

Patient Information on Charcot Arthropathy as mentioned in:
Registered Nurses Association of Ontario (2005). *Assessment and Management of Foot Ulcers for People with Diabetes*. (p.34). Toronto, Canada: Registered Nurses Association of Ontario.

St. Michael's Hospital
HIGH RISK FOOT CLINIC

Patient Information Booklet

Charcot Arthropathy

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TABLE OF CONTENTS

YOUR FOOT CARE TEAM	2
WEB SITES FOR DIABETIC FOOT CARE	2
CONTACT NUMBERS	1
WHAT IS A CHARCOT ARTHROPATHY?	1
HOW DID I GET A CHARCOT FOOT?	2
HOW DO I MANAGE MY CHARCOT FOOT?	3
HOW DO I MANAGE MY FOOT CARE WITH NEUROPATHY?	10
WHAT SHOULD I WATCH FOR?	13
ANSWERS TO COMMONLY ASKED QUESTIONS	14
NOTES	23
YOUR WOUND MEASUREMENTS	8

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Your Foot Care Team

- ? An Orthopedic Surgeon
- ? A Nurse Practitioner
- ? A Chiropodist
- ? An Orthopedic Technologist
- ? A Registered Nurse
- ? Booking Clerks

Web sites for diabetic foot care

www.cawc.net

www.diabeticfoot.org

www.diabetic-foot-consensus.com

www.acfas.org/brdiabfp.html

www.topaz47.freeseve.co.uk

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Contact Numbers

My Doctor/Surgeon is

High Risk Foot Clinic (The Martin Family Arthritis Care and Research Centre) **416-864-6060 ext.6100**

High Risk Foot Clinic Booking Desk (for making or changing appointments) **416-864-6060 ext.5280**

Nurse Practitioner, Wound Care Team **416-864-6060 ext.2376**

Chiropodist, Wound Care Team **416-864-6060 ext.6399**

Orthotist (Back2Feet Inc.) **416-335-3701**

Vascular Laboratory **416-864-5890**

St. Michael's Hospital Diabetes Centre **416-867-7424**

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Charcot Arthropathy of the Foot

What is a Charcot Arthropathy?

Charcot (*shar coe*) arthropathy is a process by which the inside of the foot begins to collapse. (Fig. 1, 2) There are 26 bones in your foot that are held together by strong ligaments. These ligaments hold your foot shape and the arch of your foot in a normal position.

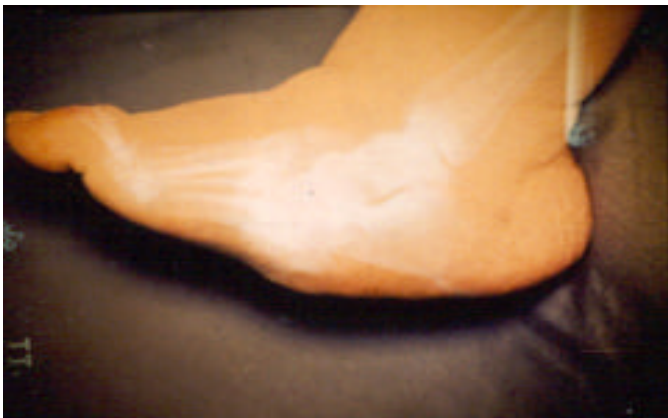


Fig. 1 Picture of a Charcot foot

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When the ligaments begin to stretch and the bones begin to collapse, the normal shape of the foot will change (Fig. 1, 2). This process is associated with swelling and sometimes pain. This is what is happening to your foot.



Fig 2 X-ray (side view) of a Charcot foot

How did I get a Charcot foot?

There are many causes of a Charcot foot, but the primary source is a dysfunction of the nerves to the foot. When the nerves do not work properly, and you lose what is called protective sensation. Without protective sensation your body cannot recognize when you are over-using your foot, or standing in one spot too long, or wearing improper shoes.

This nerve problem also weakens the bones, ligaments and skin so that your foot is NOT capable of tolerating the normal stresses of everyday activity.

Many diseases can cause nerve dysfunction, the most common of which is diabetes mellitus. High sugar levels in the blood that are associated with diabetes mellitus contribute to the production of toxins, which damage the nerves in your body.

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Maintaining blood sugar levels within a normal range plays an important role in preventing nerve damage to your foot and reduces the risk of further damage to your foot.

