

The Joint ORCA-EADPH Symposium on Sugar: The Oral Health Perspective – A Commentary

Andreas G. Schulte^a Georgios Tsakos^b

^aDepartment of Special Care Dentistry, Dental School, Witten/Herdecke University, Witten, Germany;

^bDepartment of Epidemiology and Public Health, University College London, London, UK

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Abstract

Caries is the most prevalent chronic condition worldwide and the association between high-level intake of sugars and dental decay is strong and well established. Interestingly, to combat caries, dental practitioners and public health dentists in many countries have focused mainly on the application of different kinds of fluorides and fissure sealants but not on the reduction of sugar intake. Furthermore, for many years, sugars have not been the focus of dental research activities presented at the annual conferences of the European Organisation for Caries Research (ORCA) and the European Association of Dental Public Health (EADPH). In 2015, following the publication of the new WHO guidelines on the intake of sugars, the boards of ORCA and EADPH agreed to organize a common symposium entitled “Joint ORCA-EADPH Symposium on Sugar: The Oral Health Perspective”. This symposium was organized by a scientific committee and took place on July 6, 2016, in association with the 63rd ORCA Congress in Athens, Greece. It included 9 lectures highlighting different aspects of sugar consumption, contribution of sugar to dental caries, measuring sugar consumption, and fighting against sugar on a patient and public health basis.

The purpose of this commentary is to give background information about the rationale of the above-mentioned symposium.

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In 2015, the World Health Organization (WHO) presented updated guidelines on sugar intake [World Health Organization, 2015]. Prior to this, the WHO had commissioned Moynihan and Kelly [2013] and Te Morenga et al. [2012] to perform systematic reviews on the association of sugars with dental caries and obesity, respectively. These reviews showing a clear association between high sugar intake and caries and obesity served as basis for the update of the guideline on sugar intake. Following a period of public consultation, the WHO guideline was published. The WHO recommendations are intended for use by policy makers as a benchmark when assessing the intake of sugars by populations and as a driving force for policy change [Breda et al., 2018]. It is worth mentioning that it is very rare that research on dental pathology [Moynihan and Kelly, 2013] has served as a basis for recommendations for general health.

This article is based on a contribution to the Joint ORCA-EADPH Symposium on Sugar and Oral Health, July 6, 2016.

Table 1. The lectures and their presenters at the ORCA-EADPH Symposium on Sugar: The Oral Health Perspective, held on July 6, 2016, in Athens, Greece

Working title	Presenter	Affiliation
1 The rationale for the ORCA-EADPH Symposium on Sugar: The Oral Health Perspective	Andreas G. Schulte	Witten/Herdecke University, Witten, Germany
2 Sweet taste and child development: psychology, environmental factors, and screening for poor quality diet	Valerie Duffy	University of Connecticut, Storrs, CT, USA
3 Sugar and general health: review of the evidence	Huda Yusuf	Queen Mary University of London, London, UK
4 Sugar and oral health: review of the evidence	Paula Moynihan	
5 Amount, frequency or both? Which of these is important for the detrimental effect of sugar on oral health?	Cor van Loveren	ACTA, Amsterdam, The Netherlands
5 Association between a new sugar index and caries experience	Klaus Pieper	University of Marburg, Marburg, Germany
7 Addressing the sugar issues: what is the role of the dentist, the oral health team/professionals, and public health?	Cynthia Pine	Queen Mary University of London, London, UK
8 Policies and recommendations on sugar consumption	Jo Jewell	WHO Regional Office, Copenhagen, Denmark
9 Implementation of the WHO guidelines on sugar	Shlomo Zusman	Ministry of Health, Jerusalem, Israel

This program was developed by a scientific committee which consisted of the then presidents and past presidents of the European Organisation for Caries Research (ORCA) and the European Association of Dental Public Health (EADPH): Andreas G. Schulte (chair), Vita Maciulskiene, George Tsakos, and Jacques Vannobbergen.

