistency instruments. Few instruments are actually designed to tap a perfectly homogeneous trait or characteristic. For instance, what we refer to as global mental health is usually a sample of symptoms of anxiety, depression, and perhaps somatization, as with the SCL-25. Such a heterogeneous measure can be highly reliable (for instance, measured as test-retest reliability), but will still exhibit moderate internal consistency simply because different people have different mental problems, or because similar problems may be expressed differently.

The measures of alcohol use, smoking, and life satisfaction used in our studies consisted of only one item each, and did not permit estimation of Cronbach's alpha. It is generally argued that one-item measures have limited reliability. Test-retest correlations or correlations between two different forms of a measure can provide an indication of reliability. Follow-up scores obtained from a subsample 10-38 months after HUNT1 participation demonstrated test-retest-correlations of 0.71 for alcohol consumption, 0.82 for smoking, 0.56 for exercise, 0.55 for type A personality, 0.68 for life satisfaction, and 0.71 for GMH (Tambs & Moum, 1992). The responses to the alcohol item correlated 0.60 with a more comprehensive measure of alcohol consumption obtained 11 years later. Because of true changes that have occurred during the 1- to 3-year or 11-year time lag, reliability is

underestimated by these test-retest correlations. The respective values indicate moderately high to high reliability.

In addition to assessing the accuracy of the instruments used, it is important to evaluate whether they reflect the intended theoretical notions of the constructs. Construct validity refers to links between the psychometric and theoretical notions of a characteristic, the subjective meaning of a given measure (Kerlinger & Lee, 2000). For short scales of previously established instruments like the SCL-10, validity can be demonstrated empirically by assessing the agreement between the original scale and the short scale in other samples (Tambs, 2004). The SCL-10 has been shown to correlate highly ( $r = 0.97$ ) with the SCL-25 (Strand et al., 2003). The SCL-25 has in turn proven to have satisfactory validity as a measure of psychological distress (Derogatis et al., 1974). Comparing several short SCL scales with the full-length SCL-90, Müller and colleagues (2010) also suggest that the SCL-10 is satisfactorily valid as a measure of psychological distress.

In Paper 4, the SCL-10 was divided into one measure of symptoms of anxiety and one measure of depressive symptoms. Several studies have demonstrated that scores on self-reported anxiety and depression scales are highly correlated, suggesting that they primarily tap into a single construct (Watson, Clark, & Carey, 1988). It is suggested that correlations above 0.80 indicate a one-factor model (John & Benet-Martinez, 2000). The correlation between the two measures in our sample was 0.63, which does not indicate serious overlap between them. Moreover, the validity of the anxiety and depression sub-scales has been empirically demonstrated in clinical investigations (Derogatis, Lipman, & Covi, 1973).

In Paper 5, we used a combination of the previously validated HADS (Bjelland et al., 2002) and CONOR (Søgaard & Bech, 2009) items to measure symptoms of distress. The choice to use a combination measure, instead of including one previously validated measure, was based on the fact that nearly all of the HADS depression items tap the absence of positive emotion. Supplementing the HADS with negative emotion items will therefore provide a more comprehensive measure of depressive symptoms. A similar combination has been used in previous studies (Rognmo et al, 2012; Bjelland et al., 2008).

In Paper 2, mental health was measured by GMH. The eight GMH items predicted 66% of the variance in the SCL-25, indicating that the GMH indicator is satisfactorily valid. A similar measure, containing one additional item, has been used in previous studies (Bjelland et al., 2008; Idstad, Røysamb, & Tambs, 2011).

Measures of mental distress were included in our papers as continuous outcome variables, logarithm-transformed to approximate a normal distribution. The use of cut-off points decreases the amount of available information as the variance is reduced, and can lead to arbitrary and invalid assignments of persons to categories. Continuous measures of psychopathology have demonstrated higher validity and reliability than discrete measures (Markon, Chmielewski, & Miller, 2011).

The measure of SWB and symptoms of distress are conceptually related, with absence of negative affect being one of the three SWB items. The measures were strongly negatively correlated. The SWB index is generally found to have good psychometric properties, and it conforms well to accepted operationalizations of global subjective well-being (Moum et al., 1990; Sogaard & Bech, 2009; Diener & Lucas, 1999).

Single-item measures, in this thesis used to measure alcohol consumption, smoking, and life satisfaction, are commonly considered a threat to validity concerns. However, similar single-item measures have been used previously with empirical tests that indicate quite valid responses (Veenhoven, 1984; Scherpenzeel, 1995; Bowling, 2005).

### **5.2.3. The classification of index persons**

The validity of the categorization of index persons as persons with a mental disorder, hearing loss, or dementia can be discussed through the concepts of sensitivity and specificity. Sensitivity refers to the proportion of people with the disability/illness who are correctly classified as a case, while specificity refers to freedom from the erroneous classification of people without the disability/illness (McDowell, 2006).

Because diagnostic information about mental disorders was unavailable in HUNT, a caseness variable based on SCL scores was computed for the purpose of Paper 3. It is not possible to safely establish whether all index persons classified as cases actually do have a clinical mental disorder — hence, the sensitivity of our measure. As people with severe mental disorders like schizophrenia and bipolar disorder are likely to be underrepresented in population based studies, the majority of individuals classified with mental disorder in our paper are predominately cases of anxiety and depression. By including what we thought of as a strict criteria we can be reasonably sure that we would avoid false positives (McDowell, 2006). However, the choice of strict criteria causes some loss of true positive cases from the case group to the non-case group. This modest contamination of the non-case group cannot substantially change the difference between the two groups.

The majority of earlier studies about partners of persons with hearing loss base their results on subjective measures of hearing loss. In our study, we had access to both a subjective and an objective measure of hearing loss. Traditionally, more objective health measures are preferred before subjective measures because they are considered more reliable and valid (Ware Jr et al., 1981). If one considers the objective measure of hearing loss as a “gold standard” measuring hearing, then agreement between the two measures can tell us something about the validity of subjective hearing measures that were used previously (McDowell, 2006). The polychoric correlation between the two measures was 0.70. Substantially more subjects reporting subjective hearing loss than exhibited audiometrically measured hearing loss. The conventional audiometric criteria for disabling hearing impairment appear to be stricter than what most people actually perceive as hearing impairment. Subjective hearing loss may reflect a real functional disability that is not fully tapped by audiometry; however, this measure also depends on other factors (e.g., reporting bias). Subjective ratings blend an estimate of the severity of the health problem with a personal tendency to exaggerate or conceal the problem — a bias that varies among people and over time (McDowell, 2006). However, whether the objective or subjective approach is more valid depends on the purpose of the study. Subjective measures of health, regardless of whether they are “right” or “wrong”, have proven to be valid for some purposes (Ware Jr et al., 1981). However, in Paper 4, we suggest that an audiometric measure is most suitable for measuring caregiver burden, because results based on subjective hearing loss could be confounded by correlated measurement errors between spouses.

In general, the authors of Paper 5 are confident that the dementia screening tests used for both the hospital and the nursing home data provided reliable and valid information regarding whether or not dementia is present. Given that uncertain cases were excluded, false positives are highly unlikely. There may be some difficulties in separating certain types of dementia. However, differential diagnostic information was not necessary for the purpose of our study. Although specific symptoms may vary somewhat across the various disorders that cause dementia, there is considerable overlap in the associated functional and behavioural problems, and in the challenges faced by the spouses (Aneshensel et al., 1995). On the other hand, the screening for dementia did not cover the entire population, and we know that there are a relatively large number of false negatives in the data material. In other words, with respect to the HUNT material, the sensitivity is rather low and the specificity is high for dementia. However, although complicating the estimation of occurrence, the relatively large



number of false negatives is not critical for a correct assessment of the caregivers' well-being and health. Even if a large proportion of the cases are misclassified as non-cases, they will only constitute a small fraction of the large group treated as non-cases, implying that the comparison of health and well-being between the case group (having partners with dementia) and the non-case group (having partners without dementia) will be only slightly biased.

#### **5.2.4. Generalizability**

One important goal of all research is to obtain results that can be generalized to a broad population from the examined sample (Shadish, Cook, & Campbell, 2002). The concept of generalizability deals with inferences about whether a relationship between variables holds true over variation in people, settings, treatments, and measurement variables (Shadish et al., 2002). Both reliability and validity are basically related to generalizability. Other critical aspects are the response rate and the characteristics of the non-respondents (Kerlinger, 1986).

One basic premise for generalization from the Nord-Trøndelag population to the rest of the Norwegian population is that there are no important differences between these two populations that might have affected the relationships between the observed variables. The population of Nord-Trøndelag is fairly representative of the population of the rest of Norway in terms of geography, economy, industry, sources of income, and age distribution, although it is slightly less urban and exhibits somewhat lower educational attainment (Holmen et al., 2003). Although the prevalence of various traits (e.g., mental distress) might vary somewhat between different Norwegian districts, there is no reason to expect major geographical differences in the mechanisms that lead to distress or explain spousal similarity.

A second premise for generalization is that the participating sample is representative of the total population. Compared to other population-based and long-term studies, the participation in HUNT is satisfactory, at least for HUNT1 and HUNT2, which had participation rates of 91.2%, and 71.2%, respectively. The participation in HUNT3 was lower, with 54.1% of invited persons participating. A high participation rate increases the likelihood of, but is not sufficient to ensure, representativeness (der Wiel et al., 2002). The implications of the response rate depend on the degree to which participation is random or related to variables of interest in the study. If important target groups do not respond, population studies might provide non-generalizable prevalence estimates and variable associations.

A comprehensive non-participation study after HUNT 1 demonstrated that participation was highest among middle-aged people, and lower among men, as well as

among people who were young, old, unmarried, divorced, or separated (Holmen et al., 1990). Older non-participants had significantly more health problems than participants of the same age. A similar pattern was revealed for participation in HUNT 2 (Holmen et al., 2003). Participation in HUNT 3 appears to be higher among persons with higher education, with higher income, and for employed people (Thoen & Krokstad, 2011). This finding is in agreement with previous studies (Galea & Tracy, 2007).

In this thesis, data from HUNT1 were used to estimate partner correlations. Even though means and variances related to different variables might differ between respondents and non-respondents, it is unlikely that sample selection has affected the level of concordance between partners much (Goodman & Blum, 1996; Nilsen et al., 2009).

For the case of the caregiving papers in this thesis, it is especially important to consider the possible sample bias related to mental health. One can expect that persons with serious mental health problems are underrepresented in the HUNT sample (Holmen et al., 2003). However, a recent study indicates that high levels of mental distress (measured in HUNT1) only predicted non-response in HUNT2 to a moderate extent (Torvik, Rognmo, & Tambs, 2011), a trend that was also evident in previous research (Tambs et al., 2009; Korkeila et al., 2001; Batty & Gale, 2009; Eaton et al., 1992; Lundberg et al., 2005). Owing to these results, the HUNT study is described as suitable for investigating risk factors related to causes of mental distress, although estimates of prevalence or incidence may be somewhat biased (Torvik et al., 2011). Non-participation due to severe mental illness may have deflated the results in Papers 3, 4, and 5 somewhat, because caregivers experiencing the highest burden might be under-represented.

### **5.2.5. Causality**

A limitation of the studies in this thesis, which has consequences for the generalizability of the findings, is that the analyses are based on cross-sectional data. Uncertainty about causal direction represents a problem in the caregiver studies, especially regarding the study of family burden associated with mental disorders. Effects on spouses' mental health can act both ways, both from the index person to his spouse and from the spouse to the index person. By applying high threshold values when defining a mental health index person, we assumed that the majority of the effect would be directed from the index person to the caregiver; however, a reversed causality cannot be ruled out. In the cases of hearing impairment and dementia, the causality problem is of less relevance.

### **5.3. Implications and conclusions**

The HUNT surveys include a total population within a geographic area and, with exception of HUNT3, have been characterized by high participation rates. The ability to identify and obtain data from both members of couple dyads, even for future couples, constitutes a unique ability to study various associations within the couples and to explore the general theme of interdependence. Although the associations investigated in this thesis differed (spousal similarity versus negative caregiver outcomes), the results in both cases clearly demonstrate the interdependence that exists between partners. The findings suggest that individuals choose partners who resemble themselves with regard to various traits, that a number of factors subsequently cause partners' characteristics or traits to converge or diverge, and that a serious illness that strikes one member of the dyad also affects the mental health and well-being of the other member.

Couple relationships involve complex connections, and the analyses performed in the five papers discussed here represent general trends. It is important to acknowledge that each partner relationship is different, as are the relationship dynamics between each pair of partners. Even though our results do not indicate that, for example, living with a hearing-impaired spouse causes loss of mental health and well-being, there might be spouses under special conditions that find their partners' hearing loss difficult to handle. The moderate mean differences reported in these papers on mental disorders and dementia may imply that many partners become moderately distressed, or that a minority of partners become severely distressed and the majority cope quite well.

One advantage of this study was the ability to directly determine the correlation between future partners before they actually meet. As far as we understand, such evidence is necessary to safely conclude the extent to which the observed partner resemblance reflects non-random mating and convergence. The initial correlations, as well as the early convergence observed, have implications with respect to estimations in quantitative genetics models. Understanding the sources of spousal similarity might also have implications regarding the understanding of how health behavior can be changed, and may be helpful in considering how to design, implement, or assess health interventions. Assessing both partners' perspectives will provide a richer understanding of the interpersonal context in which, for example, depression occurs, and may contribute to recommendations for treatment. One weakness in our study was our inability to separate the various causes of the observed convergence between members of couples. More research is needed to separate various

processes such as emotional contagion and shared resources, and to separate the effects of phenotypic assortment and social homogamy.

The results indicate that the negative effect of having a spouse with an illness or disability depends on the severity of the disability. While living with a person with a mental disorder or dementia leads to changes in one's own mental health, spousal mental health does not appear to be affected when living with a partner with hearing loss. Given the increasingly aging population in all developed societies and the success of modern medicine, the proportion of people with age-related chronic illnesses is increasing, as is the number of spousal caregivers. Because of the aging of society, the average age of caregivers is also increasing. These factors make caregiving an increasingly important public health issue. Maintaining the caregiver's own health and well-being is of great importance, both for its own sake and to retain the individual in the caregiving role. If the caregiving context evolves into a stressful situation with negative outcomes for the caregiver, then the solution is unacceptable.

To support caregivers in their situations, it is important to identify the actual causes of the observed loss of mental health and well-being. Caregivers' situations vary widely, and knowledge about particular problems, needs, resources, and strengths of the caregiver is crucial. The results in this thesis do not tell us much about the underlying causes of the negative caregiver outcomes, what the primary and secondary stressors most involved are. When investigating the stress process of caregiving in relation to negative mental health outcomes, it is important to include the sources of spousal similarity as aspects in the model. Owing to non-random mating and emotional contagion, spouses of persons with mental disorders or other illnesses may themselves have a greater need for treatment and support, independent of their role as caregivers.

The evidence of partner associations observed in this thesis supports the assumption that what happens to one partner has an effect on the other partner. It is important to acknowledge the mutuality in couple relationships. Whenever the well-being of one member of a marital dyad is in focus, both research and practice will gain by also including the perspective of the other member of the dyad. When conducting research on themes that are thought to be affected by the dyadic processes, data should be collected from both partners. For the purpose of developing effective interventions aimed at enhancing the quality of life for persons affected by severe illnesses, or for their spousal caregivers, it is important to include both partners. Given that one partner's well-being is likely to affect that of the other, including both partners may render all interventions more effective.

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#### **Internet resources:**

- Statistics Norway 2001, <http://www.ssb.no/vis/emner/02/01/fobhushold/main.html>
- Statistics Norway 2011, <http://tinyurl.com/> Mean age marriage
- The HUNT website, <http://www.hunt.ntnu.no>
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- R Development Core Team (2011), R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, <http://www.R-project.org/>
- Questionnaires used for the HMS, <http://tinyurl.com/HMSDementia>
- World Health Organization (2012), [www.who.int/mediacentre/factsheets/fs362/en/index.html](http://www.who.int/mediacentre/factsheets/fs362/en/index.html)



# Paper 1

Ask, H, Rognmo, K, Torvik, FA, Røysamb, E, Tambs, K (2012)  
Non-random mating and convergence over time for alcohol consumption,  
smoking, and exercise: The Nord-Trøndelag Health Study  
*Behavior Genetics*, 42, 354-365





# Paper 2

Ask H, Ildstad M, Engdahl B, Tambs K (2012)

Non-random mating and convergence over time for mental health,  
life-satisfaction and personality: The Nord-Trøndelag Health Study

*Behavior Genetics, Resubmitted after revision*



# Paper 3

Idstad M, Ask H, Tambs K (2010)

Mental disorder and caregiver burden in spouses:

The Nord-Trøndelag health study

*BMC Public Health*, 10, 516-522



RESEARCH ARTICLE

Open Access

# Mental disorder and caregiver burden in spouses: the Nord-Trøndelag health study

Mariann Idstad\*, Helga Ask, Kristian Tambs

## Abstract

**Background:** Researchers generally agree that mental disorder represents a burden to the family. The present study concerns the subjective burden of living with a person with mental disorder, more specifically the association between mental disorder in the index person and subjective well-being and symptoms of anxiety and depression in the spouse.

**Methods:** Data were obtained from questionnaires administered to the adult population of Nord-Trøndelag County, Norway during the period 1995-1997. The present study is based on a subsample where 9,740 couples were identified. Subjective burden in spouses of persons with mental disorder was compared with subjective burden in spouses of persons without mental disorder, using analysis of variance (ANOVA). All analyses were stratified by sex.

**Results:** Adjusting for several covariates, spouses of persons with mental disorder scored significantly lower on subjective well-being and significantly higher on symptoms of anxiety and depression compared to spouses of index persons without mental disorder. Although highly significant, the effect sizes were moderate, corresponding to a difference in standard deviations ranging from .34 - .51.

**Conclusions:** Our study supports the notion that there is an association between mental disorder in one partner and subjective burden in the spouse, but not to the same extent that have been reported in earlier studies, as our results do not indicate that a large proportion of the spouses reach a symptom level of anxiety and depression that reflects clinical mental disorder.

## Background

The global burden of mental disorder is increasing [1]. Depression alone is reported to be one of the leading causes of disability worldwide, accounting for 4.4% of lost years of healthy life due to premature death or disability (DALYs) on a global basis [2] and 6.2% of all DALYs in the European Region [1]. Prevalences for mood- and anxiety disorders within a 12-month period have been estimated to 9.5% and 18.1%, respectively, in the United States [3]. Similarly, in Norway almost 10% of the adult general population has been suffering from a depression disorder and almost 20% from anxiety disorders during a 12 month period [4]. Prevalence for anxiety and depression in the European Region at any point in time has been estimated to 100 million people, corresponding to 11.5% of the population [1]. The

economic costs of affective and anxiety disorders to society are substantial, amounting to €147 billion in the European Region in 2004 [5].

Researchers generally agree that mental disorder represents a burden to the caregiver and family (for reviews, see [6-10]). The interest in caregiver burden emerged when mentally ill patients started to be deinstitutionalized [11]. Caregiver burden refers to the significant amount of strain and difficulties experienced by the caregiver or family of mentally ill people, including a range of psychological, emotional, social, physical and financial problems [6,8,12-14]. In the literature, definitions distinguish between subjective and objective burden [15], and this distinction has established itself as a general guideline for researchers in the field [16]. The former includes perceived psychological distress such as feelings of loss, embarrassment in social situations, and depression, whereas the latter includes the practical and concrete problems such as reduced social and family

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activities and financial difficulties. The present study focuses on the part of subjective burden that concerns psychological distress, observed as symptoms of anxiety and depression and low subjective well-being.

Research on caregiver burden has traditionally focused on relatives of individuals with severe mental disorders like schizophrenia (for reviews, see [10,16,17]), bipolar disorder (for reviews, see [18,19]), and dementia (for review, see [20]). Although more disorders have been included in recent research [21], there are few studies on families of individuals suffering from anxiety and depression disorders, and it has been pointed out that there is a lack of research based on large sample sizes and control groups [19,22-24].

The individuals classified with mental disorder in the present study are selected on the basis of a high score on symptoms of anxiety and depression, and having sought professional help for mental health problems and/or having reduced functionality as a consequence of mental health problems. Although some of these individuals may be suffering from schizophrenia or bipolar disorder, such cases are likely to be few, as people with severe mental disorder tend to be underrepresented in population based studies. It is likely that the majority of individuals classified with mental disorder are predominantly cases of anxiety and/or depression, as these are known to be the mental disorders with the highest prevalence. However, as the case group may be somewhat heterogeneous regarding type of illness, the cases will be referred to as having "mental disorder". The present study investigates caregiver burden in spouses, more specifically the association between mental disorder in the index person and symptoms of anxiety and depression and subjective well-being in his or her spouse. As mentioned above, the spousal symptoms of anxiety and depression and subjective well-being represent subjective caregiver burden in our study, and will thus be referred to as "subjective burden". Earlier studies on this subject reported that living with a depressed person puts the spouse at risk of experiencing elevated levels of psychological distress and depression and represents considerable strain on the marriage [23,25-30].

Studies reporting that the burden of depression is smaller or more infrequent compared to the burden of for example bipolar disorder [31], schizophrenia [23] or dementia [32] may lead to a general perception that burden is larger for the more severe psychiatric diagnoses; however, other studies comparing the burden of depression with the burden of schizophrenia [24] or dementia [33] found similar amounts of burden. Furthermore, a study of partners of people suffering from anxiety disorders, depression or schizophrenia did not find any support for a relationship between strength of burden and type of diagnosis or duration of the

illness, but rather between burden and level of impairment in everyday functioning [34]. However, in this study there was a selection bias; the spouses chosen for participation all had partners who were undergoing institutional treatment and thus had severely impaired everyday functioning.

