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From Food Texture to Global Perception: Respective Impacts of Food and Human Physiology

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The acceptability of foods by consumers is mainly driven by its overall perception, including texture, taste and aroma. As food is put in the mouth, food breakdown contributes to the different sensory perceptions until swallowing and the amount of product remaining in the mouth after swallowing contributes to after-feel perception. Food texture depends on food composition and structure but also on oral physiological parameters which vary according to the individuals and impact food bolus structure. Food texture also impacts taste and aroma perception. In fact, a modification of food composition and structure does not only affect texture perception but also aroma and taste perception due to a modification of the release of taste and aroma stimuli. Moreover sensory interactions occur between texture and both taste and aroma sensory perception. The aim of this presentation is to present the effect of food texture on the global sensory perception in dairy products, taking into account food composition (fat, protein, dry matter, ions, texture replacers) and food structure on one hand and human physiological parameters (masticatory behaviour, saliva flow and composition, oral volume, respiratory flow) on the other hand. Examples will be given on semi-hard dairy product which are chewable and for which mastication and salivation play an important role and on different types of dairy emulsions for which tongue-palate compression, melting and saliva composition are more important. Another focus will be done on fat perception, a multimodal perception involving texture, taste and aroma.