

# **Prevalence and Risk Factors of Neck Pain Among Dentists and Dental Hygienists**

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## **ABSTRACT**

During the past years it has been reported that musculoskeletal disorders (MSD) have increased in working life. The body region with the highest prevalence of reported pain is the neck region. Several studies show that MSD in the neck region varies between 20–68% among dentists and dental hygienists. The dental personnel work with a limited field of vision and space, which often results in an unnatural work posture. The aim of this study was to evaluate the prevalence of neck pain in dentists and dental hygienists working in the county of Västra Götaland, Sweden and to explore possible work-related and individual risk factors. The study was based on a questionnaire, which was sent out to all dentists and dental hygienists (n = 473) who worked at Folktandvården (response rate 60%). The overall prevalence of neck pain (neck pain every day the past month) was 23%. Female dentists and dental hygienists had an increased risk of neck pain compared to male dentists (OR 2.68, 95% CI 1.22 - 6.75). Dental personnel that experienced severe stress tended to have an increased risk of neck pain compared to those who perceived low stress (OR 2.08, 95% CI 0.94 - 4.53). We conclude that neck pain is a common problem among dental personnel in the county of Västra Götaland. Female dentists and female dental hygienists are at greater risk concerning the prevalence of neck pain.

## INTRODUCTION

Musculoskeletal disorder (MSD) is defined by World Health Organisation (WHO) as “a disorder of the muscles, tendons, joints, intervertebral discs, peripheral nerves and vascular system, not directly resulting from an acute or instantaneous event but installing gradually and chronically” (Luttmann et al., 2003). During the past several years it has been reported that MSD have increased in the daily work life (Hayes et al., 2009).

In 2006 approximately 25% of the working European population suffered from MSD in the neck and shoulder region (Ijmker et al., 2006). In Sweden, it has been reported that 19% of the working population suffered from neck pain, with a prevalence of 25% for women and 14% for men (Swedish Work Environment Authority, 2013).

The prevalence of MSD in the neck region among dentists and dental hygienists has been reported to vary between 20 – 68% among dentists and dental hygienists (Hayes et al., 2009; Leggat et al., 2007). This large discrepancy could be due to different study designs, number of subjects and how neck pain is defined in different studies.

A study carried out in Poland showed that 92% of the dentists who participated were suffering from or had suffered from MSD (Kierklo et al., 2011). There are a limited number of studies from Sweden regarding dentists. One of those studies observed a prevalence of 76% for pain in the back, neck and shoulder regions (Hjalmsers et al., 2003).

Two Swedish studies in 1993 and 1999 reported a prevalence of pain in the neck and shoulder region between 62 – 64% among dental hygienists (Hayes et al., 2009; Oberg and Oberg, 1993).

According to several studies women have a higher risk of MSD compared to men, even though they are in the same profession (Marshall et al., 1997) Swedish Work Environment Authority, 2013).

Numerous risk factors for MSD in the dental profession have been proposed (Akesson et al., 1997; Kierklo et al., 2011). One work-related risk factor that has been highlighted is the limited field of vision and space. This often results in an unnatural and heightened position of the shoulders and arms, without the necessary support to maintain a stable posture, and working with the head bent forward (Sharma and Golchha, 2011). In addition to the work position, it has become an increasingly stressful working environment. The need for precision,

work efficiency and performance has increased from both the clinic, as well as the patients. The current dental care giver has a limited time for each patient which leads to increased stress levels in an already stressful environment (Swedish Work Environment Authority, 2001). As a result of this, there have been several studies where the relationships between the existing biomechanical factors and psychosocial factors have been investigated. Psychosocial factors are often described in terms of stress, anxiety, high workload, low social support in the workplace and low job satisfaction (Swedish Work Environment Authority, 2007). Studies show that the presence of these factors tend to increase the risk of deteriorating work postures with a heightened position of the shoulders, other unconscious postures and less pauses. This may further lead to the development of MSD by increasing muscle activity and muscle tension in several muscle groups by diminishing the blood flow through the muscles (Alexopoulos et al., 2004). It has also been shown that the trapezius muscle is highly activated during dental work and this has been suggested as one factor that may cause neck and head pain (Akesson et al., 1997).