There are mixed findings in the literature regarding the association between caregiver's age and burden; it has been suggested that this might be due to differences in the intensity of the relative's illness in each study so that crisis conditions may produce a greater burden regardless of age, whereas stable conditions may not produce a great burden in elderly caregivers due to more experience in dealing with the illness [6]. According to this notion, we expect elderly partners to report a lower amount of burden than younger partners because the individuals classified with mental disorder in the present study are likely to suffer from anxiety and depression disorders that tend to recur and thus make for a fairly stable condition. In a similar vein, we expect partners who have been married for many years to report a lower amount of burden than do partners who have not been married for many years.

A priori it is far from obvious that there exists a sex difference in the strength of subjective burden. On one hand, it is well established that women tend to suffer from depression to a greater extent than men, which may imply that they are more vulnerable to certain burdens, but on the other hand, women also tend to have larger social networks and receive more social support. Some previous evidence shows that female spouses of mentally ill husbands tend to report greater levels of depression than vice versa (see e.g. [35]), however, one meta-analysis focusing predominately on dementia caregivers found small to very small gender differences [36].

The literature on caregiver burden on affective disorders and spousal mental health overlaps with other literature concerning depression in couples. For example, a recent review on health concordance within couples [37] reported overwhelming evidence for concordant couple mental health, especially regarding depressive symptoms, and showed that affective contagion is one of the explanations that are most frequently used. Assortative mating - that people tend to select life partners that share similar characteristics as themselves - is also a possible explanation of observed spouse similarity for mental health [37]. Furthermore, depression in spouses is strongly associated with marital distress, and new models are now studying the importance of the interpersonal aspects of depression, such as social interaction and marital quality [38]. Unfortunately, our data do not permit us to integrate these perspectives into our study.

Based on previous research, we hypothesize that there is an association between mental disorder in the index

person and increased levels of symptoms of anxiety and depression and decreased levels of subjective well-being in the spouse, compared to couples in which the index person does not suffer from mental disorder. Furthermore, we expect elderly partners to report a lower amount of burden than do younger partners, and equivalently, partners who have been married for many years to report a lower amount of burden than do partners who have been married for a few years. We will also explore eventual gender differences. To the best of our knowledge, the present study is the first population based study to investigate the association between anxiety and depression disorders in one spouse and mental health in the other spouse within the field of caregiver burden research.

## Methods

### Sample

The present study is based on data from the Nord-Trøndelag Health Study (HUNT) in Norway. Approval to use the data was provided by the HUNT Research Centre. The population in the county of Nord-Trøndelag is fairly representative of the Norwegian general population. All inhabitants in Nord-Trøndelag county above the age of 19 were invited to participate. The present study is based on HUNT 2, the second wave of data collection, which was carried out in 1995-97. Out of the 94,194 individuals that were invited to the study, a total of 92,936 were eligible for participation, of which 66,140 participated (71.2%). A questionnaire, Q1, was attached to the mailed invitation and returned at the examination site. A second questionnaire, Q2, was handed out during the examination and returned some days after by pre-paid mail. 57,315 of the participants (86.7%) returned Q2. The sample is described in detail elsewhere [39].

In a subsample of HUNT 2, including 17 of the 24 municipalities in the county, data on an abbreviated version of SCL-25 [40] were available. 51,574 persons (62.8%) participated, and the subjects' age ranged from 20 to 101 years (mean = 50.2, SD = 17.0). A detailed description of the sample is available elsewhere [41]. The governmental statistics agency, Statistics Norway, used the 11-digit personal identification number assigned to Norwegian citizens to identify registered couples. For the purpose of the present study, only individuals from couples with valid data on the outcome measures *symptoms of anxiety and depression* (SCL) and *subjective well-being* (SWB) were included, resulting in a sample of 9,740 mixed-sex couples (48.8% of all the couples invited). Characteristics of the sample are reported in the results.

### Measures

#### *Symptoms of anxiety and depression*

Symptoms of anxiety and depression during the last two weeks were measured by ten of the 25 items in the

Symptom Checklist-25 [40]. Four questions tap anxiety (Suddenly scared for no reason; Feeling fearful; Faintness, dizziness, or weakness; Feeling tense or keyed up) and six tap depression (Blaming yourself for things; Difficulty in falling asleep or staying asleep; Feeling blue; Feeling of worthlessness; Feeling everything is an effort; Feeling hopeless about future). Response categories range from "not at all", scored 1, to "extremely", scored 4. This ten item version has been observed to correlate .97 with the original version, in an available subsample from HUNT 1 [42]. Cronbach's alpha was .84 for men and .86 for women.

#### *Criteria of mental disorder in the index person*

The data in HUNT 2 are not informative on who meets the criteria of a diagnosis. Thus, strict criteria including both SCL and other information were developed in order to identify index persons highly likely to suffer from mental disorder. A dichotomous combined variable (case/not case) was coded as positive if the following two criteria were met: 1) A score of 20 (corresponding to an average score across items of 2.0) or higher on the SCL (range 10-40). This criterion is stricter than the mean score of 1.75 across items commonly used as a SCL-25 cut off score for "severe depression". 2) A score of 1 or higher on an indicator of mental health problems consisting of two items; "reduced functionality due to mental health problems" (range 1-3: "A little", "quite a deal", "a lot") and "having sought professional help for a mental health problem" (range 0-1, no/yes). We added this criterion in order to be reasonably sure that we would correctly identify cases of mental disorder and avoid false positives. The choice of such a strict combination of criteria inevitably causes some loss of true positive cases from the case group to the non-case group. However, this modest contamination of the non-case group cannot substantially change the difference between the two groups. This resulted in a total of 540 cases; 357 women and 183 men, corresponding to 2.8% of the present sample, which is substantially lower than regular prevalence estimates [4]. The low prevalence rate, implying that our criteria are strict, indicates that our case group is relatively free from false positives.

Data from a previous HUNT study taking place 11 years earlier on a crude indicator of symptoms of anxiety and depression described elsewhere [42], were available for 23,095 of the HUNT 2 participants. To further ensure that we had managed to identify cases with severe and relatively persistent mental disorder, we investigated whether the cases also had a high score on anxiety/depression in HUNT 1. Even 11 years earlier the cases on average scored 1.48 SD higher on anxiety/depression compared to the other population.

#### *Subjective Well-Being*

Subjective well-being was measured by a three-item indicator that has been proven reliable in previous

studies (i.e., [43]). Answers were given on a 7-point scale ranging from “very satisfied” to “very unsatisfied”. The questions were phrased as follows: *When you think about your life at the moment, would you say that you are by and large satisfied with life, or are you mostly dissatisfied?; Would you say you are usually cheerful or dejected?; and Do you mostly feel strong and fit, or tired and worn out?.* The items were standardized and added as a sum score indicator. Cronbach’s alpha was .77 for both men and women.

#### **Control variables and confounders**

The association between poor mental health in the index person and the mental health in his or her spouse may be confounded by a number of variables. We adjusted for spouses’ age, education, years of marriage, and whether the spouses were also living together with persons under 18 years of age. Covariates also included somatic disease and alcohol problems in both index persons and spouses due to the possible confounding effect on spousal mental health. A sum score indicator was calculated for a number of somatic diseases including infarction, angina, stroke, diabetes, difficulty in breathing, epilepsy, cancer, other long term disease, and impairment of motor ability, vision, hearing or somatic illness. Alcohol consumption was measured with four items: *How many times a month do you usually drink alcohol?; How many glasses of beer, wine or liquor do you usually drink in the course of two weeks?* (separate responses for each category). A summative indicator was computed in which frequency and total amount of units were equally weighted.

#### **Treatment of missing values**

We used SPSS Missing Value Analysis (MVA), expectation maximization (EM) for imputation of missing values in respondents with valid data for at least half of the items. For SCL, the ten items were used as predictors for each other. Likewise the SWB items and alcohol items, respectively, were used to predict each other. Missing values (at least one item missing) were reduced from 15.3% to 8.9% for the SCL indicator, from 4.9% to 1.6% for the SWB indicator, and from 12.3% to 2.6% for the alcohol consumption indicator. Regarding years of marriage/cohabitation, valid data were available only for married couples and not for unmarried couples, who corresponded to 8.1% of the present sample. Missing values were reduced to 0.1% by placing respondents younger than 35 years in the category “married less than 10 years”, respondents 35-44 years in the category “married 10-20 years” and respondents 45 years and up in the category “married more than 20 years”. This classification was empirically tested in pairs with valid data on marital duration and gives 17% misclassification. If the unmarried couples are similar to married couples in

terms of duration of the relationship, then 268 individuals would be misclassified according to this classification. 2.7% of the respondents did not report level of education and were placed in the lowest level of education. Missing values for the variable “Living with persons under 18 years” were placed in the category “not living with persons under 18”.

#### **Design and statistical analyses**

The present study applies a cross-sectional design, investigating subjective burden, observed as low subjective well-being and symptoms of anxiety and depression, in spouses of index persons suffering from mental disorder. Multivariate ANOVA (SPSS General Linear Models, Univariate) was conducted for each of the two outcome measures, SCL and SWB. Mental disorder in the index person was entered as a dichotomous factor (case or not a case), adjusting for spousal age, education, years of marriage, living together with persons under 18 years of age, and also adjusting for somatic disease and alcohol problems in both index persons and spouses. Because of the double entry file structure (each participant in the study was included both as an index person and as a spouse), all analyses were run stratified by sex. Thus, one set of analyses estimated the association between mental disorder among male index persons and subjective burden in their female spouses, while the other estimated the relation between mental disorder in female index persons and subjective burden in their male spouses.

An association between mental disorder in the index person and spousal subjective burden might vary with the spouses’ own age, years of marriage, and whether they are living together with persons under 18 years of age. Accordingly, interaction terms between mental disorder in the index person and the spousal variables were tested.

The SCL scores were highly skewed, and were *ln*-transformed to obtain closer to normal distributions. The dependent variables, SCL and SWB, were standardized before used in the analyses. The unstandardized regression coefficients (b) therefore show adjusted group mean differences scaled in fractions of a standard deviation (SD) for the dependent variables.

#### **Results**

Mean age was 53.4 years (SD = 14.42) for men and 50.8 years (SD = 14.26) for women. Among males, 35.9% were in the age group 20-44 years, 45.5% in the group 45-64 years, and 18.6% in the group 65 years or more. The corresponding percentiles for women were 43.5%, 43.7%, and 12.8%. Mean score on SCL (range 10-40) was 11.89 (SD = 2.93) for men and 12.83 (SD = 3.65) for women. Mean score on SWB (range 1-7) was 5.18 (SD = .86) for men and 5.09 (SD = .87) for women.



The correlation between husbands' and wives' logarithmically transformed SCL scores was 0.16, and the correlation between husbands' and wives' SWB score was 0.26.

Analyses of variance were run consecutively with the two outcome variables, spousal SCL and spousal SWB, in both sex strata. Being a mental disorder case was significantly associated with spousal scores on SCL and SWB for both male and female spouses, and this association remained significant after controlling for spousal age, education, years of marriage, living together with persons under 18 years of age, and somatic disease and alcohol problems in both index persons and spouses. The nonadjusted and adjusted differences between the groups in fractions of SDs (b) are presented in Table 1.

### Interaction effects

Interaction terms were specified between the case's mental disorder and the spouse's age, years of marriage, and living together with persons under 18 years of age, respectively. No significant interaction effects were detected.

### Discussion

The present study aimed at investigating the association between mental disorder in the index person and spousal subjective burden, based on a large, population based sample. Because the study is based on cross-sectional data, we cannot make causal inferences, however the results show a clear association. Female spouses of cases with mental disorder scored about half a SD higher on SCL and male spouses scored about one third of a SD higher on SCL compared to the remaining population,

and both male and female spouses scored more than one third of a SD lower on SWB. Although highly significant, these are moderate effect sizes. Testing for interaction effects did not yield any significant results, which may be due to a lack of power, as very large sample sizes are required for these kinds of analyses.

### Mental disorder and subjective caregiver burden

Because the majority of mental disorders in the community are recurrent anxiety and depressive disorders [4], it is possible that our findings are largely attributable to index persons with these disorders. Our results show that the spouses of these persons report higher levels of symptoms of anxiety and depression and lower levels of subjective well-being compared to the other population, and may thus support earlier studies which found that spouses of depressed individuals are at risk of developing depression themselves [23,25-30].

As we did not have the possibility of identifying cases of for example bipolar disorder, schizophrenia or dementia, we could not compare the burden of anxiety and depression disorders with the burden of any of these disorders. This makes it difficult to relate our results to findings from other studies comparing the burden of different disorders. However, it could be argued that the moderate effect sizes found in our study indicate that anxiety and depression disorders are not associated with a very heavy burden, and that this lends some support to previous results showing a smaller burden associated with depressive disorders than other disorders [23,31,32].

Furthermore, the cases in the present study were selected on the basis of strict criteria reflecting recurrent mental health problems, and our results could thus be compared with the study which concluded that it was the degree of impairment and not diagnosis per se that caused burden in the spouses [34]. Even though we have probably succeeded in identifying cases with severely impaired daily functioning, the effect sizes were moderate.

In sum, the present study shows that there is an association between mental disorder in one person and spousal symptoms of anxiety and depression. This supports the notion that mental disorder may represent a burden to the spouse, but not to such a great extent that has been indicated in some earlier studies (e.g. [34]). The moderate effect sizes in the present study do not at all imply that a large part of the spouses of the cases reach a symptom level of anxiety and depression that reflects clinical mental disorder. What is more, as opposed to clinical studies, population based studies may yield more valid results because the participants are unaware of the study's purpose and thus, are not inclined to produce responses biased by being reminded and focused on a negative aspect of their life. However,

**Table 1 Relation between mental disorders in the index person and spousal symptoms of anxiety and depression (SCL) and subjective well being (SWB)**

Outcome variable and model <sup>a</sup>	N pairs	N cases	b (CI) <sup>b</sup>	$\eta^2$ <sup>c</sup>
Males				
SCL NA	9,733	352	.39 (.29 -.49)	.006
SCL A	9,300	339	.34 (.24 -.44)	.005
SWB NA	9,733	352	-.47 (-.57 -.36)	.008
SWB A	9,300	339	-.39 (-.49 -.28)	.006
Females				
SCL NA	9,740	178	.59 (.44 -.75)	.006
SCL A	9,310	174	.51 (.35 -.66)	.004
SWB NA	9,740	178	-.54 (-.69 -.39)	.005
SWB A	9,310	174	-.42 (-.57 -.27)	.003

<sup>a</sup> NA = non adjusted scores, A = adjusted scores

<sup>b</sup> Unstandardized regression coefficient (b) with 95% confidence interval (CI). The coefficients show adjusted mean deviations from spouses of persons without mental disorder in fractions of a standard deviation,  $p < 0.001$  for all coefficients.

<sup>c</sup> Partial Eta Squared.

the results show a clear association which should not be ignored. Imperfect measurement precision and sample selection against depressed persons may have deflated the estimates. Furthermore, even if mental disorder *on average* did not appear to be strongly related to spousal subjective burden, it may well be in some couples.

#### Gender differences

It is well known in the literature that women tend to suffer from anxiety and depression more frequently than men. This is also true for the present study; the female cases with mental disorder outnumbered their male counterparts. But, interestingly, the association between mental disorder in the index person and spousal subjective burden appears to be similar in men and women. Although the difference in SCL score between wives of husbands with or without mental disorder was larger than the difference in SCL score between husbands of wives with or without mental disorder, the moderate effect sizes in sum show a similar pattern. This supports earlier findings of small to very small gender differences [36] and indicates that although more women than men tend to suffer from anxiety and depression, the strength of the association between mental disorder in the index person and spousal subjective burden is similar in men and women. It does make sense that living with a depressed person may be associated with subjective burden in the partner regardless of his or her gender.

#### Methodological considerations

As mentioned earlier, population based studies concerning anxiety and depression disorders in one partner and caregiver burden in the spouse are practically absent in the literature to date. The present study is based on a large, representative sample and the dependent variables are based on well known, validated measures. Mental health was measured both by SCL and SWB; these measures may be claimed to essentially represent opposite ends of the same positive/negative affectivity dimension. Still, applying both may yield more complete information because SCL is mainly sensitive to the pathological part of the affectivity distribution, whereas the SWB scores are sensitive also to the happy part of the distribution. Consequently, our study yields important information considering mental disorder and subjective burden in spouses. However, there are some limitations. The data are not based on diagnoses; hence it is not possible to safely establish whether all index persons classified as cases actually do suffer from a clinical mental disorder. Nevertheless, strict criteria used in identifying individuals with mental disorder probably imply that the vast majority of the persons classified as cases have severe mental health problems. It is also impossible to determine the proportion of cases who suffer from even

more serious illnesses than anxiety or depression, like bipolar disorder or schizophrenia, but it is not likely that more than a small fraction of individuals with such diseases have participated in the survey. Although the results show a significant association between mental disorder in the index person and spousal subjective burden, it is not possible to conclude about the causal direction due to the study's cross-sectional design. Another limitation is the lack of validated instruments designed to measure the extent of caregiver burden; however, psychological distress is clearly included in the definition of subjective burden. Likewise, we were not able to separate couples who receive help and support from couples who do not receive any help, thus the association in the couples without support may be stronger than shown by our results.

#### Conclusions

The present study shows that spouses of persons who are suffering from mental disorder report significantly higher levels of symptoms of anxiety and depression and significantly lower SWB than do spouses of persons not suffering from mental disorders, although the effect sizes are moderate. This supports earlier research regarding caregiver burden and depression in spouses. However, our results do not indicate that a large proportion of the spouses reach a symptom level of anxiety and depression that approaches clinical mental disorder. Moreover, the results in the present study indicate that the strength of the association between mental disorder in the index person and spousal subjective burden is similar in male and female spouses. Although issues of caregiver burden are receiving increased attention, there is still a strong need of studies of the burden of mental disorders, particularly anxiety and depression. Researchers studying mental disorder and caregiver burden in couples should also, contrary to what our own data permit, try to address alternative explanations of partner resemblance in mental health, like assortative mating, effects of marital quality, and circularity of symptomatology in which symptoms in the spouse as a consequence of symptoms in the index person in turn may worsen the index person's symptoms. Disentangling the different sources of spouse resemblance would contribute to a better and more comprehensive understanding of the dynamics and causes of caregiver burden. More epidemiological and longitudinal studies and studies from different cultures are needed.

#### Acknowledgements

We thank Professor Espen Røysamb, for his comments on the text, and Professor Arne Hølte, for taking the initiative to start our caregiver project. The Nord-Trøndelag Health Study (The HUNT Study) is a collaboration between HUNT Research Centre (Faculty of Medicine, Norwegian University

of Science and Technology NTNU), Nord-Trøndelag County Council and The Norwegian Institute of Public Health.

#### Authors' contributions

MI performed the statistical analyses and drafted the manuscript. All authors contributed to the study's design, preparation of the data, interpretation of analyses and helped to draft or critically revise the manuscript. All authors read and approved the final manuscript.

#### Competing interests

The authors declare that they have no competing interests.

Received: 22 February 2010 Accepted: 26 August 2010

Published: 26 August 2010

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#### Pre-publication history

The pre-publication history for this paper can be accessed here:  
<http://www.biomedcentral.com/1471-2458/10/516/prepub>

doi:10.1186/1471-2458-10-516

Cite this article as: Idstad et al: Mental disorder and caregiver burden in spouses: the Nord-Trøndelag health study. *BMC Public Health* 2010 **10**:516.



# Paper 4

Ask H, Krog NH, Tambs K (2010)

Impact of hearing impairment on spousal mental health:

The Nord-Trøndelag Health Study

*European Journal of Public Health* 20, 3, 271-275



# Paper 5

Ask H, Langballe EM, Holmen J, Selbæk G, Saltvedt I, Tambs K (2012)  
Mental health and wellbeing in spouses of persons  
diagnosed with dementia: The HUNT study  
*Manuscript submitted for publication*





# Appendix I

Details on the erratum on Helga Ask, Kamilla Rognmo, Fartein Ask Torvik, Espen Røysamb, Kristian Tambs. Non-random mating and convergence over time for alcohol consumption, smoking and exercise: The Nord-Trøndelag Health Study





**Details on the erratum on Helga Ask, Kamilla Rognmo, Fartein Ask Torvik, Espen Røysamb, Kristian Tambs. Non-Random Mating and Convergence Over Time for Alcohol Consumption, Smoking, and Exercise: The Nord-Trøndelag Health Study. (Online October 18, 2011)**

***The original procedure***

The spouses were grouped according to time (D) until – or since – entry into relationship. There were 16 groups with mean D varying from -12 years (before entry) to 39 (after entry). First we calculated polychoric spouse correlations for three variables (alcohol consumption, smoking, exercise) in each of the 16 groups, using Preliis, which also gives the asymptotic variances of the estimates. The correlation values were transformed to z-scores by Fisher's formula,  $z(r) = 0.5 \times (\ln(1+r) - \ln(1-r))$ . We then generated a data file, using SPSS, in which we weighted each data observation (each z-transformed correlation) with the inverse of the variance of the estimates. For instance, the polychoric correlation for one group was 0.192, corresponding to  $z(r)=0.194$ , with variance (squared standard error) of the estimate 0.00647. This standard error for a z-distributed variable corresponds to a sample with  $n=155$ , thus, this data point was weighted by the number 155.

Various functions, specified in the paper, were fitted to  $z(r)$ , giving predicted spouse correlations as a function of D.

The error was made in the way we weighted the data points. Our weighing was equivalent with reproducing a record with the same value for the observed  $z(r)$  (in the example above, 155 times) which gives a falsely high precision.

***How we corrected the method***

Having consulted expert statisticians, we added an error term to  $z(r)$  (generated by the computer program), such that rather than generating a constant value (in the example 0.194 in all the 155 records), we generated a randomly fluctuating normally distributed variable with  $SD=1$  (and, in the example,  $mean=0.194$  for the group of the 155 records). Data were generated (simulated) in the same way for all sixteen observed correlations.

Unlike SPSS, the computer program R offers a nonlinear regression program with an option for weighting each observation. We have rerun the analysis in R, using this option. The results are almost identical to the new results from SPSS. The old and the new results (from SPSS) are shown below.

