

# A Prospective Study of Return to Work in Long Lasting LBP: Expectancies of Returning to Work and Overall Job Satisfaction

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## **Abstract**

**Background:** Musculoskeletal disorders including low back pain have major individual and socioeconomic consequences as it often leads to disability and sick leave. Knowledge about predictors of return to work after long lasting low back pain is important from a health promotion perspective. The main focus within this field of research has been on predictors for work disability, and these do often differ from predictors of returning to work. Therefore, it is important to identify key predictors for return to work.

**Objective:** To investigate whether high expectancies of returning to work and high levels of overall job satisfaction can predict return to work after 12 months among individuals with long lasting low back pain, and examine if there are any gender differences.

**Method:** Secondary data analyses from a recently performed multicenter randomized controlled trial in a cohort of 569 workers on sick leave for 2-10 months due to low back pain.

**Results:** Regardless of gender, high expectancies were significant in predicting return to work at 12 months, while high levels of job satisfaction were not significant. Men with high expectancies had higher odds of returning to work compared to women. Men and women reported similar levels of expectancies and overall job satisfaction

**Conclusions:** Among individuals with long lasting low back pain those with high expectancies of returning to work are more likely to return to work than those with low expectancies. Screening expectancies and paying extra attention to individuals with low expectancies may contribute to solutions to increase return to work.

**Key words:** The Cognitive Activation Theory of Stress, the Biopsychosocial Model of Pain, long lasting low back pain, expectancies of returning to work, job satisfaction, return to work.

## Sammendrag

**Bakgrunn:** Muskelskjelettlidelser, korsryggsmerter inkludert, har store individuelle og sosioøkonomiske konsekvenser siden de ofte fører til funksjonsnedsettelse og sykefravær. Kunnskap om prediktorer for retur til jobb er viktig utifra et helsefremmende perspektiv og hovedfokuset innen dette forskningsområdet har vært på prediktorer for sykefravær og funksjonsnedsettelse. Disse er ofte forskjellig fra prediktorer for retur til jobb. Dette illustrerer viktigheten av å identifisere nøkkelprediktorer for retur til jobb.

**Hensikt:** Å undersøke om høye forventninger til å komme tilbake i jobb og høy grad av jobbtilfredshet predikerer retur til jobb etter 12 måneder, og om det er forskjeller mellom kvinner og menn.

**Metode:** Sekundær dataanalyse av data fra et nylig gjennomført multisenter randomisert kontrollert forsøk. Populasjonen bestod av 569 arbeidere sykemeldt i 2-10 måneder på grunn av korsryggsmerter.

**Resultat:** Uavhengig av kjønn, høye forventninger var en signifikant og sterk prediktor for retur til jobb etter 12 måneder, mens global jobbtilfredshet var ikke signifikant. Menn med høye forventninger hadde høyere odds for å komme tilbake til jobb sammenlignet med kvinner. Menn og kvinner rapporterte tilsvarende grad av forventning om å komme tilbake i jobb og jobbtilfredshet.

**Konklusjon:** Blant personer med langvarige korsryggsmerter så er det større sannsynlighet for at personer med høye forventninger kommer tilbake i jobb enn personer med lave forventninger. Å kartlegge forventninger og rette ekstra oppmerksomhet mot personer med lave forventninger kan bidra til løsninger for å få flere personer med langvarige korsryggsmerter tilbake i jobb.

**Nøkkelord:** Kognitiv aktiveringsteori om stress, biopsykososial forklaringsmodell til smerter, langvarige korsryggsmerter, forventninger om å komme tilbake i jobb, jobbtilfredshet, retur til jobb.

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## **1.0 Background**

### **1.1 Introduction**

Work, the workplace and the working role constitute an important part of the adult life since a working adult spend a major part of his or hers waking hours at work (Faragher, Cass, & Cooper, 2005). On one side, being employed can protect and foster good health (Ross & Mirowsky, 1995). On the other side, the work environment can be threatening to the health of the employees (Wilkinson & Marmot, 2003). Unemployment might as well have adverse health effects. Paul and Moser (2009) demonstrated in a large meta-analysis that unemployed people experience more distress than employed people, and more than twice as many of the unemployed experienced psychological problems compared with the employed (Paul & Moser, 2009). The assumption that unemployment is not only correlated to distress, but also causes it was supported by meta-analysis of longitudinal studies and natural experiments (Watson, Booker, Moores, & Main, 2004).

Further, within the work environment exposure to physical and chemical hazards often above a certain threshold might be a threat to the health of a worker (Arbeidstilsynet, 2012, 2013). Physical exposures such as rapid work pace, heavy lifting, whole body vibrations, whole-body exposure to cold, and any of these combined are frequently cited as risk factors for musculoskeletal disorders (MSDs) (Punnett & Wegman, 2004). There is also substantial evidence that other occupational exposures such as job stress, being dissatisfied, low decision making authority might increase the risk of developing MSDs (Punnett & Wegman, 2004).

MSDs are the single largest category of work related illness and it accounts for a third or more of all registered occupational diseases in the Nordic countries, USA, and Japan (Punnett & Wegman, 2004). In addition, MSDs may have a substantial impact on quality of life as well as causing more work absenteeism or disability than any other group of diseases in several western countries (the United States, Canada, Finland, Sweden, and England) (Punnett & Wegman, 2004). Of the MSDs low back pain (LBP) is the most common. In Norway LBP is also the MSD which is the predominant cause of sickness absenteeism and disability benefits (Brage, Ihlebæk, Natvig, & Bruusgaard, 2010).

Work is recognized by the World Health Organization (WHO) as being one of the key social determinants of health (Wilkinson & Marmot, 2003). Work provides income and according to The Ottawa Charter for Health Promotion (WHO, 1986) work is one of the fundamental prerequisites for health (WHO, 1986). Implications of developing LBP may be



loss of income due to sickness absence, disability, and/or unemployment. Such consequences are both a direct (disability) and indirect threat (loss of income/unemployment) to the health of a working adult. Therefore, health promotion actions aiming at returning people to work might enable people to counteract some of the negative health consequences LBP might cause, and even foster better health (Ross & Mirowsky, 1995; WHO, 1986). WHO defined health promotion as the “*process of enabling people to increase control over, and to improve, their health*” (WHO, 1986).

However, before it is possible to implement health promotion actions aiming at getting people with LBP back to work it is necessary to identify key predictors of return to work. First of all it is important to find these predictors because much of the literature on prediction of occupational outcomes such as return to work has been within the pathogenic paradigm, within this context that is focusing on those at risk for disability rather than those who do RTW (Schultz, Stowell, Feuerstein, & Gatchel, 2007). The reality that predictors of disability and predictors of RTW often differ (Schultz et al., 2007) underlines the importance of finding the key predictors of RTW. Further, if we are to implement health promotion actions that might infer an positive health effect, key predictors needs to be identified or else it is more likely that we end up barking up the wrong tree (Green & Tones, 2010) . Accordingly, this thesis will focus on different factors which might play a role in returning to work in a cohort of people with long lasting LBP.

## **1.2 Concept clarifications**

### **1.2.1 Low back pain**

*LBP is defined as “pain and discomfort, localized below the costal margin and above the inferior gluteal folds, with or without referred leg pain”* (Airaksinen et al., 2006, p. 30.).

Further, usually LBP is classified in three categories:

1. Non-specific LBP, the symptoms and the pain cannot be explained by a clear and specific cause (Airaksinen et al., 2006).
2. Nerve root pain/radicular pain (radiating pain, pins and needles, numbness or paraesthesias corresponding to one or more dermatomes (Airaksinen et al., 2006).
3. Specific spinal pathology, the symptoms and the pain can be explained by a possible severe underlying disease, e.g. infections, tumor, osteoporosis, rheumatoid arthritis, fractures, cauda equina syndrome, referred pain from internal organs or other rare conditions (Airaksinen et al., 2006; van Tulder et al., 2006).

Acute, sub-acute, and chronic LBP usually refer to one episode of LBP with a continuous duration of up to six weeks (acute), between six and twelve weeks (sub-acute) and more than twelve weeks (chronic), respectively (Airaksinen et al., 2006; Lærum et al., 2007).

It is suggested to discontinue to use the term “chronic” due to its disadvantageous meaning and rather use the terms “recurrent” or “long lasting” (Lærum et al., 2007).

From now on the term LBP refers to non-specific LBP unless stated otherwise. Long lasting LBP will be used instead of chronic, unless when citing research which use the term chronic.

### **1.2.2 Flags**

Yellow flags were originally used to describe psychosocial prognostic factors for the development of disability following the onset of musculoskeletal pain. Included in the psychosocial prognostic risk factors were; (1) psychological factors (e.g. fears about pain or injury, unhelpful beliefs about recovery and anxiety), (2) societal factors- ,and (3) environmental factors (Nicholas, Linton, Watson, & Main, 2011). In recent years the term “yellow flags” has been refined. It refers to psychological risk factors such as unhelpful beliefs about pain, expectations of poor treatment outcome, fears, anxiety, avoidance of activities due to expectations of pain and possible re-injury (Nicholas et al., 2011; Shaw, van der Windt, Main, Loisel, & Linton, 2009).

Orange flags refer to clearly “abnormal” psychological or psychiatric factors or disorders, suggestive of diagnosable psychopathology (Nicholas et al., 2011).

Red flags are signs of specific and serious spinal pathology such as spinal tumor and infection, inflammatory disease, cauda equina syndrome, and fractures (Nicholas et al., 2011).

Blue flags concern perceptions about the relationship between work and health. Blue flags have been conceptualized as worker perceptions of a stressful, unsupportive, unfulfilling, or highly demanding work (Shaw et al., 2009).

Black flags refer to actual workplace conditions that can affect disability. It includes system or contextual obstacles (Nicholas et al., 2011).

## **1.3 Epidemiology, prognosis and prognostic factors**

The life time prevalence of LBP is estimated to be as high as up to 84% with a point prevalence of 12-33% (Airaksinen et al., 2006). In addition 44-78% experience relapses within one year (Hestbaek, Leboeuf-Yde, & Manniche, 2003). Up to 85-90 % of LBP patients are labeled as having non-specific LBP. Specific underlying diseases can be identified in only 10-15 % of LBP patients (Airaksinen et al., 2006; van Middelkoop et al., 2010).

The evidence base is limited when it comes to the prevalence of chronic LBP (Andersson, 1999). This may partly be due to a lack of consensus of the definition of chronic LBP (Andersson, 1999). This is underlined by Cedraschi et al. (1999) who state that chronic LBP is determined by exclusion and refers to a symptom or a syndrome rather than to a diagnosis. When the use of the term chronicity is based solely on the duration of symptoms it does not provide an adequate explanation for its socioeconomic impact (Cedraschi et al., 1999). Additionally, such a definition depends on the supposition that LBP has a linear course. This is in direct opposition to scientific evidence which has demonstrated that LBP often runs a recurrent course and symptoms may fluctuate on a day to day basis (Cedraschi et al., 1999). However, for prevalence studies of long lasting (chronic) LBP an expert panel reached consensus on four questions which should be included. The suggested questions ask about LBP in the past 4 weeks, if the pain was bad enough to limit usual activities, time since last pain free month and the intensity of the pain (Dionne et al., 2008, p. 100. Figure 3, example 1.).

Estimates suggest that the prevalence is approximately 23% (Airaksinen et al., 2006). Another study from the U.S. showed an increase in the prevalence of chronic LBP independent of demographic subgroups, from 3,9% in 1992 to 10,2% in 2006 (Freburger et al., 2009).

Further, it is well documented that the presentation of either or a combination of yellow-, orange-, blue- and black flags increase the risk of chronicity in LBP patients (Lærum et al., 2007). Without the presentation of such flags, the prognosis for LBP is debated. Hestbaek et al. (2003) have pointed out two reasons for this dispute. Firstly, it is partially a result of the lack of distinction between outcome measures in different studies. Secondly, the discussion is also due to the absence of an unambiguous definition (Hestbaek et al., 2003). Several studies have shown that 80-90 % have returned to work within 4-12 weeks (Krismer & van Tulder, 2007; Pengel, Herbert, Maher, & Refshauge, 2003; Waddell, 1987). The fact that a person has returned to work does not necessarily mean that the person is pain free, and able to continue with leisure time activity the person previously engaged in.

Hestbaek et al. (2003) demonstrated that 42-75% of people with LBP still had pain one year after onset, but the study has been criticized for depicting an unrealistic poor prognosis for acute LBP (Lærum et al., 2007).

Regardless of the prognosis, LBP often leads to disability and sick leave. The consequences for the individual and the society become large, partly due to an increase in the use of health services, sick leave and loss of production (Airaksinen et al., 2006). Hestbaek et

al. (2003) demonstrated that 16% (range 3-40) of LBP patients were on sick leave six months after study inclusion.

In Norway the direct and indirect costs related to LBP are estimated to 13-15 billion NOK yearly. Among people on disability pension, LBP is one of the leading diagnosis (Soldal, 2008 ). Further, the relationship between age and the number of people on disability pension is positive (Ellingsen, 2011). As the Norwegian population is ageing (The Norwegian Institute of Public Health [NIPH], 2010) it is likely that there will be an increase in the number of people on disability pension. According to estimates, another result of the ageing population is that the dependency ratio, defined as the ratio between the number of people aged  $\geq 67$  and the number of people in the working population (age 20-66 years), will increase almost twofold from 2010-2060 (NIPH 2010). This means that in 2011 there were 22 people aged  $\geq 67$  per 100 people in the working population, but in 2060 this number will increase to almost 40 (Brunborg & Texmon, 2011). However, the dependency ratio is a purely demographic expression of the population ageing. It does not tell us anything about the number of people working in the two age groups which are compared (Brunborg & Texmon, 2011).

On the other hand these demographic changes indicates the importance of people of working age staying at work, combined with the growing economic burden of low back occupational disability can be viewed as one of the driving forces to find predictors for RTW.

A systematic review of prognostic factors predicting return to work (RTW) in chronic LBP identified a host of significant prognostic factors, 44 biomedical (27 modifiable) and 61 psychosocial (40 modifiable) (Heitz et al., 2009). Among these factors job characteristics and the work environment have emerged as predictors of LBP and disability, even after controlling for a multitude of other psychosocial, demographic, and health variables (Shaw et al., 2009). Several authors have underlined the need to decrease the growing list of workplace variables to a feasible set of core factors (Shaw et al., 2009). Summarized evidence from five systematic reviews identified seven core factors, where each of the core factors were at least supported by one of the reviews. The seven core factors were: (1) heavy physical demands, (2) ability to modify work, (3) job stress, (4) social support, (5) job satisfaction, (6) RTW expectation, (7) fear of re-injury (Shaw et al., 2009). Further, van der Giezen, Bouter, and Nijhuis (2000) demonstrated that psychosocial features of health such as job satisfaction and health behavior combined with economic aspects have a significantly larger impact on RTW in patients with chronic LBP when compared to relatively more physical characteristics of disability and the physical requirements of the job. This is supported by Shaw et al. (2009)

which state that objective assessments of the physical job demands have generally been poor predictors of RTW.

Of highly importance, according to a large meta-analysis, for the health of the worker is the level of job satisfaction (Faragher et al., 2005). Additionally, of the workplace characteristics reviewed so far job satisfaction has undoubtedly the highest statistical correlate with health (Faragher et al., 2005). The authors concluded that dissatisfaction at work can be perilous to an employee's mental health and well-being, which in turn might affect the course of LBP.

Recovery expectancies has also been identified as one of two most consistent predictors across several statistical models (Schultz et al., 2004). Not only did recovery expectancies predict RTW, it also predicted duration of disability and cost. Additionally, positive recovery expectancies were associated with decreased pain and improved functional status (Schultz et al., 2004). However, less than 30% of the LBP population in the study by Schultz et al. (2004) had chronic LBP, and it has been demonstrated that the number of modifiable prognostic factors are higher in acute- and sub-acute samples with LBP than chronic LBP (Heitz et al., 2009). These arguments suggest that it may be important to investigate the role of recovery expectancies in a large sample of patients with long lasting LBP.

#### **1.4 Problem for discussion**

Can expectancies of returning to work and job satisfaction predict return to work after 12 months in men and women with long lasting LBP, and are there any differences between the genders?

This paper hypothesizes that having high expectancies of returning to work and a high level of job satisfaction increases the probability of returning to work regardless of gender.

## 2.0 Theoretical framework

### 2.1 Health Promotion

WHO defined health as “*A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity*” (WHO, 1946, p. 1). This definition has been criticized for unintentionally contributing to a medicalization of the society, and being utopic as the requirement for complete health would leave most of us unhealthy most of the time (Huber et al., 2011). With regards to long lasting LBP or chronic illness the definition becomes counterproductive as it declares people with such conditions as definitively ill. It also limits the role of human capacity to cope with life’s ever changing physical, emotional and social challenges and to function with fulfillment and a feeling of well-being with a long lasting or chronic illness (Huber et al., 2011). The WHO added to this definition in The Ottawa Charter for Health Promotion by stating that: “*health is a resource for everyday life, not the objective of living*” (WHO, 1986, p. 1). Looking at health as a resource represents a shift from the dominant pathogenic paradigm within medicine to a holistic view on health. A holistic view implies that health has both positive and negative aspects, and rather than seeing health and disease as opposite ends of a single spectrum, they are viewed as a continuum (Green & Tones, 2010).

A central term within health promotion is empowerment which has been conceptualized as a process through which people gain greater control over decisions and actions affecting their health (Nutbeam, 1998). Further, when health is viewed as a resource it encapsulates health as being instrumental for the achievement of valued goals (Green & Tones, 2010). For an individual with long lasting LBP currently on sick leave a valued goal might be to RTW. This is due to the evidence pointing to that work is both a fundamental determinant and a prerequisite for health (WHO, 1986), and that work has beneficial effects not only on mental- and physical health, but also on well-being (Waddell & Burton, 2006). Remaining at work or (re)enter work for an individual with long lasting LBP may be intrinsically empowering. If maximum health status involves “being all you can be” (Green & Tones, 2010), then from a health promotion perspective it is essential that a person with long lasting LBP returns to work because work promotes full participation in society and independence. Hence, it limits the harmful physical, mental and social effects of sickness absence (Waddell & Burton, 2006). However, various aspects of work can be a hazard and pose a risk to health (Punnett & Wegman, 2004; Snashall, 1996). On the other hand, in Norway the workers are fairly well protected from such hazards through The Working

Environment Act (2005). The employer's responsibility for creating healthy workplaces is demonstrated through the The Working Environment Act (2005) and its purpose; *...to secure a working environment that provides a basis for a healthy and meaningful working situation, that affords full safety from harmful physical and mental influences and that has a standard of welfare at all times consistent with the level of technological and social development of society.*

## **2.2 The Biopsychosocial Model of Pain**

Empirical support for a strictly biomedical model of occupational disability and RTW is missing. There has been an rapid increase in the evidence base for psychosocial determinants of disability (Schultz et al., 2007). This is reflected in the European guidelines for the management of chronic LBP which recommend to assess work related factors, psychosocial distress, patient expectations and extreme symptom reporting in patients with chronic LBP (Airaksinen et al., 2006). Further, there is strong evidence that intensive multidisciplinary biopsychosocial rehabilitation with a functional restoration approach decreases pain and ameliorates function in patients with chronic LBP (Airaksinen et al., 2006). The biopsychosocial model incorporates five key clinical elements; physical dysfunction, distress and emotional arousal, beliefs about back pain, illness behavior and social interactions (Waddell, 2004).

**Physical dysfunction.** LBP may arise from nociception in the back and it is primarily a matter of physical dysfunction or physiological impairment. The level of dysfunction is dependent on the level of demand or stress, the musculoskeletal system ability to cope and the (im)balance between them (Waddell, 2004).

**Distress and emotional arousal.** Both distress and emotional arousal are common responses to pain. In turn distress may lead to sensitization, which is an increased awareness of bodily sensations, pain intensity and reduced pain tolerance. Such responses make us more concerned about the pain and more likely to seek health care (Waddell, 2004).

**Beliefs about back pain.** Subjective beliefs about back pain are central to how an individual deals with the pain and how the pain affects that person. Pain expectations, anxiety, attention, expert/lay suggestions and placebos, previous experience and health care all play a role. Behavior is determined by beliefs, and fear of pain and how we deal with it may be more disabling than the pain itself (Waddell, 2004).

**Illness behavior.** How an individual deals with the pain, is affected by distress, pain beliefs and coping strategies. The illness behavior indicates the severity of the physical

problem, however it might reflect the psychological processes more than the underlying physical problem (Waddell, 2004).

**Social interactions.** Social issues- and interactions are external and reciprocal relationships occurring at the individual-, group- or societal level. Individual LBP and disability may influence other people and the society, and the other way around; how other people respond and provisions created by the society (work compensation, disability benefits) may impact the individual's illness behavior. Further, LBP and disability occur in a particular social setting where social networks, family, work and wider networks influence beliefs, coping strategies and illness behavior. The availability, strength and nature of these social influences can either neutralize or reinforce illness behavior and disability (Waddell, 2004)

### **2.2.1 Social support**

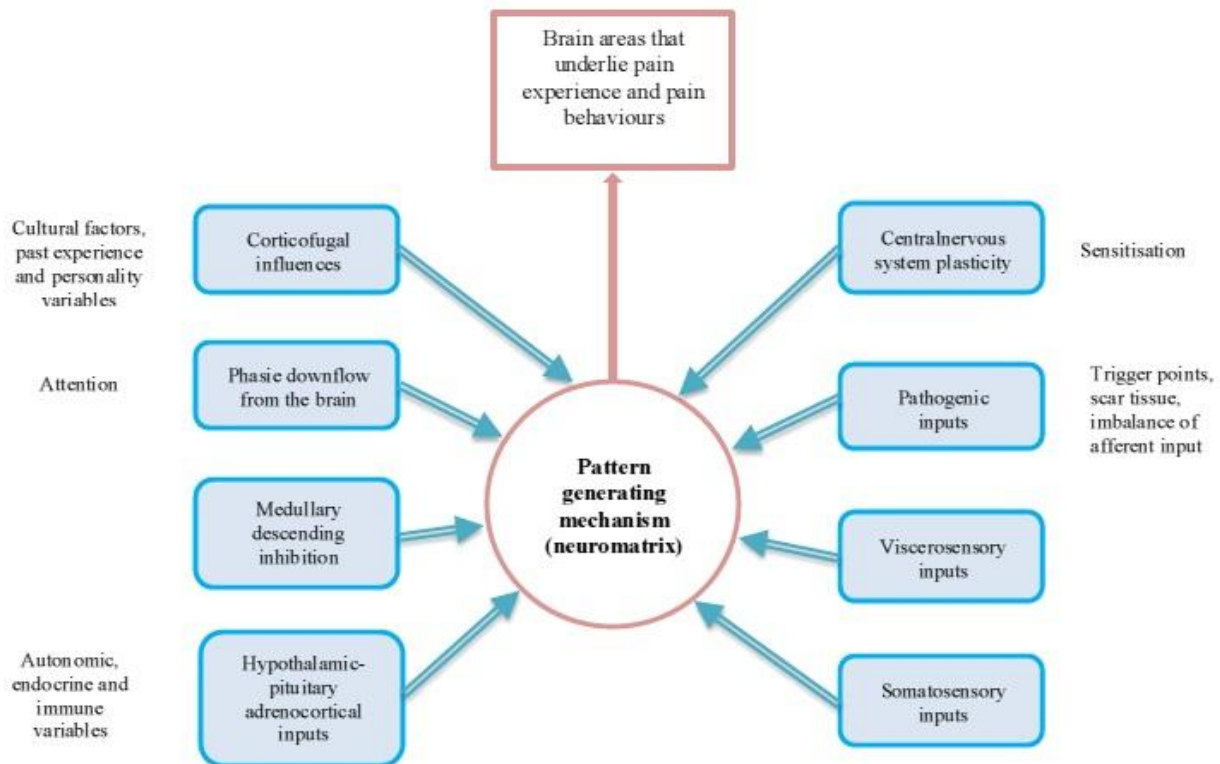
Social support is one of the main strengths of human society, especially in hard times and after major life events (Waddell, 2004). In general, social support aids us in coping with crisis, adapting to change and it provides us with a guard against stress (Waddell, 2004). Good social support can reduce distress, improve our ability to cope, speed up recovery and improve general health, while lack of or low social support increases the risk of ill health (Stansfeld, Fuhrer, Shipley, & Marmot, 1999; Waddell, 2004). The source which has the greatest influence is a significant other with whom you can share your life, your joys, and your sorrows. A wider network, family, friends, colleagues, supervisors and neighbors also provide support (Waddell, 2004). The accessibility to resource persons and the possibility to discuss intimate matters with them play a role, as well as the given feedback. It is the feedback you get from your social networks which leads you to believe that you are appreciated and cared for. Social support is more than anything about emotional support (Waddell, 2004).

### **2.2.2 Concepts of pain and pain perception**

How are the key elements related? Before Melzack and Wall (1965) postulated their gate control theory of pain, the concept of pain was explained as a specific straight-through sensory projection system. It proposed that injury led to activation of specific pain receptors and fibers which projected pain impulses through a spinal pain pathway to a pain center in the brain. This implied that the psychological experience of pain was equated with peripheral injury, and it failed to help people with chronic pain (Melzack, 1996). The gate control theory of pain was the first step towards a new understanding of pain. This theory suggests that a mechanism in the dorsal horns of the spinal cord acts like a gate that inhibits or facilitates



transmission of nerve signals from the body to the brain. If the signals are facilitated or inhibited depend on the diameter of the active peripheral fibers. Activity in large diameter fibers tends to inhibit transmission while small fibers tend to facilitate transmission. As well as the diameter of the fibers, the spinal gate mechanism is also influenced by afferent nerve impulses from the brain (Melzack, 1996). The emphasis on the modulation of inputs and the dynamic function of the brain in pain processes had both a clinical and a scientific impact. It implied that psychological variables (e.g. past experiences, attention, cognitive activities) were an essential part of pain processing. However, this theory met its limitations when facing chronic pain problems. It did not take into account long-term changes in the central nervous system to noxious input and to other external factors which affects the individual (Melzack, 1996). It has been shown that extensive nociceptive input can permanently change spinal cord function (Loeser & Melzack, 1999). Combined with the fact that injury leads to stress, and if not resolved, it may in turn lead to chronic pain after an acute injury (Loeser & Melzack, 1999). Further, physiological and behavioral studies have demonstrated that plasticity, or learning, plays a role in pain perception (Loeser & Melzack, 1999). Another feature is that the brain can produce pain even in the absence of input from the peripheral nociceptors or the spinal cord – for example, in phantom limb pain. Based on the latter, Loeser and Melzack (1999) argue that a neuromatrix (a pattern generating mechanism) must exist that is capable of maintaining an image of the body upon which sensory data are played must exist. Pain perception is the product of the generated output or the neuromatrix as a function of sensory inputs that feed into it, together with information from brain areas involved in affective and cognitive activities (Loeser & Melzack, 1999) . Additionally pain behavior can be generated or sustained by formerly conditioned cues in the environment. Stress, expectancies, and acquired experiences can alter the interaction between the neuromatrix and peripheral stimuli. This implies that the output of the neuromatrix can be altered by numerous forms of treatment to modify the inputs and influences on the neuromatrix. The latter seem to obtain support as it seems that the brain is capable of changing the way pain-producing information is processed to keep its impact to a minimum (Loeser & Melzack, 1999).



**Figure 1.** Pattern-generating mechanism or neuromatrix modulated by multiple inputs and the internal milieu (Loeser & Melzack, 1999). It shows how the widely distributed, parallel-processing neural networks in the CNS create the nerve impulse patterns that generate the diverse somatic experiences, including transient, acute and chronic pain.

Further, Bates (1987) demonstrated that sociocultural factors may affect the psychophysiological processes of pain perception. This implies that social processes as well as psychological and neuropsychological processes may sensitize patients to common bodily symptoms. In turn, emotion, attitudes and beliefs can turn these symptoms into subjective health complaints, including LBP (Eriksen & Ursin, 2002).

Disability also depends on the combination between physiological, psychological and social processes and how they interact over time. Of the aforementioned processes the social issues may be of greater importance regarding disability and sickness absence (Waddell, 2004).

