

## Temporomandibular Disorder and Nutrition Summary

Patients with TMD have altered chewing and swallowing functions. There appear to be multiple, valid ways to measure these functions in humans and capture biochemical, physiological, mechanical, and structural differences between TMD cases and controls. Electromyography, jaw tracking devices, pain measures, and questionnaires are several minimally invasive techniques utilized. There seems to be fairly good agreement in the literature about overall normal mechanisms of chewing and swallowing; to a limited extent, I think this can be said for alterations in muscle activity, joint behavior, and bone composition in TMD cases, although disease heterogeneity leads to the identification of more variable abnormalities.

It is clear from the literature that patients with TMD have difficulty consuming food due to painful chewing/swallowing and limited jaw function. This can lead to nutritional deficits, altered weight, and gastrointestinal problems. The psychological impact of these problems is potentially vast and affects the quality of life for TMD patients. These outcomes are especially true for TMD patients with chronic disease. There is general advice for TMD patients to consume soft or pureed foods (texture modification). The impact of nutrition on disease pathophysiology is not clear. There is no concrete evidence that specific diets or food stuffs are useful in managing or treating TMDs or ameliorating symptoms of disease. (i.e. the use of anti-inflammatory agents or lipids (for example, omega-3 fatty acids), soy, etc.)

There are no guidelines for assessing nutritional deficits, nor specific guidelines for managing diets in TMD patients. Several special interest groups have developed nutritional/dietary guidelines for reducing cardiovascular risk, prevention of cancers, and managing diabetic patients. These guidelines may be useful for TMD patients who have these co-morbid conditions. Importantly, HHS and USDA develop Dietary Guidelines for Americans, now in its 8<sup>th</sup> iteration and they are updated every five years by law. This document identifies healthy dietary components and should be the starting point/basis for a guideline for TMD patients; patient-specific modifications can be made on a case-by-case approach.

TMD patients (or patients with any type of face pain) do not seem to have eating disorders. Conversely, in patients with eating disorders, a large percentage reports some type of face pain (not necessarily TMD).

### Potential Research Directions:

Develop guidelines for assessing nutritional deficits in TMD patients

Develop guidelines for managing, reversing, mitigating nutritional deficits in TMD patients in a patient-centered manner

Utilize current technologies to characterize chewing and swallowing abnormalities in TMD in a patient-specific manner; explore biological and mechanism-based ways to reverse or mitigate abnormalities