UiT
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Self-reported musculoskeletal complaints

Prevalence, risk factors, and mortality.

The Tromsø Study.

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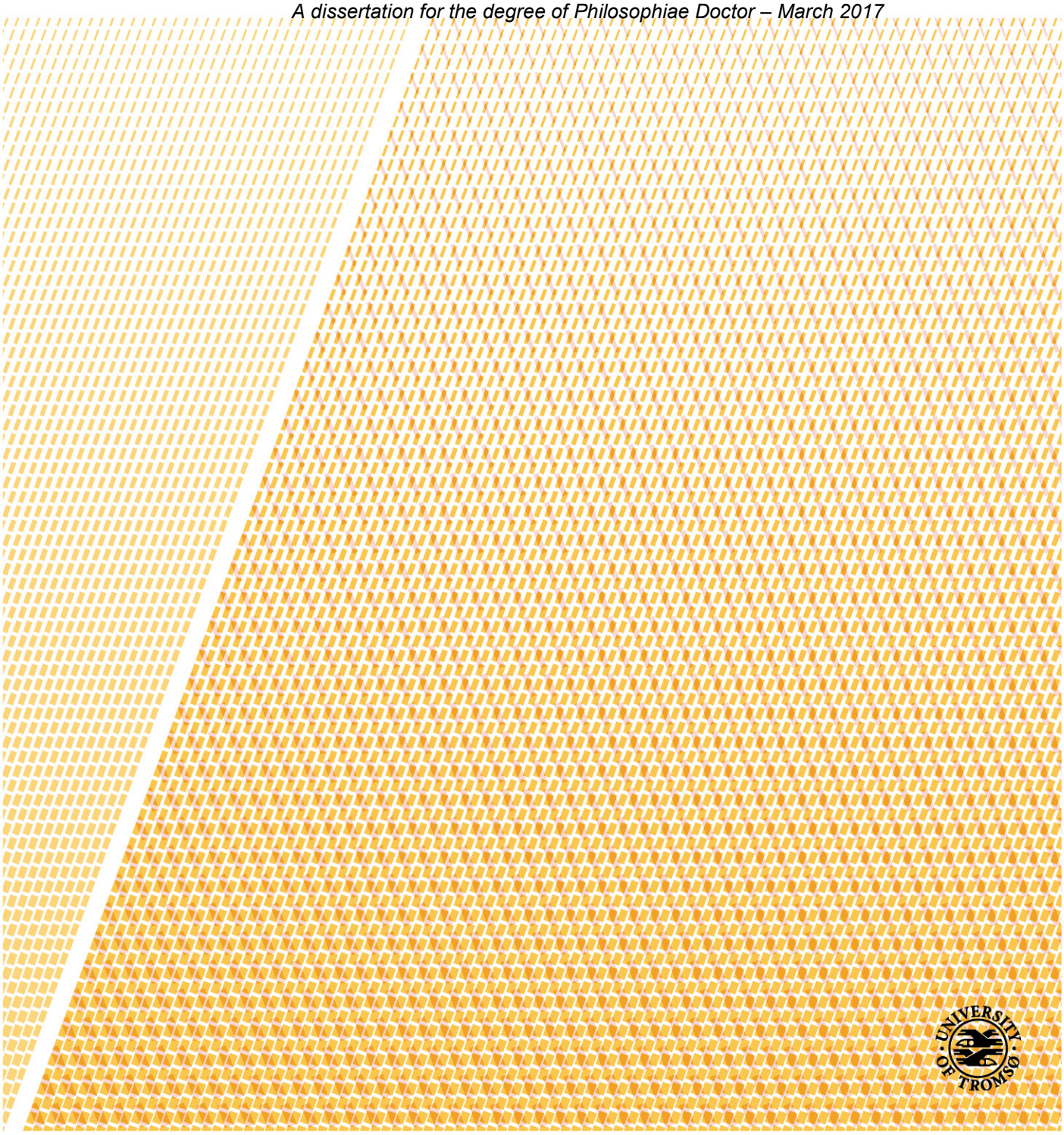

Preface

What is this thesis about?

Based on data from the Tromsø Study, this thesis describes some key issues regarding the epidemiology of longstanding musculoskeletal complaints (MSCs). Firstly, it provides estimates on how common MSCs are in a general population (including those who never seek medical advice for their MSCs). It further describes the distribution of MSCs by severity and by the characteristics of those who suffer from MSCs. The thesis also provides insight on health factors (both modifiable and non-modifiable) that may predict presence of MSCs later in life. The thesis elaborates consequences of longstanding MSCs, which have not been well described. Although pain and stiffness in the musculoskeletal system can have a great impact on daily life, such as the ability to continue working, it does not increase individual mortality risk. In sum, the thesis increases our understanding of MSCs in an epidemiological perspective.

Acknowledgements

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Thanks to my fellow medical students for interesting and/or funny discussions during a vast number of lunch and coffee breaks. We should probably be glad nobody counted the hours we spent on these discussions, but I know several of them helped us a great deal during our exams (and they may help us later in life, too!).
And last but not least, many thanks to Marthe and my family for giving me support and having patience with me during my studies. I am very grateful to all of you for constantly reminding me of the important things in life and for the memories we have created together.

Bodø, 14th March 2017

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1 Norsk sammendrag

Denne doktorgraden er basert på data fra den befolkningsbaserte Tromsøundersøkelsen. Over 40 000 av Tromsø kommunes innbyggere har deltatt på minst en av de sju Tromsøundersøkelsene (Tromsø 1-7) i tidsrommet 1974 til 2016. Muskelskjelettplager ble definert som smerte og/eller stivhet i muskler og ledd som har vedvart i minst 3 måneder det foregående året. Den første studien var designet som en tverrsnittsstudie hvor data fra den sjette Tromsøundersøkelsen (2007/08) ble benyttet. I Tromsø 6 hadde 8,439 (42.7%) av de 19,762 inviterte fylt ut spørreskjemaet om muskelskjelettplager fullstendig, og av disse var det 15.8% (kvinner: 19.4%, menn: 12.1%) som rapporterte å være sterkt plaget av muskelskjelettplager fra en eller flere kroppsregioner. Når milde og sterke plager ble sett under ett, hadde mer enn halvparten av deltakerne muskelskjelettplager fra minst en kroppsregion. Av disse var det nesten tre fjerdedeler som hadde plager fra to eller flere kroppsregioner. Dette tyder på at det er mer vanlig å ha en form for muskelskjelettplager enn ingen slike plager. Ofte ble kjente risikofaktorer for dårlig helse funnet hos deltakerne som rapporterte muskelskjelettplager. Den andre studien var en prospektiv kohortstudie hvis målsetning var å undersøke risikofaktorer for å utvikle muskelskjelettplager. Studien var basert på henholdsvis Tromsø 4 (1994/95) og Tromsø 6 (2007/08). Fordelen med dette studiedesignet er at man med større sikkerhet kan avgjøre om den enkelte risikofaktor har vært tilstede forut for muskelskjelettplagene. Flere av resultatene i den første studien ble også underbygget av resultatene fra denne studien. Dårlig selvopplevd helse, tobakksrøyking og lavt utdanningsnivå hos deltakerne predikerte tilstedeværelse av muskelskjelettplager 13 år senere. Selv-rapportert fysisk aktivitetsnivå predikerte ikke muskelskjelettplager etter at analysene var justert for andre risikofaktorer. Psykiske plager (angst/depresjon) var en viktig prediktiv faktor for muskelskjelettplager hos menn. Ingen av de undersøkte risikofaktorene ble funnet å øke kvinners risiko for muskelskjelettplager mer enn menns. I tråd med tidligere forskning på området viser denne doktorgraden at flere helsefaktorer bør evalueres når man

har med muskelskjelettplager å gjøre. Dette gjelder i klinisk sammenheng så vel som i forskningssammenheng. Resultatene fra den tredje studien gav ingen holdepunkter for at deltakere med muskelskjelettplager har høyere dødelighet sammenlignet med deltakere uten slike plager. Studien var basert på data fra den fjerde Tromsøundersøkelsen og data fra folkeregisteret og dødsårsaksregisteret og hadde en oppfølgingstid på 18-21 år. I fremtidig forskning vil det være interessant å studere den relativt store andelen av befolkningen som ved gjentatte undersøkelser rapporterer fravær av muskelskjelettplager. Det vil også være interessant å undersøke om deltakere gir konsistente svar selv om de får spørsmål om muskelskjelettplager som har ulik ordlyd.

2 Summary in English

This thesis used data from the large-scale population-based Tromsø Study. More than 45,000 inhabitants of the municipality of Tromsø participated in at least one of the seven surveys conducted between 1974 and 2016 (Tromsø 1-7). In the papers constituting this thesis, musculoskeletal complaints (MSCs) were defined as having pain and/or stiffness in muscles and joints lasting for at least 3 months the previous year. In the Tromsø 6 survey (2007/08), 8,439 (42.7%) of the 19,762 invitees provided a complete questionnaire on MSCs and were included in the analyses. In Paper I, which employed a cross-sectional study design and utilised data from the Tromsø 6 survey, 15.8% (women: 19.4%, men: 12.1%) of participants reported severe MSCs at one or more of the six body regions specified in the questionnaire. More than half of the 8,439 participants reported at least one MSC. Among those, nearly three-quarters reported MSCs in more than two body regions, which is in accordance with previous research. Hence, it is more common to report at least one MSC than no MSCs at all. Participants who reported MSCs were more likely to report coexisting negative health factors than participants without MSCs. Paper II had a prospective study design and investigated risk factors for MSCs utilising data from both the Tromsø 4 (1994/95) and Tromsø 6 surveys. Several of the associations revealed in Paper I showed evidence of temporality (i.e. a predictor present before the end-point) in Paper II, which is one of several criteria of causality. In accordance with previous research, poor self-reported general health status, tobacco smoking, and low educational level were predictors of MSCs. Physical inactivity did not predict subsequent MSCs 13 years later, after adjusting for other factors. Mental distress (i.e. depression and/or anxiety) was only a predictor of MSCs among men, doubling the odds of MSCs. None of the risk factors we investigated increased women's risk of MSCs more than men's, and could not explain the higher prevalence of MSCs among women. The present thesis demonstrated that modifiable and non-modifiable risk factors are important to consider when dealing with MSCs in both clinical and research settings. Finally, presence of MSCs did not increase mortality risk

in the general population of Tromsø (Tromsø 4 survey, 1994/95) during an 18-21-year period (Paper III). In the future, it would be of great value to explore protective factors among the relatively large part of the general population that seemed to be free of MSCs throughout different surveys and to examine if people respond differently to differently worded questions on MSCs.

3 List of papers

Paper I

Andorsen OF, Ahmed LA, Emaus N, Klouman E. **High prevalence of chronic musculoskeletal complaints among women in a Norwegian general population: the Tromso study.** *BMC Res Notes* 2014;7:506.

Paper II

Andorsen OF, Ahmed LA, Emaus N, Klouman E. **A prospective cohort study on risk factors of musculoskeletal complaints in a general population. The Tromsø study.** *Submitted*

Paper III

Andorsen OF, Ahmed LA, Emaus N, Klouman E. **Musculoskeletal complaints and its impact on mortality in the general population. The Tromsø study.**

PLoS ONE 2016;11:e0164341.

4 Abbreviations

ACR	American College of Rheumatology
BMI	Body mass index
CI	Confidence interval
CONOR-MHI	Cohort of Norway Mental Health Index
GP	General practitioner
HUNT	The Nord-Trøndelag Health Study
HR	Hazard ratio
HSCL-10	Hopkins Symptom Checklist – 10 item version
ICD-9	International Classification of Diseases, 9th Revision
ICD-10	International Classification of Diseases, 10th Revision
MSCs	Musculoskeletal complaints
OR	Odds ratio
Q1	First questionnaire in a survey of The Tromsø study
Q2	Second questionnaire in a survey of The Tromsø Study
SNQ	Standardised Nordic Questionnaire

5 Introduction

In Norway, general practitioners (GPs) have an important role as gatekeepers in the national health and social welfare system. Since 2001, inhabitants of Norway have been entitled to a regular GP (*fastlege*). This contributes to continuity in the GP-patient relationship, and allows patients to discuss their health complaints and worries with the same GP throughout different settings, at least theoretically [1]. It has been reported that only 13.7% (range 4-28%) of consultations with GPs in Norway lead to referral to secondary care [2], meaning that many of the issues discussed in consultations with GPs in Norway are actually dealt with in a primary health care setting. Moreover, it has been estimated that 60-74% of symptoms reported in primary care settings cannot be explained by any specific pathology [3, 4]. Taking this into account, clarifying symptoms and solving cases in primary care are time-effective for the patient and the GP, as well as cost-effective for the community.

A large portion of patients seeking primary care present to GPs with musculoskeletal symptoms and complaints [5, 6]. MSCs represent an important public health issue and are a common and costly health problem in the Western world due to their impact on disability and sickness absence from work [7]. Longstanding or recurrent musculoskeletal complaints (MSCs) can have a number of aetiologies, such as neurological conditions, systemic diseases, or mechanical injury. However, many MSCs remain unexplained after medical examination. We must be especially aware of this group of patients, as they often experience dissatisfaction after consultations, which could in itself, result in a delay in the improvement of symptoms [8]. The high number of patients with MSCs in primary care and the uncertainty regarding possible underlying causes, which range from self-limiting conditions to chronic diseases that could benefit from specific treatment, make diagnosis and treatment challenging even for experienced GPs. For all of the reasons outlined above, a closer investigation of what constitutes normal variations in MSCs are warranted if GPs are to distinguish those cases that

require more specialised diagnostic processes from those who do not. Improving the knowledge of the nature and possible implications of MSCs, and how to prevent them, will enhance the handling of this group of patients in primary care settings [9].

5.1 Diseases of the musculoskeletal system

Symptoms and illness represent an individual's personal experience of being unwell, in contrast to diseases, which are more or less defined pathophysiological processes [10]. There is a large number of specific diseases and structural defects within the musculoskeletal system that could lead to longstanding MSCs. Only a few diseases are mentioned here in order to illustrate the large discrepancy between the prevalence of MSCs and the prevalence of biomedically verified diseases. Rheumatoid arthritis and ankylosing spondylitis are among the most prevalent inflammatory joints diseases. The prevalence of established rheumatoid arthritis in Norway is about 0.5%, i.e., about 25,000 patients, and the prevalence of rheumatoid arthritis is three times higher in women than in men. The corresponding figures for ankylosing spondylitis are about the same, except that men are more often affected than women [11], indicating that rheumatologic diseases account for a very small portion of MSCs in primary care. In the neurological field, the annual incidence of lumbosacral radiculopathy (low back pain with radiation to the leg) due to a herniated intervertebral disc has been reported to be 1-2% [12]. In Finland, the lifetime prevalence is higher in men than in women (5.3% versus 3.7%) [13]. Thus, prolapsed intervertebral discs only explain a small part of low back pain, which is reported to be one of the most common body regions for MSCs in the general population [14, 15]. In sum, the literature supports that only a small fraction of patients with MSCs is referred to specialised treatment. Consequently, primary care providers are responsible for diagnosing, treating, and following up the vast majority of patients presenting with MSCs.

5.2 Definition of musculoskeletal complaints in research

Several different definitions of MSCs have been used in the literature. Many of them are based on questionnaires derived from the Standardized Nordic Questionnaire (SNQ) of musculoskeletal symptoms, developed by Kuorinka and colleagues [16]. As MSCs are by definition subjective, it is difficult to speak about a gold standard by which these self-reported measures can be validated, but questionnaires derived from the SNQ have been found to be useful for the surveillance of MSCs [15, 17, 18]. More comprehensive questionnaires derived from the SNQ include information on the specific character and/or duration of symptoms. Differences in the definition of MSCs in the literature have implications in the interpretation of results [19], as well as the comparability between studies. Some studies require a certain, widespread bodily distribution or even negative consequences in daily life before a symptom can be classified as MSCs [20]. The American College of Rheumatology's definition of widespread MSCs (pain above the waist, below the waist, axial skeleton, and both sides of the body) from 1990 [21] has been used in several studies [22], increasing the comparability between studies that explore the epidemiology of multiregional MSCs.

5.3 Symptoms in primary care

This thesis has a general population perspective and aims to increase knowledge about MSCs that can be useful also for primary care providers. During the research process it has become clear that we need to underline the fact that our aim is to explore symptoms related to the musculoskeletal system, not musculoskeletal diseases. The international organisation for GPs and family physicians defines symptoms as "…any expression of disturbed function or structure of the body and mind *by a patient*. Cough, pain and tiredness are symptoms" [23]. Including "patient" in the definition implies that a complaint or sensation has elicited contact with a health professional. Indeed, symptoms are often the opener to the diagnostic process in primary care [8], and as stated above, only a small fraction of the symptoms represent diseases that require referral [24]. Knowledge on health complaints in the general population

is important as it helps GPs better take care of patients seeking primary care, and it can also help assess vulnerability to future symptoms and disease [25].

Professor emeritus Knut Holtedahl, MD, has dedicated his career as a GP and a researcher to exploring the symptoms of cancer with which patients present to GPs. In his book, *Early diagnosis of cancer in general practice*, he describes the quantitative approach to diagnostic thinking in general practice: according to Bayes' formula, positive predictive values (i.e. the frequency of disease among those reporting a symptom) can be calculated if the probability of the disease (i.e. prevalence of disease in the primary care setting), the probability of the symptom in the same population, and the probability that the symptom indicates disease are known [26]. Implementing this approach to diagnostic thinking for musculoskeletal symptoms is also possible, and taking into account the high number of primary care visits due to these symptoms, this approach could enhance GPs' decision-making. As such, establishing the prevalence of MSCs in the general population would contribute greatly to improving the diagnostic process in primary care in Norway and in other countries where GPs have the role of gatekeeper in their health care and social systems. Furthermore, a population-based approach is suitable to develop knowledge on the prevention of chronic disorders, as it provides researchers the opportunity to study symptoms and associated health factors that occur in a population unsorted by health professionals. In the context of primary care, it is of utmost importance with research conducted in the general population, as this can describe symptoms, including MSCs, that exist outside of or prior to a visit to the GP's office. In clinical settings, it is important to remember that individuals have a selection of symptoms and complaints that led them to seek health care, making primary care patients a relatively selected population [25, 27].

5.4 Prevalence

Several population-based health studies have been established in Norway during the last half century, and many of them have been repeated several times, providing a valuable source of health information for researchers and clinicians. The Nord-Trøndelag Health Study (HUNT) carried out in the middle part of Norway is the largest of its kind in the country. It contains information on overall health as well as musculoskeletal health [28]. The Ullensaker Study and The Hordaland Health Studies are population-based studies including data on musculoskeletal health. They are large-scale studies with several thousand participants each, and the questionnaires from these studies are similar to those used in many other surveys conducted in the same time period, including information on MSCs [29, 30]. The Tromsø Study [31], the Nordland Health Study (1988/89) [32], and the Bardu Musculoskeletal Study (1989/90) have provided information on musculoskeletal health from Northern Norway [33].

The reported prevalence of MSCs ranges from 17.1-78.6% in studies from various countries [34-42]; however, geographical and demographical differences between study populations may influence the figures. As stated above, variation in reported prevalence can also be explained by differences in the definition, duration, and localisation of MSCs. A strict definition of MSCs should theoretically give a lower prevalence than a wide definition [20]. Previous research has, to a large extent, focused on specific pain distribution, such as low back or upper limb, thus limiting the clinical applicability for GPs because many patients experience MSCs from multiple body regions [43-45]. To assure good clinical applicability of epidemiological studies on MSCs, it is important to present results both for all body regions combined and for each body region separately.

Variations in prevalence may also reflect a true difference in the burden of MSCs between cohorts. In a Dutch general population, Wijnhoven and colleagues found that MSCs (lasting at least 3 months) were reported by a large number of participants (women: 45.1%, men:

39.3%) [14]. Whereas, Rustøen and colleagues reported a lower total prevalence (24.4%) when applying a similar definition to a Norwegian general population [46]. Hagen and colleagues reported that the prevalence of MSCs increased between two waves of the population-based HUNT Study [15]. Similar results were also reported in a Spanish population-based study [47], indicating that time trends may play an important role in the prevalence of MSCs. In sum, this underlines the importance of having prevalence information that is up to date and that such studies should be carried out in a context that assures local relevance. With this in mind, it is interesting to review the findings from two cross-sectional studies conducted by Hasvold and colleagues, which took place in two different Northern Norwegian communities at two different points in time (1986/87 and 1989/90) [48, 49]. The prevalence of headache and shoulder pain served as tracer-conditions of musculoskeletal illness in these populations and were very similar in these two surveys. In the Bardu Musculoskeletal Study, 7% of men and 11.5% of women reported weekly headache, while 15.9% of men and 22.4% of women reported weekly neck and shoulder pain. By providing updated prevalence data on MSCs, the present thesis makes it possible to assess changes in the burden of MSCs over time in the Tromsø population.

5.5 Gender

A large body of evidence indicates that there is a higher prevalence of MSCs among women than men in general populations [14, 15, 34, 35, 38, 42, 46, 50, 51]. Even though the total prevalence was different, the gender difference in prevalence found in the Norwegian general population by Rustøen and colleagues (women: 27.6%, men: 23.3%) was similar to that found in a Dutch general population that applied the same definition of MSCs [14, 46]. Wijnhoven and colleagues further investigated the association between female gender and MSCs lasting at least 3 months by body region. They reported a significantly higher prevalence of MSCs at the neck, shoulder, wrist/hand, hip, and foot among women, with prevalence ratios ranging

from 1.42-2.16, while non-significant prevalence ratios were reported at the elbow, knee, ankle, and higher and lower back. In a highly selected Portuguese population receiving cardiac rehabilitation after acute coronary syndrome, 44% of the female participants reported MSCs, compared to only 24% of the male participants [52]. A recent study from Brazil reported that females in the younger parts of the population also reported more MSCs [53]. Kvalheim and colleagues found that early menarche was associated with the presence of widespread MSCs in a general female population, indicating that female hormonal factors could contribute to the risk of MSCs among women, but the contribution to the absolute risk of MSCs was small (3%) and did not fully explain the gender difference [54].

