21. Mastication analysis

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The process of mastication is an essential function for the survival of dentate organisms and has long been a subject of the study in the dental literature. PubMed lists 11,202 references to articles on mastication from 1914 to the present. Moreover, dentistry pays too little attention to a patient’s ability to chew food. Mastication is the initial step in the digestive process of all dentate. Thus, an understanding of mastication is very important in dental medicine. Mastication can be analysed in three ways: (a) analysing the movements of the mandible, (b) analysing the activity of the masticatory muscles (electromyography studies) or c) analysing the results of the mastication process (chewing particle size analysis). The simultaneous analysis of the movements and the muscle activity is the more revealing approach. A discussion is presented here to illustrate how the combination of electrognathography and electromyography can be recorded. Analysing masticatory movements with simultaneously recorded muscle activity to reveal muscle coordination has become a technique that can be carried out in the average dental practice. The results of these studies can help us diagnose temporomandibular joint internal derangements, temporomandibular disorder conditions, and design prosthetic restorations that function. More uniquely, this process can also reveal the quality of
a patient’s masticatory function before any treatment and indicate incremental improvement after treatment.

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