*Prof. **Barbara Janssens** is an assistant professor of Gerodontology at Ghent University (Belgium) and coordinator of Gerodent, an oral healthcare programme for nursing homes in Belgium. In addition, she is still working as a general dentist. She obtained her degree in dentistry in 2005 and her Phd in 2017 at Ghent University. Her research interests are oral health promotion in long-term care facilities for older adults, oral health services for older adults and improving oral health of home-dwelling elderly through better interprofessional collaboration. She has published several scientific A1 papers and book chapters and is an associate editor for Gerodontology. In 2015, she won the Colgate research award of the European College of Gerodontology (ECG). She is the past co-president of the European Association of Dental Public health (EADPH), councilor of ECG, Co-chair of the special interest group on Gerodontology at EADPH, member of the research consortium GRAY at Ghent University and board member of BENECOMO, the Belgian-Dutch research consortium on oral care for older adults.*

*Prof. **Gerry McKenna** is Chair of Gerodontology and Oral Health Services Research at Queen's University Belfast (United Kingdom). As a specialist in Prosthodontics and Restorative Dentistry he holds a clinical position as a Consultant in the Belfast NHS Health and Social Care Trust. His research is centred around optimising treatment options for older patients which positively impact their dental and overall health. Gerry is the current president of the British Dental Association, Northern Ireland Branch and has previously been President of the British Society of Gerodontology, the European College of Gerodontology and the Geriatric Oral Research Group within the International Association for Dental Research. He holds a King James IV Professorship with the Royal College of Surgeons Edinburgh, an adjunct Professorship in University College Cork and is a visiting Professor in both the Federal University of Goais, Brazil and Zurich University, Switzerland.*

Sustainable oral health care: prevent and think ahead for older age.

An interview with **Prof. Barbara Janssens**, Belgium and **Prof. Gerry McKenna**, United Kingdom

In an ageing population with more people retaining their teeth, increasing prevalence of root caries seems inevitable. Clinicians will face challenges in deciding how best to manage such lesions. Once the disease is established, the restoration is rather challenging. Moreover, there is increased risk of further progression, and this takes its toll, from both health and economic perspectives. It's about time for extra attention to its management. We talked to Prof. Barbara Janssens and Prof. Gerry McKenna, both renowned experts in this field.

1. Prof. Janssens, you are the driving force behind 'Gerodent', a Flemish project focusing on oral health in older adults.[1] In a nutshell, could you tell us a bit about this project, the benefits and challenges you encounter?

Prof. Janssens: Gerodent is an oral health care programme that started in 2010 and includes around 55 nursing homes. There are 250 more nursing homes on the waiting lists, and this mainly for the two provinces we are active in (East- and West-Flanders, Belgium, ed.), which gives an idea about the high demand for this type of care. We help the staff to set up preventive policies and to organise the residents' oral health care. Furthermore, we include care staff education and training at the start of the programme after which a core group of staff members teaches the rest or the new employees. Timewise, the largest effort goes to the 6-monthly visits of a mobile dental team for residents who do not have access to primary care e.g. due to difficulties in transportation or complex health issues. We also do additional

visits in between those because some of the treatments require multiple visits.
Additionally, the Gerodent project entails an educational platform for dental students in their last Master year. It's a good learning environment. And not to forget, we collect data that serve as a leverage to improve national and international policies.

2. Prof. McKenna, you treat your patients mainly in the dental hospital attached to your university. Could you explain the main differences – benefits and challenges - from treatments in a nursing home in your own words?

Prof. McKenna: I treat patients who are referred to the hospital clinics, which is a significantly more controlled environment than the nursing home. These patients are in general younger and less frail than those in nursing homes, even though most have systemic diseases – most often these are the reason for their referral. Many patients that I see have undergone cancer treatments. Issues that frequently present in this population are very rapid caries progression, dry mouth and mouth opening problems. Currently, I'm also involved in two studies that involve educating carers on oral health care and prevention in nursing homes. I know from first hand that it is challenging to create preventative resources which are long-lasting and effective. In my view, legislation needs to be in place, otherwise it's very difficult to establish effective and meaningful changes.

3. What challenges do you encounter when you are treating older patients?

Prof. Janssens: The focus in nursing homes is different than in the hospital setting. It's usually the staff and family who ask for the treatment. The focus is thereby lying on comfort, function and being pain-free. There are a lot of factors that you need to work around, such as polypharmacy and certain impairments. People can drastically change over time and many adaptations can be required in the personal approach, up to the question "to what point can I treat?"; On certain conditions, you have very little influence and you're always dealing with a very high-risk population.