Another risk factor that has been suggested to be important in the development of neck pain among dental workers is a high proportion of hours per week with patient treatment (Finsen et al., 1998) (Petrén et al., 2007).

The aim of this study was to evaluate the prevalence of neck pain in dentists and dental hygienists working in the county of Västra Götaland, Sweden and to explore possible work-related and individual risk factors.

## **MATERIAL AND METHODS**

Before the study started an ethical review was carried out at The Ethics Forum at the Department of Odontology in Umeå, to ensure ethical standards.

The subjects were informed that the participation was voluntary and that their survey responses would be kept confidential. All the data was encrypted and entered into a database for data processing. The data was processed in accordance with the provisions of the Personal Data Act. Results were reported at a group level therefore individuals' responses could not be read.

The questionnaire in this study was developed by Agneta Lindegård Andersson PhD, RPT/Ergonomist in the county of Västra Götaland, who also was responsible for data collection.

## **Literature review**

In order to get hold of relevant literature a search was carried out using the medical database, PubMed. The MeSH-terms that were used was ”*musculoskeletal disorders*”, ”*dentists*”, ”*neck*”, ”*pain*”, ”*workers*”, ”*prospective*”, ”*epidemiology*”, ”*dental hygienist*”, different searches with these terms resulted in a total of 484 articles. After adding the inclusion criteria, as in the articles had to be written in English and the full text had to be available, the number of articles was narrowed down to 317.

After examining the titles, abstracts and excluding of duplicates, 56 articles were considered of relevance to this study.

## **Subjects**

In this cross-sectional study, all 473 dentists and dental hygienists currently working at Folk tandvården in the county of Västra Götaland, Sweden, were invited to participate.

## **Data collection**

To collect data, a letter with a questionnaire and letter of consent were sent by post to all of the 473 participants. Of these, 283 participants completed and returned the questionnaire (response rate 59.8%).

## **Questionnaire and analyses**

The questionnaire was built on 22 multiple-choice questions. It addressed different individual factors (for example: age, height, weight and handedness), work-related factors (for example: amount of clinical work, use of dental loupes and stress).

## **Possible risk factors**

All of the subjects reported their birth date and were categorized into five different age groups (< 30yr, 30 – 39yr, 40 – 49yr, 50 – 59yr, > 60yr). Furthermore a median value was estimated (Table 1). The subjects also reported if they were right-handed or left-handed and if they used dental loupes.

In terms of the subjects length the subjects were divided into six categories (< 160cm, 160 – 165cm, 165 – 170cm, 170 – 175cm, 175 – 180cm, 180 – 185cm, > 185cm). These categories were then further divided into three categories for each gender, to acquire more subjects in

each category, (< 175cm, 175 – 185cm, > 185cm) for the males and (< 160cm, 165 – 170cm, > 170cm) for the females.

Subjects reported their weight in one of six categories (< 50kg, 50 – 60kg, 60 – 70kg, 70 – 80kg, 80 – 90kg, > 90kg). The categories were further divided into three categories for each gender, (< 80kg, 80 – 90kg, > 90kg) for the males and (< 60kg, 60 – 70kg, > 70kg) for the females.

The subjects reported how many hours per week they worked with clinical patient treatment. Three options were possible (0 – 19h/w, 20 – 29h/w, 30 – 40 h/w). Further, these categories were divided into two categories (< 75% and > 75%), i.e. those who worked more than 75% and those who worked less than 75% with clinical patient treatment.

The variable of stress was describes in terms of tension, nervousness and difficulty sleeping in the questionnaire. Five different options were available (not at all, a little, to some extent, pretty much, very much). Before analyses the response options were collapsed into three categories: mild (not at all and a little), moderate (to some extent) and severe (pretty much and very much).

### **Neck pain**

The subjects reported how many times during the past month they had experienced neck pain. Four options were available in the questionnaire (never, once or twice last month, at least one day a week and daily). When performing the statistical analysis, pain was divided into two categories, pain or no pain. The options; never, once or twice last month, at least one day a week were not considered as pain whereas daily pain was.