### ***Original and new, corrected results***

The parameter estimates from the old and the new analyses are practically identical, but the new confidence intervals are much wider. Not all parameter estimates remain significant. In order to demonstrate significant convergence prior to marriage, we specified reduced models with only one parameter for convergence before marriage - a linear regression coefficient. Results from these simpler models show significant increases (convergence) before marriage for all the variables. The graphical figures for the reduced models are not shown. They depart little from the original figures, except for showing straight instead of curved lines before marriage.

### **Alcohol consumption**

Earlier published parameter estimates (with 95% CIs below):

$$F1: y = \underset{(0.272-0.302)}{0.287} * \exp(\underset{(0.179-0.234)}{0.206} * D_{neg}) + \underset{(0.0093-0.0118)}{0.0106} * \ln(1 + \underset{(-15-216)}{100} * D_{pos}) + \underset{(0.223-0.254)}{0.239}$$

New parameter estimates from the same model (with corrected 95% CIs below):

$$F1: y = \underset{(-0.029-0.606)}{0.289} * \exp(\underset{(-0.379-0.788)}{0.205} * D_{neg}) + \underset{(-0.0161-0.0371)}{0.0105} * \ln(1 + \underset{(-2378-2577)}{100} * D_{pos}) + \underset{(-0.100-0.575)}{0.237}$$

Parameter estimates from the reduced model with only a linear convergence before marriage:

$$y = \underset{(0.006-0.041)}{0.023} * D_{neg} + \underset{(-0.0115-0.0418)}{0.0151} * \ln(1 + \underset{(-1445-1645)}{100} * D_{pos}) + \underset{(0.377-0.604)}{0.490}$$

The results from this model showed a significant linear increase in similarity during the 12 years before entry into marriage/cohabitation (t=2.59, p=0.0048).

### **Smoking**

Published parameter estimates (with 95% CIs below):

$$F3: y = \underset{(0.417-0.595)}{0.506} * \exp(\underset{(0.038-0.060)}{0.049} * D_{neg}) - \underset{(0.000184-0.000192)}{0.000188} * (D_{pos} - \underset{(-0.5-0.5)}{0.0})^2 + \underset{(0.030-0.209)}{0.120}$$

New parameter estimates from the same model (with corrected 95% CIs below):

$$F3: y = \underset{(-2.079-3.096)}{0.508} * \exp(\underset{(-0.265-0.363)}{0.049} * D_{neg}) - \underset{(0.000067-0.000308)}{0.000188} * (D_{pos} - \underset{(-13.8-13.8)}{0.0})^2 + \underset{(-2.482-2.715)}{0.117}$$

Results from a new, reduced model with a linear convergence before marriage:

$$y = \underset{(0.011-0.029)}{0.020} * D_{neg} - \underset{(0.000071-0.000303)}{0.000187} * (D_{pos} - \underset{(-13.2-13.2)}{0.0})^2 + \underset{(0.581-0.668)}{0.625}$$

The results from this model showed a significant linear increase in similarity in the time before entry into marriage/cohabitation (t=4.29, p<0.0001).

### Exercise

Earlier published parameter estimates (with 95% CIs below):

$$F3: y = \underset{(0.088-0.098)}{0.093} * \exp(\underset{(0.236-0.313)}{0.274} * D_{neg}) + \underset{(0.000201-0.000208)}{0.000204} * (D_{pos} - \underset{(11.47-11.86)}{11.67})^2 + \underset{(0.183-0.193)}{0.189}$$

New parameter estimates (with 95% CIs below):

$$F3: y = \underset{(-0.080-0.266)}{0.093} * \exp(\underset{(-1.091-1.639)}{0.274} * D_{neg}) + \underset{(0.000085-0.000322)}{0.000203} * (D_{pos} - \underset{(4.71-18.63)}{11.67})^2 + \underset{(0.015-0.361)}{0.188}$$

A simplified model with a linear convergence before marriage:

$$y = \underset{(-0.080-0.266)}{0.093} * \exp(\underset{(-1.091-1.639)}{0.274} * D_{neg}) + \underset{(0.000085-0.000322)}{0.000203} * (D_{pos} - \underset{(4.71-18.63)}{11.67})^2 + \underset{(0.015-0.361)}{0.188}$$

There was a significant linear increase in similarity in the time before entry into marriage/cohabitation (t=1.74, p=0.041).

We are grateful to Dr. Håkon Gjessing and Dr. Bo Engdahl for valuable advice in correcting the results.



# Appendix II

Questionnaires 1 and 2 from HUNT1







# MELDING OM SKJERMBILDEFOTOGRAFERING OG UNDERSØKELSE AV BLODTRYKK OG BLODSUKKER

Skjermbildefotograferingen kommer nå til ditt distrikt. Denne gangen inngår fotograferingen i en større helseundersøkelse, og vi viser til orienteringen som er gitt i den vedlagte brosjyre.

Tid og sted for fram møte vil du finne nedenfor.

Vennligst fyll ut spørreskjemaet på baksiden og ta det med til undersøkelsen. Ta også med skjermbildebevis, tuberkulinkort eller helsebok om du har.

**Det er viktig at du møter fram selv om du nylig har fått kontrollert blodtrykk eller blodsukker, og selv om du er under behandling for høyt blodtrykk eller for sukkersyke.**

Med vennlig hilsen

Statens skjermbildefotografering

Postboks 8155 Dep, Oslo 1

Fylkeslegen • Helserådet • Statens Institutt For Folkehelse

Født dato	Personr.	Kommune	Kretsnr.
Møtested		Kjønn Første bokstav etternavn Dag og dato	Klokkeslett

H. 14 V. 18 SBT<sub>1</sub> 21 DBT<sub>1</sub> 24 PULS 27 SBT<sub>2</sub> 30 DBT<sub>2</sub> 33 SYKEPL<sub>35</sub>  
TID<sub>36</sub> GLUC<sub>39</sub> GLUC<sub>42</sub> GLUC<sub>45</sub> HC<sub>46</sub> RT<sub>47</sub> P 48 Ø.M. 49

**SE BILDET AV BLODTRYKKS MÅLINGEN I DEN VEDLAGTE BROSJYREN**

	JA	NEI	VET IKKE
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**I. Er blodtrykket ditt målt noen gang før? .....** 73  
**Hvis «NEI», gå videre til spørsmål M**

**J. Hvilket år ble blodtrykket målt siste gang?**  
 19   vet ikke..... 74  
 Skriv årstallet her (ca.)

**K. Hvor ble blodtrykket målt siste gang?**  
 (Sett kryss i bare en rute.)

Hos almenpraktiserende lege (distriktslege, privatpraktiserende lege, turnuskandidat).....	76	<input type="checkbox"/>	1
Hos bedriftslege .....		<input type="checkbox"/>	2
Hos militærlege .....		<input type="checkbox"/>	3
På sykehus.....		<input type="checkbox"/>	4
Hos annen lege .....		<input type="checkbox"/>	5
Vet ikke .....		<input type="checkbox"/>	6

**L. Hva ble resultatet av målingen?**  
 (Sett kryss i bare en rute.)

Jeg skulle begynne med eller fortsette med medisin for høyt blodtrykk.....	77	<input type="checkbox"/>	1
Jeg skulle komme til kontroll, men skulle ikke ta medisin .....		<input type="checkbox"/>	2
Jeg skulle ikke ta medisin og ikke komme til kontroll .....		<input type="checkbox"/>	3

**M. Dersom denne helseundersøkelsen viser at du bør undersøkes nærmere: Hvilken almenpraktiserende lege ønsker du da å bli henvist til?**  
 IKKE SKRIV HER

Skriv navnet på legen her

\_\_\_\_\_

Ingen spesiell lege.. 78

**LITT MID-DELS MYE OM ARBEIDET DITT**

**N. Er du i arbeid for tida?**  
 (Sett kryss i bare en rute.)

Ja, heltidsarbeid (utenom husarbeid).....	81	<input type="checkbox"/>	1
Ja, deltidsarbeid (utenom husarbeid) .....		<input type="checkbox"/>	2
Ja, heltids husarbeid .....		<input type="checkbox"/>	3
Nei, ikke i arbeid .....		<input type="checkbox"/>	4

**O. Hvis du ikke er i heltids arbeid, er det på grunn av:**  
 (Sett kryss i bare en rute.)

Arbeidsløshet, permittering .....	82	<input type="checkbox"/>	1
Pensjon eller trygd .....		<input type="checkbox"/>	2
Utdanning eller militærtjeneste .....		<input type="checkbox"/>	3
Annet.....		<input type="checkbox"/>	4

**HVIS DU ER I ARBEID, VENNLIGST SVAR PÅ DE NESTE TO SPØRSMÅLENE**

**P. Er det mye stress og mas på arbeidet ditt?**  
 (Sett kryss i bare en rute.)

Nei, ikke i det hele tatt .....	83	<input type="checkbox"/>	1
Sjelden .....		<input type="checkbox"/>	2
Ja, en god del.....		<input type="checkbox"/>	3
Ja, nesten hele tida .....		<input type="checkbox"/>	4

**Q. Kan du sjøl bestemme hvordan arbeidet ditt skal legges opp?** (Sett kryss i bare en rute)

Nei, ikke i det hele tatt .....	84	<input type="checkbox"/>	1
I liten grad .....		<input type="checkbox"/>	2
Ja, stort sett .....		<input type="checkbox"/>	3
Ja, det bestemmer jeg sjøl .....		<input type="checkbox"/>	4

**A. Hvordan er helsa di for tida?**  
 (Sett kryss i bare en rute.)

Dårlig .....	50	<input type="checkbox"/>	1
Ikke helt god .....		<input type="checkbox"/>	2
God .....		<input type="checkbox"/>	3
Svært god .....		<input type="checkbox"/>	4

**B. Har du i løpet av de siste 12 måneder vært hos?**

Almenpraktiserende lege (distriktslege, privatpraktiserende lege, turnuskandidat).....	51	<input type="checkbox"/>	<input type="checkbox"/>
Bedriftslege .....	52	<input type="checkbox"/>	<input type="checkbox"/>
Militærlege .....	53	<input type="checkbox"/>	<input type="checkbox"/>
Lege ved sykehus (uten at du var innlagt) ....	54	<input type="checkbox"/>	<input type="checkbox"/>
Annen lege .....	55	<input type="checkbox"/>	<input type="checkbox"/>

**C. Har du vært innlagt i sykehus de siste 5 åra?** 56

JA NEI

**D. Bruker du, eller har du brukt, medisin for høyt blodtrykk?** 57

**E. Har du eller har du hatt noen av disse sykdommene?**

Sukkersyke .....	58	<input type="checkbox"/>	<input type="checkbox"/>
Hjerteinfarkt.....	59	<input type="checkbox"/>	<input type="checkbox"/>
Angina pectoris (hjertekrampe).....	60	<input type="checkbox"/>	<input type="checkbox"/>
Hjerneslag eller hjernebldning.....	61	<input type="checkbox"/>	<input type="checkbox"/>

JA NEI

**F. Har du noen langvarig sykdom, skade eller lidelse av fysisk eller psykisk art som nedsetter dine funksjoner i ditt daglige liv?** (Med langvarig menes at det har vart, eller vil vare i minst ett år.) 62

JA NEI

**Hvis «JA», vil du si at dine funksjoner er litt, middels eller mye nedsatt?**

Er bevegelseshemmet .....	63	<input type="checkbox"/>	<input type="checkbox"/>
Har nedsatt syn.....	64	<input type="checkbox"/>	<input type="checkbox"/>
Har nedsatt hørsel.....	65	<input type="checkbox"/>	<input type="checkbox"/>
Hemmet pga. kroppslig sykdom.....	66	<input type="checkbox"/>	<input type="checkbox"/>
Hemmet pga. psykiske plager .....	67	<input type="checkbox"/>	<input type="checkbox"/>

LITT MID-DELS MYE

**G. Har du noen søsken?** (Nålevende eller døde) .... 68  
**Hvis «JA», har en eller flere av dem hatt noen av disse sykdommene?**

Sukkersyke .....	69	<input type="checkbox"/>	<input type="checkbox"/>
Hjerteinfarkt/hjertekrampe.....	70	<input type="checkbox"/>	<input type="checkbox"/>
Forhøyet blodtrykk .....	71	<input type="checkbox"/>	<input type="checkbox"/>

JA NEI

JA NEI VET IKKE

**H. Når du tenker på hvordan du har det for tida, er du stort sett fornøyd med tilværelsen, eller er du stort sett misfornøyd?**  
 (Sett kryss i bare en rute.)

Svært fornøyd .....	72	<input type="checkbox"/>	1
Meget fornøyd .....		<input type="checkbox"/>	2
Ganske fornøyd.....		<input type="checkbox"/>	3
Både/og .....		<input type="checkbox"/>	4
Nokså misfornøyd .....		<input type="checkbox"/>	5
Meget misfornøyd .....		<input type="checkbox"/>	6
Svært misfornøyd .....		<input type="checkbox"/>	7

Vi takker for frammøtet til undersøkelsen.

Vi vil også be deg være vennlig å fylle ut dette spørreskjemaet. Opplysninger vil bli brukt i et større forskningsarbeid om forhold som har betydning for helsen.

Svar etter beste skjønn. Kryss av for bare en av svar-mulighetene (dersom det ikke står nevnt noe annet). Det utfylte skjema returneres i vedlagte svarkonvolutt. Porto er betalt.

**Alle opplysningene er underlagt streng taushetsplikt.**

Med hilsen

Statens skjermbildefotografering  
Fylkeslegen ● Helserådet ● Statens Institutt For Folkehelse  
Institutt for anvendt sosialvitenskapelig forskning/  
Institutt for samfunnsforskning

Til etikett

Navn: .....

Adr. : .....

Postnr. Postkontor .....

F.nr. : .....

## MOSJON

Med mosjon mener vi at du f.eks. går tur, går på ski, svømmer eller driver trening/idrett.

### Hvor ofte driver du mosjon?

(Ta et gjennomsnitt)

Aldri..... 12  1  
Sjeldnere enn en gang i uka .....  2  
En gang i uka .....  3  
2-3 ganger i uka .....  4  
Omtrent hver dag.....  5

### Dersom du driver slik mosjon så ofte som en eller flere ganger i uka: Hvor hardt mosjonerer du?

(Ta et gjennomsnitt)

Tar det rolig uten å bli andpusten eller svett..... 13  1  
Tar det så hardt at jeg blir andpusten og svett.....  2  
Tar meg nesten helt ut.....  3

### Hvor lenge holder du på hver gang?

(Ta et gjennomsnitt)

Mindre enn 15 minutter ..... 14  1  
16-30 minutter.....  2  
30 minutter-1 time .....  3  
Mer enn 1 time .....  4

## SALT

### Hvor ofte bruker du salt kjøtt eller salt fisk/sild til middag?

Aldri, eller sjeldnere enn en gang i måneden..... 15  1  
1-2 ganger i måneden.....  2  
Opptil en gang i uka .....  3  
Opptil to ganger i uka .....  4  
Mer enn to ganger i uka .....  5

### Hvor ofte pleier du å strø ekstra salt på middagsmaten?

Sjelden eller aldri ..... 16  1  
Av og til .....  2  
Ofte.....  3  
Alltid eller nesten alltid.....  4

## RØYKEVANER

Røyker du daglig for tiden? ..... 17  JA  NEI

### Hvis du svarte «JA», røyker du DAGLIG for tiden:

Sigaretter? ..... 18  JA  NEI  
Pipe? ..... 19   
Sigarer (eller serutter/sigarillos)? ..... 20

### Hvis du IKKE røyker SIGARETTER daglig for tiden: Har du røykt SIGARETTER daglig tidligere?

### Hvis du svarte «JA», hvor lenge er det siden du sluttet å røyke sigaretter daglig?

Mindre enn 3 måneder ..... 22  1  
3 måneder- 1 år .....  2  
1-5 år .....  3  
Mer enn 5 år .....  4

### Hvis du røyker SIGARETTER daglig nå, eller har gjort det tidligere:

### Hvor mange sigaretter røyker eller røykte du pr. dag? (Oppgi antall pr. dag medregnet håndrullede) ..... 23

### Besvares av dem som røyker daglig nå eller har røykt daglig tidligere: (Gjelder både sigarett-, pipe- og sigar-røykere)

Hvor gammel var du da du begynte å røyke daglig? ..... 25  Antall  år

Hvor mange år tilsammen har du røykt daglig? ..... 27  år

## ALKOHOLBRUK

### Hvor ofte har du drukket alkohol (øl, vin eller brennevin) de SISTE 14 DAGENE?

Jeg har ikke drukket alkohol, men er ikke totalavholdende ..... 29  1  
Jeg har drukket 1-4 ganger .....  2  
Jeg har drukket 5-10 ganger .....  3  
Jeg har drukket mer enn 10 ganger .....  4  
Jeg er totalavholdende, drikker aldri alkohol .....  5

### Dersom du har drukket alkohol de siste 14 dagene, har det ført til at du noen gang har følt deg beruset? ..... 30

### Har det vært perioder i livet ditt da du har drukket for mye, eller i hvert fall i meste laget?

Nei ..... 31  1  
I tvil, kanskje .....  2  
Ja .....  3

## BOSITUASJONEN

### Bor du alene eller sammen med andre?

Kryss av for de du bor sammen med. (Her kan du sette flere kryss.)

Bor alene .....	32	<input type="checkbox"/>
Ektefelle eller samboer .....	33	<input type="checkbox"/>
Foreldre eller svigerforeldre .....	34	<input type="checkbox"/>
Andre voksne personer .....	35	<input type="checkbox"/>
Barn under 5 år .....	36	<input type="checkbox"/>
Barn 6-15 år .....	37	<input type="checkbox"/>
Barn over 15 år .....	38	<input type="checkbox"/>

### Bor du fast i institusjon?

(sykehjem, aldershjem eller liknende)

39  JA  NEI

## UTDANNINGEN

### Hvilken utdanning har du fullført?

Oppgi bare høyest fullførte utdanning.

7-årig folkeskole eller kortere .....	40	<input type="checkbox"/>	1
Framhalds- eller fortsettelsesskole .....		<input type="checkbox"/>	2
9-årig grunnskole .....		<input type="checkbox"/>	3
Real- eller middelskole, grunnskolens 10. år .....		<input type="checkbox"/>	4
Ett- eller to-årig videregående skole .....		<input type="checkbox"/>	5
Artium, økonomisk gymnas eller almenfaglig retning i videregående skoler .....		<input type="checkbox"/>	6
Høgskole eller universitet, mindre enn 4 år .....		<input type="checkbox"/>	7
Høgskole eller universitet, 4 år eller mer .....		<input type="checkbox"/>	8

### Har du fullført annen heldags utdanning, og i tilfelle i hvor mange år?

Skriv antall år her .... 41

år

## ARBEID

Hvis du er eller har vært i inntektsgivende arbeid, kan du angi hvilken av disse yrkesgruppene ditt yrke faller innenfor? (Hvis du ikke er i arbeid nå, svarer du ut fra det yrket du hadde sist.)

Hvis du har en ektefelle (eller samboer) som er i inntektsgivende arbeid nå, eller har vært det tidligere, angi tilsvarende hvilken yrkesgruppe han/hun tilhører. (Evt. angi om han/hun ikke har hatt inntektsgivende arbeid.)

Spesialarbeider, ufaglært arbeider .....	43, 44	<input type="checkbox"/>	1
Fagarbeider, håndverker, formann .....		<input type="checkbox"/>	2
Underordnet funksjonær (butikk, kontor, offentlige tjenester) .....		<input type="checkbox"/>	3
Fagfunksjonær (f.eks. sykepleier, tekniker, lærer) .....		<input type="checkbox"/>	4
Overordnet stilling i offentlig eller privat virksomhet .....		<input type="checkbox"/>	5
Gårdbruker eller skogeier .....		<input type="checkbox"/>	6
Fisker .....		<input type="checkbox"/>	7
Selvstendig i akademisk erverv (f.eks. tannlege, advokat) .....		<input type="checkbox"/>	8
Selvstendig næringsdrivende (Industi, transport, handel) .....		<input type="checkbox"/>	9
Har ikke hatt inntektsgivende arbeid (f.eks. pga. heltids husarbeid, studier, trygd) .....		<input type="checkbox"/>	0

Deg selv	Ektefellen
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Hvis du er i arbeid (gjelder også heltids husarbeid), ber vi deg fylle ut de neste spørsmålene:

Er arbeidet ditt så fysisk anstrengende at du ofte er sliten i kroppen etter en arbeidsdag?

Ja, nesten alltid .....	45	<input type="checkbox"/>	1
Ganske ofte .....		<input type="checkbox"/>	2
Ganske sjelden .....		<input type="checkbox"/>	3
Aldri, eller nesten aldri .....		<input type="checkbox"/>	4

Krever arbeidet ditt så mye konsentrasjon og oppmerksomhet at du ofte føler deg utslitt etter en arbeidsdag?

Ja, nesten alltid .....	46	<input type="checkbox"/>	1
Ganske ofte .....		<input type="checkbox"/>	2
Ganske sjelden .....		<input type="checkbox"/>	3
Aldri, eller nesten aldri .....		<input type="checkbox"/>	4

Hvordan trives du alt i alt med arbeidet ditt?

Veldig godt .....	47	<input type="checkbox"/>	1
Ganske godt .....		<input type="checkbox"/>	2
Godt .....		<input type="checkbox"/>	3
Ikke særlig godt .....		<input type="checkbox"/>	4
Dårlig .....		<input type="checkbox"/>	5

Hvis du er gårdbruker eller annen selvstendig næringsdrivende, har du noen ansatte som arbeider fast for deg?

Ingen fast ansatte .....	48	<input type="checkbox"/>	1
1-2 fast ansatte .....		<input type="checkbox"/>	2
3-10 fast ansatte .....		<input type="checkbox"/>	3
Mer enn 10 fast ansatte .....		<input type="checkbox"/>	4

## HVORDAN HAR DU DET?

Når du tenker på hvordan du har det for tida, er du stort sett fornøyd med tilværelsen, eller er du stort sett misfornøyd?