A general practitioner from Sweden, Professor Eva Johanson, MD, thoroughly investigated the gender aspect of MSCs in her thesis *Beyond frustration: understanding women with undefined musculoskeletal pain who consult primary care* [55]. It underlines that health indicators and risk factors of MSCs are not always the same for women and men. It further points out that gender is not only a construct of genetic and biological components, but through complex mechanisms, also comprising social and structural components. These complex mechanisms may be lost when using a dichotomised gender variable in epidemiological research. However, as epidemiological studies are suitable for the examination of predictors or associated factors of different conditions, it is also possible to design studies to examine how specific demographic or lifestyle factors interact with each other to affect MSCs [56, 57]. As such, epidemiological studies are suitable to explore whether certain demographic, lifestyle, or socioeconomic factors show systematic, different effects on MSCs in women and men.

5.6 Age

There are many reasons why one would expect MSCs to be dependent on age. The physiological effects of aging, such as reduced elasticity of soft tissue [58], reduced joint function due to destruction of joint tissue [59], and changes in the skeleton [60], are factors that may contribute to increased risk of such complaints in older populations. However, several epidemiological studies have reported a peak in the prevalence of MSCs around 60 years of age [15, 35, 38, 61], implying that other factors than aging are important. In Norway, people generally retire between 62 and 67 years of age. A lower prevalence of MSCs among those older than 60 years compared to the younger parts of the population could reflect reduced mental and physical stress after retirement [51]. Furthermore, an increase in the prevalence of MSCs has been reported in young age groups [15, 47], which is unlikely to be explained by aging and warrants further examination of the age distribution of MSCs.

5.7 Tobacco smoking

In the 1950s, nearly 70% of the male population and 25-30% of the female population in Norway were daily smokers. In 2013, the prevalence of daily smoking was much lower, with only 15% of men and 14% of women being daily smokers in Norway [62]. The prevalence of daily smoking has steadily decreased over the last 20 years, especially among the younger part of the population (Fig. 1) [63]. Tobacco smoking is an important and well-established risk factor for many diseases; it increases the risk of cardiovascular disease [64], lung cancer [65], and colorectal cancer [66]. The high incidence and mortality rates of lung and colorectal cancer, indicates that smoking alone is an important public health issue [67]. Moreover, a robust association between smoking habits and MSCs was found in a large cross-sectional study from Britain [68], and prospective cohort studies of Norwegian general populations have emphasised the higher risk of MSCs among smokers compared to non-smokers [56, 69]. Kvalheim and colleagues [56] found smoking to be a predictor of subsequent MSCs in a population free of MSCs at baseline. Overall, there is likely a multifaceted relationship between tobacco smoking

and MSCs. For instance, nicotine may have analgesic and relaxant effects that pull the associations in one direction, and the strong relationship between smoking and other negative health factors may present forces pulling in another direction. Furthermore, there are likely cohort effects, as the prevalence of smoking has strongly decreased the latest half century [56]. However, even a small increase in the risk of MSCs due to smoking may have large implications for public health, given the high prevalence estimates of MSCs in general. Still, the prevalence of tobacco smoking is high, and further investigation on how smoking predicts MSCs later in life could increase awareness and lead to smoking cessation and that could improve overall public health.

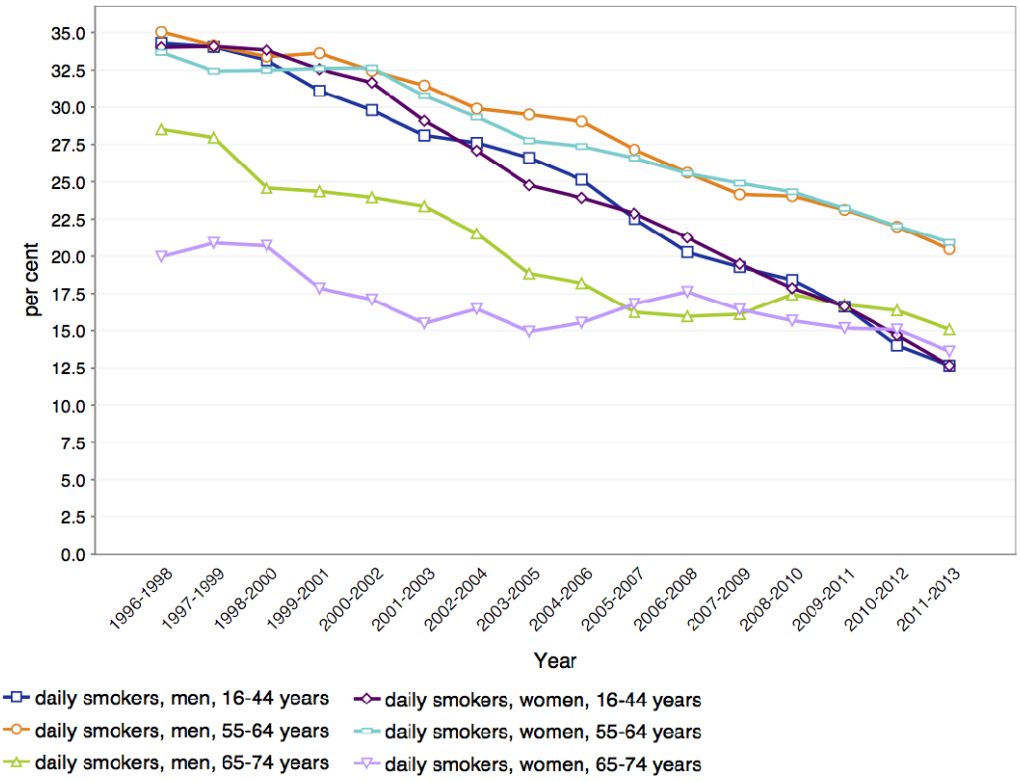


Figure 1. Prevalence of daily smokers by age group and gender in Norway between 1996 and 2013. Source: Norwegian National Institute of Public Health [63].

5.8 Physical activity and body mass index

Both physical activity and body mass index (BMI) could be related to MSCs through proposed multifaceted pathways, involving mechanical, hormonal, metabolic, and emotional factors [70-73]. The Norwegian Directorate of Health recommends a minimum of 30 minutes of daily, moderate-to-intense physical activity [74]. Self-reported leisure time physical activity level corresponds to objectively measured activity level [75], and only one out of four men and women met the recommended level of activity. From a general health perspective, the favourable effects of physically activity are well-documented [76-78]. However, there is conflicting evidence on whether leisure time physical activity relates to the occurrence of MSCs in the general population [79-84], especially since it seems difficult to determine clear dose-response patterns in significant associations. Furthermore, it has been speculated that there may be a u-shaped relationship, in which those with a moderate physical activity level have less low back pain than their most sedentary or most active counterparts, but Heuch and colleagues could not establish such a relationship in their study [85]. A recently study showed evidence of joint effects between poor physical fitness and obesity in the development of MSCs [57]; thus, the relationship between MSCs and physical activity is likely to be complex.

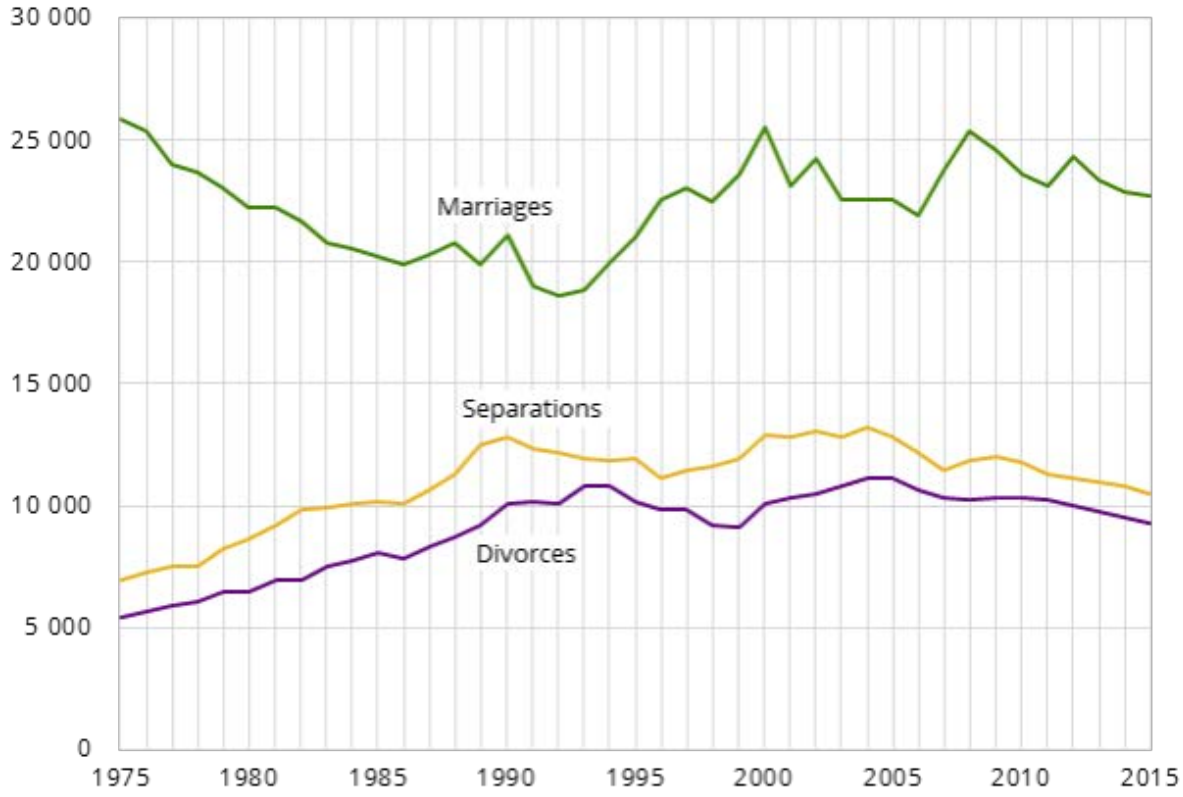
The association between high BMI and MSCs has been reported several times [70-73, 86]. Obesity is steadily increasing in the general population [87], and health professionals should be aware of the possible interactions and bidirectional relationships between physical activity and obesity on the development of MSCs. Both physical activity and high BMI can affect the mechanical exertion on the musculoskeletal system; it is likely that they interact and impact other negative health outcomes. With the conflicting evidence on the association behind physical activity and MSCs, and the assumed complex interaction with other health factors, a

thorough investigation is necessary to clarify if these modifiable lifestyle factors could be implemented in preventive health strategies to reduce MSCs in the population.

5.9 Marital status

Marital status has consistently correlated to different health outcomes [88], and these correlations have been particularly evident among men [89]. Robards and colleagues discussed several theories regarding this phenomenon. For example, healthier individuals could be selected to marriage, while their unmarried counterparts remain single, or are more frequently divorced or widowed. It may be that marriage itself provides a protective health effect through social and behavioural circumstances that unmarried individuals do not experience to the same degree. The association between marital status and MSCs is unclear. Indeed, not many studies have evaluated marital status as predictor of MSCs. A Spanish population-based study found that married men had an increased risk of MSCs compared to their single counterparts, while no such association was revealed among women [47]. However, other studies do not support these findings [34, 46]. Furthermore, it has been reported that low back pain predicted subsequent long-term work disability, but there were no differences across marital status [90].

In 2015, the number of new marriages in Norway was 22,738 and the number of divorces was 9,306 [91]. These figures have been relatively stable in the last 20 years (Fig. 2). Nevertheless, the high annual incidence of divorce in Norway may be a possible source of bias in prospectively designed cohort studies because a large proportion of participants that are married at baseline are likely to change their marital status, which dilutes the possible protective effect of marriage on MSCs. However, the results of cross-sectional studies, in which MSCs and marital status are measured at the same time or very close in time, are less vulnerable to the high incidence of divorce.



[1]Includes registered and dissolved partnerships
Source: Statistics Norway.

Figure 2. Annual incidence of marriage, separation, and divorce in Norway between 1975 and 2015. Source: Statistics Norway [91].

5.10 Educational and socioeconomic factors

Wide socioeconomic inequalities in health are known to exist in the industrialised world.

In health surveys, individuals are grouped by socioeconomic status based on educational level, income, or occupation. The relationship between socioeconomic status and health may have several explanations: health status may influence an individual's ability to reach their educational goals, and that educational level may in turn influence their exposure to certain lifestyle variations and physical workplace and living conditions [92]. Inhabitants of Norway have the right to 12-13 years of free education, of which the first 10 years are mandatory. Thus, the educational system in Norway could be considered an important structural preventive measure that may decrease the burden of MSCs in the Norwegian population. It is likely that MSCs are associated with socioeconomic status. Reported associations have been consistent

regardless of the proxy of socioeconomic status used (educational level, household income, occupation) [35, 93, 94], indicating that educational level could be a reasonable variable to use when investigating the relationship between socioeconomic status and MSCs.

5.11 Self-reported health information

Participants of population-based surveys give good estimates of their own health. This has been shown for general health variables [95], questionnaires on mental health [96], and specific diseases [97, 98]. The strong association between self-reported health status and MSCs has been investigated in cross-sectional studies [15, 38, 46]. Blyth and colleagues reported a marked gradient in self-rated health across three pain groups, where respondents with poor self-rated health reported significantly more chronic pain compared to those who rated their health more positively (odds ratio [OR]: 7.24, 95% confidence interval [CI]: 5.87-8.92) [38]. It is likely that quality of daily life is affected in those with longstanding MSCs. This was emphasised by Tschudi-Madsen and colleagues, who found a strong association between non-musculoskeletal symptoms and musculoskeletal pain symptoms [99]. Hagen and colleagues also found that self-rated symptoms of anxiety and depression was associated with MSCs without a specified body region [15]. A systematic review concluded that psychological factors played a significant role in the transition to chronicity in low back pain [100]. As MSCs are often multiregional, it is important to assess whether self-rated general health and mental health correlate with MSCs regardless of body region. Furthermore, if these measures predict subsequent MSCs, the associations should be brought to the attention of policymakers and clinicians in order to prevent MSCs and identify individuals at risk.

5.12 Consequences of musculoskeletal complaints

Reduced working capability due to MSCs explains a large portion of short- and long-term medically-certified sickness absence from work. These absences produces large costs not only for the social welfare system in Norway [101], but also for the employers, as they usually are

financially responsible for the first 16 days of sickness absence. Furthermore, sickness absence could be unfavourable for the patient [102]. All this reflects the important effects that MSCs have on the daily life of affected individuals. Thus, GP's have a heavy responsibility when assessing the need for sickness absence, especially since objective measures of MSCs are sparse. There is no straight line between the presence of MSCs and the above-mentioned "soft end-point" (i.e. medically-certified sickness absence), as the GP determines when sickness absence is warranted. Actually, one could argue that medically-certified sickness absence is a poor outcome measure of MSCs, as it is the GP that produces it. Thus, when speaking of the long-term consequences of MSCs, it would be more interesting to study hard end-points such as mortality rates. Some studies have indicated an increased mortality among individuals with MSCs [103-106], but other studies did not support this [107-111]. In a systematic review from 2014, Smith and colleagues concluded that the small number of studies and the heterogeneity between them made it difficult to provide a clear picture of the association between MSCs and mortality, and that further research should focus on how health, lifestyle, and social and psychological factors could influence this relationship in large population-based studies using a comparable methodology [112]. During the work on this thesis, there has been a growing body of evidence indicating that MSCs do not increase the risk of mortality independently [22]. However, there is still too much heterogeneity between these studies to make a definitive conclusion. Given the high prevalence of MSCs, it is crucial to examine if their presence influence mortality risk, and whether degree of severity influences this relationship.

5.13 Objectives of this thesis

The overall aim of this thesis was to explore the prevalence, risk factors, and consequences of MSCs in the general population of Northern Norway. The thesis consists of one cross-sectional study (Paper I), which examined the prevalence and severity of MSCs, and two prospective cohort studies (Papers II and III). Paper II was designed to assess predictors of MSCs 13 years

later in a cohort reporting absence of MSCs at baseline. Paper III was designed to assess subsequent mortality among those reporting MSCs at baseline during 21 years of follow-up. The prospective design of Papers II and III made it possible to assess predictors before the end-points were measured (i.e. assess temporality).

5.13.1 Specific research questions

Paper I:

1. What is the age-adjusted prevalence of MSCs in the municipality of Tromsø?
2. How does age-stratification change the prevalence of MSCs?
3. Is the prevalence of MSCs dependent of their severity and are there gender differences in the severity of MSCs?
4. What are the possible sociodemographic, lifestyle, and self-reported health factors associated with the presence of MSCs?

Paper II:

1. Can specific health factors predict the presence of MSCs 13 years later in women and men reporting absence of MSCs at baseline?

Paper III:

1. Do women and men reporting MSCs at baseline have higher mortality rates from cancer, cardiovascular disease, or death from all causes?

6 Materials

Tromsø is the largest city in Northern Norway. It is situated ≈400km north of the Arctic Circle, and has approximately 70,000 inhabitants. The population of Tromsø is relatively well educated, and a university and university hospital are located in the city. The physical living conditions are dominated by dramatic changes in daylight, with 2 months of midnight sun and 2 months of polar night. A large part of the population of Tromsø has participated in a longitudinal, population-based, multipurposed health study called the Tromsø Study. The first health survey of the Tromsø Study (originally named the Tromsø Heart Study) took place in 1974. When it was initiated, the goal of the Tromsø Study was to combat the high mortality rates from cardiovascular disease among Northern Norwegian men. In the 40 years since it began, over 45,000 inhabitants of the municipality of Tromsø have participated in one or more surveys of the Tromsø Study, and increasing emphasis has been placed on conditions other than cardiovascular disease [31]. The study currently consists of seven surveys (Tromsø 1-7); The Tromsø 1 survey was conducted in 1974 and the Tromsø 7 survey in 2016 [113]. Information on MSCs was included in the questionnaires for the first time in the Tromsø 2 survey (1979-80). The variables have been somewhat changed and updated between the Tromsø 2 and the Tromsø 7 surveys, and the participation rate for the seven surveys ranged from 62.4-77% [114]. Tromsø 4-7 surveys was conducted in two phases, with the most basic examination at the first visit, and more extensive examinations at the second visit. The participants received questionnaires several times throughout the study (appendices I-IV).

6.1 Ethics

The general approvals for the Tromsø Study were given by the Regional Committee of Research Ethics and the Norwegian Data Inspectorate and covered the objectives of this thesis. The Tromsø Study's technical staff produced the datasets used in the analyses of the present thesis, including linkage of information collected from external sources (National

Register of Norway and Cause of Death Register). The 11-digit personal identification number was used to identify each participant in the linkage processes. The datasets were made anonymous before they were given to the authors. Written informed consent was obtained from all participants. In total, 181 participants attending the Tromsø 4 survey and two participants attending the Tromsø 6 survey withdrew their consent to participate in the research. The technical staff excluded these participants before the authors received the datasets.

6.2 Study population

The study population that constituted the basis for this thesis were participants who attended the Tromsø 4 and Tromsø 6 surveys, carried out in 1994/95 and 2007/08, respectively. These participants received two sets of questionnaires: the first (Q1) was distributed with the invitation letter and the second (Q2) was handed out when the participants attended the first phase of the respective survey. Tromsø 4 and Tromsø 6 surveys were included in this thesis because these surveys posed similar questions on MSCs. Total attendance rates for the seven surveys of the Tromsø Study are presented in Table 1. In the Tromsø 4 survey, all persons older than 25 years were invited (37,559 persons), 2,139 persons moved or died prior to the attendance date, giving an eligible population of 35,420 persons, of whom 27,158 (77%) attended. In the Tromsø 6 survey, it was not possible to invite total birth cohorts due to economic constraints, so a carefully considered selection of the population was invited: attendees at the second phase of the Tromsø 4 survey, a 10% random sample of individuals aged 30-39 years, all residents aged 40-42 and 60-87 years, and finally a 40% random sample of individuals aged 43-59 years, making the total number invited 19,762, of whom 12,984 attended (65.7%) [31].

In Paper I, 8,439 of the 12,984 participants of the Tromsø 6 study were eligible for inclusion, which provided a real participation rate of 42.7%. Paper II used baseline data from the Tromsø

4 survey and follow-up data from the Tromsø 6 survey. There were 10,326 participants that attended both surveys, of whom 4,496 were eligible for inclusion. Paper III used baseline data from the Tromsø 4 survey and follow-up data from the National Register of Norway and the Cause of Death Register. There were 26,977 participants who were eligible for inclusion (181 participants withdrew their consent).

Table 1. Participation in the seven health surveys of the Tromsø Study.

Survey	**Year**	**Invited**	**Attended, n (%)**
Tromsø 1	1974	In total, 8,866 persons.	6595 (83 %)
Tromsø 2	1979/80	In total, 21,329 persons.	16621 (74 %)
Tromsø 3	1986/87	In total, 28,847 persons.	21826 (75 %)
Tromsø 4	1994/95	In total, 37,558 persons.	27158 (women: 74 %, men: 79 %)
Tromsø 5	2001/02	In total, 10,353 persons	8130 (women: 81 %, men: 76 %)
Tromsø 6	2007/08	In total, 19,762 persons	12984 (women: 68.4 %, men: 62.9 %)
Tromsø 7	2015/16	In total, 33,423 persons.	20870 men and women (62.4 %)

6.3 Musculoskeletal complaints variables

In the present thesis, MSCs were defined as having pain and/or stiffness in muscles and joints for at least 3 consecutive months during the previous year. Q1 of the Tromsø 4 survey (Papers II and III) included a screening question ("Have you during the last year suffered from pain and/or stiffness in muscles and joints that have lasted continuously for at least 3 months?") with a binary response (yes/no) (appendix I). Those who answered yes to this question were posed additional questions regarding the duration and localisation of pain at the first medical examination. Using the American College of Rheumatology's definition, participants were categorised as having or not having widespread MSCs (Paper III) [21]. In Q2 of the Tromsø 6 survey (Papers I and II), the screening question ("Have you during the last year suffered from pain and/or stiffness in muscles and joints that have lasted continuously for at least 3 months?") was asked for each of six different body regions (neck/shoulder, arm/hand, upper back, lumbar back, hip/leg/feet, and other regions). Participants were asked to choose one of three responses (no complaints, mild complaints, or severe complaints) for each body region (appendix IV). As the Tromsø 6 survey did not include a single MSCs variable, the information from these six regions was merged into one variable to analyse the prevalence and severity of region-independent MSCs and associated factors (Paper I), and to analyse predictors of subsequent MSCs (Paper II). This was done in the following way: those answering "no complaints" on all six body regions were categorised as "no MSCs", and those who answered "mild complaints" or "severe complaints" on at least one body region were categorised as "mild MSCs" and "severe MSCs", respectively (Fig. 3). Additionally, participants were grouped according to the number of body regions affected.