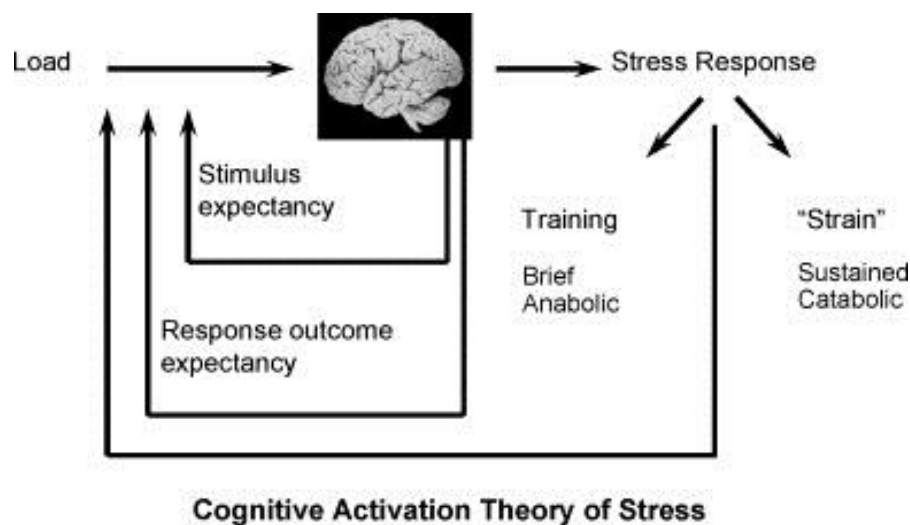
Within this model RTW is accounted for by an intricate relationship between the biopsychosocial elements. The key elements overlap, interact, develop together over time, and

have reciprocal effect on one another that may reinforce and perpetuate each other, and finally the intensity and duration of disability (Shaw et al., 2009; Waddell, 2004).

### 2.3 The Cognitive Activation Theory of Stress (CATS)

Cognitive activities are an essential part of pain processing (Loeser & Melzack, 1999; Melzack, 1996). Within CATS perceived pain is regarded as stress stimuli (load) (Ursin & Eriksen, 2004). In accordance with the biopsychosocial theory of pain the CATS emphasizes that for LBP it might not be the pain itself which is decisive for the outcome for health and RTW. Rather it is the individuals' expectancies of being able to cope with the situation which matters (Ursin & Eriksen, 2004). Further, the CATS incorporates most of, if not all the key elements of the biopsychosocial model either directly or indirectly (e.g. social support can improve our ability to cope (Waddell, 2004).

The term stress is conceptualized into four aspects; stress stimuli (load), the experience of the stress stimuli (filtration), the stress response and the experience of the stress response.



**Figure 2.** The CATS model (Ursin & Eriksen, 2004).

#### 2.3.1 The stress stimuli (load)

Whether a stimulus produces stress and stress responses depends on the individual appraisal of the situation, e. g., if it is pleasant or threatening and not the physical characteristics of the stress stimulus. In turn the individual appraisal is based on previous experience and expectations of the likelihood that the response will produce a desired

outcome. However, some stress stimuli will be perceived as negative in most or all situations (Ursin & Eriksen, 2004).

### **2.3.2 The stress experience and the two main ‘filters’**

All stimuli are assessed and filtered by the brain. Situations or stress stimuli perceived as negative and or threatening are reported as stress. For patients with long lasting LBP concerns and beliefs about possible health consequences of their state may be particularly important. The brain stores information about the relationship between stimuli and between stimuli and responses. This acquired information is referred to as expectancies, and expectancies are a fundamental element in many reformulations of learning theory (Ursin & Eriksen, 2004). The input is filtrated and assessed before it gains access to the response systems. In CATS there are two filters. The first filter is related to stimulus expectancies, which is based on classic conditioning (stimulus-stimulus learning). It is the first stage of any learning situation. The learning is based on previous knowledge of stimulus and what usually follows in the wake of the stimulus (Ursin & Eriksen, 2004). Further, stimulus expectancies are centered on psychological defense mechanisms, including cognitive activities which distort, reject or explain away threatening stimuli without the individual being aware of the strategy (Ursin & Eriksen, 2004).

The second filter is related to response outcome expectancies and is based on the second stage of any learning situation, response learning, which represents instrumental conditioning. Instrumental conditioning is learning where praise and criticism is used to either increase or decrease the probability for a behavior to occur again in the future (Ursin & Eriksen, 2004). The position within CATS is that instrumental conditioning is the acquisition of response outcome expectancies (Ursin & Eriksen, 2004). The three response outcome expectancies within CATS are:

1) Positive response outcome expectancy implies that most or all of the individual's responses lead to a positive result. The consequence is a decrease in the arousal level (Ursin & Eriksen, 2004). Coping is referred to as acquirement of positive recovery expectancies. In English the term coping has multiple meanings. It covers both the act (coping attempts) and the result. In this model the focus is on the expected result. The most suitable way of reducing arousal is to reduce or remove the threat itself by action. This is the most basic definition of coping and it is called the coping act. However, the CATS definition of coping is when the individual establishes an expectancy of being able to cope. For coping to have any predictive

value for stress, arousal, and health it must be defined as a positive response outcome expectancy (Ursin & Eriksen, 2004).

2) To have no response outcome expectancy is referred to as helplessness, which means that there is no relationship between what the individual can do and what happens to him/her.

It can occur in individuals subjected to unpleasant life events beyond their control. A relevant example is individuals with LBP with an ongoing insurance claim. Rejection or approval of their claim is beyond their control, and uncertainty about the outcome may produce high arousal. Further, a crucial feature of helplessness is that it is likely to become a generalized response expectancy for all responses (Ursin & Eriksen, 2004). Helplessness has also been suggested as a cognitive model for depression (Ursin & Eriksen, 2004).

3) Negative response outcome expectancy is described as hopelessness. It refers to the individuals' acquired expectancy that all responses lead to a negative outcome. Hopelessness is the opposite of coping (Ursin & Eriksen, 2004). The individual has control, but all the responses lead to a negative result. This leads to the introduction of the element of guilt since the individual has control, but the negative outcome is the fault of the individual.

Generalized negative outcome expectancies are related to depression and it is a better model of depression compared to helplessness since the element of guilt is brought in (Ursin & Eriksen, 2004). Negative expectancies of returning to work may be interpreted as hopelessness. Another feature which is suggested to contribute to the development of long lasting LBP are fear avoidance beliefs. The plausible associations between fear avoidance beliefs, distress, pain and disability were presented in the frequently cited fear of movement/(re) injury by (Vlaeyen, Kole-Snijders, Boeren, & van Eek, 1995). According to CATS, high levels of fear avoidance beliefs can be interpreted as hopelessness.

The expectancies are quantified by three dimensions: acquisition strength, perceived probability, and affective value (Ursin & Eriksen, 2004).

The acquisition strength of an expectancy states that expectancies are gained according to common principles of learning theory. Whether learning will take place or not, and how substantial it will be depends on characteristics of the events, the number of presentations, and how frequently the events are occurring together (Ursin & Eriksen, 2004).

The perceived probability (PP) of an expectancy is a subjective appraisal of the probability of the expected event based on learning. High levels of PP for response outcome expectancies can be described as control (Ursin & Eriksen, 2004). According to Green and Tones (2010) beliefs about control are central to empowerment. A high degree of control over

your job situation, particularly the ability to modify work, has been identified as a core factor for predicting RTW in chronic LBP (Shaw et al., 2009).

The affective value of expectancy describes whether the expected outcome is appealing, aversive or neutral. This determines the reinforcing characteristic of the expected event (Ursin & Eriksen, 2004).

### **2.3.3 The stress response**

A non-specific alarm response is the general response to stress stimuli, which is followed by a general rise in wakefulness and brain arousal and specific responses to handle the causes of the alarm. The increase in arousal is referred to as activation (Ursin & Eriksen, 2004). This activation occurs when there is a mismatch between what is expected (set value = SV) and what happens (actual value = AV). In other words it occurs when expectancies are not met and it always implies a comparison of present sensorial information with stored information in the brain. Further, it is underlined that the non-specific alarm response is a normal, healthy and necessary response.

The alarm is decreased or eliminated if an individual has positive response outcome expectancies. A temporary activation leads to training, a desirable effect. Harmful effects of stress only occur with helplessness and hopelessness. Both these conditions may have impact on the course of LBP, from acute to chronic, through sustained activation (strain) (Ursin & Eriksen, 2004). Helplessness and hopelessness may also lead to a prolonged course of chronic LBP through the lack of motivation for participating in positive lifestyles (Ursin & Eriksen, 2004, 2010).

### **2.3.4 The experience of the stress response (feedback)**

After responding to a stress stimulus the individual receives feedback on the result of his or her response. This feedback may affect the feeling of being stressed (Ursin & Eriksen, 2004). Hence, the importance of rendering clinical findings of LBP (e.g. MRI results, X-ray results, findings from the physical examination etc.) as harmless (Airaksinen et al., 2006; Lærum et al., 2007). If such feedback is given, the individual may change the appraisal of the stressor or the response outcome expectancy regarding potential relapses of LBP (Meurs & Perrewé, 2011; Ursin & Eriksen, 2004).

### **2.3.5 Measurement of stress**

The four aspects of stress in the model imply that there are four ways of measuring stress. Up to date methods may cover one of the meanings and sometimes the measurement

overlaps more than one meaning. The first aspect, the load might be the most objective and might be easy to measure. However, according to CATS the meaning of measuring the load is fairly limited since people often will appraise the load differently. This is underlined when it comes to stress research in working life where the second aspect, the subjective experience of stress, has been pointed out as the most relevant. A parallel can be drawn when it comes to long lasting LBP where Waddell (2004) stated that how we deal with the pain can be more disabling than the pain itself.

On the other hand, measuring of the load may be important e.g. to ensure a safe work environment by measuring physical hazards such as mechanical exposure, noise and exposure to chemicals. Without measuring these it would not be possible to set limits for exposure to hazards, which in turn could have adverse health effects. For example exposure to impulsive or impact noises above 130 db and to noise averaging louder than 85 db through an eight hour work day might impair your hearing. It might also increase blood pressure, contribute to sustained activation (strain), affect the cardiovascular system and increase the risk of work accidents (Arbeidstilsynet, 2012)

The third aspect, the stress response(s) is the easiest to measure. As a result of arousal almost all organ systems are affected and there is myriad of methods from psychophysiology and its subdivisions (Ursin & Eriksen, 2004). Clinical and preclinical neuroendocrine studies have strongly proposed that dysregulation of the Hypothalamic-pituitary-adrenal (HPA) axis and cortisol play a causal role in the development and course of chronic pain (Chatzitheodorou, Kabitsis, Malliou, & Mougios, 2007; Gaab et al., 2005; Griep et al., 1998). However to illustrate the complexity of the results from such measurements it has been argued that the level of excitation of the HPA axis and consequently the cortisol concentrations in peripheral blood are not regulated by pain only (Chatzitheodorou et al., 2007). This is underlined by the findings that not all patients with chronic pain have abnormal cortisol levels (Chatzitheodorou et al., 2007). A pilot study of high intensity aerobic exercise versus passive interventions for chronic LBP patients demonstrated that the subjects in the exercise group had significantly reduced pain and disability post intervention compared to the control, but the exercise intervention as well as the control failed to influence serum cortisol levels (Chatzitheodorou et al., 2007). The authors of the pilot study stated that HPA axis function is very complex, and there are several mechanisms and elements that still continues to be a matter of speculation (Chatzitheodorou et al., 2007).

The fourth aspect, feedback from the stress response is utilized in several questionnaires in human research. It is a fundamental component of many anxiety scales and questionnaires on health complaints (Ursin & Eriksen, 2004).

## **2.4 A critical look at the theories**

Is there a possibility that the two presented theories are just two sides of the same coin? On several dimensions the answer seems to be yes. Both the biopsychosocial model and CATS includes the terms stress, arousal, expectancies and coping. However, the theories differ in the use of the terms, the operationalization and measurement. For instance the CATS provides strict definitions of the terms stress, expectancies and coping in contrast to the biopsychosocial model where these terms are not clearly defined. The theories do also truly differ with regards to social factors, where the biopsychosocial model incorporates social interactions with a focus on social support as a key element while this factor is at best indirectly incorporated into the CATS.

Within the return to work context both these theories can be criticized for not sufficiently taking into account the influence of blue- and black flags, since RTW after a longer period of sick leave is very much dependent on procedures with respect to benefit schemes and employers personnel policies (Bloch & Prins, 2001).

### **2.4.1 The Biopsychosocial Model of Pain – too psychological?**

In general biopsychosocial theory has been criticized for over prioritizing the psychological part, and having too little attention on the “social factors” and the cultural context (Schultz et al., 2007). An argument which supports the latter statement is that three out of the five key elements (arousal and distress, beliefs about back pain and illness behavior) of the biopsychosocial model of pain can be defined as primarily psychological risk factors which predominantly exist within the individual. Taking the key elements of the biopsychosocial model of pain into account indicates that there is an underemphasis of the social factors in this model. It is argued that successful disability prevention will require methods to evaluate and target psychosocial risk factors “outside” of the individual (Sullivan, Feuerstein, Gatchel, Linton, & Pransky, 2005). Another challenge is that there is no single unifying biopsychosocial model that is used in research (Schultz et al., 2007). Moreover, Imrie (2004) states that there is little evidence of the development or application of biopsychosocial theory outside of the biological and psychiatric sciences. Furthermore, it can be argued that the model has a somewhat limited focus on positive resources for health and work, but the focus is rather on risk factors of disability.



#### **2.4.2 The CATS – too individual?**

One of the defining characteristics of CATS is the notion of generalized outcome expectancies as predictors of behavior. Any advantageous theoretical concept needs an instrument that has both face validity (reliable measure of the intended construct) and predictive validity for essential outcomes (Odéen, Kristensen, & Ursin, 2009). A momentary weakness with the CATS is that reliable and valid measures of coping, helplessness and hopelessness are lacking. According to Odéen et al. (2009) previous research using CATS as the theoretical framework has mainly used established inventories to measure response outcome expectancies. The authors have pointed out a number of methodological and theoretical problems with using these established inventories, e.g. that they measure strategies instead of expectancies which CATS is based on (Odéen et al., 2009; Ursin & Eriksen, 2004). Further, neither of the instruments were predictive of return to work in two separate samples, pointing to questions about their relevance as measures of coping in the field (Odéen et al., 2009). The Theoretically Originated Measure of the Cognitive Activation Theory of Stress (TOMCATS) is a newly developed instrument which is based on the CATS definitions of coping, helplessness and hopelessness as the acquisition of positive response outcome expectancies, no response outcome expectancies, and negative response outcome expectancies respectively (Odéen et al., 2012). However, the TOMCATS has been used solely as an explorative tool in epidemiological research and helplessness and hopelessness are not clearly distinguished from each other (Odéen, 2013).

Moreover, within a return to work context individual theories such as CATS have been criticized and accused for overestimating the power of the individual in forming behavior (Krokstad, Johnsen, & Westin, 2002; Smith, Ebrahim, & Frankel, 2001) which in turn may have led to an underestimation of the impact of contextual factors.

#### **2.5 Recovery expectancies**

Even though recovery expectancies are one of the cornerstones of cognitive psychology's contribution to understanding pain it has not been extensively studied (Schultz et al., 2004). Furthermore, a recent study states that stress research has mostly overlooked the crucial role that future expectancies play in present stress experiences (Meurs & Perrewé, 2011). One major challenge with expectations is that the concept itself is hard to define (Fadyl & McPherson, 2008). Secondly, for its impact on LBP recovery the concept lacks theoretical and empiric development (Kapoor, Shaw, Pransky, & Patterson, 2006). This is exemplified by the use of interchangeable wordings for assessing a range of expectations: expectations for

treatment efficacy, for pain reduction/becoming pain free, for functional recovery, or for return to work. These beliefs are highly correlated. However they may be conceptually distinctive and formed by different factors; for example return to work expectations may be more dependent on workplace factors, whereas expectations for treatment efficacy may be more dependent on confidence in the treatment provider (Kapoor et al., 2006). Despite that the concept lacks a consensus of the definition, focusing on people's expectancies regarding their LBP and RTW, and assess how these influence their engagement in the RTW process and outcome is essential if we are to design and effectively target strategies that have meaning for the individual and have the ability to effect change (Fadyl & McPherson, 2008). In light of the CATS model, having high expectancies of returning to work may be the same as coping and implicates that individuals with long lasting LBP with such expectancies are likely to RTW. Having no recovery expectancies, such as not knowing whether to return to work or not, may be the same as helplessness. Having low expectancies of returning to work may be the same as hopelessness. This indicates that people with either no or low expectancies of returning to work may be less likely to do so, and may even experience adverse health effects, such as anxiety and depression (Ursin & Eriksen, 2004). In a Canadian sample of people with work related back pain Turner et al. (2006) found that the number of disability days were 12 times higher for workers who had the lowest certainty about returning to work in six months compared with those who reported that they were "extremely certain" that they would RTW.

## **2.6 Job satisfaction**

Before digging deeper into the construct of job satisfaction a brief overview of the essential purpose or function of job in people's lives is presented. For people of working age work occupies a major part of their waking time (Faragher et al., 2005). Knowledge and an understanding of the elements influencing job satisfaction are relevant to improving the well-being of a significant number of people. While the quest of increasing satisfaction is of humanitarian value, it also has implications for job related behaviors such as productivity, absenteeism or turnover. In turn, these job related behaviors might have societal impact (Oshagbemi, 1999).

Of major importance are the economic elements of the job, particularly as long as a worker faces challenging financial demands. Brief (1998) argues that pay seems to be of greater importance for global satisfaction than satisfaction with the task or interpersonal relationships (Brief, 1998). However, a more recent meta-analysis on the relationship between

pay and job satisfaction suggested only a marginal relationship between pay and job satisfaction (Judge, Piccolo, Podsakoff, Shaw, & Rich, 2010).

Pressure, strain and sustained stress within the workplace have been recognized as possible important health factors. The effort-reward imbalance (ERI) model by Siegrist (1996) is a theoretical model which is proposed to assess adverse health effects of stressful experience at work. The core principle of this model is social reciprocity, which is an essential principle of social exchange that assures equivalence of give and take between two individuals or parties (Siegrist, 1996, 2007). In the occupational setting the principle of social reciprocity lies at the core of the employment contract, which defines specific obligations or tasks to be performed in exchange for equitable rewards (Siegrist, 1996). If high efforts spent at work are not reciprocated by equitable rewards in terms of money, esteem and status control (e.g. career opportunities, job security), strong negative emotions with a special propensity to sustained autonomic and neuroendocrine activation may occur. In turn, the sustained activation may have adverse long-term consequences for health (Siegrist, 1996, 2007). Job insecurity is a major threat to one's status control, because it threatens the continuity of one of the crucial adult social roles, the occupational role. In turn it leads to an impairment of successful self-regulation (Siegrist, 1996; Siegrist et al., 2004).

Moreover, a link between job insecurity and job satisfaction has been found. Employees who feel more insecure about future employment are more dissatisfied with their job than their counterparts who feel more secure about their job (Hansson, Vingård, Arnetz, & Anderzén, 2008). Further, it has been demonstrated that an imbalance between efforts and rewards in Chinese health care workers were associated with an over five-times higher risk of job dissatisfaction (Li, Yang, Cheng, Siegrist, & Cho, 2005)

The three conditions which increase the likelihood of recurrent effort-reward imbalance are;

- a) Dependency – reflects structural constraints observed in some employment contracts when no alternative choice in the labor market is available.
- b) Strategic choice – people accept high efforts-low reward conditions for some time, because they often increase the probability of career promotion in the future.
- c) Overcommitment – mirrors psychological reasons for a recurrent discrepancy between efforts and rewards. The pattern of work related overcommitment is often seen in people who may strive toward high achievement due to their need for approval and esteem at work. Even though these excessive efforts often are not met by satisfactory awards, people tend to maintain their level of involvement. Overcommitted people are prone to exhaustion in

the long run (Siegrist, 2007). This is supported by some studies which found an association between burnout and an elevated risk for cardiovascular disease and overcommitment (Joksimovic, Starke, Knesebeck, & Siegrist, 2002; Preckel, von Känel, Kudielka, & Fischer, 2005; Schulz et al., 2009).

A large meta-analysis, including 485 studies and data from more than 250.000 workers, on the relationship between job satisfaction and mental health demonstrated on average that employees with low levels of job satisfaction are more likely to experience emotional burn-out, increased levels of anxiety, depression and subjective physical illness (Faragher et al., 2005). If the work is failing to provide sufficient personal satisfaction or actually causing dissatisfaction employees are likely to feel unfulfilled which in the long run might have adverse health effect (Faragher et al., 2005). However, job satisfaction accounted for less than a quarter of the variation in the burnout scores. For anxiety, depression and subjective physical illness the variation explained was even lower (Faragher et al., 2005). From the CATS point of view if job dissatisfaction leads to workers feeling unfulfilled this represents a discrepancy between the SV and AV, which leads to activation (Ursin & Eriksen, 2004). If a worker with LBP expects to be unable to handle the situation, the activation may be sustained because the individual has no- or negative response outcome expectancies. Hence, job dissatisfaction may be associated with no- or negative response outcome expectancies. In turn job dissatisfaction may lead to an increased risk of illness (Ursin & Eriksen, 2004). The latter assumption has been bolstered by the finding that a decrease of 1 *SD* in job satisfaction corresponded to an average increase of almost 1.5 *SD* in symptoms of burnout/emotional exhaustion (Faragher et al., 2005). On the other hand job satisfaction might be associated with positive response outcome expectancies, and therefore it might have positive effects on the health of the worker. This was illustrated by Faragher et al. (2005) who showed that increases in job satisfaction were related to improvements in well-being.

Points of the debate regarding the definition of job satisfaction seems to be focused on whether to define job satisfaction as affect (Cranny, Smith, & Stone, 1992) or as an attitude toward one's job (Brief, 1998; Miner, 1992). Weiss (2002) claims that an advantageous way to think about attitudes would be to break up the evaluative-, affective and belief components of attitudes into separate constructs. The rationale behind this is that the basic and essential property of attitude is evaluation. Not distinguishing between satisfaction as "affect" and as "evaluation" has concealed real and important differences between the constructs (Weiss, 2002). However, affect and beliefs do not dissipate when attitude is defined as evaluation (Weiss, 2002). Instead these three elements are seen as having independent influence and

discriminant validity on the overall (global) evaluation of the job (the attitude object) (Weiss, 2002).

Another debate is whether job satisfaction is a global concept or if it consists of several dimensions or facets (Brief, 1998). Pinning on the philosophical argument that the whole is more than the sum of the parts (Fjelland, 1999) leads to the conclusion that summing across facet scores is not equal to measuring global satisfaction (Brief, 1998). Moreover, there are conceptual distinctions to be drawn among such facet evaluations. Concreteness or abstractness of the facet (object) being evaluated plays a role, as evaluation of satisfaction with concrete objects (e.g. supervisors, co-workers, pay) are less affected by transient mood states than abstract objects (e.g. career opportunities) (Weiss, 2002).

## **2.7 Key points from the theoretical framework**

The shift from the pathogenic paradigm to the holistic approach is present in this thesis. There is a focus on positive factors towards returning to work as opposed to the common search for predictors for work disability. The CATS position of stress as having positive effects when the individual is coping is in line with a central tenet of health promotion seeing health as a resource for everyday life. This theory also fills the theoretical gap with regards to expectancies and provides clear and strict definitions. The biopsychosocial model of pain adds the importance of the social interactions, particularly social support. High expectancies of returning to work and being satisfied with the job might be associated with coping as defined in CATS and hence impact RTW. In turn returning to work after prolonged sick leave is essential for the individual to achieve his or hers full potential – being all that you can be.

### **3.0 Methods**

The analyses in this study were conducted with data from the cognitive interventions and nutritional supplements (CINS) trial. The CINS trial was a multicenter randomized controlled trial (RCT), which examined the effectiveness of brief intervention (BI) and cognitive behavioral therapy (CBT) compared to; BI plus soy oil, BI plus seal oil, and BI. The project protocol of the RCT is described in detail elsewhere (Reme et al., 2011). Patients recruited to sub-studies of the main RCT were also included in this study.

#### **3.1 Study participants**

In this study 574 eligible patients with long lasting LBP who were sick listed for 2-10 months were included (Figure 3). The population consisted of 49.7 % men. The mean age was 44.3 years (*SD* 9.7) for both men and women (see Table 1).

The inclusion criteria were:

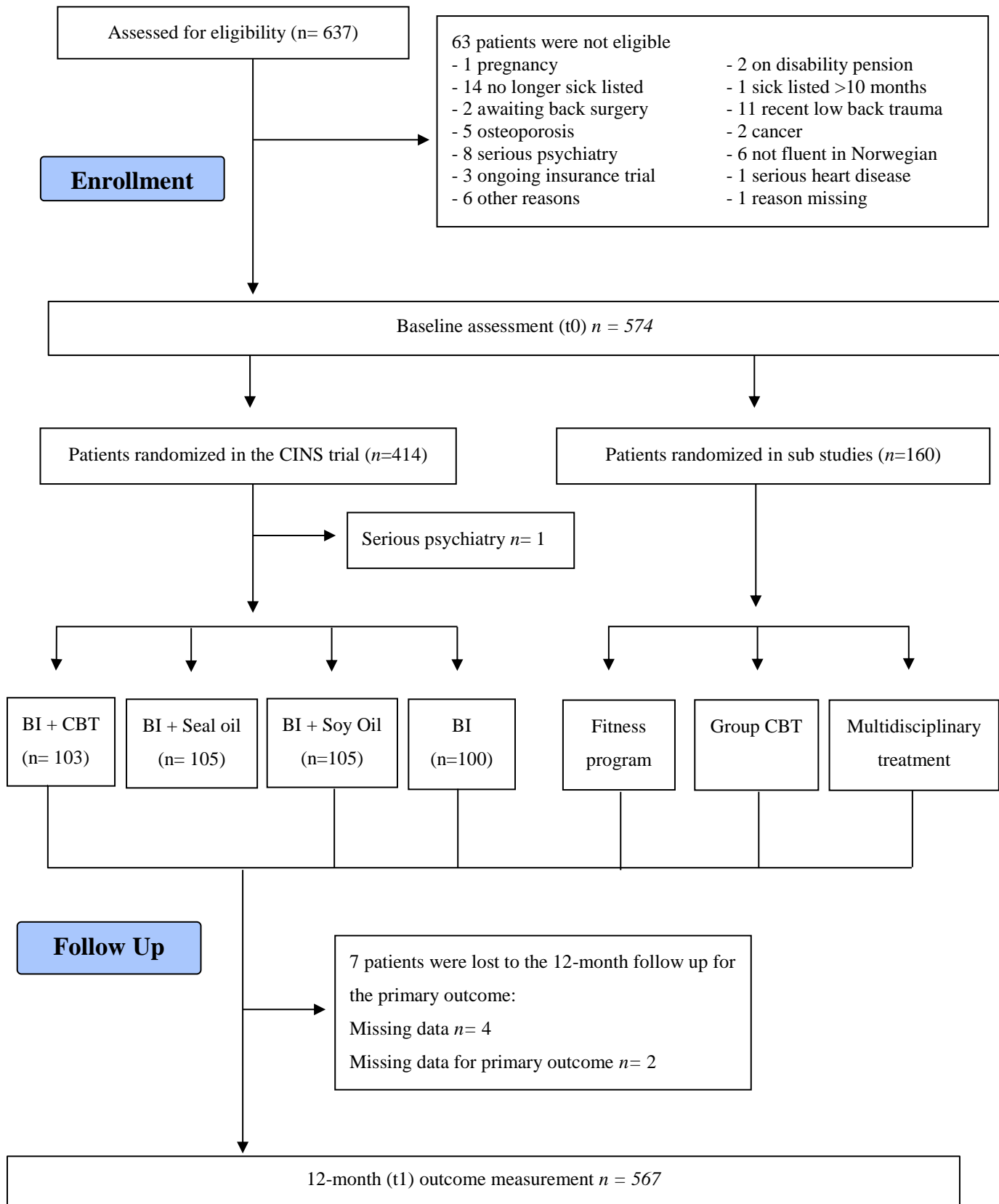
- 1) Sick leave due to LBP for 2-10 months
- 2) At least 50% sickness compensation
- 3) Both participant and clinician agree that randomization is acceptable
- 4) Written informed consent from the participant
- 5) At least 50% employed
- 6) One of the following ICPC diagnoses: L02, L03, L84, or L86
- 7) Age between 20 and 60 years

(Reme et al., 2011)

The exclusion criteria were:

- 1) Less than 50% sick listed or not on sick leave anymore
- 2) Pregnancy
- 3) Hemophilia
- 4) Osteoporosis (known osteoporotic fracture, or on anti-osteoporotic medication)
- 5) Currently being treated for cancer
- 6) Recent back trauma
- 7) Serious psychiatric disorders (mainly due to ongoing psychosis, high suicide risk, and/or serious depression), assumed to be incompatible with participation in the trial.
- 8) Not fluent in Norwegian (assumed to be incompatible with CBT)
- 9) Debilitating cardiovascular disease
- 10) Patients on warfarin treatment (blood thinner, e. g. Marevan)

11) Ongoing insurance trial, lawsuit, or pending legal action for LBP or related conditions  
(Reme et al., 2011)



**Figure 3.** Flow chart.

### 3.2 Measures and instruments

At the baseline assessment (t0) all the study participants were given the CINS questionnaire (see Appendix B) which included several health related measures. The predictor variables, expectancies of returning to work and job satisfaction, and the other potential prognostic variables (covariates) were assessed with the CINS questionnaire at t0. The questionnaires were returned to researchers at Uni Health who punched the data. At the 12 month follow up (t1) data for the primary outcome measure was obtained from The Norwegian Welfare and Labour Administration (NAV).