Svært fornøyd .....	49	<input type="checkbox"/>	1
Meget fornøyd .....		<input type="checkbox"/>	2
Nokså fornøyd .....		<input type="checkbox"/>	3
Både - og .....		<input type="checkbox"/>	4
Nokså misfornøyd .....		<input type="checkbox"/>	5
Meget misfornøyd .....		<input type="checkbox"/>	6
Svært misfornøyd .....		<input type="checkbox"/>	7

Føler du deg stort sett sterk og opplagt, eller trett og sliten?

Meget sterk og opplagt .....	50	<input type="checkbox"/>	1
Sterk og opplagt .....		<input type="checkbox"/>	2
Ganske sterk og opplagt .....		<input type="checkbox"/>	3
Både - og .....		<input type="checkbox"/>	4
Ganske trett og sliten .....		<input type="checkbox"/>	5
Trett og sliten .....		<input type="checkbox"/>	6
Svært trett og sliten .....		<input type="checkbox"/>	7

## MEDISIN/PLAGER

### Har du vanligvis:

Hoste om morgenen? ..... 51  JA  NEI

Oppspytt fra brystet om morgenen? ..... 52  JA  NEI

### Hvor ofte har du brukt smertestillende medisin den siste måneden?

Daglig ..... 53  1

Hver uke, men ikke hver dag .....  2

Sjeldnere enn hver uke .....  3

Aldri .....  4

### Hvor ofte har du brukt avslappende/beroligende medisin eller sovemedisin den siste måneden?

Daglig ..... 54  1

Hver uke, men ikke hver dag .....  2

Sjeldnere enn hver uke .....  3

Aldri .....  4

### Har du i løpet av siste måned vært plaget av nervøsitet (irritabel, urolig, anspekt eller rastløs)?

Nesten hele tida ..... 55  1

Ofte .....  2

Av og til .....  3

Aldri .....  4

### Har du i løpet av siste måned hatt innsovning- eller søvnproblemer?

Nesten hver natt ..... 56  1

Ofte .....  2

Av og til .....  3

Aldri .....  4

### Har du i det store og hele en rolig og god følelse inne i deg?

Nesten hele tida ..... 57  1

Ofte .....  2

Av og til .....  3

Aldri .....  4

## VENNER/HJELP

### Dersom du ble syk og måtte holde senga i lengre tid, hvor sannsynlig tror du det er at du kunne få nødvendig hjelp og støtte av familie, venner eller naboer?

Svært sannsynlig ..... 58  1

Nokså sannsynlig .....  2

Usikkert .....  3

Usannsynlig .....  4

Helt usannsynlig .....  5

### Hender det ofte at du føler deg ensom?

Meget ofte ..... 59  1

Ofte .....  2

Av og til .....  3

Meget sjelden .....  4

Aldri .....  5

## HVORDAN ER DU?

### Har du tendens til å ta dine oppgaver mer alvorlig enn folk flest?

Ja, nettopp slik er jeg ..... 60  1

Ja, stort sett .....  2

Både - og .....  3

Nei, stort sett ikke .....  4

Nei, tvert imot .....  5

### Har du i løpet av det siste året ofte følt at du har presset deg, eller stadig drevet deg selv framover?

..... 61  JA  NEI  VET IKKE

### Føler du deg alltid under tidspress, også når det gjelder daglige gjøremål?

Alltid, eller nesten alltid ..... 62  1

Noen ganger .....  2

Aldri .....  3

### Er du vanligvis glad eller nedstemt?

Svært nedstemt ..... 63  1

Nedstemt .....  2

Nokså nedstemt .....  3

Både - og .....  4

Nokså glad .....  5

Glad .....  6

Svært glad .....  7

## HVA ER VIKTIG?

### Synes du det er viktig at man prøver å være fornøyd med det man har?

..... 64  1

Dette er særlig viktig .....  2

Dette er viktig .....  3

Både - og .....  4

Dette er mindre viktig .....  5

Dette er overhodet ikke viktig .....  5

### Synes du det er viktig at man kan slå av på kravene?

..... 65  1

Dette er særlig viktig .....  2

Dette er viktig .....  3

Både - og .....  4

Dette er mindre viktig .....  5

Dette er overhodet ikke viktig .....  5

### Synes du det er viktig at man alltid er i godt humør?

..... 66  1

Dette er særlig viktig .....  2

Dette er viktig .....  3

Både - og .....  4

Dette er mindre viktig .....  5

Dette er overhodet ikke viktig .....  5

Tusen takk for den hjelp du har gitt oss ved å fylle ut dette skjema.

# TILLEGGS-SKJEMA OM BLODTRYKK

På skjemaet du leverte ved helseundersøkelsen, svarte du at du har, eller har brukt, medisin for høyt blodtrykk.

I Nord-Trøndelag har det siden 1980 pågått en undersøkelse om blodtrycksbehandling. Formålet ved undersøkelsen er å gjøre behandlingen bedre. En viktig del av undersøkelsen er å få opplysninger om hvordan du og alle andre med høyt blodtrykk har det, og hvilke erfaringer dere har gjort.

Det er derfor meget viktig at du fyller ut dette skjemaet så nøye som mulig.

Enkelte spørsmål kan være vanskelig å svare på. Prøv likevel å svare etter beste skjønn, og legg vekt på det som er vanlig eller gjennomsnittlig for deg.

Alle opplysninger blir behandlet av oss med streng taushetsplikt.

På forhånd takk!

Hvis du har brukt medisin for blodtrykket før, men ikke nå: Når slutta du med medisinene?

(Skriv årstallet i ruta)

19

Vet ikke ... 82

Hvorfor slutta du med medisinene?

(Sett ett eller flere kryss)

Legen bestemte det ..... 84  
 Jeg fikk plager av medisinene ..... 85  
 Jeg mente det ikke var nødvendig med medisinere ..... 86  
 Jeg var redd medisinene var skadelige ..... 87  
 Annen årsak (skriv hvilken nedenfor) ..... 88

Ikke skriv her

Skriv hvilken årsak det evt. var ..... 89

Har legen gitt deg andre råd i forbindelse med at du har for høyt blodtrykk?

(Sett kryss i bare en av rutene)

Nei ..... 91  
 Ja ..... 92  
 Husker ikke ..... 93

1  
2  
3

Hvis «JA»; Hvilke råd?

..... 92  
 ..... 94

Ikke skriv her

Hvordan opplever du behandlingen for blodtrykket? Gir det deg:

(Sett ett eller flere kryss)

Lettelse, ro, trygghet ..... 96  
 Anspenhet, engstelse, redsel, uro ..... 97  
 Dårlig humør, depresjon ..... 98  
 Ingen spesielle følelser ..... 99

Synes du at det er noen ulemper ved det at du må ha behandling for høyt blodtrykk?

Nei, ingen ulemper ..... 100  
 Ja ..... 101

Hvis «JA»: Hva synes du er mest plagsomt?

(Sett ett eller flere kryss)

At du må bruke medisinere hver dag ..... 101  
 At du må gå til legekontroll ..... 102  
 At du må følge de råd som legen har gitt ..... 103  
 At du har ubehag av medisinene ..... 104  
 At du er engstelig for at det er noe alvorlig som feiler deg ..... 105  
 At du synes det er leit å bli betraktet som «pasient» ..... 106  
 Annet ..... 107

Når ble det påvist at du hadde høyt blodtrykk første gang? (Skriv årstallet i ruta)

19

Vet ikke ... 67

Hvor ble det påvist?

(Sett kryss i bare en av rutene)

Hos almenpraktiserende lege (distriktslege, privatpraktiserende lege, turnuskandidat) ..... 69  
 Hos militærlege ..... 70  
 På sykehus ..... 71  
 Vet ikke ..... 72

JA NEI

Bruker du medisin for blodtrykk nå? ..... 70

Hvis «NEI»: Gå til de to siste spm. nederst til venstre.

Hvis «JA»: Når begynte du med medisinere for blodtrykket? (Skriv årstallet i ruta)

19

Vet ikke ... 71

JA NEI

Bruker du doserings-eske for tabletter? ..... 220

Har du medisinkort som viser hva slags medisin du skal ta? ..... 221

Hender det at du glemmer å ta medisinene?

(Sett kryss i bare en av rutene)

Aldri ..... 73  
 Sjelden (ca. en gang i mnd.) ..... 74  
 Oftere ..... 75

Hvor viktig mener du at det er for deg at du tar blodtrycksmedisinen(e) akkurat som foreskrevet?

(Sett kryss i bare en av rutene)

Ikke så viktig ..... 74  
 Viktig ..... 75  
 Meget viktig ..... 76

Vet du hva blodtrykket ditt var ved siste kontroll?

(Sett kryss i bare en rute)

Nei ..... 75  
 Ja ..... 76  
 Usikker ..... 77

Hvis «JA» eller «USIKKER», skriv hvor mye du tror det var:

Ikke skriv her

Skriv her

79



## TILLEGGS-SKJEMA FOR SUKKERSYKE

Du har opplyst at du har sukkersyke. Et viktig mål for helseundersøkelsen er å finne ut hvordan sukkersyke best kan behandles for å gi minst mulig plager.

Alle som har eller har hatt sukkersyke, bes derfor om å svare så godt som mulig på disse spørsmålene om sukkersyke.

Noen har svart på et lignende skjema høsten 1982. Det er likevel av stor betydning at disse fyller ut dette skjemaet.

Alle opplysninger blir behandlet av oss med streng taushetsplikt.

På forhånd takk!

Når ble sukkersyken din oppdaget? ... **19** 108

(Skriv årstallet i ruta)

### Hvordan ble sukkersyken din oppdaget?

Jeg søkte lege på grunn av symptomer ..... 110  1

Ble oppdaget uten at jeg hadde symptomer (ved legeattest, bedriftskontroll, undersøkelse for annen sykdom i eller utenfor sykehus) .....  2

### Hva slags plager hadde du i tilfelle da sukkersyken ble oppdaget? (kryss evt. i flere ruter).

Ingen plager ..... 111

Unormal tørste ..... 112

Stor vannlating ..... 113

Slapphet ..... 114

Vekttap ..... 115

Underlivskløe ..... 116

Andre plager ..... 117

### Hvis «ANDRE PLAGER», skriv hvilke:

..... 118  Ikke skriv her

..... 120

### Har noen av dine foreldre, søsken eller barn hatt sukkersyke?

Hvis «JA», bruker eller brukte noen av disse insulinsprøyter? ..... 123

## BEHANDLING

Bruker du insulinsprøyter mot sukkersyken? ..... 124

### Hvis «JA», bruker du sprøyter daglig?

Sprøyte en gang daglig ..... 125  1

Sprøyte to eller flere ganger daglig .....  2

Om du bruker sprøyter, hvor mye insulin tar du tilsammen hver dag? (Skriv antall ml i ruta - 1 «strek» svarer til 0,1 ml) ..... 126  ml

### Om du bruker sprøyter, hva heter den insulinen du bruker?

(Skriv navnet som står på glasset, begge dersom du bruker to sorter).

..... 128  Ikke skriv her

..... 130

Bruker du tabletter mot sukkersyken? ..... 132

Om du bruker tabletter mot sukkersyken, skriv nedenfor hva de heter, antall mg. som står på glasset/pakningen og hvor mange slike tabletter du tar hver dag: (Skriv om begge sorter dersom du bruker mer enn en type tabletter mot sukkersyke)

..... 133  138  139  Ikke skriv her

Skriv navn på tablettene her mg. pr. tabl. antall pr. dag

..... 140  145  146  Ikke skriv her

Skriv navn på tablettene her mg. pr. tabl. antall pr. dag

Hvor mange måltider spiser du hver dag? ..... 147

Føler du at du vet nok om hva slags mat du kan spise? ..... 148

Hvis du skal svare på hva du virkelig spiser, og ikke hva legen din har sagt du bør spise, vil du da si at du: (Kryss av bare i den ruta som kommer nærmest det du virkelig gjør)

Spiser stort sett det samme som de som ikke har sukkersyke ..... 149  1

Spiser hva jeg vil unntatt sukker og søtsaker .....  2

Bruker på øyemål bestemt mengde brød, potet, melk og frukt .....  3

Veier/måler bestemt mengde brød, potet, melk og evt. frukt en eller flere dager i uka .....  4

Kontrollerer du hjemme hvor mye sukker du har i urinen? (Kryss av også om noen hjelper deg eller gjør det for deg) ..... 150

Hva heter den metoden du i tilfelle bruker til å måle sukker i urinen?

..... 151  Ikke skriv her

Kontrollerer du noen gang hjemme hvor mye sukker du har i blod (blodsukker)? (Kryss av også om noen hjelper deg eller gjør det for deg) ..... 152

Hva heter den metoden du i tilfelle bruker til å måle blodsukker?

..... 153  Ikke skriv her

Skriv navnet på pakningen og navn på evt. apparat du måler med.

Hvis du selv kontrollerer sukker i urin eller blod, hvor ofte gjør du det? (Kryss av også om noen hjelper deg eller gjør det for deg)

Hver dag ..... 154  1

2-3 dager i uka .....  2

En dag i uka .....  3

En dag hver 14. dag .....  4

En dag i måneden .....  5

Sjeldnere enn en dag i måneden .....  6

Hvis du selv kontrollerer sukker i urin eller blod: måler du flere ganger om dagen de dagene du gjør det? ..... 155

JA NEI

Dersom du tar urin- eller blodprøve selv, tar du resultatene med til legen ved kontroll? (kryss av i den ruta som passer best)

Aldri ..... 156

Av og til ..... 157

Oftest ..... 158

Alltid ..... 159

1  
 2  
 3  
 4

JA NEI

Går du til regelmessig kontroll hos lege for sukkersyken din? ..... 157

Hvis «JA», hvor lenge var det mellom de to siste gangene du var hos legen din til kontroll for sukkersyken?

Antall måneder (skriv i ruta) .... 158

mndr.

Hva slags lege går du til kontroll hos for sukkersyken? (Sett kryss i bare en rute)

Vanlig lege (distriktslege, almenpraktiserende lege, bedriftslege osv.) ..... 160

Sykehuslege (poliklinikk på sykehus) ..... 161

Er innlagt i sykehjem eller annen institusjon og får kontroll der ..... 162

Andre ..... 163

1  
 2  
 3  
 4

Ikke skriv her

Hvis «andre», skriv hva slags lege på linja over ..... 161

### ANNEN SYKDOM

Bruker du regelmessig medisin for annet enn sukkersyken? ..... 162

JA NEI

Dersom «JA», skriv hva disse medisinene heter (Skriv det navnet som står på glasset eller pakningen. Ta med alle sortene du bruker regelmessig. Skriv x bak navnet om du brukte dette også før du fikk sukkersyke).

..... 163

..... 166

..... 169

..... 172

..... 175

..... 178

..... 181

Ikke skriv her

Tror du man er mer utsatt for å få enkelte andre sykdommer dersom man har dårlig kontrollert sukkersyke? ..... 194

JA NEI

Hvis «JA», nevnt navnet på 3 slike sykdommer: (Du behøver ikke å ha hatt disse sykdommene selv).

..... 185

..... 187

..... 189

Ikke skriv her

Har du selv hatt noen vedvarende (kroniske) plager etter at du fikk sukkersyke?

(Skriv hva slags sykdom/plager på linjene under).

191

193

195

197

199

201

Ikke skriv her

### UNDERVISNING - STØTTE

Er du medlem av Norges Landsforbund for Sukkersyke? ..... 203

Har du noen gang deltatt på kurs eller møte om sukkersyke? ..... 204

Får du grunnstønad gjennom trygdekontoret for sukkersyken? ..... 205

Har du søkt om og fått særfradrag i skattelikninga fordi du har sukkersyke? ..... 206

JA NEI

### HVORDAN HAR DU DET?

Synes du det er vanskelig å ha sukkersyke?

(kryss av i den ruta som passer best).

Ja, jeg føler det er som en plage hver dag ..... 207

Ja, jeg tenker ofte på det ..... 208

Ja, av og til ..... 209

Nei, sjelden ..... 210

Nei, jeg tenker nesten aldri på det ..... 211

Føler meg akkurat som alle som ikke har sukkersyke .. 212

1  
 2  
 3  
 4  
 5  
 6

Dersom du synes det er vanskelig å ha sukkersyke, hva synes du er verst?

(Skriv det du mener på linja nedenfor).

Skriv her

Ikke skriv her

Forteller du til andre at du har sukkersyke?

(kryss av i den ruta som passer best).

Ja, alltid når jeg mener de bør vite det ..... 210

Ja, men bare om de spør ..... 211

Nei, helst ikke ..... 212

Jeg er redd for at andre skal få greie på det ..... 213

1  
 2  
 3  
 4

JA NEI

Har du noen gang hatt for lavt blodsukker?

(«føling», «insulinsjokk») ..... 211

Hvis «JA», hvor mange ganger har du hatt det den siste uka? (Skriv antall ganger i ruta) ..... 212

Hvor mange ganger har du vært innlagt i sykehus de siste 5 årene? (Skriv antall ganger i ruta) ..... 213

Dersom du har ligget i sykehus de siste 5 årene, hva har du ligget der for?

(Skriv på linjene nedenfor)

..... 214

..... 216

..... 218

Ikke skriv her

Ikke skriv her

Ikke skriv her



# Appendix III

Questionnaires 1 and 2 from HUNT2





HELSEUNDERSØKELSEN  
I NORD-TRØNDELAG

*«JA, nå er det  
min tur!»*



## Personlig innbydelse



**S**pørreskjemaet er en viktig del av Helseundersøkelsen. Her finner du spørsmål om tidligere sykdom og om andre forhold som har betydning for helsen. Vennligst fyll ut skjemaet på forhånd og ta det med til Helseundersøkelsen. Dersom enkelte spørsmål er uklare, lar du dem bare stå ubesvarte til du møter fram, og drøfter dem med personalet som gjennomfører undersøkelsen. Alle svar vil bli behandlet strengt fortrolig.

Flere steder i skjemaet ber vi deg oppgi din alder da eventuell sykdom inntrådte. Hvis du ikke husker nøyaktig hvor gammel du var, skriver du et tall som er nærmest det du antar er korrekt.

Når resultatene fra undersøkelsen foreligger, vil det være enkelte som trenger ny undersøkelse hos egen lege. Dette vil du få beskjed om i det brevet som vi sender deg om dine resultater. Samtidig sender vi melding om resultatene dine til legen din. Det er derfor

om å gjøre at du i rubrikken helt til slutt i skjemaet oppgir navnet på den allmennpraktiserende lege, kommunelege eller det helsesenter som du ønsker skal ta hånd om eventuell etterundersøkelse, og som vi skal sende resultatene til.

Med vennlig hilsen

*Helsetjenesten i Nord-Trøndelag • Statens helseundersøkelser • Statens Institutt for Folkehelse*

## DET HANDLER OM HELSA DI

### Hvordan er helsa di nå?

Bare ett kryss

- Dårlig ..... 12  1
- Ikke helt god .....  2
- God .....  3
- Svært god .....  4

## LUFTVEGSPLAGER

### Hoster du daglig i perioder av året? .....

JA	NEI
----	-----

Hvis JA:

- Er hosten vanligvis ledsaget av oppspytt? .. 14
- Har du hatt hoste med oppspytt i minst 3 mnd. sammenhengende i hvert av de to siste åra?

### Har du hatt noe anfall med pipende eller tung pust de siste 12 måneder? .....

JA	NEI
----	-----

### Har du eller har du hatt astma? .... 17

JA	NEI	Alder første gang
		år

### Har du brukt eller bruker du astmamedisiner? .....

JA	NEI
----	-----

## HJERTE-KARSYKDOMMER, DIABETES

### Har du, eller har du hatt:

- |                                       |    |     |                   |
|---------------------------------------|----|-----|-------------------|
| Hjerteinfarkt ..... 21                | JA | NEI | Alder første gang |
| Angina pectoris (hjerterampe) .... 24 |    |     | år                |
| Hjerneslag/hjerneblødning ..... 27    |    |     | år                |
| Diabetes (sukkersyke) ..... 30        |    |     | år                |

### Hva ble resultatet siste gang du målte blodtrykket ditt?

Bare ett kryss

- Begynne med/fortsette med blodtryksmedisin .... 33  1
- Komme til kontroll, men ikke ta blodtryksmedisin  2
- Ingen kontroll og ingen medisin nødvendig .....  3
- Har aldri fått målt blodtrykket .....  4

### Bruker du medisin mot høyt blodtrykk?

Bare ett kryss

- Nå ..... 34  1
- Før, men ikke nå .....  2
- Aldri brukt .....  3

### Har en eller flere av foreldre eller søsken hatt hjerteinfarkt (sår på hjertet) eller angina pectoris (hjerterampe)? .....

JA	NEI	VEI IKKE
----	-----	----------

## STOFFSKIFTE

### Har du noen gang fått påvist:

- |                                     |    |     |                   |
|-------------------------------------|----|-----|-------------------|
|                                     | JA | NEI | Alder første gang |
| for høyt stoffskifte ..... 36       |    |     | år                |
| for lavt stoffskifte ..... 39       |    |     | år                |
| struma ..... 42                     |    |     | år                |
| annen sykdom i skjoldbruskkjertelen |    |     | år                |

### Bruker du eller har du brukt noen av disse medisinene:

- |                        |  |  |    |
|------------------------|--|--|----|
| Thyroxin ..... 48      |  |  | år |
| Neo-Mercazole ..... 51 |  |  | år |

### Er du operert i skjoldbruskkjertelen

### Har du fått radiojodbehandling .... 57

	JA	NEI	år
--	----	-----	----

## MUSKEL/SKJELETT-PLAGER

### Har du i løpet av det siste året vært plaget med smerter og/eller stivhet i muskler og ledd som har vart i minst 3 måneder sammenhengende? .....