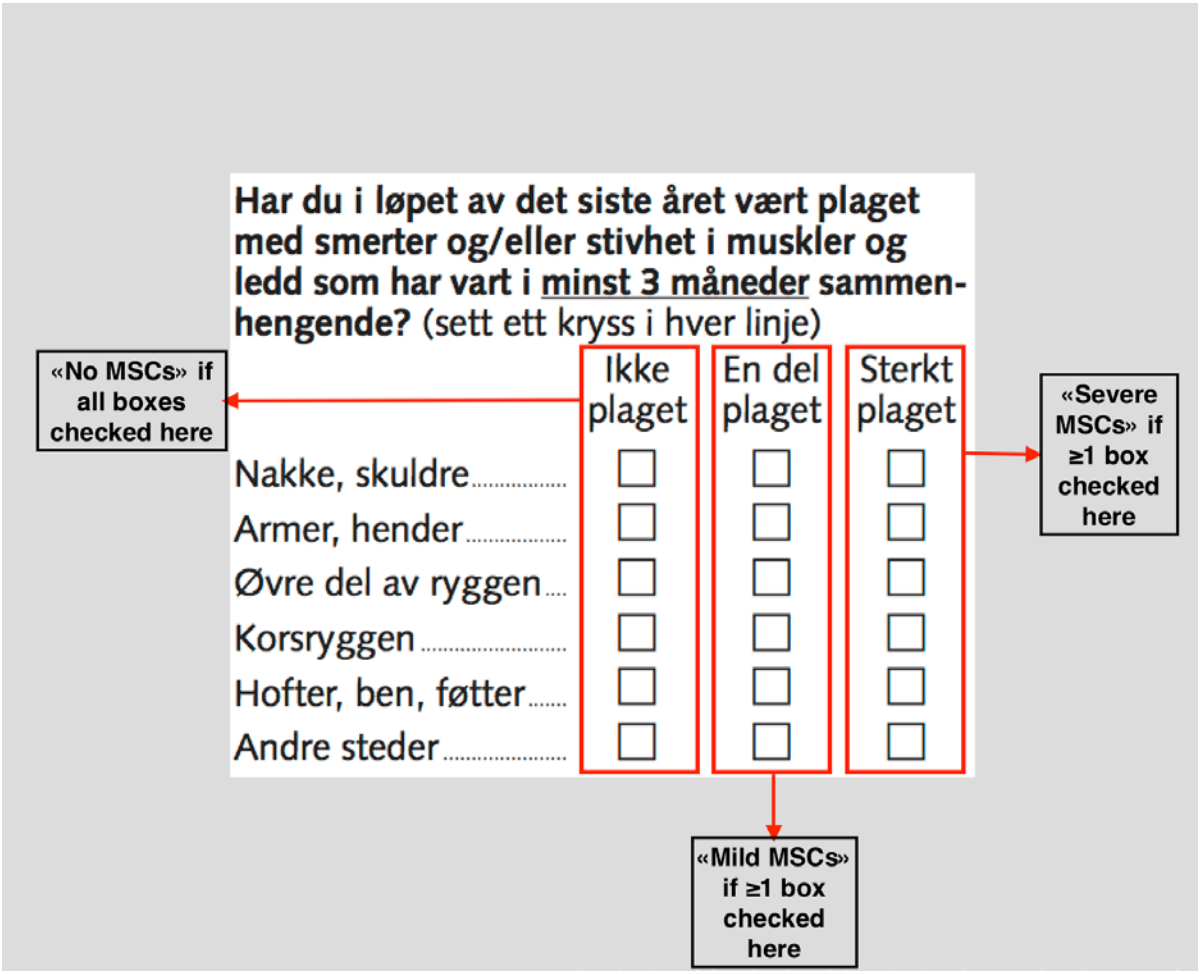


Figure 3. The construction of one variable to analyse the prevalence and severity of region-independent MSCs based on the questionnaire of Tromsø 6 (second questionnaire; Q2). Participants answering "no complaints [ikke plaget]" on all six body regions were categorised as "no MSCs", and those who answered "mild complaints [en del plaget]" or "severe complaints [sterkt plaget]" on at least one body region were categorised as "mild MSCs" and "severe MSCs", respectively.

6.4 Sociodemographic, lifestyle, and self-reported health variables

The Tromsø Study provided a wide range of information that could be used to analyse associated factors (Paper I), predictors (Paper II), and possible confounders (Paper III), depending on the aim of the analyses: smoking, self-reported health (i.e. general health status, mental health status, and chronic diseases), educational level, and leisure time physical

activity level. Additionally, BMI was calculated using the body weight/height data collected at the first medical visit. Age, gender, and marital status were collected from the National Register of Norway by the Tromsø Study's technical staff.

Paper I: Paper I investigated factors associated with MSCs, using variables collected from Q1 of the Tromsø 6 survey (appendix III). Participants were categorised according to their self-reported health status as either good or poor using a five-level ordinal general health variable (very good, good, neither good nor poor, poor, and very poor). The education variable had five levels: primary/secondary, technical, college, university <4 years, and university >4 years. Leisure time physical activity level was assessed through a validated questionnaire with four levels. Smoking status was categorised as current, former, or never smoker. Based on their BMI, participants were divided into 4 groups: <18.5, 18.5-24.9, 25-29.9, and >30 kg/m^2. Marital status was divided into married (including both registered partnership or married) and unmarried.

Paper II: Paper II investigated the risk factors for MSCs using the variables collected in Q1 of the Tromsø 4 survey (appendix I). Self-reported health status was categorised as either good or poor through a four-level ordinal general health variable (very good, good, poor, very poor). Smoking status was categorised as current smokers (current cigarette, cigar, or pipe smoker) and not current smokers. Mental distress was measured using the previously validated Cohort of Norway-Mental Health Index (CONOR-MHI), which is a seven-item questionnaire. Each item has a four-level scale ranging from "no" (1) to "very" (4). An average score was calculated from the seven items and the cut-off was set to 2.15, thus creating two groups: CONOR-MHI <2.15 and CONOR-MHI ≥2.15 (i.e. indicating mental distress) [96]. Leisure time physical activity level was determined from two questions (hard and light activity) and combined into a four-level physical activity index: sedentary (0

hours/week), low (<3 hours/week), moderate (3-5 hours/week), and high (>6 hours/week) [115]. BMI was divided into three groups: ≤24.9, 25.0-29.9, and ≥30 kg/m^2. As in Paper I, marital status was divided into married (including both registered partnership or married) and unmarried.

Paper III: The variables that served as potential confounders in the survival analysis were age, current smoking, mental distress (CONOR-MHI), educational level, and leisure time physical activity level. Additionally, self-reported chronic diseases (cardiovascular disease, cancer, diabetes, and asthma) were included. Participants were categorised as having a chronic disease if they reported one or more of the diseases listed. These variables were collected from both Q1 and Q2 of the Tromsø 4 survey. The analyses were also adjusted for BMI based on the measure of height/weight at the first medical visit.

6.5 Mortality data

In Paper III, information on all-cause and cause-specific mortality was made available through linkage between the Tromsø Study database and the National Register of Norway and the Cause of Death Register, respectively. The linkage process was ensured using the 11-digit personal identification number of each participant. All-cause mortality was based on the registration of a date of death in the National Register of Norway. Cause of death was classified according to International Classification of Diseases, 9th Revision (ICD-9) until 31 December 1995 and according to the International Classification of Diseases, 10th Revision (ICD-10) thereafter. Causes of death were categorised as cardiovascular disease death (ICD-9 codes: 390–459; ICD-10 codes: I00-99) or cancer death (ICD-9 codes: 140–239, and ICD-10 codes: C00-97). Information on all-cause mortality was updated until 17 October 2015 and cause-specific mortality was updated until 31 December 2012.

6.6 Variables with missing information

During the process of writing the present thesis, there were challenges with missing values on questionnaire variables that demanded attention.

Paper I. In Q2 of the Tromsø 6 survey, large number of participants provided an incomplete set of MSCs variables (i.e. one or more of the six variables were left unanswered). After excluding participants >80 years of age, there were 4,012 participants with incomplete MSCs data that were excluded, giving a total number of participants of 8,439. Among the population included in the first paper (N=8,439), missing values on independent variables were: BMI (n=7), self-reported health status (n=47), smoking status (n=81), educational level (n=72), leisure time physical activity level (n=465) and marital status (n=0)

Paper II. Of the 26,977 participants that returned Q1 of the Tromsø 4 survey (and consented to research), 29 lacked an answer to the screening question on MSCs and had to be excluded. There were 10,326 participants who attended both the Tromsø 4 and Tromsø 6 surveys, of whom 6,415 reported no MSCs at baseline (Q1 of the Tromsø 4 survey) constituting the eligible population of Paper II. At follow-up (Q2 of the Tromsø 6 survey), 1,785 participants had incomplete MSCs data as explained for Paper I. In Paper II (N=4,496), missing values on independent variables were: BMI (n=5), self-reported health (n=2), smoking status (n=7), educational level (n=8), leisure time physical activity level (n=40), marital status (n=6) and mental health complaints (n=67).

Paper III. The corresponding figures for the participants with missing data at baseline (Q1 and Q2 of the Tromsø 4 survey) (N=26,977) were: BMI (n=57), smoking status (n=24), educational level (n=103), leisure time physical activity level (n=283), mental health complaints (n=788) and self-reported chronic diseases (n=3270). The high number of missing information on self-reported chronic diseases was explained by information on cancer disease,

which was collected in Q2 (N=24,724), in contrast to the other diseases (asthma, diabetes, cardiovascular disease), which were included in Q1 (N=26,977).

7 Statistical methods

7.1 Descriptive statistics

Descriptive statistics of the categorical variables (Papers I-III) were compared with cross-tabulation, and the chi-square test was applied. The chi-square test estimates the probability of finding the observed difference in the sample (or more extreme) under the assumption that the null hypothesis is true. This test should not be applied if there are cells in the cross-table with values less than 5. This assumption was met. Our large-scale studies provided very large sample sizes, which can lead to an increase in the calculated chi-square value independent of the strength of the relationship between the variables (p. 109 [116]). Therefore, the relationships were further investigated using regression and survival models.

One-way analysis of variance (ANOVA) was performed to examine the descriptive statistics of continuous independent variables on the nominal three-level dependent MSCs variable (Papers I and II), and a post-hoc test was applied when appropriate (chapter 9 [117]). ANOVA is suitable to examine differences in means between the three MSCs categories if samples are randomly chosen from the population, the independent variable is normally distributed, and the variance is similar in the different groups within the sample. The post-hoc test chosen was the Tukey test, which is a conservative test when the groups are of unequal size, as they were in our studies (Papers I and II). In Paper III, descriptive statistics of continuous variables associated with the dichotomised MSCs variables were analysed using the independent samples t-test. Both the assumption of normal distribution and equality of variance were met (pp. 140-141 [117])

7.2 Logistic regression analysis

In order to estimate associations between the binary outcome of MSCs (mild and/or severe versus no MSCs) and sociodemographic, lifestyle, and self-reported health information (Paper I), and to estimate if these factors predicted subsequent MSCs (Paper II), logistic regression

analyses were the natural choice [116, 118]. All analyses were performed unadjusted, age-adjusted, age- and gender-adjusted, and finally, multivariable logistic regression analyses were performed. Interaction term analyses were performed to assess if significant gender differences could be revealed. In Paper II, regression analyses were also performed for severe MSCs (versus mild or no MSCs) and multiregional MSCs (≥3 regions versus <3 regions), and the multivariable regression models were graphically presented. The associations were presented as ORs with 95% CIs for women and men, separately. All participants with missing values for any of the independent variables were excluded.

7.3 Survival analysis

The analyses of mortality rates for participants with MSCs versus no MSCs, and widespread MSCs versus no widespread MSCs, were undertaken with the Cox proportional hazard model (Paper III) [118]. Time from attendance date at baseline (Tromsø 4) to death, emigration, or the end of the study was entered as survival time. Results were presented as hazard ratios (HR) with 95% CIs for women and men, separately. A HR >1.0 indicated that the MSCs group or widespread MSCs group, had an increased mortality risk compared to those without such complaints at baseline. The analyses were performed unadjusted, age-adjusted, and finally multivariable Cox regression models were performed. Additionally, the unadjusted Cox regression model was stratified on 10-year age groups and presented graphically. All participants with missing values for any of the independent variables were excluded. The assumption of proportionality of mortality risk over time was checked by comparing the survival curves of the unadjusted Cox regression models. Crossing curves were not found in the analysis of MSCs or widespread MSCs, indicating a satisfied assumption of proportionality of HRs.

7.4 Level of statistical significance

For all the above-mentioned analyses, a p-value <0.05 was considered statistically significant.

7.5 Statistical software

All data analyses were performed using SPSS 19 (Paper I) and SPSS 21 (Papers II and III).

8 Main results

8.1 Paper I: Prevalence and severity of musculoskeletal complaints

Overall, the age-adjusted prevalence of MSCs in one or more body regions was 15.8% (95% CI: 15.0-16.6) and 42.4% (95% CI: 41.4-43.5) for severe and mild MSCs, respectively. Most of the participants with MSCs (72.3%) had more than two body regions involved. The highest prevalence of MSCs in the specified body regions was found in the neck and shoulders (severe complaints: 8.9% [95% CI: 8.3-9.5]; mild complaints: 34.2% [95% CI: 33.1-35.2]). Among those reporting MSCs from more than five body regions, women had nearly three times higher prevalence than men (14.9% versus 5.6%). Age-stratified analyses revealed that the prevalence of mild MSCs increased steadily with age. Severe MSCs had the highest prevalence in the age group 50-59 years. Multivariable regression analyses showed that respondents with MSCs were more likely to have coexisting negative health factors, and some gender differences in the distribution of such factors were observed.

8.2 Paper II: Predictors of future musculoskeletal complaints

The overall multivariable logistic regression analyses revealed that female gender predicted the presence of MSCs 13 years later (OR: 1.46, 95% CI: 1.29-1.66). The strongest predictor in this analysis was low educational level at baseline (primary/secondary or technical school) with an OR of 1.73 (95% CI: 1.46-2.05), followed by poor self-reported health status (OR: 1.62, 95% CI: 1.30-2.02). BMI $\geq$30 kg/m^2 (OR: 1.39, 95% CI: 1.10-1.77) and current smoking (OR: 1.33, 95% CI: 1.16-1.52) also increased the risk of future MSCs, in contrast to age and physical inactivity, which were not significantly associated in any direction. The gender stratification of the analysis revealed that mental health complaints (i.e. depression and/or anxiety) predicted MSCs in men (OR: 2.03, 95% CI: 1.18-3.50). Current smoking, low educational level, and poor self-reported health status were slightly stronger predictors of MSCs among women than men, but they were not statistically significant.

8.3 Paper III: Musculoskeletal complaints and mortality risk

The crude Cox regression analyses revealed an increased risk of all-cause mortality among females (HR: 1.36, 95% CI: 1.26-1.46) and males (HR: 1.35, 95% CI: 1.25-1.45) who reported MSCs. The same applied for participants with widespread MSCs. In the multivariable Cox regression analyses (adjusted for age, smoking, mental health complaints, educational level, BMI, leisure time physical activity level, and self-reported chronic diseases), MSCs did not predict all-cause mortality among women (HR: 0.93, 95% CI: 0.85-1.01) or men (HR: 0.93, 95% CI: 0.85-1.01). Widespread MSCs were not found to significantly predict the risk of all-cause mortality in either women (HR: 0.90, 95% CI: 0.80-1.01) or men (HR: 0.87, 95% CI: 0.76-1.00). The cause-specific mortality analyses did not add any information to these findings. Another interesting finding revealed in the preliminary analyses of Paper III was that, when self-reported health status was included as a covariate in the multivariable Cox regression analysis, the MSCs and widespread MSCs groups had a HR <1.0, indicating a significantly lower mortality than that observed among those without MSCs or widespread MSCs. The variable self-reported health was excluded from the final analyses due to a significant interaction term between this variable and MSCs.

9 Discussion

9.1 Methodological considerations

This large-scale, population-based study examined several aspects of a population reporting pain and/or stiffness in muscles and joints lasting for 3 months or more during the past year (MSCs). Adult women and men from a general population of Northern Norway were included. Overall, the Tromsø Study surveys have high response rates, but the response rate was heavily reduced by incomplete MSCs data in Tromsø 6 (paper I and II).

Even though there were differences in how participants were asked to report the presence and severity of MSCs between the two Tromsø surveys in this thesis, the same definition of MSCs was used in all of the papers: one cross-sectional and the two prospective cohort studies. Moreover, in the prospective studies (Papers II and III), the baseline variables were reported without knowledge of the future outcome (MSCs or mortality, respectively). Finally, the population-based approach reduces the chances that data are influenced by health-seeking behaviour or diagnostic processes. However, in this epidemiological study there are several methodological considerations to discuss in order to assess the generalisability of our results to other populations.

9.1.1 Systematic errors

Information sampled in the Tromsø 4 survey (1994/95) came from total birth cohorts older than 25 years of age, and the response rate was very high (77%). Moreover, the Q1 and Q2 of the Tromsø 4 survey did not have a large number of non-responders, and 91% of the attendees of Tromsø 4 also finished Q2 (N=24,724). Baseline data for Papers II and III were collected from the Tromsø 4 survey cohort, which is a middle-class Caucasian population likely to be representative of the Tromsø population [31]. Information from the Tromsø 6 survey (2007/08) constituted the basis for Paper I, and also provided follow-up data for Paper II. Due to economical constraints, it was necessary to carefully consider invitees in order to produce a

representative sample of the population (see 6.2 Study population). Of the 19,762 individuals invited to the Tromsø 6 survey, 12,984 responded to Q1 and attended the first visit, providing a response rate of 65.7%, which is considered high in population-based health surveys that include medical examinations [119]. The Tromsø 6 survey cohort is considered representative of the adult population of Tromsø [31]. In sum, the population-based approach chosen in this thesis should not have produced selection bias (p. 134, [120]).

As most participants answered Q2 at the site of the first medical visit, a total of 12,440 participants answered both Q1 and Q2, but only 8,439 participants (42.7 % of the invited) completed a full MSCs questionnaire in Q2. The questions on MSCs in Q2 of the Tromsø 6 survey constituted the outcome variables in Papers I and II, and missing values constituted a challenge. Unlike the Tromsø 4 survey, this questionnaire lacked an overall MSCs variable to enable the assessment of region-independent prevalence of MSCs. Thus, we created an overall MSCs variable by combining responses from all body regions as described in the Statistical Methods section. Nevertheless, Q2 provided the opportunity to give a negative or positive response at individual body regions. Early in the analytical process, it became obvious that a large portion of participants with MSCs at one body region tended to skip responding to the rest of the body regions. This was further complicated by the fact that a somewhat smaller group of participants gave negative responses to some, but not all, body regions. In addition, some participants did not report data on any of the body regions.
A complete-case approach was chosen, providing 8,439 participants with self-reported MSCs data from the Tromsø 6 survey. A sensitivity analysis was performed by coding the missing answers as “no complaints”, which led to a slightly increased prevalence of MSCs in the Tromsø 6 survey, indicating that the complete-case approach produced conservative prevalence estimates. There were statistically significant differences between the population with complete data and those with incomplete data regarding the descriptive statistics (Papers

I and II). As part of the sensitivity analysis, the logistic regression analysis remained unchanged compared to the complete-case approach. Based on this, a complete-case approach was also chosen for the follow-up data in Paper II. The handling of incomplete data on MSCs in this thesis may have violated the representativeness of the sample, as it likely led to including participants who fully understood the questionnaires. If so, the results could underestimate what could be expected in another population. This would have fewer implications on the interpretation of the logistic regression analyses performed in Papers I and II. Even though the effect size diminished, the significant associations revealed in the sensitivity analyses remained significant in the multivariable models when a complete-case approach was chosen. In sum, with the overall high response rates of the Tromsø Study and our above-mentioned sensitivity analyses of missing data handling, the results of this thesis should be valid for the source population of Tromsø.

9.1.2 Random error

The risk of our findings not being reproducible due to random error or imprecision was reduced by the large sample size in the study. Furthermore, random error was addressed by appropriate statistical methods, by which a p-value of 5% was used to test the hypotheses and 95% CIs were computed. When the p-value exceeded 5% (non-significant finding) and/or the CI included 1 (OR in Papers I and II, HR in Paper III), the null hypotheses were retained and the finding was reported accordingly (pp. 148-161 [120]). The risk of type I error (i.e. rejecting a null hypothesis that is true) was inflated due to multiple testing. To avoid that, a Bonferroni correction was used (Paper II) to calculate a lower p-value, providing a more conservative basis for discarding the null hypotheses (p. 236 [120]). Reducing the chance of type I error increases the risk of type II error (i.e. retaining a null hypothesis that is false). However, the large sample size, p-values clearly below 5%, and overall narrow CIs minimises the risk of type II as well as type I errors.

