

The Physicians Foot UPDATE

Volume 1, Issue 2

How The Foot Institute can Benefit Health Care Professionals in Private Practice

General Surgeon Now on Staff

Dr. John Hollingsworth, MD FRCSC FACS is a general and bariatric surgeon who has recently joined the staff of professionals at the Foot Institute. Although Dr. Hollingsworth is best known for his expertise in obesity surgery, he has always maintained an active general surgery practice as well. Dr. Hollingsworth will work with the other doctors as the Foot Institute and will be available for consults, surgical assistance, and continuing education. Patients and staff at The Foot Institute feel fortunate to have available the services of Dr. Hollingsworth in its continued mission to provide well trained professionals committed to treat and prevent foot pathology, biomechanical disorders as well as all other problems relating to the feet and ankles.



Dr. John Hollingsworth, MD

"Type II diabetes can always be improved and often completely controlled with attention to diet, weight control and exercise. The complications of chronic diabetic foot ulcers can often be cured and usually prevented by appropriate management and meticulous foot care, in partnership with your family physician and podiatrist."

New Clinics Open

Since the issuance of the last newsletter, The Foot Institute has opened a number of new clinics in the areas of Edson, Bonnyville, Fort Saskatchewan, Drayton Valley, Lloydminster and Westlock. Two Edmonton locations were also added, one on the North side of the city and one in the Millwoods area. Although some of the clinics will not formally be open until summer, Foot Institute Administrator, Mr. Mark Pilling, reports the purpose of the expansion is to establish clinics that are conveniently located and which will allow more people access to quality foot care. Many people are under the false assumption that foot pain is something that you have to learn to live with. Mr. Pilling indicates their hope is to change this notion by providing access to well-trained Doctors no matter where people may live.

Referrals

The Foot Institute would like to thank the many Physicians who refer patients for foot and ankle treatment. After the last newsletter on biomechanics was issued, we received many requests to send Physicians additional patient brochures on orthotics as well as our introductory brochure. Physicians wanting additional newsletters, brochures or other patient information can contact our administrative offices .

Feature Article - The Diabetic Foot



Diabetics Mellitus is the fastest growing preventable disease in Canada now reaching near epidemic proportions. There are approximately 60,000 new cases of diabetes diagnosed in Canada

every year with studies indicating that a large percentage of people with diabetes are still undiagnosed. The incidence of diabetes in certain populations such as Aborigines, Blacks and Hispanics are even higher. It is estimated that approximately one-third of Natives in Canada will be inflicted with Type 2 diabetes in the coming years. Research indicates that large percentages of patients diagnosed with diabetes mellitus will develop foot problems related to their disease. The rate of lower limb amputation is over 15 times greater in diabetic patients than in non-diabetic patients. Research also indicates that it is possible to decrease amputation rates by up to 70% by providing proper foot care.

Peripheral neuropathy, ischemia, and infection are the three primary foot complications that patients with diabetes mellitus experience. The leading cause of diabetic foot ulcers is peripheral neuropathy (PN). The most important consequence of PN is a loss of sensation. Diabetics experience a loss of vibratory and temperature senses which compromise proprioception, kinaesthesia, pressure and temperature awareness. Because of the PN condition, many patients experience undetected trauma which often

lead to ulceration and subsequent infection. This trauma is usually a result of prolonged and repetitive low magnitude forces (often due to an underlying biomechanical fault). Ulceration and subsequent infections are facilitated by this lack of protective sensation.



Hammertoe/Clawtoe deformity is an example of one of the complications that result from neuropathy affecting the intrinsic foot muscles and their respective motor neurons. The claw foot deformity can lead to increased pressure

under the metatarsal heads and toes and result in an increased susceptibility to plantar ulceration. Physicians should look for any foot disorders or anomalies as often these disorders are caused by an underlying



and more serious pathology. Given the seriousness of peripheral neuropathy, it is recommended that all high risk or newly diagnosed diabetics should have a comprehensive foot and screening exam by Doctors at The Foot Institute.

Clinical Biomechanics of the Diabetic Foot

There are many etiological factors that can contribute to increased plantar pressure on the foot. These factors include bony deformities, limited joint motion, decreased soft tissue integrity, atrophy, pes cavus, clawing of toes, altered posture and gait pattern. These can lead to bone and joint destruction via neuropathic osteoarthropathy (Charcot foot). Clinicians should look for plantar flexed metatarsals, bony deformities on the plantar, dorsal, medial or lateral surfaces of the foot, bunions or any other prominence. Limited joint motion of the subtalar, midtarsal and 1st metatarsophalangeal joint can also cause increased plantar pressure and subsequent foot ulceration.

It is believed that intrinsic foot muscle atrophy also occurs as a result of motor neuropathy. Claw toes are often the systematic result of this condition along with callosity on the plantar surface of the foot.

Practitioners should be very aware of altered gait patterns and posture which often leads to excessive plantar pressure particularly in the form of repetitive focal loading. The degree of pressure may not be high, but it is the repetitive loading of one localized area and the uneven weight distribution that often increases the change of ulceration.

Along with clinically evaluating the relevant anatomy, biomechanics and the overall foot function, it is important to consider patient activity levels, foot wear and foot care habits. Many of the above complications such as plantar pressure are complicated or exacerbated by a biomechanical dysfunction that can often be effectively treated by prescription custom foot orthotics, which are either accommodative, functional, or both. Orthotics supplied by Doctors at The Foot Institute generally differ greatly from orthotics supplied by non-podiatrists. Patients that may require orthotics should be seen by Foot Institute Doctors for a complete evaluation.