Prof. McKenna: I am often charged with replacing missing teeth for older patients and I would say the main challenge is to develop a treatment plan which is effective but also easy to maintain. We always have to keep in mind where our patients are going to be the future. I firmly believe that we need to create an oral environment that is maintainable and cleansable, not just at the time of the treatment, but also down the line, when our patients may become dependent on others for oral care.

Prof. Janssens: We should always aim for a sustainable life-course approach in healthcare. Ask yourself the question: "Can the restoration be adapted if the patient is not able to clean it anymore? It occurs more than often that patients are not frequently followed up, and they come back again when everything is completely failing and conditions for treatment have considerably worsened.

Prof. McKenna: We also cooperate with nutritionists. Frail older patients often need nutritional supplements, which help the overall recovery but are often detrimental for their remaining dentition due to the very high sugar contents.

Prof. Janssens: Many patients in dental practice are already frail while the dentist is not yet aware. Frailty comes in different forms and on different levels: physical, social, psychological. And it isn't always a constant condition. Frailty can fluctuate.

4. How do you think restorative products can contribute to these challenges?

Prof. McKenna: I would say that prevention of oral diseases in the first place is the most important thing. Physically treating root caries is can be extremely difficult; once it's established an apple core pattern can develop that sweeps around the root surface of the teeth. Contributing factors should be identified and counteracted if possible. For patients with dry mouth, I like to use MI Paste Plus (GC) as a salivary supplement. It has the extra benefit of caries protection, lubricates longer than most products and the patients find the mild flavours very pleasant. Traditional mint flavours can be unpleasant for older patients with dry mouth. Exposed root surfaces should be treated with fluoride varnishes on a regular basis.

Prof. Janssens: Nowadays, with extra attention for prevention, we drill way less than before. We are using more silver diamine fluoride and fluoride varnishes. And even when there is already cavitation, we do not treat it as we used to do (Fig. 1). I take care that the product that I use for dry mouth as a favourable pH, since in many products, the pH is too low. I do not give more than one product to the patient, or they might lose overview. One product that tackles several levels is sometimes better than giving two or three different ones.

Prof. McKenna: When caries has already developed, glass ionomers and glass hybrids are much more effective on root caries than composites. I tend to use the conventional types.

