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Linking oral processing behaviour to oral physiology of consumers varying in age, gender and ethnicity

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Food oral processing behaviour is known to be affected by age, gender and ethnicity. Changes in oral physiology occur during ageing and might affect oral processing behaviour. Differences in food oral processing behaviour between consumers of different ethnicities and consumers of different gender may also be explained by differences in oral physiology and psychological factors during food consumption. At this moment, there is no study which has studied the link between oral physiology and oral processing behaviour of different consumer groups. The aim of this study was to link oral physiology of consumers varying in age, gender and ethnicity to their oral processing behaviour. To characterize the oral physiology of consumers varying in age, gender and ethnicity, 3 groups consisting of healthy consumers, Dutch Caucasian adults (18-30 years, n=36), Chinese Asian adults (18-30 years, n=36) and Dutch Caucasian elderly (65-85 years, n=36) were recruited. Oral physiology of all consumers was characterized by salivary flow rate (both rested and stimulated saliva), volume of oral cavity, mastication efficiency (as the particle size and number of particles of a masticated artificial rubber), tongue dimensions and dental status. The oral processing behaviour was assessed by video recording the consumption behaviour of the subjects, while consuming a carrot, cheese and sausage sample. From the video recordings 4 oral processing parameters were extracted: consumption time, bite size, eating rate and number of chews. Additionally, 5 food-related questionnaires were used to assess food intake, food choice, contextual factors and health aspects during food consumption and texture preferences. Data collection is ongoing. The data analysis will link the oral physiology with the oral processing behaviour of the different consumers. With the current study we hope to gain a better understanding of the link between oral physiology and oral processing behaviour among different consumer groups will be obtained.