**Primary outcome.** RTW was the primary outcome of this study. This item was assessed as a dichotomous variable (yes/no) at t1 using registry data from NAV. A successful (yes) RTW and no RTW was classified as receiving sickness compensation  $<30\%$  and  $\geq 30\%$ , respectively.

**Job satisfaction.** Job satisfaction was measured with a single-item asking about global job satisfaction and the item were rated on a five point Likert scale, ranging from 1 - very dissatisfied to 5 - very satisfied (Quinn & Shepard, 1974).

**Expectancies of returning to work.** The study participants were asked about their own expectancies of RTW, and if they thought their family, their co-workers and their treating physician expected that they would get back to work. Each item were rated on a four point Likert scale (1 = low certainty, 2 = some certainty, 3 = high certainty and 4 = do not know).

**Covariates.** A multitude of factors have been found to increase the risk of developing LBP and the risk for a prolonged course of LBP. In an attempt to reduce the risk of alternative explanations several variables with previously demonstrated associations between long lasting LBP and return to work were controlled for in the analyses. The covariates included sociodemographic factors; age, education and smoking status. The other covariates which were included were; co-worker social support, fear avoidance beliefs (FAB) about LBP, disability and subjective health complaints.

**Sociodemographic factors.** Age, gender (male/female), smoking status, and education were assessed. Education was assessed in terms of the participants' highest completed education, divided into five categories; primary and secondary school, upper secondary school, college/university 1-3 years, college/university  $\geq 4$  years or other).

**Fear-avoidance beliefs (FAB).** FAB were measured with the Norwegian version of the Fear-Avoidance Beliefs Questionnaire (FABQ) (Grotle & Vøllestad, 2001; Waddell, Newton,



Henderson, Somerville, & Main, 1993). This instrument consists of 16 items. Each item is scored on a 7-point Likert scale, which ranges from 0 - completely disagree to 6 - completely agree. The FABQ contains two subscales, and the scores on each subscale are used independently. The first subscale is the FABQ physical activity (FABQ-PA) consisting of five items, and four of the items are added to the sum score (score range =0-24). The second subscale is the FABQ for work (FABQ-Work), consisting of eleven items where seven are added to the sum score (score range 0-42) (Waddell et al., 1993). Higher scores on the questionnaire as a whole, or either of the subscales, indicate increased fear-avoidance beliefs (Waddell et al., 1993). Several studies have demonstrated that the FABQ as a whole and both FABQ-PA and FABQ-Work have acceptable reliability and validity (George, Fritz, & Childs, 2008; Grotle, Brox, & Vøllestad, 2006). The Norwegian version of the FABQ has displayed reliability almost equal to the English version for the two subscales (Grotle et al., 2006). It also demonstrated acceptable construct validity (Grotle et al., 2006). Only the FABQ-Work subscale was used as it has been shown to be a better predictor of self-reported disability and work loss in patients with chronic LBP compared to the FABQ-PA (Fritz, George, & Delitto, 2001; George et al., 2008).

***Subjective health complaints (SHC).*** SHC were measured with The SHC Inventory (Eriksen, Ihlebæk, & Ursin, 1999) containing 29 items of ordinary somatic and psychological complaints. The participants were asked to rate the intensity of each complaint experienced during the last 30 days on a four-point scale; 0 – not at all, 1 – a little, 2 – some, 3 – severe. A total score of SHC was computed by summing the score on all the 29 items. The questionnaire has been tested and it demonstrated acceptable reliability and validity (Eriksen et al., 1999).

***Co-worker social support.*** Subjective perceived social support at the workplace was measured with the social support subscale of a Norwegian version of the Demand-Control-Support-Questionnaire (DCSQ) (Theorell, Michelsen, & Nordemar, 1991). The co-worker social support subscale consists of six items. Each item is scored on a four-point scale ranging from 1 - completely true to 4 -completely untrue, giving the subscale a score range from 6-24 (Sanne, Torp, Mykletun, & Dahl, 2005). The Norwegian version of the questionnaire has been tested, and the co-worker social support subscale has demonstrated satisfactory reliability (Sanne et al., 2005).

***Disability.*** Disability was assessed with the Oswestry Disability Index (ODI) version 2.0. The ODI mainly assesses activity limitations, and contains 10 different items—pain intensity, personal hygiene, lifting, walking, sitting, standing, sleeping, sexual activity, social activity, and travelling—which all were scored on a six-point scale. A score of 0 represents no

limitation and 5 represents maximal limitation (Fairbank & Pynsent, 2000). If more than one box was marked in each item, the highest score was used. The total score was calculated according to guidelines; ((the total score of items answered/number of items answered) (x20%)) (Fairbank & Pynsent, 2000). When answering the items the answers should relate to the situation at the day of answering (Fairbank, Couper, Davies, & O'Brien, 1980). The Norwegian version of the modified ODI has demonstrated acceptable reliability and construct validity for assessing functional status of Norwegian-speaking patients with LBP (Grotle, Brox, & Vøllestad, 2003).

**Anxiety and depression.** The Hospital Anxiety and Depression Scale (HADS) was used to measure symptoms of anxiety and depression. It is a self-assessment scale and developed to identify cases of anxiety and depression (Zigmond & Snaith, 1983). It was divided into two subscales which assesses emotional and cognitive symptoms of anxiety (HADS-A) and depression (HADS-D). Each subscale has seven items. The items were rated on a 4-point scale from 0-3, giving the subscales a score range from 0-21. HADS has demonstrated good case-finding properties. A cut-off score of eight were originally characterized as an indicator of “possible” cases in the HADS article by Zigmond and Snaith (1983). A review of the validity of HADS concluded that the optimal balance between sensitivity and specificity was achieved when caseness was defined by a score  $\geq 8$  on both the subscales (Bjelland, Dahl, Haug, & Neckelmann, 2002). Using the cut-off score of  $\geq 8$  on both the subscales has most often given sensitivity and specificity in the range from 0.70 to 0.90 (Bjelland et al., 2002). HADS has also shown the ability to differentiate anxiety and depression as distinctive constructs in hospital settings, in the general population and in the general working population (Bjelland et al., 2002).

A comorbid anxiety and depression (score  $\geq 8$  on both HADS-A and HADS-D) variable was included due to the high co-occurrence of anxiety and depression (Kessler et al., 2008; Mathew, Pettit, Lewinsohn, Seeley, & Roberts, 2011). The terms “anxiety” and “depression” will from now on refer to anxiety and depressive symptom load crossing the recommended cut-off score of  $\geq 8$  (Bjelland et al., 2002) on the HADS-A and the HADS-D, unless stated otherwise.

### **3.3 Statistical procedures**

SPSS version 19 for Windows was used for the statistical analyses. If a subject had a missing value on any of the variables included in the analyses, the variable was left out of that particular analysis.

All the descriptive statistics were split by gender making it possible to do further comparisons between men and women. Descriptive statistics using baseline data were used to present the distribution of the sociodemographic factors, the predictor variables and the remaining covariates among the men and the women.

Data on continuous variables were checked for normality before independent-sample *t*-tests were used to test differences between men and women at t0 (age, FABQ-Work, SHC total, ODI and Co-Worker Social Support). Comparison between men and women with regard to categorical variables were performed with  $\chi^2$ - tests. The categorical variables which violated the assumption of the  $\chi^2$ - tests (more than 20% of the cells with expected frequency <5) were recoded. Smoking was recoded into a dichotomous smoker/non-smoker variable, where the smoker category included all smokers; from those who smoked on a daily basis to those smoking less than once a week. For RTW expectancies the two categories “low degree” and “some degree” were merged, while the categories “high degree” and “do not know” were kept. Job satisfaction was recoded into four categories; “Very dissatisfied” and “dissatisfied” were merged and the remaining three categories were kept equal to the original variable. The scoring on co-worker social support was reversed, so a higher score indicates increased co-worker social support. The two HADS subscales (HADS-A and HADS-D) were recoded into two dichotomous variables. In accordance with previous studies a cut-off score of  $\geq 8$  was used (Bjelland et al., 2002; Zigmond & Snaith, 1983). Next, a comorbid dichotomous anxiety and depression variable was created. A comorbid case was defined as a subject scoring  $\geq 8$  on both HADS-A and HADS-D.

Preliminary correlational analyses were performed between job satisfaction and RTW expectancies and the outcome, as well as between the covariates and the outcome.

Both bivariable and multivariable logistic regression analyses were employed to predict the probability that a participant would RTW at 12 months. The results from these analyses are presented as odds ratios (OR) and 95% confidence interval (CI).

First, to compute crude estimates bivariable logistic regression analyses were used between the predictor variables and the primary outcome, as well as between all the covariates and the primary outcome. If the crude estimates for the predictor variables were significant for the outcome, multivariable logistic regression analyses were performed. Further, in the multivariable logistic regression analyses all the covariates with significance at the  $p < .10$  for either men or women were adjusted for in the model. However age was kept regardless of the *p*-value. In the multivariable logistic regression analyses expectancies of returning to work

and the covariates were entered in the following six blocks: I) age, II) return to work expectancies III) sociodemographic factors IV) FABQ-Work, SHC and ODI, V) co-worker social support VI) anxiety, depression, and comorbid anxiety and depression. No multivariable analyses were employed for global job satisfaction for either men or women because  $p > 0.10$ , (men  $p = 0.433$ , women  $p = 0.16$ ).

For explained variance Nagelkerke R square was used.

### **3.4 Ethical considerations**

This study utilized data from the CINS trial (Reme et al., 2011). All procedures were in accordance with the Helsinki declaration, and the trial was approved by the Norwegian Regional Ethical Committee and the Norwegian Social Science Data Services. All participation in the CINS trial was voluntary, and all potential participants received written information about the study before they met at the clinic for the baseline assessment. At the clinic the participants were informed of their rights according to the Helsinki declaration and received additional information about the trial. Before any trial related procedures the participants gave their written informed consent, emphasizing the right to withdraw from the trial at any time without any explanation and their confidentiality were guaranteed.

There was no contact with the study participants in this study. Hence, the study participants do not know that the data collected in the CINS trial were used in this study. Further, the data used in this study was not traceable to the study participants which ensured the confidentiality of the study participants. From a societal level this study may contribute to a better understanding of factors influencing RTW after long lasting LBP. Knowledge about these factors may be a starting point for further work in achieving higher RTW rates, which in turn is very likely to have societal benefits.

## 4.0 Results

### 4.1 Descriptive statistics

Baseline characteristics of the study population are presented in Table 1. Regarding the sociodemographic factors of the study population the percentage of men and women was similar, the age of the study population ranged from 21-61 years for men and 20-61 years for women. There were no significant age differences between men and women ( $t [567] = 0.55, p = .956$ ). The majority of both men and women had finished at least upper secondary education. A higher percentage of women had completed 1-4 years and >4 years of college/university compared to men. The association between gender and highest completed education was significant ( $\chi^2 [4, n = 553] = 20.493, p < .001$ .)

For both men and women there were a higher percentage of non-smokers than smokers. More men smoked compared to women and the association was statistically significant ( $\chi^2 [1, n = 550] = 3.907, p = .048$ .)

For the association between expectancies of returning to work and work status at 12 months the correlation between the participants' own expectations and work at 12 months was significant regardless of gender (men  $r_s = 0.202, p = .001$  and women  $r_s = 0.207, p = .001$ ). There were no statistically significant correlations between what the participants' thought their family, treating physician and co-workers believed and the participants' work status at 12 months. Therefore they were omitted from further analyses and only the participants' own expectancies about RTW are presented in Table 1.

Independent of gender, the majority of the study participants reported that they were either very satisfied or satisfied with their job (see Table 1). There were a similar percentage of men and women who reported that they were very dissatisfied with their job. More than twice as many women reported to be dissatisfied compared to men. There was no statistically significant association between gender and reported levels of global job satisfaction ( $\chi^2 [3, n = 553] = 5.162, p = .160$ ).

Close to  $\frac{3}{4}$  of the study population had high expectancies of returning to work. The responders who reported a low degree of RTW expectancies amounted for less than 10% of the study population. Within this category there were more than twice as many men compared with women. There was no statistically significant association between gender and expectancies of returning to work, ( $\chi^2 [3, n = 550] = 6.814, p = .078$ ).

Regarding the SHC, men reported on average 3.56 fewer points on the SHC\_Total than women ( $t [531] = -4.360, p < .001$ ). The men also reported higher co-worker social support compared to woman, and this difference was significant ( $t [547] = 1.917, p = .049$ ). Regarding the FABQ-Work, both men and women reported from none FAB (score = 0) to the highest possible FAB (score = 42). Scores on this instrument were not significantly different between the genders, ( $t [547] = 1.914, p = .56$ ). Scores on the ODI ranged from 2-70% and 2.2-66% for men and women respectively, and the score was not significantly different between the genders, ( $t [550] = -0.408, p = .684$ ).

The men and the women reported similar levels of anxiety, depression, and comorbid anxiety and depression (see Table 1) and there were no statistically significant associations between gender and anxiety, depression and comorbid anxiety and depression.

## **4.2 Expectancies of returning to work**

The odds ratio (OR) and the 95% confidence interval (CI) for the OR of expectancies of returning to work at 12 months are given in Table 2. The results illustrate that regardless of gender and reference group, the participants with high expectancies of RTW had a significantly higher OR of returning to work (see Table 2). The OR was lower and the 95% CI wider for both men and women in the high expectancies group when using the “do not know” as the reference group compared to using those with low or some expectancies as the reference group (see Table 2).

Further, expectancies of returning to work correctly classified 85.5% of the men and 87.7% of the women who returned to work. Corresponding percentage for men and women who did not RTW were lower, 46.2% and 38.9% respectively. The overall success rate of the predictive ability of expectancies was 70.1% for men and 64.6% for women.

Independent of gender, expectancies of returning to work contributed significantly to the prediction of return to work and it distinguished between the participants who got back to work and those who did not get back to work.

Expectancies of returning to work explained 15.4% and 12.4% of the variance seen in RTW for men and women respectively.

## **4.3 Global job satisfaction**

The level of global job satisfaction did not significantly contribute to the prediction of return to work at 12 months for either men or women. The OR and 95% CI for global job satisfaction and RTW at 12 months are presented in Table 3.

#### **4.4 Sociodemographic factors**

Men had a significantly higher odds (1.51, 95% CI 1.2-1.9) of returning to work at 12 months compared to women. Gender explained 2.7% of the difference seen in RTW at 12 months. Age and smoking status contributed significantly to the prediction of returning to work among men, but not for women (see Table 4). Compared with the reference group women with >4 years of college/university did not have significantly higher odds of returning to work, women with 1-4 years of college/university had significantly higher odds of returning to work, and women with “other” type of education were significantly less likely to RTW (see Table 4). Corresponding results for men compared with the reference group showed that men with any university or college education did not have significantly higher odds of RTW, men with “upper secondary”, and “other” education had significantly higher odds of returning to work (see Table 4).

#### **4.5 Covariates**

The OR and 95% CI for the covariates and RTW at 12 months are given in Table 5. In general Table 5 illustrates that regardless of gender the subjects who scored low on the covariates, FABQ-Work, SHC Total, and ODI, and not reporting depression have significant increased OR of RTW compared with their respective counterparts (see Table 5). Further, a higher number of the covariates contributed significantly to the prediction of RTW for men compared to the women, including high perceived social support, not reporting anxiety or comorbid anxiety and depression (see Table 5). Independent of gender FABQ-Work, the total number of SHC, and ODI differentiated between the subjects who got back to work and those who did not.

The covariates explained more of the variance seen in RTW among men compared to women. Nagelkerke  $R^2$  for the covariates ranged from 15.2% (FABQ-work) to 6.2% (HADS-D) for men. Corresponding percentages ranged from 6.2% (FABQ-Work) to 1.9% (HADS-D) for women.

#### **4.6 Multivariable logistic regression analyses**

High expectancies of returning to work were statistically significant in predicting RTW at 12 months regardless of gender and the level of adjustment (see Table 6). Regardless of adjustment, men with high expectancies had higher OR of successful RTW at 12 months compared to women. In the fully adjusted model the covariates SHC, FABQ-work, and disability (ODI) adjusted the OR of high expectancies more among the women compared to

the men. From the crude model to the fully adjusted model the OR decreased more among the women than the men. Nagelkerke  $R^2$  for the crude model was 15.4% and 12.4% for men and women, respectively. For the fully adjusted model corresponding explained variance were 32.2% and 30.7% for men and women respectively.

When the “do not know” category was used as the reference group the fully adjusted model was not significant for men and women (see table 7). For women with high expectancies the OR became not significant after the adjustment of sociodemographic factors (see Table 7). For men the OR became not significant after anxiety, depression, and comorbid anxiety and depression were added to the model (see Table 7).

Multivariable logistic regression analyses with global job satisfaction were not employed for men or women as the crude estimates were not significant.



## **5.0 Discussion**

### **5.1 Key findings**

High expectancies of RTW was a significant and strong predictor of successful RTW for both men and women both in the crude model and after the adjustment of potential confounders. The odds of returning to work for men with high expectancies were higher than for the women, particularly in the fully adjusted model.

High levels of global job satisfaction did not have a significant impact on successful RTW at 12 months for either men or women.

There were no associations between gender and reported levels of both expectancies of returning to work and global job satisfaction.

### **5.2 Methodological limitations**

The limitations of the present study concerns the validity of the predictor variables and the primary outcome measurement, residual confounding and/or a possible mediating effect of the treatment provided in the RCT. These limitations will be discussed in the following sections.

#### **5.2.1 Validity of the predictor variables and the outcome**

*Expectancies of returning to work.* These were measured with an unvalidated scale. In itself using an unvalidated scale jeopardizes the generalizability of the results if not replicated by other studies. On the other hand an essential problem identified from the literature on the role of expectations is a lack of standard or consistent measures of the concept (Fadyl & McPherson, 2008). As a result the best way to measure work related recovery expectancies remain unclear (Iles, Davidson, Taylor, & O'Halloran, 2009), which makes comparisons between this study and other studies difficult, and thereby further affecting the generalizability. The majority of previous studies measuring recovery expectations have used single-item questions with a Likert scale (or similar) response rating relating to a statement or statements regarding expectations (Fadyl & McPherson, 2008; Iles et al., 2009). Why do inconsistent and unvalidated measures of expectations continue to be used? Iles et al. (2009) have provided a partial answer to this question by stating that this issue has not previously been highlighted as a key problem or that various researchers do not agree on how it should be measured or simply the lack of knowledge of the key components. If the latter is the case qualitative research is needed to explore the underlying factors. However, one qualitative study exploring outcome expectancies for RTW found that it

included four sub-domains; financial/job security, re-injury, workplace support and self-image (Shaw & Huang, 2005). On the other hand it did not explore the processes which form expectations or the factors that influence those processes. The return-to-work self-efficacy scale (RTWSE-19) is a recently developed instrument (Shaw, Reme, Linton, Huang, & Pransky, 2011) which was based on the qualitative work of Shaw and Huang (2005) to ensure content validity. It is intended to assess workers' belief of their current ability to resume normal job responsibilities following pain onset (Shaw et al., 2011). When assessed after 1-2 weeks it was predictive for RTW at three months, e.g. individuals with high RTWSE were 2-5 times more likely to RTW than those with low RTSWE (Shaw et al., 2011). However, it was developed after the data were collected for this study and it has yet to show predictive ability for RTW outcomes in long lasting LBP.

A possible solution of the measurement issue can be to base measurements of expectancies of RTW on the response outcome expectancies of the CATS model. The rationale behind the latter suggestion is that the CATS provides a theoretically sound explanation for the key elements of expectations as well as how they are formed. When expectancies are defined in terms of coping, helplessness and hopelessness it is likely that they will have an impact on health and health related outcomes (Ursin & Eriksen, 2004). However, the results from using the TOMCATS scale have been somewhat disappointing (Odéen, 2013).

Further, it remains unclear whether the theoretical constructs of coping, helplessness and hopelessness are measured appropriately with the question and the operationalization used in this study. Hence, when the validity of both the question used and the operationalization of the theoretical constructs are not known the results should be interpreted with caution.

**Job satisfaction.** There are several limitations with using single-item questions measuring psychological constructs such as job satisfaction (Wanous, Reichers, & Hudy, 1997). It is not known what the worker is thinking about in rating global satisfaction with their job, including what the worker included or excluded in making decisions about satisfaction, why these elements received high or low ratings, or how they were combined or rated (Hudak & Wright, 2000). Not knowing what the worker had in mind when they form the global rating may have considerable consequences. Possibly the most essential consequence is that while global measures are plain, direct, easy to construct and convenient to use the measure may not be used by different people in a reproducible manner (Hudak & Wright, 2000). As a result it may lead to unacceptable low reliability, hence the use of single-item

measures of global job satisfaction has been discouraged (Wanous et al., 1997). Based on the latter argument the results from the present thesis regarding job satisfaction may be questioned. The logic behind the low reliability argument is that global measures can mask specific dissatisfactions (Hudak & Wright, 2000) and be more affected by transient mood states since global job satisfaction may be classified as an abstract object (Weiss, 2002). Knowledge regarding the different facets is missing since a single-item was used in the present study. Knowledge about these facets may provide valuable insight for the stakeholders involved (Weiss, 2002). This is underlined by a study which concluded that the most important determinants for job satisfaction among employees are having an interesting job and having a good relationship with the management (Sousa-Poza & Sousa-Poza, 2000b). Another important determinant was the ability to work independently. Furthermore, global measures of job satisfaction tend to produce scores that are highly skewed, with a large proportion of respondents reporting high levels of overall job satisfaction irrespective of the population studied (Sousa-Poza & Sousa-Poza, 2000b) and similar results were also found in this study. The need to merge “very dissatisfied” and “dissatisfied” in this study underlines that the scores of global job satisfaction were skewed. A problem with high undifferentiated levels of job satisfaction is that when the satisfaction scores is highly skewed or clustered in only a few response options at the top of the possible range, it makes it difficult for the measure to distinguish different levels of satisfaction (Hudak & Wright, 2000). As well, they might be of less use when attempting to detect small but important differences in satisfaction related to the outcome (Hudak & Wright, 2000).

Using multi-item scales could reduce the problem of skewed satisfaction scores since these scales typically yield greater score variability than global measures, as well as having higher reliability and validity than global measures (Hudak & Wright, 2000). Multidimensional measures also ask explicitly about particular facets of job satisfaction. A widely used multidimensional instrument is the Job Descriptive Index. The five facets it measures are satisfaction with work itself, pay, promotion, supervision and co-workers. Scores on the individual facets are aggregated into a global score (Faragher et al., 2005). However, it has been argued that facet measures of job satisfaction should be separated from overall satisfaction since they are conceptually different (Faragher et al., 2005).

On the other hand, skewness is difficult to interpret and even for well validated questionnaires such as the SHC inventory, skewness is present (Ihlebak, Eriksen, & Ursin, 2002). Secondly, the results from a systematic meta-analysis reviewing the quality of single-item questions measuring job satisfaction were indicative of convergent validity with multi-

item scales (Wanous et al., 1997). This finding bolsters the argument that a single-item question for global job satisfaction is acceptable (Wanous et al., 1997). Furthermore, from an ethical point of view using multi-item scales increases the burden on the study participants and it might not be necessary to do so when one question may be enough.

***Return to work.*** The validity of measuring RTW as a dichotomous variable at a certain point in time can be discussed. One problem with this measurement is that long lasting back pain is a recurrent condition (Cedraschi et al., 1999), a characteristic which a dichotomous measure of return to work does not capture. For instance, a participant that have been working previous to the 12 month outcome measure, but experienced a relapse of his or hers back pain might be at a sick leave at the time of the outcome measurement and hence affecting the results of the present study. On the other hand, first RTW has been related to the same set of prognostic factors as lasting RTW in acute LBP (Heymans et al., 2006). This indicates that most workers from the first day of work resumption will experience lasting RTW. In turn, this implies that similar results regarding the predictor variables in the present study could be reproduced using another measurement of RTW.

Despite an abundance of RTW research there is not substantial agreement about what constitute a successful RTW outcome (Pransky, Gatchel, Linton, & Loisel, 2005). However, regardless of the operationalization of RTW, it is an important surrogate measure of recovery which has both socioeconomic and personal implications (Ozegovic, Carroll, & Cassidy, 2009). For example it has been shown that long duration of sick leave can lead to social isolation (Ostelo & de Vet, 2005) and the longer the worker is on sick leave the lower are their chances of returning to work (Reme, Hagen, & Eriksen, 2009).

### **5.2.2 Residual confounding**

The included covariates in this thesis do not constitute an exhaustive list over possible confounders. There are also other factors that are associated with long lasting LBP and return to work, like pain intensity and pain radiation (Heymans et al., 2006; Turner, Franklin, & Turk, 2000), previous history of sick leave (Airaksinen et al., 2006), general health status (van der Giezen et al., 2000). Residual confounding may therefore be present. Consequently the effect of high RTW expectancies on RTW may have been overestimated. There is also a risk that the potential confounders included in this study were not adequately measured. This means that adjusting for them does not adjust for the true effect. For example for smoking it was not differentiated between current smokers and former smokers or the dose. It has been found that current smokers have an increased number of annual days of sick leave compared

to never-smokers (Lundborg, 2007). However, the covariates were measured with widely used instruments stated to have acceptable reliability and validity. This may have limited the risk of not adjusting for the true effect.

### **5.2.3 Mediating effect of the treatment provided in the RCT**

The brief intervention, the cognitive behavioral therapy and the other treatments provided in the RCT and the sub-studies may have acted as a mediator and contributed to increased rates of RTW, particularly for those who had low or some expectancies of RTW. This position is backed up by a recent systematic review which found positive short- and long term effects on return to work for psychological interventions, including CBT, for persons with long lasting LBP (Hoffman, Papas, Chatkoff, & Kerns, 2007). On the other hand adjusting for mediators in the analyses may lead to over-adjustment, with resulting underestimation of the effect of recovery expectancies on the outcome (RTW) (Knudsen, 2013).

### **5.3 Methodological strengths**

The main strengths of the present thesis is that; the data were collected prospectively, obtaining data for the exposure and outcome from different sources, the access to a range of health related information, the large sample size with regards to the cohort under investigation compared with previous studies, the low attrition rate and the gender specific results.

The strength of collecting data prospectively is mainly that expectancies of returning to work and the level of global job satisfaction were measured before the outcome (RTW) occurred. Hence, the study demonstrates that these prognostic factors preceded the outcome and thereby distinguishing the factors from the effects (Mann, 2003). Prospective cohort studies are vulnerable to nonparticipation and attrition (Mann, 2003). If nonparticipation and attrition rates are higher among individuals with certain characteristics related to LBP (i.e. they have higher rates of comorbid disorders and higher non-return to work) and RTW this may lead to selection bias that may challenge the validity and generalizability of the results (Booker, Harding, & Benzeval, 2011; Harrison & Cock, 2004). In this study there were no more than 10.9% missing responses on the included variables which limited the risk of selection bias.

Using registry data from NAV for the outcome measure at 12 months minimized the risk of attrition. In this study only seven people had missing data for RTW at 12 months. Another advantage with using registry data for the outcome measure is that registry data are considered valid because they are registered prospectively (Ostelo & de Vet, 2005), hence

avoiding the issue of recall bias. On the other hand there are often errors in register data too, but it is unlikely that they are systematical.

Further, obtaining measures of the predictor variables and the covariates from a different source than the outcome variable limits the risk of bias from common method variance by eliminating the common rater effect (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Another strong point of the CINS study is the extensive data collection of health related measures. This allows the control of a range of potential confounders, and reduces the risk of alternative explanations.

Only a few studies on LBP and prognostic factors for RTW have presented gender specific analyses (Dionne et al., 2007; Volinn, Van Koevering, & Loeser, 1991), and differences between men and women regarding prognostic factors for RTW have previously been found (Dionne et al., 2007). To my knowledge this is the first study which have used and reported the results from gender specific analyses on prognostic factors in a cohort of individuals with long lasting low back pain. In turn, this might have implications for who and which factors to address.

The final point worth noticing is the inclusion criteria that the participants were at least 50% employed which seems to be important as one study which included both employed and unemployed found that the only significant predictor of RTW was employment at baseline (Deyo & Diehl, 1988).

## **5.4 Discussion of the present findings**

### **5.4.1 Expectancies of returning to work**

Having high expectancies of returning to work was a significant and strong predictor for returning to work at 12 months. After controlling for sociodemographic factors and other covariates, male and female workers with high expectancies had over 4.5 and 3 times higher odds of returning to work compared to their respective counterparts with low or some expectancies of RTW. It is important to discuss the present results with previous studies. The small effect of the confounding variables on the strength of the relation between high expectancies and RTW is in line with findings from a systematic review on expectancies and health outcomes (Mondloch, Cole, & Frank, 2001). More precisely Mondloch et al. (2001) found that simultaneous control for the effects biological, physiological, psychological or social variables usually had little effect on the strength of the relation between recovery expectancies on health outcomes. However, when the reference group was changed to the “do

not know category”, the impact of the confounding variables on the relation between high expectancies and RTW are discordant to the findings from the systematic review by Mondloch et al. (2001).