9.1.3 Information and classification bias

The MSCs variables in the Tromsø 4 and Tromsø 6 surveys had a binary (yes/no) and a three-level ordinal (no/mild/severe) response, respectively. In Paper I, the overall prevalence of any MSCs (mild or severe MSCs together) was higher than the prevalence reported in another study of a Norwegian general population using a binary response variable with the same definition of MSCs [15]. We hypothesise that some of the participants answering "no" to a binary response variable may have reported "mild complaints" if presented an ordinal response variable. Hence, we will not claim that MSCs are *de facto* more prevalent in the Tromsø population compared to other populations, and therefore the higher prevalence of MSCs presented in this thesis is not regarded as an indication of poor generalisability of the results. This is further emphasised by the fact that the prevalence of MSCs in the Paper III (binary response variable) was 35.7%, which is comparable to other studies [14, 35, 38, 46, 121]. During the work on this thesis, it was interesting to discover that the Tromsø Study included variables on symptoms from the musculoskeletal system that differed slightly from survey to survey, but also within one survey. In the Tromsø 6 survey, Q1 had a binary response pain question with a slightly different definition of pain than that used for MSCs included in this thesis. Participants were asked if they had "persistent or constantly recurring pain lasting for 3 months or more", and about 35% of the participants answered yes [122]. When designing the methods of Paper II, we claimed that this phrasing was not comparable to our 1-year prevalence variable of MSCs at baseline (Tromsø 4). However, it could be questioned how much the phrasing of these two different variables influences the prevalence. In Q2 of the Tromsø 6 study, immediately after the six MSCs body regions, the participants were presented with another set of questions with the exact same layout, but asking for MSCs during "the latest 4 weeks" instead of "at least 3 months in the last year" (i.e. 1-month and 1-year prevalence, respectively). An explorative and preliminary analysis of the agreement between these variables revealed a very high degree of agreement on all body regions. Of

course, this should be interpreted with caution, as it is not contradictory to have MSCs prevalent in the last month and the last year at the same time. However, it might imply that different phrasing of MSCs variables has fewer implications on a survey's case-finding ability. The most recent survey, Tromsø 7, adopted MSCs variables from the Tromsø 6 survey. Thus, future analyses of the Tromsø Study can be performed with consistent data. Besides the questionnaires of health surveys included in CONOR [123], there is no national standard of MSCs questionnaires in Norwegian health surveys. Such an initiative would improve the Norwegian epidemiological research on musculoskeletal health.

Well-established questionnaires provided information on the covariates examined in this thesis, and data were collected at study enrolment, minimising the chance of recall bias. Additionally, height and weight were measured in a standardised way and were used to calculate BMI. Although the transformation of a continuous variable of BMI to a categorical one in order to simplify the analysis may hide important nuances, with ordinal variables of four to five categories the loss of information is quite small [124]. The analyses including BMI as a continuous variable did not reveal contradictory findings (Paper I). Furthermore, as covariates were collected at study enrolment, it was difficult to adjust for changes during follow-up in Papers II and III. For instance, current smokers at enrolment could have stopped smoking, and non-smokers could have started. However, as the included participants were older than 25 years in Papers II and III, and the average age for starting smoking in Norway is 18 years for women and men [125], we can assume that the group of non-smokers in these samples is quite stable. Thus, regarding smoking status, most of those who change their smoking status are stopping smoking, reducing their exposure time to tobacco. This may lead to an underestimation of tobacco smoking as a risk factor for MSCs.

Mortality data from the Cause of Death Registry is problematic, as the physician writing the death certificate is the one to register cause of death. Diagnoses on death certificates have low

reproducibility, and autopsy can result in a changed cause of death [126-128]. In the present thesis, potential inconsistencies in the registered cause of death were compensated by the highly valid all-cause mortality data that relied on a date of death collected from the National Register of Norway.

9.1.4 External validity

Can the results of this study be generalised to other populations? External validity is dependent on internal validity. With the above-mentioned methodological considerations, the internal validity of this thesis is mostly dependent on what the MSCs variables are actually measuring in the study sample. We must assume that those categorised as having MSCs in this thesis truly have had such complaints (more or less severe) the last year before the time of survey, and likely also with duration of three months according to the phrasing of the variables. Furthermore, as MSCs are subjective by definition, and not a defined pathophysiological "event" that occurs or not, it should not be very controversial to claim that the degree of MSCs and the presence of MSCs can fluctuate with time [121]. Hence, the study design provided no data on the burden of MSCs in between the two points of measurement in Paper II, or between baseline and the defined end-points in Paper III. Thus, the generalisation of the associations between predictors of MSCs and the association between MSCs and mortality should be done with some caution regarding the possible fluctuation of MSCs with time. However, Landmark and colleagues [129] concluded that the use of simple recall questions shows considerable stability of pain. One should be less concerned about fluctuations of pain over time when measuring chronic pain by recall in population studies, and in their study this was further emphasised by the fact that current pain was highly correlated with previous pain, indicating that the methods were able to sample a population that is bothered by pain over time [129]. Generalisation should always be done with caution. The Tromsø study population is considered representative of an urban middle-

class adult Northern European Caucasian population [31, 114], and therefore the generalisability of the present thesis should be limited accordingly.

9.2 Discussion of the results

The results of each paper are discussed in detail therein. This section will elaborate on the results and possible implications.

The prevalence of MSCs in Paper I was higher in women than in men; in particular among those reporting MSCs from ≥5 body regions. The results of Tschudi-Madsen and colleagues support these figures [99], as do those of Parot-Schinkel and colleagues [130]. More than half of the participants reported any MSCs lasting for at least 3 months the previous year. The handling of missing data produced slightly conservative prevalence estimates, indicating that it is more common to have any one MSC than none at all. GPs should be aware of this when seeing patients with musculoskeletal symptoms and include it in the conversation to reassuring the patient. One-fifth of consultations in primary care are due to symptoms or diseases of the musculoskeletal system [6, 8]. Compared to the high prevalence in the general population, the lower prevalence of MSCs reported in primary care suggests that the population provides a large-scale selection of which symptoms lead to health care use. However, each individual handles their illness in a unique manner, and the ability to interpret symptoms varies with the individual's previous experiences, acquired knowledge, and presence of a support network [131]. Green and colleagues stated that disease has become the focus of the technological and market-driven medical systems, while illness and the socio-cultural aspects of medicine have blurred into the background. Fostering attitudes, values, and communication will improve understanding of the meaning and context of a patient's illness [10]. The GP's focus on patient's ideas, concerns, and expectations in addition to an adequate examination of the musculoskeletal symptoms might effectively help to differentiate between musculoskeletal symptoms within the normal range, which could benefit from a reassuring

approach, and individuals presenting symptoms and clinical signs that should undergo further medical investigations.

Another important finding of Paper I was that, among those reporting any MSCs, nearly three-quarters had complaints from more than one body region. This finding may be more important than the prevalence of MSCs at specified body regions. The number of body regions affected was strongly associated with other symptoms, functional status, and a negative health profile in general [29, 99, 132]. Thus, if we view multiregional MSCs as an indicator of a poor health profile, better prevention of MSCs could be beneficial to public health. The results of Paper I underline this by revealing that those reporting MSCs were more likely to simultaneously report tobacco smoking, be obese, and have a poor self-reported health status. These associations are supported by other large-scale studies [15, 56, 68]. Hagen and colleagues reported a strong association between poor self-reported health and MSCs, similar to the corresponding figures in Paper I. The same applies for tobacco smoking. Hence, it is a major strength that the results are similar, despite some differences in the MSCs variable.

Paper II filled the gaps of Paper I by adding temporality to the associations. The aim of Paper II was to examine if specific health factors predicted the presence of MSCs 13 years later in women and men reporting absence of MSCs at baseline. Also here, smoking status, self-reported health status, and educational level were associated with MSCs. The ORs corresponding to these associations were slightly higher in women than in men, as found in Paper I, but the differences were not statistically significant. Current smokers were more likely to report MSCs (OR: 1.33, 95% CI: 1.16-1.52) at the time of follow-up in Paper II compared to non-smokers. The biological mechanism by which this occurs cannot be determined with the present study design. Nevertheless, through the ability to assess

temporality, this study adds a possible reduced burden of MSCs to the list of positive effects of less tobacco smoking.

A dose-response relationship was found between leisure time physical activity level and MSCs among women in the age-adjusted logistic regression model in Paper II, but this was lost when adjusting for other covariates. In Paper I, this association was not that prominent, but a gender difference was present in both papers. Magnusson and colleagues found that the onset of widespread MSCs was likely a result of a combination of obesity, mental distress, poor physical fitness, and poor sleep quality, and that poor physical fitness was the most likely factor to interact with other covariates [57]. The analyses in Paper II were checked for interactions between the factors included. Hence, the loss of significant associations between MSCs and leisure time physical activity level in the multivariable analyses of the present thesis is less likely to be a result of over-adjustment. Landmark and colleagues suggested that the relationship between exercise and MSCs was close in time. That is, in times when participants exercised more, they reported less MSCs [84]. In Paper II, changes in leisure time physical activity level during the 13-year follow-up period might dilute the associations. If the lack of significant associations reported in Paper II can be explained by methodological issues, then physically inactive women might realistically be more vulnerable to MSCs than men. The strong association between MSCs and mental health distress was in agreement with Hagen and colleagues [15], but in Paper II the association was found only in men. Mental health distress also predicted MSCs in the lumbar back and lower extremities in Paper II. The present thesis adds to this research, showing that men facing mental distress may be more vulnerable to MSCs than women.

In Paper II, the prevalence of MSCs was 54.6% at follow-up. When more than half of the population reports MSCs, one should suspect a heterogeneity in the aetiology of these complaints. This study was able to indicate characteristics of individuals at risk for

subsequent MSCs, but the assumed heterogeneity and the observational study design make it difficult to claim that the exact mechanisms behind developing MSCs could be assessed. Hence, causal inference with the associations found in Paper II should be interpreted with caution. On the other hand, the similar findings of Papers I and II strengthen the present thesis' ability to describe health characteristics associated with MSCs. The gender difference in the prevalence of MSCs could not be explained by any risk factors that were more significantly associated with MSCs in women than men.

When reviewing the associations presented in Paper II, it could be debated whether it is more appropriate to report incidence proportion (and risk ratios) rather than ORs in a prospective study design. McBeth and Jones discussed the different measures of reporting rates of musculoskeletal pain in their review from 2007. They suggested that musculoskeletal pain is episodic and has a poorly-defined onset. This makes it problematic to use the term incidence (or first ever), as the "incident cases" reported in some studies are probably prevalent episodes identified among individuals who were symptom-free at the time of enrolment in a study [121]. With the high prevalence at follow-up in Paper II, it is expected that the OR is higher than a risk ratio would be (p.166 [116]), and this might give the impression of a stronger relationship than that which was actually found. But taking the aim and design of the study and the above-mentioned considerations into account, the presentation of ORs is justified and does not violate the conclusions of Paper II.

The present thesis did not evaluate the effect of different preventive strategies or treatment of MSCs. Thus, it cannot be claimed that aiming interventions towards smoking cessation will influence the course of the MSCs as an isolated health issue. However, focusing on the general risk profile of an individual level is an important task for GPs, and increasing the knowledge on factors that contribute to MSCs is crucial in developing strategies for prevention [9]. The present thesis demonstrated that there might be a potential to reduce

general risk factors among people reporting MSCs to decrease such health problems. Additionally, 85% of all Norwegian municipalities actually have a position dedicated to coordinating public health services, including preventive strategies [133]. Taking the above-mentioned associations into account, these coordinators should be aware that MSCs can be used as an indicator of health status.

In order to explore the health status of people reporting MSCs further, Paper III aimed to assess if they had higher mortality rates than people reporting no MSCs. Even though results from population-based studies can give valuable information to primary care providers, their scientific and clinical relevance increases when they are connected to other information sources such as the Cancer Registry of Norway, the Cause of Death Register, or the National Register of Norway. Connecting data from these sources provides almost infinite possibilities to explore factors that prevent and promote illness and disease. Due to the existence of the Norwegian personal identification number and the national mortality information from the National Register of Norway, it is possible to produce highly valid data. In a systematic review from 2014, Smith and colleagues concluded that there was a divergence in the evidence on the relationship between MSCs and mortality [112]. Through Paper III, the present thesis responds to the concerns raised by this systematic review. The analyses conducted and reported in Paper III gave no indication that MSCs or widespread MSCs present at baseline are independent risk factors for mortality. The increased mortality rates in crude analyses were lost when adjusting for possible confounders, and no gender differences in mortality rates were revealed. Thus, neither the gender difference in the prevalence of MSCs, nor the peak in the prevalence of severe MSCs at age 50-59 years found in Paper I, could be attributed to increased mortality risk among respondents with MSCs. Åsberg and colleagues published a study using a methodology that was very similar to that used in Paper III [111], and found no increased mortality among respondents with MSCs or widespread

MSCs. This was further determined through their systematic review [22]. Together with the updated literature on the field, the present thesis addressed the concerns of Smith and colleagues [112] about incongruent methodologies blurring the evidence of mortality risk among respondents with MSCs.

Poor self-reported health has been related to higher mortality rates [95, 134], and it was also the strongest factor associated with MSCs in Paper I. Therefore, the preliminary analyses of Paper III were adjusted for poor self-reported health. Significantly, a lower risk of all-cause mortality among respondents with MSCs compared to those reporting no MSCs was found. Due to significant interaction analyses, the self-reported health variable was excluded from the final analyses. This preliminary analysis could indicate that when one's general health perception is poor due to MSCs, the mortality risk is lower than when this perception is poor due to other, known deadly diseases. Based on this we infer that presence of MSCs is not an independent risk factor for subsequent death, despite the higher burden of other risk factors and poorer self-reported health among people reporting MSCs. In clinical settings, this finding is of importance. Patients can be reassured that, even though the MSCs they experience are influencing their daily life and well-being, their presence do not reduce life expectancy. Such information may have a symptom-relieving effect in itself.

There are however limitations in the study design of Paper III that might hide a true association between MSCs and mortality, i.e. MSCs were only measured at baseline. Thus, it is possible that those who reported no MSCs at baseline experienced them during follow-up, but remained classified as no MSCs, which may have blurred the results. Further, the prevalence of MSCs at baseline was high, and it would be somewhat sensational if this large group had a higher mortality risk, even if the increased risk was small. However, if the lower prevalence of widespread MSCs indicates a higher clinical significance than MSCs overall, one should expect Paper III to be able to reveal an increased mortality risk in this group of the

population, if present. This was not the case in Paper III. So with the limitations of sampling participants with MSCs mentioned in the section *7.1.3 Information and classification bias*, it is possible to generalise the results and claim that reporting MSCs does not affect mortality risk.

10 Final conclusion

- Based on data from the Tromsø Study, more than half of the population report any MSCs, indicating that it is more common to have at least one MSC than none.
- Presence of MSCs was dependent on the reported severity of complaints; prevalence of mild MSCs steadily increased with age, while prevalence of severe MSCs peaked in the 50-59-year age group.
- The peak in MSCs prevalence is probably not associated with a higher mortality risk among those reporting MSCs.
- Reporting MSCs was associated with a negative health profile, which indicates that people suffering from MSCs have the potential to improve their general health.
- Mental health distress (i.e. symptoms of depression and/or anxiety) tended to predict MSCs in men more than women.
- Leisure time physical activity level was not associated with MSCs in the cross-sectional study (Paper I), nor was it predictive of MSCs in the prospective study (Paper II).

11 Future research

MSCs are a costly public health problem in Norway and in other Western countries due to their heavy burden on social welfare systems [51]. MSCs constitute a large group of patients in primary care. Diagnosing, treating, and evaluating patients with these health issues is mostly done by GPs. Combining this with the task of acting as a gatekeeper for the social welfare system is challenging. The present thesis shows that a considerable part of a general population reports MSCs and points out predictors of reporting MSCs later in life. A small reduction in the burden of MSCs would have large positive consequences. Future epidemiological research should aim to investigate the proportion of the population that reports absence of MSCs in several consecutive health surveys, as little is known about which characteristics maintain the absence of MSCs. Such an approach could provide a better homogeneity in the sample than the present thesis was able to. Many authors have explained differences in MSCs prevalence across studies by differences in the definition of MSCs [51, 121]. The present thesis supports the notion that the layout and phrasing of MSCs questionnaires have an impact on prevalence of MSCs. However, a survey's case-finding ability might not be dependent of different phrasings of questions. The Tromsø Study provides a unique opportunity to compare responses to different questionnaires regarding MSCs. The results of such an examination may support a simplification of already wide-ranging questionnaires of the Tromsø Study.

12 Erratum

- Paper I, methods section: “all residents of Tromsø aged 42-44”. It should say 40-42 years.
- Paper I, II and III, methods sections: Age, gender and marital status were collected from the National Register of Norway by the Tromsø study’s technical staff before the datasets were made anonymous for the researchers (i.e. the mentioned variables were not questionnaire data).

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Appendix I

First questionnaire of Tromsø 4 (Q1)

Innbydelse til

HELSEUNDERSØKELSEN

Fødselsdato **Personnr.** **Kommune** **Kretsnr.**

Velkommen til helseundersøkelsen i Tromsø!

Helseundersøkelsen kommer nå til Tromsø. Tid og sted for frammøte finner du nedenfor. Du finner også en orientering om undersøkelsen i den vedlagte brosjyren.

Vi ber deg fylle ut spørreskjemaet på baksiden og ta det med til undersøkelsen.

Undersøkelsen blir mest verdifull om frammøtet blir så fullstendig som mulig. Vi håper derfor at du har mulighet til å komme. Møt selv om du kjenner deg frisk, om du er under legebehandling, eller om du har fått målt kolesterol og blodtrykk i den senere tid.

Vennlig hilsen
Kommunehelsetjenesten
Fagområdet medisin, Universitetet i Tromsø
Statens helseundersøkelser

EGEN HELSE

Hvordan er helsen din nå? *Sett bare ett kryss.*

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

Har du, eller har du hatt:

	JA	NEI	Alder første gang
Hjerteinfarkt 13			år
Angina pectoris (hjertekrampe) 16			år
Hjerneslag/hjerneblødning 19			år
Astma 22			år
Diabetes (sukkersyke) 25			år

Bruker du medisin mot høyt blodtrykk?

Nå	28	1
Før, men ikke nå		2
Aldri brukt		3

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? 29 — JA / NEI

Har du de siste to ukene følt deg:

	Nei	Litt	En god del	Svært mye
Nervøs og urolig? 30				
Plaget av angst? 31				
Trygg og rolig? 32				
Irritabel? 33				
Glad og optimistisk? 34				
Nedfor/deprimert? 35				
Ensom? 36				
	1	2	3	4

RØYKING

Røykte noen av de voksne hjemme da du vokste opp? 37 — JA / NEI

Bor du, eller har du bodd, sammen med noen dagligrøykere etter at du fylte 20 år? 38 — JA / NEI

Hvis "JA", hvor mange år tilsammen? 39 — Antall år

Hvor lenge er du vanligvis daglig tilstede i røykfylt rom? 41 — Antall timer

Sett 0 hvis du ikke oppholder deg i røykfylt rom.

Røyker du selv:

	JA	NEI
Sigaretter daglig? 43		
Sigarer/sigarillos daglig? 44		
Pipe daglig? 45		

Hvis du har røykt daglig tidligere, hvor lenge er det siden du sluttet? 46 — Antall år

Hvis du røyker daglig nå eller har røykt tidligere:

Hvor mange sigaretter røyker eller røykte du vanligvis daglig? 48 — Antall sigaretter

Hvor gammel var du da du begynte å røyke daglig? 52 — Alder år

Hvor mange år tilsammen har du røykt daglig? 54 — Antall år

MOSJON

Hvordan har din fysiske aktivitet i fritiden vært det siste året? *Tenk deg et ukentlig gjennomsnitt for året.*
Arbeidsvei regnes som fritid.

	Timer pr. uke: Ingen	Under 1	1-2	3 og mer
Lett aktivitet *(ikke svett/andpusten)* 56				
Hard fysisk aktivitet *(svett/andpusten)* 57				
	1	2	3	4

KAFFE

Hvor mange kopper kaffe drikker du daglig?
Sett 0 hvis du ikke drikker kaffe daglig.

Kokekaffe	58	Antall kopper
Annen kaffe	60	Antall kopper

ALKOHOL

Er du total avholdsmann/-kvinne? 62 — JA / NEI

Hvor mange ganger i måneden drikker du vanligvis alkohol? *Regn ikke med lettøl.*
Sett 0 hvis mindre enn 1 gang i mnd. 63 — Antall ganger

Hvor mange glass øl, vin eller brennevin drikker du vanligvis i løpet av to uker? 65
Regn ikke med lettøl.
Sett 0 hvis du ikke drikker alkohol.

Øl	Vin	Brennevin
glass	glass	glass

FETT

Hva slags margarin eller smør bruker du vanligvis på brødet? *Sett ett kryss.*

Bruker ikke smør/margarin	71	1
Meierismør		2
Hard margarin		3
Bløt (soft) margarin		4
Smør/margarin blanding		5
Lettmargarin		6

UTDANNING/ARBEID

Hvilken utdanning er den høyeste du har fullført?

Grunnskole, 7-10 år, framhaldsskole, folkehøgskole	72	1
Realskole, middelskole, yrkesskole, 1-2-årig videregående skole		2
Artium, øk.gymnas, allmennfaglig retning i videregående skole		3
Høgskole/universitet, mindre enn 4 år		4
Høgskole/universitet, 4 år eller mer		5

Hva slags arbeidssituasjon har du nå?

Lønnet arbeid	73	
Heltids husarbeid	74	
Utdanning, militærtjeneste	75	
Arbeidsledig, permittert	76	

Hvor mange timer lønnet arbeid har du i uka? 77 — Antall timer

Mottar du nå noen av følgende ytelser?

Syketrygd (sykmeldt)	79	
Attføring	80	
Uførepensjon	81	
Alderspensjon	82	
Sosialstøtte	83	
Arbeidsløshetstrygd	84	

SYKDOM I FAMILIEN

Har en eller flere av foreldre eller søsken hatt hjerteinfarkt (sår på hjertet) eller angina pectoris (hjertekrampe)? 85 — JA / NEI / VET IKKE

Appendix II

Second questionnaire of Tromsø 4 (Q2)

Helseundersøkelsen i Tromsø

Hovedformålet med Tromsøundersøkelsene er å skaffe ny kunnskap om hjerte-karsykdommer for å kunne forebygge dem. I tillegg skal undersøkelsen øke kunnskapen om kreftsykdommer og andre alminnelige plager som f.eks. allergier, smerter i muskulatur og nervøse lidelser. Vi ber deg derfor svare på noen spørsmål om forhold som kan ha betydning for risikoen for disse og andre sykdommer.

