Determining the link between Chronic Periodontitis and Abdominal Aortic Aneurysm
A questionnaire-based study

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ABSTRACT

**Aim:** The aim of this study was to find if there is a correlation between AAA and chronic periodontitis in regards to their relation with the help of a questionnaire.

**Material and methods:** Men that have undergone screening in the Vascular Centre at Skånes University Hospital in Malmö, Sweden were invited to participate in this study via telephone. The questionnaire was formulated mainly with questions from the study conducted in *Self-reported measures for Surveillance of Periodontitis* (Eke et al. 2013). Questions asking the respondents about tobacco habits, if they suffered other diseases, medication, and more were added as part of this study. Captured data was analysed using IBM SPSS Statistics 25 (SPSS Inc., Chicago, IL, USA). Normal distribution was not assumed for the analyses. Values were processed with Mann-Whitney U test and $\chi^2$-test. P-value < 0.05 was accepted as statistically significant

**Results:** A total of 300 individuals were contacted, of which 65 (21.7%) were included in the study. Of these, 42 (64.6 %) were controls and 23 (35.4 %) had AAA. Bone loss was more commonly present in AAA group (37.9%) versus control (11.9%) (p= 0.010)

**Conclusion:** A weak link between chronic periodontitis and AAA may be suggested, however more studies with larger cohorts and potentially clinically verified periodontitis diagnosis, are necessary to establish this potential link more firmly.

**Keywords:** AAA, Link, Parodontit, Periodontitis, Samband
ABSTRAKTT

Syfte: Syftet med studien var att se om det fanns en correlation mellan AAA och kronisk parodontit med hjälp av en enkät.


Resultat: Totalt kontaktades 300 individer, varav 65 (21.7%) inkluderades i studien. Av dessa var 42 (64.6%) individer i kontrollgruppen medans 23 (35.4%) ingick i AAA-gruppen. Bennettbrytning förekom oftare i AAA gruppen (37.9%) jämfört med kontrollgruppen (11.9%) (p=0.010)

Slutsats: En svag länk mellan kronisk parodontit och AAA kan föreslås i detta skede, dock behövs fler studier med större kohort och om möjligt en kliniskt verifierad parodontal diagnos för att med säkerhet bekräfta denna potentiella länken
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INTRODUCTION

A periodontium is the tooth’s support system. (1) It is what anchors a tooth to the jaw bone, and is composed of soft and hard tissues. (1) Those tissues are the gingiva, the periodontal ligament, the root cementum, and the alveolar bone. (1) The oral flora consists of bacteria amongst other constituents. The presence of bacteria in the oral cavity does not necessarily equate to the presence of a disease and that is because there generally is a balance in the bacteria-host relationship. (2) If the symbiotic relationship’s scale tips in favour of the bacteria’s, pathologic processes arise. (2) The bacteria involved in the processes are mainly Porphyromonas gingivalis, Aggregatibacter actinomycetemcomitans, Treponema denticola, and Streptococcus sanguinis.(1)

Furthermore are gingivitis and periodontitis two of the most common periodontium-involving diseases in the mouth (1) Gingivitis is defined as an inflammation of the periodontium’s soft tissues and is a reversible disease.(2) Gingivitis is diagnosed by the use of clinical diagnostic parameters such as bleeding on probing and probing depth .(1) Treatment involves mainly improved dental hygiene in order to restore the balance that was once disrupted. (2) If left untreated the inflammation can progress and involve the hard tissues of the tooth’s support system, causing irreversible damage as alveolar bone is broken down. That disease is called periodontitis. (2) Chronic periodontitis is defined as the loss of supporting tissue surrounding the tooth due to a prolonged inflammation, and has a prevalence of up to 40% in adults. (2) It is known as an irreversible disease because the damage to the lost alveolar bone cannot be reversed without regenerative surgical intervention. (1) Treatment mainly involves mechanical infection control in the form of scaling and root planing, as well as improved dental hygiene in order to decrease probing depth. (2)