In general health expectancies have been demonstrated to predict actual health outcomes, including RTW, in several medical conditions, such as myocardial infarction, after cardiac surgery, psychiatric conditions (Mondloch et al., 2001), mental health problems (Nielsen et al., 2011) and whiplash associated disorders (Ozegovic et al., 2009). The literature on expectancies of returning to work with regards to LBP seems to have the main focus on acute or sub-acute LBP and predicting the risk of non-return to work or disability. This is illustrated through literature searches identifying four systematic reviews (Fayad et al., 2004; Hallegraeff, Krijnen, van der Schans, & de Greef, 2012; Iles, Davidson, & Taylor, 2008; Iles et al., 2009) on prognostic factors, including recovery expectancies, of non-return to work and only one systematic review (Fadyl & McPherson, 2008) which reviewed the effect of both high- and low recovery expectancies on both RTW and non-return to work. Further, three of these reviews concerned acute and or sub-acute LBP (Iles et al., 2008; Iles et al., 2009) and screening these four systematic reviews identified more than 10 studies since the year of 2000 on acute or sub-acute LBP and none on chronic LBP. The results from the present study are similar to the findings from several studies on acute and sub-acute LBP; one high quality study (Dionne et al., 2005), three lower quality studies (Kapoor et al., 2006; Schultz et al., 2004; Shaw, Pransky, Patterson, & Winters, 2005) and another study, not assessed by systematic reviews (Heymans et al., 2006), all demonstrated that high expectancies significantly predicted RTW. A Swedish study which investigated the impact of recovery expectancies for people on long term sick leave due to MSDs and behavioral health disorders also found a strong and highly significant effect of positive expectancies of returning to work on RTW after 18 months (Heijbel, Josephson, Jensen, Stark, & Vingård, 2006).

Two systematic reviews stated that for acute or sub-acute LBP negative or low recovery expectancies were a consistent and significant predictor of activity limitation and work disability (sickness absence/non-return to work/wage replacement compensation) (Hallegraeff et al., 2012; Iles et al., 2009). Particularly, the high quality study by Turner et al. (2006) showed results very similar to this study, however in the opposite end of RTW, using low expectancies of RTW in predicting work disability (Turner et al., 2006).

On the other hand Fadyl and McPherson (2008) states in their systematic review that despite the intuitive prospect for expectancies’ influence on RTW there is limited evidence due to the small number of studies and the evidence derived from them remains inconclusive.

However, only two out of the five previously mentioned studies which are consistent with the present results were included in the systematic review by Fadyl and McPherson (2008). The latter review might also have missed relevant studies due to the search criteria that were used. Another element is that the authors defined injury as trauma resulting in functional impairment, and they included several studies on LBP which is questionable since the origin of LBP is not clear, but multifactorial (Airaksinen et al., 2006; Macfarlane et al., 1999).

The explained variation of the crude RTW model was slightly higher for men (15.4%) compared to women (13.4%). After adjusting for possible confounders the explained variance of the RTW model increased to more than 30% for both genders. This indicated that RTW is influenced by the prognostic factors in this study. Still, more than 2/3 of the variance in RTW is still left unexplained. However, expectancies of returning to work classified almost 90% of those who did return to work correctly. This implies that expectancies play an important role for successful RTW. Nonetheless, interventions solely aimed to target expectancies of returning to work may have only limited beneficial effects on increased RTW rates. This might be due to both that the majority of the study participants reported high expectancies of returning to work and that the explained variation of the RTW model may be raised by adding factors which encompass key aspects of the complex environment of occupational health care. An interesting aspect from a health promotion perspective is if the explained variation in RTW may be raised by adding black flags to the model such as whether the public policy promotes RTW or if it is a barrier. In a cross cultural comparison between western countries of RTW after chronic LBP found that the eligibility criteria for entitlement to long term and/or partial disability benefits contributed to the differences in sustainable RTW (Anema et al., 2009). The authors found that less strict compensation policies to be eligible for long term (partial) benefits were more effective in achieving sustainable RTW. However, the cross country differences in sustainable return to work were mainly explained by differences in applied work interventions (Anema et al., 2009). Interestingly and in line with the biopsychosocial model of pain was the result that patient characteristics (age, gender, education) and medical interventions (surgery, pain medication, passive treatment etc) explained less of the variance in sustainable return to work compared to health characteristics, job characteristics and work interventions (Anema et al., 2009). The finding from the latter study that applied work interventions contributed most to the observed differences in sustainable RTW between the countries gains support from Pransky et al. (2005) who claim that the greatest barriers as well as opportunities to achieve improved RTW outcomes exist within the workplace. The ability to modify work have been effective in increasing RTW rates



(Krause, Dasinger, & Neuhauser, 1998). The presented arguments make it plausible that adding such contextual factors would improve the explained variation of the model in this study.

The CATS model provides an explanation for the reason why the subjects reporting high expectancies of returning to work have a strong and significant increased probability of returning to work compared with those with low or some expectancies based on the response outcome expectancies. Having high expectancies of returning to work can be considered as coping which implies that the individual has acquired positive response outcome expectancies. This leads the individual to use whatever strategy he or she places the highest confidence in for solving the problem (Eriksen & Ursin, 1999). Interestingly it has been found that workers with sub-acute/chronic LBP with a previous back pain episode had higher RTW rates than workers without a previous episode. It did also predict shorter disability (Dasinger, Krause, Deegan, Brand, & Rudolph, 2000; Krause, Dasinger, Deegan, Rudolph, & Brand, 2001). This is in line with the postulated position of coping in the CATS, the individual learn from his or her previous expectancy, and the experience of returning to work reinforces the individual positive response outcome expectancies with a high perceived probability for future RTW. In turn coping is associated with beliefs about control which is essential to empowerment (Green & Tones, 2010).

Further, one study found that long term maladaptive coping strategies might contribute to hypocortisolism in people with long lasting LBP (Sudhaus et al., 2009). Hypocortisolism is also found in other chronic stress and stress-related disorders (Fries, Hesse, Hellhammer, & Hellhammer, 2005; Gaab et al., 2005; Sudhaus et al., 2009). Hypocortisolism may be a result of sustained arousal and it might be an important mechanism for loss of dynamic capacity to respond to new challenges. In turn, it might lead to increased levels of illness and disease (Ursin & Eriksen, 2004). Sudhaus et al. (2009) argues that it is conceivable that positive response outcome expectancies might counteract the hypocortisolism found among subjects with long lasting LBP. On the other hand hypocortisolism might be a common phenomenon even in childhood (Gunnar & Vazquez, 2001). However, this subject requires additional research to clarify the relationship.

A parallel from having low or some expectancies of RTW and the CATS definition of hopelessness can be drawn. As well, hopelessness can be compared with aspects of the beliefs about pain element from the biopsychosocial model of pain, which states that the beliefs might be more incapacitating than the pain itself (Waddell, 2004).

The findings from this study and from previous studies (Iles et al., 2009) contribute in some ways to support the CATS position that hopelessness might sustain and even prolong the individuals' work disability due to LBP and its associated comorbid disorders, such as anxiety, depression and the number and severity of SHC. An explanation which have been suggested is that the state of hopelessness may sustain the symptoms and/or prolong the course of LBP due to the lack of motivation of engaging in a positive lifestyle (Ursin & Eriksen, 2004). This explanation is supported by a recent study which concluded that adults with chronic low back pain reported greater difficulty in engaging in general positive health behaviors than adults with no history of LBP (Briggs et al., 2011). Another suggested explanation which both the CATS and the biopsychosocial theory of pain has postulated is sensitization (Eriksen & Ursin, 2002; Waddell, 2004). Hopelessness leads to sustained activation and sensitization might occur as a result. Implications of sensitization are amongst other elevated awareness of the lower back, perceptual bias towards the condition and this hypervigilance towards such bodily sensations might amplify the symptoms of LBP (Eriksen & Ursin, 2002), particularly if combined with catastrophizing– an exaggerated negative orientation towards pain stimuli and pain experience (Sullivan, Stanish, Waite, Sullivan, & Tripp, 1998).

#### **5.4.2 Job satisfaction**

Surprisingly, being very satisfied or satisfied with the job did not predict RTW at 12 months for either the men or the women. With regard to previous studies, the same issue found with expectancies of returning to work seems to be present for job satisfaction as well; previous studies have mainly focused on individuals with acute and sub-acute LBP and the pathogenic paradigm has been dominant (Fayad et al., 2004; Iles et al., 2008). Only one of the previous studies used high levels of job satisfaction in predicting RTW in people with long lasting LBP (van der Giezen et al., 2000). The latter study demonstrated that higher job satisfaction independently predicted RTW, which is in discordance with the findings from this study. This difference might have occurred due to either or the use of different measures of job satisfaction and the statistical procedures employed, as the lack of standardization may give rise to random associations in single studies (Hartvigsen, Lings, Leboeuf-Yde, & Bakketeig, 2004).

The evidence regarding the impact of job dissatisfaction on RTW is ambiguous. On one hand, one systematic review which investigated the ability of psychosocial factors to predict failure of RTW in acute- and sub-acute LBP stated that there is strong evidence that

job dissatisfaction is not predictive of work outcome (Iles et al., 2008). On the other hand, another systematic review on prognostic factors for non-return to work, recurrence and disability highlighted that there was strong evidence that low level of job satisfaction is an essential prognostic factor for non-return to work in LBP (Fayad et al., 2004).

High levels of job satisfaction were insignificant in predicting RTW at 12 months. The scientific evidence regarding high levels of job satisfaction is limited and the evidence base of job dissatisfaction is inconclusive. This does not necessarily mean that job satisfaction is unimportant. From a broader perspective the large meta-analysis by (Faragher et al., 2005) clearly demonstrated that the level of job satisfaction is an important factor influencing the health of workers (Faragher et al., 2005). This was demonstrated in a study which found that satisfied workers reported a similar number of SHC as the Norwegian general population, but the dissatisfied workers reported significant greater number of SHC compared to the satisfied workers (Svensen, Arnetz, Ursin, & Eriksen, 2007). The follow-up of 12 months may be too short for demonstrating a possible long term adverse health effect of global dissatisfaction. On the other hand the vast majority of the study population reported that they were either very satisfied or satisfied with their job, which implicates that the possible negative health effects of dissatisfaction probably had a limited impact on the study population.

One explanation which has been proposed is that the decision on whether or when to return to work is not dependent on global job satisfaction, rather that decision may be more influenced by practical considerations such as injury severity, the necessity to earn a living (largely dependent on the nations' welfare systems), control over ones' work or the availability of modified work (Krause et al., 2001). Another postulated explanation is that low job satisfaction may predispose a worker to longer work absence by impacting on motivation to RTW (Iles et al., 2008), and when RTW were measured at one given point in time the measurement might not reflect the possible impact for job satisfaction on the motivation for RTW. If RTW had been measured as time to RTW instead, it may be that the results would have been different. On the other hand, and in agreement with Krause et al. (2001), Iles et al. (2008) state that other workplace factors, especially social support, interaction with colleagues and the perception of the work tasks have an impact on RTW. Accordingly, these aspects may have a greater positive effect on the motivation to RTW than any negative influence of global job satisfaction. As a consequence the global level of job satisfaction does not appear to delay the return to work process (Iles et al., 2008).

### 5.4.3 Gender differences

In this sample when comparing the responses from men and women regarding expectancies of returning to work and global job satisfaction, almost identical percentages were found for the different response categories. There were no statistical significant associations between gender and these two constructs. This indicates that men and women reported almost the same level of expectancies of returning to work and global job satisfaction. The finding with regards to job satisfaction is in agreement by the study of Sousa-Poza and Sousa-Poza (2000a) who did not find any gender differences in job satisfaction in more than 15 countries including Norway. On the other hand, in the fully adjusted model men with high expectancies of returning to work had a higher OR of returning to work compared to women. A contributing factor to this result may be that the crude results for gender showed that men were significantly more likely to RTW. This in some ways surprising since women had significantly higher education and there were a significantly higher proportion of smokers among the men. The latter argument is based on previous studies which have shown that those with higher education are more likely to RTW after sickness absence due to MSDs, including LBP (Selander, Marnetoft, Bergroth, & Ekholm, 2002) and that smoking has a strong effect on sick leave in a representative working population (Lundborg, 2007). Despite women having higher completed education than men, the crude results regarding education among the women were inconsistent. Non-smoking women were not more likely to return to work compared to women who smoked. Additionally, the men reported higher perceived social support from their colleagues compared to women. Hence, from the biopsychosocial model of pain point of view it may be argued that it is not surprising that the men in this study were more likely to RTW than the women since they experienced a higher level of support. The importance of perceived social support from colleagues is further backed up by a study which found that individuals on sick leave due to MSDs who reported high levels of perceived social support used shorter time to first RTW than individuals with lower perceived support (Brouwer, Reneman, Bültmann, van der Klink, & Groothoff, 2010).

Moreover, the result that men were more likely to RTW is in some ways discordant to a study by De Rijk, Janssen, Alexanderson, and Nijhuis (2008) who did not find gender differences in first RTW. However, in the same study women reported longer time to lasting RTW compared to men. These findings combined with that RTW was measured differently in this study shows the complexity regarding gender and RTW since using different measures of RTW may affect the results. As well, it becomes difficult to compare results across studies.

The subjects included in the study by De Rijk et al. (2008) were sick listed due to either musculoskeletal or mental complaints which further complicates the comparison of the results. This was illustrated by Heitz et al. (2009) who found that even for LBP, the prognostic factors amenable for change are fewer in chronic LBP compared to sub-acute LBP.

Another explanation which may be valid is that the women in this sample reported a higher score on the SHC Inventory compared to the men, and it has been found that comorbidity in workers with LBP increases the likelihood of remaining disabled from work (Nordin et al., 2002). This is also supported by the bivariable analyses of SHC and work status at 12 months which demonstrated that a lower score on the SHC inventory was a significant predictor of RTW when compared with those reporting the highest score on the SHC inventory. The result that women reported a significantly higher score on the SHC inventory is in agreement with findings from the Norwegian general population, where women reported a greater number and severity of SHC compared to men (Ihlebaek et al., 2002). Suggested explanations of these gender differences includes differences in responses to stress, differences in coping styles, higher total workload, higher pressure with regards to family and career or plainly that females have a lower threshold for reporting complaints (Ihlebaek, 2001).

## **5.5 Future research directions**

The present findings have several implications for future research. Future research on expectancies of returning to work may benefit from using the CATS as the theoretical framework as it is a well-developed theory which provides a much-needed and clear definition of expectancies. It also represents a shift from the dominant pathogenic paradigm to a holistic view on health. However, a reliable and valid instrument for measuring coping, helplessness and hopelessness is needed. The recent development of the TOMCATS seems to be a step forward, but the instrument might need further development. As well, it is also necessary with more validation research of the instrument if it is to be used for other purposes such as screening for coping, helplessness and hopelessness or clinical use.

Screening expectancies about returning to work and giving extra attention to those with low expectancies with interventions that focus on knowledge and coping might empower the individual and provide the “tools” to manage their long lasting low back pain themselves, without or limited need of using health care services. These “tools” consist of cognitive and behavioral strategies that can be used when needed. For instance cognitive behavioral therapy are recommended in the treatment of long lasting LBP (Airaksinen et al., 2006). However,

interventions solely focusing on the individual might have limited beneficial effect on achieving better RTW rates since multiple stakeholders are involved in the return to work process, and evidence points to that the biggest opportunities in achieving enhanced return to work rates lies within the workplace (Pransky et al., 2005). This combined with the findings from the present study implies that return to work interventions should address three key elements; individual psychological factors such as expectancies, work environmental factors (Krause et al., 1998) and factors related to the involvement of the various stakeholders (Franche, Baril, Shaw, Nicholas, & Loisel, 2005). Participatory approaches placing the individual with long lasting LBP in the center of the process are advocated as it is consistent with the principles of health promotion (Green & Tones, 2010). The planning process may be the needed vehicle for involving all the major stakeholders, and systematic planning is needed to find the most effective means of achieving increased RTW rates (Green & Tones, 2010).

Moreover, future research on predictive factors for return to work should place more focus on positive resources for health and which factors that can predict RTW as previous research has predominantly focused on predictors for work disability. This is essential from the health promotion perspective as work promotes full participation in the society and there is strong evidence that work has beneficial effects on physical-, mental health and well-being (Waddell & Burton, 2006). Another reason for shifting the focus to predictors for RTW is the evidence that predictors of work disability and RTW are often not the same (Schultz et al., 2007).

Due to the low number of previous studies presenting results of gender sensitive analyses on the topic, future studies should strive to employ such analyses since similar results might lead to increased generalizability. In addition there is evidence that prognostic factors for RTW varies between the genders (Lederer, Rivard, & Mechakra-Tahiri, 2012). In turn this has clinically implications for designing effective treatment interventions, which in the long run may have large individual and socioeconomic impact.

## **6.0 Conclusions**

In the present thesis, data from the randomized multicenter CINS trial was utilized to investigate the predictive value of two core factors; recovery expectancies and job satisfaction, on RTW after 12 months in a cohort of workers on sick leave due to long lasting LBP. The results demonstrate that regardless of gender high expectancies of returning to work is an important contributor to successful RTW at 12 months when individuals with high expectancies are compared with those with low expectancies. Men with high expectancies had higher odds of returning to work than woman with identical expectancies. This was somewhat surprising since men and women reported very similar levels of expectancies. As well, men and women reported very similar levels of overall job satisfaction, but high levels of job satisfaction were not predictive of RTW at 12 months.

Long lasting LBP may have severe negative consequences for both the individual and the society. The results from the present study suggest that screening expectancies of returning to work and giving extra attention to individuals with low expectancies may contribute to solutions to promote return to work. Still, a large proportion of the variance in return to work were left unexplained and scientific evidence indicates that work environmental factors and factors related to stakeholder involvement should be included in return to work interventions.

## References

- Airaksinen, O., Brox, J. I., Cedraschi, C., Hildebrandt, J., Klaber-Moffett, J., Kovacs, F., . . . Zanolli, G. (2006). Chapter 4. European guidelines for the management of chronic nonspecific low back pain. *European Spine Journal*, *15*, 192-300. doi: 10.1007/s00586-006-1072-1
- Andersson, G. B. J. (1999). Epidemiological features of chronic low-back pain. *The Lancet*, *354*(9178), 581-585. doi: 10.1016/s0140-6736(99)01312-4
- Anema, J. R., Schellart, A. J. M., Cassidy, J. D., Loisel, P., Veerman, T. J., & Van der Beek, A. J. (2009). Can cross country differences in return-to-work after chronic occupational back pain be explained? An exploratory analysis on disability policies in a six country cohort study. *Journal of Occupational Rehabilitation*, *19*(4), 419-426. doi: 10.1007/s10926-009-9202-3
- Arbeidstilsynet. (2012). Støy og Helse, from <http://www.arbeidstilsynet.no/fakta.html?tid=78245>
- Arbeidstilsynet. (2013). Kjemikalier, from <http://www.arbeidstilsynet.no/fakta.html?tid=206422#Helsefare>
- Bates, M. S. (1987). Ethnicity and pain: A biocultural model. *Social Science & Medicine*, *24*(1), 47-50. doi: 10.1016/0277-9536(87)90138-9
- Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research*, *52*(2), 69-77. doi: [http://dx.doi.org/10.1016/S0022-3999\(01\)00296-3](http://dx.doi.org/10.1016/S0022-3999(01)00296-3)
- Bloch, F. S., & Prins, R. (2001). *Who returns to work & why?: a six-country study on work incapacity & reintegration*. New Brunswick, U.S.A.: Transaction Publishers.



- Booker, C. L., Harding, S., & Benzeval, M. (2011). A systematic review of the effect of retention methods in population-based cohort studies. *BMC Public Health*, *11*(249). doi: 10.1186/1471-2458-11-249
- Brage, S., Ihlebæk, C., Natvig, B., & Bruusgaard, D. (2010). Muskel- og skjelettlidelser som årsak til sykefravær og uføreytelser. *Tidsskrift for Den Norske Legeforening*, (130), 2369–2370. Retrieved from <http://tidsskriftet.no/article/2049314>
- Brief, A. P. (1998). *Attitudes in and around organizations*. Thousand Oaks, Calif.: Sage.
- Briggs, A. M., Jordan, J. E., O'Sullivan, P. B., Buchbinder, R., Burnett, A. F., Osborne, R. H., & Straker, L. M. (2011). Individuals with chronic low back pain have greater difficulty in engaging in positive lifestyle behaviours than those without back pain: an assessment of health literacy. *BMC Musculoskeletal Disorders*, *12*(161). doi: 10.1186/1471-2474-12-161
- Brouwer, S., Reneman, M. F., Bültmann, U., van der Klink, J. J., & Groothoff, J. W. (2010). A prospective study of return to work across health conditions: perceived work attitude, self-efficacy and perceived social support. *Journal of Occupational Rehabilitation*, *20*(1), 104-112. doi: 10.1007/s10926-009-9214-z
- Brunborg, H., & Texmon, I. (2011). Befolkningsframskrivning 2011-2100: Nasjonale resultater. *Økonomiske Analyser*, *4*. Retrieved from <http://www.ssb.no/emner/08/05/10/oa/201104/brunborg2.pdf>
- Cedraschi, C., Robert, J., Goerg, D., Perrin, E., Fischer, W., & Vischer, T. L. (1999). Is chronic non-specific low back pain chronic? Definitions of a problem and problems of a definition. *British Journal of General Practice*, *49*(442), 358-362. Retrieved from <http://www.rcgp.org.uk/Publishing/BJGP.aspx>
- Chatzitheodorou, D., Kabitsis, C., Malliou, P., & Mougios, V. (2007). A pilot study of the effects of high-intensity aerobic exercise versus passive interventions on pain,

- disability, psychological strain, and serum cortisol concentrations in people with chronic low back pain. *Physical Therapy*, 87(3), 304-312. doi: 10.2522/ptj.20060080
- Cranny, C., Smith, P. C., & Stone, E. F. (1992). *Job satisfaction: how people feel about their jobs and how it affects their performance*. New York: Lexington Books.
- Dasinger, L. K., Krause, N., Deegan, L. J., Brand, R. J., & Rudolph, L. (2000). Physical Workplace Factors and Return to Work After Compensated Low Back Injury: A Disability Phase-Specific Analysis. *Journal of Occupational and Environmental Medicine*, 42(3), 323-333. Retrieved from <http://journals.lww.com/joem/pages/default.aspx>
- De Rijk, A., Janssen, N., Alexanderson, K., & Nijhuis, F. (2008). Gender differences in return to work patterns among sickness absentees and their associations with health: a prospective cohort study in The Netherlands. *International Journal of Rehabilitation Research*, 31(4), 327-336. doi: 10.1097/MRR.0b013e3282fba37c
- Deyo, R. A., & Diehl, A. K. (1988). Psychosocial predictors of disability in patients with low back pain. *The Journal of Rheumatology*, 15(10), 1557-1564.
- Dionne, C. E., Bourbonnais, R., Frémont, P., Rossignol, M., Stock, S. R., & Larocque, I. (2005). A clinical return-to-work rule for patients with back pain. *Canadian Medical Association Journal*, 172(12), 1559-1567. doi: 10.1503/cmaj.1041159
- Dionne, C. E., Bourbonnais, R., Frémont, P., Rossignol, M., Stock, S. R., Nouwen, A., . . . Demers, E. (2007). Determinants of “return to work in good health” among workers with back pain who consult in primary care settings: a 2-year prospective study. *European Spine Journal*, 16(5), 641-655. doi: 10.1007/s00586-006-0180-2
- Dionne, C. E., Dunn, K. M., Croft, P. R., Nachemson, A. L., Buchbinder, R., Walker, B. F., . . . Von Korff, M. (2008). A consensus approach toward the standardization of back pain

- definitions for use in prevalence studies. *Spine*, 33(1), 95-103. doi:  
10.1097/BRS.0b013e31815e7f94
- Ellingsen, J. (2011). Statistikknotat uførepensjon pr. 30. juni 2011. Retrieved from  
<http://www.nav.no/systemsider/sok/solrDokumenterAlle/attachment/287601?ts=1327151e100>
- Eriksen, H. R., Ihlebæk, C., & Ursin, H. (1999). A scoring system for subjective health complaints (SHC). *Scandinavian Journal of Public Health*, 27(1), 63-72. doi:  
10.1177/14034948990270010401
- Eriksen, H. R., & Ursin, H. (1999). Subjective health complaints: Is coping more important than control? *Work & Stress*, 13(3), 238-252. doi: 10.1080/026783799296048
- Eriksen, H. R., & Ursin, H. (2002). Sensitization and subjective health complaints. *Scandinavian Journal of Psychology*, 43(2), 189-196. doi: 10.1111/1467-9450.00286
- Fadyl, J., & McPherson, K. (2008). Return to Work After Injury: A Review of Evidence Regarding Expectations and Injury Perceptions, and their Influence on Outcome. *Journal of Occupational Rehabilitation*, 18(4), 362-374. doi: 10.1007/s10926-008-9153-0
- Fairbank, J. C. T., Couper, J., Davies, J. B., & O'Brien, J. P. (1980). The Oswestry low back pain disability questionnaire. *Physiotherapy*, 66, 271-273.
- Fairbank, J. C. T., & Pynsent, P. B. (2000). The Oswestry Disability Index. *Spine*, 25(22), 2940-2953. Retrieved from <http://journals.lww.com/spinejournal/>
- Faragher, E. B., Cass, M., & Cooper, C. L. (2005). The relationship between job satisfaction and health: a meta-analysis. *Occupational & Environmental Medicine*, 62(2), 105-112. doi: 10.1136/oem.2002.006734
- Fayad, F., Lefevre-Colau, M. M., Poiraudau, S., Fermanian, J., Rannou, F., Wlodyka Demaille, S., . . . Revel, M. (2004). Chronicity, recurrence, and return to work in low

- back pain: common prognostic factors. *Annales de Réadaptation et de Médecine Physique*, 47(4), 179-189. doi: 10.1016/j.annrmp.2004.01.005
- Fjelland, R. (1999). *Innføring i vitenskapsteori*. Oslo: Universitetsforlaget.
- Franche, R. L., Baril, R., Shaw, W., Nicholas, M., & Loisel, P. (2005). Workplace-Based Return-to-Work Interventions: Optimizing the Role of Stakeholders in Implementation and Research. *Journal of Occupational Rehabilitation*, 15(4), 525-542. doi: 10.1007/s10926-005-8032-1
- Freburger, J. K., Holmes, G. M., Agans, R. P., Jackman, A. M., Darter, J. D., Wallace, A. S., . . . Carey, T. S. (2009). The rising prevalence of chronic low back pain. *Archives of Internal Medicine*, 169(3), 251-258. doi: 10.1001/archinternmed.2008.543
- Fries, E., Hesse, J., Hellhammer, J., & Hellhammer, D. H. (2005). A new view on hypocortisolism. *Psychoneuroendocrinology*, 30(10), 1010-1016. doi: <http://dx.doi.org/10.1016/j.psyneuen.2005.04.006>
- Fritz, J. M., George, S. Z., & Delitto, A. (2001). The role of fear-avoidance beliefs in acute low back pain: relationships with current and future disability and work status. *Pain*, 94(1), 7-15. doi: [http://dx.doi.org/10.1016/S0304-3959\(01\)00333-5](http://dx.doi.org/10.1016/S0304-3959(01)00333-5)
- Gaab, J., Baumann, S., Budnoik, A., Gmünder, H., Hottinger, N., & Ehlert, U. (2005). Reduced reactivity and enhanced negative feedback sensitivity of the hypothalamus–pituitary–adrenal axis in chronic whiplash-associated disorder. *Pain*, 119(1–3), 219-224. doi: <http://dx.doi.org/10.1016/j.pain.2005.10.001>
- George, S. Z., Fritz, J. M., & Childs, J. D. (2008). Investigation of elevated fear-avoidance beliefs for patients with low back pain: a secondary analysis involving patients enrolled in physical therapy clinical trials. *Journal of Orthopaedic & Sports Physical Therapy*, 38(2), 50-58. doi: 10.2519/jospt.2008.2647