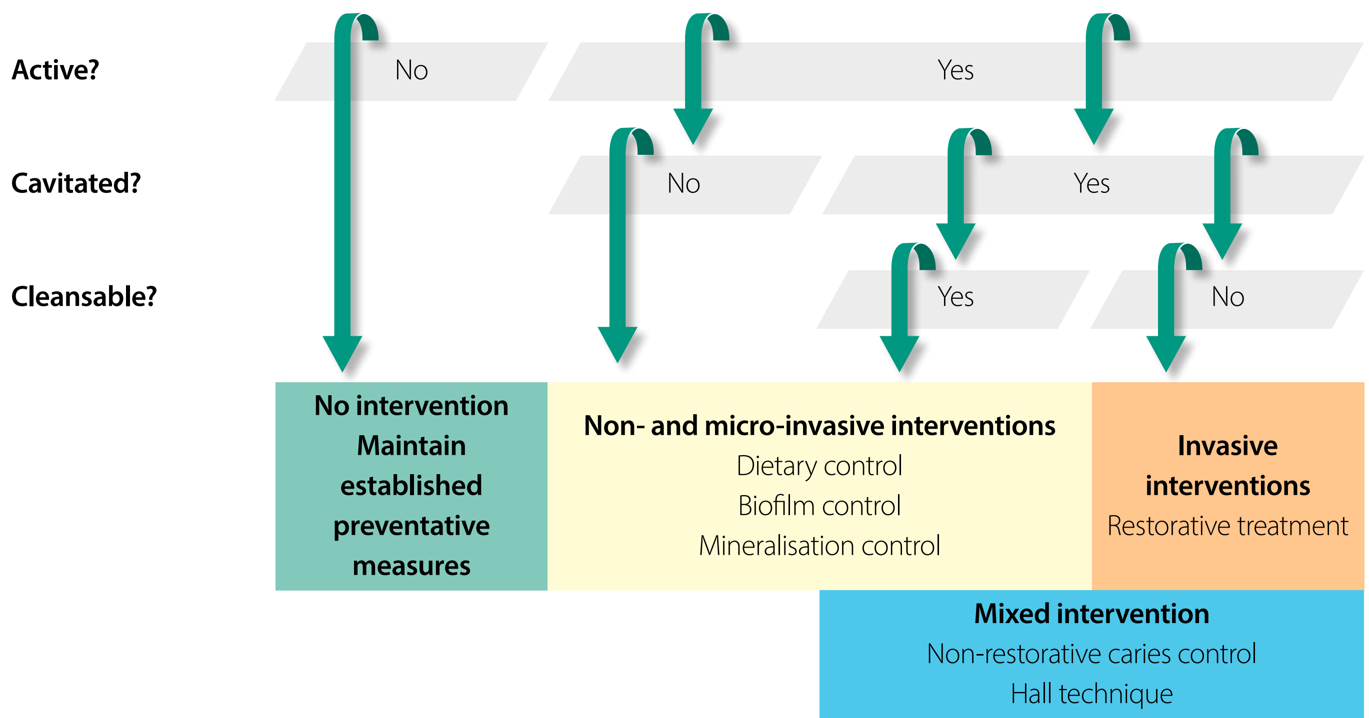

Table 1: Factors determining the intervention thresholds. Based on: Schwendicke et *al.* When to intervene in the caries process? An expert Delphi consensus statement. Clin Oral Investig, 2019;23(10):3691-3703.

The resin-modified glass ionomers are nice and quick with the cure-on-demand when you have everything perfectly under control, but the traditional ones are more forgiving. I have been using EQUIA Forte HT (GC) since the day it came out.

Prof. Janssens: I also prefer the conventional types of glass ionomers and glass hybrid. They are pleasant to work with and indeed, more forgiving. Likewise, we have been using EQUIA Forte HT in Gerodent since the day it came out.

5. Do you recommend selective caries removal for root caries and how do you apply it in practice? Do you have guidelines or recommendations when and where to stop?

Prof. McKenna: Selective caries removal is certainly a recommended technique; enamel and dentine are absolutely precious, so we should always intervene in a minimally invasive way.
I personally don't use any dyes but I use the atraumatic restorative technique (ART) for older adults and we have good experiences with that.[2] With hand instruments, I remove the softened dentine but leave the innermost caries-affected dentine behind.

Prof. Janssens: When I treat people with cognitive decline, I always tend to use hand instruments and then fill with a glass ionomer or glass hybrid. The patients are more relaxed, and you can be gentler to the gingiva. The margins are less relevant than in occlusal caries and it's sometimes a bit more of a judgement call. We're looking to find sound tissue, but at the root surface, there isn't such a clear demarcation as at the coronal part of the tooth.

6. How to you see the evolution of caries disease in older adults?

Prof. Janssens: When the first cohort of periodontally treated teeth will getting older with a large part of the root being exposed, I wonder what will happen. We are moving to a population where gingival recession is more prevalent than pockets. Will the periodontal issues return or will root caries be the largest challenge? I honestly don't know what to expect.

7. What do you see as the "root causes" for the increased rate of root caries in older patients?

Prof. Janssens: Older adults often eat more simple carbohydrates and have more exposed root surfaces. Together with polypharmacy and reduced dexterity, this is a hazardous cocktail for root caries.

Prof. McKenna: Another thing that can contribute is the presence of complex restorations, particularly those replacing natural teeth. Many patients may have received beautiful but complex restorative treatments when they were younger, but which are not easy to maintain. When levels of manual dexterity decrease, this may cause serious problems as older patients become dependent on others for care.

8. What would be the most important advice you'd like to give to your colleagues with regard to the treatment of root caries?

Prof. Janssens: Start early enough with root caries prevention and try to follow-up on your patients when they do not appear on a recall – if you lose them on the way, you might see them back 5 year later with severe issues, that might have been prevented or treated at an early stage with frequent check-ups.

Prof. McKenna: I'd like to add to that: be cautious with choosing complex treatments that are difficult to clean and might actually promote root caries. There are many cases in which we should think if teeth – especially molars – need to be replaced at all. A shortened dental arch can work very well in this population to provide adequate function but reduce the maintenance burden. Where you need to treat root caries: remove tissue selectively because tooth tissue is precious. Also use a glass ionomer or glass hybrid to restore roots as they are much more effective than composites for these lesions. Always ensure that an effective prevention plan is in place.

Professors, thank you both very much for this interview.

1. https://www.ugent.be/ge/dentistry/nl/diensten/gerodent
2. da Mata C, McKenna G, Anweigi L, Hayes M, Cronin M, Woods N, O'Mahony D, Allen PF. An RCT of atraumatic restorative treatment for older adults: 5 year results. J Dent. 2019 Apr;83:95-99.