### **Exclusion**

In order to have enough large groups for statistical analyses three male dental hygienists were excluded.

### **Statistics**

Odds ratios (OR) with 95 percent confidence intervals (95% CI) were computed using logistic regression models.

All statistical analyses were performed with the statistical software JMP version 10.0.0 (SAS Institute Inc., Cary, NC, USA). Statistical significance was assumed for  $p \leq 0.05$ .

## **RESULTS**

Of the 280 dental workers that participated in this study, 67% worked as dentists and 33% as dental hygienists. In total, 128 female dentists, 60 male dentists and 92 female dental hygienists were included (Table 1).

### **Prevalence of neck pain**

Descriptive data for the dentists and dental hygienists are presented in Table 1. The overall prevalence of neck pain among the dental workers was 23%. Among the dentists, 12% of the males compared to 24% of the females reported daily symptoms. The corresponding number for the female dental hygienists was 30% (Table 1).

### **Work-related risk factors**

There was a small (OR 1.31) but not statistically significant, increased risk for dental workers who worked more than 75% of the time with patient treatment to report more neck pain (Table 2).

The results showed an association between increased stress levels and increased risk of neck pain (Table 2). The higher the stress level, the greater the risk of neck pain, which indicates a dose-response pattern.

Dentists using dental loupes showed a tendency to a reduced risk (OR 0.68) of neck pain (Table 2).

### **Individual risk factors**

Female dental personnel had an increased risk of reporting neck pain (OR 2.68) compared to male dentists (Table 2). When using male dentists as the reference group both female dental hygienists and female dentists had increased risks for neck pain (Table 2).

There was an increased risk (OR 1.85) for dental workers who were left handed compared to right handed, though the risk was not statistically significant (Table 2).

No statistically significant associations between body constitution (i.e. weight and height) and neck pain were observed (data not presented).

## **Multivariable model**

When combining both work-related and individual factors in a multivariable model it was only the increased risk for female dental hygienists compared to male dentists that remained statistically significant (Table 3).

## **DISCUSSION**

### **The prevalence of neck pain**

The main aim of this study was to investigate the prevalence of neck pain among dentists and dental hygienists in the county of Västra Götaland. We also wanted to study the relation between risk factors and pain in the neck, and to investigate whether ergonomic strategies such as the use of dental loupes may tend to reduce the prevalence of pain in the neck.

Our study results showed that 23% of the dentists and dental hygienists experienced daily neck pain. In our study the criteria for neck pain was that the subject had daily neck pain, therefore this result is reached. When using different definitions, different outcomes will be reached. Therefore it is important to understand how different studies define neck pain to be able to compare the results.

These results verifies that neck pain in dentistry is an issue that has become increasingly common and it is estimated that one third of all started sickness leaves is due to diseases of the muscles and in joints. In this study, results show that women are at greater risk concerning the prevalence of neck pain compared to men. Other studies have also reached this conclusion (Marshall et al., 1997) Swedish Work Environment Authority, 2013).

### **Dentists versus dental hygienists**

When comparing female dentists and dental hygienists, our results showed that 29.7% of female dental hygienists compared with 24.2% of female dentists experienced daily pain in the neck region. However, this is not statistically significant. Several other studies report similar outcome whereas dental hygienists report a higher prevalence of musculoskeletal pain in the neck (Hayes et al., 2013b) (Morse et al., 2010). There is also a Swedish study showing the opposite, that female dentists (48%) have more pain in the neck region compared with the female dental hygienists (32%) (Akesson et al., 1999).

The study carried out by Åkesson et al. showed that there was a higher prevalence of MSD among the female dentists. However, the numbers of participants were limited since the study involved 30 dentists and 30 dental hygienists. This leads to small groups and less relevant conclusions because the variation is likely to be large. During the study period three dentists and eight dental hygienists left their profession. Nevertheless they completed the 5 - year follow-up. The reason for them leaving their professions may be due to that the MSD problems were so pronounced that they were forced away from the profession.

