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Association Between Physical Activity and Dentine Caries

E. Blomster^{1,2}, T. Tanner^{1,2}, M. Laitala^{1,2}

¹Department of Cariology, Endodontology, and Paediatric Dentistry, Research Unit of Oral Health Sciences, University of Oulu, Finland, University of Oulu, Oulu, Finland, ²Medical Research Center, University of Oulu and Oulu University Hospital, Oulu, Finland., University of Oulu, Oulu, Finland

Objectives The objective was to assess the association between physical activity, dental caries and erosive tooth wear (ETW) among middle-aged Finnish adults. Physical activity has been shown to have positive association with general health, but its impact on oral health has been only sparsely studied, with the recent studies posing contradictory results. Current knowledge of the topic is mostly based on studies with specific study populations, such as elite athletes, children, or male conscripts, with many of these studies relying on self-reported data.

Methods The data (n=1964) was acquired from North Finland Birth Cohort 1966 (NFBC1966) 46-year follow-up examination conducted between 2012 and 2013. Oral clinical examination was conducted by seven calibrated dentists assessing caries (ICDAS values) and ETW (BEWE scores) status. Physical activity was objectively measured in two-weeks' use of Polar Active recording system, and a computer-based questionnaire was conducted. ICDAS-values, BEWE-indices and the results of questionnaires and Polar Active system were categorized and analysed with cross-tabulations and multivariable logistic regression models. 95% confidence intervals [CI], Odds Ratios [OR] and p-values were calculated.

Results Low physical activity associated with increased dentine caries (OR 1.57, 95% CI 1.16 – 2.14). ETW associated with increase OR to dentine caries (OR 1.24, 95% CI 0.67 – 0.88). No statistically significant association was found between physical activity and ETW.

Conclusions In this study among middle-aged Finnish adults, high physical activity associated with lower caries prevalence. Among the same population, no connection between physical activity and ETW was found. The results are somewhat inconsistent with previous literature.