Other known causes of a Charcot of the foot are:

- ? Spina bifida
- ? alcohol dependency
- ? spinal cord injury
- ? leprosy
- ? CMT

How do I manage my Charcot foot?

Once a Charcot collapse of your foot has occurred, you cannot reverse it. (Fig.1) The primary goal of treatment is to prevent further collapse. Unfortunately, you have lost the internal support for your foot. Therefore, our goal is to provide you with extra support externally by means of custom-made orthotics braces and shoes. (Fig.3).

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Without the extra external support, your foot is at risk of further collapse.



Fig. 3 Samples of custom-made cast, orthotics and braces used in the treatment of Charcot foot.

If the foot collapses further, the bones can begin to protrude. The protruding bones cause an increased pressure to the skin. Eventually the skin can no longer tolerate the pressure and can develop ulcers.

(Fig 4, 5)

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Fig. 4 Foot ulcer



Fig. 5 Foot ulcer

It is imperative that we prevent foot ulcers from occurring. Your risk of requiring an AMPUTATION increases dramatically once an ulcer appears.

THE ROLE OF YOUR ORTHOTIC OR BRACE IS TO PROTECT YOUR FOOT FROM FURTHER COLLAPSE AND PREVENT ULCERATION OF YOUR SKIN.

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Remember, 85 per cent of below the knee amputations in persons with a neuropathic arthropathy occur with an associated foot ulcer. If you prevent an ulcer from forming, you substantially decrease the risk of losing your foot.

How do I manage my foot care with neuropathy?

Your body cannot tell you when your foot is in danger; therefore, you must be your own security guard for your feet. People with neuropathic feet can walk an entire round of golf with a shoehorn or golf ball in their shoe and not feel it. Here are some simple tasks that are important to perform on a daily or routine basis:

- ? Always check your shoe for foreign objects before you put it on.

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- ? Always wear a comfortable shoe that is wide. The top of the shoe should be soft.
- ? Never go barefoot. Have a pair of slippers by the bed if you go to the washroom at night. Shower with sandals on. Stubbing your toe just once can lead to a serious foot infection.
- ? Keep your toenails trimmed at the same level as the skin on the end of your toe. Cut the nails straight, not curved at the edges. You may require professional nail care, if your toenails are thick, or if you have trouble with your vision.
- ? Never test the bath water with your feet. The water can be scalding hot and you may not feel it.

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- ? Wash your feet once a day with soap and water. Wash between the toes and dry thoroughly.
- ? Put lotion on your feet once a day.
- ? Change your socks twice a day.
- ? When you buy a new pair of shoes, break them in slowly and check your feet frequently when you first start to use them.
- ? Have your family doctor check your feet at least once a year.

If the doctor has prescribed a brace and/or orthotics, wear these at all times when you are up and active.

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What should I watch for?

There are several warning signs that your foot is compromised or is at risk of further collapse. If these warning signs are present, visit your doctor immediately:

- ? Increased swelling of the foot and/or ankle;
- ? Increased pain of the foot and/or ankle;
- ? Redness or increased callous over an area of your foot;
- ? *An increased skin temperature of your foot, when compared to the other side; and*
- ? A change in the shape of your foot

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- ? A break in the skin with bleeding or drainage of fluid.
- ? Any signs of fluid or blood on your sock.

Answers to commonly asked questions:

1. What are the chances of this happening to my other foot?

There is an approximately 30 per cent chance that this can occur to your other foot.

2. Will I eventually lose my foot?

Not necessarily. The majority of patients with neuropathic foot complications do not require amputation as long as they manage their feet properly.

3. Why not operate on my foot and make it normal again?

When your foot collapses, the bones break into many little pieces. It is impossible to put these pieces back together again.

4. How long do I have to wear my brace?

Most people will have to wear their braces for a lifetime.

5. How often do I need to replace my brace and/or orthotics?

The brace will last approximately two years. If any cracks or defects

occur in the plastic, you need to see your orthotist immediately.

The orthotics will last approximately one year.

6. What is the role of surgery for my foot?

The role of surgery:

- ? To realign a foot that will not fit into a brace;
- ? To remove infected bone;
- ? To stabilize a foot that continues to collapse; and
- ? To remove protruding bone so that an ulcer can heal.

Most people do not require surgery for their Charcot arthropathy.

SURGERY IS NEVER PERFORMED TO ELIMINATE THE NEED FOR A BRACE.