JA	NEI
----	-----

### Hvis NEI, gå videre til neste side øverst.

Hvis JA, svar på følgende:

### Hvor har du hatt disse plagene?

- |                         |    |     |
|-------------------------|----|-----|
|                         | JA | NEI |
| Nakke ..... 61          |    |     |
| Skuldre (aksler) .....  |    |     |
| Albuer .....            |    |     |
| Håndledd, hender.....   |    |     |
| Bryst/mage..... 65      |    |     |
| Øvre del av ryggen..... |    |     |
| Korsryggen.....         |    |     |
| Hofter .....            |    |     |
| Knær .....              |    |     |
| Anklær, føtter ..... 70 |    |     |

Hvis du har hatt plager i flere områder i minst 3 mnd. det siste året, setter du ring rundt det ja-krysset hvor plagene har vart lengst

### Hvor lenge har plagene vart sammenhengende?

Svar for det området hvor plagene har vart lengst

- Hvis under 1 år, oppgi antall mnd.  Antall mnd.
- Hvis 1 år eller mer, oppgi antall år.. 73  Antall år

### Har plagene redusert din arbeidsevne det siste året?

Gjelder også hjemmearbeidende. Bare ett kryss

- Nei/ubetydelig  I noen grad  I betydelig grad  Vet ikke

### Har du vært sykmeldt pga. disse plagene det siste året? .....

JA	NEI	IKKET ARBEID
----	-----	--------------

### Har plagene ført til redusert aktivitet i fritida? .....

JA	NEI
----	-----

Har lege noen gang sagt at du har/har hatt noen av disse sykdommene:

	JA	NEI
Beinskjørhet (osteoporose) ..... 78		
Fibromyalgi (fibrositt/kronisk smertesyndrom)		
Leddgikt (reumatoid artritt) .....		
Slitasjegikt (artrose) .....		
Bechterews sykdom ..... 82		
Andre langvarige skjelett- eller muskelsykdommer		

Har du noen gang hatt:

	JA	NEI	Alder siste gang
Lårhalsbrudd ..... 84			år
Brudd i håndledd/underarm ..... 87			år
Nakkesleng (whiplash) ..... 90			år
Skade som førte til sykehusinnleggelse			år

## ANDRE PLAGER

I hvilken grad har du hatt disse plagene i de siste 12 månedene?

	Ikke plaget	Litt plaget	Mye plaget
Kvalme ..... 96	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brystbrann/sure oppstøt .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diaré .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treg mage .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hjertebank .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Åndenød ..... 101	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ANDRE SYKDOMMER

Har du eller har du noen gang hatt:

	JA	NEI	Alder første gang
Epilepsi ..... 102			år
Psykiske plager hvor du har søkt hjelp			år
Kreftsykdom ..... 108			år
Annen langvarig sykdom ..... 111			

## DAGLIGE FUNKSJONER

Har du noen langvarig sykdom, skade eller lidelse av fysisk eller psykisk art som nedsetter dine funksjoner i ditt daglige liv? ... 112

JA	NEI
----	-----

Langvarig: minst ett år

Hvis JA:

Hvor mye vil du si at dine funksjoner er nedsatt?

	Litt nedsatt	Middels nedsatt	Mye nedsatt
Er bevegelsehemmet ..... 113	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har nedsatt syn .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har nedsatt hørsel .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hemmet pga. kroppslig sykdom.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hemmet pga. psykiske plager... 117	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MENN fortsetter øverst neste spalte

## BESVARES BARE AV KVINNER

Hvor mange barn har du født? ..... 118

Sett 0 hvis du ikke har født barn

Antall barn
-------------

Hvis du har født barn, besvar:

Hvor gammel var du da du fødte ditt første barn? ..... 120

Alder
år

Hvor gammel var du da du fødte ditt siste barn? ..... 122

Besvares ikke hvis du har født bare ett barn

år
----

Hvor gammel var du da du fikk menstruasjon? ..... 124

Sett 0 hvis du ikke noen gang har hatt menstruasjon

år
----

Fortsett neste spalte øverst

## RØYKING

Røykte noen av de voksne hjemme da du vokste opp? ..... 126

JA	NEI
----	-----

Bor du, eller har du bodd, sammen med noen dagligrøykere etter at du fylte 20 år? ..... 127

JA	NEI
----	-----

Hvor lenge er du vanligvis daglig til stede i røykfyllt rom? ..... 128

Sett 0 hvis du ikke oppholder deg i røykfyllt rom

Antall timer
--------------

Røyker du selv?

Sigaretter daglig? ..... 130

Sigarer/sigarillos daglig? .....

Pipe daglig? ..... 132

Aldri røykt daglig ..... (Sett kryss)

JA	NEI

Hvis du har røykt daglig tidligere, hvor lenge er det siden du sluttet? ..... 134

Antall år
-----------

Hvis du røyker daglig nå eller har røykt tidligere:

Hvor mange sigaretter røyker eller røykte du vanligvis daglig? ..... 136

Hvor gammel var du da du begynte å røyke daglig? ..... 140

Hvor mange år tilsammen har du røykt daglig? ..... 142

Antall sigaretter
-------------------

Alder
år

Antall år
-----------

## KAFFE/TE/ALKOHOL

Hvor mange kopper kaffe/te drikker du daglig?

Sett 0 hvis du ikke drikker kaffe/te daglig

Kokekaffe ..... 144

Annen kaffe ..... 146

Te ..... 148

Antall kopper
---------------

--

--

Alkohol:

Er du total avholdsmann/-kvinne? .... 150

JA	NEI
----	-----

Hvor mange ganger i måneden drikker du vanligvis alkohol? ..... 151

Regn ikke med lettøl. Sett 0 hvis mindre enn 1 gang i mnd.

Antall ganger
---------------

Hvor mange glass øl, vin eller brennevin drikker du vanligvis i løpet av to uker?

Regn ikke med lettøl.

Sett 0 hvis du ikke drikker alkohol 153

Øl	Vin	Brennevin
glass	glass	glass

## FYSISK AKTIVITET

I FRITIDA

Hvordan har din fysiske aktivitet i fritida vært det siste året? Tenk deg et ukentlig gjennomsnitt for året.

Arbeidsveg regnes som fritid

Lett aktivitet (ikke svett/andpusten) ..... 159

Hard fysisk aktivitet (svett/andpusten) ..... 160

	Timer pr. uke			
	Ingen	Under 1	1-2	3 og mer
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

UNDER ARBEID

Hvis du er i lønnet eller ulønnet arbeid:

Hvorledes vil du beskrive arbeidet ditt?

Bare ett kryss

For det meste stillesittende arbeid (f.eks. skrivebordsarbeid, montering) ..... 161

Arbeid som krever at du går mye (f.eks. ekspeditorarb., lett industriarb., undervisning) .....

Arbeid hvor du går og løfter mye (f.eks. postbud, pleier, bygningsarbeid) .....

Tungt kroppsarbeid (f.eks. skogsarbeid, tungt jordbruksarb., tungt bygningsarb.) .....

## HVORLEDES FØLER DU DEG?

Har du de siste to ukene følt deg:

	Nei	Litt	En god del	Svært mye
Trygg og rolig? ..... 162	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glad og optimistisk? ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Har du følt deg:</b>				
Nervøs og urolig? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plaget av angst? ..... 165	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irritabel? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nedfor/deprimert? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensom? ..... 168	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4

Her kommer noen flere spørsmål om hvorledes du føler deg. For hvert spørsmål setter du kryss for ett av de fire svarene som best beskriver dine følelser **den siste uka**. Ikke tenk for lenge på svaret - de spontane svarene er best

**Jeg gleder meg fortsatt over ting slik jeg pleide før** 169  
 Avgjort like mye .....  1 Bare lite grann .....  3  
 Ikke fullt så mye .....  2 Ikke i det hele tatt .....  4

**Jeg har en urofølelse som om noe forferdelig vil skje** 170  
 Ja, og noe svært ille ....  1 Litt, bekymrer meg lite .  3  
 Ja, ikke så veldig ille ...  2 Ikke i det hele tatt .....  4

**Jeg kan le og se det morsomme i situasjoner** 171  
 Like mye nå som før ....  1 Avgjort ikke som før ....  3  
 Ikke like mye nå som før  2 Ikke i det hele tatt .....  4

**Jeg har hodet fullt av bekymringer** 172  
 Veldig ofte .....  1 Av og til .....  3  
 Ganske ofte .....  2 En gang i blant .....  4

**Jeg er i godt humør** 173  
 Aldri .....  1 Ganske ofte .....  3  
 Noen ganger .....  2 For det meste .....  4

**Jeg kan sitte i fred og ro og kjenne meg avslappet** 174  
 Ja, helt klart .....  1 Ikke så ofte .....  3  
 Vanligvis .....  2 Ikke i det hele tatt .....  4

**Jeg føler meg som om alt går langsommere** 175  
 Nesten hele tiden .....  1 Fra tid til annen .....  3  
 Svært ofte .....  2 Ikke i det hele tatt .....  4

**Jeg føler meg urolig som om jeg har sommerfugler i magen** 176  
 Ikke i det hele tatt .....  1 Ganske ofte .....  3  
 Fra tid til annen .....  2 Svært ofte .....  4

**Jeg bryr meg ikke lenger om hvordan jeg ser ut** 177  
 Ja, har sluttet å bry meg  1 Kan hende ikke nok ....  3  
 Ikke som jeg burde .....  2 Bryr meg som før .....  4

**Jeg er rastløs som om jeg stadig må være aktiv** 178  
 Uten tvil svært mye .....  1 Ikke så veldig mye .....  3  
 Ganske mye .....  2 Ikke i det hele tatt .....  4

**Jeg ser med glede frem til hendelser og ting** 179  
 Like mye som før .....  1 Avgjort mindre enn før .  3  
 Heller mindre enn før ...  2 Nesten ikke i det hele tatt  4

**Jeg kan plutselig få en følelse av panikk** 180  
 Uten tvil svært ofte .....  1 Ikke så veldig ofte .....  3  
 Ganske ofte .....  2 Ikke i det hele tatt .....  4

**Jeg kan glede meg over gode bøker, radio og TV** 181  
 Ofte .....  1 Ikke så ofte .....  3  
 Fra tid til annen .....  2 Svært sjelden .....  4

## UTDANNING

Hvilken utdanning er den høyeste du har fullført?

Grunnskole 7-10 år, framhaldsskole, folkehøgskole .....	182	<input type="checkbox"/> 1
Realskole, middelskole, yrkesskole, 1-2 årig videregående skole.....		<input type="checkbox"/> 2
Artium, øk.gymnas, allmennfaglig retning i videregående skole .....		<input type="checkbox"/> 3
Høgskole/universitet, mindre enn 4 år .....		<input type="checkbox"/> 4
Høgskole/universitet, 4 år eller mer .....		<input type="checkbox"/> 5

## ARBEID

Hva slags arbeidssituasjon har du nå?

Ett eller flere kryss

Lønnet arbeid .....	183	<input type="checkbox"/>
Selvstendig næringsdrivende.....		<input type="checkbox"/>
Heltids husarbeid .....		<input type="checkbox"/>
Utdanning, militærtjeneste .....		<input type="checkbox"/>
Arbeidsledig, permittert.....		<input type="checkbox"/>
Pensjonist/trygdet.....	188	<input type="checkbox"/>

Hvor mange timer lønnet arbeid har du i uka? .....

Antall timer

JA  NEI

Har du skiftarbeid, nattarbeid eller går vakt?

JA  NEI

## ALT I ALT

Når du tenker på hvordan du har det for tida, er du stort sett fornøyd med tilværelsen eller er du stort sett misfornøyd?

Bare ett kryss

Svært fornøyd .....	192	<input type="checkbox"/> 1
Meget fornøyd .....		<input type="checkbox"/> 2
Ganske fornøyd.....		<input type="checkbox"/> 3
Både/og.....		<input type="checkbox"/> 4
Nokså misfornøyd .....		<input type="checkbox"/> 5
Meget misfornøyd.....		<input type="checkbox"/> 6
Svært misfornøyd.....		<input type="checkbox"/> 7

## DIN LEGE

Hvis denne helseundersøkelsen viser at du bør undersøkes nærmere, hvilken allmennpraktiserende lege/kommunelege ønsker du skal foreta undersøkelsen?

Skriv navnet på legen her:

193

Ikke skriv her

Tabbe for utfyllingen!

Nok en gang:

Velkommen til undersøkelsen!

NORD-TRØNDELAG



Takk for frammetet til undersøkelsen!

Vi vil også be deg fylle ut dette spørreskjemaet. Opplysningene vil bli brukt i større forskningsarbeider om forebyggende helsearbeid. Noen av spørsmålene ligner på spørsmål du har svart på i det skjemaet du fylte ut heime og lærte ved frammetet til helseundersøkelsen. Det er likevel viktig at du svarer på alle spørsmålene også i dette skjemaet. Det utfylte skjemaet returneres i vedlagte svarkonvolutt. Porto er betalt. Alle opplysningene er underlagt streng taushetsplikt.

Vennlig hilsen

Helsetjenesten i Nord-Trøndelag

Statens Institutt for Folkehelse Statens helseundersøkelser

Hvis du ikke ønsker å besvare spørreskjemaet, sett kryss her og returner skjemaet. Da slipper du puring. Jeg ønsker ikke å besvare skjemaet

## UTFYLING

Dato for utfylling av skjema:  19

## OPPVEKST

I hvilken kommune bodde du da du fylte 1 år?

Hvis du ikke bodde i Norge, oppgi land i stedet for kommune.

24

## ARBEID

Nåværende eller tidligere arbeid:

Hva slags inntektsgivende arbeid har du og event. din

ektefelle/samboer? Hvis du/dere ikke har inntektsgivende arbeid nå: Oppgi det siste yrket. Deg Ektefelle/selv samboer

Spesialarbeider eller ufaglært arbeider .....	25	<input type="checkbox"/>	<input type="checkbox"/>	36
Fagarbeider, handverker, formann .....		<input type="checkbox"/>	<input type="checkbox"/>	
Underordnet funksjonær (f.eks. butikk, kontor, off. tjenester) .....		<input type="checkbox"/>	<input type="checkbox"/>	
Fagfunksjonær (f.eks. sykepleier, tekniker, lærer) .....		<input type="checkbox"/>	<input type="checkbox"/>	
Overordnet stilling i off. eller privat virksomhet		<input type="checkbox"/>	<input type="checkbox"/>	
Sjåfør .....	30	<input type="checkbox"/>	<input type="checkbox"/>	41
Gårdbruker eller skogeier .....		<input type="checkbox"/>	<input type="checkbox"/>	
Fisker .....		<input type="checkbox"/>	<input type="checkbox"/>	
Selvstendig i akademisk erverv (f.eks. tannlege, advokat) .....		<input type="checkbox"/>	<input type="checkbox"/>	
Annen selvstendig næringsvirksomhet .....		<input type="checkbox"/>	<input type="checkbox"/>	
Har ikke vært i inntektsgivende arbeid .....	35	<input type="checkbox"/>	<input type="checkbox"/>	46

Hvis du NÅ ikke har inntektsgivende arbeid eller du ikke har heltids husarbeid: Gå til BOLIG.

Har du i løpet av de siste 12 månedene

**hatt sykefravær:** Ja Nei  
med egenmelding ..... 47    
med sykmelding fra lege ..... 48

Hvis «Ja»: Hvor lenge tilsammen? Bare ett kryss

2 uker eller mindre ..... 49  1  
2-8 uker .....  2  
Mer enn 8 uker .....  3

Har du i løpet av de siste 12 månedene vurdert å skifte yrke eller arbeidsplass? ..... 50  Ja  Nei

Er arbeidet ditt så fysisk anstrengende at du ofte er sliten i kroppen etter en arbeidsdag? Bare ett kryss 51

Ja, nesten alltid .....  1 Ganske sjelden .....  3  
Ganske ofte .....  2 Aldri, eller nesten aldri .....  4

Krever arbeidet ditt så mye konsentrasjon og oppmerksomhet at du ofte føler deg utslitt etter en arbeidsdag? 52

Ja, nesten alltid .....  1 Ganske sjelden .....  3  
Ganske ofte .....  2 Aldri, eller nesten aldri .....  4

Hvordan trives du alt i alt med arbeidet ditt? 53

Veldig godt .....  1 Ikke særlig godt .....  3  
Godt .....  2 Dårlig .....  4

## BOLIG

Hvem bor du sammen med?

Ett kryss for hver linje og angi antall

	Ja	Nei	
Ektefelle/samboer .....	54	<input type="checkbox"/>	<input type="checkbox"/> Antall <input type="text"/>
Andre personer over 18 år .....	55	<input type="checkbox"/>	<input type="text"/>
Personer under 18 år .....	58	<input type="checkbox"/>	<input type="text"/>
			Antall <input type="text"/>

Hvor mange av barna har plass i barnehage? ..... 61

Hvilken type bolig bor du i? Bare ett kryss

Enebolig/villa .....	63	<input type="checkbox"/>	1
Gårdsbruk .....		<input type="checkbox"/>	2
Blokk/terrasseleilighet .....		<input type="checkbox"/>	3
Rekkehus/2-4 mannsbolig .....		<input type="checkbox"/>	4
Annen bolig .....		<input type="checkbox"/>	5

Hvor stor er din boenhet? ..... 64  kvm

	Ja	Nei
Er det heldekkende tepper i stua? .....	67	<input type="checkbox"/> <input type="checkbox"/>
Er det heldekkende tepper på ditt soverom? .....		<input type="checkbox"/> <input type="checkbox"/>
Er det katt i boligen? .....	69	<input type="checkbox"/> <input type="checkbox"/>
Er det hund i boligen? .....		<input type="checkbox"/> <input type="checkbox"/>
Er det andre pelsklodde dyr eller fugler i boligen? .....		<input type="checkbox"/> <input type="checkbox"/>

## ØKONOMI

Mottar du noen av følgende offentlige ytelser?

	Ja	Nei
Sykepenger/sykelønn/rehabiliteringspenger .....	72	<input type="checkbox"/> <input type="checkbox"/>
Ytelser under yrkesrettet attføring .....		<input type="checkbox"/> <input type="checkbox"/>
Uførepensjon .....	74	<input type="checkbox"/> <input type="checkbox"/>
Alderspensjon .....		<input type="checkbox"/> <input type="checkbox"/>
Sosialstøtte .....		<input type="checkbox"/> <input type="checkbox"/>
Arbeidsløshetstrygd .....		<input type="checkbox"/> <input type="checkbox"/>
Overgangsstønad .....		<input type="checkbox"/> <input type="checkbox"/>
Etterlattepensjon .....	79	<input type="checkbox"/> <input type="checkbox"/>
Andre ytelser .....		<input type="checkbox"/> <input type="checkbox"/>

Har det i løpet av det siste året hendt at husholdningen har hatt vansker med å klare de løpende utgifter til mat, transport, bolig og liknende? Bare ett kryss 81

Ja, ofte .....  1 Ja, en sjelden gang .....  3  
Ja, av og til .....  2 Nei, aldri .....  4

## VENNER

Hvor mange gode venner har du?

Regn med de du kan snakke fortrolig med og som kan gi deg god hjelp når du trenger det ..... 82  Antall

Tell ikke med de du bor sammen med, men regn med andre slektinger

Føler du at du har mange nok gode venner? ..... 84  Ja  Nei

Hvor ofte tar du vanligvis del i foreningsvirksomhet som f.eks. syklubb, idrettslag, politiske lag, religiøse eller andre foreninger? 85

Aldri, eller noen få ganger i året .....  1 Omtrent en gang i uka .....  1  
1-2 ganger i måneden .....  2 Mer enn en gang i uka .....  2



## DER DU BOR

Svar ut fra nærmiljøet, dvs. nabolaget/grenda.

Ett kryss for hvert spørsmål

**Jeg føler et sterkt fellesskap med de som bor her** <sup>86</sup>

Helt enig  1 Delvis enig  2 Usikker  3 Delvis uenig  4 Helt uenig  5

**Selv om noen tar initiativ, er det ingen som blir med på det som settes i gang her** <sup>87</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Hvis jeg flytter herfra, vil jeg lengte tilbake** <sup>88</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Man kan ikke stole på hverandre her** <sup>89</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Når noe skal gjøres her, er det lett å få folk med** <sup>90</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Det er vanskelig å få kontakt med folk her** <sup>91</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Det er godt samhold her** <sup>92</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Ingen orker å ta initiativ til noe lenger her** <sup>93</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Folk trives godt her** <sup>94</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Folk her kan ha store problemer uten at naboen vet noe** <sup>95</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Det er alltid noen som tar initiativ til å løse nødvendige oppgaver her** <sup>96</sup>

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

**Folk snakker lite med hverandre her** <sup>97</sup>

Helt enig  1 Delvis enig  2 Usikker  3 Delvis uenig  4 Helt uenig  5

## SYKDOM I FAMILIEN

Kryss av for de slektingene som har eller har hatt noen av sykdommene. Kryss av for «ingen» hvis ingen av slektingene har hatt denne sykdommen. Evt. flere kryss på hver linje

Mor Far Bror Søster Barn Ingen

Hjerneslag eller hjerneblødning .....	98	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hjerteinfarkt før 60 års alder .....	104	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Astma .....	110	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allergi .....	116	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kreftsykdom .....	122	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Høyt blodtrykk .....	128	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psykiske plager .....	134	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Osteoporose (benskjørhet) .....	140	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diabetes (sukkersyke) .....	146	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alder da de fikk diabetes .....	152	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Har du selv høysnue eller neseallergi? ..... <sup>162</sup>  Ja  Nei

## BRUK AV HELSETJENESTER

**Har du i løpet av de siste 12 månedene vært hos :**

Ett kryss på hver linje

Ja Nei

allmennpraktiserende lege (kommunelege, privatpraktiserende lege, turnuskandidat) ..... <sup>163</sup>

bedriftslege .....

lege ved sykehus (uten at du var innlagt) .....

annen lege .....

fysioterapeut .....

kiropraktor .....

homøopat ..... <sup>169</sup>

annen behandler (naturmedisiner, fotsoneterapeut, håndspålegger, "healer", "synsk", e.l.) .....

Har du vært innlagt i sykehus de siste 5 åra? ..... <sup>171</sup>

## ALKOHOL

Hvis du er totalavholdsmann: Gå til KOSTHOLD.