Skjemaet er en del av Helseundersøkelsen som er godkjent av Datatilsynet og av Regional komite for medisinsk forskningsetikk. Svarene brukes bare til forskning og behandles strengt fortrolig. Opplysningene kan senere bli sammenholdt med informasjon fra andre offentlige helseregistre etter de regler som Datatilsynet og Regional komite for medisinsk forskningsetikk gir.

Hvis du er i tvil om hva du skal svare, sett kryss i den ruten som du synes passer best.

Det utfylte skjema sendes i vedlagte svarkonvolutt. Portoen er betalt.

På forhånd takk for hjelpen!

Med vennlig hilsen

Fagområdet medisin
Universitetet i Tromsø **Statens helseundersøkelser**

Hvis du ikke ønsker å besvare spørreskjemaet, sett kryss i ruten under og returner skjemaet. Da slipper du purring.

Jeg ønsker ikke å besvare spørreskjemaet ..... 17 ❑

Dag Mnd År

Dato for utfylling av skjema: ..... 18 ...../...../.....

OPPVEKST

I hvilken kommune bodde du da du fylte 1 år?

..... 24 - 28

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

Hvordan var de økonomiske forhold i familien under din oppvekst?

- Meget gode ..... 29 ❑
- Gode ..... ❑
- Vanskelige ..... ❑
- Meget vanskelige ..... ❑

Hvor mange av de første 3 årene av ditt liv
- bodde du i by? ..... 30 _____ år
- hadde dere katt eller hund i hjemmet? ..... 31 _____ år

Hvor mange av de første 15 årene av ditt liv
- bodde du i by? ..... 32 _____ år
- hadde dere katt eller hund i hjemmet? ..... 34 _____ år

BOLIG

Hvem bor du sammen med?

Sett ett kryss for hvert spørsmål og angi antall.		Ja	Nei	Antall
Ektefelle/samboer	36	❑	❑	
Andre personer over 18 år	37	❑	❑	_____
Personer under 18 år	40	❑	❑	_____

Hvor mange av barna har plass i barnehage? ..... 43 _____

Hvilken type bolig bor du i?
- Enebolig/villa ..... 45 ❑ 1
- Gårdsbruk ..... ❑ 2
- Blokk/terrasseleilighet ..... ❑ 3
- Rekkehus/2-4 mannsbolig ..... ❑ 4
- Annen bolig ..... ❑ 5

Hvor stor er din boenhet? ..... 46 _____ m^2

I omtrent hvilket år ble boligen bygget? ..... 49 _____

		Ja	Nei
Er boligen isolert etter 1970?	53	❑	❑
Bor du i underetasje/kjeller?	54	❑	❑
Hvis "Ja", er gulvbelegget lagt på betong?	55	❑	❑

Hvordan er boligen hovedsakelig oppvarmet?
- Elektrisk oppvarming ..... 56 ❑
- Vedfyring ..... ❑
- Sentralvarmeanlegg oppvarmet med:
  - Parafin ..... ❑
  - Elektrisitet ..... ❑

		Ja	Nei
Er det heldekkende tepper i stua?	60	❑	❑
Er det katt i boligen?	61	❑	❑
Er det hund i boligen?	62	❑	❑

ARBEID

Hvis du er i lønnet eller ulønnet arbeid, hvordan vil du beskrive ditt arbeid?
- For det meste stillesittende arbeid? ..... 63 ❑ 1
  (f.eks. skrivebordsarbeid, montering)
- Arbeid som krever at du går mye? ..... ❑ 2
  (f.eks. ekspeditørarb., lett industriarb., undervisning)
- Arbeid hvor du går og løfter mye? ..... ❑ 3
  (f.eks. postbud, pleier, bygningsarbeid)
- Tungt kroppsarbeid? ..... ❑ 4
  (f.eks. skogsarb., tungt jordbruksarb., tungt bygn.arb.)

Kan du selv bestemme hvordan arbeidet ditt skal legges opp?
- Nei, ikke i det hele tatt ..... 64 ❑ 1
- I liten grad ..... ❑ 2
- Ja, i stor grad ..... ❑ 3
- Ja, det bestemmer jeg selv ..... ❑ 4

		Ja	Nei
Har du skiftarbeid, nattarbeid eller går vakter?	65	❑	❑

Har du noen av følgende yrker (heltid eller deltid)?

Sett ett kryss for hvert spørsmål.		Ja	Nei
Sjåfør	66	❑	❑
Bonde/gårdbruker		❑	❑
Fisker		❑	❑

EGNE SYKDOMMER

Har du noen gang hatt:
Sett ett kryss for hvert spørsmål. Oppgi alderen ved hendelsen.
*Hvis det har skjedd flere ganger, hvor gammel var du **siste** gang?*

	Ja	Nei	Alder
Lårhalsbrudd 69	❑	❑	_____
Brudd ved håndledd/underarm 72	❑	❑	_____
Nakkesleng (whiplash) 75	❑	❑	_____
Skade som førte til sykehusinnleggelse 78	❑	❑	_____
Sår på magesekken 81	❑	❑	_____
Sår på tolvfingertarmen 84	❑	❑	_____
Magesår-operasjon 87	❑	❑	_____
Operasjon på halsen 90	❑	❑	_____

Har du eller har du hatt:
Sett ett kryss for hvert spørsmål.

	Ja	Nei
Kreftsykdom 93	❑	❑
Epilepsi (fallesyke)	❑	❑
Migrene	❑	❑
Kronisk bronkitt	❑	❑
Psoriasis	❑	❑
Benskjørhet (osteoporose) 98	❑	❑
Fibromyalgi/fibrositt/kronisk smertesyndrom	❑	❑
Psykiske plager som du har søkt hjelp for	❑	❑
Stoffskiftesykdom (skjoldbruskkjertel)	❑	❑
Sykdom i leveren	❑	❑
Nyrestein 103	❑	❑
Blindtarmsoperasjon	❑	❑
Allergi og overfølsomhet		
Atopisk eksem (f.eks. barneeksem)	❑	❑
Håndeksem	❑	❑
Høysnue	❑	❑
Matvareallergi 108	❑	❑
Annen overfølsomhet (ikke allergi)	❑	❑

Hvor mange ganger har du hatt forkjølelse, influensa, "ræksjuka" og lignende siste halvår? ..110 ____ ganger

	Ja	Nei
Har du hatt dette siste 14 dager? 112	❑	❑

SYKDOM I FAMILIEN

Kryss av for de slektningene som har eller har hatt noen av sykdommene:
Kryss av for "Ingen" hvis ingen av slektningene har hatt sykdommen.

	Mor	Far	Bror	Søster	Barn	Ingen
Hjerneslag eller hjerneblødning 113	❑	❑	❑	❑	❑	❑
Hjerteinfarkt før 60 års alder 119	❑	❑	❑	❑	❑	❑
Kreftsykdom 125	❑	❑	❑	❑	❑	❑
Astma 131	❑	❑	❑	❑	❑	❑
Mage/tolvfingertarm-sår 137	❑	❑	❑	❑	❑	❑
Benskjørhet (osteoporose) 143	❑	❑	❑	❑	❑	❑
Psykiske plager 149	❑	❑	❑	❑	❑	❑
Allergi 155	❑	❑	❑	❑	❑	❑
Diabetes (sukkersyke) 161	❑	❑	❑	❑	❑	❑
– alder da de fikk diabetes 167	____	____	____	____	____	____

SYMPTOMER

	Ja	Nei
Hoster du omtrent daglig i perioder av året? 177	❑	❑
Hvis "Ja":		
Er hosten vanligvis ledsaget av oppspytt? 178	❑	❑
Har du hatt slik hoste så lenge som i en 3 måneders periode i begge de to siste år? 179	❑	❑
Har du hatt episoder med piping i brystet? 180	❑	❑
Hvis "Ja", har dette oppstått:		
Sett ett kryss for hvert spørsmål.		
Om natten 181	❑	❑
Ved luftveisinfeksjoner	❑	❑
Ved fysiske anstrengelser	❑	❑
Ved sterk kulde	❑	❑
Har du merket anfall med plutselig endring i pulsen eller hjerterytmen siste år? 185	❑	❑

Hvor ofte er du plaget av søvnløshet?
- Aldri, eller noen få ganger i året ....186 ❑ 1
- 1-2 ganger i måneden ❑ 2
- Omtrent en gang i uken ❑ 3
- Mer enn en gang i uken ❑ 4

Hvis du er plaget av søvnløshet i perioder, når på året er du mest plaget?
- Ingen spesiell tid ....187 ❑ 1
- Særlig i mørketiden ❑ 2
- Særlig i midnattsoltiden ❑ 3
- Særlig vår og høst ❑ 4

	Ja	Nei
Har du det siste året vært plaget av søvnløshet slik at det har gått ut over arbeidsevnen? 188	❑	❑

Hvor ofte er du plaget av hodepine?
- Sjelden eller aldri ....189 ❑ 1
- En eller flere ganger i måneden ❑ 2
- En eller flere ganger i uken ❑ 3
- Daglig ❑ 4

Hender det at tanken på å få alvorlig sykdom bekymrer deg?
- Ikke i det hele tatt ....190 ❑ 1
- Bare i liten grad ❑ 2
- En del ❑ 3
- Ganske mye ❑ 4

BRUK AV HELSEVESENET

Hvor mange ganger har du siste året, på grunn av egen helse eller sykdom, vært:
*Sett **0** hvis du **ikke** har hatt slik kontakt.*

	Antall ganger siste år
Hos vanlig lege/legevakt 191	_____
Hos psykolog eller psykiater	_____
Hos annen legespesialist utenfor sykehus	_____
På poliklinikk 197	_____
Innlagt i sykehus	_____
Hos bedriftslege	_____
Hos fysioterapeut 203	_____
Hos kiropraktor	_____
Hos akupunktør	_____
Hos tannlege 209	_____
Hos naturmedisiner (homøopat, soneterapeut o.l.)	_____
Hos håndspålegger, synsk eller "leser"	_____

LEGEMIDLER OG KOSTTILSKUDD

Har du det siste året periodevis brukt noen av de følgende midler daglig eller nesten daglig? Angi hvor mange måneder du brukte dem.
*Sett **0** hvis du **ikke** har brukt midlene.*

Legemidler
- Smertestillende ....215 _____ mnd.
- Sovemedisin .... _____ mnd.
- Beroligende midler .... _____ mnd.
- Medisin mot depresjon ....221 _____ mnd.
- Allergimedisin .... _____ mnd.
- Astmamedisin .... _____ mnd.

Kosttilskudd
- Jerntabletter ....227 _____ mnd.
- Kalktabletter eller benmel .... _____ mnd.
- Vitamin D-tilskudd .... _____ mnd.
- Andre vitamintilskudd ....233 _____ mnd.
- Tran eller fiskeoljekapsler .... _____ mnd.

Har du de siste 14 dager brukt følgende legemidler eller kosttilskudd?
*Sett **ett** kryss for **hvert** spørsmål.*

	Ja	Nei
Legemidler		
Smertestillende medisin 237	❑	❑
Febersenkende medisin	❑	❑
Migrenemedisin	❑	❑
Eksemsalve	❑	❑
Hjertemedisin (ikke blodtrykksmedisin)	❑	❑
Kolesterolsenkende medisin 242	❑	❑
Sovemedisin	❑	❑
Beroligende medisin	❑	❑
Medisin mot depresjon	❑	❑
Annen nervemedisin	❑	❑
Syrenøytraliserende midler 247	❑	❑
Magesårsmedisin	❑	❑
Insulin	❑	❑
Tabletter mot diabetes (sukkersyke)	❑	❑
Tabletter mot lavt stoffskifte (thyroxin)	❑	❑
Kortisontabletter 252	❑	❑
Annen medisin	❑	❑
Kosttilskudd		
Jerntabletter	❑	❑
Kalktabletter eller benmel	❑	❑
Vitamin D-tilskudd	❑	❑
Andre vitamintilskudd 257	❑	❑
Tran eller fiskeoljekapsler	❑	❑

VENNER

Hvor mange gode venner har du som du kan snakke fortrolig med og gi deg hjelp når du trenger det? ....259 ____ gode venner
Tell ikke med de du bor sammen med, men ta med andre slektninger!

Hvor mange av disse gode vennene har du kontakt med minst en gang i måneden? ....261 ____

	Ja	Nei
Føler du at du har nok gode venner? 263	❑	❑

Hvor ofte tar du vanligvis del i foreningsvirksomhet som f.eks. syklubb, idrettslag, politiske lag, religiøse eller andre foreninger?
- Aldri, eller noen få ganger i året ....264 ❑ 1
- 1-2 ganger i måneden .... ❑ 2
- Omtrent en gang i uken .... ❑ 3
- Mer enn en gang i uken .... ❑ 4

KOSTVANER

Hvis du bruker smør eller margarin på brødet, hvor mange skiver rekker en liten porsjonspakning vanligvis til? Vi tenker på slik porsjonspakning som du får på fly, på kafé o.l. (10-12 gram).

Den rekker til omtrent ....265 _____ skiver

Hva slags fett blir vanligvis brukt til **matlaging** (ikke på brødet) i din husholdning?
- Meierismør ....266 ❑
- Hard margarin .... ❑
- Bløt (Soft) margarin .... ❑
- Smør/margarin blanding .... ❑
- Oljer ....270 ❑

Hva slags type brød (kjøpt eller hjemmebakt) spiser du vanligvis?
Sett ett eller to kryss!

	Loff	Fint brød	Kneip-brød	Grov-brød	Knekke-brød
Brødtypen ligner mest på:	❑ 271	❑	❑	❑	❑ 275

Hvor mye (i **antall** glass, kopper, poteter eller brødskiver) spiser eller drikker du vanligvis **daglig** av følgende matvarer?
*Kryss av for **alle** matvarene.*

	0	Færre enn 1	1-2	3-4	5-6	Mer enn 6
Helmelk (søt eller sur) (glass) 276	❑	❑	❑	❑	❑	❑
Lettmelk (søt eller sur) (glass)	❑	❑	❑	❑	❑	❑
Skummet melk (søt eller sur) (glass)	❑	❑	❑	❑	❑	❑
Te (kopper)	❑	❑	❑	❑	❑	❑
Appelsinjuice (glass)	❑	❑	❑	❑	❑	❑
Poteter 281	❑	❑	❑	❑	❑	❑
Brødskiver totalt (inkl. knekkebrød)	❑	❑	❑	❑	❑	❑
Brødskiver med						
– fiskepålegg (f.eks. makrell i tomat)	❑	❑	❑	❑	❑	❑
– magert kjøttpålegg (f.eks. skinke)	❑	❑	❑	❑	❑	❑
– fetere kjøttpålegg (f.eks. salami)	❑	❑	❑	❑	❑	❑
– gulost 286	❑	❑	❑	❑	❑	❑
– brunost	❑	❑	❑	❑	❑	❑
– kaviar	❑	❑	❑	❑	❑	❑
– syltetøy og annet søtt pålegg	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	❑ 6

Hvor mange **ganger i uka** spiser du vanligvis følgende matvarer?
*Kryss av for **alle** matvarene.*

	Aldri	Færre enn 1	1	2-3	4-5	Omtrent daglig
Yoghurt 290	❑	❑	❑	❑	❑	❑
Kokt eller stekt egg	❑	❑	❑	❑	❑	❑
Frokostblanding/havregryn o.l.	❑	❑	❑	❑	❑	❑
Middag med						
– rent kjøtt	❑	❑	❑	❑	❑	❑
– pølser/kjøttpudding/-kaker	❑	❑	❑	❑	❑	❑
– feit fisk (f.eks. laks/uer) 295	❑	❑	❑	❑	❑	❑
– mager fisk (f.eks. torsk)	❑	❑	❑	❑	❑	❑
– fiskeboller/-pudding/-kaker	❑	❑	❑	❑	❑	❑
– grønnsaker	❑	❑	❑	❑	❑	❑
Majones, remulade o.l.	❑	❑	❑	❑	❑	❑
Gulrøtter 300	❑	❑	❑	❑	❑	❑
Blomkål/kål/brokkoli	❑	❑	❑	❑	❑	❑
Epler/pærer	❑	❑	❑	❑	❑	❑
Appelsiner, mandariner o.l.	❑	❑	❑	❑	❑	❑
Sukkerholdige leskedrikker	❑	❑	❑	❑	❑	❑
Sukkerfrie («Light») leskedrikker	❑	❑	❑	❑	❑	❑
Sjokolade	❑	❑	❑	❑	❑	❑
Vafler, kaker o.l. 307	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	❑ 6

ALKOHOL

Hvor ofte pleier du å drikke	øl?	vin?	brennevin?
Aldri, eller noen få ganger i året	❑	❑	❑ 1
1-2 ganger i måneden	❑	❑	❑ 2
Omtrent 1 gang i uken	❑	❑	❑ 3
2-3 ganger i uken	❑	❑	❑ 4
Omtrent hver dag	❑	❑	❑ 5
	308		310

Omtrent hvor ofte har du i løpet av siste år drukket alkohol tilsvarende minst 5 halvflasker øl, en helflaske vin eller 1/4 flaske brennevin?

- Ikke siste år ..... 311 ❑ 1
- Noen få ganger ..... ❑ 2
- 1 - 2 ganger per måned ..... ❑ 3
- 1 - 2 ganger i uken ..... ❑ 4
- 3 eller flere ganger i uken ..... ❑ 5

I omtrent hvor mange år har ditt alkoholforbruk vært slik du har svart i spørsmålene over? ..... 312 _____ år

SLANKING

Omtrent hvor mange ganger har du bevisst prøvd å slanke deg? Sett **0** hvis ingen forsøk.

- – før 20 år ..... 314 _____ ganger
- – senere ..... 316 _____ ganger

Hvis du har slanket deg, omtrent hvor mange kilo har du på det meste gått ned i vekt?

- – før 20 år ..... 318 _____ kg
- – senere ..... 320 _____ kg

Hvilken vekt ville du være tilfreds med (din "trivselsvekt")? ..... 322 _____ kg

UFRIVILLIG URINLEKKASJE

Hvor ofte har du ufrivillig urinlekkasje?

- Aldri ..... 325 ❑ 1
- Ikke mer enn en gang i måneden ..... ❑ 2
- To eller flere ganger i måneden ..... ❑ 3
- Ukentlig eller oftere ..... ❑ 4

Dine kommentarer:

BESVARES BARE AV KVINNER

MENSTRUASJON

Hvor gammel var du da du fikk menstruasjon første gang? ..... 326 _____ år

Hvis du ikke lenger har menstruasjon, hvor gammel var du da den sluttet? ..... 328 _____ år

Når du ser bort fra svangerskap og barselsperiode, har du noen gang vært blødningsfri i minst 6 måneder? 330	Ja ❑	Nei ❑

Hvis "Ja", hvor mange ganger? ..... 331 _____ ganger

Hvis du fremdeles har menstruasjon eller er gravid:

Hvilken dato startet din siste menstruasjon? ..... 333 dag/ mnd/ år ___/___/___

Bruker du vanligvis smertestillende legemidler for å dempe menstruasjonsplager? 339	Ja ❑	Nei ❑

SVANGERSKAP

Hvor mange barn har du født? ..... 340 _____ barn

Er du gravid nå? 342	Ja ❑	Nei ❑	Usikker ❑

Har du i forbindelse med svangerskap hatt for høyt blodtrykk og/eller eggehvite (protein) i urinen? 343	Ja ❑	Nei ❑

Hvis "Ja", i hvilket svangerskap?

	Svangerskap Første	Senere
For høyt blodtrykk 344	❑	❑
Eggehvite i urinen 346	❑	❑

Hvis du har født, fyll ut for hvert barn barnets fødselsår og omtrent antall måneder du ammet barnet.

Barn:		Fødselsår:	Antall måneder med amming:
1	348	_____	_____
2		_____	_____
3	356	_____	_____
4		_____	_____
5	364	_____	_____
6		_____	_____

PREVENSJON OG ØSTROGEN

Bruker du, eller har du brukt:	Nå	Før	Aldri
P-pille (også minipille) 372	❑	❑	❑
Hormonspiral	❑	❑	❑
Østrogen (tabletter eller plaster) 374	❑	❑	❑
Østrogen (krem eller stikkpiller)	❑	❑	❑
	1	2	3

Hvis du bruker p-pille, hormonspiral eller østrogen; hvilket merke bruker du nå?

376 .....

Hvis du bruker eller har brukt p-pille:

Alder da du begynte med P-piller? ..... 380 _____ år

Hvor mange år har du tilsammen brukt P-piller? ..... 382 _____ år

Dersom du har født, hvor mange år brukte du P-piller før første fødsel? ..... 384 _____ år

Hvis du har sluttet å bruke P-piller:

Alder da du sluttet? ..... 386 _____ år

Takk for hjelpen! Husk å postlegge skjemaet idag!

Helseundersøkelsen i Tromsø

Appendix III

First questionnaire of Tromsø 4 (Q1)

Tromsø-undersøkelsen

Skjemaet skal leses optisk. Vennligst bruk blå eller sort penn. Du kan ikke bruke komma, bruk blokkbokstaver.