The reason why female dental hygienists, compared with female dentists, have more pronounced neck pain is an ongoing research. Factors of speculation that are highlighted to explain the underlying reasons for the increased risk of developing neck pain is whether the work of a dental hygienist is more monotonous, repetitive and contains higher exposure in deteriorating postures compared to the dental profession which include more complex treatments.

## **Risk factors**

### **Individual**

In our study twice as many female dentists (24.2%) reported every day pain compared with male dentists (11.9%). The reason for the perception of pain difference among men and women is an ongoing research area. Despite the same job title, as dentists, work tasks can be performed differentially and some dentists also choose to voluntary niche them selves into a specific field which can lead to less varied tasks. Several studies suggest that exactly the same task is performed differentially among women and men. Women have been noted to be more likely to work with different postures (hands in front, or off to one side of the body) as compared to men (Kennedy and Koehoorn, 2003). Inappropriate work postures are likely to lead to higher activation of many "redundant" muscles to compensate for the posture, which increasingly leads to muscle stress, which leads to muscle overload and MSD.

Another level mentioned is the physiological level. This can also underpin that women have higher MSD prevalence than men despite the same workload. Women are generally smaller and weaker than men, which in practice mean that the same workload during the work life will cause higher relative load. In turn, this may lead to pain in the neck. A study conducted in Hong Kong suggests that women's neck strength in specific directions are 17-41% lower than men's (Chiu et al., 2002).

Because of, or in conjunction with the woman's muscle composition and muscle cross-sectional area is different from the man, chances are that the active muscles more easily overloaded thus leading to pain in the neck. In addition, there have been studies showing that the male sex hormone, testosterone, is likely to have a pain reducing effect, which indeed is a physiological difference between the sexes (Wiesenfeld-Hallin, 2005).

Other aspects that can be discussed are whether the body constitution could affect the working posture, and be a factor that leads to unfavourable strain and pain in the neck. However, in our study, the individual factors height and weight showed weak associations with neck pain. This might be due to too few individuals in the different categories used (i.e. low statistical power), which also the wide confidence intervals indicated. The result is limited due to the lack of the BMI. It could not be calculated and thus defects in the survey design. Similar results were presented in a study where no associations between neck pain and individual factors (height, weight, BMI) were observed (Rahmani et al., 2013).

### **Psychosocial factors**

All of the dental personnel that participated in the study experienced some degree of stress. Workers that experienced severe stress had an increased risk of neck pain (OR 2.08). The result was not significant. Severe stress was experienced by 16.4% of female dentists compared with 11.7% male dentists. The proportion of female dental hygienists that experienced severe stress was 13.0%. There is no scientific evidence that women are less stress tolerant than men but there are studies showing that women are likely to experience an earlier stress onset (Swedish Work Environment Authority, 2013). Because of the lower stress threshold, hyperactivity in the muscles have an earlier onset which may give pain problems and MSD in the neck at an earlier stage. Muscle fatigue and reduced muscle endurance are factors that lead to reduced work capacity. This increases the risk for both mental and physical overload (Swedish Work Environment Authority, 2007).

In dentistry, it has long been recognized that psychosocial factors such as mental stress and high job demands are present everyday. Factors such as family situation and social network also have an influence in the general health status. These factors are strongly connected with the prevalence of pain in the neck (Alexopoulos et al., 2004). According to the Swedish Work Environment Authority, these factors combined with the low social support from colleagues, family or executives are among the main reasons for work dissatisfaction, development of negative stress and long-term sick leave (Swedish Work Environment Authority, 2001).

Psychosocial factors are different and one should take into account when comparing men and women in the same profession, that women generally have greater responsibility outside of work, such as responsibility for family and household. In the longer term, this extra responsibility can lead to insufficient time for recovery and the risk of developing neck pain therefore increases (Swedish Work Environment Authority, 2013).

### **Handedness**

A total of 20 subjects were left-handed. The results showed that left-handers had an increased risk of neck pain compared with right-handed workers (OR 1.85), however the result was not significant. Most likely this is not due to the specific handedness, whether the person is right or left handed, but more about if the caregiver is working with a dental unit adjusted after their handedness. Working with a mismatched dental unit most likely leads to limited movement patterns, which reduces the possibility of ergonomic advantageous positions in the daily clinical work.

