

# Dental Insights – Is behavior change a key part periodontal treatment?

## 1. Myths vs facts on chronic diseases

60% of the global population in 2015 (WHO) died due to a chronic disease, such as: cancer, diabetes, stroke, heart disease, high blood pressure, lung disease.

77% of the global population will in 2025 die due to a chronic diseases.

World economy: Within the next 10 years more than 1000 billion USD will be spent on treating and managing chronic diseases.

Misunderstanding: Mainly high income countries are affected.

Reality: 80% of deaths are arising in low and middle income countries.

Misunderstanding: Mainly rich people are affected.

Reality: Poor people are more affected, and poor people suffer more.

Misunderstanding: Mainly men are affected.

Reality: Men and women are equally affected.

Misunderstanding: Unhealthy lifestyles have to be blamed.

Reality: Governments and societies have to provide supportive environments to get people to behave more healthy.

Misunderstanding: Nothing can be done.

Reality: 80% of all chronic diseases are preventable.

Call for action: Stop the global epidemic of chronic diseases!

## 2. Periodontal risk factor control is key

Risk factors for periodontitis (in order):

- 1) Inadequate oral hygiene,
- 2) Tobacco use (cigarette, cigar, pipe, smokeless tobacco),
- 3) Diabetes mellitus type I and II,
- 4) Alcohol consumption,
- 5) Nutrition deficiencies,
- 6) Stress,
- 7) HIV,
- 8) Inadequate physical activity,
- 9) Osteoporosis.

We need to support people to make healthy choices! We have to get behaviour change towards to reduce chronic diseases: healthy diet, physical activity, avoid tobacco.

The role of oral health professionals in behavioral support is more important today than ever, and is receiving more attention, but is still underestimated by BOTH patients and oral health professionals.

Preventive measures are necessary not only for high risk individuals, but for all individuals. We have to address all risk factors at the same time.

Patient communication 1:1 eye to eye in the clinic: connection → information → motivation → action. These steps and the progress can be monitored at all times.

The role of oral health professionals is health promotion - on individual level, population level and community level.

### **3. Why we should start using technology in preventive care**

www.bankmycell.com shows these numbers:

World population: 7,93 billion people.

IoT cellular connections: 10,57 billion.

Smartphones: 6,64 billion smartphone users, which is 83,72% of the global population.

Mobile phones: 7,26 billion mobile phone users, which is 91,54% of the global population.

Manufacturers: Apple 59%, Samsung 26%, Motorola 4%, LG 3,3%, Google 2%, Other 1%.

Hugh amount of eHealth and mHealth apps, fx diabetes, weight loss, cardiovascular apps.

www.artezio.com shows these numbers:

Global mHealth market: 181 billion USD in 2023, and estimated 332 billion USD in 2025.

eHealth: The diagnostic evidence of available health apps is scarce.

Article: "Evidence assessing the diagnostic performace of medical smartphone apps: a systematic review and exploratory meta-analysis" Buechi et al 2017.

There is limited research of the use of smartphone health apps for non-communicable diseases other than diabetes.

Article: "The effectiveness of smartphone apps for lifestyle improvement in noncommunicable diseases: systematic review and meta-analysis" Lunde et al 2019.

Web-based patient education may be offered as a time- and cost-effective alternative.

Article: "Web-based patient education in orthopedics: systematic review" Dekkers et al 2018.

The most effective form of patient education is one that is interactive and allows patients to navigate the online system on their own.

Article: "A systematic review of web-based educational interventions" Kredericks et al 2015.

Article: "mHealth for health behavior change" Myeunghee et al 2018.

Health apps with positive impact on health-related behaviors are mainly due to patient education and training.

Article: Systematic review by Iribarren et al 2021, revealed that mostly 4 features are used in health apps: self-report adherence and self-monitoring, information and education, visual feedback on user's data, reminders and alerts.

Most effective features of health apps are: self-monitoring, information and education, reminders, communication, gamification.

Teledentistry and mHealth can help reduce plaque and gingival index.

www.periodontal-health.com is free and can help patients understand periodontitis.  
www.perio-tools.com can visualize the patient's periodontal risk assessment.

Precision medicine will use much more machine learning and patient data in the future.

Summary:

- 1) Call for action to make our patients make healthy choices,
- 2) Risk factor control to address all risk factors on all levels,
- 3) Adjunctive eHealth/mHealth may be supportive even with smaller effect sizes (education, self-monitoring, reminders, communication, gamification).

## Good resources

www.my.periodontalhealth.com

www.periodontal-health.com

www.perio-tools.com

Fernandez et al 2021

Ramseier et al 2019 (EFP Research Award 2018)

Systematic review by Iribarren et al 2021

"A systematic review of web-based educational interventions" Kredericks et al 2015

"mHealth for health behavior change" Myeunghee et al 2018

"The effectiveness of smartphone apps for lifestyle improvement in noncommunicable diseases: systematic review and meta-analysis" Lunde et al 2019

"Evidence assessing the diagnostic performance of medical smartphone apps: a systematic review and exploratory meta-analysis" Buechi et al 2017

## Top 3 Dental Insights – Key Take Aways

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Health apps with positive impact on health-related behaviors are mainly due to patient education and training.

Summary:

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- 2) Risk factor control to address all risk factors on all levels,
- 3) Adjunctive eHealth/mHealth may be supportive even with smaller effect sizes (education, self-monitoring, reminders, communication, gamification).

## Sources

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All reservations of the correct reproduction of the course material in the notes are taken by the author.

**That was Dental Insights. Thank you for being here. ♥**

**Dental love, Anne Mette**