Anatomy of the Foot

View of Dorsal (Top) of Foot

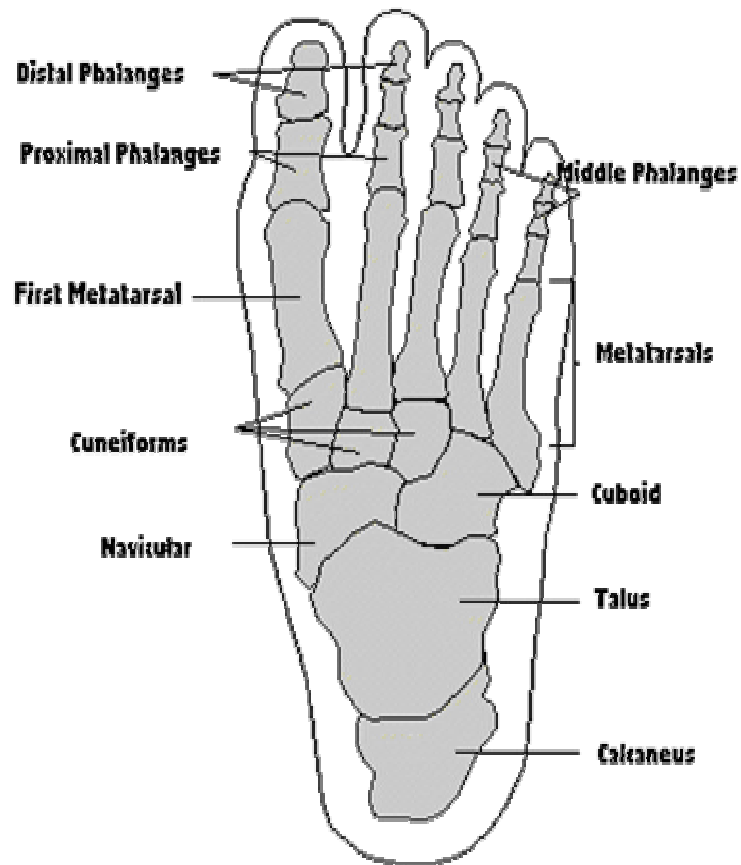


Fig. 6 Top view of the bones of the foot

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View of Medial (Inside) Side of Foot