- Green, J., & Tones, K. (2010). *Health promotion: planning and strategies*. Los Angeles: Sage.
- Griep, E. N., Boersma, J. W., Lentjes, E. G., Prins, A. P., van der Korst, J. K., & de Kloet, E. R. (1998). Function of the hypothalamic-pituitary-adrenal axis in patients with fibromyalgia and low back pain. *The Journal of Rheumatology*, *25*(7), 1374-1381.
- Grotle, M., Brox, J. I., & Vøllestad, N. K. (2003). Cross-cultural adaptation of the Norwegian versions of the Roland-Morris Disability Questionnaire and the Oswestry Disability Index. *Journal of Rehabilitation Medicine*, *35*(5), 241-247. doi: 10.1080/16501970306094
- Grotle, M., Brox, J. I., & Vøllestad, N. K. (2006). Reliability, validity and responsiveness of the fear-avoidance beliefs questionnaire: methodological aspects of the Norwegian version. *Journal of Rehabilitation Medicine*, *38*(6), 346-353. doi: 10.1080/16501970600722403
- Grotle, M., & Vøllestad, N. K. (2001). The Fear-Avoidance Beliefs Questionnaire (FABQ) translated by Grotle and Vøllestad Retrieved from [http://www.formi.no/images/uploads/pdf/fear\\_avoidance.pdf](http://www.formi.no/images/uploads/pdf/fear_avoidance.pdf)
- Gunnar, M. R., & Vazquez, D. M. (2001). Low cortisol and a flattening of expected daytime rhythm: Potential indices of risk in human development. *Development and Psychopathology*, *13*(03), 515-538. doi: doi:null
- Hallegraeff, J. M., Krijnen, W. P., van der Schans, C. P., & de Greef, M. H. (2012). Expectations about recovery from acute non-specific low back pain predict absence from usual work due to chronic low back pain: a systematic review. *Journal of Physiotherapy*, *58*(3), 165-172. doi: 10.1016/s1836-9553(12)70107-8
- Hansson, A., Vingård, E., Arnetz, B. B., & Anderzén, I. (2008). Organizational change, health, and sick leave among health care employees: a longitudinal study measuring

- stress markers, individual, and work site factors. *Work & Stress*, 22(1), 69-80. doi: 10.1080/02678370801996236
- Harrison, R. A., & Cock, D. (2004). Increasing response to a postal survey of sedentary patients - a randomised controlled trial. *BMC Health Service Research*, 4(31). doi: 10.1186/1472-6963-4-31
- Hartvigsen, J., Lings, S., Leboeuf-Yde, C., & Bakketeig, L. (2004). Psychosocial factors at work in relation to low back pain and consequences of low back pain; a systematic, critical review of prospective cohort studies. *Occupational & Environmental Medicine*, 61(1). Retrieved from <http://oem.bmj.com/>
- Heijbel, B., Josephson, M., Jensen, I., Stark, S., & Vingård, E. (2006). Return to work expectation predicts work in chronic musculoskeletal and behavioral health disorders: Prospective study with clinical implications. *Journal of Occupational Rehabilitation*, 16(2), 169-180. doi: 10.1007/s10926-006-9016-5
- Heitz, C., Hilfiker, R., Bachmann, L., Joronen, H., Lorenz, T., Uebelhart, D., . . . Brunner, F. (2009). Comparison of risk factors predicting return to work between patients with subacute and chronic non-specific low back pain: systematic review. *European Spine Journal*, 18(12), 1829-1835. doi: 10.1007/s00586-009-1083-9
- Hestbaek, L., Leboeuf-Yde, C., & Manniche, C. (2003). Low back pain: what is the long-term course? A review of studies of general patient populations. *European Spine Journal*, 12(2), 149-165. doi: 10.1007/s00586-002-0508-5
- Heymans, M. W., de Vet, H. C., Knol, D. L., Bongers, P. M., Koes, B. W., & van Mechelen, W. (2006). Workers' beliefs and expectations affect return to work over 12 months. *Journal of Occupational Rehabilitation*, 16(4), 685-695. doi: 10.1007/s10926-006-9058-8

- Hoffman, B. M., Papas, R. K., Chatkoff, D. K., & Kerns, R. D. (2007). Meta-analysis of psychological interventions for chronic low back pain. *Health Psychology, 26*(1), 1-9. doi: 10.1037/0278-6133.26.1.1
- Huber, M., Knottnerus, J. A., Green, L., Horst, H. V. D., Jadad, A. R., Kromhout, D., . . . Smid, H. (2011). How should we define health? *BMJ, 343*. doi: <http://dx.doi.org/10.1136/bmj.d4163>
- Hudak, P. L., & Wright, J. G. (2000). The characteristics of patient satisfaction measures. *Spine, 25*(24), 3167-3177.
- Ihlebak, C. (2001). *Epidemiological studies of subjective health complaints*. Bergen: Department of Biological and Medical Psychology, Division of Physiological Psychology, Faculty of Psychology, University of Bergen.
- Ihlebak, C., Eriksen, H. R., & Ursin, H. (2002). Prevalence of subjective health complaints (SHC) in Norway. *Scandinavian Journal of Public Health, 30*(1), 20-29. doi: 10.1177/14034948020300010701
- Iles, R. A., Davidson, M., & Taylor, N. F. (2008). Psychosocial predictors of failure to return to work in non-chronic non-specific low back pain: a systematic review. *Occupational and Environmental Medicine, 65*(8), 507-517. doi: 10.1136/oem.2007.036046
- Iles, R. A., Davidson, M., Taylor, N. F., & O'Halloran, P. (2009). Systematic Review of the Ability of Recovery Expectations to Predict Outcomes in Non-Chronic Non-Specific Low Back Pain. *Journal of Occupational Rehabilitation, 19*(1), 25-40. doi: 10.1007/s10926-008-9161-0
- Imrie, R. (2004). Demystifying disability: a review of the International Classification of Functioning, Disability and Health. *Sociology of Health & Illness, 26*(3), 287-305. doi: 10.1111/j.1467-9566.2004.00391.x

- Joksimovic, L., Starke, D., Knesebeck, O. V. D., & Siegrist, J. (2002). Perceived work stress, overcommitment, and self-reported musculoskeletal pain: A cross-sectional investigation. *International Journal of Behavioral Medicine*, 9(2), 122-138. doi: 10.1207/s15327558ijbm0902\_04
- Judge, T. A., Piccolo, R. F., Podsakoff, N. P., Shaw, J. C., & Rich, B. L. (2010). The relationship between pay and job satisfaction: A meta-analysis of the literature. *Journal of Vocational Behavior*, 77(2), 157-167. doi: 10.1016/j.jvb.2010.04.002
- Kapoor, S., Shaw, W. S., Pransky, G., & Patterson, W. (2006). Initial patient and clinician expectations of return to work after acute onset of work-related low back pain. *Journal of Occupational and Environmental Medicine*, 48(11), 1173-1180. doi: 10.1097/01.jom.0000243401.22301.5e
- Kessler, R. C., Gruber, M., Hettema, J. M., Hwang, I., Sampson, N., & Yonkers, K. A. (2008). Co-morbid major depression and generalized anxiety disorders in the National Comorbidity Survey follow-up. *Psychological Medicine*, 38(3), 365-374. doi: 10.1017/S0033291707002012
- Knudsen, A. K. (2013). *Long-term sickness absence and disability pension award as consequences of common mental disorders: epidemiological studies using a population-based health survey and official ill health benefit registries*. Bergen: University of Bergen.
- Krause, N., Dasinger, L. K., Deegan, L. J., Rudolph, L., & Brand, R. J. (2001). Psychosocial job factors and return-to-work after compensated low back injury: A disability phase-specific analysis. *American journal of industrial medicine*, 40(4), 374-392. doi: 10.1002/ajim.1112



- Krause, N., Dasinger, L. K., & Neuhauser, F. (1998). Modified Work and Return to Work: A Review of the Literature. *Journal of Occupational Rehabilitation*, 8(2), 113-139. doi: 10.1023/a:1023015622987
- Krismer, M., & van Tulder, M. (2007). Low back pain (non-specific). *Best Practice & Research: Clinical Rheumatology*, 21(1), 77-91. doi: 10.1016/j.berh.2006.08.004
- Krokstad, S., Johnsen, R., & Westin, S. (2002). Social determinants of disability pension: a 10-year follow-up of 62 000 people in a Norwegian county population. *International Journal of Epidemiology*, 31(6), 1183-1191. doi: 10.1093/ije/31.6.1183
- Lederer, V., Rivard, M., & Mechakra-Tahiri, S. D. (2012). Gender differences in personal and work-related determinants of return-to-work following long-term disability: a 5-year cohort study. *Journal of Occupational Rehabilitation*, 22(4), 522-531. doi: 10.1007/s10926-012-9366-0
- Li, J., Yang, W., Cheng, Y., Siegrist, J., & Cho, S.-I. (2005). Effort–reward imbalance at work and job dissatisfaction in Chinese healthcare workers: a validation study. *International Archives of Occupational and Environmental Health*, 78(3), 198-204. doi: 10.1007/s00420-004-0581-7
- Loeser, J. D., & Melzack, R. (1999). Pain: an overview. *The Lancet*, 353(9164), 1607-1609. doi: 10.1016/s0140-6736(99)01311-2
- Lundborg, P. (2007). Does smoking increase sick leave? Evidence using register data on Swedish workers. *Tobacco Control*, 16(2), 114-118. doi: 10.1136/tc.2006.017798
- Lærum, E., Brox, J. I., Storheim, K., Espeland, A., Haldorsen, E. M. H., Munch-Ellingsen, J., . . . Werner, E. (2007). *Nasjonale kliniske retningslinjer; Korsryggsmarter – med og uten nerverotsaffeksjon*. Oslo: Sosial- og helsedirektoratet.
- Macfarlane, G. J., Thomas, E., Croft, P. R., Papageorgiou, A. C., Jayson, M. I., & Silman, A. J. (1999). Predictors of early improvement in low back pain amongst consulters to

- general practice: the influence of pre-morbid and episode-related factors. *Pain*, 80(1-2), 113-119. doi: [http://dx.doi.org/10.1016/S0304-3959\(98\)00209-7](http://dx.doi.org/10.1016/S0304-3959(98)00209-7)
- Mann, C. J. (2003). Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emergency Medicine Journal*, 20(1), 54-60. doi: 10.1136/emj.20.1.54
- Mathew, A. R., Pettit, J. W., Lewinsohn, P. M., Seeley, J. R., & Roberts, R. E. (2011). Co-morbidity between major depressive disorder and anxiety disorders: shared etiology or direct causation? *Psychological Medicine*, 41(10), 2023-2034. doi: <http://dx.doi.org/10.1017/S0033291711000407>
- Melzack, R. (1996). Gate control theory: On the evolution of pain concepts. *Pain Forum*, 5(2), 128-138. doi: [http://dx.doi.org/10.1016/S1082-3174\(96\)80050-X](http://dx.doi.org/10.1016/S1082-3174(96)80050-X)
- Melzack, R., & Wall, P. D. (1965). Pain Mechanisms: A New Theory. *Science*, 150(3699), 971-979. Retrieved from New Series website: <http://www.jstor.org/stable/1717891>
- Meurs, J. A., & Perrewé, P. L. (2011). Cognitive Activation Theory of Stress: An Integrative Theoretical Approach to Work Stress. *Journal of Management*, 37(4), 1043-1068. doi: 10.1177/0149206310387303
- Miner, J. B. (1992). *Industrial-organizational psychology*. New York: McGraw-Hill.
- Mondloch, M. V., Cole, D. C., & Frank, J. W. (2001). Does how you do depend on how you think you'll do? A systematic review of the evidence for a relation between patients' recovery expectations and health outcomes. *Canadian Medical Association Journal*, 165(2), 174-179. Retrieved from <http://www.cmaj.ca/>
- Nicholas, M. K., Linton, S. J., Watson, P. J., & Main, C. J. (2011). Early Identification and Management of Psychological Risk Factors (“Yellow Flags”) in Patients With Low Back Pain: A Reappraisal. *Physical Therapy*, 91(5), 737-753. doi: 10.2522/ptj.20100224

- Nielsen, M. B. D., Madsen, I. E. H., Bültmann, U., Christensen, U., Diderichsen, F., & Rugulies, R. (2011). Predictors of return to work in employees sick-listed with mental health problems: findings from a longitudinal study. *The European Journal of Public Health, 21*(6), 806-811. doi: 10.1093/eurpub/ckq171
- Nordin, M., Hiebert, R., Pietrek, M., Alexander, M., Crane, M., & Lewis, S. (2002). Association of Comorbidity and Outcome in Episodes of Nonspecific Low Back Pain in Occupational Populations. *Journal of Occupational and Environmental Medicine, 44*(7), 677-684. doi: 10.1097/01.jom.0000023381.41727.a0
- Nutbeam, D. (1998). Health promotion glossary. *Health Promotion International, 13*(4), 349-364. doi: 10.1093/heapro/13.4.349
- Odéen, M. (2013). *Coping at work: the role of knowledge and coping expectancies in health and sick leave*. Bergen: The Faculty of Psychology, University of Bergen.
- Odéen, M., Kristensen, L. O., & Ursin, H. (2009). Coping and return to work: Measurement and theoretical issues. *Norsk Epidemiologi, 19*(2), 173-178. Retrieved from <http://www.ntnu.no/ojs/index.php/norepid/index>
- Odéen, M., Westerlund, H., Theorell, T., Leineweber, C., Eriksen, H. R., & Ursin, H. (2012). Expectancies, Socioeconomic Status, and Self-Rated Health: Use of the Simplified TOMCATS Questionnaire. *International Journal of Behavioral Medicine, 20*(2), 242-251. doi: 10.1007/s12529-012-9221-x
- Oshagbemi, T. (1999). Overall job satisfaction: how good are single versus multiple-item measures? *Journal of Managerial Psychology, 14*(5), 388-403. doi: 10.1108/02683949910277148
- Ostelo, R. W., & de Vet, H. C. (2005). Clinically important outcomes in low back pain. *Best Practice & Research Clinical Rheumatology, 19*(4), 593-607. doi: 10.1016/j.berh.2005.03.003

- Ozegovic, D., Carroll, L. J., & Cassidy, J. D. (2009). Does expecting mean achieving? The association between expecting to return to work and recovery in whiplash associated disorders: a population-based prospective cohort study. *European Spine Journal*, *18*(6), 893-899. doi: 10.1007/s00586-009-0954-4
- Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, *74*(3), 264-282. doi: 10.1016/j.jvb.2009.01.001
- Pengel, L. H. M., Herbert, R. D., Maher, C. G., & Refshauge, K. M. (2003). Acute low back pain: systematic review of its prognosis. *BMJ*, *327*(7410), 323. doi: 10.1136/bmj.327.7410.323
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903. doi: 10.1037/0021-9010.88.5.879
- Pransky, G., Gatchel, R., Linton, S. J., & Loisel, P. (2005). Improving Return to Work Research. *Journal of Occupational Rehabilitation*, *15*(4), 453-457. doi: 10.1007/s10926-005-8027-y
- Preckel, D., von Känel, R., Kudielka, B. M., & Fischer, J. E. (2005). Overcommitment to work is associated with vital exhaustion. *International Archives of Occupational and Environmental Health*, *78*(2), 117-122. doi: 10.1007/s00420-004-0572-8
- Punnett, L., & Wegman, D. H. (2004). Work-related musculoskeletal disorders: the epidemiologic evidence and the debate. *Journal of Electromyography and Kinesiology*, *14*(1), 13-23. doi: 10.1016/j.jelekin.2003.09.015
- Quinn, R. P., & Shepard, L. J. (1974). *The 1972-73 quality of employment survey: descriptive statistics, with comparison data from the 1969-70 survey of working conditions :*

- report to the Employment Standards Administration, U.S. Department of Labor.* Ann Arbor: Survey Research Center, Institute for Social Research, University of Michigan.
- Reme, S. E., Hagen, E. M., & Eriksen, H. R. (2009). Expectations, perceptions, and physiotherapy predict prolonged sick leave in subacute low back pain. *BMC Musculoskeletal Disorders*, *10*(139). doi: 10.1186/1471-2474-10-139
- Reme, S. E., Tveito, T. H., Chalder, T., Bjorkkjaer, T., Indahl, A., Brox, J. I., . . . Eriksen, H. R. (2011). Protocol for the Cognitive Interventions and Nutritional Supplements (CINS) trial: a randomized controlled multicenter trial of a brief intervention (BI) versus a BI plus cognitive behavioral treatment (CBT) versus nutritional supplements for patients with long-lasting muscle and back pain. *BMC Musculoskeletal Disorders*, *12*(152). doi: 10.1186/1471-2474-12-152
- Ross, C. E., & Mirowsky, J. (1995). Does Employment Affect Health? *Journal of Health and Social Behavior*, *36*(3), 230-243. doi: 10.2307/2137340
- Sanne, B., Torp, S., Mykletun, A., & Dahl, A. A. (2005). The Swedish Demand-Control-Support Questionnaire (DCSQ): Factor structure, item analyses, and internal consistency in a large population. *Scandinavian Journal of Public Health*, *33*(3), 166-174. doi: 10.1080/14034940410019217
- Schultz, I. Z., Crook, J., Meloche, G. R., Berkowitz, J., Milner, R., Zuberbier, O. A., & Meloche, W. (2004). Psychosocial factors predictive of occupational low back disability: towards development of a return-to-work model. *Pain*, *107*(1-2), 77-85. doi: 10.1016/j.pain.2003.09.019
- Schultz, I. Z., Stowell, A. W., Feuerstein, M., & Gatchel, R. J. (2007). Models of return to work for musculoskeletal disorders. *Journal of Occupational Rehabilitation*, *17*(2), 327-352. doi: 10.1007/s10926-007-9071-6

- Schulz, M., Damkröger, A., Heins, C., Wehlitz, L., Löhr, M., Driessen, M., . . . Wingenfeld, K. (2009). Effort-reward imbalance and burnout among German nurses in medical compared with psychiatric hospital settings. *Journal of Psychiatric and Mental Health Nursing, 16*(3), 225-233. doi: 10.1111/j.1365-2850.2008.01355.x
- Selander, J., Marnetoft, S. U., Bergroth, A., & Ekholm, J. (2002). Return to work following vocational rehabilitation for neck, back and shoulder problems: risk factors reviewed. *Disability and Rehabilitation, 24*(14), 704-712. doi: 10.1080/09638280210124284
- Shaw, W. S., & Huang, Y. H. (2005). Concerns and expectations about returning to work with low back pain: identifying themes from focus groups and semi-structured interviews. *Disability and Rehabilitation, 27*(21), 1269-1281. doi: 10.1080/09638280500076269
- Shaw, W. S., Pransky, G., Patterson, W., & Winters, T. (2005). Early disability risk factors for low back pain assessed at outpatient occupational health clinics. *Spine, 30*(5), 572-580. doi: 10.1097/01.brs.0000154628.37515.ef
- Shaw, W. S., Reme, S. E., Linton, S. J., Huang, Y. H., & Pransky, G. (2011). Development of the return-to-work self-efficacy (RTWSE-19) questionnaire-Psychometric properties and predictive validity. *Scandinavian Journal of Work Environment and Health, 37*(2), 109-119. doi: 10.5271/sjweh.3139
- Shaw, W. S., van der Windt, D., Main, C., Loisel, P., & Linton, S. (2009). Early Patient Screening and Intervention to Address Individual-Level Occupational Factors (“Blue Flags”) in Back Disability. *Journal of Occupational Rehabilitation, 19*(1), 64-80. doi: 10.1007/s10926-008-9159-7
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology, 1*(1), 27-41. doi: 10.1037/1076-8998.1.1.27
- Siegrist, J. (2007). Effort Reward Imbalance Model. In George Fink Associate Editors (Ed.), *Encyclopedia of Stress* (2nd ed., pp. 893-896). New York: Academic Press.

- Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I., & Peter, R. (2004). The measurement of effort–reward imbalance at work: European comparisons. *Social Science & Medicine*, 58(8), 1483-1499. doi: 10.1016/s0277-9536(03)00351-4
- Smith, G. D., Ebrahim, S., & Frankel, S. (2001). How policy informs the evidence. *BMJ*, 322(7280), 184–185. doi: 10.1136/bmj.322.7280.184
- Snashall, D. (1996). ABC of work related disorders. Hazards of work. *BMJ: British Medical Journal*, 313(7050), 161-163. Retrieved from doi:<http://www.bmj.com/>
- Soldal, D. M. (2008 ). Epidemiologi ved korsryggsmarter. *Norsk Epidemiologi*, 18(1), 107-110. Retrieved from <http://www.ntnu.no/ojs/index.php/norepid/index>
- Sousa-Poza, A., & Sousa-Poza, A. A. (2000a). Taking Another Look at the Gender/Job-Satisfaction Paradox. *Kyklos*, 53(2), 135-152. doi: 10.1111/1467-6435.00114
- Sousa-Poza, A., & Sousa-Poza, A. A. (2000b). Well-being at work: a cross-national analysis of the levels and determinants of job satisfaction. *Journal of Socio-Economics*, 29(6), 517-538. doi: 10.1016/s1053-5357(00)00085-8
- Stansfeld, S. A., Fuhrer, R., Shipley, M. J., & Marmot, M. G. (1999). Work characteristics predict psychiatric disorder: prospective results from the Whitehall II Study. *Occupational and Environmental Medicine*, 56(5), 302-307.
- Sudhaus, S., Fricke, B., Stachon, A., Schneider, S., Klein, H., von Düring, M., & Hasenbring, M. (2009). Salivary cortisol and psychological mechanisms in patients with acute versus chronic low back pain. *Psychoneuroendocrinology*, 34(4), 513-522. doi: <http://dx.doi.org/10.1016/j.psyneuen.2008.10.011>
- Sullivan, M. J. L., Feuerstein, M., Gatchel, R., Linton, S., & Pransky, G. (2005). Integrating Psychosocial and Behavioral Interventions to Achieve Optimal Rehabilitation Outcomes. *Journal of Occupational Rehabilitation*, 15(4), 475-489. doi: 10.1007/s10926-005-8029-9

- Sullivan, M. J. L., Stanish, W., Waite, H., Sullivan, M., & Tripp, D. A. (1998). Catastrophizing, pain, and disability in patients with soft-tissue injuries. *Pain*, 77(3), 253-260. doi: [http://dx.doi.org/10.1016/S0304-3959\(98\)00097-9](http://dx.doi.org/10.1016/S0304-3959(98)00097-9)
- Svensen, E., Arnetz, B. B., Ursin, H., & Eriksen, H. R. (2007). Health complaints and satisfied with the job? A cross-sectional study on work environment, job satisfaction, and subjective health complaints. *Journal of Occupational and Environmental Medicine*, 49(5), 568-573. doi: 10.1097/JOM.0b013e3180577700
- The Norwegian Institute of Public Health [NIPH]. (2010). DEL 2: Helse i ulike befolkningsgrupper: Kapittel 7; Helse hos eldre. *Folkehelse rapport 2010: Helsetilstanden i Norge* (pp. 46-55). Oslo: The Norwegian Institute of Public Health.
- The Working Environment Act. (2005). *Act relating to working environment, working hours and employment protection, etc.*: Retrieved from <http://www.arbeidstilsynet.no/binfil/download2.php?tid=92156>.
- Theorell, T., Michelsen, H., & Nordemar, R. (1991). Tre arbeidsmiljøindex som använts i Stockholmsundersökningen 1. In M. Hagberg & C. Hogstedt (Eds.), *Stockholmsundersökningen 1*. (pp. 150-154). Stockholm: MUSIC Books.
- Turner, J. A., Franklin, G., Fulton-Kehoe, D., Sheppard, L., Wickizer, T. M., Wu, R., . . . Egan, K. (2006). Worker recovery expectations and fear-avoidance predict work disability in a population-based workers' compensation back pain sample. *Spine*, 31(6), 682-689. doi: 10.1097/01.brs.0000202762.88787.af
- Turner, J. A., Franklin, G., & Turk, D. C. (2000). Predictors of chronic disability in injured workers: A systematic literature synthesis. *American journal of industrial medicine*, 38(6), 707-722. doi: 10.1002/1097-0274(200012)38:6<707::aid-ajim10>3.0.co;2-9
- Ursin, H., & Eriksen, H. R. (2004). The cognitive activation theory of stress. *Psychoneuroendocrinology*, 29(5), 567-592. doi: 10.1016/s0306-4530(03)00091-x



- Ursin, H., & Eriksen, H. R. (2010). Cognitive activation theory of stress (CATS). *Neuroscience & Biobehavioral Reviews*, 34(6), 877-881. doi: 10.1016/j.neubiorev.2009.03.001
- van der Giezen, A. M., Bouter, L. M., & Nijhuis, F. J. N. (2000). Prediction of return-to-work of low back pain patients sicklisted for 3–4 months. *Pain*, 87(3), 285-294. doi: 10.1016/s0304-3959(00)00292-x
- van Middelkoop, M., Rubinstein, S. M., Verhagen, A. P., Ostelo, R. W., Koes, B. W., & van Tulder, M. W. (2010). Exercise therapy for chronic nonspecific low-back pain. *Best Practice & Research Clinical Rheumatology*, 24(2), 193-204. doi: 10.1016/j.berh.2010.01.002
- van Tulder, M., Becker, A., Bekkering, T., Breen, A., del Real, M. T., Hutchinson, A., . . . Malmivaara, A. (2006). Chapter 3. European guidelines for the management of acute nonspecific low back pain in primary care. *European Spine Journal*, 15 Suppl 2, 169-191. doi: 10.1007/s00586-006-1071-2
- Vlaeyen, J. W. S., Kole-Snijders, A. M. J., Boeren, R. G. B., & van Eek, H. (1995). Fear of movement/(re)injury in chronic low back pain and its relation to behavioral performance. *Pain*, 62(3), 363-372. doi: 10.1016/0304-3959(94)00279-n
- Volinn, E., Van Koevering, D., & Loeser, J. D. (1991). Back sprain in industry. The role of socioeconomic factors in chronicity. *Spine*, 16(5), 542-548. Retrieved from <http://journals.lww.com/spinejournal/pages/default.aspx>
- Waddell, G. (1987). A new clinical model for the treatment of low-back pain. *Spine*, 12, 632–644. Retrieved from <http://journals.lww.com/spinejournal/pages/default.aspx>
- Waddell, G. (2004). *The back pain revolution* (2 ed.). Edinburgh: Churchill Livingstone.
- Waddell, G., & Burton, K. A. (2006). Is work good for your health and well-being? Retrieved from

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/138008/hwwb-is-work-good-for-you.pdf.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/138008/hwwb-is-work-good-for-you.pdf.pdf)

- Waddell, G., Newton, M., Henderson, I., Somerville, D., & Main, C. J. (1993). A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability. *Pain*, 52(2), 157-168. doi: [http://dx.doi.org/10.1016/0304-3959\(93\)90127-B](http://dx.doi.org/10.1016/0304-3959(93)90127-B)
- Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: how good are single-item measures? *Journal of Applied Psychology*, 82(2), 247-252. doi: 10.1037/0021-9010.82.2.247
- Watson, P. J., Booker, C. K., Moores, L., & Main, C. J. (2004). Returning the chronically unemployed with low back pain to employment. *European Journal of Pain*, 8(4), 359-369. doi: 10.1016/j.ejpain.2003.11.003
- Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs and affective experiences. *Human Resource Management Review*, 12(2), 173-194. doi: 10.1016/s1053-4822(02)00045-1
- Wilkinson, R., & Marmot, M. (2003). *Social Determinants of Health: The Solid Facts*. Second Edition. Retrieved from [http://www.euro.who.int/\\_data/assets/pdf\\_file/0005/98438/e81384.pdf](http://www.euro.who.int/_data/assets/pdf_file/0005/98438/e81384.pdf)
- World Health Organization [WHO]. (1946). Constitution of the World Health Organization. Retrieved from <http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf>
- World Health Organization [WHO]. (1986). Ottawa charter for health promotion. Retrieved from [http://www.who.int/hpr/NPH/docs/ottawa\\_charter\\_hp.pdf](http://www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf)
- Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67(6), 361-370. doi: 10.1111/j.1600-0447.1983.tb09716.x

**Table 1.** Characteristics of the study population at baseline ( $N= 569$ )

	Men	Women
<i>Sociodemographic factors</i>		
Age, $M$ ( $SD$ )	44.3 (9.7)	44.3 (9.7)
Gender	49.7%	50.3%
Education:		
Primary and secondary	17.6%	10.4%
Upper secondary	52.6%	44.6%
College/University 1-4 years	17.3%	26.6%
College/University $\geq 4$ years	4.4%	11.2%
Other	8.1%	7.2%
Smoking (yes)	46.5%	38.2%
<i>Covariates</i>		
Co-worker social support, $M$ ( $SD$ )	19.3 (3.3)	18.8 (3.3)
SHC, $M$ ( $SD$ )	15.7 (9.5)	19.3 (9.4)
FABQ-Work, $M$ ( $SD$ )	25.7 (9.6)	24.1 (10.3)
ODI, $M$ ( $SD$ )	28.8 (12.3)	29.3 (12.6)
Anxiety	20.5%	24.6%
Depression	18.7%	17.9%
Comorbid anxiety and depression	11.7%	11.8%
<i>Predictor variables</i>		
Job satisfaction:		
Very satisfied	32.3%	29.2%
Satisfied	45 %	45.8%
Neither satisfied or dissatisfied	18.2%	15,9 %
Dissatisfied	3 %	7.6%
Very dissatisfied	1.5%	1.4%
Return to work expectancies:		
High degree	73.3%	75.1%
Some degree	13.3%	17.3%
Low degree	6.6%	2.9%
Do not know	7 %	4.7%

Continuous variables are presented by means ( $M$ ) with standard deviation ( $SD$ ) in parentheses, and categorical variables by percentages.  $N$  refers to the total sample size, and may deviate in some of the variables due to missing data.