Unlike gingivitis, the diagnostic clinical means utilized are insufficient to diagnose periodontitis on their own. However, they are used as indicators of an advanced periodontal disease. Radiographs are used as help to determine if any hard tissue is involved in the inflammatory process. Physiologically, bone level should be radiographically visible 1-3mm under the CEJ (cemento-enamel junction), and thus anything under that level is considered bone attachment loss. (1,3)

The aorta is a major artery in the human body. (4) Like most blood vessels, it consists of three layers; tunica adventitia which is the outer layer and provides structural support, the tunica media which is the middle layer and provides elasticity to the vessel, and the tunica intima which is the inner layer. (5) It originates from the left ventricle in the heart and is responsible for transporting oxygenated blood to the rest of the body for gas exchange.(4,6) Thus, it is always under high pressure which it generally withstands, due to the different layers that the vessel is composed of. (5)

An abdominal aortic aneurysm (AAA) is a disease where degeneration in all three vessel walls leads to a focal dilation of the vessel, causing an enlargement in all three aforementioned layers. (6) It is a potentially life-threatening condition if not detected since it needs treatment and follow-ups.(7) The continuous stress from the highly pressured blood flow that the aorta sustains may cause an aortic dissection. (8) Risk factors for developing the disease include smoking, the male
gender (four to six times more common in males than females), and an age above 60 years. (9,10).

Moreover, AAA is typically asymptomatic, and used to be either incidentally detected (through en passant or discovered after it ruptures. (7) Due to its difficult to detect nature, the disease has a high mortality rate of approximately 60-80%. (11) The risk difference between treating an AAA in a planned way before it ruptures versus after it ruptures has led to a national screening of AAA. This is performed mainly on 65-year-old men because it has shown the highest cost-effectiveness to implement it at that age. (12) Treatment alternatives include pharmacologic treatment and elective surgery. (9)

Periodontitis-linked pathogens such as e.g. Porphyromonas gingivalis have been found in patients with AAA. (6) The simple action of tooth brushing can cause oral bacteria to enter the blood stream. (13) Additionally, a dental visit that involves dental calculus removal can also lead to bacteraemia. The link between AAA and periodontitis has recently been of interest in the world of research, since more and more studies have shown that the presence of periodontitis-linked pathogens play a role in the worsening of an AAA. (6,14,15)

In addition from the aforementioned, getting a deeper understanding to this link between chronic periodontitis and AAA may help in future treatment planning for an aneurysm.

Figure 1 – artistic illustration of an infrarenal AAA in relation to different organs

Blaus, Bruce. Abdominal Aortic Aneurysm Location. 2016.
Aim
The aim of this study is to find if there is a correlation between AAA and chronic periodontitis in regards to their relation, the aforementioned correlation will be explored with the use of a questionnaire.

Hypothesis
The leading hypothesis of this study is that there will be a higher prevalence of periodontitis in the group with abdominal aortic aneurysm.

MATERIAL AND METHODS
This study was conducted in collaboration with the Vascular Centre at Skånes University Hospital in Malmö, Sweden. Males aged 65 and upwards are called to a screening for AAA at the Vascular centre in Malmö. Due to a lack of evidence that shows the need for women to undergo screening, a very limited amount of women are called. (9) Women without a history of smoking are likely not called because there is no benefit screening them. (9)

A list of individuals that have undergone screening was acquired from the Vascular Centre. That list included patients that were diagnosed with the disease as well as patients that have been declared free of it.

300 men that have undergone the screening for abdominal aortic aneurysm between the years 2011-2017 were offered to participate in the study by means of the telephone. 125 of the total were males diagnosed with AAA, and 175 were individuals that were cleared of the diagnosis. Those made up the control group.

The questionnaire
A questionnaire was formulated mainly with questions from the study conducted in Self-reported measures for Surveillance of Periodontitis (Eke et al. 2013). In that survey, the participants were asked questions about their subjective perception of their oral health, if they have ever to their knowledge had a gum disease, and what kind of oral hygiene routine they have amongst other questions. (16) Questions asking the respondents about tobacco habits, if they suffered other diseases, medication, and more were added to the questionnaire as part of this study.

