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## **The Diabetic Patient and Improving Quality of Life**

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Type II diabetes, or noninsulin-dependant diabetes mellitus (NIDDM), affects millions of our patients. The condition usually develops after age 40, and many patients who present for treatment of musculoskeletal or neurological conditions may actually be experiencing complications from uncontrolled blood glucose levels. As potentially debilitating as this condition can be, it is unfortunate that as many as half of those with diabetes are unaware of their condition.<sup>1</sup> Being familiar with the disease process will allow the health care provider to function as an important member of any treatment team.

### **Signs, Causes, Complications**

Patients exhibiting classic signs of the Type II diabetic are overweight, hypertensive, and inactive.

Type II diabetes usually results from decreasing tissue insulin sensitivity and degeneration of pancreatic beta cells, related to a high-carbohydrate diet and inactivity. The result is a chain of pathological processes involving mobilization and deposition of fat. The worst complication is vascular destruction, because of atherosclerotic plaquing. As peripheral blood vessels become blocked, especially in those that supply nerves, characteristic changes occur in the feet and ankles.

### **Improving Quality of Life**

The triad of peripheral neuropathy, neuropathic joint destruction (Charcot joint), and increased weight gain requires direct intervention by a structure-conscious healthcare provider. Although the chiropractor may not directly treat the diabetic condition, using some simple techniques will improve the quality of life for any diabetic patient:

- increase patient activity level

- monitor diet and supplements
  
- protect and support the feet

The number-one goal is to control the blood sugar level. In type II diabetes, this may require oral hypoglycemic medications, but treatment will be far more effective if the patient is able to improve diet and increase activity, without adding additional stress to the feet and ankles.

Even patients without diabetes find it hard to exercise regularly when they are in pain. Chiropractic care increases the patient's ability to establish an exercise regimen necessary to maintain healthy body weight. Furthermore, exercise is therapeutic. "During exercise, insulin need is diminished," Souza observes. "This is due to the enhanced insulin binding at receptor sites, so that glucose uptake is increased without an increase in insulin (insulin demand reduced)."<sup>2</sup>

Excessive chronic hunger, thirst and urination (polyphagia, polydipsia, and polyuria) means your patients will struggle with their diets. Despite the blood being full of ample fuel, the cells that need it don't have access to it. The signals to eat and drink are truly false alarms. The function of insulin, and its balance with other hormones that control glycemic metabolism, depends on sufficient levels of chromium and potassium. Thiazide diuretics, used to control hypertension, for example, decrease serum potassium, and beta-blockers may raise lipid levels. An attempt to correct hyperlipidemia with niacin can increase insulin resistance.

### **Foot Concerns**

Any disease that impairs sensation of joint receptors predisposes the articulations to microtrauma and joint derangement, resulting in Charcot joints. Diabetic arthropathy affects the feet and ankles predominantly, and although diabetics may report tingling or burning in their feet, true sensation actually decreases. It is very important, especially for the diabetic, to ensure normal articulations in the feet.

First, subluxations are responsible for the severe joint destruction that occurs. Although destruction can happen anywhere, the tarsals and distal metatarsals are most susceptible. The arches of the feet should be supported to maintain proper alignment. Secondly, misalignments can cause pressure sores, which are slow

to heal and are easily infected.

The American Orthopaedic Foot and Ankle Society (AOFAS)<sup>3</sup> makes these foot-care recommendations:

- Make frequent visual inspection to compensate for the loss of sensation.
- Never walk barefoot.
- Check inside shoes for foreign objects.

### **Orthotic Support**

Use custom-made, flexible orthotics to help cushion the foot and provide shock protection to the joints. Avoid over-the-counter, rigid, and hard plastic insoles.

Research on magnetic inserts suggests a positive effect on diabetic-related distal neuropathy. Weintraub reports that despite "the uncertainty regarding the precise mechanism of this novel approach, the results are impressive and suggest that a legitimacy exists for magnetotherapy as a safe and unique therapy in neuropathic diabetic foot pain."<sup>4</sup> Speculation as to how or why these positive changes occur currently centers around gradient changes in the Na-K-ATPase system of sensory nerve endings or the induction of a change in the C-fiber firing patterns, which are known to be adaptive.

In response to demands from doctors who were already providing spinal/pelvic stabilization for their patients, there is now a line of flexible, custom-made orthotics that includes magnet therapy. Not only do these scientifically designed orthotics help stabilize the body's overall structure by providing a symmetrical foundation, enhancing shock-absorption capacity, and improving the sensory-motor responses, they also provide the potential positive benefits of magnetic therapy. Orthotics are a fundamental part of any treatment plan aimed at increasing the patients' activity level and getting them back on their feet.

There are other specialty orthotics without magnets. These orthotics are specifically designed to support foot and ankle articulations in the diabetic, while providing a level foundation for the pelvis and spine. Built-in gentle orthotic correction protects the feet from possible pressure sores and provides a very high level of

comfort.

Even though you may not treat the diabetic condition directly, you can function as a vital member of the health care team. Your efforts to minimize the damaging effects of this disease will add quality to the life of your patient.

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