2007 – 2008 KONFIDENSIELT

HELSE OG SYKDOMMER

1 **Hvordan vurderer du din egen helse sånn i alminnelighet?**

- ☐ Meget god
- ☐ God
- ☐ Verken god eller dårlig
- ☐ Dårlig
- ☐ Meget dårlig

2 **Hvordan synes du at helsen din er sammenlignet med andre på din alder?**

- ☐ Mye bedre
- ☐ Litt bedre
- ☐ Omtrent lik
- ☐ Litt dårligere
- ☐ Mye dårligere

3 **Har du eller har du hatt?**

	Ja	Nei	Alder første gang
Hjerteinfarkt	☐	☐	
Angina pectoris *(hjertekrampe)*	☐	☐	
Hjerneslag/hjerneblødning	☐	☐	
Hjerteflimmer *(atrieflimmer)*	☐	☐	
Høyt blodtrykk	☐	☐	
Beinskjørhet *(osteoporose)*	☐	☐	
Astma	☐	☐	
Kronisk bronkitt/emfysem/KOLS	☐	☐	
Diabetes	☐	☐	
Psykiske plager *(som du har søkt hjelp for)*	☐	☐	
Lavt stoffskifte	☐	☐	
Nyresykdom, unntatt urinveisinfeksjon	☐	☐	
Migrene	☐	☐	

4 **Har du langvarige eller stadig tilbakevendende smerter som har vart i 3 måneder eller mer?**

☐ Ja ☐ Nei

5 **Hvor ofte har du vært plaget av søvnløshet de siste 12 måneder?**

- ☐ Aldri, eller noen få ganger
- ☐ 1-3 ganger i måneden
- ☐ Omtrent 1 gang i uken
- ☐ Mer enn 1 gang i uken

6 **Under finner du en liste over ulike problemer. Har du opplevd noe av dette den siste uken (til og med i dag)?** (Sett ett kryss for hver plage)

	Ikke plaget	Litt plaget	Ganske mye	Veldig mye
Plutselig frykt uten grunn	☐	☐	☐	☐
Føler deg redd eller engstelig	☐	☐	☐	☐
Matthet eller svimmelhet	☐	☐	☐	☐
Føler deg anspent eller oppjaget	☐	☐	☐	☐
Lett for å klandre deg selv	☐	☐	☐	☐
Søvnproblemer	☐	☐	☐	☐
Nedtrykt, tungsindig	☐	☐	☐	☐
Følelse av å være unyttig, lite verd	☐	☐	☐	☐
Følelse av at alt er et slit	☐	☐	☐	☐
Følelse av håpløshet mht. framtida	☐	☐	☐	☐

BRUK AV HELSETJENESTER

7 **Har du i løpet av de siste 12 måneder vært hos:** Hvis JA; Hvor mange ganger?

	Ja	Nei	Ant ggr
Fastlege/allmennlege	☐	☐	
Psykiater/psykolog	☐	☐	
Legespesialist utenfor sykehus *(utenom fastlege/allmennlege/psykiater)*	☐	☐	
Fysioterapeut	☐	☐	
Kiropraktor	☐	☐	
Annen behandler *(homøopat, akupunktør, fotsoneterapeut, naturmedisiner, håndspålegger, healer, synsk el.l)*	☐	☐	
Tannlege/tannpleier	☐	☐	

8 **Har du i løpet av de siste 12 måneder vært på sykehus?**

	Ja	Nei	Ant ggr
Innlagt på sykehus	☐	☐	
Konsultasjon ved sykehus uten innleggelse;			
Ved psykiatrisk poliklinikk	☐	☐	
Ved annen sykehuspoliklinikk	☐	☐	

9 **Har du gjennomgått noen form for operasjon i løpet av de siste 3 årene?**

☐ Ja ☐ Nei

BRUK AV MEDISINER

10 **Bruker du, eller har du brukt, noen av følgende medisiner?** (Sett ett kryss for hver linje)

	Aldri brukt	Nå	Før	Alder første gang
Medisin mot høyt blodtrykk	☐	☐	☐	
Kolesterolsenkende medisin	☐	☐	☐	
Medisin mot hjertesykdom	☐	☐	☐	
Vanndrivende medisin	☐	☐	☐	
Medisin mot beinskjørhet *(osteoporose)*	☐	☐	☐	
Insulin	☐	☐	☐	
Diabetesmedisin *(tabletter)*	☐	☐	☐	
Stoffskiftemedisinene Thyroxin/levaxin	☐	☐	☐	

11 **Hvor ofte har du i løpet av de siste 4 ukene brukt følgende medisiner?** (Sett ett kryss pr linje)

	Ikke brukt siste 4 uker	Sjeldnere enn hver uke	Hver uke, men ikke daglig	Daglig
Smertestillende på resept	☐	☐	☐	☐
Smertestillende reseptfrie	☐	☐	☐	☐
Sovemidler	☐	☐	☐	☐
Beroligende medisiner	☐	☐	☐	☐
Medisin mot depresjon	☐	☐	☐	☐

12 **Skriv ned alle medisiner – både de med og uten resept – som du har brukt regelmessig i siste 4 ukers periode.** (Ikke regn med vitaminer, mineraler, urter, naturmedisin, andre kosttilskudd etc.)

Får du ikke plass til alle medisiner, bruk eget ark.

VED FRAMMØTE vil du bli spurt om du har brukt antibiotika eller smertestillende medisiner de siste 24 timene. Om du har det, vil vi be om at du oppgir preparat, styrke, dose og tidspunkt

FAMILIE OG VENNER

13 **Hvem bor du sammen med?** (Sett kryss for hvert spørsmål og angi antall)

	Ja	Nei	Antall
Ektefelle/samboer	☐	☐	
Andre personer over 18 år	☐	☐	
Personer under 18 år	☐	☐	

14 **Kryss av for de slektninger som har eller har hatt**

	Foreldre	Barn	Søsken
Hjerteinfarkt	☐	☐	☐
Hjerteinfarkt før fylte 60 år	☐	☐	☐
Angina pectoris *(hjertekrampe)*	☐	☐	☐
Hjerneslag/hjerneblødning	☐	☐	☐
Beinskjørhet *(osteoporose)*	☐	☐	☐
Magesår/tolvfingertarmsår	☐	☐	☐
Astma	☐	☐	☐
Diabetes	☐	☐	☐
Demens	☐	☐	☐
Psykiske plager	☐	☐	☐
Rusproblemer	☐	☐	☐

15 **Har du nok venner som kan gi deg hjelp når du trenger det?**

☐ Ja ☐ Nei

16 **Har du nok venner som du kan snakke fortrolig med?**

☐ Ja ☐ Nei

17 **Hvor ofte tar du vanligvis del i foreningsvirksomhet som for eksempel syklubb, idrettslag, politiske lag, religiøse eller andre foreninger?**

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

ARBEID, TRYGD OG INNTEKT

18 **Hva er din høyeste fullførte utdanning?** (Sett ett kryss)

☐ Grunnskole, framhaldsskole eller folkehøyskole
☐ Yrkesfaglig videregående, yrkesskole eller realskole
☐ Allmennfaglig videregående skole eller gymnas
☐ Høyskole eller universitet, mindre enn 4 år
☐ Høyskole eller universitet, 4 år eller mer

19 **Hva er din hovedaktivitet?** (Sett ett kryss)

☐ Yrkesaktiv heltid
☐ Yrkesaktiv deltid
☐ Arbeidsledig
☐ Hjemmeværende
☐ Pensjonist/trygdet
☐ Student/militærtjeneste

20 **Mottar du noen av følgende ytelser?**

- ☐ Alderstrygd, førtidspensjon (AFP) eller etterlattepensjon
- ☐ Sykepenger (er sykemeldt)
- ☐ Rehabiliterings-/attføringspenger
- ☐ Uføreytelse/pensjon, hel
- ☐ Uføreytelse/pensjon, delvis
- ☐ Dagpenger under arbeidsledighet
- ☐ Overgangstønad
- ☐ Sosialhjelp/-stønad

21 **Hvor høy var husholdningens samlede bruttoinntekt siste år?** Ta med alle inntekter fra arbeid, trygder, sosialhjelp og lignende.

- ☐ Under 125 000 kr
- ☐ 125 000-200 000 kr
- ☐ 201 000-300 000 kr
- ☐ 301 000-400 000 kr
- ☐ 401 000-550 000 kr
- ☐ 551 000-700 000 kr
- ☐ 701 000 -850 000 kr
- ☐ Over 850 000 kr

22 **Arbeider du utendørs minst 25 % av tiden, eller i lokaler med lav temperatur, som for eksempel lager-/industrihaller?**

- ☐ Ja
- ☐ Nei

FYSISK AKTIVITET

23 **Hvis du er i lønnet eller ulønnet arbeid, hvordan vil du beskrive arbeidet ditt?**

- ☐ For det meste stillesittende arbeid *(f.eks. skrivebordsarbeid, montering)*
- ☐ Arbeid som krever at du går mye *(f.eks ekspeditørarbeid, lett industriarbeid, undervisning)*
- ☐ Arbeid der du går og løfter mye *(f.eks postbud, pleier, bygningsarbeider)*
- ☐ Tungt kroppsarbeid

24 **Angi bevegelse og kroppslig anstrengelse i din fritid. Hvis aktiviteten varierer meget f eks mellom sommer og vinter, så ta et gjennomsnitt. Spørsmålet gjelder bare det siste året.** (Sett kryss i den ruta som passer best)

- ☐ Leser, ser på fjernsyn eller annen stillesittende beskjeftigelse
- ☐ Spaserer, sykler eller beveger deg på annen måte minst 4 timer i uken *(her skal du også regne med gang eller sykling til arbeidsstedet, søndagsturer med mer)*
- ☐ Driver mosjonsidrett, tyngre hagearbeid, snømåking e.l. *(merk at aktiviteten skal vare minst 4 timer i uka)*
- ☐ Trener hardt eller driver konkurranseidrett regelmessig og flere ganger i uka

25 **Hvor ofte driver du mosjon?** (Med mosjon mener vi at du f.eks går en tur, går på ski, svømmer eller driver trening/idrett)

- ☐ Aldri
- ☐ Sjeldnere enn en gang i uken
- ☐ En gang i uken
- ☐ 2-3 ganger i uken
- ☐ omtrent hver dag

26 **Hvor hardt mosjonerer du da i 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

27 **Hvor lenge holder du på hver gang i gjennomsnitt ?**

- ☐ Mindre enn 15 minutter
- ☐ 15-29 minutter
- ☐ 30 minutter – 1 time
- ☐ Mer enn 1 time

ALKOHOL OG TOBAKK

28 **Hvor ofte drikker du alkohol?**

- ☐ Aldri
- ☐ Månedlig eller sjeldnere
- ☐ 2-4 ganger hver måned
- ☐ 2-3 ganger pr. uke
- ☐ 4 eller flere ganger pr.uke

29 **Hvor mange enheter alkohol** (en øl, et glass vin, eller en drink) **tar du vanligvis når du drikker?**

- ☐ 1-2
- ☐ 3-4
- ☐ 5-6
- ☐ 7-9
- ☐ 10 eller flere

30 **Hvor ofte drikker du 6 eller flere enheter alkohol ved en anledning?**

- ☐ aldri
- ☐ sjeldnere enn månedlig
- ☐ månedlig
- ☐ ukentlig
- ☐ daglig eller nesten daglig

31 **Røyker du av og til, men ikke daglig?**

- ☐ Ja
- ☐ Nei

32 **Har du røykt/røyker du daglig?**

- ☐ Ja, nå
- ☐ Ja, tidligere
- ☐ Aldri

33 **Hvis du har røykt daglig tidligere, hvor lenge er det siden du sluttet?**

Antall år ☐☐

34 **Hvis du røyker daglig nå eller har røykt tidligere: Hvor mange sigaretter røyker eller røykte du vanligvis daglig?**

Antall sigaretter ☐☐

35 **Hvor gammel var du da du begynte å røyke daglig?**

Antall år ☐☐

36 **Hvor mange år til sammen har du røykt daglig?**

Antall år ☐☐

37 **Bruker du, eller har du brukt, snus eller skrå?**

- ☐ Nei, aldri
- ☐ Ja, men jeg har sluttet
- ☐ Ja, av og til
- ☐ Ja, daglig

KOSTHOLD

38 **Spiser du vanligvis frokost hver dag?**

☐ Ja ☐ Nei

39 **Hvor mange enheter frukt og grønnsaker spiser du i gjennomsnitt per dag?** (Med enhet menes f.eks. en frukt, glass juice, potet, porsjon grønnsaker)

Antall enheter ☐☐

40 **Hvor mange ganger i uken spiser du varm middag?**

Antall ☐☐

41 **Hvor ofte spiser du vanligvis disse matvarene?**
(Sett ett kryss pr linje)

	0-1 g pr. mnd	2-3 g pr.mnd	1-3 g pr.uke	4-6 g pr.uke	1-2 g pr. dag
Poteter	☐	☐	☐	☐	☐
Pasta/ris	☐	☐	☐	☐	☐
Kjøtt *(ikke kvernet)*	☐	☐	☐	☐	☐
Kvernet kjøtt *(pølser, hamburger o.l)*	☐	☐	☐	☐	☐
Grønnsaker, frukt, bær	☐	☐	☐	☐	☐
Mager fisk	☐	☐	☐	☐	☐
Feit fisk *(f.eks.laks, ørret, makrell, sild, kveite,uer)*	☐	☐	☐	☐	☐

42 **Hvor mye drikker du vanligvis av følgende?**
(Sett ett kryss pr. linje)

	Sjelden/ aldri	1-6 glass pr. uke	1 glass pr. dag	2-3 glass pr. dag	4 glass el. mer pr. dag
Melk, kefir, yoghurt	☐	☐	☐	☐	☐
Fruktjuice	☐	☐	☐	☐	☐
Brus/leskedrikker med sukker	☐	☐	☐	☐	☐

43 **Hvor mange kopper kaffe og te drikker du daglig?**
(sett 0 for de typene du ikke drikker daglig)

	Antall kopper
Filterkaffe	☐☐
Kokekaffe/presskanne	☐☐
Annen kaffe	☐☐
Te	☐☐

44 **Hvor ofte spiser du vanligvis fiskelever?**
(For eksempel i mølje)

☐ Sjelden/aldri ☐ 1-3 g i året ☐ 4-6 g i året
☐ 7-12 g i året ☐ Oftere

45 **Bruker du følgende kosttilskudd?**

	Daglig	Iblant	Nei
Tran, trankapsler	☐	☐	☐
Omega 3 kapsler *(fiskeolje,selolje)*	☐	☐	☐
Kalktabletter	☐	☐	☐

SPØRSMÅL TIL KVINNER

46 **Er du gravid nå?**

☐ Ja ☐ Nei ☐ Usikker

47 **Hvor mange barn har du født?**

Antall ☐☐

48 **Hvis du har født, fyll ut for hvert barn: fødselsår og vekt samt hvor mange måneder du ammet.**
(Angi så godt som du kan)

Barn	Fødselsår	Fødselsvekt i gram	Ammet ant.mnd
1	☐☐☐☐	☐☐☐☐	☐☐
2	☐☐☐☐	☐☐☐☐	☐☐
3	☐☐☐☐	☐☐☐☐	☐☐
4	☐☐☐☐	☐☐☐☐	☐☐
5	☐☐☐☐	☐☐☐☐	☐☐
6	☐☐☐☐	☐☐☐☐	☐☐

49 **Har du i forbindelse med svangerskap hatt for høyt blodtrykk?**

☐ Ja ☐ Nei

50 **Hvis Ja, i hvilket svangerskap?**

☐ Første ☐ Senere

51 **Har du i forbindelse med svangerskap hatt protein (eggehvite) i urinen?**

☐ Ja ☐ Nei

52 **Hvis Ja, i hvilket svangerskap?**

☐ Første ☐ Senere

53 **Ble noen av disse barna født mer enn en måned for tidlig (før termin) pga. svangerskapsforgiftning?**

☐ Ja ☐ Nei

54 **Hvis Ja, hvilke(t) barn**

Barn 1	Barn 2	Barn 3	Barn 4	Barn 5	Barn 6
☐	☐	☐	☐	☐	☐

55 **Hvor gammel var du da du fikk menstruasjon første gang?**

Antall år ☐☐

56 **Bruker du for tiden reseptpliktige legemidler som påvirker menstruasjonen?**

P-pille, hormonspiral eller lignende ☐ Ja ☐ Nei
Hormonpreparat for overgangs-alderen ☐ Ja ☐ Nei

VED FRAMMØTE vil du få utfyllende spørsmål om menstruasjon og eventuell bruk av hormoner. Skriv gjerne ned på et papir navn på hormonpreparater du har brukt, og ta det med deg. Du vil også bli spurt om din menstruasjon har opphørt og eventuelt når og hvorfor.

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Appendix IV

Second questionnaire of Tromsø 4 (Q2)

Tromsø 6

- en del av Tromsøundersøkelsen

SLIK FYLLER DU UT SKJEMAET:

Skjemaet vil bli lest maskinelt, det er derfor viktig at du krysser av riktig:

☒ Riktig

☑ Galt

☒ Galt

■ Om du krysser feil, retter du ved å fylle boksen slik

Skriv tydelige tall 1 2 3 4 5 6 7 8 9 0

7 | 4 Riktig

7 | 4 Galt

Bruk kun sort eller blå penn, bruk ikke blyant eller tusj

1. BESKRIVELSE AV DIN HELSETILSTAND

Vis hvilke utsagn som passer best på din helsetilstand i dag ved å sette ett kryss i en av rutene utenfor hver av de fem gruppene nedenfor:

1.01 **Gange**

- ☐ Jeg har ingen problemer med å gå omkring
- ☐ Jeg har litt problemer med å gå omkring
- ☐ Jeg er sengeliggende

1.02 **Personlig stell**

- ☐ Jeg har ingen problemer med personlig stell
- ☐ Jeg har litt problemer med å vaske meg eller kle meg
- ☐ Jeg er ute av stand til å vaske meg eller kle meg

1.03 **Vanlige gjøremål** (f.eks. arbeid, studier, husarbeid, familie- eller fritidsaktiviteter)

- ☐ Jeg har ingen problemer med å utføre mine vanlige gjøremål
- ☐ Jeg har litt problemer med å utføre mine vanlige gjøremål
- ☐ Jeg er ute av stand til å utføre mine vanlige gjøremål

1.04 **Smerte og ubehag**

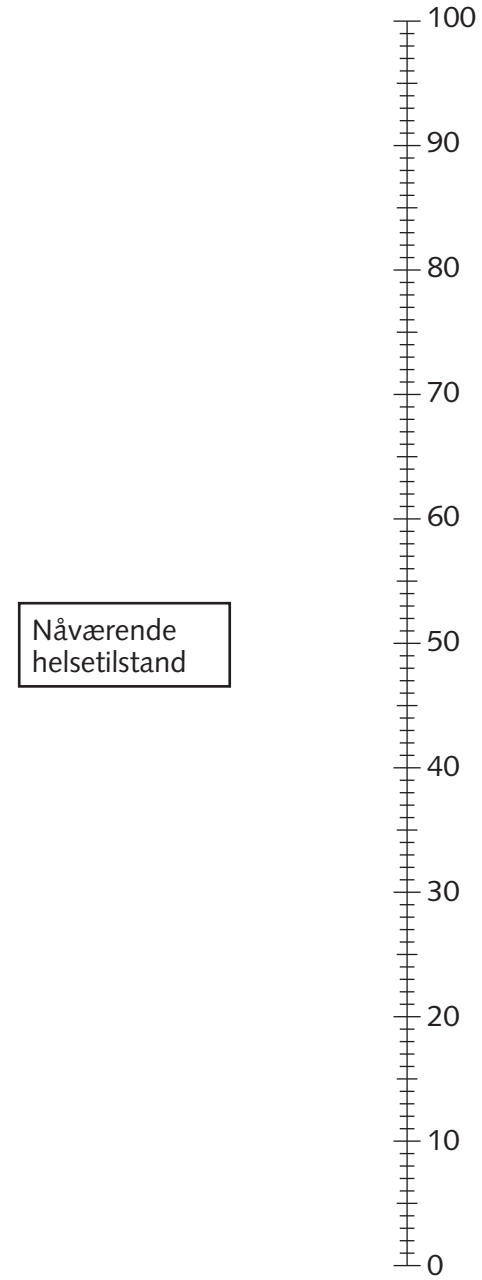
- ☐ Jeg har verken smerte eller ubehag
- ☐ Jeg har moderat smerte eller ubehag
- ☐ Jeg har sterk smerte eller ubehag

1.05 **Angst og depresjon**

- ☐ Jeg er verken engstelig eller deprimert
- ☐ Jeg er noe engstelig eller deprimert
- ☐ Jeg er svært engstelig eller deprimert

1.6 For at du skal kunne vise oss hvor god eller dårlig din helsetilstand er, har vi laget en skala (nesten som et termometer), hvor den beste helsetilstanden du kan tenke deg er markert med 100 og den dårligste med 0. Vi ber om at du viser din helsetilstand ved å trekke ei linje fra boksen nedenfor til det punkt på skalaen som passer best med din helsetilstand.

Best tenkelige helsetilstand



Nåværende helsetilstand

Verst tenkelige helsetilstand

2. OPPVEKST OG TILHØRIGHET

2.01 **Hvor bodde du da du fylte 1 år?**

- ☐ I Tromsø *(med dagens kommunegrenser)*
- ☐ I Troms, men ikke i Tromsø
- ☐ I Finnmark fylke
- ☐ I Nordland fylke
- ☐ Annet sted i Norge
- ☐ I utlandet

2.02 **Hvordan var de økonomiske forhold i familien under din oppvekst?**

- ☐ Meget gode
- ☐ Gode
- ☐ Vanskelige
- ☐ Meget vanskelige

2.03 **Hvilken betydning har religion i ditt liv?**

- ☐ Stor betydning
- ☐ En viss betydning
- ☐ Ingen betydning

2.04 **Hva regner du deg selv som?** (Kryss av for ett eller flere alternativ)

- ☐ Norsk
- ☐ Samisk
- ☐ Kvensk/Finsk
- ☐ Annet

2.05 **Hvor mange søsken og barn har du/har du hatt?**

Antall søsken ..... ☐☐

Antall barn ..... ☐☐

2.06 **Lever din mor?**

☐ Ja ☐ Nei

Hvis NEI: hennes alder ved død ..... ☐☐

Lever din far?