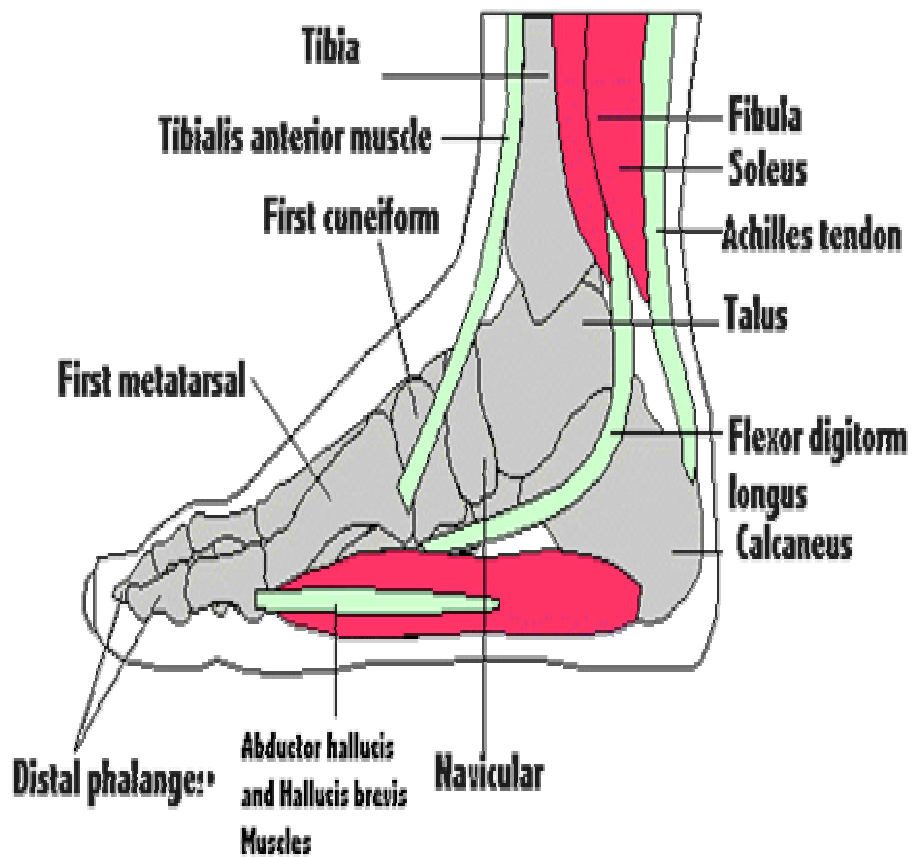


Fig. 7 Side view of the bond of the foot

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Glossary

A

Angiogram

A special X-ray of the arteries. This involves the insertion of a small catheter into the artery in your groin area. A dye is injected into this catheter. This allows the surgeons to see if there is a blockage in the arteries in your leg.

Arterial Doppler /Duplex Scan

An arterial doppler evaluates the arterial blood flow of the body. It can be used to evaluate the arteries of the legs. It may be ordered when there is suspicion of reduced blood flow.

The “microphone” called a doppler probe, sends sound waves into the body, which are reflected off the blood vessels, producing sounds and an electronic tracing of the blood flow pattern of that vessel.

B

Blood Glucose/Sugar

Glucose is the sugar, found in the blood stream that our body uses for energy.

A hormone called Insulin regulates glucose. Normal blood glucose or blood sugar is 4.0 mmol/P to 6.0 mmol/P

C

Circulation

The flow of blood through the heart and blood vessels of the body.

D

Debridement

This is the removal of dead tissue from a wound or ulcer. This is done with a sharp instrument or with special dressings, gels, or ointments.

Dermagraft®

A skin substitute used to help in the wound closure of diabetic foot ulcers. It is made from human cells known as fibroblasts, placed on a dissolvable mesh material.

H

Hemoglobin AC (HgA1C)

This is a special blood test that measures the “average” blood sugar over a three-month period. This measurement tells you how well your blood sugar has been controlled. If this level is high, you will have problems with healing, as well as increased complications of diabetes.

Hyalofill

This is a new advanced wound care technology. Hyalofill is a soft, conformable and absorbent biopolymeric fleece or ribbon entirely composed of HYAFF*, an ester of hyaluronic acid.

High blood pressure (hypertension)

When the blood flows through the vessels at a greater than normal force.

High blood pressure strains the heart; harms the arteries; and increases the risk of heart attack, stroke, and kidney problems. High blood pressure is also called hypertension.

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I

Infection

The presence of bacteria that overwhelms the tissue defenses and produces the inflammatory signs - i.e. purulent exudate (pus), odour, redness, warmth, tenderness, swelling, pain, fever and elevated white blood cell counts. Infection can damage tissue and impair wound healing.

Ischemia (poor arterial circulation)

A deficiency of blood supply to tissue, due to diseased or blocked blood vessels.

N

Necrotic Tissue (Tissue Necrosis)

Tissue that has died and has therefore lost its usual physical properties and biological activity. It is also called "devitalized tissue."

P

Pressure Sore

Is an area of localized tissue damage caused by ischemia (deficiency of blood supply to tissue) due to pressure.

Promogram

Is protease modulating matrix dressing. It re-balances a chronic wound to promote healing.

Protective Sensation

The ability to feel when the health of your foot is threatened, especially through paid cues.

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R

Regranex™

This is a prescription topical drug for the treatment of diabetic foot ulcers. It contains a growth factor that is part of the body's natural healing process.

S

Sensory neuropathy

This is a condition in which the nerves do not work properly; you lose what is called protective sensation.

T

Total contact cast

This is a fiberglass shell with a walking bar on the bottom. The shell fits your leg and foot very closely. It touches, or is in contact with, your whole foot--that is why it is called a total contact cast. The walking bar keeps weight off your foot when you are standing.

The total contact cast is used to treat deep ulcers (deep sores) on a person's foot. Where the cast sits under the sore, there is a layer of soft foam. This makes a space so that no pressure is put on the sore and it can heal more quickly. The cast has only a small amount of padding around the rest of your foot.

U

Ulcer

A defect or break in the skin that provides a doorway for bacteria to enter. Once a break occurs, the foot is prone to invasion of bacteria that can cause infection. The longer an ulcer remains open and untreated, the greater the risk of infection.

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YOUR WOUND MEASUREMENTS

Date	Length	Width	Depth	Change in size	Your dressing instruction

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