Ethics
The ethical committee at Malmö University approved this study before any research was conducted.

The individuals contacted were all given information about the study, its purpose and what participation in the study entails. They were also made aware of the fact that declining to participate would not affect the future of their standard of care, be it health- or dental care.

Furthermore the participants were informed they could withdraw from the study at any moment, and that their withdrawal would not affect their future health- or dental care.
The data collected during the study was all anonymised to ensure the participants’ safety. Every single participant was given a code number at the start of the questionnaire. That way, no answers could be linked to an individual participant.

**Criteria for inclusion and exclusion**

Individuals that verbally consented to the questionnaire, as well as answered all questions were included in the study.

Not disclosing tobacco habits as well as other diseases or medication were a criteria for exclusion, mainly because those were needed in order to see any concomitance. The processing of incomplete datasets was avoided by choosing to not include answers that lacked the aforementioned, and thus was the risk of any faulty conclusions being drawn bypassed.

**Statistics**

Captured data was analysed using IBM SPSS Statistics 25 (SPSS Inc., Chicago, IL, USA). Normal distribution was not assumed for the analyses. Continuous values are represented with median and interquartile range (IQR). Questions that were responded with “Yes/No” as well as those on an ordinal scale (good, okay, subpar, and so on) were processed using a non-parametric analysis, namely the $\chi^2$-test (chi square test). This was performed in order to compare the results acquired from patients with AAA. Continuous values were processed with Mann-Whitney U test. A P-value < 0.05 was accepted as statistically significant.

**RESULTS**

**Cohort characteristics**

The list of potential participants was acquired from the Vascular Centre at Skånes University Hospital in Malmö, Sweden. The list consisted of all men that had undergone screening for AAA. A total of 300 individuals were contacted, of which 125 (41.6 %) had AAA and 175 (58.4 %) were without AAA. One hundred and three (34.3 %) subjects agreed to participate, of which 65 (21.7%) were included. Of these, 42 (64.6 % of included) were controls and 23 (35.4 % of included) were cases with AAA. Thirty-two (10.7 %) subjects had replied to the questionnaire, however due to non-disclosure of relevant data e.g smoking habits or past medical history data, were excluded from the study.

**Reported medical history**

There was a tendency of increase reported perception of disease (“feeling sick”) in AAA group (58.6 %) versus control group (40.5 %; p = 0.154). However, the other aspects of reported medical history (e.g hypertension, diabetes and cardiac disease) were similar between both groups (p > 0.05; table 1). Patients suffering from AAA were slightly older compared to control (71 years AAA group versus 69 years control group; p = 0.027).
Reported medical usage
With regards to reported usage of medications, patients diagnosed with AAA had higher usage (p<0.05) of antihypertensives, blood thinners and antihyperlipidemic agents. On the other hand, no differences in the usage of antidiabetics or pain medications were present between both groups. The details are presented in table 2.

Table 1 – Reported medical history

<table>
<thead>
<tr>
<th></th>
<th>Control, N (% of subgroup)</th>
<th>AAA, N (% of subgroup)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years)</td>
<td>69 (68 – 70)</td>
<td>71 (69 – 71)</td>
<td>0.027</td>
</tr>
<tr>
<td>Perceived disease (&quot;feel sick&quot;)</td>
<td>17 (40.5)</td>
<td>17 (58.6)</td>
<td>0.154</td>
</tr>
<tr>
<td>Hypertension</td>
<td>8 (19.0)</td>
<td>6 (20.7)</td>
<td>1.000</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>3 (7.1)</td>
<td>2 (6.9)</td>
<td>1.000</td>
</tr>
<tr>
<td>Cardiac disease</td>
<td>3 (7.1)</td>
<td>5 (17.2)</td>
<td>0.258</td>
</tr>
<tr>
<td>Respiratory disease</td>
<td>1 (2.4)</td>
<td>2 (6.9)</td>
<td>0.563</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>1 (2.4)</td>
<td>1 (3.4)</td>
<td>1.000</td>
</tr>
<tr>
<td>Peripheral vascular disease</td>
<td>0 (0)</td>
<td>2 (6.9)</td>
<td>0.163</td>
</tr>
<tr>
<td>Previous or current malignancy</td>
<td>1 (3.1)</td>
<td>3 (13.0)</td>
<td>0.298</td>
</tr>
</tbody>
</table>