Ett kryss for hver spørsmål

**Har du noen gang følt at du burde redusere alkoholforbruket ditt?** ..... <sup>172</sup>  Ja  Nei

**Har andre noen gang kritisert alkoholbruken din?** ..... <sup>173</sup>  Ja  Nei

**Har du noen gang følt ubehag eller skyldfølelse pga. alkoholbruken din?** ..... <sup>174</sup>  Ja  Nei

**Har det å ta en drink noen gang vært det første du har gjort om morgenen for å roe nervene, kurere bakrus eller som en oppvækker?** ..... <sup>175</sup>  Ja  Nei

## KOSTHOLD

**Hvor mange måltider spiser du vanligvis daglig (middag og brødmåltid)?** ..... <sup>176</sup>  Antall

**Hvor mange dager i uka spiser du varm middag?**

**Hva slags type brød (kjøpt eller hjemmebakt) spiser du vanligvis? Inntil to kryss.**

Brødtypen ligner	Loff	Fint brød	Kneipp-brød	Grov-brød	Knekke-brød
mest på .....	<sup>178</sup> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Hva slags fett blir vanligvis brukt i din husholdning?**

Ett kryss for matlaging og ett kryss for brød

Til matlaging På brød

Bruker ikke smør eller margarin .....	<sup>183</sup> <input type="checkbox"/> 1	<sup>184</sup> <input type="checkbox"/> 1
Meierismør .....	<input type="checkbox"/> 2	<input type="checkbox"/> 2
Hard margarin .....	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Bløt (soft) margarin .....	<input type="checkbox"/> 4	<input type="checkbox"/> 4
Smør/margarin blanding .....	<input type="checkbox"/> 5	<input type="checkbox"/> 5
Lettmargarin .....	<input type="checkbox"/> 6	<input type="checkbox"/> 6
Oljer .....	<input type="checkbox"/> 7	<input type="checkbox"/> 7

## MEDISINBRUK

**Har du i deler av de siste 12 måneder brukt noen medisiner daglig eller nesten daglig?** ..... <sup>185</sup>  Ja  Nei

Hvis «Ja»:

**Angi hvor mange måneder du brukte følgende medisiner:** Sett 0 hvis du ikke har brukt medisinen

smertestillende .....	<sup>186</sup> <input type="checkbox"/>	hjertermedisin (ikke blodtrykksmedisin) .....	<input type="checkbox"/>
sovemedisin .....	<sup>188</sup> <input type="checkbox"/>	annen medisin .....	<input type="checkbox"/>
beroligende medisin .....	<input type="checkbox"/>	Kosttilskudd: .....	<input type="checkbox"/>
medisin mot depresjon .....	<input type="checkbox"/>	jernetabletter .....	<sup>202</sup> <input type="checkbox"/>
allergimedisin .....	<sup>194</sup> <input type="checkbox"/>	vitamintilskudd .....	<input type="checkbox"/>
astmamedisin .....	<sup>196</sup> <input type="checkbox"/>	tran/fiskeoljer .....	<sup>206</sup> <input type="checkbox"/>

**Hvor ofte har du brukt avslappende/beroligende medisin eller sovemedisin den siste måneden?** <sup>208</sup>

Daglig .....
 1 | Sjeldnere enn hver uke ..... | 3 |

Hver uke, men ikke hver dag .....
 2 | Aldri ..... | 4 |



## HODEPINE

Har du vært plaget av hodepine i løpet av de siste 12 måneder? <sup>209</sup>

- Ja, anfallsvis (migrene) .....  1  
 Ja, annen slags hodepine....  2  
 Nei .....  3

Antall anfall siste 12 mndr. <sup>210</sup>

Hvis «Nei»: Gå til MUSKEL-/SKJELETTPLAGER

Omtrent hvor mange dager i pr. måned har du hodepine? Mindre enn 7 dager  1 7 til 14 dager  2 Mer enn 14 d.  3

Hvor lenge varer hodepinen vanligvis hver gang? <sup>213</sup> Mindre enn 4 timer  1 4 timer–3 døgn  2 Mer enn 3 døgn  3

Hvor ofte er hodepinen preget av eller ledsaget av:

Ett kryss på hver linje	Sjelden eller aldri	Av og til	Ofta
bankende/dunkende smerte ..... <sup>214</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pressende smerte .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
halvsidighet, alltid samme side .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
halvsidighet, vekselvis h. og v. side	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
smarter i «hele hodet» .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
kvalme ..... <sup>219</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
lys- og/eller lydskyhet .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
forverring ved fysisk aktivitet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
synsforstyrrelser før hodepine ..... <sup>222</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvor mange tabletter/stikkpiller har du eventuelt brukt av disse medisinene alt i alt i løpet av den siste måneden?

Skriv 0 hvis du ikke har brukt medisinen.

Cafergot  <sup>223</sup> Anervan  <sup>225</sup> Imigran  <sup>227</sup>

## MUSKEL-/SKJELETTPLAGER

Har du hatt plager (smarter, verk, ubehag) i muskler og/eller ledd i den siste måneden? <sup>229</sup> Ja Nei

Hvis «Ja»: Hvor har du hatt disse plagene (ett eller flere kryss) og omtrent hvor mange dager tilsammen var du plaget?

Plager (Sett kryss)	Antall dager
Nakke ..... <sup>230</sup>	<input type="checkbox"/>
Skuldre/aksler ..... <sup>233</sup>	<input type="checkbox"/>
Øvre del av ryggen	<input type="checkbox"/>
Albuer ..... <sup>239</sup>	<input type="checkbox"/>
Korsryggen ..... <sup>242</sup>	<input type="checkbox"/>
Handledd/hender <sup>245</sup>	<input type="checkbox"/>
Hofter ..... <sup>248</sup>	<input type="checkbox"/>
Knær ..... <sup>251</sup>	<input type="checkbox"/>
Ankler/føtter ..... <sup>254</sup>	<input type="checkbox"/>

Dersom flere kryss: Sett ring rundt krysset der plagen var verst

Har plagene hindret deg i å utføre daglige aktiviteter den siste måneden? Ja Nei

I arbeidet ..... <sup>257</sup>    
 I fritida ..... <sup>258</sup>

## SMERTER I BEINA

Har du sår på tå, fot eller ankel som ikke vil gro? ..... <sup>259</sup> Ja Nei

Har du smerter i det ene eller i begge beina når du går? ..... <sup>260</sup>

Har du oppsøkt lege p.g.a. smerter i beina? ..... <sup>261</sup>

Hvis «NEI» på disse spørsmålene: Gå til URINVEGS...

Kan du gå lenger enn 50 meter? ..... <sup>262</sup> Ja Nei

Forsvinner smerten når du står stille en stund? <sup>263</sup>

Må du sette deg for at smerten skal gå over? <sup>264</sup>

Hvor gjør det mest vondt? Ett kryss <sup>265</sup>

Fot  Legg  Lår  Hofte

Ja Nei

Har du smerter i beina når du er i ro? ..... <sup>266</sup>

Er smertene verst når du ligger i senga? ..... <sup>267</sup>

Blir søvnen forstyrret av smertene? ..... <sup>268</sup>

Får du mindre vondt når beinet ligger høyt? ..... <sup>269</sup>

Får du mindre vondt når beinet ligger lavt, f.eks. om beinet henger utfor sengekanten? ..... <sup>270</sup>

Bedres smertene når du står opp og går litt? ..... <sup>271</sup>

## URINVEGS- OG PROSTATAPLAGER

Ett kryss på hver linje

Har du noen gang blitt fortalt av lege at du har: Ja Nei

forstørret prostata ..... <sup>272</sup>

prostatakrefte ..... <sup>273</sup>

Har du gjennomgått noe av følgende: Ja Nei

sterilisering ..... <sup>274</sup>

tatt vevsprøve (biopsi) av prostata ..... <sup>275</sup>

kirurgisk fjerning av prostata (heilt eller delvis) ..... <sup>276</sup>

## De neste spørsmålene gjelder siste måned

Bare ett kryss for hvert spørsmål

Hvor ofte har du hatt følelsen av at blæren ikke er blitt fullstendig tømt etter avsluttet vannlating? <sup>277</sup>

Aldri .....  1 Omtrent annenhver gang ...  4

Omtrent 1 av 5 ganger ...  2 Omtrent 2 av 3 ganger .....  5

Omtrent 1 av 3 ganger ...  3 Nesten alltid .....  6

Hvor ofte har du måttet late vannet på nytt mindre enn 2 timer etter forrige vannlating? <sup>278</sup>

Aldri .....  1 Omtrent annenhver gang ...  4

Omtrent 1 av 5 ganger ...  2 Omtrent 2 av 3 ganger .....  5

Omtrent 1 av 3 ganger ...  3 Nesten alltid .....  6

Hvor ofte har du måttet stoppe og starte flere ganger under vannlatingen? <sup>279</sup>

Aldri .....  1 Omtrent annenhver gang ...  4

Omtrent 1 av 5 ganger ...  2 Omtrent 2 av 3 ganger .....  5

Omtrent 1 av 3 ganger ...  3 Nesten alltid .....  6

Hvor ofte synes du det har vært vanskelig å holde igjen når du har følt trang til å late vannet? <sup>280</sup>

Aldri .....  1 Omtrent annenhver gang ...  4

Omtrent 1 av 5 ganger ...  2 Omtrent 2 av 3 ganger .....  5

Omtrent 1 av 3 ganger ...  3 Nesten alltid .....  6

Hvor ofte har du hatt svak urinstråle? <sup>281</sup>

Aldri .....  1 Omtrent annenhver gang ...  4

Omtrent 1 av 5 ganger ...  2 Omtrent 2 av 3 ganger .....  5

Omtrent 1 av 3 ganger ...  3 Nesten alltid .....  6

Hvor ofte har du måttet trykke eller presse for å begynne vannlatingen? <sup>282</sup>

Aldri .....  1 Omtrent annenhver gang ...  4

Omtrent 1 av 5 ganger ...  2 Omtrent 2 av 3 ganger .....  5

Omtrent 1 av 3 ganger ...  3 Nesten alltid .....  6

Hvor mange ganger har du vanligvis måttet stå opp i løpet av natta for å late vannet? <sup>283</sup>

Ingen .....  1 2 ganger .....  3 4 ganger .....  5

1 gang .....  2 3 ganger .....  4 5 ganger eller mer  6

Hvis du resten av livet måtte leve med de vannlatingprobleme du har nå, hvordan ville du føle det? <sup>284</sup>

Være meget godt fornøyd ...  1 Være for det meste utilfreds  5

Være fornøyd .....  2 Være misfornøyd .....  6

Være for det meste tilfreds.  3 Ha det forferdelig .....  7

Ha blandete følelser .....  4

## HUMØR OG TRIVSEL

Ett kryss på hver linje

**Angi hvordan du har følt deg den siste måneden:**

	Aldri	Noen ganger	Ganske ofte	For det meste
i godt humør ..... <sup>285</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i dårlig humør ..... <sup>286</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Er du rask til å oppfatte et humoristisk poeng?** <sup>287</sup>

	Svært treg	Ganske treg	Ganske rask	Svært rask
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Er du enig i at det er noe ansvarsløst over folk som stadig prøver å være morsomme?** <sup>288</sup>

Nei, slett ikke ..... <sup>1</sup>	Ganske enig ..... <sup>3</sup>
I noen grad ..... <sup>2</sup>	Ja, absolutt ..... <sup>4</sup>

**Er du en munter person?** <sup>289</sup>

Nei, slett ikke ..... <sup>1</sup>	Ganske munter ..... <sup>3</sup>
I noen grad ..... <sup>2</sup>	Ja, absolutt ..... <sup>4</sup>

## SINNE

Sett kryss på det svaret som best beskriver deg i forhold til de to påstandene nedenfor:

**Jeg gir uttrykk for mitt sinne, og andre mennesker vet at jeg er sint.** <sup>290</sup>

Nesten aldri ..... <sup>1</sup>	Ganske ofte ..... <sup>3</sup>
Noen ganger ..... <sup>2</sup>	Nesten alltid ..... <sup>4</sup>

**Jeg koker av sinne, men jeg viser det ikke til andre.** <sup>291</sup>

Nesten aldri ..... <sup>1</sup>	Ganske ofte ..... <sup>3</sup>
Noen ganger ..... <sup>2</sup>	Nesten alltid ..... <sup>4</sup>

## HVILE OG AVSLAPPING

**Hvor mange timer tilbringer du vanligvis i liggende stilling i løpet av et døgn?**

(nattesøvn, middagshvil) .....<sup>292</sup>

Antall timer

**Hvor mange timer tilbringer du vanligvis i sittende stilling i løpet av et døgn?**

(arbeid, måltider, TV, bil etc.) .....<sup>294</sup>

Antall timer

**Hvor ofte er du plaget av søvnløshet?** <sup>295</sup>

Aldri, eller noen få ganger i året ..... <sup>1</sup>	<input type="checkbox"/>
1-2 ganger i måneden ..... <sup>2</sup>	<input type="checkbox"/>
Omtrent 1 gang i uka ..... <sup>3</sup>	<input type="checkbox"/>
Mer enn en gang i uka ..... <sup>4</sup>	<input type="checkbox"/>

**Har du siste år vært plaget av søvnløshet slik at det har gått ut over arbeidsevnen?** .....<sup>297</sup>

Ja Nei

**Har du i løpet av siste måned hatt innsøvningsproblemer?** Bare ett kryss <sup>298</sup>

Nesten hver natt ..... <sup>1</sup>	Av og til ..... <sup>3</sup>
Ofte ..... <sup>2</sup>	Aldri ..... <sup>4</sup>

**Har du i løpet av siste måned våknet for tidlig og ikke fått sove igjen?** Bare ett kryss <sup>299</sup>

Nesten hver natt ..... <sup>1</sup>	Av og til ..... <sup>3</sup>
Ofte ..... <sup>2</sup>	Aldri ..... <sup>4</sup>

**Har du i løpet av siste måned vært plaget av nervøsitet (irritabel, urolig, anspent eller rastløs)?** <sup>300</sup>

Nesten hele tida ..... <sup>1</sup>	<input type="checkbox"/>
Ofte ..... <sup>2</sup>	<input type="checkbox"/>
Av og til ..... <sup>3</sup>	<input type="checkbox"/>
Aldri ..... <sup>4</sup>	<input type="checkbox"/>

## HVORDAN DU HAR HATT DET

**Har det noen gang i løpet av ditt liv vært sammenhengende perioder på 2 uker eller mer da du:**

følte deg deprimert, trist og nedfor ..... <sup>301</sup>	Ja	Nei
hadde problemer med matlysten eller spiste alt for lite .....	<input type="checkbox"/>	<input type="checkbox"/>
var plaget av kraftløshet eller mangel på overskudd	<input type="checkbox"/>	<input type="checkbox"/>
virkelig bebreidet deg selv og følte deg verdiløs ...	<input type="checkbox"/>	<input type="checkbox"/>
hadde problemer med å konsentrere deg eller vanskelig for å ta beslutninger .....	<input type="checkbox"/>	<input type="checkbox"/>
hadde minst tre av de problemene som er nevnt ovenfor samtidig..... <sup>306</sup>	<input type="checkbox"/>	<input type="checkbox"/>

## HVORDAN DU SER PÅ DEG SELV

Folk ser på seg selv på ulike måter. Kryss av for hvert utsagn hvor enig eller uenig du er. Ett kryss på hver linje

Svært enig Enig Uenig Svært uenig

**Jeg har en positiv holdning til meg selv** .....<sup>307</sup>

**Jeg føler meg virkelig ubrukelig til tider** .....<sup>308</sup>

**Jeg føler at jeg ikke har mye å være stolt av** .....<sup>309</sup>

**Jeg føler at jeg er en verdifull person, i allefall på lik linje med andre** .....<sup>310</sup>

**Synes du at du har funnet et virkelig betydningsfullt innhold i livet ditt?** .....<sup>311</sup>

**Føler du at du lever fullt ut?** .....<sup>312</sup>

## HVORDAN DU FØLER DEG NA

Sett kryss i den ruta utenfor det svaret som best beskriver dine følelser den siste uka. Bare ett kryss

**Er du vanligvis glad eller nedstemt?** <sup>313</sup>

Svært nedstemt .....	<input type="checkbox"/>	1
Nedstemt .....	<input type="checkbox"/>	2
Nokså nedstemt .....	<input type="checkbox"/>	3
Både – og .....	<input type="checkbox"/>	4
Nokså glad .....	<input type="checkbox"/>	5
Glad .....	<input type="checkbox"/>	6
Svært glad .....	<input type="checkbox"/>	7

**Har du i det store og hele en rolig og god følelse inne i deg?** <sup>314</sup>

Nesten hele tida .....	<input type="checkbox"/>	1
Ofte .....	<input type="checkbox"/>	2
Av og til .....	<input type="checkbox"/>	3
Aldri .....	<input type="checkbox"/>	4

**Føler du deg stort sett sterk og opplagt, eller trøtt og sliten?** <sup>315</sup>

Meget sterk og opplagt .....	<input type="checkbox"/>	1
Sterk og opplagt .....	<input type="checkbox"/>	2
Ganske sterk og opplagt .....	<input type="checkbox"/>	3
Både – og .....	<input type="checkbox"/>	4
Ganske trøtt og sliten .....	<input type="checkbox"/>	5
Trøtt og sliten .....	<input type="checkbox"/>	6
Svært trøtt og sliten .....	<input type="checkbox"/>	7

*Legg det utfylte spørreskjemaet i den vedlagte svarbrevkollitten og postlegg den så snart som mulig!  
Porto er betalt.*

*Hjertelig takk for hjelpa!*

# Appendix IV

Questionnaires 1 and 2 from HUNT3



# Invitasjon til HUNT 3

Viktig  
Enkelt  
Gratis

Du inviteres herved til å delta i den tredje store Helseundersøkelsen i Nord-Trøndelag (HUNT 3). Ved å delta får du en enkel undersøkelse av din egen helse, og du gir samtidig et viktig bidrag til medisinsk forskning.

Hver deltaker er like viktig, enten du er ung eller gammel, frisk eller syk, er HUNT-veteran eller møter for første gang. Tilsvarende undersøkelse er tidligere gjennomført i 1984-86 (HUNT 1) og 1995-97 (HUNT 2 og Ung-HUNT). For å kunne studere årsaker til sykdom, er det viktig at også de som tidligere har deltatt møter fram.

**Vennligst fyll ut spørreskjemaet, og ta det med når du møter til undersøkelse.**


Undersøkelsen tar vanligvis ca 1/2 time. Du vil få brev med resultater fra dine prøver etter noen uker. Dersom noen av resultatene er utenom det normale, vil du bli anbefalt undersøkelse hos fastlegen din.


Du kan lese mer om HUNT 3 i den vedlagte brosjyren eller på [www.hunt.ntnu.no](http://www.hunt.ntnu.no). Har du spørsmål, kan du også ringe til HUNT forskningssenter, tlf 74075180.

## Vel møtt til undersøkelsen!

Vennlig hilsen

  
Steinar Krokstad  
Førsteamanuensis  
Prosjektleder HUNT 3

  
Jostein Holmen  
Professor, daglig leder  
HUNT forskningssenter

  
Stig A. Slørdahl  
Professor, dekanus  
Det medisinske fakultet, NTNU

## Tid og sted for oppmøte

Dersom det foreslåtte tidspunktet ikke passer for deg, behøver du ikke bestille ny time. Du kan møte når det passer deg innenfor åpningstiden, men det kan da bli noe ventetid. Du kan også møte i en annen kommune, hvis det skulle passe bedre. Takk for at du deltar!

Åpningstida:

 **hunt 3**  
Helseundersøkelsen i Nord-Trøndelag

 **NTNU**

HUNT forskningssenter



En time for bedre folkehelse

## Slik fyller du ut skjemaet

- Skjemaet vil bli lest maskinelt.
- Det er derfor viktig at du krysser av riktig: Rett  Galt
- Krysser du feil sted, retter du ved å fylle boksen slik:
- Skriv tydelige tall: 0 1 2 3 4 5 6 7 8 9
- Bruk bare svart eller blå penn. Ikke bruk blyant eller tusj.

## HELSE OG DAGLIGLIV

- 1 Hvordan er helsa di nå?
- Dårlig  Ikke helt god  God  Svært god
- 
- 2 Har du noen langvarig (minst 1 år) sykdom, skade eller lidelse av fysisk eller psykisk art som nedsetter dine funksjoner i ditt daglige liv?
- Ja  Nei

### Hvis ja:

Hvor mye vil du si at dine funksjoner er nedsatt?

	Litt nedsatt	Middels nedsatt	Mye nedsatt
Er bevegelseshemmet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har nedsatt syn .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har nedsatt hørsel .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hemmet pga. kroppslig sykdom.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hemmet pga. psykisk sykdom.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 3 Har du kroppslige smerter nå som har vart mer enn 6 måneder?
- Ja  Nei
- 
- 4 Hvor sterke kroppslige smerter har du hatt i løpet av de siste 4 uker?

Ingen	Meget svake	Svake	Mode-rate	Sterke	Meget sterke
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 5 I hvilken grad har din fysiske helse eller følelsesmessige problemer begrenset deg i din vanlige sosiale omgang med familie eller venner i løpet av de siste 4 uker?