**Table 2.** Prospective effects of expectancies of returning to work on RTW at 12 months. Crude estimates from bivariable logistic regression analyses.

<i>Variable</i>	<i>Categories</i>	<i>Men</i>		<i>Women</i>	
		<i>OR</i>	<i>95% CI</i>	<i>OR</i>	<i>95% CI</i>
Expectancies of returning to work	Low or some expectancies <sup>a</sup>				
	High expectancies	5.38	2.81-10.33	4.80	2.47-9.35
	Do not know	1.27	0.42-3.79	1.33	0.35-5.01
	Do not know <sup>b</sup>				
	Low or some expectancies	0.79	0.26-2.35	0.75	0.20-2.82
	High expectancies	4.24	1.59-11.32	3.60	1.07-12.08

<sup>a</sup> reference group = low or some expectancies

<sup>b</sup> reference group = do not know

**Table 3.** Prospective effects of global job satisfaction on RTW at 12 months. Crude estimates from bivariable logistic regression analyses

<i>Gender</i>	<i>Global job satisfaction</i>	<i>OR</i>	<i>95% CI</i>
Men	Very dissatisfied or dissatisfied <sup>a</sup>		
	Neither satisfied or dissatisfied	0.74	0.21-2.67
	Satisfied	1.09	0.33-3.62
	Very satisfied	1.36	0.40-4.64
Women	Very dissatisfied or dissatisfied <sup>a</sup>		
	Neither satisfied or dissatisfied	0.68	0.25-1.84
	Satisfied	1.07	0.45-2.52
	Very satisfied	2.17	0.87-5.39

<sup>a</sup> = reference group

**Table 4.** Prospective effects of sociodemographic factors on RTW at 12 months. Crude estimates from bivariable logistic regression analyses.

<i>Variables</i>	<i>Categories</i>	<i>Men</i>		<i>Women</i>	
		<i>OR</i>	<i>95% CI</i>	<i>OR</i>	<i>95% CI</i>
Gender		1.51	1.19-1.92	<sup>a</sup>	<sup>a</sup>
Age		1.01	1.00-1.01	1.00	0.996-1.01
	Primary and secondary				
	Upper secondary	1.45	1.04-2.02	1.10	0.77-1.57
Highest completed education <sup>b</sup>	College/University 1-4 years	1.19	0.67-2.13	1.74	1.08-2.79
	College/University >4 years	1.40	0.44-4.41	1.21	0.60-2.46
	Other	3.40	1.25-9.22	0.25	0.08-0.75
Smoking status <sup>c</sup>	Non-smokers	1.64	1.17-2.29	1.06	0.79-1.43

<sup>a</sup> reference group for gender = women

<sup>b</sup> reference group = primary and secondary school.

<sup>c</sup> reference group for smoking status = smokers

**Table 5.** Prospective effects of the covariates on RTW at 12 months. Crude estimates from bivariable logistic regression analyses.

<i>Variables</i>	<i>Categories</i>	<i>Men</i>		<i>Women</i>	
		<i>OR</i>	<i>95% CI</i>	<i>OR</i>	<i>95% CI</i>
Co-worker social support <sup>a</sup>	Low Support				
	Moderate support	1.58	0.95-2.64	1.29	0.86-1.92
	High Support	2.16	1.41-3.31	1.07	0.71-1.61
FABQ-Work <sup>b</sup>	Low FAB	3.63	2.19-6.03	1.90	1.23-2.94
	Moderate FAB	1.41	0.92-2.14	1.54	1.02-2.33
	High FAB				
SHC_Total <sup>b</sup>	Low SHC	2.46	1.53-3.95	1.87	1.22-2.88
	Moderate SHC	1.12	0.74-1.70	1.02	0.68-1.53
	High SHC				
ODI <sup>b</sup>	Low disability	2.07	1.32-3.25	1.82	1.20-2.77
	Moderate disability	2.24	1.45-3.47	0.98	0.65-1.46
	High disability				
HADS <sup>c</sup>	<sup>I</sup> HADS-A score <8	1.73	1.32-2.29	1.22	0.93-1.60
	<sup>II</sup> HADS D score <8	1.63	1.24-2.14	1.30	1.002-1.69
	<sup>III</sup> HADS-A & HADS-D score <8	1.67	1.28-2.16	1.27	0.99-1.63

<sup>a</sup> reference group = Low support

<sup>b</sup> reference group; FABQ-Work = high FAB, SHC\_Total = High SHC, ODI = High disability

<sup>c</sup> reference group = I - Anxiety, II - Depression, III - Comorbid anxiety and depression

**Table 6.** Prospective effects of high expectancies of returning to work on RTW at 12 months. Multivariable logistic regression analyses with cumulative adjustments for potential confounding factors.

<i>Adjustment Variables</i>	Men		Women	
	<i>OR</i>	<i>95% CI</i>	<i>OR</i>	<i>95% CI</i>
No adjustment	5.38	2.81-10.33	4.80	2.47-9.35
+ sociodemographic factors <sup>a</sup>	4.86	2.43-9.73	4.44	2.20-8.97
+ FABQ-Work, SHC_total, ODI	4.60	2.18-9.67	3.29	1.57-6.87
+ Anxiety, depression and comorbid anxiety and depression	4.82	2.25-10.33	3.11	1.46-6.63
+ Co-worker social support	4.77	2.21-10.25	<sup>b</sup>	<sup>b</sup>

<sup>a</sup> highest completed education, smoking status

<sup>b</sup> not included

Note: Reference group = low or some expectancies of RTW



**Table 7.** Prospective effects of high expectancies of returning to work on RTW at 12 months. Multivariable logistic regression analyses with cumulative adjustments for potential confounding factors.

<i>Adjustment Variables</i>	Men		Women	
	<i>OR</i>	<i>95% CI</i>	<i>OR</i>	<i>95% CI</i>
No adjustment	4.24	1.59-11.32	3.60	1.07-12.08
+ sociodemographic factors <sup>a</sup>	4.24	1.47-12.29	2.94	0.83-10.41
+ FABQ-Work, SHC_total, ODI	3.39	1.04-11	1.63	0.42-6.33
+ Anxiety, depression and comorbid anxiety and depression	3.25	0.99-10.68	1.43	0.36-5.73
+ Co-worker social support	3.29	0.97-10.58	<sup>b</sup>	<sup>b</sup>

<sup>a</sup> highest completed education, smoking status

<sup>b</sup> not included

Note: Reference group = do not know

## Appendix A. Approval from the National Committees for Research Ethics in Norway.



UNIVERSITETET I BERGEN  
Regional komité for medisinsk forskningsetikk, Vest-Norge (REK Vest)

Professor Hege Randi Eriksen  
Unifob Helse  
Christies gt 12  
5015 Bergen

Deres ref	Vår ref	Dato
	2007/6047-096.07/anøl	04.05.07

### Ad. prosjekt: Et randomisert og kontrollert multisenterstudie av effekten av kognitiv atferdsterapi og selolje hos pasienter med kroniske ryggplager (096.07)

Det vises til din søknad om etisk vurdering datert 12.04.07. REK Vest vurderte studien i møte den *26/4 07*

Komiteen mener dette er et ambisiøst prosjekt med mange variabler.

En har noen merknader.

Informasjonsskrivet må omarbeides. I andre avsnitt må, på grunn av ledende karakter, siste setning strykes. I femte avsnitt bør en vurdere å be deltakeren beskrive medikamentbruk, sykefravær og lignende direkte via spørreskjemaene. Det åttende avsnittet må strykes i sin helhet da alle laboratorier tar slike prøver rutinemessig ved uhell.

Studien er da endelig klarert fra denne komité sin side.

Vi ønsker dere lykke til med gjennomføringen og minner om at komiteen setter pris på en sluttrapport, eventuelt en kopi av trykt publikasjon når dette foreligger.

Med vennlig hilsen

  
Jon Lekven  
leder

  
Anne Berit Øimheim  
sekretær

Postadresse  
Postboks 7804  
5020 Bergen

rek-vest@uib.no  
www.etikkom.no/REK  
Org no. 874 789 542

Regional komité for medisinsk  
forskningsetikk, Vest-Norge  
Telefon 55 97 84 97 / 98 / 99

Besøksadresse  
Haukeland  
Universitetssykehus

## Appendix B. Approval from the Norwegian Social Science Data Services

Norsk samfunnsvitenskapelig datatjeneste AS  
NORWEGIAN SOCIAL SCIENCE DATA SERVICES



Harald Hårfagres gate 29  
N-5007 Bergen  
Norway  
Tel: +47-55 58 21 17  
Fax: +47-55 58 96 50  
nsd@nsd.uib.no  
www.nsd.uib.no  
Org.nr. 985 321 884

Hege Randi Eriksen  
Unifob helse  
Christiesgate 13  
5015 BERGEN

Vår dato: 03.01.2008

Vår ref: 17889 / 2 / AMS

Deres dato:

Deres ref:

### TILRÅDING AV BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 21.11.2007. Meldingen gjelder prosjektet:

17889

*A Randomized Controlled Multicenter Trial of a Brief Intervention (BI) Versus a BI Plus Cognitive Behavioral Treatment (CBT) Versus a BI Plus Nutritional Supplementation for Patients with Long-Lasting Muscle and Back Pain*

Behandlingsansvarlig  
Daglig ansvarlig

UNIFOB AS, ved institusjonens overste leder  
Hege Randi Eriksen

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, eventuelle kommentarer samt personopplysningsloven/-helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, [http://www.nsd.uib.no/personvern/melding/pvo\\_endrings skjema.cfm](http://www.nsd.uib.no/personvern/melding/pvo_endrings skjema.cfm). Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://www.nsd.uib.no/personvern/register/>.

Personvernombudet vil ved prosjektets avslutning, 31.12.2020, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

  
Bjørn Henrichsen

  
Anne-Mette Somby

Kontaktperson: Anne-Mette Somby tlf: 55 58 24 10  
Vedlegg: Prosjektvurdering

Avdelingskontorer / District Offices:

OSLO: NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no

TRONDHEIM: NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. kyrre.svarva@svt.ntnu.no

TROMSØ: NSD, SVF, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 36. nsdmaa@sv.uit.no



Personvernombudet finner at behandlingen kan finne sted med hjemmel i personopplysningsloven §§ 8 første ledd og 9 a (samtykke). Det skal registreres sensitive opplysninger om helse jf. pol § 2 pkt. 8 c.

Prosjektet skal kartlegge effekt på ryggplager av to typer kognitiv behandling og to typer kosttilskudd. Det skal i tillegg innhentes opplysninger om deltakerne fra ulike registre og fra spørreskjema. Prosjektet er et samarbeid mellom NAV, Unifob helse, Universitetet i Bergen og ulike sykehus/klinikker. Unifob helse er behandlingsansvarlig institusjon, de øvrige institusjonene er databehandlere jf. pol § 15. Ombudet legger til grunn at det foreligger databehandleravtale mellom institusjonene.

Utvalget skal trekkes av NAV, og rekrutteres ved at NAV sender ut invitasjon til deltakelse til personer som er sykemeldte på grunn av rygglidelser. Informasjonsskrivene som er utformet vurderes som tilfredstillende etter revisjon jf. e-post 05.12.2007 og 20.12.2007.

Datamaterialet skal anonymiseres 31.12.2020. Det innebærer at direkte og indirekte personidentifiserende opplysninger skal slettes, grovkategoriseres eller omkodes. Dersom det blir aktuelt å gjennomføre oppfølgingsstudier skal utvalget kontaktes på nytt, og det må sendes melding til personvernombudet.

Det skal gjennomføres en registerstudie i tilknytning til prosjektet som ikke omfatter dette utvalget, og som ikke er vurdert i denne meldingen. Registerstudien skal meldes til personvernombudet.

Prosjektet er godkjent av Regional komité for medisinsk forskningsetikk, (REK Vest). Ombudet forutsetter at opprettelse av forskningsbiobank samt utførsel av biologisk materiale til utlandet godkjennes av Sosial-og helsedirektoratet.

## Appendix C. The CINS Questionnaire.

ID. NR:

# Spørreskjema om Ryggplager og helse



## Ryggplager og helse

Hensikten med dette forskningsprosjektet er å kartlegge effekt på ryggplager av to typer kognitiv behandling og to typer kosttilskudd. Undersøkelsen skjer med bistand fra NAV i et samarbeid mellom sykehus/klinikker forskjellige steder i Norge, Unifob helse og Universitetet i Bergen. Ansvarlig for prosjektet er professor Hege R. Eriksen ved Universitetet i Bergen/Unifob helse.

For å kunne gjøre dette vil det være nødvendig å spørre ganske grundig om hvordan du har det nå før du starter med behandling. Vi ber deg bl.a. svare på spørsmål om ryggsmarter, helseplager, utdanning, arbeidsevne og funksjon. Du vil bli bedt om å fylle ut et mindre spørreskjema etter 3, 6 og 12 måneder.

Det er mange spørsmål i skjemaet. Det er ingen riktige eller gale svar. Les spørsmålene nøye og forsøk å beskrive det som passer best for deg. Bruk magefølelsen og svar det som umiddelbart virker som det riktige svaret for deg. Noen spørsmål ligner på hverandre. Årsaken til dette er at spørreskjemaet er sammensatt av flere standardiserte spørreskjema brukt i forskning internasjonalt som ikke kan endres på. Det er derfor viktig at dere besvarer alle spørsmålene.

Det utfylte skjemaet er konfidensielt. Resultatene vil ikke bli presentert på en måte som gjør det mulig å identifisere den enkelte svargiver. Alle som er knyttet til prosjektet er bundet av taushetsplikt.

Dersom du har spørsmål om prosjektet, ta kontakt med oss.

På forhånd tusen takk for hjelpen!

Hege R. Eriksen  
**Prosjektleder**  
Professor/Forskningsdirektør  
Unifob helse/Universitetet i Bergen  
Christies gate 13  
5015 Bergen

### Prosjektmedarbeidere Unifob helse/Universitetet i Bergen

Anette K. Harris  
Tlf. 55 58 39 92  
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Tlf. 55 58 62 33  
[Torill.Tveito@psych.uib.no](mailto:Torill.Tveito@psych.uib.no)

1. **Kjønn** <sub>1</sub> Mann <sub>2</sub> Kvinne

2. **Fødselsår:** 19\_\_\_\_\_

3. **Har du lese og skrivevansker?**

<sub>1</sub> Ja

<sub>2</sub> Nei

Si fra dersom du ønsker  
hjelp til å fylle ut skjema.

4. **Sivilstand**

<sub>1</sub> Ugift

<sub>3</sub> Samboer

<sub>5</sub> Skilt

<sub>2</sub> Gift/partnerskap

<sub>4</sub> Enke-/enkemann

<sub>6</sub> Separert

5. a) **Hvor mange barn har du?** \_\_\_\_\_

b) **Hvor mange barn bor hos deg nå/er i husholdningen?**

Antall 0-3 år: \_\_\_\_\_ 4-7 år: \_\_\_\_\_ 8-16 år: \_\_\_\_\_ over 16 år: \_\_\_\_\_

6. **Hvor mange års skolegang/studier har du til sammen?** \_\_\_\_\_ år  
(tell antall år fra og med første skoleår på barneskole/folkeskole)

7. **Hva slags utdanning har du?** (Sett kryss ved den høyeste utdannelsen du har)

<sub>1</sub> Grunnskolenivå (Barne- og ungdomsskole)

<sub>2</sub> Videregående skole

<sub>3</sub> Universitet/høgskole 1-4 år

<sub>4</sub> Universitet/høgskole mer enn 4 år

<sub>5</sub> Annet

8. **Yrke**

a) **Hva er/var ditt hovedyrke:** \_\_\_\_\_

antall år i yrket \_\_\_\_\_ stillingsprosent: \_\_\_\_\_ %

b) **Type bedrift:** \_\_\_\_\_

- c) **Har du privat uføreforsikring**    <sub>1</sub> Ja    <sub>2</sub> Nei
- d) **Hvilken arbeidstidsordning har du i jobben du nå er sykmeldt fra?**  
<sub>1</sub>Dag    <sub>2</sub>Kveld    <sub>3</sub>Natt    <sub>4</sub>Skiftarbeid
- e) **Regner du med å være sykmeldt så lenge du har vondt i ryggen?**  
<sub>1</sub>Ja    <sub>2</sub>Nei    <sub>3</sub>Vet ikke

**9. Foretrukket behandling**

Som du vet, kan hverken du eller noen på ryggpoliklinikken velge hvilken behandling du vil motta. Vi er likevel interessert å vite om du har spesielt stor tro på en av behandlingene og ville valgt denne dersom du hadde hatt et valg.

JEG FORETREKKER:

	I liten grad	Spiller ingen rolle	I stor grad
Kort kognitiv behandling	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Lengre kognitiv behandling	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Soyaolje	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
Selolje	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>

**10. Ryggplager i familien**

**Er det noen i din nærmeste familie/ektefelle som har hatt lignende ryggplager som deg?**

- <sub>1</sub> Ja    ektefelle\_\_    søsken\_\_    foreldre\_\_    barn\_\_    andre \_\_\_\_\_
- <sub>2</sub> Nei
- <sub>3</sub> Vet ikke

**11. Tro på bedring.**

**I hvor stor grad tror du de følgende har tro på at du vil komme tilbake i jobb?**

(Sett ring rundt tallet)

	I liten grad	I noen grad	I stor grad	Vet ikke
1. Du selv	1	2	3	4
2. Familie	1	2	3	4
3. Arbeidskolleger	1	2	3	4
4. Behandlende lege	1	2	3	4

**12. Sett et kryss ved det utsagnet som passer best for deg:**

- <sub>1</sub> Jeg kommer til å komme tilbake i jobb, men jeg vet ikke når
- <sub>2</sub> Jeg har planlagt å komme tilbake i jobb om ..... uker
- <sub>3</sub> Jeg har ingen planer om å komme tilbake til jobb



### **Behandling**

13. **Hvor lenge har du hatt ryggplagene dine?** Antall år.....

b) **Har du tidligere blitt operert for dine ryggplager? (Hvis ja, oppgi årstall)**

<sub>0</sub> Nei

<sub>1</sub> Ja, prolapsoperasjon           År: \_\_\_\_\_

<sub>2</sub> Ja, avstivningsoperasjon       År: \_\_\_\_\_

<sub>3</sub> Ja, operert for spinal stenose   År: \_\_\_\_\_

14. **Lege**

**Er du fornøyd med den informasjonen du har fått fra fastlegen om ryggplagene dine?**

1       2       3       4       5

Svært misfornøyd                               Svært fornøyd

15. **Fysioterapi**

a) **Har du vært til behandling hos fysioterapeut for dine nåværende ryggplager?**

<sub>1</sub> Ja            Antall behandlinger .....

<sub>2</sub> Nei (*gå videre til spm. 16*)

b) **Hvilken effekt synes du denne behandlingen hadde på dine ryggplager?**

<sub>1</sub> Jeg ble bedre

<sub>2</sub> Ingen effekt

<sub>3</sub> Jeg ble verre

16. **Kiropraktikk**

a) **Har du vært til behandling hos kiropraktor for dine nåværende ryggplager?**

<sub>1</sub> Ja, antall behandlinger: .....

<sub>2</sub> Nei (*gå videre til spm. 17*)

b) **Hvilken effekt synes du denne behandlingen hadde på dine ryggplager?**

<sub>1</sub> Jeg ble bedre

<sub>2</sub> Ingen effekt

<sub>3</sub> Jeg ble verre

**17. Annen behandling** (for eksempel naprapat, osteopat, homeopat, akupunktur el. lign.)

a) **Har du fått annen behandling for dine nåværende ryggplager?**

<sub>1</sub> Ja, antall behandlinger: .....

<sub>2</sub> Nei (gå videre til spm. 18)

b) **Hvis ja, hvilken effekt synes du denne behandlingen hadde på dine ryggplager?**

<sub>1</sub> Jeg ble bedre

<sub>2</sub> Ingen effekt

<sub>3</sub> Jeg ble verre

**18. Jobbsikkerhet**

a) **Har du et arbeid å gå tilbake til nå?**

<sub>1</sub> Ja (gå videre til spm. 19)

<sub>2</sub> Nei

b) **Hvis nei, hvor gode muligheter tror du at det er for å få arbeid etter endt behandling?**

<sub>1</sub> Svært gode

<sub>2</sub> Meget gode

<sub>3</sub> Gode

<sub>4</sub> Mindre gode

<sub>5</sub> Dårlige

**19. Arbeidssituasjon/arbeidsmiljø**

(Sett ring rundt tallet som passer)

**I jobben du er sykmeldt fra:**

	Nesten hele tiden	Ca. ¾ av tiden	Ca. ½ av tiden	Ca. ¼ av tiden	Svært lite	Nei/ aldri
a) arbeidet du med gjentatte og ensidige bevegelse?.....	1	2	3	4	5	6
b) arbeidet du i stillinger som gav konstant belastning på ryggen?.....	1	2	3	4	5	6
c) arbeidet du med hendene løftet i høyde med skuldrene eller høyere? .....	1	2	3	4	5	6
d) arbeidet du med stillesittende arbeid?.....	1	2	3	4	5	6

## 20. Krav/kontroll

### Vedrørende arbeidet du er sykmeldt fra

*Kryss av på alle spørsmålene under.*

	Ja, ofte 1.	Ja, noen ganger 2.	Nei, sjelden 3.	Nei, så godt som aldri 4.
1. Krever arbeidet ditt at du arbeider meget raskt?				
2. Krever arbeidet ditt at du arbeider meget hardt?				
3. Krever arbeidet ditt for stor arbeidsinnsats?				
4. Har du tilstrekkelig tid til å utføre arbeidsoppgavene dine?				
5. Forekommer det ofte motstridende krav i arbeidet ditt?				
6. Får du lære nye ting i ditt arbeid?				
7. Krever ditt arbeid dyktighet?				
8. Krever ditt arbeid oppfinnsomhet/kreativitet?				
9. Innebærer ditt arbeid at du gjør samme ting om og om igjen?				
10. Har du frihet til å bestemme hvordan ditt arbeid skal utføres?				
11. Har du frihet til å bestemme hva som skal utføres i ditt arbeid?				

### Positive og psykososiale faktorer i arbeidsmiljøet

*Kryss av det som passer best for alle utsagnene under.*

	Stemmer helt 1.	Stemmer ganske bra 2.	Stemmer ikke særlig bra 3.	Stemmer ikke 4.
1. Det er rolig og behagelig stemning på min arbeidsplass.				
2. Det er godt samhold.				
3. Mine arbeidskamerater stiller opp for meg.				
4. Det er forståelse for at jeg kan ha en dårlig dag.				
5. Jeg kommer godt overens med mine overordnede.				
6. Jeg trives bra med mine arbeidskamerater.				

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**21. Har du vært utsatt for mobbing i jobben du er sykmeldt fra?**

- <sub>1</sub> Aldri   <sub>2</sub> En sjelden gang   <sub>3</sub> Av og til   <sub>4</sub> 1 gang i uken   <sub>5</sub> Flere ganger i uken

**22. JOBBTILFREDSHET**

**a. Alt i alt, hvor tilfreds er du med jobben du er sykmeldt fra?**

- <sub>1</sub> Svært misfornøyd   <sub>3</sub> Verken misfornøyd eller fornøyd  
<sub>2</sub> Misfornøyd   <sub>4</sub> Fornøyd   <sub>5</sub> Svært fornøyd

**b. Hvis du kunne velge å gå inn i hvilken som helst jobb, hva ville du velge?**

- <sub>1</sub> Ville foretrekke en annen jobb enn den jeg nå er sykmeldt fra.  
<sub>2</sub> Ville ikke jobbe i det hele tatt.  
<sub>3</sub> Ville ønske den jobben jeg nå er sykmeldt fra.

**c. Med det du vet i dag, ville du tatt den jobben du nå er sykmeldt fra?**

- <sub>1</sub> Jeg ville uten tvil takke nei.  
<sub>2</sub> Jeg ville tenke meg om to ganger.  
<sub>3</sub> Jeg ville uten å nøle ta den samme jobben.

**d. Svarer jobben du er sykmeldt fra til forventningene du hadde da du tok den?**

- <sub>1</sub> Ikke særlig lik forventningene.  
<sub>2</sub> Litt lik forventningene.  
<sub>3</sub> Svært lik forventningene.

**e. Hvis en god venn av deg var interessert i å ta en jobb tilsvarende jobben du er sykmeldt fra for samme arbeidsgiver, hva ville du råde ham eller henne til?**

- <sub>1</sub> Jeg ville fraråde min venn det.  
<sub>2</sub> Jeg ville vært i tvil om å anbefale det.  
<sub>3</sub> Jeg ville anbefale det på stedet.

### 23. OPPLEVD STRESS

Vennligst se på spørsmålene under og svar hvor ofte du har følt det slik **i løpet av den siste måneden**

	Aldri	Nesten aldri	Noen ganger	Ganske ofte	Svært ofte
1 Hvor ofte har du blitt oppskaket av at noe uventet skjedde? .....	1	2	3	4	5
2 Hvor ofte har du følt at du ikke var i stand til å kontrollere de viktige tingene i livet ditt? .....	1	2	3	4	5
3 Hvor ofte har du følt deg nervøs og "stresset"? .....	1	2	3	4	5
4 Hvor ofte har du følt deg trygg på dine evner til å takle dine personlige problemer? .....	1	2	3	4	5
5 Hvor ofte har du følt at det går din vei? .....	1	2	3	4	5
6 Hvor ofte har du ikke klart å mestre alt du skulle gjøre? .....	1	2	3	4	5
7 Hvor ofte har du klart å kontrollere irritasjonene i livet ditt? .....	1	2	3	4	5
8 Hvor ofte har du følt deg på topp? .....	1	2	3	4	5
9 Hvor ofte har du vært sint på grunn av ting som har ligget utenfor din kontroll? .....	1	2	3	4	5
10 Hvor ofte har du følt at vanskelighetene har tårnet seg opp så du ikke har klart å hankses med dem? ....	1	2	3	4	5

Perceived Stress Scale, Cohen 1983

### 24. Har du på noe tidspunkt vært påført vold av en eller flere andre personer? (Uhell og vanlige barneslagsmål regnes ikke med)

<sub>1</sub> Ja      <sub>2</sub> Nei (gå videre til spm. 25)

#### a) I tilfelle vold, hva slags vold har du vært utsatt for?

<sub>1</sub> Blitt slått      <sub>3</sub> Seksuell vold eller overgrep  
<sub>2</sub> Ran/Overfall      <sub>4</sub> Frihetsberøvelse      <sub>5</sub> Alvorlige trusler

#### b) I tilfelle du har vært utsatt for vold, hvor ofte har dette skjedd?

<sub>1</sub> En enkelt hendelse      <sub>3</sub> Regelmessig i 1 – 12 måneder  
<sub>2</sub> En eller flere enkelthendelser      <sub>4</sub> Regelmessig i over ett år

## LIVSSTIL

### 25. Fysisk form

#### a) Hvordan vil du beskrive din fysiske form?

- <sub>1</sub> Meget god      <sub>3</sub> Middels  
<sub>2</sub> God      <sub>4</sub> Dårlig      <sub>5</sub> Meget dårlig

#### b) Er din fysiske form dårligere enn vanlig?

- <sub>1</sub> Ja      <sub>2</sub> Nei

### 26. Har du i løpet av det siste året før den nåværende sykmeldingsperioden drevet regelmessig med fysisk trening (mer enn 30 min. hver gang, og slik at du svetter)?

- <sub>1</sub> Ja      <sub>2</sub> Nei

	Tid	
	Totalt antall timer per uke	
	<b>Hvis Ja</b>	
Turgåing		
Kondisjonstrening (for eksempel jogging, aerobic, trimparti, sykling, svømming, ballspill, ski)		
Styrketrening		
Annet		

### 27. Driver du nå regelmessig med fysisk trening (mer enn 30 min. hver gang, og slik at du svetter)?

- <sub>1</sub> Ja      <sub>2</sub> Nei

	Tid	
	Totalt antall timer per uke	
	<b>Hvis Ja</b>	
Turgåing		
Kondisjonstrening (for eksempel jogging, aerobic, trimparti, sykling, svømming, ballspill, ski)		
Styrketrening		
Annet		

**28. Hvor ofte røyker du?**

- <sub>1</sub> Ikke i det hele tatt (*gå videre til spm. 29*)  
<sub>2</sub> Sjeldnere enn en gang i uken  
<sub>3</sub> Hver uke  
<sub>4</sub> Hver dag

Hvis du røyker hver dag, hvor mange sigaretter røyker du vanligvis per dag? (Både ferdigsigaretter og hjemmerullede)

Antall \_\_\_\_\_

Hvis du røyker hver uke, hvor mange sigaretter røyker du vanligvis per uke? (Både ferdigsigaretter og hjemmerullede)

Antall \_\_\_\_\_

**29. Hvor ofte bruker du snus?**

- <sub>1</sub> Ikke i det hele tatt (*gå videre til spm. 30*)  
<sub>2</sub> Sjeldnere enn en gang i uken  
<sub>3</sub> Hver uke  
<sub>4</sub> Hver dag

Hvis du bruker snus, omtrent hvor mange bokser snus bruker du per uke?