Reported medical usage
With regards to reported usage of medications, patients diagnosed with AAA had higher usage (p<0.05) of antihypertensives, blood thinners and antihyperlipidemic agents. On the other hand, no differences in the usage of antidiabetics or pain medications were present between both groups. The details are presented in table 2.

Table 2– Medications reported for each group

<table>
<thead>
<tr>
<th></th>
<th>Control, N (% of subgroup)</th>
<th>AAA, N (% of subgroup)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antihypertensives</td>
<td>18 (42.9)</td>
<td>25 (89.3)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>&quot;Blood thinners&quot;*</td>
<td>10 (23.8)</td>
<td>24 (85.7)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Pain killers</td>
<td>6 (14.3)</td>
<td>4 (14.3)</td>
<td>1.000</td>
</tr>
<tr>
<td>Antidiabetics</td>
<td>2 (4.8)</td>
<td>5 (17.9)</td>
<td>0.107</td>
</tr>
<tr>
<td>Antihyperlipidemics</td>
<td>11 (26.2)</td>
<td>24 (85.7)</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

*antiplatelet agents and anticoagulants
**Reported tobacco usage**
With regards to tobacco usage, patients with AAA (17 (89.7 %)) were more likely to be current or previous smokers (p = 0.032) when compared to control group (28 (66.7 %)). No difference was present, however, when comparing the types of tobacco consumed between both groups (p > 0.05).

**Reported dental health**
There was a tendency towards more loose teeth (27.6 % in AAA group versus 7.1 % in control; p = 0.267) and subjective tooth discoloration/dysfunction (13.8 % in AAA group vs 4.8 % in control, p = 0.218) in AAA group versus control. In harmony with aforementioned findings, bone loss was more common in AAA group (37.9 % in AAA group versus 11.9 % in control, p=0.010). Table 3 illustrates differences between the two groups.

**Table 3— Dental health for each group**

<table>
<thead>
<tr>
<th></th>
<th>Control, N (% of subgroup)</th>
<th>AAA, N (% of subgroup)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gum disease</td>
<td>3 (7.1)</td>
<td>4 (13.8)</td>
<td>0.463</td>
</tr>
<tr>
<td>Received dental treatment</td>
<td>28 (66.7)</td>
<td>22 (75.9)</td>
<td>0.872</td>
</tr>
<tr>
<td>Loose teeth</td>
<td>3 (7.1)</td>
<td>8 (27.6)</td>
<td>0.267</td>
</tr>
<tr>
<td>Bone loss</td>
<td>5 (11.9)</td>
<td>11 (37.9)</td>
<td><strong>0.010</strong></td>
</tr>
<tr>
<td>Tooth looks ”off”</td>
<td>2 (4.8)</td>
<td>4 (13.8)</td>
<td>0.218</td>
</tr>
</tbody>
</table>

The majority of patients in both groups either classified their dental health as good (41.4 % AAA group versus 38.1 % control group) or OK (41.4 % AAA group versus 26.2 % control group). No differences (p>0.05) were found when comparing the subjective dental health perception. The distribution of answers with regards to dental health are illustrated in figure 2 (next page).
Reported dental hygiene
Intra-dental cleansing rates were similar (p>0.05) in both groups. However, there is a visual tendency towards higher rates of intra-dental cleansing in the control group as compared to the AAA group (figure 3).