Ikke i det hele tatt	En del	Litt	Mye	Kunne ikke ha sosial omgang
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## HELSETJENESTER

- 6 Har du i løpet av de siste 12 måneder vært hos:
- |  | Ja                       | Nei                      |
|--|--------------------------|--------------------------|
| Fastlege/allmennlege .....   | <input type="checkbox"/> | <input type="checkbox"/> |
| Annen legespesialist utenfor sykehus .....   | <input type="checkbox"/> | <input type="checkbox"/> |
| Konsultasjon uten innleggelse  |                          |                          |
| - ved psykiatrisk poliklinikk.....   | <input type="checkbox"/> | <input type="checkbox"/> |
| - ved annen poliklinikk i sykehus .....  | <input type="checkbox"/> | <input type="checkbox"/> |
| Kiropraktor .....  | <input type="checkbox"/> | <input type="checkbox"/> |
| Homøopat, akupunktør, soneterapeut, håndspålegger eller annen alternativ behandler ... | <input type="checkbox"/> | <input type="checkbox"/> |
- 
- 7 Har du vært innlagt i sykehus i løpet av de siste 12 måneder?
- Ja  Nei

## SYKDOMMER OG PLAGER

- 8 Har du hatt noe anfall med pipende eller tung pust de siste 12 måneder?
- Ja  Nei
- 
- 9 Har du noen gang de siste 5 år brukt medisiner for astma, kronisk bronkitt, emfysem eller KOLS?
- Ja  Nei
- 
- 10 Bruker du, eller har du brukt, medisin mot høyt blodtrykk?
- Ja  Nei
- 
- 11 Har du, eller har du noen gang hatt, noen av disse sykdommene/plagene: (Sett ett kryss pr. linje)
- Hvis ja, hvor gammel var du første gang?  
Eksempel:  år gammel
- |   | Ja                       | Nei                      |   |
|---|--------------------------|--------------------------|---|
| Hjerteinfarkt .....                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Angina pectoris (hjertekrampe) ...              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Hjertesvikt .....                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Annen hjertesykdom .....                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Hjerneslag/hjerneblødning .....                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Nyresykdom .....                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Astma .....                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Kronisk bronkitt, emfysem, KOLS                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Diabetes (sukkersyke).....                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Psoriasis.....                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Eksem på hendene .....                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Kreftsykdom .....                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Epilepsi.....                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Leddgikt (reumatoid artritt).....               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Bechterews sykdom .....                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Sarkoidose .....                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Beinskjørhet (osteoporose) .....                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Fibromyalgi.....                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Slitasjegikt (artrose).....                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
| Psykiske plager som du har søkt hjelp for ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value=""/> år gammel |
- 
- 12 Har du noen gang fått påvist for høyt blodsukker?
- Ja  Nei

**Hvis ja:** I hvilken situasjon første gang?

- Ved helseundersøkelse...  Under sykdom .....
- Under svangerskap .....
- Annet.....

## SKADER

13 Har du noen gang hatt:

Hvis ja, hvor gammel var du **første** gang?

Eksempel:

år gammel

	Ja	Nei	År gammel
Lårhalsbrudd .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Brudd i handledd/underarm ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Brudd/sammenfall av ryggvirvler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Nakkesleng (whiplash).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

14 Har du foreldre, søsken eller barn som har, eller har hatt, følgende sykdommer?

(Sett ett kryss pr. linje)

	Ja	Nei	Vet ikke
Hjerneslag eller hjerneblødning før 60 års alder.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hjerteinfarkt før 60-års alder .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Astma.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allergi/høysnue/neseallergi.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kronisk bronkitt/emfysem/KOLS.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kreftsykdom .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psykiske plager .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beinskjørhet (osteoporose).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nyresykdom (ikke nyresten, urinveisinfeksjon, urinlekkasje) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diabetes (sukkersyke).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15 Har noen av dine besteforeldre, dine foreldres søsken eller dine søskenbarn fått diagnosen diabetes (type 1 eller type 2)?

Ja  Nei

## HVORDAN FØLER DU DEG?

16 Har du de to siste uker følt deg:

(Sett ett kryss pr. linje)

	Nei	Litt	En god del	Svært mye
Trygg og rolig?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glad og optimistisk? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervøs og urolig?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plaget av angst? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irritabel?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nedfor/deprimert?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensom?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17 Har du noen gang i livet opplevd at noen over lengre tid har forsøkt å kve, fornedre eller ydmyke deg?

Ja  Nei

## TOBAKK

18 Røykte noen av de voksne innendørs da du vokste opp? Ja  Nei

19 Røykte mora di da du vokste opp? Ja  Nei

20 Røyker du selv?

Nei, jeg har aldri røykt.....

Hvis du aldri har røykt, hopp til spørsmål 22.

Nei, jeg har sluttet å røyke.....

Ja, sigaretter av og til (fest/ferie, ikke daglig).....

Ja, sigarer/sigarillos/pipe av og til.....

Ja, sigaretter daglig.....

Ja, sigarer/sigarillos/pipe daglig.....

21 Svar på dette hvis du nå røyker daglig eller tidligere har røykt daglig:

Hvor mange sigaretter røyker eller røykte du vanligvis daglig?  sigaretter pr. dag

Hvor gammel var du da du begynte å røyke daglig?  år gammel

Hvis du tidligere har røykt daglig, hvor gammel var du da du sluttet?  år gammel

21 Svar på dette hvis du røyker eller har røykt av og til, men ikke daglig:

Hvor mange sigaretter røyker eller røykte du vanligvis i måneden?  sigaretter pr. mnd

Hvor gammel var du da du begynte å røyke av og til?  år gammel

Hvis du tidligere har røykt av og til, hvor gammel var du da du sluttet?  år gammel

22 Bruker du, eller har du brukt, snus?

Nei, aldri.....  Ja, av og til.....

Ja, men jeg har sluttet....  Ja, daglig.....

Hvis du aldri har brukt snus, hopp til spørsmål 23.

**Hvis ja:**

Hvor gammel var du da du begynte med snus?  år gammel

Hvor mange esker snus bruker/brakte du pr. måned?  esker snus pr. måned



23 Hvis du bruker eller har brukt både sigaretter og snus, hva begynte du med først?

Snus.....  Sigaretter.....   
 Omtrent samtidig .....  Husker ikke.....   
 (innenfor 3 måneder)

Da du begynte å bruke snus, var det for å prøve å slutte å røyke eller for å redusere røykinga?

Nei.....  Ja, for å  
 Ja, for å slutte å røyke .....  redusere røykinga.....

## MATVARER

25 Hvor ofte spiser du vanligvis disse matvarene?

(Sett ett kryss pr. linje)

	0-3 ganger pr. mnd.	1-3 ganger pr. uke	4-6 ganger pr. uke	1 gang pr. dag	2 ggr el mer pr. dag
Frukt/bær.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grønnsaker.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sjokolade/smågodt....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kokte poteter.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pasta/ris.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pølser/hamburgere.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fet fisk ..... (laks, ørret, sild, makrell, uer som pålegg/middag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24 Bruker du følgende kosttilskudd?

(Sett ett kryss for hvert kosttilskudd)

	Ja, daglig	Av og til	Nei
Tran .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Omega-3-kapsler.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vitamin- og/eller mineraltilskudd.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26 Hvor mange glass drikker du vanligvis av følgende?  
 1/2 liter = 3 glass (Sett ett kryss pr. linje)

	Sjelden eller aldri	1-6 gl. pr. uke	1 gl. pr. dag	2-3 gl. pr. dag	4 gl. eller mer pr. dag
Vann, farris o.l.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helmelk (søt/sur).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Annen melk (søt/sur)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brus/saft med sukker....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brus/saft uten sukker....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Juice eller nektar .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26 Hvor mange kopper kaffe/te drikker du pr. døgn?  
 (Sett 0 dersom du ikke drikker kaffe/te daglig)

	Koke- kaffe	Annen kaffe	Te
Antall kopper	<input type="text"/>	<input type="text"/>	<input type="text"/>

27 Hvor mange kopper kaffe drikker du om kvelden (etter kl 18)?

Antall kopper

## ALKOHOLBRUK

28 Omtrent hvor ofte har du i løpet av de siste 12 måneder drukket alkohol? (Regn ikke med lettøl)

4-7 ganger pr. uke.....  Ca 1 gang pr. måned..   
 2-3 ganger pr. uke.....  Noen få ganger pr. år.   
 ca 1 gang pr. uke .....  Ingen ganger siste år..   
 2-3 ganger pr. måned.....  Aldri drukket alkohol...

29 Har du drukket alkohol i løpet av de siste 4 uker? Ja Nei

Hvis ja:

Har du drukket så mye at du har kjent deg sterkt beruset (full)? Nei.....   
 Ja, 1-2 ganger .....   
 Ja, 3 ganger eller mer

30 Hvor mange glass øl, vin eller brennevin drikker du vanligvis i løpet av 2 uker? (Regn ikke med lettøl)  
 (Sett 0 hvis du ikke drikker alkohol)

	Øl	Vin	Brenne- vin
Antall glass	<input type="text"/>	<input type="text"/>	<input type="text"/>

31 Hvor ofte drikker du 5 glass eller mer av øl, vin eller brennevin ved samme anledning?

Aldri.....  Ukentlig.....   
 Månedlig.....  Daglig.....

## MOSJON/FYSISK AKTIVITET

Med mosjon mener vi at du f.eks går tur, går på ski, svømmer eller driver trening/idrett.

32 Hvor ofte driver du mosjon? (Ta et gjennomsnitt)

Aldri.....   
 Sjeldnere enn en gang i uka.....   
 En gang i uka.....   
 2-3 ganger i uka.....   
 Omtrent hver dag.....

33 Dersom du driver slik mosjon, så ofte som en eller flere ganger i uka; hvor hardt mosjonerer du?  
 (Ta et gjennomsnitt)

Tar det rolig uten å bli andpusten eller svett.....   
 Tar det så hardt at jeg blir andpusten og svett.....   
 Tar meg nesten helt ut.....

34 Hvor lenge holder du på hver gang?  
 (Ta et gjennomsnitt)

Mindre enn 15 minutter..  30 minutter – 1 time....   
 15-29 minutter.....  Mer enn 1 time.....

35 Har du vanligvis minst 30 minutter fysisk aktivitet daglig på arbeid og/eller i fritida? Ja  Nei

36 Omtrent hvor mange timer sitter du i ro på en vanlig hverdag? (Regn med både jobb og fritid) Antall timer

### ARBEID

37 Hvis du er i lønnet eller ulønnet arbeid, hvordan vil du beskrive arbeidet ditt? (Sett ett kryss)

For det meste stillesittende arbeid (f.eks skrivebordsarbeid, montering)

Arbeid som krever at du går mye (f.eks ekspeditørarbeid, lett industriarb., undervisning)

Arbeid hvor du går og løfter mye (f.eks postbud, pleier, bygningsarbeid)

Tungt kroppsarbeid (f.eks skogsarbeid, tungt jordbruksarbeid, tungt bygningsarbeid)

### HØYDE/VEKT

38 Omtrent hva var din høyde da du var 18 år?  cm Husker ikke

39 Omtrent hva var din kroppsvekt da du var 18 år?  kg Husker ikke

40 Er du fornøyd med vekta di nå? Ja  Nei, for lett  Nei, for tung

41 Har du forsøkt å slanke deg i løpet av de siste 10 år? Nei  Ja, noen ganger  Ja, mange ganger

42 Er din kroppsvekt minst 2 kg lavere nå enn for 1 år siden? Ja  Nei

#### Hvis ja:

Hva er grunnen til dette?

Slanking  Sykdom/stress  Vet ikke

### ALVORLIGE LIVSHENDELSER SISTE 12 MÅNEDER

43 Har det vært dødsfall i nær familie? (barn, ektefelle/samboer, søsken eller foreldre) Ja  Nei

44 Har du vært i overhengende livsfare pga. alvorlig ulykke, katastrofe, voldssituasjon eller krig? Ja  Nei

45 Har du hatt samlivsbrudd i ekteskap eller i lengre samboerforhold? Ja  Nei

46 Hvis du har svart ja på et eller flere av spm 43, 44 eller 45; i hvilken grad har du hatt reaksjoner på dette de siste 7 dager?

Ikke i det hele tatt  I moderat grad

Litt  I høy grad

### OPPVEKST - DA DU VAR 0-18 ÅR

47 Hvem vokste du opp sammen med?

Mor  Andre slektninger

Far  Adoptivforeldre

Stemor/stefar  Foster-/pleieforeldre

48 Ble dine foreldre skilt, eller flyttet de fra hverandre, da du var barn? Nei   
Ja, før jeg var 7 år   
Ja, da jeg var 7-18 år

49 Døde noen av dine foreldre da du var barn? Nei   
Ja, før jeg var 7 år   
Ja, da jeg var 7-18 år

50 Vokste du opp med kjæledyr? Nei   
Ja, katt  Ja, hund   
Ja, hest  Ja, annet levende dyr

51 Hvor mye melk eller yoghurt drakk du vanligvis?

Sjelden/aldri  1-6 gl. pr. uke  1 glass pr. dag  2-3 gl. pr. dag  Mer enn 3 glass pr. dag

52 Vokste du opp på gård med husdyr? Ja  Nei

53 Når du tenker på barndommen/oppveksten din, vil du beskrive den som:

Svært god  Vanskelig

God  Svært vanskelig

Middels

### ALT I ALT

54 Når du tenker på hvordan du har det for tida, er du stort sett fornøyd med tilværelsen eller er du stort sett misfornøyd? (Sett ett kryss)

Svært fornøyd  Nokså misfornøyd

Meget fornøyd  Meget misfornøyd

Ganske fornøyd  Svært misfornøyd

Både/og

## Kjære HUNT-deltaker

Takk for at du møtte til Helseundersøkelsen. Vi vil også be deg om å fylle ut dette spørreskjemaet. Noen av spørsmålene likner de som du har svart på før, men det er viktig at du allikevel besvarer alt. Opplysningene blir brukt til forskning og forebyggende helsearbeid. Forskere vil kun ha tilgang til avidentifiserte data, det vil si at opplysningene ikke kan spores tilbake til en enkeltperson.

## Slik fyller du ut skjemaet

- Skjemaet vil bli lest maskinelt.
- Det er derfor viktig at du krysser av riktig: Rett  Galt
- Krysser du feil sted, retter du ved å fylle boksen slik:
- Skriv tydelige tall: 0 1 2 3 4 5 6 7 8 9
- Bruk bare svart eller blå penn. Ikke bruk blyant eller tusj.

**Dato for utfylling:**  /  20   
Dag Måned År

**Vennligst fyll ut skjemaet, og post det snarest mulig. Porto er betalt.**



Menn 30-69 år

En time for bedre folkehelse

### BOLIGFORHOLD OG VENNER

1 Hvem bor du sammen med?  
(Sett ett eller flere kryss)

Ingen .....  Andre personer over 18 år   
Foreldre .....  Personer under 18 år.....   
Ektefelle/samboer.....  Antall under 18 år ..

2 Er det kjæledyr i boligen?

Ja, katt .....   
Nei.....  Ja, hund.....   
Ja, andre pelsdyr/fugl.....

3 Har du venner som kan gi deg hjelp når du trenger det? Ja  Nei

4 Har du venner som du kan snakke fortrolig med? Ja  Nei

### DITT NÆRMILJØ, DVS. NABOLAGET/GRENDA

5 Jeg føler et sterkt fellesskap med de som bor her  
(Sett ett kryss)

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

6 Man kan ikke stole på hverandre her (Sett ett kryss)

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

7 Folk trives godt her (Sett ett kryss)

Helt enig  Delvis enig  Usikker  Delvis uenig  Helt uenig

## AKTIVITET

- 8 Hvordan har din fysiske aktivitet i fritida vært det siste året? (Tenk deg et ukentlig gjennomsnitt for året. Arbeidsvei regnes som fritid.)

	Timer pr. uke			
	Ingen	Under 1	1-2	3 el. mer
Lett aktivitet ..... (ikke svett/andpusten)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hard fysisk aktivitet ..... (svett/andpusten)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 9 Hvor lang tid bruker du til sammen daglig foran dataskjerm? (Sett 0 hvis du ikke bruker data)

I arbeid  timer I fritid  timer

- 10 Hvor mange timer ser du på TV/video/DVD daglig?

Mindre enn 1 time .....  4-6 timer .....   
1-3 timer .....  Mer enn 6 timer .....

## KULTUR/LIVSSYNN

- 11 Hvor mange ganger har du i løpet av de siste 6 måneder vært på/i: (Sett ett kryss pr. linje)

	Mer enn 3g /mnd	1-3g /mnd	1-6g siste 6 mnd	Aldri
	Museum, kunstutstilling.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Konsert, teater, kino.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kirke, bedehus .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Idrettsarrangement.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 12 Hvor mange ganger har du i løpet av de siste 6 måneder selv drevet med: (Sett ett kryss pr. linje)

	Mer enn 1g /uke	1g /uke	1-3g /mnd	1-5g siste 6 mnd	Ingen gang
	Foreningsvirksomhet ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Musikk, sang, teater.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Menighetsarbeid.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friluftsliv .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dans .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trening, idrett.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 13 Hvilket livssyn vil du si ligger nærmest opp til ditt eget? (Sett ett kryss)

Kristent livssyn .....  Ateistisk livssyn .....   
Humanetisk livssyn .....  Annet livssyn .....

- 14 Når det skjer vonde ting i livet mitt, tenker jeg: "det er ei mening med det".

Ja.....  Nei .....  Vet ikke.....

- 15 Jeg søker hjelp hos Gud når jeg trenger styrke og trøst.

Aldri .....  Av og til .....  Ofte .....

## PERSONLIGHET

- 16 Beskriv deg selv slik du vanligvis er: Ja Nei

Klarer du å få fart i et selskap? .....	<input type="checkbox"/>	<input type="checkbox"/>
Er du stort sett stille og tilbakeholden når du er sammen med andre?.....	<input type="checkbox"/>	<input type="checkbox"/>
Liker du å treffe nye mennesker? .....	<input type="checkbox"/>	<input type="checkbox"/>
Liker du å ha masse liv og røre rundt deg?.....	<input type="checkbox"/>	<input type="checkbox"/>
Er du forholdsvis livlig?.....	<input type="checkbox"/>	<input type="checkbox"/>
Tar du vanligvis selv initiativet for å få nye venner?.....	<input type="checkbox"/>	<input type="checkbox"/>
Er du ofte bekymret?.....	<input type="checkbox"/>	<input type="checkbox"/>
Blir dine følelser lett sårte? .....	<input type="checkbox"/>	<input type="checkbox"/>
Hender det ofte at du "går trøtt"? .....	<input type="checkbox"/>	<input type="checkbox"/>
Plages du av "nerver"? .....	<input type="checkbox"/>	<input type="checkbox"/>
Har du ofte følt deg trøtt og likeglad uten grunn?.....	<input type="checkbox"/>	<input type="checkbox"/>
Bekymrer du deg for at fryktelige ting kan skje?.....	<input type="checkbox"/>	<input type="checkbox"/>

## HODEPINE

- 17 Har du vært plaget av hodepine det siste året? Ja Nei

Hvis nei, gå til spørsmål 24.  
Hvis ja: Migrene.....   
Hva slags hodepine: Annen hodepine.....

- 18 Omtrent antall dager pr. måned med hodepine:

Mindre enn 1 dag .....  7-14 dager.....   
1-6 dager .....  Mer enn 14 dager.....

- 19 Hvor sterk er hodepina vanligvis?

Mild (hemmer ikke aktivitet) .....   
Moderat (hemmer aktivitet) .....   
Sterk (forhindrer aktivitet).....

- 20 Hvor lenge varer hodepina vanligvis?

Mindre enn 4 timer .....  1-3 døgn.....   
4 timer – 1 døgn.....  Mer enn 3 døgn.....

- 21 Er hodepina vanligvis preget av eller ledsaget av: (Sett ett kryss pr. linje)

	Ja	Nei
Bankende/dunkende smerte? .....	<input type="checkbox"/>	<input type="checkbox"/>
Pressende smerte?.....	<input type="checkbox"/>	<input type="checkbox"/>
Ensidig smerte (høyre eller venstre)? .....	<input type="checkbox"/>	<input type="checkbox"/>
Forverring ved moderat fysisk aktivitet? .....	<input type="checkbox"/>	<input type="checkbox"/>
Kvalme og/eller oppkast?.....	<input type="checkbox"/>	<input type="checkbox"/>
Lys- og lydskjyhet?.....	<input type="checkbox"/>	<input type="checkbox"/>

- 22 Før eller under hodepina; kan du ha forbigående: (Sett ett kryss pr. linje)

Ja Nei  
Synsforstyrrelse? (takkede linjer, flimring, tåkesyn, lysglimt)    
Nummenhet i halve ansiktet eller i handa?.....

- 23 Angi hvor mange dager du har vært borte fra arbeid eller skole siste måned på grunn av hodepine:  dager

## LUFTVEIER

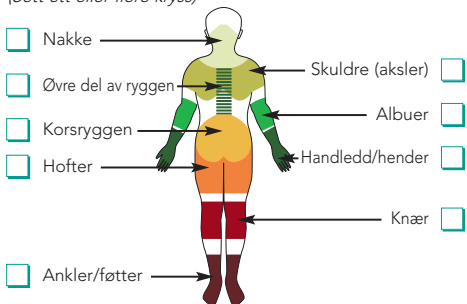
- 24 Hoster du daglig i perioder av året?  Ja  Nei  
**Hvis ja:**  Ja  Nei  
 Er hosten vanligvis ledsaget av oppspytt?
- Har du hatt hoste med oppspytt, i minst 3 måneder, sammenhengende i hvert av de to siste åra?  Ja  Nei
- 
- 25 Har du, eller har du hatt, høysnue eller neseallergi?  Ja  Nei  
**Hvis ja:**  Ja  Nei  
 Har du hatt slike plager i løpet av de siste 12 måneder?
- 
- 26 Har du i løpet av de siste 12 måneder blitt vekket av anfall med tung pust?  Ja  Nei

## MUSKLER OG LEDD

- 27 Har du i løpet av det siste året vært plaget med smerter og/eller stivhet i muskler og ledd, som har vart i minst 3 måneder sammenhengende?  Ja  Nei  
*Hvis nei, gå til spørsmål 30.*

### Hvis ja:

Hvor har du hatt disse plagene?  
 (Sett ett eller flere kryss)



- 28 Har du vært plaget både i høyre og venstre kroppshalvdel?  Ja  Nei
- 
- 29 Har plagene hindret deg i å utføre daglige aktiviteter?  
 I arbeid .....  Ja  Nei  
 I fritid .....
- 
- 30 Er du operert for ryggplager?  Ja  Nei  
**Hvis ja:** Hvilken type operasjon?  
 Prolaps/ischias-operasjon  Annet .....   
 Avstivning .....

