

## The association between dental caries and intake of sweets in adults

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**Abstract** : Objectives: The aim of this study was to examine the association between intake frequency of sugary foods and beverages and the prevalence of dental caries.

Methods: Data was used from 582 Japanese adults, 20 to 79 yr of age, who first visited a dental clinic. A total of 511 new patients who had not previously had regular dental check-ups over once a year before visiting a dental clinic were analyzed. Dental caries prevalence and frequency of habitual intake of sugary foods or beverages were examined.

Results: A total of males ranged 1.9% to 29.2% and females ranged 24.5% to 38.9% consumed sweets almost every day. Younger age group, 20 to 39 yr in both genders more consumed sweets almost every day than those of others. Males aged 20 to 39 yr who consume sweets almost every day showed higher DMFT than those of consuming sweets sometimes or never ( $p=0.056$ ).

Conclusion: Young adults tend to intake sugary foods and beverages more frequently and to have higher DMFT and Decayed Teeth. This would be one of the key points to improve health guidance for young adults effectively.

Key words : dental caries, sweets, adults

### Introduction

Evidence from previous studies suggests that the incidence risks of dental caries in adults are associated with the total amount as well as the frequency of sugar intakes<sup>1)</sup>. In adults, the studies

reported that the frequency<sup>2-9)</sup> and the amount<sup>4, 10)</sup> of consumption of sugar-sweetened beverages was related with increased risk of dental caries. Especially, regular carbonated soft drinks intake was associated with higher DMFS for the 25 to 40 yr and over 60 yr Americans<sup>6)</sup>. Few previous studies are available on the relationship between dental caries and sugar consumption in adults.

The aim of this study was to examine the association between frequency of sugar intake and the prevalence of dental caries to improve health guidance more effectively on the subject of new patients visiting a dental clinic.

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Methods

Data was used from 582 adults, 20 to 79 yr of age, who first visited a dental clinic located in a city, Saitama Prefecture on January, 2010 to December, 2015. Amounted 71 patients who had visited for regular dental check-ups over once a year before the dental clinic were excluded due to the unavailable number of data. A total of 511 participants (272 males and 239 females) were analyzed, who had not previously had regular dental check-ups over once a year before visiting the dental clinic. Males were composed of 89 aged 20~39 yr, 67 aged 40~59 yr, and 116 aged 60~79 yr. Females were composed of 72 aged 20~39 yr, 73 aged 40~59 yr, and 94 aged 60~79yr.

One dentist examined dental caries. The self-administered questionnaires were used, concerning the habitual intake of sugary foods or beverages

for the subjects. Dental caries prevalence and consumption frequency of sweets were assessed with DMFT index and the three alternatives: (1) almost every day, (2) sometimes, (3) never, respectively. Welch's t-test was used as statistical analysis.

Results

A total of males ranged 1.9% to 29.2% and females ranged 24.5% to 38.9% consumed sweets almost every day. Females more consumed sweets almost every day compared with those of males in all of age brackets. Younger adults aged 20 to 39 yr in both genders more consumed sweets almost every day than those of others.

The relation between consumption frequency of sweets and dental caries was shown in Fig.1-1 and Fig1-2. Males aged 20 to 39 yr who consume

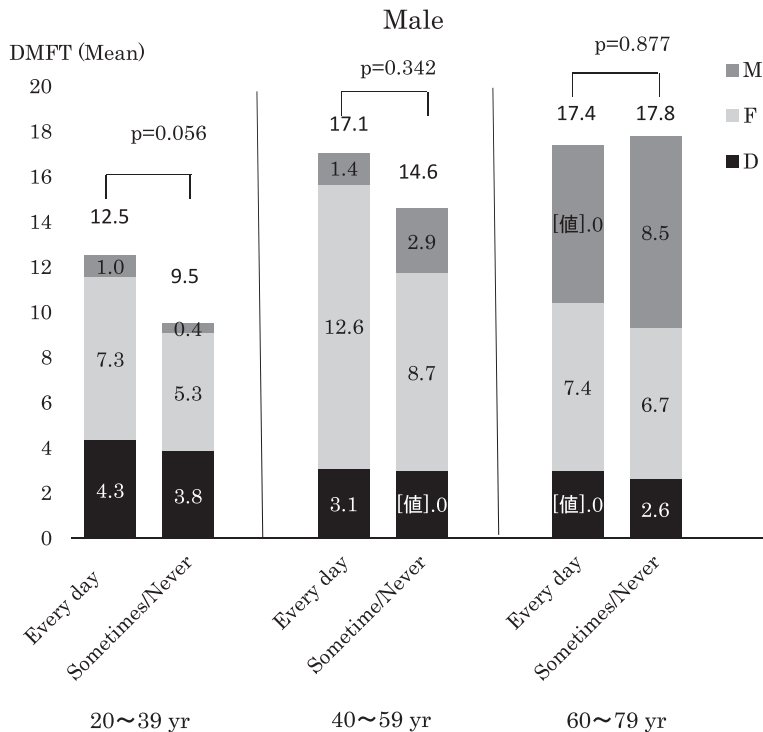


Fig. 1-1 Frequency of sweets intake and caries prevalence (DMFT index)