Figure 2 – illustration of subjectively graded dental health in control group (blue) versus AAA group (red)

Figure 3 – Weekly reported intra-dental cleansing
No significant difference (p>0.05) were reported in the frequency of usage of mouth wash between both groups. Generally speaking, both groups of patients exhibited lack of usage of mouth wash (figure 4).

**DISCUSSION**

This current study points towards higher prevalence of periodontal disease in patients diagnosed with AAA as compared to the control group. However, the aforementioned relation is – to say the least – weak from a statistical perspective. This is due to factors inherent of the study design, along with external factors.

**Age**

The control group had a younger median age in comparison to the group that have AAA. Albeit a marginal difference, it may still entail a certain co-variance of variables since e.g. older age in on itself is a risk factor for developing periodontitis, but also AAA. (17,18) This can in turn result in a concomitance of different causal factors, those being age, periodontitis, and AAA in this case.

**Medication**

There were several differences in the usage of medication between the AAA and control groups. The medications in question were anti-hypertensives, blood thinners, and antihyperlipidemics. All of which were more frequently used in the group with AAA. This is mainly due to the fact that the guidelines for aortic aneurysm treatment state a clear benefit with using statins and low-dose acetylsalicylic acid (ASA) (19), due to the increased risk of cardiovascular death in patients with AAA. Their effect is first and foremost in regards to the disease’s progression, since statins decrease the risk of developing atherosclerosis in the vessel walls, and ASA reduced the risk of cardiovascular mortality which is elevated in patients with AAA diagnosis. Although AAA is not caused by

![Figure 4 – Weekly reported mouth wash usage](image-url)
atherosclerosis, they have common risk factors which the aforementioned medications aim to curb. However, if the usage of medications has a correlation to periodontitis being more prevalent in the AAA group is doubtful, since studies have showed that the use of ASA and statins has a beneficial effect on reducing the progression of periodontitis (20).

Statins are used as a cardiac event prophylactic, as well as treatment for patients with high cholesterol levels, also known as hyperlipidemia. These hypolipidemics inhibit HMG-CoA reductase (3-hydroxy3-methylglutaryl coenzyme A reductase), and thus manage to treat the aforementioned groups. (21) However, statins possess other properties which give them an expanded pharmacological effect other than reducing lipid levels in the blood. (22) These properties include, but are not limited to, an anti-inflammatory effect as well as inhibiting e.g. MMPs (matrix metalloproteinase) amongst other tissue-degrading enzymes. In vivo clinical trials on rats have shown that administering local or systemic statins considerably reduces the rate at which bone loss occurs. (22) A decline in the levels of pro-inflammatory cytokines such as IL-1β (interleukin-1 beta) and TNF-α (tumor necrosis factor-alpha) as well as an increased secretion of anti-inflammatory mediators such as IL-10 (interleukin 10) yield the aforementioned results. (21) In other words, statins’ pleotropic nature may contribute to improving the state of both AAA and periodontitis.

It has been hypothesized that ASA has an anti-inflammatory effect. (23) Acetylsalicylic acid inhibits the inflammatory response with the aid of COX-2 (Cyclooxygenase-2), and thus manages to reduce the degree of supporting bone loss (23). This effect is however purely theoretical and needs basic scientific evidence.

**Tobacco use**

Patients with AAA had a higher likelihood of tobacco usage as opposed to the control group without AAA. Using tobacco in its various forms has long been associated with a multitude of chronic diseases. (24)

A stimulation of tissue plasminogen activator is caused by smoking, and leads to the production of MMPs, which are known for their ability to lyse elastin. A disruption in collagen synthesis has also been observed in smokers (25, 26).

Hallmark features of AAA include matrix changes that lead to a significant decrease in the lamellar elastin matrix (26), and results in a weakened aortic wall. Furthermore, MMPs are also instrumental in the breakdown of periodontal tissue (27) through similar mechanisms to the ones mentioned for AAA. It should be noted that this makes smoking a confounding factor since it increases the risk of developing both AAA and periodontitis.