## STOFFSKIFTE

- 31 Har du noen gang fått påvist for lavt stoffskifte (hypothyreose)?  Ja  Nei  
 Hvis ja, hvor gammel var du **første** gang?  
 Eksempel:   år gammel
- 
- 32 Har du noen gang fått påvist for høyt stoffskifte (hypertyreose)?  Ja  Nei  
 Hvis ja, hvor gammel var du **første** gang?  
 Eksempel:   år gammel
- Hvis ja:**  
 Har du brukt Neo-Mercazole?   år gammel  
 Har du fått radiojodbehandling?   år gammel

## MAGE OG TARM

- 33 Har du vært plaget med smerter eller ubehag fra magen de siste 12 måneder?  
 Ja, mye...  Ja, litt...  Nei, aldri...   
*Hvis nei, gå til spørsmål 34.*
- Hvis ja:**  Ja  Nei  
 Er disse lokalisert øverst i magen? .....    
 Har du de siste 3 måneder hatt disse plagene så ofte som 1 dag i uka i minst 3 uker? .....    
 Bli smertene eller ubehaget bedre etter at du har hatt avføring? .....    
 Har smertene eller ubehaget noen sammenheng med hyppigere eller sjeldnere avføring enn vanlig? .....    
 Har smertene eller ubehaget noen sammenheng med at avføringen blir løsere eller fastere enn vanlig? .....    
 Kommer smertene eller ubehaget etter måltid?

- 34 I hvilken grad har du hatt følgende plager i de siste 12 måneder?
- |                                   | Aldri                    | Litt                     | Mye                      |
|-----------------------------------|--------------------------|--------------------------|--------------------------|
| Kvalme .....                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Halsbrann/sure oppstøt .....      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Diaré .....                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Treg mage .....                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Vekslende treg mage og diaré..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Oppblåsthet.....                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## HVORDAN FØLER DU DEG

Her kommer noen utsagn om hvordan du føler deg. For hvert spørsmål setter du kryss for ett av de fire svarene som best beskriver dine følelser den siste uken. Ikke tenk for lenge på svaret – de spontane svarene er best.

- 35** Jeg føler meg nervøs og urolig
- Nei.....  En god del.....   
 Litt.....  Svært mye.....
- 36** Jeg gleder meg fortsatt over ting slik jeg pleide før
- Avgjort like mye .....  Bare lite grann.....   
 Ikke fullt så mye .....  Ikke i det hele tatt .....
- 37** Jeg har en urofølelse som om noe forferdelig vil skje
- Ja, og noe svært ille .....  Litt, bekymrer meg lite   
 Ja, ikke så veldig ille.....  Ikke i det hele tatt .....
- 38** Jeg kan le og se det morsomme i situasjoner
- Like mye nå som før .....  Avgjort ikke som før....   
 Ikke like mye nå som før.  Ikke i det hele tatt .....
- 39** Jeg har hodet fullt av bekymringer
- Veldig ofte .....  Av og til.....   
 Ganske ofte .....  En gang i blant .....
- 40** Jeg er i godt humør
- Aldri.....  Ganske ofte.....   
 Noen ganger.....  For det meste .....
- 41** Jeg kan sitte i fred og ro og kjenne meg avslappet
- Ja, helt klart.....  Ikke så ofte.....   
 Vanligvis .....  Ikke i det hele tatt .....
- 42** Jeg føler meg som om alt går langsommere
- Nesten hele tiden .....  Fra tid til annen .....   
 Svært ofte .....  Ikke i det hele tatt .....
- 43** Jeg føler meg urolig som om jeg har sommerfugler i magen
- Ikke i det hele tatt.....  Ganske ofte.....   
 Fra tid til annen.....  Svært ofte.....
- 44** Jeg bryr meg ikke lenger om hvordan jeg ser ut
- Ja, har sluttet å bry meg  Kan hende ikke nok   
 Ikke som jeg burde.....  Bryr meg som før .....
- 45** Jeg er rastløs som om jeg stadig må være aktiv
- Uten tvil svært mye .....  Ikke så veldig mye .....   
 Ganske mye.....  Ikke i det hele tatt .....

## T

- 46** Jeg ser med glede fram til hendelser og ting
- Like mye som før .....  Avgjort mindre enn før   
 Heller mindre enn før ....  Nesten ikke i hele tatt.
- 47** Jeg kan plutselig få en følelse av panikk
- Uten tvil svært ofte .....  Ikke så veldig ofte .....   
 Ganske ofte .....  Ikke i det hele tatt .....
- 48** Jeg kan glede meg over gode bøker, radio/TV
- Ofte .....  Ikke så ofte.....   
 Fra tid til annen.....  Svært sjelden .....

## SØVN

- 49** Hvor ofte har det hendt i løpet av de siste 3 måneder at du:
- |  | Aldri/<br>sjelden        | Av<br>og til             | Flere<br>ggr/<br>uka     |
|--|--------------------------|--------------------------|--------------------------|
| Snorker høyt og sjenerende? .....            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Får pustestopp når du sover? .....           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Har vanskelig for å sovne om kvelden?...     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Våkner gjentatte ganger om natta?.....       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Våkner for tidlig og får ikke sove igjen?... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Kjenner deg søvni om dagen?.....             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Har plagsom nattesvette? .....               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Våkner med hodepine?.....                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Får ubehag, kribling eller mauring i bein?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## ALKOHOL

Hvis du ikke drikker alkohol, gå til spørsmål 54.

- 50** Har du noen gang følt at du burde redusere alkoholforbruket ditt? Ja Nei
- 
- 51** Har andre noen gang kritisert alkoholbruken din? Ja Nei
- 
- 52** Har du noen gang følt ubehag eller skyldfølelse pga. alkoholbruken din? Ja Nei
- 
- 53** Har det å ta en drink noen gang vært det første du har gjort om morgenen for å roe nervene, kurere bakrus eller som en oppkvikker? Ja Nei
-

## KOSTHOLD

54 Hvor mange skiver brød spiser du vanligvis?  
(Sett ett kryss for hver type brød)

	0-4 /uke	5-7 /uke	2-3 /dag	4-5 /dag	6 el flere /dag
Løff/fint brød .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kneipp/mellomgrovt .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grovt brød .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

55 Hvor ofte spiser du vanligvis disse måltidene?  
(Sett ett kryss pr. måltid)

	Sjelden /aldri	1-2 g /uke	3-4 g /uke	5-6 g /uke	Hver dag
Frokost .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Formiddagsmat .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Varm middag .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kveldsmat .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Annet måltid .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nattmat (kl 24-06) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

56 Hva slags fett bruker du oftest?  
(Sett ett kryss pr. linje)

	Meieri- smør	Margarin Hard	Myk /fett	Oljer	Bruker ikke
På brød .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I matlaging .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## TANNHELSE

57 Har du de siste 12 måneder vært hos tannlege/tannhelsetjeneste? Ja Nei

58 Hvordan vurderer du tannhelsen di?

Meget dårlig .....	<input type="checkbox"/>	God .....	<input type="checkbox"/>
Dårlig .....	<input type="checkbox"/>	Meget god .....	<input type="checkbox"/>
Verken god eller dårlig...	<input type="checkbox"/>		

59 Hva betyr god tannhelse for helsen di ellers?

Svært mye .....	<input type="checkbox"/>	Lite .....	<input type="checkbox"/>
Mye .....	<input type="checkbox"/>	Svært lite .....	<input type="checkbox"/>
Både og .....	<input type="checkbox"/>		

## BRUK AV RESEPTFRIE MEDISINER

60 Hvor ofte har du brukt reseptfrie medisiner mot følgende plager i løpet av den siste måneden?  
(Sett ett kryss pr. linje)

	Sjelden /aldri	1-3 g /uke	4-6 g /uke	Dag- lig
Halsbrann/sure oppstøt .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treg mage .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hodepine .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smerter i muskler/ledd .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

61 Har du brukt noen av disse reseptfrie medisinene minst en gang i uka i løpet av den siste måneden?

	Ja	Nei
Paracetamol, Paracet, Panodil, Pamol, Pinex, Perfalgan .....	<input type="checkbox"/>	<input type="checkbox"/>
Albyl E (500 mg), Aspirin, Globoid, Dispril .....	<input type="checkbox"/>	<input type="checkbox"/>
Ibuprofen, Ibux, Ibuprox, Ibumetin, Brufen .....	<input type="checkbox"/>	<input type="checkbox"/>
Naproxen, Naprosyn, Ledox .....	<input type="checkbox"/>	<input type="checkbox"/>
Andre .....	<input type="checkbox"/>	<input type="checkbox"/>

## HVORDAN FØLER DU DEG NÅ

62 Føler du deg stort sett sterk og opplagt, eller trøtt og sliten?

Meget sterk og opplagt .....	<input type="checkbox"/>
Sterk og opplagt .....	<input type="checkbox"/>
Ganske sterk og opplagt .....	<input type="checkbox"/>
Både – og .....	<input type="checkbox"/>
Ganske trøtt og sliten .....	<input type="checkbox"/>
Trøtt og sliten .....	<input type="checkbox"/>
Svært trøtt og sliten .....	<input type="checkbox"/>

## VURDERING AV DIN ARBEIDSPASS

Besvares hvis du er eller har vært i arbeid. Ta stilling til følgende påstander/spørsmål om arbeidsplassen din og arbeidet ditt.

63 Det er et godt samhold på arbeidsplassen

Stemmer helt .....	<input type="checkbox"/>	Stemmer ikke særlig ...	<input type="checkbox"/>
Stemmer ganske bra .....	<input type="checkbox"/>	Stemmer slett ikke .....	<input type="checkbox"/>

64 Mine kolleger stiller opp for meg (gir meg støtte)

Stemmer helt .....	<input type="checkbox"/>	Stemmer ikke særlig ...	<input type="checkbox"/>
Stemmer ganske bra .....	<input type="checkbox"/>	Stemmer slett ikke .....	<input type="checkbox"/>

65 Jeg trives godt med mine arbeidskamerater

Stemmer helt .....	<input type="checkbox"/>	Stemmer ikke særlig ...	<input type="checkbox"/>
Stemmer ganske bra .....	<input type="checkbox"/>	Stemmer slett ikke .....	<input type="checkbox"/>

66 Er du blitt mobbet/trakassert på din arbeidsplass?

Ja, ofte .....	<input type="checkbox"/>	Nei, sjelden .....	<input type="checkbox"/>
Ja, iblant .....	<input type="checkbox"/>	Nei, så godt som aldri	<input type="checkbox"/>

67 Krever arbeidet ditt at du må arbeide veldig hurtig?

Ja, ofte .....	<input type="checkbox"/>	Nei, sjelden .....	<input type="checkbox"/>
Ja, iblant .....	<input type="checkbox"/>	Nei, så godt som aldri	<input type="checkbox"/>

68 Krever arbeidet ditt at du må arbeide svært hardt?

Ja, ofte .....	<input type="checkbox"/>	Nei, sjelden .....	<input type="checkbox"/>
Ja, iblant .....	<input type="checkbox"/>	Nei, så godt som aldri	<input type="checkbox"/>

## 69 Krever arbeidet ditt for stor arbeidsinnsats?

Ja, ofte .....  Nei, sjelden .....   
 Ja, iblant .....  Nei, så godt som aldri

## 70 Krever arbeidet ditt oppfinnsomhet?

Ja, ofte .....  Nei, sjelden .....   
 Ja, iblant .....  Nei, så godt som aldri

## 71 Har du mulighet til selv å bestemme hvordan arbeidet skal utføres?

Ja, ofte .....  Nei, sjelden .....   
 Ja, iblant .....  Nei, så godt som aldri

## 72 Har du mulighet til selv å bestemme hva som skal gjøres i arbeidet ditt?

Ja, ofte .....  Nei, sjelden .....   
 Ja, iblant .....  Nei, så godt som aldri

## 73 Er arbeidet ditt så fysisk anstrengende at du ofte er sliten i kroppen etter en arbeidsdag?

Ja, nesten alltid .....  Ganske sjelden .....   
 Ja, ganske ofte .....  Aldri eller nesten aldri.

## SMERTER I BEINA

## 74 Har du sår på tå, fot eller ankel som ikke vil gro?

Ja Nei

## 75 Har du smerter i det ene eller i begge beina når du går?

Ja Nei

**Hvis ja:**

Hvor gjør det mest vondt? Fot.....   
 Legg .....   
 Lår .....   
 Hofte.....

Forsvinner smertene når du står stille en stund? Ja Nei

## 76 Har du smerter i beina når du er i ro?

Ja Nei

**Hvis ja:**

Er smertene verst når du ligger i senga? Ja Nei

Får du mindre vondt når beinet ligger lavt, f.eks. om beinet henger utfor sengekanten? Ja Nei

Har du hatt smertene i beina sammenhengende i mer enn 14 dager? Ja Nei

## 77 Har du brukt smertestillende medisin pga. smerter i beina?

Ja Nei

## SYN

## 78 Har du noen av disse øyesykdommene? Ja Nei

Katarakt (grå stær) .....    
 Glaukom (grønn stær, høyt trykk i øyet) .....    
 Aldersrelatert makuladegenerasjon .....    
 (forkalkning på netthinna)

## HUKOMMELSE

## 79 Har du problemer med hukommelsen?

Nei .....  Ja, noe .....  Ja, store .....

## 80 Har hukommelsen endret seg siden du var yngre?

Nei .....  Ja, noe .....  Ja, mye .....

## 81 Har du problemer med å huske:

	Aldri	Av og til	Ofte
Hendelser for få minutter siden? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Navn på andre mennesker? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Datoer? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Å gjøre det du har planlagt? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hendelser som skjedde for noen dager siden? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hendelser som skjedde for år siden? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Å holde tråden i samtaler? .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## URINVEIER

## 82 Hvor ofte later du vanligvis vannet om dagen?

1-4 ganger .....  8-11 ganger .....   
 5-7 ganger .....  Over 11 ganger .....

## 83 Hvor mange ganger må du vanligvis opp om natta for å late vannet?

Ingen 1 gang 2 ganger 3 ganger 4 ganger 5 ganger eller mer

## 84 Hvis du må opp om natta for å late vannet, hvordan opplever du dette?

Ikke noe problem .....  Mye plaget .....   
 Litt plaget .....  Svært stort problem ...

## 85 Opplever du plutselig og/eller sterk vannlatingstrang som er vanskelig å holde tilbake?

Aldri .....  Flere ganger i uka .....   
 Månedlig .....  Daglig .....

## 86 Omtrent hvor ofte har du siste måned hatt følelsen av at blæra ikke er blitt fullstendig tømt etter avsluttet vannlating?

Aldri .....  1 av 2 ganger .....   
 1 av 5 ganger .....  2 av 3 ganger .....   
 1 av 3 ganger .....  Nesten alltid .....



T

87 Omtrent hvor ofte har du siste måned måttet late vannet mindre enn 2 timer etter forrige vannlating?

- Aldri .....  1 av 2 ganger .....   
 1 av 5 ganger .....  2 av 3 ganger .....   
 1 av 3 ganger .....  Nesten alltid .....

88 Omtrent hvor ofte har du siste måned måttet stoppe og starte flere ganger under vannlatingen?

- Aldri .....  1 av 2 ganger .....   
 1 av 5 ganger .....  2 av 3 ganger .....   
 1 av 3 ganger .....  Nesten alltid .....

89 Omtrent hvor ofte har det siste måned vært vanskelig å holde igjen når du har følt vannlatingstrang?

- Aldri .....  1 av 2 ganger .....   
 1 av 5 ganger .....  2 av 3 ganger .....   
 1 av 3 ganger .....  Nesten alltid .....

90 Omtrent hvor ofte har du siste måned hatt svak urinstråle?

- Aldri .....  1 av 2 ganger .....   
 1 av 5 ganger .....  2 av 3 ganger .....   
 1 av 3 ganger .....  Nesten alltid .....

91 Hvor ofte har du siste måned måttet trykke eller presse for å begynne vannlatingen?

- Aldri .....  1 av 2 ganger .....   
 1 av 5 ganger .....  2 av 3 ganger .....   
 1 av 3 ganger .....  Nesten alltid .....

92 Har du ufrivillig urinlekkasje? Ja Nei

(Hvis nei, gå til spm. 93)

#### Hvis ja:

Hvor ofte har du urinlekkasje?

- Mindre enn 1 gang/mnd  En el. flere ganger /uke   
 En eller flere ganger/mnd  Hver dag og/eller natt

Hvor mye urin lekker du vanligvis hver gang?

- Dråper .....  Større mengder .....   
 Små skvetter .....

I hvilke situasjoner kan du ha lekkasje av urin?

(Du kan sette flere kryss)

- Ved hosting, nysing, tunge løft .....   
 Ved plutselig og sterk vannlatingstrang .....   
 Smådrypping på slutten av eller etter vannlating .....   
 Smådrypping hele tiden, uavhengig av vannlating .....

Hvordan opplever du lekkasjeplagene dine?

- Ikke noe problem .....  Mye plaget .....   
 En liten plage .....  Svært stort problem ...   
 En del plaget .....

Hvor gammel var du da du fikk urinlekkasje?  år gammel

93 Har du søkt lege for urinlekkasje? Ja Nei

## NB!

Det utfylte skjemaet returneres i den vedlagte svarkonvolutten. Porto er betalt.

## Takk for hjelpa!





# Appendix V

Questionnaire from the Nord-Trøndelag Hearing Loss Study





# Spørreskjema

## Hørselsundersøkelsen

Helseundersøkelsen i Nord-Trøndelag

Er du utsatt for så sterk støy i ditt arbeid at det er vanskelig å føre en samtale, eller har du vært jevnlig utsatt i ditt tidligere arbeid i perioder på minst 3 mnd.?  
 Nei, aldri  5-15 timer i uka   
 Mindre enn 5 timer i uka  Mer enn 15 timer i uka

Hva slags arbeidsplass arbeider du på / har du arbeidet på? Kryss av for alle arbeidsplasser hvor du har vært mer enn 2 år i fast arbeide.

Husarbeid <input type="checkbox"/>	Tungtransport <input type="checkbox"/>
Mekanisk/verkstedsindustri <input type="checkbox"/>	Sjefart, fiske <input type="checkbox"/>
Treforedlingsindustri <input type="checkbox"/>	Jordbruk <input type="checkbox"/>
Annen industri <input type="checkbox"/>	Skogbruk <input type="checkbox"/>
Bygg/anlegg <input type="checkbox"/>	Forsvaret <input type="checkbox"/>

Annen arbeidsplass, lite støy  Type.....  
 Annen arbeidsplass med støy  Type.....

Har du daglig, eller nesten daglig, opplevd støy fra noe av dette på arbeidet?

Spikerpistol, hamring i tre <input type="checkbox"/>	Pressluft- eller bensindrevet bormaskin <input type="checkbox"/>
Hamring, klinking i metall <input type="checkbox"/>	Sprengning <input type="checkbox"/>
Sirkelsag, maskinhovel <input type="checkbox"/>	Maskinrom <input type="checkbox"/>
Motorsag (kjedesag) <input type="checkbox"/>	Annen industristøy <input type="checkbox"/>
Traktor, anleggmaskin <input type="checkbox"/>	

Annet: .....

Hvis utsatt for støy, har du brukt hørselsvern?

Før 1980: Alltid  Ofte  Sjelden/aldri  Ingen støy   
 1980-1989: Alltid  Ofte  Sjelden/aldri  Ingen støy   
 Etter 1989: Alltid  Ofte  Sjelden/aldri  Ingen støy

Har du mye oftere enn folk flest vært utsatt for impulsstøy (eksplosjoner, skyting e.l.)? Ja  Nei  Vet ikke, kanskje

Har du noen gang vært innlagt på sykehus for en hodeskade?

Har du noen gang spilt i musikk-korps eller band?

Har du, i perioder av ditt liv, vært på diskotek, rocke-konsert eller andre steder med høy musikk oftere enn én gang i måneden?

Er du plaget av øresus?

Hvis ja:

Hvor ofte har du øresus? Månedlig  Ukentlig  Daglig  Nesten alltid

Hvor lenge varer vanligvis periodene med øresus? Få minutter  10 min-1time  Mer enn 1time

Når får du vanligvis øresus (kryss gjerne av to steder)? Etter sterke lyder  Når det er stille  Vet aldri når

Er du plaget av svimmelhet? Ja  Nei  Kanskje

Har du, som barn eller i perioder senere, hatt gjentatte ørebetennelser?

Hvis ja, vet du omtrent hvor gammel du var da du fikk ørebetennelse første gang? .....år  
 Vet ikke, men før skolealder

Har du, i perioder på minst ett år, brukt kassettspiller med øreklokker (walkman) eller andre typer "lomme-disko"? I så fall, hvor ofte?

Aldri/sjelden  3-6 timer i uka   
 1-2 timer i uka  Mer enn 6 timer

Har hørselen din vært undersøkt av lege eller andre i løpet av de 5 siste åra? Ja  Nei

Har du et hørselstap som du vet om?

Hvis ja:

Bruker du høreapparat?

Vet du hva slags hørselstap du har?

Type tap.....

Omtrent ved hvilken alder ble dette oppdaget? .....år

Plager hørselstapet deg? Ja, mye  Ja, litt  Nei

Har du vanskelig for å oppfatte tale?

Har, eller hadde noen i din nære familie nedsatt hørsel?

Mor  Far  Barn  Søsken  Ingen nære

Disse problemene eller plagene har ikke bare med hørsel å gjøre. Har du i løpet av de siste 14 dagene vært plaget av noe av dette? (Ett kryss ved hver plage)

	Ikke plaget	Litt plaget	Ganske mye	Veldig mye
Plutselig frykt uten grunn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stadig redd eller engstelig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Matthet eller svimmelhet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Føler deg anspent eller oppjaget	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lett for å klandre deg selv	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Søvnproblemer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nedtrykt, tungsindig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Følelse av å være unyttig	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Følelse av at alt er et slit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Følelse av håpløshet mht. framtida	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hvilken hånd bruker du? Høyre  Venstre  Begge

Til å skrive med   
 Til å skjære brød med

Disse opplysningene vil bli behandlet i full fortrolighet. Mange takk for samarbeidet!