Antall \_\_\_\_\_

**30. Omtrent hvor ofte har du i løpet av det siste året drukket alkohol?**

- <sub>1</sub> Har aldri drukket alkohol (*gå videre til spm. 31*)  
<sub>2</sub> Har ikke drukket alkohol siste år (*gå videre til spm. 31*)  
<sub>3</sub> Noen få ganger siste år  
<sub>4</sub> Ca 1 gang i mnd  
<sub>5</sub> 2-3 ganger per mnd  
<sub>6</sub> Ca 1 gang i uken  
<sub>7</sub> 2-3 ganger i uken  
<sub>8</sub> 4-7 ganger i uken

Når du drikker alkohol, hvor mange glass og/eller drinker drikker du vanligvis?

Antall \_\_\_\_\_

Omtrent hvor mange ganger i løpet av det siste året, har du drukket så mye som minst 5 glass og/eller drinker i løpet av ett døgn?

Antall \_\_\_\_\_

Når du drikker, drikker du da vanligvis (sett ett eller flere kryss)

- Øl  
 Vin  
 Brennevin

**31. Koffeininntak**

Antall kopper kaffe med koffein pr. dag (1 kopp = ca. 2 dl): \_\_\_\_\_kopper

Hvor mye te drikker du?

Antall kopper te (ikke urte/grønn) pr. dag (1 kopp = ca. 2 dl): \_\_\_\_\_kopper

Hvor mye annen koffeinholdig drikke drikker du?

Antall dl annen koffeinholdig drikke pr. dag (for eksempel Coca cola, Cola light, Pepsi, Battery, Urge, Burn): \_\_\_\_\_ dl

**32. Søvn**

**a) Hvordan har du sovet de tre siste månedene?**

<sub>1</sub> Meget godt

<sub>3</sub> Middels

<sub>2</sub> Godt

<sub>4</sub> Dårlig

<sub>5</sub> Meget dårlig

**b) Hvor mange timer sover du vanligvis per døgn? Ca. \_\_\_\_\_timer**

**c) Hvor mange timer søvn trenger du per døgn (hvor mange timer ville du sove hvis du hadde muligheten til å sove så lenge som du trengte)? Fyll ut:**

Jeg trenger \_\_\_\_\_ timer og \_\_\_\_\_ minutter søvn per døgn.

**33. Hvordan vil du beskrive din egen helse?**

<sub>1</sub> Meget god

<sub>3</sub> Middels

<sub>2</sub> God

<sub>4</sub> Dårlig

<sub>5</sub> Meget dårlig

**34. Medikamenter**

**a) Bruker du medisiner?**

<sub>1</sub> Ja, daglig

<sub>2</sub> Ja, ved behov

<sub>3</sub> Nei (gå videre til spm. 36)

Hvis du trenger mer plass enn det du finner på neste side for å skrive hvilke medisiner du bruker, be om ekstra skjema. Hormontilskudd, p-piller og lignende vil vi gjerne også at du registrerer.



b) Hvilke medisiner bruker du hver dag?

Navn (Hva heter medisinen)	Styrke (antall mg i hver tablett)	Dose (antall tabletter pr. døgn)
For eksempel: Ibux	200 mg	1 tablett 3 ganger daglig (1 x 3)

c) Hvilken effekt synes du disse medisinerne har på dine plager?

- <sub>1</sub> Jeg blir bedre   
 <sub>2</sub> Ingen effekt   
 <sub>3</sub> Jeg blir verre   
 <sub>4</sub> Vet ikke

d) Hvilke medisiner bruker du ved behov?

Navn (Hva heter medisinen)	Styrke (antall mg i hver tablett)	Dose (antall tabletter)	Hvor ofte bruker du vanligvis denne medisinen?
For eksempel: Ibux	200 mg	1 tablett inntil 3 ganger daglig ved behov (1 x 3 v. beh.)	1 – 2 ganger pr. uke (1 – 2/uke)

e) Hvilken effekt synes du disse medisinerne har på dine plager?

- <sub>1</sub> Jeg blir bedre   
 <sub>2</sub> Ingen effekt   
 <sub>3</sub> Jeg blir verre   
 <sub>4</sub> Vet ikke

35.

### **Helseproblemer siste 30 dogn**

På den neste siden nevnes noen vanlige helseplager. Vi vil be deg om å vurdere hvert enkelt problem/symptom, og oppgi **i hvilken grad du har vært plaget** av dette i løpet av de siste tretti dogn, og **antall dager** du har vært plaget.

#### **Eksempel**

Hvis du føler at du har vært *endel* plaget med forkjølelse/influenza siste måned, og varigheten av plagene var *ca. en uke*, fylles dette ut på følgende måte:

Sett ring rundt tallet som passer best.

Nedenfor nevnes noen alminnelige helseproblemer	Ikke plaget	Litt plaget	Endel plaget	Alvorlig plaget	Antall dager plagene varte (omtrent)
1. Forkjølelse, influensa	0	1	(2)	3	7

**NB! Det er viktig at du fyller ut både *hvor plaget du har vært*, og *omtrent antall dager du har vært plaget siste tretti dogn*.**

SHC (Eriksen et al., 1999)

### **Helseproblemer siste 30 dagn**

Nedenfor nevnes noen alminnelige helseproblemer (sett ring rundt tallet som passer)	Ikke plaget	Litt plaget	Endel plaget	Alvorlig plaget	Antall dager plagene varte (omtrent)
1. Forkjølelse, influensa.....	0	1	2	3	.....
2. Hoste, bronkitt.....	0	1	2	3	.....
3. Astma .....	0	1	2	3	.....
4. Hodepine .....	0	1	2	3	.....
5. Nakkesmerter .....	0	1	2	3	.....
6. Smerter øverst i ryggen .....	0	1	2	3	.....
7. Smerter i korsrygg .....	0	1	2	3	.....
8. Smerter i armer.....	0	1	2	3	.....
9. Smerter i skuldre .....	0	1	2	3	.....
10. Migrene.....	0	1	2	3	.....
11. Hjerterbank, ekstraslag.....	0	1	2	3	.....
12. Brystsmerter .....	0	1	2	3	.....
13. Pustevansker .....	0	1	2	3	.....
14. Smerter i føttene ved anstrengelser	0	1	2	3	.....
15. Sure oppstøt, "halsbrann".....	0	1	2	3	.....
16. Sug eller svie i magen .....	0	1	2	3	.....
17. Magekatarr, magesår .....	0	1	2	3	.....
18. Mageknip .....	0	1	2	3	.....
19. «Luftplager».....	0	1	2	3	.....
20. Løs avføring, diaré .....	0	1	2	3	.....
21. Forstoppelse .....	0	1	2	3	.....
22. Eksem .....	0	1	2	3	.....
23. Allergi .....	0	1	2	3	.....
24. Hetetokter .....	0	1	2	3	.....
25. Søvnproblemer .....	0	1	2	3	.....
26. Tretthet.....	0	1	2	3	.....
27. Svimmelhet .....	0	1	2	3	.....
28. Angst .....	0	1	2	3	.....
29. Nedtrykt, depresjon.....	0	1	2	3	.....

Utrecht Coping List (UCL):

36.

**Takling av problemer og ubehagelige hendelser**

Folk flest har forskjellige måter å reagere på når de blir konfrontert med eller står foran problemer og ubehagelige hendelser. Reaksjonens art er ofte avhengig av problemets art, og av hvor alvorlig problemet er, eller av tidspunktet problemet oppstår på.

På de neste sidene finner du flere beskrivelser som sier noe om forskjellige måter du kunne tenke deg å reagere på når du står ovenfor et slikt problem. Vær vennlig å angi hvor ofte du ville handle på den måten som er beskrevet i setningen. Dette gjør du ved å sette en ring rundt det tallet som passer. Det er ingen riktige eller gale svar.

		Sjelden eller aldri	Noen ganger	Ofte	Veldig ofte
1.	Jeg trekker meg helt tilbake fra andre mennesker .....	1	2	3	4
2.	Jeg ser mørkt på situasjonen .....	1	2	3	4
3.	Jeg gir etter for å unngå slike vanskelige situasjoner .....	1	2	3	4
4.	Jeg forsoner meg med situasjonen .....	1	2	3	4
5.	Jeg griper direkte inn i problemet .....	1	2	3	4
6.	Jeg ser på problemet som en utfordring .....	1	2	3	4
7.	Jeg venter og ser hva som da vil skje .....	1	2	3	4
8.	Jeg finner ut alt om problemet .....	1	2	3	4
9.	Jeg forsøker å unngå vanskelige situasjoner så meget som mulig .....	1	2	3	4
10.	Jeg prøver å forholde meg rolig i vanskelige situasjoner	1	2	3	4
11.	Jeg vurderer forskjellige løsninger på problemet. ....	1	2	3	4
12.	Jeg angriper problemet direkte .....	1	2	3	4
13.	Jeg bekymrer meg om fortiden .....	1	2	3	4
14.	Jeg prøver å komme meg vekk fra situasjonen .....	1	2	3	4
15.	Jeg tar beroligende midler .....	1	2	3	4
16.	Jeg søker tilflukt i fantasier .....	1	2	3	4
17.	Jeg lager mange alternative planer for å takle problemet .....	1	2	3	4
18.	Jeg er fullstendig oppslukt av problemet .....	1	2	3	4
19.	Jeg lar problemene hope seg opp .....	1	2	3	4
20.	Jeg lar problemene løse seg selv .....	1	2	3	4
21.	Jeg bekymrer meg ikke, tingene ordner seg som regel...	1	2	3	4
22.	Jeg føler meg ute av stand til å gjøre noe .....	1	2	3	4

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37. Her er en figur som skal forestille livets stige. Øverste trinnet representerer det beste liv du kan tenke deg, nederste trinn er det verste liv du kan tenke deg.

På hvilket trinn synes du at du står akkurat nå?	_  _	10
På hvilket trinn stod du for ett år siden?	_  _	9
Hvilket trinn tror du at du vil stå på om ett år?	_  _	8
		7
		6
		5
		4
		3
		2
		1

38. **SOSIAL STØTTE**

Vi er interessert i typen oppmuntring, assistanse og samarbeid du mottar fra den personen som er viktigst for deg når du trenger støtte for å takle ryggplagene dine (for eksempel din lege, en god venn eller din ektefelle/partner).

Hvert spørsmål beskriver en måte mennesker kan støtte deg på. Markér hvor typisk hvert utsagn er for den støtten **du** mottar. Vær snill å svare slik at vi kan se hvilke som er virkelig typiske og hvilke som ikke er så typiske for støtten du mottar for ryggplagene dine. **Sett ring rundt tallet som best markerer hvor typisk utsagnet er for typen av støtte du mottar fra din støtteperson.**

Støttepersonen jeg har valgt er:

- Legen min       Ektefellen/partneren min       Andre.....

		Slett ikke typisk				Svært typisk
1	Viser interesse for hvordan du har det.....	1	2	3	4	5
2	Løser problemer for deg .....	1	2	3	4	5
3	Spør om du trenger hjelp .....	1	2	3	4	5
4	Tar seg av dine problemer .....	1	2	3	4	5
5	Gjør det lett for deg å snakke om alt som du synes er viktig.....	1	2	3	4	5
6	Sier at du skal være stolt av deg selv.....	1	2	3	4	5
7	Samarbeider med deg for å få ting gjort.....	1	2	3	4	5
8	Presser deg til å gjøre ting .....	1	2	3	4	5

	Slett ikke typisk				Svært typisk
9 Spør deg hvordan du har det.....	1	2	3	4	5
10 Gir deg klare råd om hvordan du skal takle problemer.....	1	2	3	4	5
11 Gir deg informasjon slik at du forstår hvorfor du gjør ting .....	1	2	3	4	5
12 Forteller deg hva du skal gjøre .....	1	2	3	4	5
13 Er tilgjengelig for samtale når som helst.....	1	2	3	4	5
14 Peker på skadelige eller tåpelige måter du ser på ting på .....	1	2	3	4	5
15 Tilbyr en rekke forslag .....	1	2	3	4	5
16 Lar deg ikke dvele ved opprørende tanker .....	1	2	3	4	5

(Fisher et al... 2004)

### 39.

**Vi vil gjerne vite om du har følt deg sliten, svak eller i mangel av overskudd den siste måneden. Vennligst besvar ALLE spørsmålene ved å krysse av for det svaret du synes passer best for deg. Vi ønsker at du besvarer alle spørsmålene selv om du ikke har hatt slike problemer. Vi spør om hvordan du har følt deg i det siste og ikke om hvordan du følte deg for lenge siden. Hvis du har følt deg sliten lenge, ber vi om at du sammenligner deg med hvordan du følte deg sist du var bra.**

(Sett ett kryss på hver linje)

Har du problemer med at du føler deg sliten?	<input type="checkbox"/> Mindre enn vanlig	<input type="checkbox"/> Ikke mer enn vanlig	<input type="checkbox"/> Mer enn vanlig	<input type="checkbox"/> Mye mer enn vanlig
Trenger du mer hvile?	<input type="checkbox"/> Nei, mindre enn vanlig	<input type="checkbox"/> Ikke mer enn vanlig	<input type="checkbox"/> Mer enn vanlig	<input type="checkbox"/> Mye mer enn vanlig
Føler du deg søvnløs eller døsig?	<input type="checkbox"/> Mindre enn vanlig	<input type="checkbox"/> Ikke mer enn vanlig	<input type="checkbox"/> Mer enn vanlig	<input type="checkbox"/> Mye mer enn vanlig
Har du problemer med å komme igang med ting?	<input type="checkbox"/> Mindre enn vanlig	<input type="checkbox"/> Ikke mer enn vanlig	<input type="checkbox"/> Mer enn vanlig	<input type="checkbox"/> Mye mer enn vanlig
Mangler du overskudd?	<input type="checkbox"/> Ikke i det hele tatt	<input type="checkbox"/> Ikke mer enn vanlig	<input type="checkbox"/> Mer enn vanlig	<input type="checkbox"/> Mye mer enn vanlig
Har du redusert styrke i musklene dine?	<input type="checkbox"/> Ikke i det hele tatt	<input type="checkbox"/> Ikke mer enn vanlig	<input type="checkbox"/> Mer enn vanlig	<input type="checkbox"/> Mye mer enn vanlig

Føler du deg svak?  Mindre enn vanlig  Som vanlig  Mer enn vanlig  Mye mer enn vanlig

Har du vansker med å konsentrere deg?  Mindre enn vanlig  Som vanlig  Mer enn vanlig  Mye mer enn vanlig

Forsnakker du deg i samtaler?  Mindre enn vanlig  Ikke mer enn vanlig  Mer enn vanlig  Mye mer enn vanlig

Er det vanskeligere å finne det rette ordet?  Mindre enn vanlig  Ikke mer enn vanlig  Mer enn vanlig  Mye mer enn vanlig

Hvordan er hukommelsen din?  Bedre enn vanlig  Ikke verre enn vanlig  Verre enn vanlig  Mye verre enn vanlig

FQ

**40.**

Vær vennlig å besvare hvert spørsmål med å sette en ring rundt «ja» eller «nei». Det er ingen riktige eller gale svar, og det er ingen «lure-spørsmål». Arbeid raskt med spørsmålene, og bruk ikke for lang tid på å tenke på den eksakte meningen med spørsmålene. Vennligst besvar alle spørsmålene.

1	Går humøret ditt ofte opp og ned?	Ja	Nei
2	Føler du deg «helt elendig» uten grunn?	Ja	Nei
3	Har du lett for å bli irritert?	Ja	Nei
4	Blir følelsene dine lett såret?	Ja	Nei
5	Har du ofte følelsen av å «ha fått nok»?	Ja	Nei
6	Vil du beskrive deg selv som en nervøs person?	Ja	Nei
7	Er du en bekymret person? . .	Ja	Nei
8	Ville du beskrive deg som anspent eller overnervøs?	Ja	Nei
9	Bekymrer du deg for lenge etter en pinlig opplevelse?	Ja	Nei
10	Plages du av «nervene»?	Ja	Nei
11	Føler du deg ofte ensom?	Ja	Nei
12	Er du ofte bekymret over å ha skyldfølelse?	Ja	Nei

EPQ-N

#### 41. SMERTE, FYSISK AKTIVITET OG JOBB

Her er noe av det som andre har fortalt oss om ryggsmertene sine.

Sett ring rundt ett av tallene fra 0 (*helt uenig*) til 6 (*helt enig*) for hvert utsagn for å si hvor mye fysiske aktiviteter som å bøye seg, løfte, gå eller kjøre vil påvirke ryggen din.

	Helt uenig			Usikker			Helt enig
1 Smertene mine ble forårsaket av fysisk aktivitet .....	0	1	2	3	4	5	6
2 Fysisk aktivitet forverrer smertene mine. ....	0	1	2	3	4	5	6
3 Fysisk aktivitet kan skade ryggen min. ....	0	1	2	3	4	5	6
4 Jeg burde ikke utføre fysiske aktiviteter som (kan) forverre smertene mine. ....	0	1	2	3	4	5	6
5 Jeg kan ikke utføre fysiske aktiviteter som (kan) forverre smertene mine. ....	0	1	2	3	4	5	6

Følgende utsagn handler om hvordan det vanlige arbeidet ditt påvirker eller kan påvirke ryggsmertene dine.

	Helt uenig			Usikker			Helt enig
6 Smertene mine ble forårsaket av arbeidet mitt eller et uhell på jobben. ....	0	1	2	3	4	5	6
7 Arbeidet mitt forverret smertene mine. ....	0	1	2	3	4	5	6
8 Jeg har framsatt erstatningskrav for smertene mine. ....	0	1	2	3	4	5	6
9 Arbeidet mitt er for tungt for meg. ....	0	1	2	3	4	5	6
10 Arbeidet mitt forverrer eller kan forverre smertene mine	0	1	2	3	4	5	6
11 Arbeidet mitt kan skade ryggen min. ....	0	1	2	3	4	5	6
12 Jeg burde ikke utføre det vanlige arbeidet mitt med mine nåværende smerter. ....	0	1	2	3	4	5	6
13 Jeg kan ikke utføre det vanlige arbeidet mitt med mine nåværende smerter. ....	0	1	2	3	4	5	6
14 Jeg kan ikke utføre det vanlige arbeidet mitt før smertene er behandlet. ....	0	1	2	3	4	5	6
15 Jeg tror ikke jeg vil være tilbake på det vanlige arbeidet mitt innen 3 måneder. ....	0	1	2	3	4	5	6
16 Jeg tror ikke jeg noen gang vil være i stand til å komme tilbake til mitt vanlige arbeid. ....	0	1	2	3	4	5	6

(FABQ)



## 42.

**Hvordan har du det?**

Når smerter og andre plager har vart en tid, blir en gjerne sliten og oppgitt. Dette gir ofte slike plager som nevnt nedenfor. Samlet blir disse her brukt som mål på at en er legemlig og psykisk presset. Vurder hvor mye hvert symptom har vært til plage eller ulempe for deg de siste 14 dagene (til og med i dag). Sett ring rundt tallet som passer best.

Husk å sette *en ring utenfor hver plage/hvert symptom*.

(sett ring rundt tallet)	Ikke i det hele tatt	Litt	En god del	Svært mye
1. Plutselig skremt uten grunn	1	2	3	4
2. Føler du deg engstelig	1	2	3	4
3. Føler du deg svimmel eller kraftløs	1	2	3	4
4. Nervøs eller urolig	1	2	3	4
5. Hjertebank	1	2	3	4
6. Skjelving	1	2	3	4
7. Føler deg anspent eller opphisset	1	2	3	4
8. Hodepine	1	2	3	4
9. Anfall av redsel eller panikk	1	2	3	4
10. Rastløshet, kan ikke sitte rolig	1	2	3	4
11. Føler deg slapp og uten energi	1	2	3	4
12. Anklager deg selv for ting	1	2	3	4
13. Har lett for å gråte	1	2	3	4
14. Tap av seksuell interesse/opplevelse	1	2	3	4
15. Dårlig appetitt	1	2	3	4
16. Vanskelig for å sove	1	2	3	4
17. Følelse av håpløshet mht. framtiden	1	2	3	4
18. Føler deg nedfor	1	2	3	4
19. Føler deg ensom	1	2	3	4
20. Har tanker om å ta ditt eget liv	1	2	3	4
21. Følelse av å være fanget	1	2	3	4
22. Bekymrer deg for mye	1	2	3	4
23. Føler ikke interesse for noe	1	2	3	4
24. Føler at alt krever stor anstrengelse	1	2	3	4
25. Føler at du ikke er noe verd	1	2	3	4

HSCL-25

**43. Sykdomsforståelse**

**Vi er interessert i din personlige oppfatning av dine nåværende plager.**

**Marker hvor enig eller uenig du er i de følgende utsagnene om dine plager ved å krysse av under det alternativet som passer best.**

		Helt uenig	Uenig	Verken enig eller uenig	Enig	Helt enig
1	Mine plager vil være av kort varighet					
2	Mine plager går nok ikke fort over, men blir sannsynligvis kroniske					
3	Mine plager vil være langvarige					
4	Disse plagene vil gå raskt over					
5	Jeg regner med å ha disse plagene resten av livet					
6	Mine plager er en alvorlig tilstand					
7	Mine plager har store konsekvenser for livet mitt					
8	Mine plager har ingen stor innvirkning på livet mitt					
9	Mine plager har stor betydning for hvordan andre oppfatter meg					
10	Mine plager har store økonomiske konsekvenser					
11	Mine plager forårsaker problemer for mine nærmeste					
12	Det er mye jeg kan gjøre for å kontrollere symptomene mine					
13	Det jeg selv gjør kan være avgjørende for om mine plager blir bedre eller verre					
14	Plagens forløp kommer an på meg selv					
15	Ingenting jeg gjør kan påvirke mine plager					
16	Jeg har mulighet til å påvirke plagene mine					
17	Mine handlinger vil ikke påvirke utfallet av plagene mine					
18	Mine plager vil bli bedre med tiden					
19	Der er svært lite som kan gjøres for å bedre plagene mine.					
20	Behandlingen jeg får vil kurere plagene mine					
21	De negative konsekvensene av mine plager kan unngås ved hjelp av behandlingen jeg får					
22	Den behandlingen jeg får kan holde plagene mine i sjakk					
23	Det er ingenting som kan hjelpe for plagene mine					
24	Symptomene på mine plager forundrer meg					

		Helt uenig	Uenig	Verken enig eller uenig	Enig	Helt enig
25	Mine plager er et mysterium					
26	Jeg forstår ikke mine plager					
27	Mine plager er ubegripelige					
28	Jeg har et klart bilde eller forståelse av mine plager					
29	Symptomene mine varierer mye fra dag til dag					
30	Symptomene kommer og går					
31	Mine plager kan ikke forutsies					
32	Jeg går igjennom perioder der plagene blir bedre og verre					
33	Jeg blir deprimert av å tenke på mine plager					
34	Jeg blir irritert når jeg tenker på mine plager					
35	Mine plager gjør meg sint					
36	Mine plager bekymrer meg ikke					
37	Mine plager gjør meg engstelig					
38	Mine plager gjør meg redd					

(IPQ-R)

#### 44.

##### Oswestry

Disse spørsmålene hjelper oss til å forstå i hvor stor grad dine rygg smerter har påvirket din evne til å mestre hverdagsaktiviteter. Vær vennlig å svar på hvert spørsmål ved å sette kryss i **én** boks. Vi er klar over at du vil kunne oppfatte alle utsagnene som gjeldende, men vær vennlig å kun merke av i boksen utenfor det utsagnet som passer mest i den nåværende situasjonen.

Vær vennlig å svare på alle spørsmålene.

##### 1. Smerter/smertestillende medisiner

- <sub>1</sub> Jeg kan tolerere smerten jeg har uten å bruke smertestillende midler.
- <sub>2</sub> Jeg har store smerter, men klarer meg uten smertestillende midler.
- <sub>3</sub> Smertestillende midler gjør meg helt smertefri.
- <sub>4</sub> Smertestillende midler demper smertene.
- <sub>5</sub> Smertestillende midler hjelper nesten ingenting.
- <sub>6</sub> Smertestillende midler hjelper ikke på smertene.

**2. Personlig stell (vask og påkledning)**

- <sub>1</sub> Jeg kan på vanlig måte stelle meg selv uten at det gir mer smerte.
- <sub>2</sub> Jeg kan på vanlig måte stelle meg selv, men det gir mer smerte.
- <sub>3</sub> Det er smertefullt å foreta det personlige stell, men jeg gjør det sakte og forsiktig.
- <sub>4</sub> Jeg trenger litt hjelp, men klarer for det meste mitt personlige stell.
- <sub>5</sub> Jeg trenger hjelp hver dag til mesteparten av det personlig stell.
- <sub>6</sub> Jeg kler ikke på meg, vasker meg med vanskelighet og er sengeliggende.

**3. Å løfte**

- <sub>1</sub> Jeg kan løfte tunge ting uten å få mer smerter.
- <sub>2</sub> Jeg kan løfte tunge ting, men det øker smerten.
- <sub>3</sub> Smerte hindrer meg i å løfte tunge ting, men jeg klarer det hvis de er gunstig plassert, for eksempel på et bord.
- <sub>4</sub> Smerte hindrer meg i å løfte tunge ting, men jeg klarer lette og middels tunge ting hvis de er gunstig plassert.
- <sub>5</sub> Jeg kan bare løfte svært lette ting.
- <sub>6</sub> Jeg kan ikke løfte eller bære noe i det hele tatt.

**4. Å gå**

- <sub>1</sub> Jeg kan gå så langt jeg vil.
- <sub>2</sub> Smerte hindrer meg i å gå mer enn 1,5 km.
- <sub>3</sub> Smerte hindrer meg i å gå mer enn 750 m.
- <sub>4</sub> Smerte hindrer meg i å gå mer enn 350 m.
- <sub>5</sub> Jeg kan bare gå hvis jeg bruker stokk eller krykker.
- <sub>6</sub> Jeg er for det meste sengeliggende eller sitter i en stol det mest av dagen.

**5. Å sitte**

- <sub>1</sub> Jeg kan sitte i hvilken som helst stol så lenge jeg vil.
- <sub>2</sub> Jeg kan bare sitte i min favorittstol, men så lenge jeg vil.
- <sub>3</sub> Smerte hindrer meg i å sitte mer enn 1 time.
- <sub>4</sub> Smerte hindrer meg i å sitte mer enn 1/2 time.
- <sub>5</sub> Smerte hindrer meg i å sitte mer enn 10 minutter.
- <sub>6</sub> Smerte hindrer meg i å sitte i det hele tatt.

**6. Å stå**

- <sub>1</sub> Jeg kan stå så lenge jeg vil uten å få mer smerter.
- <sub>2</sub> Jeg kan stå så lenge jeg vil, men det øker smerten..
- <sub>3</sub> Smerte hindrer meg i å stå mer enn 1 time.
- <sub>4</sub> Smerte hindrer meg i å stå mer enn 1/2 time.
- <sub>5</sub> Smerte hindrer meg i å stå mer enn 10 minutter.
- <sub>6</sub> Smerte hindrer meg i å stå i det hele tatt.

**7. Å sove**

- <sub>1</sub> Smerte hindrer meg ikke i å sove godt.
- <sub>2</sub> Jeg sover bare godt når jeg har tatt medisiner.
- <sub>3</sub> Selv om jeg tar medisiner, sover jeg ikke mer enn 6 timer.
- <sub>4</sub> Selv om jeg tar medisiner, sover jeg ikke mer enn 4 timer.
- <sub>5</sub> Selv om jeg tar medisiner, sover jeg ikke mer enn 2 timer.
- <sub>6</sub> Smerte hindrer meg i å sove i det hele tatt.

**8. Seksualliv**

- <sub>1</sub> Mitt seksualliv er normalt og gir ikke mer smerte.
- <sub>2</sub> Mitt seksualliv er normalt, men det gir litt mer smerte.
- <sub>3</sub> Mitt seksualliv er nærmest normalt, men det er svært smertefullt.
- <sub>4</sub> Mitt seksualliv er i høy grad hemmet av smerter.
- <sub>5</sub> Mitt seksualliv eksiterer nesten ikke på grunn av smerter.
- <sub>6</sub> Smerte hindrer ethvert seksualliv.

