Dental Insights — How does oral health affect mastication, eating and physical activity?

1. Link between periodontitis and masticatory capacity
Poor oral health —>
Tooth loss —>
Poor masticatory capacity —>
Increased BMI —>
Hyperglycemia and expansion of adipose tissue —>
Cardiovascular disease (CVD) risk.

Nutrition pathway:
Poor oral health —>
Poor masticatory capacity —>
Poor cardiovascular health.

Poor masticatory capacity is a mediator between oral health and general health.

Poor masticatory capacity is a reversible condition! Very important!!
You have to replace missing teeth!

Oral health is not only a smile, but also a way to crunch life!

Good resources:
”Roth et al, Global burden of cardiovascular disease, 2020”
”Deraz et al, Oral condition and incident coronary heart disease, 2022…”
”Deraz et al, Poster session, EuroPerio 2022”
”Poor masticatory capacity and blood biomarkers… Paris Prospective Study III…, Bouchard et al, 2021”

2. Eating disorders and dental health

Persistent disturbances in eating behaviors with negative impact on mental, social and physical health.

Anorexia and bulimia are preoccupied with food and weight all day. That leads to low self esteem.
There’s an overlap between anorexia and bulimia: vomiting, misuse of laxatives.

Eating disorders have the highest death rate of all mental disorders.
Eating disorders affect 10% of the population.

Eating disorders have huge negative impact on teeth: erosion, abrasion, attrition, dental caries, hyposalivation.
Dental professionals are often the first to see signs of eating disorders.

Extraoral signs of eating disorders: salivary glands swelling, cracked lips, high level of physical activity (due to dehydration, vomiting).

Intraoral signs of provoked vomiting: Russell's Sign (wounds on hands), or sometimes they use a toothbrush which give a wound in the palate.

Often people with eating disorders also have depressive and psychiatric conditions, which also give low interest in oral hygiene.

Often people with eating disorders also smoke.

People with eating disorders brush their teeth many times during a day, fx up to 10 times after every vomiting. That creates abrasion.

You have to give special oral health instructions to people with eating disorders.

Especially they have vitamin D and zinc deficiencies. That effects wound healing and periodontal health negatively.

Serum ferritin: a marker om malnutrition.

Self-induced vomiting + Psychotropic drugs + Diet + Addictions —> Periodontal conditions.
What role does Personality play?

Good resources:
”Range et al, 2021, Eating disorders through the periodontal lens”
”Boillot et al, High serum ferritin levels are associated with reduced periodontium in women with anorexia nervosa, 2019”
”Micronutrient deficiencies in malnourished anorexia patients, 2019, Hanachi et al.”
”Bashutski et al, Impact of vitamin D status on periodontal surgery outcomes, 2011”
Botelhol, Vitamin D deficiency…, 2020”
”Heaman PA et al, Evidence for the occurence of gingival recession and non-carious cervical lesions as a consequence of traumatic toothbrushing, 2015”
”Reyes Garita P et al, Periodontal conditions in people with eating disorders – systematic review and meta-analysis, 2022”
”Chiba FY et al, 2019, Periodontal condition, changes in salivary biochemical parameters, and oral health-related quality of life in patients with anoxeria and bulimia nervosa”
”Association btween poor oral health and eating disorders, Kisely et al 2015”
”Dental and periodontal health in adults with eating disorders – a case control, Pallier et al, 2019”
”Radon et Godart 2021, Manuel de psychiatrie Guelfi Rouillon”

3. Physical activity and periodontal health
Sports dentistry = The association between Physical activity and Periodontitis as treatment and prevention.

Moderate activity at least 2,5 hours per week: brisk walking, cycling etc.
You have to ask your patients about their physical activity!

Inactive adults are rising across the world, mostly in America, but Europe is third place of all continents.

Income has an effect on physical acitivty.

Promotion of physical activity should be emphasized in clinical practice. We all have a responsibility.

Minimum physical activity: UK Chief Medical Guidelines physical activity guidelines (based on international guidelines).
Moderate intensity: 2,5 hours per week (brisk walking, cycling, swimming)
Vigorous intensity: 75 min/week (running)
Minimize sitting (break up with light physical activity)
Any physical activity is better than none!

Strong evidence of benefit for non-communable diseases (NCD).
Large proportion of population that don't meet the minimum criteria of physical activity.

EuroPerio poll result to dental professionals:
Do you usually ask your patients about their weekly physical activity?
81% no
19% yes

However, physical activity is often overestimated if it's self-reported.

How we measure outcomes (self-reported or objectively) is important, and can give different results.
People overestimate themselves with 30%.

We don't know yet if increased physical activity can have a positive effect on periodontal treatment.
Physical activity may have a protective effect on periodontal health, but we don't have the evidence yet.

Strong positive association between physical activity and mental health.

Periodontal inflammation effect physical activity:
Poor oral health is consistent across sports athletes.

Severity of periodontitis is associated with cardiorespiratory performance, muscle power and physical fitness.
Fx article about law enforcement workers.

Good ressource for patient conversations about lifestyle changes:
Moving Medicine at: www.movingmedicine.ac.uk .

Good resources:
"Effect of physical activity on risk of having periodontitis – analysis of two large population-based surveys", Patel et al, under review 2022"
Moving Medicine at: www.movingmedicine.ac.uk .
"Katzmarzyk et al, 2022, Population attributable risks associated wih physical inactivity in... income countries"
"Physical activity reduces the prevalence of periodontal disease – systematic review and meta-analysis"
"Hallal et al, 2012, Global physical activity levels"

Top 3 Dental Insights — Key Take Aways

1. Link between periodontitis and masticatory capacity
Poor masticatory capacity is a reversible condition. You have to replace missing teeth!

Poor oral health —> Tooth loss —> Poor masticatory capacity —> Increased BMI —> Hyperglycemia and expansion of adipose tissue —> Cardiovascular disease (CVD) risk.

2. Eating disorders and dental health
Eating disorders affect 10% of the population. Eating disorders have huge negative impact on teeth: erosion, abrasion, attrition, dental caries, hyposalivation. People with eating disorders brush their teeth many times during a day, fx up to 10 times after every vomiting. That creates abrasion.

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Intraoral signs of provoked vomiting: Russell's Sign (wounds on hands), or sometimes they use a toothbrush which give a wound in the palate.

Dental professionals are often the first to see signs of eating disorders.

3. Physical activity and periodontal health (sports dentistry)
Periodontal inflammation effect physical activity: Poor oral health is consistent across sports athletes.

Severity of periodontitis is associated with cardiorespiratory performance, muscle power and physical fitness. Physical activity may have a protective effect on periodontal health, but we don't have the evidence yet.

You have to ask your patients about their physical activity! We all have a responsibility.

Sources

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That was Dental Insights. Thank you for being here. ❤

Dental love, Anne Mette