Two-Phase Treatment for Temporomandibular Disorders

The terms "TMJ" and "TMD" have been used to identify a group of disorders, temporomandibular disorders that, as a group, are medically considered as musculoskeletal disorders. They involve primarily pain and dysfunction of the muscles, joints, ligaments and related structures of the jaw system. Either of these terms, "TMJ" or TMD, must be considered no more than generic. Using either is comparable to referring to "digestive disorders" as a group. Neither refers to a specific condition and neither is a specific diagnosis of the problem in an individual case.

In the past twenty years or so we have learned enough about these conditions to be able, in most cases, to arrive at a quite specific diagnosis for any given patient's condition. Rather than thinking of all jaw complaints generically as "TMJ", as was largely true prior to about 1980, today a dentist with proper training and experience, having done a careful history, a thorough exam, and in some cases certain x-rays or other imaging, can quite specifically identify the exact nature of a patient’s pain or other problem with their jaw. This, then, makes it possible to develop a treatment plan that is designed to address the specific condition for each individual patient. As a result of clearly identifying the nature of the problem, treatment, when properly rendered, can be far more predictable. To put it simply, generic diagnoses lead to generic treatment. Sometimes it may help but the outcome remains unpredictable. And non-specific treatment can sometimes make the problem worse or may involve more treatment than is necessary.

The predominant feature of most TMD complaints is pain. In many medical conditions, pain is the symptom that tells us something is wrong. The objective of complete medical diagnosis and treatment is not simply to eliminate the presenting symptoms. It is also to understand what is causing the pain, to address the underlying cause of the problem and, hopefully, to decrease the likelihood that the problem will return. Although pain may be what brings the patient to see the doctor, it is important to recognize that eliminating the pain may not necessarily represent treatment of the entire condition. This is no less true in temporomandibular disorders than it is in any other medical condition where pain is a prominent symptom. The question that must always be asked is, "Why does this patient hurt?" Without a specific diagnosis derived from a thorough history and examination, the answer to that question is seldom more than a guess and treatment, therefore, can only be approached speculatively.

Historically, when all TMDs were approached from no more than a generic understanding, treatment was often largely trial and error. There were far too many cases in which irreversible treatment was done "to see if it would help." "To help" usually meant to reduce or eliminate the pain, but the thinking, regarding the objective of treatment seldom went beyond elimination of pain. This approach was often like Russian roulette. Sometimes the pain was
made better and sometimes it wasn’t. Most significantly, attempts to relieve pain often involved extensive irreversible treatment such as grinding on the teeth, orthodontic treatment, extensive crown work, surgery, etc. Because these treatments did sometimes help, in the absence of more predictable and/or less invasive options, these occasional successes provided a justification to continue doing them, even though there was no certainty that they would help in a specific case. In other words, the fact that these treatments sometimes didn’t help or that they could be very expensive or, in some cases, even causing the patient to be worse off, was conveniently ignored. It was easy to rationalize doing these things because they were all that was known and sometimes they worked. Today we have the ability to approach these problems in a much more rational and predictable manner that usually allows us to avoid doing irreversible treatment until we know that the underlying problem can be addressed in a definitive manner. This is the rationale for what we refer to as Two-Phase TMD treatment.

Phase I Therapy
Initial treatment, Phase I, addresses the objectives of, (1) a substantial reduction or elimination of symptoms, (2) the return of normal physiologic function of the jaw mechanism, and (3) stabilization of the jaw. It is also an objective of Phase I treatment to avoid, whenever possible, invasive and/or irreversible treatment while accomplishing the three previous objectives. Achieving these objectives amounts to reestablishing homeostasis in the jaw mechanism, based on known physiologic requirements for optimum function. To accomplish these aims, the patient is first typically fitted with an intraoral appliance that has been designed to specific parameters that are conducive to achieving the objectives stated above.

It is an axiom of jaw function that the jaw always closes where the teeth fit together best, regardless of how this may affect the jaw muscles or the temporomandibular joints. Research on the function of jaw muscles and the temporomandibular joints has clearly shown that the way the teeth come together has a significant influence on the function of both. With certain types of tooth contacts, the jaw muscles contract more and/or loose their normal coordination. The position of the condyle within the temporomandibular joint is clearly influenced by the existing bite. In a symptomatic patient, regardless of the etiology of their complaint, promoting a return of functional homeostasis within the jaw system requires masking possible detrimental aspects of the existing dental occlusion (“bite”) and creating optimum occlusal relationships. Achieving this therapeutic potential is accomplished, temporarily, by fitting the patient with a properly designed intraoral appliance.

The therapeutic changes that occur in Phase I are largely due to the “permissive” design of the intraoral appliance. It produces an “unlocking” of the existing dental occlusion, permitting the lower jaw to assume a more physiologic posture under muscular control. This change in jaw posture will also affect the position and function of the temporomandibular joints. Proper tooth contact on the appliance also promotes a decrease in muscle tension. The patient is typically followed over a period of several months, with regular adjustments on the appliance, as alteration in jaw posture takes place in conjunction with reduction of muscle tension. With some conditions, an appliance of special design will be required so that direct mechanical control of joint position can also be achieved.

In addition to having patients wear an appliance, they are also frequently referred to physical therapy, which can facilitate the objectives of Phase I. For many patients, wearing of the appliance alone, although essential, will not accomplish all of the objectives of Phase I without the addition of physical therapy. We have found that the level of knowledge, skill, and experience of the physical therapist is crucial to achieving predictable improvement. When these two approaches, a properly designed and adjusted occlusal appliance, and well-executed physical therapy, are provided with a high level of knowledge and skill, the desired outcome is most consistent.

Phase II Therapy
Not every patient requires Phase II therapy and it is not recommended unless the objectives of Phase I have been accomplished. In the process of achieving homeostasis within the jaw mechanism, Phase I therapy typically produces a slight change in the relationship between the upper and lower jaws, due to mandibular re-posturing. Preserving this therapeutic change is often indicated to achieve long-term stability and to minimize the risks of a return of the original symptoms. The specific needs of each patient in Phase II can only be determined following successful completion of Phase I. Whatever the specific needs of the individual patient may be, the objective of Phase II therapy is to definitively provide a stable and functional dental occlusion that supports the relationship between the upper and lower jaws achieved in Phase I. Due to the axiom mentioned earlier regarding the effect of the bite on jaw positioning, if such a correction is not accomplished, the likelihood that the jaw will revert to its pre-treatment status is quite high.

As was explained earlier, what is now considered Phase II therapy was once done in an attempt to treat the problem directly, without any clear certainty that it would be effective. The rationale for this previous approach was based on the observation that correction of dental occlusal mal-relationships clearly did help with some problems. It is now known, however, that when pain and high levels of muscle tension exist, it is often impossible to achieve an optimum outcome by attempting to correct dental occlusal problems directly.

When the objectives of Phase I have been realized by re-establishing functional homeostasis in the jaw system, Phase II may be justified on the evidence of benefit from Phase I. But equally as important is the realization that making the correction in Phase II is far more predictable when the pain and dysfunction have first been eliminated from the jaw muscles and joints.