Furthermore, smoking has been said to impede the recruitment of leukocytes into periodontal tissue during an inflammatory response (24). This in turn means that the host defence to noxious stimuli is reduced, making the pathogens’ effect more detrimental (24). During inflammation, an increase in pro-inflammatory cytokines such as IL-1 and IL-6 is seen (1). These interleukins increases the rate at which bone resorption occurs by increasing the presence of RANK-L.
Smokers usually have a less healthy lifestyle compared to non-smokers (25), which means that personal care and oral hygiene might not be their first priority. A subpar oral hygiene allows bacterial colonization and thus commences the pathogenesis of periodontal disease (1). However, the results pertaining to oral hygiene were not statistically significant between the AAA and control group and that link is therefore purely hypothetical.

**Strengths and limitations with the study**

**Exploring the connection between chronic periodontitis and AAA**

There have been studies of limited capacity in regards to exploring the link between the two diseases. This in turn means that there is still a lot of uncovered ground in terms of research. This in on itself might be seen as strength with the study because it gives it a hypothesis-generating purpose with many clinical applications.

A possible clinical utilization might be pre-operatively assessing the dental status of patients about to undergo aortic repair surgery. Such an assessment is already implemented before heart surgery due to the well-known link between infective endocarditis and periodontitis-related bacteraemia. (8) Finding such a link in regards to AAA would mean that the assessment would be used to curtail the risk of post-operative infections after aortic repair surgery.

**The questionnaire**

The questions that pertain to diagnosing periodontitis in the questionnaire have been validated against full periodontal examinations. (9) This in turn means that the questionnaire is an acceptable method to diagnose periodontitis, under the condition that the participants have answered all questions in a truthful manner.

The study that the periodontal-health related questions were based on in the questionnaire has tested how well each question has performed and hence approved of them. However, they were validated according to the CDC-AAP (Centre for Disease Control- American Academy of Periodontology) standards, and were developed for a population-based kind of surveillance. (9) This can in turn mean that the questions’ generalisation over all degrees of severity can be questioned. (9)

In addition to that, if the add-on questions in regards to the participants’ health, medication, tobacco, et cetera are validated to that same extent is unclear. This is because many individuals were excluded from the study due to an unwillingness to respond to those, which can in turn minimize the legitimacy of the study’s design. Furthermore, those questions were added as a means to minimize bias factors and have not been validated in any other scenario beforehand.

**Study design**

Ideally, the study would have encompassed a full clinical examination or included access to radiographs and patient notes. However, such an access could not be obtained due to ethical and financial restrictions. As previously mentioned, radiographs are the best way to assess alveolar bone loss and the ideal way to diagnose periodontitis (1,3).
Additionally, the lack of knowledge on when the participants last visited a dental treatment facility adds another limitation to the study. A vast majority of the participants did not remember their last dental visit or did not want to disclose a reply. The question was therefore removed and not included in the results after careful ethical consideration, due to being viewed as an infringement on the individuals’ integrity. The reason that such a question might have an effect on the final results is that a long time may have passed since their last dental visit, and that signs of periodontal disease started showing after that. This in turn means that the patients could also have forgotten the information they acquired from their dental care professional. As stated above, getting access to patient notes and radiographs, with the participants’ consent, would give us all the information needed without putting participants through rigorous questioning on their health status and oral habits.

**Method of data collection**
Calling individuals and asking them to participate proved to be a limitation to this study due to a multitude of reasons; for example, the questions posed to the patients through the phone may be misinterpreted, especially given that the questions require grading. Furthermore, participants may have been eager to finish the questionnaire quickly and thus did not carefully consider their answers.

**Subjective versus objective point of view on personal health**
An individual’s subjective perception of disease does not always match with health care’s objective take on the concept of disease. A majority of participants responded that they felt healthy, but later stated several medications for a multitude of conditions that they were on when that question was posed. This means that patients that perceive their oral health as good or that said they do not have bone loss etc. might have worse dental status than their subjective belief. (12) Dental, in particular periodontal, diseases are difficult to notice due to their slow progression rate- a majority of the population are unaware of an existing pathological process in the oral cavity due to that. (13)

The above can also be seen in the use of medication for Diabetes Mellitus as opposed to the individuals that have stated they suffer from Diabetes Mellitus; a higher number of participants were on diabetes medication than there were people that had it, which may suggest some misinformation on the part of the patients with regards to their underlying conditions.