Caries is the most prevalent chronic condition worldwide [Global Burden of Disease 2013 Collaborators, 2015] and the association between high-level intake of sugars and dental decay is strong and well established [Moynihan and Kelly, 2013]. Interestingly, to combat caries, dental practitioners and public health dentists in many countries have mainly focused on the application of different forms of fluorides and fissure sealants but not on the reduction of sugar intake. The German example may be typical for many Western countries. Between 1993 and 2009 the mean D₃MFT in 12-year-olds decreased from 2.7 to 0.7 although the average sugar consumption was 36 kg/capita and year in this period [Pieper et al., 2004, 2013; Schulte et al., 2006]. In the same time period, the market share of fluoridated salt and the proportion of children with fissure sealants increased distinctly. Furthermore, since 1989 the German social security system has to pay for caries preventive measures applied by public health dentists in kindergartens and schools as well as by dentists in their practices. In spite of all these preventive efforts, the prevalence of caries in Germany remains substantial in adults, and even in children a group with high caries experience persists [Bissar et al., 2014; Jordan et al., 2014]. This pattern is common in most developed countries. Furthermore, there are clear inequalities in caries prevalence with the lower socioeco-

nomic groups having higher prevalence and a greater extent of tooth decay [Schwendicke et al., 2015; Steele et al., 2015].

Although the efficacy of fluorides and fissure sealants as caries preventive measures have been shown in systematic reviews [Tonetti et al., 2017; Ahovuo-Saloranta et al., 2017], it is not sufficient to combat caries with fluorides and fissure sealants only and aim to halt the progress of the disease. We should also expand on interventions that address the major risk factors of the disease, so that caries does not occur in the first place. Using the common risk factor approach to improve dental and oral health [Watt and Sheiham, 2012] is a meaningful way forward in that sense. Indeed, caries is a typical chronic disease that shares risk factors with other major chronic conditions.

For many years, sugars have not been the focus of dental research activities presented at the annual conferences of the European Organisation for Caries Research (ORCA) and the European Association of Dental Public Health (EADPH). In 2015, following the publication of the new WHO guidelines on the intake of sugars, the boards of ORCA and EADPH agreed to organize a common symposium entitled the “Joint ORCA-EADPH Symposium on Sugar: The Oral Health Perspective”. This symposium was organized by a scientific committee and took place on July 6, 2016, in association with the 63rd

ORCA Congress in Athens, Greece. It included 9 lectures highlighting different aspects of sugar consumption, contribution of sugar to dental caries, measuring sugar consumption, and interventions to address sugar consumption from a patient and public health perspective (Table 1). The main purpose of this symposium was to give scientists and educators with a focus on cariology and dental public health the opportunity to update their knowledge about the relation between sugar and oral health without neglecting the impact of sugar on general health. We are grateful that some presenters transformed their lecture into a paper which can be found in the same issue of *Caries Research* as this commentary [Smith et al., 2019; van Loveren et al., 2019; Pieper et al., 2019; Breda et al., 2019]. The scientific committee of this symposium also hoped that the lectures presented at the ORCA-EADPH symposium would contribute to encouraging researchers from the fields of cariology and dental public health to develop tools for patients and populations that enable them to lower sugar intake to an acceptable level, in line with the WHO guideline on sugar intake [World Health Organization, 2015].

Since this ORCA-EADPH symposium took place some important publications in the context of reduction of sugar intake have been published. This shows that the determination of the ORCA and EADPH boards to draw attention to the negative impact of sugars was shared by several research groups. Apart from the articles published in this issue, we would like to draw the attention of the readers to the following publications. The consumption of sugared drinks decreased in Mexico as a consequence of the introduction of sugar taxes that resulted in the products being more expensive [Colchero et al., 2017]. In a model constructed with the aid of data available from Germany it was shown that the potential introduction of 20% taxes on sugared drinks could decrease the caries burden in the German population and make considerable savings in the economy through the reduction of dental

treatment expenditure as well as the additional tax revenue, while it would also result in lower inequalities in dental caries [Schwendicke et al., 2016]. Beyond this effect, a reduction of the obesity rate was also shown to be possible in Germany [Schwendicke and Stolpe, 2017]. Calculations using data from Israel, where sugar consumption on average represents 12% of the total energy intake, showed that a reduction of sugar consumption to 10% of the total energy intake as recommended by WHO could reduce the diabetes-related number of deaths by approximately 5% [World Health Organization, 2015; Schillinger and Kahn, 2017]. As sugar has been shown to be associated with periodontitis [Chapple et al., 2017], reducing sugar intake could also serve as one of several measures for the prevention of this disease. The fight against excessive sugar intake cannot only be the task of dentists working in the public health sector but has also to be shared by dental practitioners. Unfortunately, so far no effective tools seem to be available to them. A systematic review on theory-based interventions for caries-related sugar intake in adults could not include any eligible article [Al Rawahi et al., 2017]. The authors concluded that there is a need for more clinical trials to assess the effectiveness of interventions based on psychological theory in reducing dietary sugar intake among adults.

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Disclosure Statement

The authors have no conflict of interest to declare.

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