☐ Ja ☐ Nei

Hvis NEI: hans alder ved død ..... ☐☐

2.07 **Hva var/er den høyeste fullførte utdanning til dine foreldre og din ektefelle/samboer?**
(sett ett kryss i hver kolonne)

	Mor	Far	Ektefelle/ samboer
Grunnskole 7-10 år, framhaldsskole eller folkehøyskole	☐	☐	☐
Yrkesfaglig videregående, yrkesskole eller realskole	☐	☐	☐
Allmennfaglig videregående skole eller gymnas	☐	☐	☐
Høyskole eller universitet (mindre enn 4 år)	☐	☐	☐
Høyskole eller universitet (4 år eller mer)	☐	☐	☐

3. TRIVSEL OG LIVSFORHOLD

3.01 **Nedenfor står tre utsagn om tilfredshet med livet som et hele. Deretter står to utsagn om syn på din egen helse. Vis hvor enig eller uenig du er i hver av påstandene ved å sette et kryss i rubrikken for det tallet du synes stemmer best for deg.** (sett ett kryss for hvert utsagn)

	Helt uenig	1	2	3	4	5	6	7	Helt enig
På de fleste måter er livet mitt nær idealet mitt		☐	☐	☐	☐	☐	☐	☐	
Mine livsforhold er utmerkede		☐	☐	☐	☐	☐	☐	☐	
Jeg er tilfreds med livet mitt		☐	☐	☐	☐	☐	☐	☐	
Jeg ser lyst på min framtidige helse		☐	☐	☐	☐	☐	☐	☐	
Ved å leve sunt kan jeg forhindre alvorlige sykdommer		☐	☐	☐	☐	☐	☐	☐	

3.02 **Nedenfor står fire utsagn om syn på forhold ved din nåværende jobb, eller hvis du ikke er i arbeid nå, den jobben du hadde sist** (sett ett kryss for hvert utsagn)

	Helt uenig	1	2	3	4	5	6	7	Helt enig
Arbeidet mitt er for belastende, fysisk eller følelsesmessig		☐	☐	☐	☐	☐	☐	☐	
Jeg har tilstrekkelig innflytelse på når og hvordan arbeidet mitt skal utføres		☐	☐	☐	☐	☐	☐	☐	
Jeg blir mobbet eller trakassert på arbeidsplassen min		☐	☐	☐	☐	☐	☐	☐	
Jeg blir rettferdig behandlet på arbeidsplassen min		☐	☐	☐	☐	☐	☐	☐	

3.03 **Jeg opplever at yrket mitt har følgende sosiale status i samfunnet:** (dersom du ikke er i arbeid nå, tenk på det yrket du hadde sist)

- ☐ Meget høy status
- ☐ Ganske høy status
- ☐ Middels status
- ☐ Ganske lav status
- ☐ Meget lav status

3.04 **Har du over lengre tid opplevd noe av det følgende?** (sett ett eller flere kryss for hver linje)

	Nei	Ja, som barn	Ja, som voksen	Ja, siste år
Blitt plaget psykisk, eller truet med vold	☐	☐	☐	☐
Blitt slått, sparket eller utsatt for annen type vold	☐	☐	☐	☐
Noen i nær familie har brukt rusmidler på en slik måte at dette har vært til *bekymring* for deg	☐	☐	☐	☐

Dersom du har opplevd noen av disse forholdene, hvor mye plages du av dette nå?

☐ Ingen plager ☐ Noen plager ☐ Store plager

4. SYKDOMMER OG PLAGER

4.01 **Har du i løpet av den siste måneden følt deg syk eller hatt en skade?**

☐ Ja ☐ Nei

Hvis JA: har du i den samme perioden?
(sett ett kryss for hver linje)

	Ja	Nei
Vært hos allmennlege/fastlege	☐	☐
Vært hos spesialist	☐	☐
Vært på legevakt	☐	☐
Vært innlagt i sykehus	☐	☐
Vært hos alternativ behandler *(kiropraktor, homøopat eller lignende)*	☐	☐

4.02 **Har du merket anfall med plutselig endring i pulsen eller hjerterytmen siste året?**

☐ Ja ☐ Nei

4.03 **Blir du tungpustet i følgende situasjoner?**
(sett ett kryss for hvert spørsmål)

	Ja	Nei
Når du går hurtig på flatmark eller svak oppoverbakke	☐	☐
Når du spaserer i rolig tempo på flatmark	☐	☐
Når du vasker deg eller kler på deg	☐	☐
Når du er i hvile	☐	☐

4.04 **Hoster du omtrent daglig i perioder av året?**

☐ Ja ☐ Nei

Hvis JA: Er hosten vanligvis ledsaget av oppspytt?

☐ Ja ☐ Nei

Har du hatt slik hoste så lenge som i en 3 måneders periode i begge de to siste årene?

☐ Ja ☐ Nei

4.05 **Hvor ofte er du plaget av søvnløshet?**
(sett ett kryss)

☐ Aldri, eller noen få ganger i året
☐ 1-3 ganger i måneden
☐ Omtrent 1 gang i uka
☐ Mer enn 1 gang i uka

Hvis du er plaget av søvnløshet månedlig eller oftere, når på året er du mest plaget?
(sett ett eller flere kryss)

☐ Ingen spesiell tid
☐ Mørketida
☐ Midnattsoltida
☐ Vår og høst

4.06 **Har du i de siste par ukene hatt vansker med å sove?**

☐ Ikke i det hele tatt
☐ Ikke mer enn vanlig
☐ Heller mer enn vanlig
☐ Mye mer enn vanlig

4.07 **Har du de siste par ukene følt deg ulykkelig og nedtrykt (deprimert)?**

☐ Ikke i det hele tatt
☐ Ikke mer enn vanlig
☐ Heller mer enn vanlig
☐ Mye mer enn vanlig

4.08 **Har du i de siste par ukene følt deg ute av stand til å mestre dine vanskeligheter?**

☐ Ikke i det hele tatt
☐ Ikke mer enn vanlig
☐ Heller mer enn vanlig
☐ Mye mer enn vanlig

4.09 **Nedenfor ber vi deg besvare noen spørsmål om din hukommelse:** (sett ett kryss for hvert spørsmål)

	Ja	Nei
Synes du at din hukommelse har blitt dårligere?	☐	☐
Glemmer du ofte hvor du har lagt tingene dine?	☐	☐
Har du problemer med å finne vanlige ord i en samtale?	☐	☐
Har du fått problemer med daglige gjøremål som du mestret tidligere?	☐	☐
Har du vært undersøkt for sviktende hukommelse?	☐	☐

Hvis JA på minst ett av de fire første spørsmålene ovenfor: Er det et problem i hverdagen?

☐ Ja ☐ Nei

4.10 **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?** (sett ett kryss i hver linje)

	Ikke plaget	En del plaget	Sterkt plaget
Nakke, skuldre	☐	☐	☐
Armer, hender	☐	☐	☐
Øvre del av ryggen	☐	☐	☐
Korsryggen	☐	☐	☐
Hofter, ben, føtter	☐	☐	☐
Andre steder	☐	☐	☐

4.11 **Har du vært plaget med smerter og/eller stivhet i muskler og ledd i løpet av de siste 4 ukene?** (sett ett kryss i hver linje)

	Ikke plaget	En del plaget	Sterkt plaget
Nakke, skuldre	☐	☐	☐
Armer, hender	☐	☐	☐
Øvre del av ryggen	☐	☐	☐
Korsryggen	☐	☐	☐
Hofter, ben, føtter	☐	☐	☐
Andre steder	☐	☐	☐

4.12 **Har du noen gang hatt:**

	Ja	Nei	Alder siste gang
Brudd i håndledd/underarm?	☐	☐	
Lårhalsbrudd?	☐	☐	

4.13 **Har du fått stilt diagnosen slitasjegikt av lege?**

☐ Ja ☐ Nei

4.14 **Har eller har du hatt noen av følgende:**

	Aldri	Litt	Mye
Nikkelallergi	☐	☐	☐
Pollenallergi	☐	☐	☐
Andre allergier	☐	☐	☐

4.15 **Har du opplevd ufrivillig barnløshet i mer enn 1 år?**

☐ Ja ☐ Nei

Hvis JA, skyldtes dette:

	Ja	Nei	Vet ikke
Forhold hos deg selv?	☐	☐	☐
Forhold hos partneren?	☐	☐	☐

4.16 **I hvilken grad har du hatt følgende plager i de siste 12 måneder?**

	Aldri	Litt	Mye
Kvalme	☐	☐	☐
Halsbrann/sure oppstøt	☐	☐	☐
Diare	☐	☐	☐
Treg mage	☐	☐	☐
Vekslende treg mage og diare	☐	☐	☐
Oppblåsthet	☐	☐	☐
Smerter i magen	☐	☐	☐

4.17 **Hvis du har hatt smerter i eller ubehag fra magen siste året:**

	Ja	Nei
Er disse lokalisert øverst i magen?	☐	☐
Har du hatt plagene så ofte som 1 dag i uka eller mer de siste 3 måneder?	☐	☐
Blir plagene bedre etter avføring?	☐	☐
Har plagene sammenheng med hyppigere eller sjeldnere avføring enn vanlig?	☐	☐
Har plagene noen sammenheng med løsere eller fastere avføring enn vanlig?	☐	☐
Kommer plagene etter måltid?	☐	☐

4.18 **Har du noen gang hatt:**

	Ja	Nei	Alder siste gang
Sår på magesekken	☐	☐	
Sår på tolvfingertarmen	☐	☐	
Magesår-operasjon	☐	☐	

4.19 **Til kvinnen: Har du spontanabortert?**

☐ Ja ☐ Nei ☐ Vet ikke

Hvis JA, antall ganger

4.20 **Til mannen: Har din partner noen gang spontanabortert?**

☐ Ja ☐ Nei ☐ Vet ikke

Hvis JA, antall ganger

4.21 **Bruker du glutenfri diett?**

☐ Ja ☐ Nei ☐ Vet ikke

4.22 **Har du fått stilt diagnosen Dermatitis Herpetiformis (DH)?**

☐ Ja ☐ Nei ☐ Vet ikke

4.23 **Har du fått stilt diagnosen cøliaki på bakgrunn av en vevsprøve fra tynntarmen tatt under en undersøkelse der du svelget en slange (gastroskopi)?**

☐ Ja ☐ Nei ☐ Vet ikke

4.24 **Har du egne tenner?**

☐ Ja ☐ Nei

4.25 **Hvor mange amalgamfyllinger har du/har du hatt?**

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 10+

4.26 **Har du vært plaget av hodepine det siste året?**

☐ Ja ☐ Nei

Hvis NEI, gå til del 5, kosthold

4.27 **Hva slags hodepine er du plaget av?**

☐ Migrene ☐ Annen hodepine

4.28 **Omtrent hvor mange dager per måned har du hodepine?**

☐ Mindre enn 1 dag
☐ 1-6 dager
☐ 7-14 dager
☐ Mer enn 14 dager

4.29 **Er hodepinen vanligvis:**
(sett et kryss for hver linje)

	Ja	Nei
Bankende/dunkende smerte	☐	☐
Pressende smerte	☐	☐
Ensidig smerte *(høyre eller venstre)*	☐	☐

4.30 **Hvor sterk er hodepinen vanligvis?**

☐ Mild *(hemmer ikke aktivitet)*
☐ Moderat *(hemmer aktivitet)*
☐ Sterk *(forhindrer aktivitet)*

4.31 **Hvor lenge varer hodepinen vanligvis?**

☐ Mindre enn 4 timer
☐ 4 timer – 1 døgn
☐ 1-3 døgn
☐ Mer enn 3 døgn

4.32 **Dersom du er plaget av hodepine, når på året er du plaget mest?** (sett ett eller flere kryss)

☐ Ingen spesiell tid
☐ Mørketida
☐ Midnattsoltida
☐ Vår og/eller høst

4.33 **Før eller under hodepinen, kan du da ha forbigående:**

	Ja	Nei
Synsforstyrrelse? *(takkede linjer, flimring, tåkesyn, lysglimt)*	☐	☐
Nummenhet i halve ansiktet eller i hånden?	☐	☐
Forverring ved moderat fysisk aktivitet	☐	☐
Kvalme og /eller oppkast	☐	☐

4.34 **Angi hvor mange dager du har vært borte fra arbeid eller skole siste måned på grunn av hodepine:**

Antall dager ☐☐

5. KOSTHOLD

5.01 **Hvor ofte spiser du vanligvis følgende?** (sett ett kryss i hver linje)

	0-1 g per mnd	2-3 g per mnd	1-3 g per uke	Mer enn 3 g per uke
Ferskvannsfisk *(ikke oppdrett)*	☐	☐	☐	☐
Saltvannsfisk *(ikke oppdrett)*	☐	☐	☐	☐
Oppdrettsfisk *(laks, røye, ørret)*	☐	☐	☐	☐
Tunfisk *(fersk eller hermetisert)*	☐	☐	☐	☐
Fiskepålegg	☐	☐	☐	☐
Skjell	☐	☐	☐	☐
Den brune innmaten i krabbe	☐	☐	☐	☐
Hvalkjøtt/sel/kobbekjøtt	☐	☐	☐	☐
Innmat fra rein eller elg	☐	☐	☐	☐
Innmat fra rype	☐	☐	☐	☐

5.02 **Hvor mange ganger i året spiser du/spiste du vanligvis følgende?** (antall ganger)

	Som voksen	I din barndom
Mølje *(Antall ganger i året)*	☐☐	☐☐
Måsegg *(Antall egg i året)*	☐☐	☐☐
Reinsdyrkjøtt *(Antall ganger i året)*	☐☐	☐☐
Selvplukket sopp og bær *(blåbær/tyttebær/multe) (Antall ganger i året)*	☐☐☐	☐☐☐

5.03 **Hvor mange ganger i måneden spiser du hermetiske matvarer (fra metallbokser)?**

Antall ☐☐

5.04 **Bruker du vitaminer og/eller mineraltilskudd?**

☐ Ja, daglig ☐ Iblant ☐ Aldri

5.05 **Hvor ofte spiser du?**

	Aldri	1-3 g per mnd	1-3 g per uke	4-6 g. per uke	1-2 g. per dag	3 g. per dag eller mer
Mørk sjokolade	☐	☐	☐	☐	☐	☐
Lys sjokolade/melkesjokolade	☐	☐	☐	☐	☐	☐
Sjokoladekake	☐	☐	☐	☐	☐	☐
Andre søtsaker	☐	☐	☐	☐	☐	☐

5.06 **Hvis du spiser sjokolade, hvor mye pleier du vanligvis å spise hver gang?**
Tenk deg størrelsen på en Kvikk- Lunsj sjokolade, og oppgi hvor mye du spiser i forhold til den.

¼	½	1	1 ½	2	Mer enn 2
☐	☐	☐	☐	☐	☐

5.07 **Hvor ofte drikker du kakao/varm sjokolade**

Aldri	1-3 g per mnd	1-3 g per uke	4-6 g. per uke	1-2 g. per dag	3 g. per dag eller mer
☐	☐	☐	☐	☐	☐

6. ALKOHOL

6.01 **Hvor ofte har du <u>det siste året</u>:**	Aldri	Sjeldnere enn månedlig	Månedlig	Ukentlig	Daglig, eller nesten daglig
Ikke klart å stoppe og drikke alkohol når du først har begynt?	☐	☐	☐	☐	☐
Ikke klart å gjøre det som normalt forventes av deg fordi du har drukket?	☐	☐	☐	☐	☐
Trengt en drink om morgenen for å få komme i gang etter en rangel?	☐	☐	☐	☐	☐
Følt skyld eller anger etter at du har drukket?	☐	☐	☐	☐	☐
Ikke klart å huske hva som skjedde kvelden før på grunn av at du hadde drukket?	☐	☐	☐	☐	☐

	Aldri	Ja, men ikke det siste året	Ja, det siste året
6.02 **Har du eller andre noen gang blitt skadet på grunn av at du har drukket?**	☐	☐	☐
Har en slektning, venn, lege, eller annet helsepersonell vært bekymret for din drikking, eller foreslått at du reduserer inntaket?	☐	☐	☐

7. VEKT

7.01 **Har du ufrivillig gått ned i vekt <u>siste 6 måneder</u>?**

☐ Ja ☐ Nei

Hvis JA: Hvor mange kilo? ☐☐

7.02 **Anslå din vekt da du var 25 år gammel:**

Antall hele kg ☐☐☐

7.03 **Er du fornøyd med vekta di nå?**

☐ Ja ☐ Nei

7.04 **Hvilken vekt ville du være tilfreds med (din trivselsvekt):**

Antall kg ☐☐☐

8. LØSEMIDLER

8.01 **Hvor mange timer i uka driver du med følgende <u>fritids- eller yrkesaktiviteter:</u>**
Bilreparasjoner/lakkering, keramikkarbeid, maling/lakkering/løsemidler, frisør, glassmester, elektriker (Sett 0 om du ikke driver med slike fritids eller yrkesaktiviteter)

Antall timer per uke i gjennomsnitt ☐☐

8.02 **Bruker du hårfargemidler?**

☐ Ja ☐ Nei

Hvis JA, hvor mange ganger per år? ☐☐

9. BRUK AV HELSETJENESTER

9.01 **Har du noen gang opplevd at sykdom er blitt mangelfullt undersøkt eller behandlet, og at dette har gitt alvorlige følger?**

- ☐ Ja, det har rammet meg selv
- ☐ Ja, det har rammet en nær pårørende *(barn, foreldre, ektefelle/samboer)*
- ☐ Nei

Hvis JA, hvor mener du årsaken ligger? (sett ett eller flere kryss):

- ☐ hos fastlege/allmennlege
- ☐ hos legevaktslege
- ☐ hos privatpraktiserende spesialist
- ☐ hos sykehuslege
- ☐ hos annet helsepersonell
- ☐ hos alternativ behandler
- ☐ hos flere på grunn av svikt i rutiner og samarbeid

9.02 **Har du noen gang følt deg overtalt til å godta undersøkelse eller behandling som du selv ikke ønsket?**

☐ Ja ☐ Nei

Hvis JA, mener du dette har hatt uheldige helsemessige følger?

☐ Ja ☐ Nei

9.03 **Har du noen gang klaget på behandling du har fått?**

- ☐ Har aldri vært aktuelt
- ☐ Har vurdert å klage, men ikke gjort det
- ☐ Har klaget muntlig
- ☐ Har klaget skriftlig

9.04 **Hvor lenge har du hatt din nåværende fastlege/annen lege?**

- ☐ Mindre enn 6 måneder
- ☐ 6 til 12 måneder
- ☐ 12 til 24 måneder
- ☐ Mer enn 2 år

9.05 **Ved siste legebesøk hos fastlegen, snakket legen(e) til deg slik at du forsto dem?** Svar på en skala fra 0 til 10, hvor 0=de var vanskelige å forstå og 10=de var alltid enkle å forstå

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9.06 **Hvordan vil du karakterisere behandlingen eller rådgivingen du fikk siste gang du var hos lege?** Svar på en skala fra 0 til 10, hvor 0= meget dårlig behandling og 10 = meget god behandling

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9.07 **Har du i løpet av de siste 12 måneder opplevd at det har vært vanskelig å bli henvist til spesielle undersøkelser (som røntgen eller liknende) eller til spesialist-helsetjenesten (privatpraktiserende spesialist eller ved sykehus)?**

- ☐ Ikke aktuelt
- ☐ Intet problem
- ☐ Noe problem
- ☐ Stort problem

9.08 **Har du i løpet av de siste 12 måneder opplevd at det er vanskelig å bli henvist til fysioterapeut, kiropraktor eller liknende?**

- ☐ Ikke aktuelt
- ☐ Intet problem
- ☐ Noe problem
- ☐ Stort problem

9.09 **Alt i alt, har du opplevd at det er vanskelig eller enkelt å bli henvist til spesialisthelse-tjenesten?**

- ☐ Ikke aktuelt
- ☐ Meget vanskelig
- ☐ Noe vanskelig
- ☐ Rimelig enkelt
- ☐ Meget enkelt

9.10 **Har du i løpet av de siste 12 måneder vært til undersøkelse eller behandling i spesialist-helsetjenesten?**

☐ Ja ☐ Nei

Hvis JA, snakket legen(e) til deg slik at du forstod dem? Svar på en skala fra 0 til 10, hvor 0=de var vanskelige å forstå og 10=de var alltid enkle å forstå

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9.11 **Hvordan vil du karakterisere behandlingen eller rådgivningen du fikk siste gang du var hos spesialist?** Svar på en skala fra 0 til 10, hvor 0=meget dårlig og 10=meget god

0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9.12 **Har du noen gang før 2002 gjennomgått en operasjon på sykehus eller spesialist-klinikk?**

☐ Ja ☐ Nei

9.13 **Har du i løpet av de siste 12 måneder brukt urtemedisin , naturmidler eller naturlegemidler?**

☐ Ja ☐ Nei

9.14 **Har du i løpet av de siste 12 måneder brukt meditasjon, yoga, qi gong eller thai chi som egenbehandling?**

☐ Ja ☐ Nei

10. BRUK AV ANTIBIOTIKA

10.01 **Har du brukt antibiotika i løpet av de siste 12 måneder?** (all penicillinliknende medisin i form av tabletter, mikstur eller sprøyter)

☐ Ja ☐ Nei ☐ Husker ikke

Hvis JA, hva fikk du behandling mot? Har du tatt flere antibiotikakurer, sett ett kryss for hver kur.

	Kur 1	Kur 2	Kur 3	Kur 4	Kur 5	Kur 6
· Urinveisinfeksjon *(blærebetennelse, blærekatarr)*	☐	☐	☐	☐	☐	☐
· Luftveisinfeksjon *(øre-, bihule- hals- eller lungebetennelse, bronkitt)*	☐	☐	☐	☐	☐	☐
· Annet	☐	☐	☐	☐	☐	☐
Antall dagers antibiotika kur						

Hvordan skaffet du deg antibiotikakuren? Har du tatt flere kurer, sett ett kryss for hver kur.

Etter resept fra lege/tannlege	☐	☐	☐	☐	☐	☐
Uten kontakt med lege/uten resept:						
· Kjøp direkte fra apotek i utlandet	☐	☐	☐	☐	☐	☐
· Kjøp gjennom Internett	☐	☐	☐	☐	☐	☐
· Rest fra tidligere kur tilgjengelig hjemme	☐	☐	☐	☐	☐	☐
· Fått av familie/venner	☐	☐	☐	☐	☐	☐
· Andre måter	☐	☐	☐	☐	☐	☐

10.02 **Har du antibiotika hjemme?**

☐ Ja ☐ Nei

Hvis JA, er dette etter avtale med lege for å behandle kronisk eller hyppig tilbakevendende sykdom?

☐ Ja ☐ Nei

Hvis Nei, hvordan skaffet du deg dette legemiddelet? (Flere kryss er mulig)

- Kjøpt direkte fra apotek i utlandet ☐
- Kjøpt over Internett ☐
- Rest fra tidligere kur ☐
- Fått av familie/venner ☐
- Andre måter ☐

10.03 **Kan du tenke deg å bruke antibiotika uten å kontakte lege først?**

☐ Ja ☐ Nei

Hvis JA, hvilke tilstander vil du i så fall behandle? (Flere kryss mulig)

- Forkjølelse ☐
- Hoste ☐
- Bronkitt ☐
- Halsbetennelse ☐
- Bihulebetennelse ☐
- Feber ☐
- Influensa ☐
- Ørebetennelse ☐
- Diaré ☐
- Blærebetennelse ☐
- Andre infeksjoner ☐

11. DIN DØGNRYTME

Vi vil stille deg noen spørsmål som handler om dine søvnvaner.