**Sample size**
The response rates in both groups were very low, that can be considered a limitation with this study since the results obtained cannot be regarded as statistically strong from a research stand-point. This in turn leads to a weakened conclusion.

**CONCLUSION**
A weak link between chronic periodontitis and AAA is suggested in this current study. However, more studies with larger cohorts and potentially clinically verified periodontitis diagnosis are necessary to establish this potential link more firmly.
THANK YOU
A huge thank you to my supervisors Prof. Andreas Stavropoulos and Associate Prof. Nuno V. Dias for their guidance and support during the entire process of this study and to the staff at the Vascular Centre in Malmö University Hospital, Skåne, for allowing me to conduct research in collaboration with them.
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APPENDIX 1: THE QUESTIONNAIRE THAT WAS USED AS THE BASIS FOR DATA COLLECTION
In swedish

Questionnaire for the study “Determining the link between Chronic Periodontitis and Abdominal Aortic Aneurysm: A questionnaire-based study”

1. Kön
   □ Man    □ Kvinna    □ Annat: _______

2. Ålder: _______ år

3. Använder du tobak (snus/cigaretter/annat)?
   □ Ja    □ Nej    □ Vill ej uppg"e
   Om ja, anges typ (cigaretter, snus, annat) ____________________________
   Om nej, har du tidigare använt tobak? Vilken typ? ____________________________

4. Ansvar du att du är fullt fisk?
   □ Ja    □ Nej    □ Vill ej uppg"e    □ Vet ej
   Om nej, vänligen ange sjukdom(er): ____________________________

5. Använder du mediciner?
   □ Ja    □ Nej    □ Vill ej uppg"e    □ Vet ej
   Om ja, vänligen ange medicinerna ____________________________

6. När var ditt senaste besök hos tandläkare/tandhygienist? ____________________________

7. Missunderst du att du har någon form av tandköttssjukdom? (ex. Inflammation i tandköttet)
   □ Ja    □ Nej    □ Vill ej uppg"e    □ Vet ej
8. Hur uppskattar du hur ditt tandvård och tänderna hållas överlägsen?
☐ Utmärkt  ☐ Välidigt bra  ☐ Bra  ☐ Ok  ☐ Undrämig  ☐ Vill ej uppgö

9. Har du någon i gångbehandling för sjukdom i tandkätten i form av ex. tandsensoriskt behandling, främst också hand som cíppexippning eller djärvtandirvisning eller seperation?
☐ Ja  ☐ Nej  ☐ Vill ej uppgö  ☐ Vet ej

10. Har du någon in upplevt att en tand blivit löst på egen hand, utan att den utsatts för trauma?
☐ Ja  ☐ Nej  ☐ Vill ej uppgö  ☐ Vet ej

11. Har du någon i gångbehandling, tandläkares sjukdom, berättat att du har fickat bokstavskvinnan och röntgenröntgenband och att du har tandlaxosnede?
☐ Ja  ☐ Nej  ☐ Vill ej uppgö  ☐ Vet ej

12. Har du, under de senaste 3 månaderna, sett att en tand inte ser ut som den bör?
☐ Ja  ☐ Nej  ☐ Vill ej uppgö  ☐ Vet ej

13. Förrutem åtboende tändare, hur många gånger har du under de senaste 7 dagarna använt någon typ av mellanrumsmuntligare, exempelvis tandstrim eller mellanrumsmuntligare? Vi vill ha en siffra:______________

14. Förrutem åtboende tändare, hur många gånger har du under de senaste 7 dagarna använt någon typ av muntligare? (om som sjukdom i bl a tandkätten)
Vi vill ha en siffra och namnet av muntligare:__________________________