### **Working hours**

Our results indicated a slightly increased risk for those who worked > 75% with clinical work (OR 1.31), the result was not significant. Another study that compared reduced work weeks (37.5 hours / week) with full work weeks (40 hours / week) concluded that there was no significant difference in the prevalence of MSD (Hoe et al., 2012). It is uncertain if the number of working hours in the dental profession plays a role in the prevalence of pain in the neck.

### **Ergonomic strategies**

To counteract the problem with pain in the neck among dentists and dental hygienists a couple of different strategies are recommended today.

### **Working Posture**

There are several different ergonomic strategies in the dental profession that can be used to prevent unfavourable postures that can lead to neck pain. Something that is often forgotten is to align the patient so that the caregiver can set up a good ergonomic working position. Within the dental professions, seated positions are the most abundant working posture (Khan and Chew, 2013). It is likely that this posture became more regular since the introduction of a dental assistant.

This may be a contributing factor to a more static working posture since clinical time with patients was extended resulting in absence of micro-pauses. However, it reduced the experience of stress (Murphy, 1998). The incorporation of micro-pauses has not shown significant differences in the reduction of pain in the neck. Micro-pauses offer a way to break the static loading of the muscles, which in itself provides the opportunity for recovery (Marshall et al., 1997).

Other things such as the use of good lighting, using the mouth mirror correctly, correct placement of the patient and the instrument tray, correct positioning of the therapist, chair comfort etc. are very important for optimizing posture and prevent neck pain (Murphy, 1998).

### **General health**

Etiology for MSD is multifactorial and directly linked to everyday life. Generally, a healthy lifestyle and healthy habits are essential for physical and mental wellbeing. Good socioeconomic (family, work colleagues, economy etc.) conditions are irregular factors and will either be beneficial or non-beneficial to the body's dynamics and function. The opposite conditions, such as physical and mental weakness, lower stress and pain threshold are factors which can lead to MSD.

### **Dental loupes**

In total, 80 people used dental loupes in our study and the majority of the users were dentists. The reason for the frequent use of dental loupes among dentists may be due to several factors, including high precision requirements and the opportunity for greater influence in the workplace. Our results showed a tendency that the use of dental loupes for dentists reduced the risk of developing neck pain somewhat (OR 0.69). In Australia studies were carried out on dental hygienists who were working with dental loupes. The results showed positive effects, with reduction of MSD in the upper extremities (hand, wrist and shoulders) (Hayes et al., 2013a; Hayes et al., 2012). The profession of dentistry places high demands on precision and vision accessibility, which has increased the use of dental loupes due to improved field vision and improved neck posture. The advantage of dental loupes is that extreme head flexion ( $\geq 45^\circ$ ) is prevented. A relatively common posture used by dental practitioners involves a flexion of the neck and/ or head ( $> 20^\circ$ ), which can also be reduced by the use of dental loupes, thus decreasing the risk of developing MSD (Maillet et al., 2008). Although positive effects were detected with the use of dental loupes on MSD and its ability to reduce MSD in the neck, it is

still not a common tool, which means that the scientific material is limited. Furthermore, to get scientific evidence more research is needed due to limited material.

### **Limitations**

A possible limitation of this study is that the non-response rate (40%) can be considered relatively high, which may affect the study's reliability and accuracy. The variables (perceived pain intensity, duration, stress) is self-rated assessments. The pain conditions can fluctuate which may cause the reporting of the current pain perception to vary. This can be reduced by follow-ups of pain in order to obtain more accurate responses. Another limitation is that it is difficult to identify the reason and onset of the neck pain.

The method used to collect the data showed no exact height and weight values and therefore the result is limited due to the lack of the body mass index (BMI). It could not be calculated and thus defects in the survey design.

The sample size of the number of male dental hygienists was low, which led to exclusion, which precluded statistical analysis and comparison to female dental hygienists.

