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Physiological mechanisms explaining human differences in fat perception and liking in food spreads-a review

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1 **Physiological mechanisms explaining human differences in fat perception**  
2 **and liking in food spreads-a review.**

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9

10 **Abstract**

11 *Background*

12 Fat perception and liking are the subjects of growing interest from industries and the scientific  
13 community to reduce the fat content in food products while maintaining consumers' liking.

14 *Scope and Approach*

15 In this review, the different physiological parameters involved in fat perception and fat liking  
16 for food emulsions are explored, focusing on spreads. A deeper analysis of the physiological  
17 mechanisms occurring during the melting and inversion phases, followed by bolus formation,  
18 mouth coating and oral clearance, allows an examination of the links between food  
19 composition, food structure, oral physiological parameters, fat perception and liking.

20 *Key Findings and Conclusions*

21 Fat perception is a multimodal sensation involving olfactory, gustatory and tactile cues. The  
22 main sensory descriptors associated with fat liking are creaminess, spreadability and aroma  
23 perception. During the melting and inversion phases, oral volume, saliva flow and tongue-  
24 palate compression contribute to the heat transfer and cooling effect, leading to the first  
25 sensory perception. Global acceptability is also driven by the mouthfeel sensation perceived

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