Dynamic Chiropractic

ORTHOTICS & ORTHOPEADICS

When to Consider Orthotics: Research-Based Recommendations

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Sometimes a patient's need for custom-made foot orthotics becomes apparent only after an inadequate response to chiropractic care. Some patients, however, reveal an obvious need, and orthotics should be provided early in their care. This will allow a good response to adjustments and prevent frustration all around. What follows are some commonly seen patient characteristics that indicate the need for foot orthotics.

History

Back problems worse with standing, walking, running. When a patient reports a link between locomotor activities and their spinal symptoms, this clearly calls for orthotics to minimize the stress being transmitted from the lower extremities to the spine.[1]

Recurrent ankle sprains. A history of previous sprain injuries to one or both ankles indicates biomechanical instability and probable permanent ligament damage. Custom-made stabilizing orthotics provide the support needed to help prevent re-injury.[2-3]

Family history of foot problems or surgery. A patient who has family members with foot problems and/or surgery has a much higher probability of the same. Fitting for orthotics may prevent these problems from developing and could help the patient avoid surgery.

Strenuous athletic activities. Those who engage in upright, weight-bearing sports need both shock absorption and foot/ankle stability. Orthotic support can increase performance and prevent injuries in many individual and team sports.[4]

History of lower extremity stress fractures, recurring shin splints, hamstring strains. Whenever an athlete, whether recreational or competitive, reports symptoms of overuse injury (microtrauma) in the lower extremities, orthotics should be provided. These conditions are closely correlated with biomechanical asymmetries, and require better support and shock absorption.[5-6]

Chronic knee pain, patellofemoral arthralgia, ACL injury. The knee joint is a sensitive indicator of abnormal biomechanical stress, and these conditions have all been shown to indicate the need for orthotics. Controlling pronation decreases the rotational forces, improving patellar tracking and protecting the anterior cruciate ligament.[7]

Exam Findings

Postural imbalances (e.g., pelvic tilt, scoliosis, forward head). When a standing structural evaluation

discloses any pelvic tilt, a lower extremity asymmetry requiring orthotics for proper correction is likely. Both functional and idiopathic types of spinal curvatures can benefit from the foot stabilization and neurological stimulus provided by orthotics.[8] Many postural complexes (forward head is one of the most common) are secondary to poor standing balance and proprioception from the feet.

Gait asymmetry (e.g., calcaneal eversion, excessive pronation, foot flare). Looking for indicators of biomechanical asymmetry while a patient walks will often demonstrate the need for orthotics.[9] If the foot and ankle complex is not functioning correctly during the stance phase of gait, this stress is transmitted to the pelvis and spine with every step.

Foot calluses, bunions, hallux valgus. Heavy callousing, bunion development and abnormal alignment all reveal evidence of abnormal or poorly tolerated forces during walking and indicate the need for improved biomechanics and orthotics.[10]

Lack of an arch (especially unilateral). This is seen during the weight-bearing portion of the exam, when a foot collapses under the weight of the body. A foot without an arch will not function properly and thus requires support.[11]

Knee instability, high Q-angle, poor patellar tracking. When the knee does not align properly or track correctly, degenerative wear-and-tear and other chronic symptoms will follow. Orthotic alignment is required to reduce the abnormal forces on this complex joint, which must be able to sustain frequent high forces during walking and running.[12-13]

X-Ray Findings

Scoliosis (functional or idiopathic), widespread disc degeneration. The spine will demonstrate poor support from one of the lower extremities by developing a lateral curvature. Gait disturbances may be one of the causative factors for idiopathic scoliosis. Significant intervertebral disc degeneration is proof of poor spinal shock absorption, and orthotics with viscoelastic properties often reduce symptoms dramatically.[9]

Unlevel sacral base, sacroiliac joint degeneration. The pelvis shows evidence of inadequate support by the appearance of a tilted sacral base when standing. This is often due to a functional short leg requiring orthotic support.[14] Sacroiliac degeneration is unusual; when found, it indicates significant abnormal stresses.

Low femur head, coxafemoral DJD. These conditions are due to either an anatomical or a functional short leg. Degenerative changes in the hip joint have been correlated with the stress of a longer leg. Both will benefit from the improved balance and support provided by orthotics.[14]

Heel spur, DJD in knees, metatarsals. X-rays of the feet and knees may reveal evidence of long-standing regional stress, such as degenerative changes in weight-bearing joints and connective tissue calcification. Calcium deposited in the calcaneal attachment of the plantar fascia specifically indicates the need for support of the arches of the foot to help reduce shock and symptoms in degenerated joints, and provide arch stabilization.[11]

Treatment Response

Recurrent subluxations. Making the same adjustment to a patient's spine again and again suggests poor structural support for the region. Orthotics have been used for decades by chiropractors who don't want to continue adjusting the same area and who want to see the adjustment "hold" better.

Unresolving muscle strain, myalgia. Myofascial symptoms not responding to treatment often are a clue to an underlying biomechanical imbalance. Many chronic muscle spasms and strains can be corrected by providing orthotics to support and stabilize.[15]

Flare-ups, exacerbations. A patient who is feeling better, returns to daily activities, and then suffers a return of symptoms probably needs orthotics. Without proper biomechanical support, these patients find that every attempt to establish normal routines causes a recurrence of their symptoms.

Foot symptoms are only one of the many reasons for supplying orthotics. In fact, the feet are seldom painful in most of the conditions that are clear indicators of an need for orthotic support. All chiropractors must be alert for signs of lower extremity involvement in spinal conditions. The good news is that these conditions can all be helped. Investigation and correction of foot biomechanics can help most patients, especially the recreationally active and the elderly.

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