

## LESSER METATARSAL PAIN

Metatarsal is a general term that denotes a painful condition that involves the metatarsal region of the foot, just before the toes, sometimes referred to as the “ball of the foot”. There are five metatarsal bones in the foot; these bones are similar to the “knuckles” on the hand. Each metatarsal serves to distribute the entire weight of the body across the forefoot (the area of the foot from the metatarsal bones forward and including the toes). We will discuss problems with the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> metatarsals only, since the 1<sup>st</sup> and 5<sup>th</sup> present separate and distinct problems in themselves. The forefoot is anatomically composed of bones, ligaments, tendons, muscles, nerves, blood vessels and skin, which all interrelate. Each item listed above may cause painful conditions alone or in combination together at the junction known as the metatarsal-phalangeal joints (the toe bones are known as phalanges).

Pain in this area may be caused by any of the following:

Calluses, which may diffuse and spread over a broad area or be very localized and deep rooted. They may or may not have a painful bursa associated with them (a bursa is a fluid filled sac that lies between skin and bone and functions to cushion, lubricate and protect). Calluses may be caused by a great number of things which are structural, i.e. anatomic variations present, or functional, i.e. caused by variations in the way the foot functions while walking or standing.

## STRUCTURAL CAUSES OF CALLOUSES:

1. Enlarged Metatarsal Head

2. Depressed Metatarsal (a bone that sits lower than the others)
3. Abnormally long metatarsal
4. Foreign bodies embedded in the foot
5. Degenerative changes to the joints from inflammation or Arthritis.

## FUNCTIONAL CAUSES:

1. Abnormal biomechanical function of the foot (Biomechanics is the dynamic study of the changes that occur with the weight bearing or walking.)

These abnormalities include: flat-feet, high arched feet and contracted toes.

Each entity will produce specific callous patterns on the “ball of the foot”.

2. Loss of the fat pad or displacement of the fat pad under the ball of the foot that serves to cushion and protect. This naturally occurs with age. It can also occur with people who have abnormally high arched feet, with people who are involved with sports activities, who constantly have pressure on the ball of the foot, i.e. jogging, basketball, tennis and volleyball.

Other items that can cause pain on the ball of the foot include:

1. Arthritis, Rheumatoid or Osteo
2. Painful Bursitis without associated callouses

3. Warts –commonly resembling callouses or corns
4. Neuroma or Neuritis, a condition of the small nerves to the toes.
5. Tendonitis
6. Cysts
7. Foreign bodies, splinters or hairs
8. Diabetes- causes pain from poor circulation (usually burning or pins and needle tingling pain occurring at night)
9. Trauma
10. Stress Fractures

## TREATMENT

Treatment is based on the determination of the doctor. Usually functional or biomechanical causes of Metatarsalgia are treated with Orthotics (inserts in the shoe that prevent abnormal movement of the foot while standing or walking. This reduces the shearing motion across the ball of the foot and reduces pain and or callous formation.

Structural causes of Metatarsalgia respond well to surgery and/ or accommodative orthotic (accommodation balances the pressures across the forefoot to take the stress off the painful area in the same way a foam pad would).

If surgery for structural deformities is indicated, the history your doctor will take will assist him in determining the proper procedure for your condition. Your answers to his questions will help your Podiatrist to

focus on the goals for your surgery- to relieve pain, restore function or improve the appearance of your feet. Your Podiatrist will conduct a thorough examination of your feet, ankles, knees and hips. The affected area will be checked for pain and tenderness and gait will be analyzed. X-rays and lab tests may be required to diagnose your particular foot problems. If surgery is recommended, your Podiatrist will explain your particular problem and how surgery can help to correct it. Keep in mind, however, that each foot problem is unique, and there are many different surgical procedures and approaches. Some examples of types and locations of metatarsal ostoetomies (surgical fractures of the bone(s), which are necessary to reposition the dropped metatarsal that is causing your problem) follow:

Surgery may be performed in the hospital overnight or more commonly at a same day surgical facility or in the Podiatrist's office. The types of anesthesia and all necessary arrangements will be discussed in advanced, including any risks or complications. Postoperatively, your Podiatrist will discuss your recovery, which like your foot problem and surgery is as unique as you are. Some considerations would be: pain, stitches, bathing, weight bearing, surgical shoes, physical therapy, crutches and canes, casts, home exercises and returning to work. Each of the above will vary with each individual and will be discussed by your podiatrist. Foot surgery generally yields excellent results in relieving pain and restoring function and appearance. Foot surgery is usually elective, which means you can schedule it to fit a convenient time for you and your doctor. Remember, post- operative care is as important as the surgery itself, so

work with your Podiatrist to attain the best return to comfort and function. Postoperative X-rays will be taken by your doctor to determine when satisfactory healing has taken place.