**9. Sosialt liv**

- <sub>1</sub> Mitt sosiale liv er normalt, og gir meg ikke mer smerte.
- <sub>2</sub> Mitt sosiale liv er normalt, men det øker smerten.
- <sub>3</sub> Smerte har ikke noe bestemt innvirkning på mitt sosiale liv bortsett fra på aktive interesser som f.eks. dansing, sport etc..
- <sub>4</sub> Smerte har begrenset mitt sosiale liv, og jeg går ikke ofte ut.
- <sub>5</sub> På grunn av smerter er mitt sosiale liv begrenset til hjemmet.
- <sub>6</sub> Jeg har overhodet ikke noe sosialt liv på grunn av smerter.

**10. Å reise**

- <sub>1</sub> Jeg kan reise hvor som helst uten å få mer smerte.
- <sub>2</sub> Jeg kan reise hvor som helst, men det gir meg mer smerte.
- <sub>3</sub> Smerten er stor, men jeg klarer å reise mer enn 2 timer.
- <sub>4</sub> På grunn av smerte klarer jeg bare reiser under 1 time.
- <sub>5</sub> På grunn av smerte klarer jeg bare nødvendige reiser på under ½ time.
- <sub>6</sub> Smerte hindrer meg i å reise i det hele tatt, bortsett fra til lege og sykehus.

**45. Norsk funksjonsskjema**

**Har du hatt vansker med å utføre følgende aktiviteter den siste uken:**

Ingen vansker    Noe vansker    Mye vansker    Kan ikke

**Gå/stå**

Stå .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gå korte avstander på flat mark (mindre enn 1 kilometer) .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gå lange avstander på flat mark (mer enn 1 kilometer) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gå på skiftende underlag .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gå i trapper .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Handle dagligvarer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ta på sko og strømper .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Holde/plukke**

Plukke opp en mynt fra et bord med fingrene .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Holde og styre et ratt med hendene .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kjøre bil .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lage mat .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skrive.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utføre vanlige oppgaver alene .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drive med dine fritidsaktiviteter .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kle på og av deg .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Har du hatt vansker med å utføre følgende aktiviteter den siste uken:</b>	Ingen vansker	Noe vansker	Mye vansker	Kan ikke
<b>Løfte/bære</b>				
Løfte en tom bruskasse fra gulvet .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bære handleposer i hendene .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bære en liten sekk på skuldrene eller ryggen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skyve og dra med armene .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gjøre vanlig rengjøring (inkl gulvvask og støvsuging) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gjøre klesvask .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Sitte</b>				
Sitte på en kjøkkenstol .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bruke bil som passasjer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bruke kollektivtransport (buss, tog) som passasjer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Mestre</b>				
Være oppmerksom og konsentrert .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arbeide i gruppe .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rettlede andre i deres aktiviteter .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mestre ansvar i dagliglivet .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mestre dagliglivets påkjenninger og belastninger.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Takle kritikk .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Styre sinne og aggresjon.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Samhandling/kommunikasjon</b>				
Huske .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oppfatte muntlige beskjeder .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oppfatte skriftlige beskjeder .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Snakke .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delta i samtale med flere personer .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bruke telefon .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Sanser</b>				
Se på fjernsyn .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lytte til radio .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I hvilken grad er din evne til å utføre ditt vanlige arbeid nedsatt akkurat i dag? (Her angis den nedsettelsen som skyldes de plagene du er sykmeldt for):

- 1 Svært mye nedsatt
- 2 Mye nedsatt
- 3 Middels nedsatt
- 4 Ikke særlig nedsatt
- 5 Ubetydelig nedsatt

Hvor lenge tror du at du fortsatt vil være sykmeldt fra i dag?

- 1 Mindre enn en måned
- 2 1-2 måneder
- 3 2-4 måneder
- 4 4-10 måneder
- 5 Mer enn 10 måneder

(Brage et al. 2000)

46.

HAD

Disse spørsmålene handler om hvordan du føler deg for tiden. Kryss av det svaret som best beskriver dine følelser **siste uken**. Funder ikke for lenge på ditt svar; din umiddelbare reaksjon på hvert spørsmål er sannsynligvis riktigere enn et svar du har fundert lenge på.

<p>1 Jeg er nervøs eller anspent</p> <p>For det meste <input type="checkbox"/><sub>1</sub></p> <p>Ofte <input type="checkbox"/><sub>2</sub></p> <p>Noen ganger <input type="checkbox"/><sub>3</sub></p> <p>Ikke i det hele tatt <input type="checkbox"/><sub>4</sub></p>	<p>2 Det føles som om alt går langsommere</p> <p>Nesten hele tiden <input type="checkbox"/><sub>1</sub></p> <p>Svært ofte <input type="checkbox"/><sub>2</sub></p> <p>Fra tid til annen <input type="checkbox"/><sub>3</sub></p> <p>Ikke i det hele tatt <input type="checkbox"/><sub>4</sub></p>
<p>3 Jeg gleder meg fremdeles over ting jeg pleide å glede meg over</p> <p>Avgjort like mye <input type="checkbox"/><sub>1</sub></p> <p>Ikke fullt så mye <input type="checkbox"/><sub>2</sub></p> <p>Bare lite grann <input type="checkbox"/><sub>3</sub></p> <p>Ikke i det hele <input type="checkbox"/><sub>4</sub></p>	<p>4 Jeg føler meg urolig liksom jeg har sommerfugler i magen</p> <p>Ikke i det hele tatt <input type="checkbox"/><sub>1</sub></p> <p>Fra tid til annen <input type="checkbox"/><sub>2</sub></p> <p>Ganske ofte <input type="checkbox"/><sub>3</sub></p> <p>Svært ofte <input type="checkbox"/><sub>4</sub></p>
<p>5 Jeg har en urofølelse som om noe forferdelig kommer til å skje</p> <p>Helt sikkert og svært ille <input type="checkbox"/><sub>1</sub></p> <p>Ja, men ikke så veldig ille <input type="checkbox"/><sub>2</sub></p> <p>Litt ille, men det bekymrer meg ikke så mye <input type="checkbox"/><sub>3</sub></p> <p>Ikke i det hele tatt <input type="checkbox"/><sub>4</sub></p>	<p>6 Jeg har sluttet å bry meg om hvordan jeg ser ut</p> <p>Ja, helt klart <input type="checkbox"/><sub>1</sub></p> <p>Jeg bryr meg ikke så mye som jeg burde <input type="checkbox"/><sub>2</sub></p> <p>Det kan nok hende jeg ikke bryr meg nok <input type="checkbox"/><sub>3</sub></p> <p>Jeg bryr meg om utseende like mye som jeg alltid har gjort <input type="checkbox"/><sub>4</sub></p>



7	Jeg kan le og se det morsomme i situasjoner		8	Jeg føler meg rastløs som om jeg stadig må være i aktivitet	
	Like mye som jeg alltid har gjort	<input type="checkbox"/> <sub>1</sub>		Uten tvil svært mye	<input type="checkbox"/> <sub>1</sub>
	Ikke like mye nå som før	<input type="checkbox"/> <sub>2</sub>		Ganske mye	<input type="checkbox"/> <sub>2</sub>
	Avgjort ikke så mye nå som før	<input type="checkbox"/> <sub>3</sub>		ikke så veldig mye	<input type="checkbox"/> <sub>3</sub>
	Ikke i det hele tatt	<input type="checkbox"/> <sub>4</sub>		Ikke i det hele tatt	<input type="checkbox"/> <sub>4</sub>
9	Jeg har hodet fullt av bekymringer		10	Jeg kan se framover med glede	
	Veldig ofte	<input type="checkbox"/> <sub>1</sub>		Like mye som jeg alltid har gjort	<input type="checkbox"/> <sub>1</sub>
	Ganske ofte	<input type="checkbox"/> <sub>2</sub>		Heller mindre enn jeg pleier	<input type="checkbox"/> <sub>2</sub>
	Av og til	<input type="checkbox"/> <sub>3</sub>		Avgjort mindre enn jeg pleier	<input type="checkbox"/> <sub>3</sub>
	En gang i blant	<input type="checkbox"/> <sub>4</sub>		Nesten ikke i det hele tatt	<input type="checkbox"/> <sub>4</sub>
11	Jeg er i godt humør		12	Jeg kan plutselig få en følelse av panikk	
	Aldri	<input type="checkbox"/> <sub>1</sub>		Uten tvil svært ofte	<input type="checkbox"/> <sub>1</sub>
	Noen ganger	<input type="checkbox"/> <sub>2</sub>		Svært ofte	<input type="checkbox"/> <sub>2</sub>
	Ganske ofte	<input type="checkbox"/> <sub>3</sub>		Ikke så veldig ofte	<input type="checkbox"/> <sub>3</sub>
	For det meste	<input type="checkbox"/> <sub>4</sub>		Ikke i det hele tatt	<input type="checkbox"/> <sub>4</sub>
13	Jeg kan sitte i fred og ro og kjenne meg avslappet		14	Jeg kan glede meg over en god bok eller et radio eller TV-program	
	Ja, helt klart	<input type="checkbox"/> <sub>1</sub>		Ofte	<input type="checkbox"/> <sub>1</sub>
	Vanligvis	<input type="checkbox"/> <sub>2</sub>		Fra tid til annen	<input type="checkbox"/> <sub>2</sub>
	Ikke så ofte	<input type="checkbox"/> <sub>3</sub>		Ikke så ofte	<input type="checkbox"/> <sub>3</sub>
	Ikke i det hele tatt	<input type="checkbox"/> <sub>4</sub>		Svært sjeldent	<input type="checkbox"/> <sub>4</sub>

(Snaith et al., 1982; Herman, 1997)

## 47. Helsetilstand

Vis hvilke utsagn som passer best på din helsetilstand i dag ved å sette et kryss i en av rutene utenfor hver av gruppene nedenfor.

### Gange

- Jeg har ingen problemer med å gå omkring. <sub>1</sub>
- Jeg har litt problemer med å gå omkring. <sub>2</sub>
- Jeg er sengeliggende. <sub>3</sub>

### Personlig stell

- Jeg har ingen problemer med personlig stell. <sub>1</sub>
- Jeg har litt problemer med å vaske meg eller kle meg. <sub>2</sub>
- Jeg er ute av stand til å vaske meg eller kle meg. <sub>3</sub>

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

- Jeg har ingen problemer med å utføre mine vanlige gjøremål <sub>1</sub>
- Jeg har litt problemer med å utføre mine vanlige gjøremål. <sub>2</sub>
- Jeg er ute av stand til å utføre mine vanlige gjøremål. <sub>3</sub>

### Smerte/ubehag

- Jeg har verken smerte eller ubehag. <sub>1</sub>
- Jeg har moderat smerte eller ubehag. <sub>2</sub>
- Jeg har sterk smerte eller ubehag. <sub>3</sub>

### Angst/depresjon

- Jeg er verken engstelig eller deprimert. <sub>1</sub>
- Jeg er noe engstelig eller deprimert. <sub>2</sub>
- Jeg er svært engstelig eller deprimert. <sub>3</sub>

48.

For å hjelpe folk til å si hvor god eller dårlig en helsetilstand er, har vi laget en skala (omtrent som et termometer) hvor den beste tilstanden du kan tenke deg er merket 100 og den verste tilstanden du kan tenke deg er merket 0.

Vi vil gjerne at du viser på denne skalaen hvor god eller dårlig helsetilstanden din er i dag, etter din oppfatning. Vær vennlig å gjøre dette ved å trekke en linje fra boksen nedenfor til det punktet på skalaen som viser hvor god eller dårlig din helsetilstand er i dag.

**Din egen  
helsetilstand  
i dag**

Best tenkelige  
helsetilstand



Verst tenkelige  
helsetilstand

EQ-5D

31

## 49.

## PSOCQ

Disse spørsmålene hjelper oss å forstå bedre måten du betrakter smerteproblemet ditt på. Hvert utsagn beskriver hvordan du kan føle om dette spesielle problemet. Vær så snill å angi i hvilken grad du er enig eller uenig med hvert utsagn. I hvert eksempel, vær snill å gjøre dine valg basert på hvordan du kjenner det akkurat nå, ikke hvordan du følte deg tidligere eller hvordan du skulle ønske at du følte deg.

Sett kryss i ruten under det tallet som best beskriver hvor mye du er enig eller uenig i hvert utsagn:

		Sterkt uenig	Uenig	Ubestemt eller usikker	Enig	Svært enig
		1	2	3	4	5
1.	Jeg har tenkt at måten jeg takler smertene mine på kan bli bedre					
2.	Jeg utvikler nye måter å mestre smertene mine på					
3.	Jeg har lært noen gode måter for å hindre at smertenproblemene forstyrrer livet mitt					
4.	Når smerten blomstrer opp, legger jeg merke til at jeg automatisk tar i bruk mestringsteknikker som har fungert tidligere, slik som avspennings øvelser eller mentale distraheringsteknikker					
5.	Jeg bruker noen strategier som hjelper meg bedre å takle smertene mine i det daglige					
6.	Jeg har begynt å finne nye strategier for å hjelpe meg selv til å kontrollere smertene mine					
7.	Jeg har i det siste skjønt at det ikke er noen medisinsk kur mot smertene mine, så jeg ønsker å lære noen måter å mestre dem på					
8.	Selv om smertene mine ikke går bort så er jeg klar til å begynne å forandre min måte å takle dem på					
9.	Jeg innser nå at det er på tide å legge opp en bedre plan for å takle smerteproblemet mitt					
10.	Jeg bruker det jeg har lært som bidrar til å holde smertene mine under kontroll					
11.	Jeg har prøvd alt folk har foreslått for å takle smertene mine og ingenting hjelper					
12.	Smertene mine er et medisinsk problem og jeg burde konsultere leger om det					
13.	Jeg bruker for øyeblikket noen forslag andre har kommet med om hvordan jeg skal leve med smerteproblemene mine					
14.	Jeg begynner å lure på om jeg trenger å få litt hjelp til å utvikle ferdigheter for å mestre smertene mine					
15.	Jeg har i det siste funnet ut at det er opp til meg å takle smertene mine bedre					

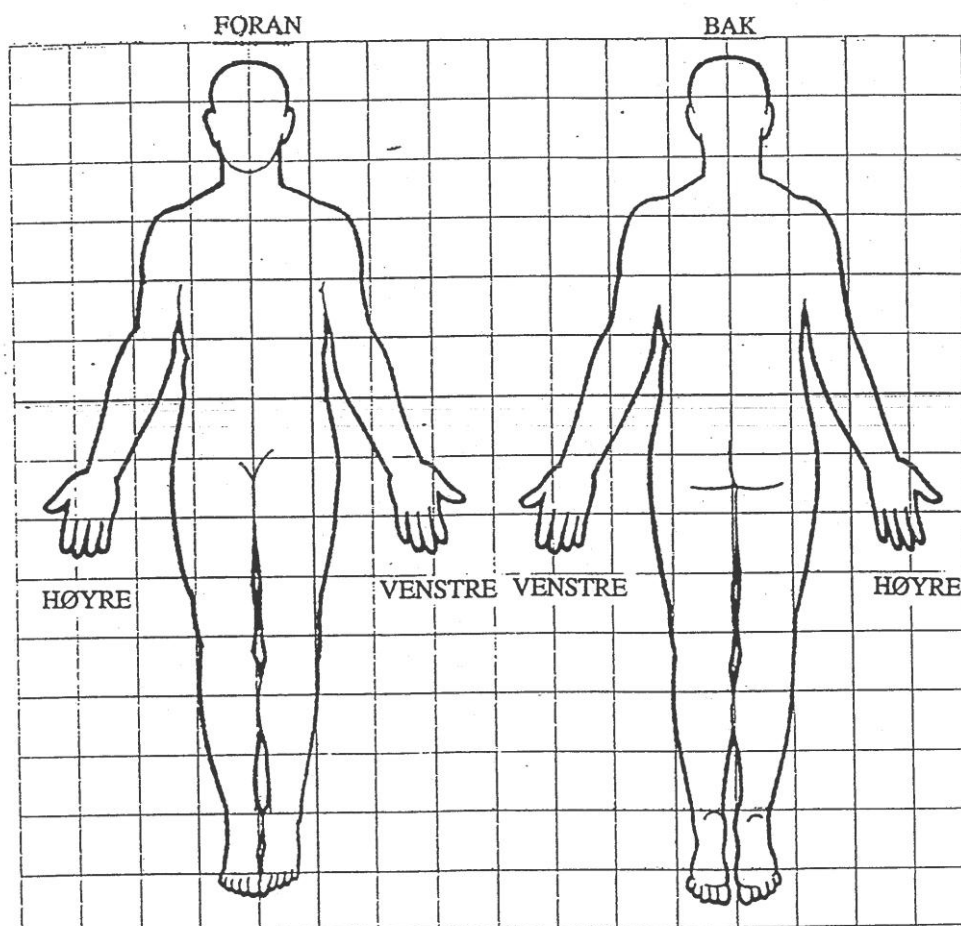
		Sterkt uenig 1	Uenig 2	Ubestemt eller usikker 3	Enig 4	Svært enig 5
16	Alle jeg snakker med forteller meg at jeg må lære meg å leve med smertene mine, men jeg skjønner ikke hvorfor jeg må gjøre det					
17	Jeg bruker teknikker for å takle smertene mine i det daglige					
18	Jeg har gjort store fremskritt i mestringen av smertene mine					
19	Jeg har i det siste kommet til den konklusjonen at det er på tide at jeg endrer min måte å takle smertene på					
20	Jeg får hjelp til å lære noen teknikker for å takle smertene mine bedre					
21	Jeg har begynt å lure på om det er opp til meg å gjøre noe med smertene mine i stedet for å stole på legene					
22	På tross av det leger forteller meg, tror jeg fortsatt at det må finnes en kirurgisk metode eller medikamenter som vil kunne fjerne smertene					
23	Jeg har funnet ut at leger bare kan hjelpe til en viss grad med å gjøre noe med smertene mine og at resten er opp til meg					
24	Det beste jeg kan gjøre er å finne en lege som kan finne ut hvordan jeg kan bli kvitt smertene mine en gang for alle					
25	Hvorfor kan ikke noen bare gjøre noe for å ta bort smertene mine?					
26	Jeg lærer å hjelpe meg selv til å kontrollere smertene mine uten legers hjelp					
27	Jeg prøver ut noen mestringsteknikker for å takle smertene mine bedre					
28	Jeg har lurt på om det er noe jeg kunne gjøre for å takle smertene mine bedre					
29	Alt dette snakket om bedre mestring er å kaste bort tiden min					
30	Jeg lærer meg måter å kontrollere smertene mine på uten å ty til medikamenter eller kirurgi					

50.

### Plager og funksjon

**Hvor har du vondt nå for tiden?**

- Skra vér de områder på kroppen hvor du har hatt smerte de siste 14 dagene
- Sett så et **X** på det punktet der du har følt mest intens smerte de siste 14 dagene
- Marker med pil → i hvilken retning og hvor langt smerten stråler fra **X**



**51. Hvor sterke har smertene dine vanligvis vært de siste 14 dagene?**

Ingen smertesmerter  
Verst tenkelige smertesmerter

Nakke og skulder

0 1 2 3 4 5 6 7 8 9 10

Ingen smertesmerter  
Verst tenkelige smertesmerter

Rygg og hofte

0 1 2 3 4 5 6 7 8 9 10

Ingen smertesmerter  
Verst tenkelige smertesmerter

Bein og fot

0 1 2 3 4 5 6 7 8 9 10

**Smertens variasjon**

**Er smertene på samme plass hele tiden?** <sub>1</sub> Ja <sub>2</sub> Nei

**Har du like mye vondt hele tiden?** <sub>1</sub> Ja <sub>2</sub> Nei

**52. Hva tror du selv er årsakene til ryggplagene dine? (kryss av ett eller flere alternativer)**

- <sub>1</sub> Arbeidsbelastning
- <sub>2</sub> Hjemmebelastning
- <sub>3</sub> Fritidsaktiviteter
- <sub>4</sub> Defekt i skjelett, muskulatur, eller andre kroppsdeler
- <sub>5</sub> Feilbehandling
- <sub>6</sub> Skade
- <sub>7</sub> Vet ikke
- <sub>8</sub> Andre årsaker.....

Hvis du har svart at du tror det er en skade som er årsak til ryggproblemene dine, vil vi gjerne vite om du har vært utsatt for noe som er meldt inn som yrkesskade eller trafikkskade.

<sub>1</sub> Yrkesskade <sub>2</sub> Trafikkskade

Har du en uavklart forsikringssak eller trygdesak i tilknytning til dine ryggplager?

<sub>1</sub> Ja, forsikringssak <sub>2</sub> Ja, trygdesak <sub>3</sub> Nei

**53. Kan du for dine plager siste uke merke av styrken på plagene, målt fra ingen til maksimal/sterkest mulig (sett kryss):**

	Ingen smerter											Verst tenkelige smerter
Smerte ved aktivitet												
	0	1	2	3	4	5	6	7	8	9	10	
	Ingen smerter											Verst tenkelige smerter
Smerte ved hvile												
	0	1	2	3	4	5	6	7	8	9	10	
	Ingen smerter											Verst tenkelige smerter
Smerte om natten												
	0	1	2	3	4	5	6	7	8	9	10	
	Ingen tretthet											Verst tenkelige tretthet
Tretthet												
	0	1	2	3	4	5	6	7	8	9	10	
	Ingen konsentrasjonssvikt											Verst tenkelige konsentrasjonssvikt
Konsentrasjonssvikt (tretthet i hodet)												
	0	1	2	3	4	5	6	7	8	9	10	

**54. Akseptering av kronisk smerte**

Nedenfor finner du en rekke med utsagn. Vær snill å vurdere hvor sant hvert utsagn er for deg.

	Aldri sant	Veldig sjelden sant	Sjelden sant	Av og til sant	Ofte sant	Nesten alltid sant	Alltid sant
1 Jeg går videre med livet mitt uansett hvordan smertenivået mitt er.....	0	1	2	3	4	5	6
2 Livet mitt er bra, selv om jeg har kroniske smerter.....	0	1	2	3	4	5	6
3 Det er OK å kjenne smerter.....	0	1	2	3	4	5	6
4 Jeg skulle gjerne ofre viktige ting i livet mitt for å få bedre kontroll over denne smerten ....	0	1	2	3	4	5	6
5 Det er ikke nødvendig for meg å ha kontroll over smertene for å håndtere livet mitt bra ....	0	1	2	3	4	5	6
6 Selv om ting har forandret seg, lever jeg et normalt liv til tross mine kroniske smerter ....	0	1	2	3	4	5	6
7 Jeg må konsentrere meg om å bli kvitt smerten min.....	0	1	2	3	4	5	6



	Aldri sant	Veldig sjelden sant	Sjelden sant	Av og til sant	Ofte sant	Nesten alltid sant	Alltid sant
8 Jeg gjør mange aktiviteter når jeg føler smerte .....	0	1	2	3	4	5	6
9 Jeg lever et fullverdig liv selv om jeg har kroniske smerter .....	0	1	2	3	4	5	6
10 Å kontrollere smerte er mindre viktig enn andre mål i livet mitt .....	0	1	2	3	4	5	6
11 Mine tanker og følelser om smerte må forandre seg før jeg kan ta viktige skritt i livet mitt .....	0	1	2	3	4	5	6
12 Til tross for smerten, holder jeg nå fast ved en bestemt kurs i livet mitt .....	0	1	2	3	4	5	6
13 Å holde smertenivået mitt under kontroll krever første prioritet hver gang jeg foretar meg noe .....	0	1	2	3	4	5	6
14 Før jeg kan planlegge noe for alvor må jeg ha noe kontroll over smerten min.....	0	1	2	3	4	5	6
15 Når smerten min øker, så kan jeg fortsatt ivareta mine forpliktelser .....	0	1	2	3	4	5	6
16 Jeg vil ha bedre kontroll med livet mitt hvis jeg kan kontrollere mine negative tanker om smerte .....	0	1	2	3	4	5	6
17 Jeg unngår å sette meg i situasjoner hvor smerten kan øke.....	0	1	2	3	4	5	6
18 Mine bekymringer og engstelser for hva smerte kan gjøre med meg er reelle .....	0	1	2	3	4	5	6
19 Det er en lettelse å innse at jeg ikke trenger å endre smertene mine for å komme videre med livet mitt .....	0	1	2	3	4	5	6
20 Jeg må kjempe for å gjøre ting når jeg har smerter.....	0	1	2	3	4	5	6

CPAQ

### 55. KOSTHOLD

Spørsmålene under gjelder ditt sjømatinntak, slik det **vanligvis** er. Med sjømat mener vi fisk og andre sjømatprodukter. Vi er klar over at kostholdet varierer fra dag til dag. Prøv derfor så godt du kan å gi et ”gjennomsnitt” av ditt sjømatinntak. Ha det siste året i tankene når du fyller ut.

#### 1. Hvor ofte spiser du vanligvis sjømat som middagsmat?

- <sub>1</sub> 4 ganger eller mer/uke      <sub>2</sub> 1-3 ganger/uke      <sub>3</sub> 1-3 ganger/mnd  
<sub>4</sub> Sjeldnere enn 1 gang/mnd      <sub>5</sub> Aldri

Hvis du spiser sjømat til middag, hvor stor mengde spiser du vanligvis?

(1 porsjon = 150 gram, tilsvarer 1 laksekotelett eller 3 fiskekaker eller 5 fiskeboller)

- <sub>1</sub> ½ porsjon eller mindre      <sub>2</sub> 1 porsjon      <sub>3</sub> 1 ½ porsjon  
<sub>4</sub> 2 porsjoner      <sub>5</sub> Mer enn 2 porsjoner

#### 2. Hvor ofte spiser du vanligvis sjømat som pålegg, i salat, mellommåltid/snacks og lignende?

- <sub>1</sub> 4 ganger eller mer/uke      <sub>2</sub> 1-3 ganger/uke      <sub>3</sub> 1-3 ganger/mnd  
<sub>4</sub> Sjeldnere enn 1 gang/mnd      <sub>5</sub> Aldri

Hvis du bruker sjømat som pålegg, i salat, mellommåltid/snacks og lignende, hvor stor mengde spiser du vanligvis? (for eksempel ... fiskekaker, ... bokser makrell i tomat, ... dl reker, til ... antall brødskeer). Bruk blokkbokstaver.

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#### 3. Bruker du omega-3 tilskudd (flytende)? <sub>1</sub> Ja      <sub>2</sub> Nei (gå videre til spm. 4)

Hvilken type omega-3 tilskudd bruker du? (spesifiser gjerne produktnavn og leverandør, bruk blokkbokstaver)

- <sub>1</sub> Tran/fiskeolje      <sub>2</sub> Selolje      <sub>3</sub> Annen, spesifiser:
- 

Hvor ofte?	Hele året	Deler av året (eks. om vinteren)
Daglig	<input type="checkbox"/>	<input type="checkbox"/>
4-6 ganger/uke	<input type="checkbox"/>	<input type="checkbox"/>
1-3 ganger/uke	<input type="checkbox"/>	<input type="checkbox"/>
1-3 ganger/mnd.	<input type="checkbox"/>	<input type="checkbox"/>

Hvor mye pleier du å ta hver gang?

- <sub>1</sub> 1 teskje (3 ml)      <sub>2</sub> 1 barneskje (5 ml)      <sub>3</sub> 1 spiseskje (10 ml) eller mer

**4. Bruker du omega-3 kapsler?** <sub>1</sub> Ja <sub>2</sub> Nei (gå videre til spm. 5)

Hvilken type omega-3 kapsler bruker du? (spesifiser gjerne produktnavn og leverandør, bruk blokkbokstaver)

<sub>1</sub> Tran/fiskeolje <sub>2</sub> Selolje <sub>3</sub> Annen, spesifiser:

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Hvor ofte? Hele året Deler av året (eks. om vinteren)

Daglig

4-6 ganger/uke

1-3 ganger/uke

1-3 ganger/mnd.

Angi antall kapsler per dag: \_\_\_\_\_

Angi størrelse/mengde-innhold per kapsel (eks. 500/1000 mg): \_\_\_\_\_

**5. Hvor ofte spiser du vanligvis følgende sjømat?**

	Aldri	Sjeldnere enn 1 gang/mnd	1-3 ganger/mnd	1-3 ganger/uke	4 ganger eller mer/uke
Fiskegryte/grateng/suppe	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Fiskekaker/pudding/boller/pinner	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Torsk, sei, hyse/kolje o.l. – middag	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Piggvar, steinbit, uer, kveite o.l. – middag	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Laks, ørret, sild, makrell o.l. – middag	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Abbor, sik, røye, gjedde (ferskvann)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Tunfisk	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Sild (sur, speket, røkt)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Røkt/gravet laks, ørret, makrell	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Makrell/sardin/ansjos/brisling i tomat/olje	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Reker	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Blåskjell, kamskjell	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Kaviar	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Krabbe, crabsticks, kreps, hummer	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Annen sjømat, spesifiser type og hvor ofte (bruk blokkbokstaver):	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

*Tusen takk for hjelpen!*