### **Conclusion**

Daily neck pain the last month was reported by one fifth of the dental personnel in the county of Västra Götaland. This study shows that females have a higher prevalence of neck pain compared to males, regardless of their dental occupation. Additionally this study showed a tendency that dental personnel who are experiencing severe stress at work also have an increased risk of neck pain.

More studies on preventing neck pain among dental personnel are needed, with more subjects and a higher response rate. With greater knowledge and early identification of warning signals, practical guidelines and recommendations for avoiding neck pain among dental personnel can be developed.

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## TABLES

**Table 1. Distribution of possible risk factors for the study population according to occupation and gender. Data presented as numbers and frequency within brackets.**

	<b>Dentists (n: 188)</b>		<b>Dental hygienists (n: 92)</b>
	<b>Male (n: 60)</b>	<b>Female (n: 128)</b>	<b>Female</b>
<b>Age (median)</b>	59 (32 – 70)	53 (29 – 69)	51 (29 – 70)
<b>Right handed</b>	55 (93.2%)	116 (90.6%)	88 (95.6%)
<b>Left handed</b>	4 (6.78%)	12 (9.40%)	4 (4.40%)
<b>Clinical hours with patients</b>			
<75%	17 (28.3%)	40 (31.2%)	32 (34.8%)
>75%	43 (71.7%)	88 (68.8%)	60 (65.2%)
<b>Stress</b>			
<i>Mild</i>	36 (60.0%)	58 (45.3%)	51 (55.4%)
<i>Moderate</i>	17 (28.3%)	49 (38.3%)	29 (31.5%)
<i>Severe</i>	7 (11.7%)	21 (16.4%)	12 (13.0%)
<b>Dental loupes</b>			
<i>Yes</i>	28 (46.7%)	46 (36.2%)	6 (6.50%)
<i>No</i>	32 (53.3%)	81 (64.8%)	86 (93.5%)
<b>Symptoms from the neck last month</b>			
<i>Never</i>	12 (20.3%)	19 (14.8%)	13 (14.3%)
<i>1 – 2 times a month</i>	25 (42.4%)	48 (37.5%)	30 (32.9%)
<i>At least once a week</i>	15 (25.4%)	30 (23.4%)	21 (23.1%)
<i>Everyday</i>	7 (11.9%)	31 (24.2%)	27 (29.7%)
<b>Weight (males)</b>			
<80kg	27 (45.0%)	na	na
80 – 90kg	14 (23.3%)	na	na
>90kg	19 (31.7%)	na	na
<b>Weight (females)</b>			
<60kg	na	51 (39.8%)	27 (29.3%)
60 – 70kg	na	55 (43.0%)	38 (41.3%)
>70kg	na	22 (17.2%)	27 (29.3%)
<b>Length (males)</b>			
<175cm	16 (26.7%)	na	na
175 – 185cm	24 (40.0%)	na	na
>185cm	20 (33.3%)	na	na
<b>Length (females)</b>			
<160cm	na	58 (45.3%)	45 (48.9%)
165 – 170cm	na	29 (22.7%)	28 (30.4%)
>170cm	na	41 (32.0%)	19 (20.7%)

**Table 2. Univariate associations between neck pain and work-related and individual factors. Odds ratios (OR) and 95% confidence intervals (95% CI).**

<b>Factors</b>	<b>OR</b>	<b>95% CI</b>	<b>P- value</b>
<b>Occupation and gender</b>			
Male dentists	1	...	...
Female dentists	2.37	1.03 – 6.20	0.04
Female dental hygienists	3.13	1.32 – 8.33	0.01
<b>Gender</b>			
<i>Male</i>	1	...	...
<i>Female</i>	2.68	1.22 – 6.75	0.01
<b>Clinical hours &gt;75%</b>			
<i>No</i>	1	...	...
<i>Yes</i>	1.31	0.72 – 2.46	0.39
<b>Stress</b>			
<i>Mild</i>	1	...	...
<i>Moderate</i>	1.57	0.84 – 2.92	0.16
<i>Severe</i>	2.08	0.94 – 4.53	0.07
<b>Handedness</b>			
<i>Right</i>	1	...	...
<i>Left</i>	1.85	0.67 – 4.73	0.23
<b>Dental loupes *</b>			
<i>No</i>	1	...	...
<i>Yes</i>	0.69	0.31 – 1.45	0.33

\* In the analyses of dental loupes female dental hygienists were excluded due to the low number using loupes among hygienists.

