

ARTICLE ANALYSIS & EVALUATION // **DIAGNOSIS/TREATMENT/PROGNOSIS**

MEASURES OF DYNAMIC CHEWING FUNCTION, RATHER THAN THE NUMBER OF TEETH, ARE A BETTER PREDICTORS OF THE ELDERLY'S ABILITY TO INTAKE FOOD AND NUTRIENTS



REVIEWERS

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Do oral functions, such as occlusal force, have a closer association with the intake of food and nutrients than the number of teeth in older people?

SORT SCORE			
A	B	C	N/A

SORT, Strength of Recommendation Taxonomy

LEVEL OF EVIDENCE		
1	2	3

See page 9A for complete details regarding SORT and LEVEL OF EVIDENCE grading system

SOURCE OF FUNDING

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TYPE OF STUDY/DESIGN

Cross-sectional study

KEYWORDS

Chewing function, Elderly, Number of teeth, Nutrition

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ARTICLE TITLE AND BIBLIOGRAPHIC INFORMATION

Dietary intake is associated with occlusal force rather than number of teeth in 80-y-old Japanese. Inomata C, Ikebe K, Okubo H et al. J Dent Res 2016;2(2):187-97.

SUMMARY

Subjects

This study analyzed baseline examination data of an ongoing cohort study named "SONIC" (Septuagenarians, Octogenarians, Nonagenarians Investigation with Centenarians).¹ The SONIC study data collection was conducted during 2011 and 2012 in 2 main regions of eastern and western Japan: Itami City, Hyogo (western urban); Asago City, Hyogo (western rural); Itabashi Ward, Tokyo (eastern urban); and Nishitama County, Tokyo (eastern rural). The final study participants comprised 760 community-dwelling Japanese individuals (364 males and 396 females) aged 79-81 years. The study protocol and informed documents were approved by the Institutional Review Board of Osaka University Graduate School of Dentistry (approval number H22-E9).

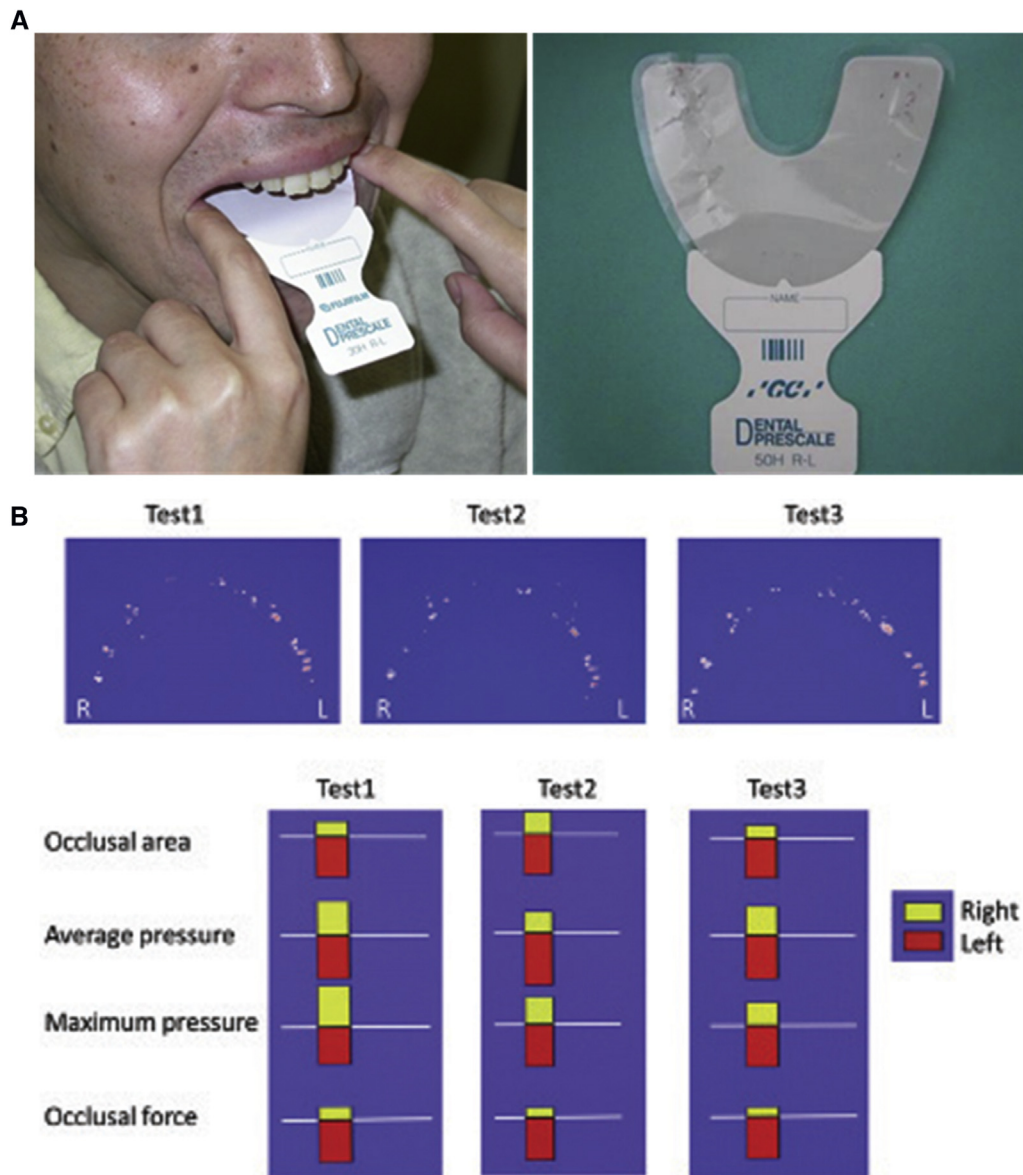
Key Exposure/Study Factor

Occlusal force was measured using pressure-sensitive sheets (PSSs, Dental Pre-scale, Type-R 50H; Fuji Film, Figure 1A) and a computer scanner (Occluzer FDP-707; Fuji Film, Figure 1B). One side of the PSS is coated with the developer, and the other side contains microcapsules that produce a red mark on the contact point when a pressure greater than 5 MPa is applied. This mark is analyzed by the computer scanner to compute the final occlusal force. Participants with removable partial dentures kept their dentures in place during the measurement of maximal occlusal force. In addition, the number of remaining teeth was recorded for all participants.

Main Outcome Measure

The participants' dietary habits were recorded during the preceding month based on their memory using a brief self-administered diet history questionnaire

Figure 1. Bite mark taking by dental prescale (A) and analyses of scan images by occluser (B).



(BDHQ). The BDHQ is a questionnaire that can estimate the dietary intake of 58 food and beverage items.² Estimates of the dietary intake of food, energy, and selected nutrients were calculated using an ad hoc computer algorithm for the BDHQ, which was based on the Standard Tables of Food Composition in Japan (Japanese Ministry of Health Labour and Welfare 2005). Linear trends in food and nutrient intake in relation to the number of teeth and occlusal force were assessed after adjusting for gender and socioeconomic status (education level, financial status, family structure, area of residence, and body mass index).

Main Results

The number of teeth was not significantly associated with the energy-adjusted intake of any food group examined. In contrast, a decline in the occlusal force was significantly associated with a lower intake of vegetables, fish and shellfish, protein, polyunsaturated fatty acids, dietary fiber, and most vitamins and minerals ($P < .05$).

Conclusions

Food and nutrient intake was more closely associated with the occlusal force than the number of teeth in a

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