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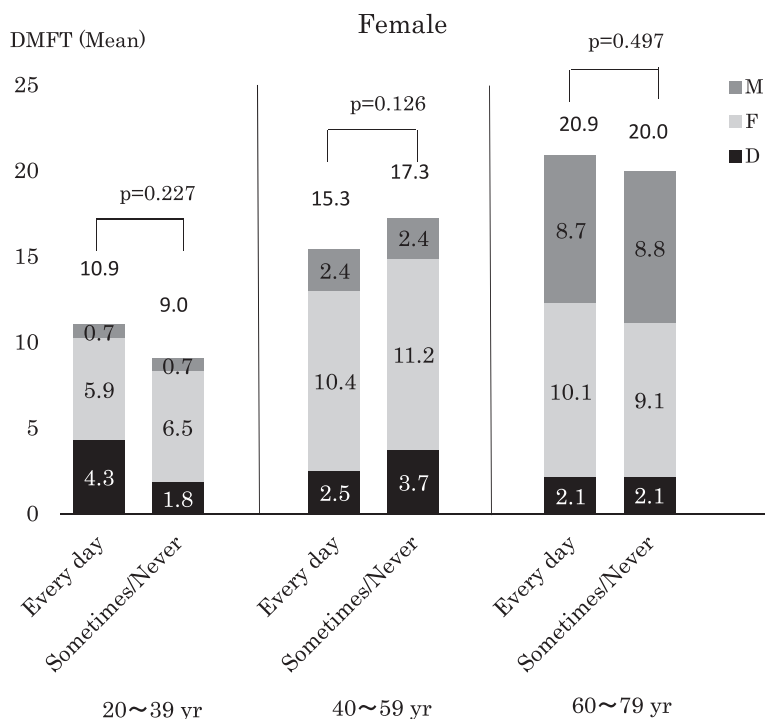


Fig. 1-2 Frequency of sweets intake and caries prevalence (DMFT index)

sweets almost every day showed higher DMFT level than those of consuming sweets sometimes or never ( $p=0.056$ ). The female group was no significantly different relationship between consumption frequency and dental caries prevalence in all groups of age. While, only young females aged 20 ~ 39 yr consuming sweets almost every day was correlated with Decayed Teeth compared with those who consume sweets sometimes or never ( $p=0.008$ ).

### Discussion

A new WHO guideline to prevent non-communicable diseases and dental caries strongly recommends children and adults reduce their daily consumption of free sugars to less than 10% of their total energy or roughly 50 grams (12 teaspoons) per day in 2015. As additional recommendation

WHO suggests a further reduction of the consumption of free sugars to below 5% of total energy intake of roughly 25 grams (6 teaspoons) per day<sup>11)</sup>. Among the Finnish adults aged 30 yr or more, the amount of sugar consumption significantly related with DMFT levels<sup>12)</sup>. As for frequency of sugar intake, Moynihan P et al. (2004) suggested that the consumption of foods with free sugars should be limited to maximum 4 times per day<sup>13)</sup>.

As a result of this study, younger group, especially females aged 20 to 30 yr tended to consume sugary foods or beverages more frequently compared with those of other aged brackets. Besides, 20 to 30 yr males had significantly higher DMFT, compared with the other age groups. Their irregular dental visits cause to increase decayed teeth without their notice. According to the report of

Bernabé E, et al. (2014), in the participants aged 30 ~89 yr, men and younger groups who brush their teeth once a day or less often reported significantly higher sugar-sweetened beverages<sup>9)</sup>.

There were some limitations of this present study. First, more accurate numbers of frequency of sugary foods and beverages in each day could not be examined. Second, we could not research details of the concrete aspects of regular dental check-ups before visiting the dental clinic such as topical application of fluorides, tooth brushing instruction. Third, the sample of this study was relatively small and cross sectional.

In conclusion, this study shows that young adults tend to consume sugary foods and beverages more frequently and to have higher DMFT and DT. This would be one of the key points to improve health guidance for young adults effectively. Because of lack of available evidence, further research would be needed to examine the association between dental caries and sugary intake of foods and beverages in adults.

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