**Table 3. Multivariate model of work-related and individual factors. Odds ratios (OR) and 95% confidence intervals (95% CI) (adjusted for all of the other factors in the model).**

<b>Factor</b>	<b>OR</b>	<b>95% CI</b>	<b>P- value</b>
<b>Occupation and gender</b>			
<i>Male dentists</i>	1	...	...
<i>Female dentists</i>	2.17	0.92 – 5.75	0.07
<i>Female dental hygienists</i>	2.92	1.17 – 8.13	0.02
<b>Clinical hours &gt;75%</b>			
<i>No</i>	1	...	...
<i>Yes</i>	1.36	0.73 – 2.61	0.33
<b>Stress</b>			
<i>Mild</i>	1	...	...
<i>Moderate</i>	1.61	0.85 – 3.06	0.15
<i>Severe</i>	2.01	0.89 – 4.44	0.09
<b>Handedness</b>			
<i>Right</i>	1	...	...
<i>Left</i>	1.81	0.64 – 4.79	0.25
<b>Dental loupes</b>			
<i>No</i>	1	...	...
<i>Yes</i>	0.74	0.35 – 1.50	0.41

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## Optik-ergonomi projekt

Tandläkare och tandhygienister arbetsuppgifter genererar mycket statisk belastning, kräver hög koncentration, ger hög anspänning och utförs ofta under tidspress. Dessa yrkesgrupper har därför stort behov av hjälpmedel för avlastning, men utbudet av hjälpmedel är mycket begränsat och problem är ofta relaterade till en felaktig arbetsställning. I den s.k. AFA-enkäten som genomfördes 2004 och 2006 (1000 anställda i det tidigare Folktandvården Göteborg) framkom att tandläkare och tandhygienister låg över referensvärdena när det gäller denna typ av besvär.

Projektet avser att vetenskapligt studera det s.k. Optergo Solution-konceptet på tandläkare och tandhygienister inom folktandvården. Konceptet som innebär att man erhåller individuellt utprovade glasögon med en inbyggd prismatisk lins som i kombination med anpassad ergonomisk information ger möjlighet för tandläkaren/tandhygienisten att arbeta i en för nacken optimal arbetsställning. Syfte är att undersöka om man med denna åtgärd kan minska ansträngning/symtom från nacken i samband med kliniskt tandvårdsarbete.

Denna enkätundersökning ställs till anställda tandläkare och tandhygienister inom Västra Götalandsregionen. Beräknad tidsåtgång för ifyllande av enkäten är ca 10 minuter. Dina enkätsvar kommer att behandlas konfidentiellt. De uppgifter som samlas in kommer att läggas in i en databas för att sedvanlig databehandling ska kunna genomföras. Data kommer att förvaras och behandlas i enlighet med vad som föreskrivs i personuppgiftslagen (PUL) och inte göras tillgängliga för någon utanför gruppen. Resultat kommer att redovisas på gruppnivå, enskilda individers svar kommer ej att kunna utläsas.

Om det är något du undrar över är du välkommen att ringa eller e-posta till:

Projektgruppen:

Tandvården Västra Götaland/ Susanne Westerdahl Ryberg

[Susanne.westerdahl@vgregion.se](mailto:Susanne.westerdahl@vgregion.se) Tel 031 340553

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Jag har tagit del av den bifogade skriftliga informationen om deltagande i enkätstudien och är villig att delta.

Signatur. \_\_\_\_\_

Jag vill inte delta i enkätstudien.

Tack för Ditt ställningstagande. Observera att vi behöver Din signatur om Du valt att delta i studien.

Använd det portofria svarskuvertet när Du returnerar formuläret.