### **SUMMARY**

Be sure to follow your doctor's instructions carefully. Do not begin to wear regular shoes until your doctor advises you to do so.

Postoperative physical therapy and home exercises may be part of your postoperative management.

You should consult your doctor regarding the type and proper fit of shoes you wear. Your doctor may also prescribe custom made fitted orthotics to help improve your foot function and prevent a recurrence or any other type of foot deformity.

### **SUMMARY**

There may be additional methods of treatment for this common foot problem. Sometimes vitamins and skin creams or liquids are utilized. Your doctor will discuss this with you. Each doctor develops a favorite treatment, and probably has the best percentage of results with that approach. Complete cooperation between you and your doctor is essential for a satisfactory result.

**NAME OF PATIENT:**

**SURGERY:**

**DATE:** \_\_\_\_\_ **TIME:** \_\_\_\_\_

**PLACE:**

\_\_\_\_\_ Hospital \_\_\_\_\_

\_\_\_\_\_ Surgicenter \_\_\_\_\_

\_\_\_\_\_ Office \_\_\_\_\_

\_\_\_\_\_ Other \_\_\_\_\_

### **PREADMISSION TESTING:**

Date: \_\_\_\_\_

Place: \_\_\_\_\_

Time: \_\_\_\_\_

### **SURGICAL PROCEDURE(S):**

\_\_\_\_\_

### **INSTRUCTIONS:**

Preoperative:

\_\_\_\_\_

\_\_\_\_\_

Postoperative:

\_\_\_\_\_

\_\_\_\_\_

### **ANESTHESIA:**

\_\_\_\_\_

**SIGNATURE OF PATIENT: (Parent or guardian for minor)**

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**SIGNATURE OF DOCTOR:**

\_\_\_\_\_

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2. Choose Save As from the File menu. Choose Document Template in the Save as Type: box (the filename extensions should change from *.doc* to *.dot*) and save the updated template.
3. To create a document with your new template, on the File menu, click New. In the New Document task pane, under Templates, click On my computer. In the Templates dialog, your updated template will appear on the General tab.

## ABOUT THE "PICTURES"

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The "pictures" in this brochure are Wingdings typeface symbols. To insert a new symbol, highlight the symbol character and choose Symbol from the Insert menu—select a new symbol from the map, click Insert, and Close.

## HOW TO WORK WITH BREAKS

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Breaks in a Word document appear as labeled dotted lines on the screen. Using the Break command, you can insert manual page breaks, column breaks, and section breaks.

*To insert a break, choose Break from the Insert menu. Select one option. Click on OK to accept your choice.*

## HOW TO WORK WITH SPACING

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To reduce the spacing between, for example, body text paragraphs, click your cursor in *this* paragraph, and choose Paragraph from the Format menu. Reduce the Spacing After to 6 points, making additional adjustments as needed.

To save your Style changes, (assuming your cursor is blinking in the changed paragraph), click on the down arrow for the Style in the Styles and Formatting work pane. Select Update to match selection to save the changes, and update all similar Styles.

To adjust character spacing, select the text to be modified, and choose Font from the Format menu. Click Character Spacing and enter a new value.

## OTHER BROCHURE TIPS

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**To change a font size**, choose Font from the Format menu. Adjust the size as needed, and click OK or Cancel to exit.

**To change the shading** of shaded paragraphs, choose Borders and Shading from the Format menu. Select a new shade or pattern, and choose OK. Experiment to achieve the best shade for your printer.

**To remove a character style**, select the text and press Ctrl-Spacebar. You can also choose Default Paragraph Font from the Styles and Formatting work pane (accessible from the Format menu).

## BROCHURE IDEAS

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