CHAPTER 4
Perpetuating Factors

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HIGHLIGHTS: The **CLINICAL IMPORTANCE** of factors that perpetuate myofascial trigger points (TrPs) is generally underestimated. Perpetuating factors are numerous and often require special knowledge to recognize their importance to TrPs. They are commonly overlooked and neglected. In patients with chronic myofascial pain, attention to perpetuating factors often spells the difference between successful and failed therapy. **MECHANICAL STRESSES** frequently perpetuate the TrPs in patients with persistent (chronic) myofascial pain syndromes. The most common sources of such physical stress are skeletal asymmetry and disproportion. Asymmetries include a lower limb-length inequality–a 0.5 cm (3/16 in) difference can be critical–and a small hemipelvis. Skeletal disproportions are a long second metatarsal bone (Morton foot configuration) and short upper arms. Other sources of muscular stress, such as misfitting furniture, poor posture, abuse of muscles, constricting pressure on muscles, and prolonged immobility, are frequently significant and nearly always correctable. **NUTRITIONAL INADEQUACIES** are often crucial perpetuating factors and commonly occur along with sources of mechanical stress. Low "normal" levels of vitamins B_1, B_6, B_{12}, and/or folic acid, are suboptimal, and frequently are responsible when only transitory relief is obtained by specific myofascial treatment of involved muscles. Abnormally low values consistently aggravate TrPs. Vitamin C deficiency increases bleeding at sites of injection; low levels of this vitamin are very common in smokers. Vitamin inadequacies are confirmed by measuring blood serum levels; symptoms usually respond to oral supplements. Iron deficiency and anemia aggravate TrPs. Adequate calcium, potassium, and several trace minerals also are essential for normal muscle function. Borderline anemia is an important factor. **METABOLIC AND ENDOCRINE INADEQUACIES** that commonly perpetuate TrPs are hypometabolism due to suboptimal thyroid function, hyperuricemia and hypoglycemia. Apparently, whatever impairs muscle metabolism, including anemia and low thyroid function perpetuates TrPs. Adequate laboratory tests are now available to identify marginal thyroid function affecting TrPs. **PSYCHOLOGICAL FACTORS** that can delay recovery include depression, tension caused by anxiety, the "good sport" syndrome, secondary gain, and learned sick behavior. **CHRONIC INFECTION** due to either viral or bacterial disease, and some parasitic infestations, can prevent recovery from myofascial pain syndromes. **OTHER FACTORS,** such as allergy, impaired sleep, radiculopathy and chronic visceral disease, prolong treatment. The routine **SCREENING LABORATORY TESTS** that are most useful to identify perpetuating factors are serum vitamin levels, a blood chemistry profile, complete blood count with indices, the erythrocyte sedimentation rate, and thyroid hormone levels.

.224
Thyroid Tests .228
.228

A. CLINICAL IMPORTANCE

The importance of correcting perpetuating factors is illustrated by the apocryphal story of the man who stepped in a hole in the sidewalk and broke his leg. He was treated and the bones of his leg healed, but 2 months later he stepped in the same hole and again broke the leg. *No one had patched the hole.* If we treat myofascial pain syndromes without "patching the holes" by not correcting the multiple perpetuating factors that promptly reactivate TrPs, the patient is doomed to repeated cycles of treatment and relapse. For patients who have suffered myofascial pain for many months or years, we find it necessary to spend most of our time patching holes. For patients with chronic myofascial TrPs, this is *the most important single chapter* in this manual; it concerns the most neglected part of the management of myofascial pain syndromes.

The answer to the question, "How long will the beneficial results of specific myofascial therapy last?" depends largely on how long the active TrPs have persisted untreated, and on the perpetuating factors that remain unresolved. In the absence of such factors, the muscle with fully inactivated trigger points (TrPs) should be no more susceptible to TrP activation than that muscle had been previously.

One also can view perpetuating factors as predisposing factors, since their presence can make the muscles more susceptible to the activation of TrPs.

The present chapter concerns the group of mechanical and biochemical factors that perpetuate existing TrPs. The previous chapter noted many common mechanical stresses that initiate TrPs by overloading muscles (Section 7). Frequently with acute TrPs, one stress activates a TrP, then other factors perpetuate it. Occasionally, these perpetuating factors are so important that their elimination permits spontaneous inactivation of the TrPs.

B. MECHANICAL STRESS

Three types of mechanical stresses are considered below: structural inadequacies, postural stresses, and constriction of muscle.

Structural Inadequacies

Common structural inadequacies can be potent perpetuators of TrPs. A lower limb-length inequality (one leg shorter) can cause a tilted pelvis in standing. This usually results in a compensatory scoliosis that is maintained by sustained muscular effort, which is a potent perpetuating factor for TrPs in those muscles. A small hemipelvis (when the subject is standing or seated) can tilt the sacral base also producing a compensatory scoliosis that produces the same results. Short upper arms (in relation to torso height) leave the shoulders without adequate support in most seated positions. This leads to overloaded shoulder elevator muscles. It also produces compensatory distorted postures that can overload torso muscles and perpetuate their TrPs. The short first, long second metatarsal variation (Morton's foot configuration) causes muscle imbalance that can extend from the leg to the head and perpetuate TrPs in those muscles.

Lower Limb-Length Inequality

IMPORTANCE. The clinical experience of practitioners is strongly convincing that lower limb-length inequality (LLLI) is fre-