11.01 **Har du hatt skiftarbeid de tre siste månedene?**

☐ Ja ☐ Nei

11.02 **Antall dager i løpet av uken hvor du ikke kan velge fritt når du vil sove (f.eks arbeidsdager)?**

0 1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Da går jeg til sengs klokken ..... ☐☐:☐☐

Jeg gjør meg klar til å sove klokken ..... ☐☐:☐☐

Antall minutter jeg trenger på å sovne ..... ☐☐

Jeg våkner klokken ..... ☐☐:☐☐

Ved hjelp av: ☐ Vekkeklokke ☐ annen ytre påvirkning *(støy, familie etc)* ☐ av meg selv

Antall minutter jeg trenger på å stå opp ..... ☐☐

11.03 **Antall dager i løpet av uken hvor du fritt kan velge når du vil sove** (f.eks helger eller fridager)

0 1 2 3 4 5 6 7

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Da går jeg til sengs klokken ..... ☐☐:☐☐

Jeg gjør meg klar til å sove klokken ..... ☐☐:☐☐

Antall minutter jeg trenger på å sovne ..... ☐☐

Jeg våkner klokken ..... ☐☐:☐☐

Ved hjelp av: ☐ Vekkeklokke ☐ annen ytre påvirkning *(støy, familie etc)* ☐ av meg selv

Antall minutter jeg trenger på å stå opp ..... ☐☐

12. HUD OG HUDSYKDOMMER

12.01 **Hvor ofte dusjer eller bader du vanligvis?** (sett ett kryss)

- ☐ 2 eller flere ganger daglig
- ☐ 1 gang daglig
- ☐ 4-6 ganger per uke
- ☐ 2-3 ganger per uke
- ☐ 1 gang per uke
- ☐ sjeldnere enn 1 gang per uke

12.02 **Hvor ofte vasker du vanligvis hendene med såpe i løpet av en dag?** (sett ett kryss)

- ☐ 0 ganger
- ☐ 1-5 ganger
- ☐ 6-10 ganger
- ☐ 11-20 ganger
- ☐ Mer enn 20 ganger

12.03 **Har du noen gang fått antibiotikakur (penicillin og liknende medisin) på grunn av en hudlidelse, for eksempel betent eksem, kviser, leggsår som ikke vil gro, tilbakevendende verkebyll?**

☐ Ja ☐ Nei

Hvis JA, hvor mange ganger i gjennomsnitt per år fikk du antibiotika i den perioden du var mest plaget (sett ett kryss)

☐ 1-2 ☐ 3-4 ☐ Mer enn 4 ganger

12.04 **Har du eller har du noen gang hatt følgende hudlidelser?** (sett ett kryss for hver linje)

	Ja	Nei
Psoriasis	☐	☐
Atopisk eksem (barneeksem)	☐	☐
Tilbakevendende håndeksem	☐	☐
Tilbakevendende kviser over flere måneder	☐	☐
Legg- eller fotsår som ikke ville gro i løpet av 3-4 uker	☐	☐

Hvis JA på spørsmål om legg-og/eller fotsår, har du leggsår i dag?

☐ Ja ☐ Nei

12.05 **Har du ofte eller bestandig noen av følgende plager?** (sett ett kryss for hver linje)

	Ja	Nei
Hevelse i ankler og legger, særlig om kvelden	☐	☐
Åreknuter	☐	☐
Eksem (rødt, kløende utslett) på leggene	☐	☐
Smerter i beina når du går, men som forsvinner når du står stille	☐	☐

12.06 **Har du noen gang fått følgende diagnoser av lege?** (sett ett kryss for hver linje)

	Ja	Nei
Psoriasis	☐	☐
Atopisk eksem	☐	☐
Rosacea	☐	☐

12.07 **Har du tilbakevendende store kviser/ verkebyller som er ømme/smertefulle og som ofte tilheler med arr på følgende steder?** (sett ett kryss for hver linje)

	Ja	Nei
Armhulene	☐	☐
Under brystene	☐	☐
Magefolden/navlen	☐	☐
Rundt kjønnsorganet	☐	☐
Rundt endetarmsåpningen	☐	☐
Lyskene	☐	☐

Hvis JA, har du noen gang oppsøkt lege på grunn av verkebyller?

☐ Ja ☐ Nei

Hvis JA, fikk du da noen av følgende behandlinger? (sett ett kryss for hver linje)

	Ja	Nei
Antibiotika salve/krem	☐	☐
Antibiotika tabletter	☐	☐
Kirurgisk åpning/tømming	☐	☐
Større kirurgisk inngrep med fjerning av hud	☐	☐
Kirurgisk laserbehandling	☐	☐

Oppfølgingsspørsmål

INFORMASJON TIL OPPFØLGINGSSPØRSMÅL

De neste sidene med spørsmål skal ikke besvares av alle. Dersom du har svart ja på ett eller flere av spørsmålene under, ber vi deg om å gå videre til oppfølgingsspørsmål om emnet eller emnene du har svart ja på. De fire første emnene er fra det første spørreskjemaet og det siste spørsmålet er fra dette skjemaet.

Vi har for enkelhetsskyld markert emnene med ulike farger slik at du lett skal finne frem til de spørsmålene som gjelder for deg.

Dersom du svarte JA på at du har: langvarige eller stadig tilbakevendende smerter som har vart i 3 måneder eller mer, ber vi deg svare på spørsmålene på side 19 og 20. Margen er markert med grønn.

Dersom du svarte JA på at du har gjennomgått noen form for operasjon i løpet av de siste 3 årene, ber vi deg svare på spørsmålene på side 21 og 22. Margen er markert med lilla.

Dersom du svarte JA på at du arbeider utendørs minst 25% av tiden, eller i lokaler med lav temperatur, som for eksempel lager/industrihaller, ber vi deg svare på spørsmålene på side 23. Margen er markert med rød.

Dersom du svarte JA på at du har brukt reseptfrie smertestillende medisiner, ber vi deg svare på spørsmålene på side 24. Margen er markert med orange.

Dersom du svarte JA på at du har eller noen gang har hatt plager med hud (som psoriasis, atopisk eksem, legg- eller fotsår som ikke vil gro, tilbakevendende håndeksem, kviser eller verkebyll), ber vi deg svare på spørsmålene på side 25. Margen er markert med gul.

Har du svart **NEI** på disse fem spørsmålene, er du ferdig med besvarelsen din. Spørreskjemaet returneres i svarkonvolutten du fikk utlevert på undersøkelsen. Portoen er allerede betalt.

Skulle du ønske å gi oss en skriftlig tilbakemelding om enten spørreskjema eller Tromsøundersøkelsen generelt, er du hjertelig velkommen til det på side 26.

Har du noen spørsmål, kan du ta kontakt med oss på telefon eller på e-post. Du finner kontaktinformasjon på baksiden av skjemaet. **TUSEN TAKK** for at du tok deg tid til undersøkelsen og til å svare på spørsmålene fra oss.

13. OPPFØLGINGSSPØRSMÅL OM SMERTE

Du svarte i det første spørreskjemaet at du har langvarige eller stadig tilbakevendende smerter som har vart i 3 måneder eller mer. Her ber vi deg beskrive de smertene litt nærmere.

13.01 **Hvor lenge har du hatt disse smertene?**

Antall år..... ☐☐ måneder..... ☐☐

13.02 **Hvor ofte har du vanligvis disse smertene?**

- ☐ Hver dag
- ☐ En eller flere ganger i uken
- ☐ En eller flere ganger i måneden
- ☐ Sjeldnere enn 1 gang i måneden

13.03 **Hvor er det vondt?** (Kryss av for alle steder der du har langvarige eller stadig tilbakevendende smerter)

- ☐ Hode/ansikt
- ☐ Kjeve/kjeveledd
- ☐ Nakke
- ☐ Rygg
- ☐ Skulder
- ☐ Arm/albue
- ☐ Hånd
- ☐ Hofte
- ☐ Lår/kne/legg
- ☐ Ankel/fot
- ☐ Bryst
- ☐ Mage
- ☐ Underliv/kjønnsorganer
- ☐ Hud
- ☐ Annet sted

13.04 **Hva mener du er årsaken til smertene?** (Kryss av for alle kjente årsaker)

- ☐ Ulykke/akutt skade
- ☐ Langvarig belastning
- ☐ Kirurgisk inngrep/operasjon
- ☐ Skiveutglidning *(prolaps)*/lumbago
- ☐ Nakkesleng *(whiplash)*
- ☐ Migrene/hodepine
- ☐ Slitasjegikt *(artrose)*
- ☐ Leddgikt
- ☐ Bechterews sykdom
- ☐ Fibromyalgi
- ☐ Angina pectoris *(hjertekrampe)*
- ☐ Dårlig blodsirkulasjon
- ☐ Kreft
- ☐ Nerveskade/nevropati
- ☐ Infeksjon
- ☐ Helvetesild
- ☐ Annen årsak *(beskriv under)*
- ☐ Vet ikke

Beskriv annen årsak:

.....

13.05 **Hvilke former for behandling har du fått for smertene?** (Kryss av for alle typer smertebehandling du har mottatt)

- ☐ Ingen behandling
- ☐ Smertestillende medisiner
- ☐ Fysioterapi/kiropraktikk
- ☐ Behandling ved smerteklinikk
- ☐ Operasjon
- ☐ Smerteskole/avspenning/psykoterapi
- ☐ Akupunktur
- ☐ Alternativ behandling *(homøopati, healing, aromaterapi, m.m.)*
- ☐ Annen behandling

13.06 **På en skala fra 0 til 10, der 0 tilsvarer ingen smerte og 10 tilsvarer den verst tenkelige smerten du kan forestille deg:**

Hvor sterke vil du si at smertene vanligvis er?	Ingen smerte	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	Verst tenkelige smerte
Hvor sterke er smertene når de er på sitt sterkeste?	Ingen smerte	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	Verst tenkelige smerte
I hvor stor grad påvirker smertene søvnen din?	Påvirker ikke	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	Umulig å få sove
I hvor stor grad hindrer smertene deg i å utføre vanlige aktiviteter hjemme og i arbeid?	Påvirker ikke	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	Kan ikke gjøre noe

14. OPPFØLGINGSSPØRSMÅL OM OPERASJON

I det første spørreskjemaet svarte du at du har gjennomgått en operasjon i løpet av de siste 3 årene.

14.01 **Hvor mange operasjoner har du totalt gjennomgått de siste 3 årene?**

Antall ..... ☐☐

Nedenfor ber vi deg beskrive operasjonen. Dersom du har gjennomgått flere operasjoner i løpet av de siste 3 årene gjelder disse spørsmålene den siste operasjonen du gjennomgikk.

14.02 **Hvor i kroppen ble du operert?** (Dersom du samtidig ble operert flere steder i kroppen, settes flere kryss)

Operasjon i hode/nakke/rygg
- · Hode/ansikt ☐
- · Nakke/hals ☐
- · Rygg ☐

Operasjon i brystregionen
- · Hjerte ☐
- · Lunger ☐
- · Bryster ☐
- · Annen operasjon i brystregionen ☐

Operasjon i mage/underliv
- · Mage/tarm ☐
- · Lyskebrokk ☐
- · Urinveier/kjønnsorganer ☐
- · Galleblære/galleveier ☐
- · Annen operasjon i mage/underliv ☐

Operasjon i hofte/ben
- · Hofte/lår ☐
- · Kne/legg ☐
- · Ankel/fot ☐
- · Amputasjon ☐

Operasjon i skulder og arm
- · Skulder/overarm ☐
- · Albue/underarm ☐
- · Hånd ☐
- · Amputasjon ☐

14.03 **Bakgrunn for operasjonen:**
- Akutt sykdom/skade ☐
- Planlagt ikke-kosmetisk operasjon ☐
- Planlagt kosmetisk operasjon ☐

14.04 **Hvor ble du operert?**
- Sykehuset i Tromsø ☐
- Sykehuset i Harstad ☐
- Annet offentlig sykehus ☐
- Privat klinikk ☐

14.05 **Hvor lenge er det siden du gjennomgikk operasjonen?**

Antall år ..... ☐☐ måneder ..... ☐☐

14.06 **Har du nedsatt følsomhet i et område nær operasjonsarret?**

☐ Ja ☐ Nei

14.07 **Er du overfølsom for berøring, varme eller kulde i et område nær operasjonsarret?**

☐ Ja ☐ Nei

14.08 **Kan lett berøring av klær, dusj og lignende fremkalle ubehag/smerte?**

☐ Ja ☐ Nei

14.09 **Hvis du hadde smerter på operasjonsstedet før du ble operert, har du samme type smerte nå?**

☐ Ja ☐ Nei

14.10 **Smerte fra operasjonsstedet:** Svar på en skala fra 0 til 10, hvor 0=ingen smerte og 10=verst tenkelige smerte

Hvor sterke smerter hadde du fra operasjonsstedet før operasjonen.....	Ingen smerte	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	Verst tenkelige smerte
Hvor sterke smerter har du vanligvis fra operasjonsstedet nå.....	Ingen smerte	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	Verst tenkelige smerte
Hvor sterke smerter har du nå fra operasjonsstedet når smertene er på det sterkeste.....	Ingen smerte	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	Verst tenkelige smerte

15. OPPFØLGINGSSPØRSMÅL OM ARBEID I KALDT KLIMA

I det første spørreskjemaet svarte du ja på at du arbeidet i kaldt klima. Her er noen oppfølgingsspørsmål vi håper du vil svare på.

15.01 **Fryser du på jobb?**

☐ Ja, ofte
☐ Ja, noen ganger
☐ Nei, aldri

15.02 **Hvor lenge har du vært utsatt for kalde omgivelser under 0°C sist vinter?**

Fritid/hobby *(timer/uke)* .....
Arbeid *(timer/uke)* .....
Utendørs, godt kledd *(timer/uke)* .....
Utendørs, tynnkledd *(timer/uke)* .....
Innendørs, uten oppvarming *(timer/uke)* .....
I kalde omgivelser, med våte klær *(timer/uke)* .....
Kontakt med kalde gjenstander/ verktøy *(timer/uke)* .....

15.03 **Hvilken omgivelsestemperatur forhindrer deg i å:**

	Under °C
Arbeide utendørs	
Trene utendørs	
Utføre andre aktiviteter utendørs	

15.04 **Har du hatt forfrysninger siste 12 måneder, med blemmer, sår eller skader i huden?**

☐ Ja ☐ Nei

Hvis JA, hvor mange ganger? .....

15.05 **Har du opplevd kløe og/eller utslett i forbindelse med kulde?**

☐ Ja ☐ Nei

15.06 **Har du i løpet av de siste 12 måneder vært involvert i ulykke som krevde medisinsk behandling der kulde var en viktig faktor?**

	Ja	Nei
På arbeid	☐	☐
I fritiden	☐	☐

15.07 **Opplever du noen av følgende symptomer mens du oppholder deg i kalde omgivelser? I så fall, ved hvilken temperatur oppstår symptomene?**

	Ja	Nei	Under °C
Pusteproblemer	☐	☐	
Pipende pust	☐	☐	
Slim fra lungene	☐	☐	
Brystsmerter	☐	☐	
Forstyrrelse i hjerterytmen ..	☐	☐	
Nedsatt blodsirkulasjon i hender/føtter	☐	☐	
Synsforstyrrelse *(kortvarig/ forbigående)*	☐	☐	
Migrene *(kortvarig/forbigående)*	☐	☐	
Hvite fingre *(kortvarig/ forbigående)*	☐	☐	
Blå, blå-røde fingre *(kortvarig/forbigående)*	☐	☐	

15.08 **Hvordan påvirker kalde omgivelser og kulderelaterte symptomer din yteevne?**

	Nedsatt	Uforandret	Forbedret
Konsentrasjon	☐	☐	☐
Hukommelse	☐	☐	☐
Fingerfølsomhet *(følelse)*	☐	☐	☐
Fingerferdighet *(motorikk)*	☐	☐	☐
Kontroll av bevegelse *(for eksempel skjelving)*	☐	☐	☐
Tungt fysisk arbeid	☐	☐	☐
Langvarig fysisk arbeid	☐	☐	☐

16. BRUK AV RESEPTFRIE SMERTESTILLENDE LEGEMIDLER

I det første spørreskjemaet svarte du at du hadde brukt reseptfrie smertestillende legemidler de siste 4 ukene. Her er noen oppfølgingsspørsmål vi håper du vil svare på.

16.01 **Hvilke typer reseptfrie smertestillende legemidler har du brukt?**

Paracetamol: *(Pamol, Panodil, Paracet, Paracetamol, Pinex)*

- ☐ Ikke brukt
- ☐ Sjeldnere enn hver uke
- ☐ Hver uke, men ikke daglig
- ☐ Daglig

Hvor mye tar du vanligvis daglig når du bruker midlene?
(Antall tabletter, stikkpiller)..... ☐☐

Acetylsalisylsyre: (*Aspirin,Dispril, Globoid)*

- ☐ Ikke brukt
- ☐ Sjeldnere enn hver uke
- ☐ Hver uke, men ikke daglig
- ☐ Daglig

Hvor mye tar du vanligvis daglig når du bruker midlene?
(Antall tabletter)..... ☐☐

Ibuprofen: *(Ibumetin, Ibuprofen, Ibuprox, Ibux)*

- ☐ Ikke brukt
- ☐ Sjeldnere enn hver uke
- ☐ Hver uke, men ikke daglig
- ☐ Daglig

Hvor mye tar du vanligvis daglig når du bruker midlene?
(Antall tabletter, stikkpiller)..... ☐☐

Naproksen: *(Ledox, Naproxen)*

- ☐ Ikke brukt
- ☐ Sjeldnere enn hver uke
- ☐ Hver uke, men ikke daglig
- ☐ Daglig

Hvor mye tar du vanligvis daglig når du bruker midlene?
(Antall tabletter)..... ☐☐

Fenazon med koffein: *(Antineuralgica ,Fanalgin Fenazon-koffein, Fenazon-koffein sterke)*

- ☐ Ikke brukt
- ☐ Sjeldnere enn hver uke
- ☐ Hver uke, men ikke daglig
- ☐ Daglig

Hvor mye tar du vanligvis daglig når du bruker midlene?
(Antall tabletter)..... ☐☐

16.02 **Mot hvilke plager bruker du reseptfrie smertestillende midler: (**Flere kryss er mulig)

- ☐ Hodepine
- ☐ Menssmerter
- ☐ Migrene
- ☐ Ryggsmerter
- ☐ Muskelsmerter/leddsmerter
- ☐ Tannsmerter
- ☐ Annet

16.03 **Mener du å ha opplevd bivirkninger av noen av legemidlene?** (sett ett kryss for hver linje)

	Ja	Nei
Paracetamol	☐	☐
Acetylsalisylsyre	☐	☐
Ibuprofen	☐	☐
Naproksen	☐	☐
Fenazon med koffein	☐	☐

16.04 **Hvor pleier du å kjøpe slike legemidler?**

- ☐ Apotek
- ☐ Dagligvare
- ☐ Bensinstasjon
- ☐ Utenlands
- ☐ Internett

16.05 **Kombinerer du behandlingen med bruk av reseptbelagte smertestillende midler?**

☐ Ja ☐ Nei

17. OPPFØLGINGSSPØRSMÅL OM HUDSYKDOMMER

På side 15 i dette spørreskjemaet svarte du at du har eller har hatt en hudsykdom. Her er noen oppfølgingsspørsmål vi håper du vil svare på.

Svar på en skala fra 0 til 10, der 0 tilsvarer ingen plager og 10 tilsvarer verst tenkelige plager. Dersom du svarte JA på at du har eller har hatt:

Ingen plager 0 1 2 3 4 5 6 7 8 9 10 Verst tenkelige plager

17.01 **Psoriasis**
- Hvor mye plaget er du av din psoriasis i dag? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
- Hvor mye plaget er du av din psoriasis når den er som verst? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

17.02 **Atopisk eksem**
- Hvor mye plaget er du av ditt atopiske eksem i dag? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
- Hvor mye plaget er du av ditt atopiske eksem når det er som verst? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

17.03 **Håndeksem**
- Hvor mye plaget er du av ditt håndeksem i dag? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
- Hvor mye plaget er du av ditt håndeksem når det er som verst? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

17.04 **Kviser**
- Hvor mye plaget er du av dine kviser i dag? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
- Hvor mye plaget er du av dine kviser når de er som verst? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

17.05 **Verkebyller**
- Hvor mye plaget er du av dine verkebyller i dag? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
- Hvor mye plaget er du av dine verkebyller når de er som verst? ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

17.06 **Her er en liste over faktorer som kan tenkes å utløse eller forverre verkebyller, kryss av for hva du synes gjelder for deg:**

	Ja	Nei
Stress/psykisk påkjenning	☐	☐
Trange/tette klær	☐	☐
Menstruasjonssyklus	☐	☐
Svangerskap	☐	☐
Annet	☐	☐

17.07 **Hvor mange utbrudd av verkebyller har du vanligvis i løpet av ett år?** (sett ett kryss)

☐ 0-1 ☐ 4-6
☐ 2-3 ☐ Mer enn 6

17.08 **Hvor gammel var du da du fikk verkebyller første gang?**

☐ 0-12 år ☐ 26-35 år
☐ 13-19 år ☐ 36-50 år
☐ 20-25 år ☐ Over 50 år

17.09 **Dersom du ikke lenger har verkebyller, hvor gammel var du da plagene forsvant?**

☐ 0-12 år ☐ 26-35 år
☐ 13-19 år ☐ 36-50 år
☐ 20-25 år ☐ Over 50 år

TILBAKEMELDING

Skulle du ønske å gi oss en skriftlig tilbakemelding om enten spørreskjema eller Tromsøundersøkelsen generelt, er du hjertelig velkommen til det her:

Takk for hjelpen!

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Tromsø-undersøkelsen

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