Management of the Diabetic Foot

Because the neuropathic patient is unable to detect pain and trauma, it is imperative that particular attention be paid to a patient's biomechanical function, gait, posture and foot structure. Proper prescribed foot orthotics, footwear and shoe modifications will address the following essential objectives:

1. Relieve areas of excessive plantar pressure
2. Reduce shock
3. Reduce shear
4. Accommodate deformities
5. Stabilize and support deformities
6. Control joint motion.

Ill-fitting or inappropriate shoe gear can lead to excessive pressure and friction that may cause blisters, calluses and eventual ulceration. Often, rocker bottom or rocker sole modified foot wear is prescribed to restore lost or deficient sagittal plane of motion in the ankle and foot or decrease the plantar pressure under the forefoot.

As an alternative to, or in conjunction with proper foot wear, prescription foot orthotics are often one of the most effective and financially responsible prevention tools to restore the sagittal plane of motion or decrease the plantar pressure under the forefoot. These proactive measures can accommodate highly susceptible areas of prominence, ensure even weight distribution, provide high levels of shock attenuation as well as address any abnormal foot mechanics that can often contribute to ulceration and subsequent infection.



Dr. Dave Gibbs, DPM

"Diabetes Mellitus is not a *biomechanical* disease. However, a large number of serious lower extremity complications and disorders are often caused by an underlying biomechanical dysfunction. Doctors of Podiatric Medicine are specifically trained to diagnose, treat and manage these types of disorders."



Dr. Brent Young, DPM

Our Podiatrists are often asked to lecture or provide workshops to Physician groups on such topics as biomechanical exams, foot surgery, etc. If you have a particular topic of interest, please contact our Administration Offices.

Ask Your Foot Specialist

Q: Are lower limb amputations preventable?

A: In North America, over 70,000 people each year undergo diabetes related lower extremity amputations. Evidence indicates that over 50% of these amputations are preventable. It is important that any patient with diabetes mellitus or those in high-risk categories, work with the entire health care team to manage the disease. Proper foot care is a very important element in this approach as one quarter of all diabetics experience foot difficulties. The leading cause of diabetic foot ulcers is peripheral neuropathy, which results in a patient's inability to perceive pain and trauma. This loss of sensation often results in foot ulceration, subsequent infection and all too often - lower limb amputation. Proper foot care can often prevent foot ulceration, infection and thus amputation.

Q: What are some of the best ways to manage the diabetic foot?

A: There are many different approaches to manage the diabetic foot. Each case must be treated differently depending on the severity of the situation and individual patient profile. However, a great number of foot complications can be prevented through proactive measures adopted by patients combined with the use of proper footwear and custom prescription orthotics. These measures are very effective in controlling the proper motion in the ankle and foot and decreasing or eliminating excess plantar pressure. Proper shoe gear combined with orthotic therapy has been shown to control motion in the foot with a resultant decrease of approximately 50% of forefoot plantar pressure compared to a regular flexible shoe.



Dr. John Hollingsworth, MD



Dr. Brent Young, DPM



Dr. David Gibbs, DPM

Call

444-FOOT (3668)

to book an appointment near you.



Dr. Jason Lehr, DPM



Dr. Scott Hollingsworth, DPM



Dr. Todd Schnoor, DPM

EDMONTON

U of A Hospital
Metabolic Centre

The Allin Clinic
10155 - 120 St.

Clareview Medicentre
3504 - 137 Ave.
*(780) 475-7070

Weinlos clinic
15508 - 87Ave.

Terwilliger Medicentre
600 Riverbend Sq.
*(780) 434-7234

Calgary Trail Medicentre
#1, 10407 - 51 Ave.
*(780) 436-8071

Links Clinic
11910 - 111 Ave.

Millwoods Family Clinic
5706 - 19 A Ave.

Palisades Medical Clinic
12848 - 137 Ave.

BONNYVILLE/COLD LAKE

Bonnyville Health Centre
5001 Lakeshore Drive
*(780) 826-3311

DRAYTON VALLEY

Towers Medical Clinic
5207 - 50 St.
*(780) 542-5305

EDSON

Edson Medical Centre
616 - 50 St.
*(780) 723-5531

FT. MCMURRAY

Thickwood Heights Clinic
108 Wolverine Dr.
*(780) 791-4547

FT. SASKATCHEWAN

Fort Saskatchewan
Medical Clinic
9421 - 94 Ave.
*(780) 998-2231

GRANDE PRAIRIE

Prairie Medical Clinic
10309 - 98 St.
*(780) 539-4010

LEDUC

Medical Arts Clinic
4721 - 47 Ave.

LLOYDMINSTER

Lloydminster Clinic
5120 - 46 St.
*(780) 875-2221

SHERWOOD PARK

Dr. Stan Kolber & Assoc.
50 Brentwood Blvd.
#100 Normed Center

SPRUCE GROVE

Parkland Medical Associates
#202, 93 McLeod Ave.
*(780) 962-3668

ST. ALBERT

Associate Medical Clinic
25 St. Michael St.

WESTLOCK

Associate Medical Clinic
203, 10030-106 St.
*(780) 349-3341

WETASKIWIN

Associate Clinic
5215-49 Ave.
*(780) 352-7157

* Please book appointments directly with clinics.

The Foot Institute is independently owned and operated from the above clinics and institutions.