



## What is Plantar Fibromatosis?

Plantar Fibromatosis is a fibrotic tissue disorder or wound healing disorder, which is non-cancerous and is characterized by the presence of excess collagen or fibrotic tissue. The most common symptoms of plantar fibromatosis are firm nodular masses that can be felt just under the skin on the bottom of the foot and pain when standing or walking. Unlike the related condition Peyronie's disease, plantar fibromatosis nodules are not known to resolve their own. Studies indicate that plantar fibromatosis is diagnosed most often in the middle-aged and elderly population, although it can affect people of all ages. It has been found that the incidence may be as high as 25% in the middle-aged and elderly population and that the condition affects men approximately 10 times more often than women\*\*. Caucasians of northern Europe descents tend to be affected more than other ethnicities.

### Symptoms



Plantar Fibromatosis is a fibrotic tissue disorder of the plantar fascia that consists of excess collagen or fibrotic tissue. The excess collagen is commonly referred to as a fibroma. It is most commonly located in the arch of the foot in a tissue layer called the plantar aponeurosis. The two most common symptoms of plantar fibromatosis are firm nodules that can be felt just under the skin and pain that can be constant or increase when standing or walking. Plantar fibromas often increase in size and density over time but not indefinitely.

### Causes of Plantar Fibromatosis

An exact cause of plantar fibromatosis is unknown; however, there are some potential causes that most doctors agree may play a role in the condition.

## **Trauma**

Trauma to the plantar fascia is thought to be a primary cause of plantar fibromatosis. The trauma may be from a puncture through the bottom of the foot or from repetitive impact from activities such as running or climbing. It is also thought that thickening and tightening of the plantar fascia caused by plantar fasciitis may lead to tears in the tissues, causing plantar fibromas to occur.

## **Genetics**

Many patients may be genetically predisposed to fibrotic tissue disorders such as plantar fibromatosis. People of northern European descent appear to have a higher incidence of fibrotic diseases, while they rarely affect Asians. People with plantar fibromatosis may also have parent or a close relative with the condition. The condition is also associated with Peyronie's disease and Dupuytren's disease. About 5% of patients with Dupuytren's disease also have plantar fibromatosis, and 3% of patients with Dupuytren's disease will have Peyronie's disease.

## **Medications/Vitamins/Supplements**

Medications often used for treating high blood pressure that belong to the drug class known as beta adrenergic blocking agents (beta-blockers) have been reported to cause fibrotic tissue disorders. Anti-seizure medications such as phenytoin and certain supplements such as glucosamine/chondroitin and large doses of supplemental vitamin C may also promote the production of excess collagen.

## **Other Conditions**

A higher rate of plantar fibromatosis has been found among patients with conditions such as chronic liver disease, diabetes, and seizure disorders\*\*. While these conditions may not be a direct cause of the condition, it may indicate the impact these conditions or medications used to treat them have on wound healing. Long-term alcohol abuse has also been associated with the condition.

## **Treatment Options**

Many different treatments for plantar fibromatosis have been used and can be divided into two major categories, invasive and noninvasive.

### **Invasive treatments include:**

- Corticosteroid injections into the fibroma
- Surgery-Surgery is currently the most common treatment for plantar fibromatosis. There are two common procedures. One involves the removal of the fibroma only which results in a high recurrence rate and the second involves the complete removal of the plantar fascia which has a long recovery time and can lead to other podiatric problems.



# CAPITAL

## FOOT & ANKLE CENTERS

Joe Gonzalez, DPM

**Okemos**  
2270 Jolly Oak Rd  
Suite 1  
Okemos, MI 48864  
Fax 517-913-5996  
**517-853-8951**

**Grand Ledge**  
1005 Charlevoix Dr  
Suite 180  
Grand Ledge, MI 48837  
Fax 517-913-5996  
**517-853-8951**

**St. Johns**  
306 E. Elm St  
Suite B  
St. Johns, MI 48879  
Fax 517-913-5996  
**989-224-4880**

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### Non-Invasive treatment options include:

- Transdermal Verapamil 15% Gel
- Stretching
- Orthotics
- Padding
- Physical Therapy

Most doctors agree that a non-invasive approach to treating plantar fibromatosis should be considered first given the high rate of recurrence from surgery. Invasive treatments and surgery are usually reserved for the most severe causes.

## What to Expect from Transdermal Verapamil 15% Gel

### Treatment Timeline

It is important to understand that there are no “quick fix” treatments for plantar fibromatosis. This is because remodeling tissue is a slow process. Patients should expect to use Transdermal Verapamil 15% Gel for 6 to 12 months to complete their treatment. Patients who are experiencing pain or discomfort typically see this as the first symptom to be significantly improved, usually within 90 days. Once the fibroma has been remodeled, recurrence is unusual.

Transdermal Verapamil 15% Gel is not a life long treatment and it is not necessary to use the medication periodically as a maintenance or preventative treatment.

## What Happens If I Am Not Getting Better?

As with any medication, Transdermal Verapamil 15% Gel will not help everyone; however, PDLabs wants to make every effort to maximize the results patients receive. Patients that are not responding tend to fall into one of two categories. First are patients that do not improve at all and patients that have responded but seem to have reached a plateau and no longer improving. All patients are started on a twice a day regimen since this is effective for the majority of patients. If you are not responding at this dose, a PDLabs pharmacist will contact your doctor to discuss alternative doses that have proven effective in other patients that might be appropriate for you.

### Side Effects

Side effects for patients treating plantar fibromatosis have been very rare. Due to the highly tolerant nature of the skin on the plantar surface of the foot, the skin irritation seen in Peyronie's disease patients has not been seen in plantar fibromatosis patients. Since verapamil is a medication used to reduce blood pressure when it is taken orally, patients should report any dizziness, sudden rapid heart beat, or unusual irregular or rapid heart beat to PDLabs and/or their doctor.

## Get The Most From Transdermal Verapamil 15% Gel

### Using Transdermal Verapamil 15% Gel Correctly

To get the most from Transdermal Verapamil 15% Gel it is critical that you use it correctly. In order to maintain a steady level of the collagenase enzyme that is responsible for remodeling the fibroma, the medication must be applied very consistently. Patients that skip doses or days of application, typically see very slow or no improvement in their condition. Transdermal Verapamil 15% Gel should be applied twice a day, approximately 12 hours apart. Remember to allow a few days to get your prescription refilled so that you do not run out of medication.