***Vi ber Dig som valt att inte delta i enkätstudien ändå returnera enkäten i det portofria svarskuvertet.***

För att kunna nå dig med en förfrågan om eventuellt fortsatt deltagande i studien ber vi dig fylla i namn, adress, e-post och telefonnummer till din arbetsplats.

Denna sida kommer att separeras från enkäten så att din identitet skyddas.

Förnamn: \_\_\_\_\_

Efternamn: \_\_\_\_\_

Arbetsplats: \_\_\_\_\_

E-postadress: \_\_\_\_\_

Telefonnummer: \_\_\_\_\_

Datum: \_\_\_\_\_

De enkätfrågor som innehåller olika svarsalternativ besvaras genom att markera med ett X i den ruta som bäst motsvarar ditt svar. Markera endast ett alternativ på varje fråga om ingenting annat anges.

1. Födelseår? \_\_\_\_\_

2. Kön?

Kvinna

Man

3. Vad är ditt nuvarande yrke?

- Tandläkare
- Tandhygienist
- Ortodontiassistent

8. Använder du glasögon i arbetet (avser ej skyddsglasögon)?

- Ja
- Nej

10. Hur många timmar/ per vecka arbetar du med kliniskt patientarbete?

- 0 –19 timmar/vecka
- 20 –29 timmar/vecka
- 30 – 40 timmar/vecka

11. Under hur lång tid har din veckoarbetstid varit på det sätt som du besvarade i ovanstående fråga?

- Mindre än 1 år
- 1 – 2 år
- 2 – 4 år
- Mer än 4 år

12. Hur länge har du sammanlagt arbetat med dina nuvarande eller liknande arbetsuppgifter i detta eller i tidigare arbeten?

- Mindre än 1 år
- 1 – 2 år
- 2 – 4 år
- Mer än 4 år

13. Hur upplever du ditt nuvarande hälsotillstånd?

- Mycket dålig
- Dålig
- Varken bra eller dålig
- Bra
- Mycket bra

14. Hur bedömer du din nuvarande arbetsförmåga med avseende på de **fysiska krav** som ditt arbete ställer?

Mycket god

Ganska god

Någorlunda

Ganska dålig

Mycket dålig

15. Hur många gånger under senaste månaden har du känt av symtom (t ex smärta eller värk) från nacke (se figur)?

Aldrig

1 – 2 gånger senaste månaden

Minst 1 gång/vecka

I stort sett varje dag

16. Anser du att dina nacksymptom beror på ditt arbete?

Ja

Nej

Om du svarat "ja, varför?

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17. Hur ansträngd känner du dig vanligtvis i nacken (med nacke avses de område som är markerat med svart på figuren nedan) i slutet av en arbetsdag? Ringa in det alternativ som stämmer bäst.



Modifierad Borgskala

0

1 mycket mycket lätt

2

3 mycket lätt

4

- 5 ganska lätt  
6  
7 något ansträngande  
8  
9 ansträngande  
10  
11 mycket ansträngande  
12  
13 mycket mycket ansträngande  
14

18. Har du behandlats för nacksmärta/symptom under senaste månaden?

Ja

Nej

Om du svarat **"Ja"** på fråga 18 vilken/vilka behandlingar har du fått?

Massage

Sjukgymnastik

Akupunktur

Osteopati

Kiropraktik

Stresshantering

Avslappningsövningar/träning

Annan:

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19. Har ergonomisk anpassning av arbetsplatsen gjorts under senaste året?

Ja

Nej

20. Hur bedömer du din nuvarande arbetsförmåga med avseende på de **psykiska krav** som ditt arbete ställer?

Mycket god

Ganska god

Någorlunda

Ganska dålig

Mycket dålig

21. Med stress menas ett tillstånd då man känner sig spänd, nervös eller orolig eller inte kan sova på natten eftersom man tänker på problem hela tiden. Känner du av sådan stress för närvarande?

Inte alls

Bara lite

I viss mån

Ganska mycket

Väldigt mycket

22. Med tanke på din hälsa – tror du att du kan arbeta i ditt nuvarande yrke även **om två år**?

Troligen inte

Jag är osäker på det

Ja, ganska säkert

Tack för din medverkan!