

# **On oral health before and after obesity treatment**

## **Studies on clinical and patient-reported outcomes**

Akademisk avhandling

som för avläggande av odontologie doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentlig försvaras i hörsal Arvid Carlsson, Medicinaregatan 3, Göteborg, fredagen 6 oktober 2023, klockan 09.00

av

**Negin Taghat**

Fakultetsopponent:

**Docent Gunnel Hänsel Petersson**

Avdelningen för Cariologi, Malmö universitet, Malmö, Sverige

### **Avhandlingen baseras på följande delarbeten**

- I. Taghat N, Lingström P, Mossberg K, Fändriks L, Eliasson B, Östberg AL. Oral health by obesity classification in young obese women - a cross-sectional study. *Acta Odontol Scand.* 2022;80:596-604.
- II. Taghat N, Mossberg K, Lingström P, Björkman S, Lehrkinder A, Werling M, Östberg AL. Oral health profile of postbariatric surgery individuals: A case series. *Clin Exp Dent Res.* 2021;7:811–818.
- III. Taghat N, Werling M, Östberg AL. Oral Health-Related Quality of Life after Gastric Bypass Surgery. *Obes Surg.* 2020;30:224–232.
- IV. Taghat N, Mossberg K, Lingström P, Petzold M, Östberg AL. Impact of medical and surgical obesity treatment on dental caries: A two-year prospective cohort study. Accepted for publication in *Caries Res.*, August 2023.

# On oral health before and after obesity treatment

## Studies on clinical and patient-reported outcomes

**Negin Taghat**

Department of Behavioral and Community Dentistry, Institute of Odontology, The Sahlgrenska Academy, University of Gothenburg, Sweden, 2023

### **Abstract**

The overall aim of this thesis was to study the oral health of individuals with obesity and how oral health may be affected by medical and surgical obesity treatment. The thesis comprises three study populations, with Paper I and IV studying female participants, while Paper II and III includes both genders. Paper I is a cross-sectional study of obese women (Body Mass Index, BMI  $\geq 35$  kg/m<sup>2</sup>, n = 118), with the aim to describe oral health with increasing degrees of obesity and associations between obesity and dental caries. Paper II is a case series designed to describe the oral health profile of bariatric individuals (n = 14). Paper III is a questionnaire study aimed to examine how individuals (n = 1182) treated with gastric bypass perceived their oral health and oral health related quality of life (OHRQoL). Paper IV is a longitudinal follow-up study of the Paper I population aimed to compare the effect of bariatric surgery with medical obesity treatment on dental caries estimates until two years after the intervention. The results demonstrated that obese women had poor oral health habits and that there was an association between increasing degrees of obesity and dental caries frequency. The associations were robust, also after adjusting for confounders (Paper I). After bariatric surgery, both women and men may struggle with oral health problems with high frequencies of dental caries and hyposalivation (Paper II). In Paper III, a high proportion of women and men who underwent bariatric treatment reported poor self-perceived oral health and impacts on their OHRQoL. A longitudinal follow-up showed a higher frequency of caries lesions in women two years after surgical obesity treatment but not after medical treatment. The positive associations between surgical obesity treatment and dental caries were robust also after adjustments for confounders (Paper IV). In conclusion, the findings in this thesis indicate poor oral health and higher caries frequency with increasing BMI (Body Mass Index) in obese women, and oral health problems were observed in both men and women following bariatric surgery with impacts on OHRQoL. The findings can serve as a basis for adapting preventive dental care for obese and bariatric patients.

**Keywords:** bariatric surgery, dental caries, obesity, obesity management, oral health