

# The Role of the Podiatrist

(in Raynaud's and Scleroderma)



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# SUPPORT FOR SUFFERERS

The Raynaud's & Scleroderma Association (RSA) offers support and practical advice to people on the problems of day-to-day living. On joining the Association, members receive quarterly newsletters giving up-to-date information on research and treatments.

## AIMS OF THE RSA

- Creating a greater awareness of Raynaud's and scleroderma.
- Promoting better communication between doctors and patients.
- Putting patients in touch with each other in order to exchange ideas and information.
- Offering support, advice, and information to sufferers, their families and carers.
- Raising funds for research and welfare projects, as research is absolutely essential if we are to determine the cause and find better treatments in the future.

Patient leaflets on Foot Care and Chilblains are also available, together with informative leaflets on Raynaud's and scleroderma for health professionals and patients, from:

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# THE ROLE OF THE PODIATRIST

This booklet has been written as a brief guide for podiatrists who may at some time be responsible for treating a patient with Raynaud's or scleroderma. Patients will also find the information helpful.

Raynaud's is very common but is closely linked to scleroderma. It is therefore important to understand that Raynaud's can be of two types. It can be a phenomenon in itself, when it is usually benign or can be secondary to other conditions such as scleroderma, systemic lupus erythematosus and rheumatoid arthritis.

Scleroderma is a generalised disorder of the connective tissue. Fibrotic and degenerative changes occur in the skin, synovium, digital arteries and internal organs including the oesophagus, intestinal tract, heart, lungs and kidneys. It affects about 20 per million of the population per year and is three times more common in women than in men. Being such a rare condition, scleroderma is not commonly seen. When a patient is seen for treatment, it is essential that their condition is recognised and understood by the podiatrist.

The podiatrist may be one of the first people to recognise a patient who has gone undiagnosed and needs referring to their GP. By the time you have read this booklet you may be more aware of the problems, treatments available and importance of referral.

## RAYNAUD'S

Raynaud's phenomenon is a common, episodic circulatory disorder in which the small blood vessels in the extremities are over-sensitive to changes in temperature. It affects between 3-20% of the adult population worldwide and there may be as many as ten million sufferers in the UK. Raynaud's is most commonly found in females and approximately 10% of women suffer from Raynaud's to some degree. The condition can affect children, adolescents and adults. Many sufferers have never seen a doctor as they are unaware that their condition has a name or that there is anything that can be done to help. However, for a small number of people, Raynaud's is one of the earliest symptoms of impending scleroderma and for this reason Raynaud's patients require prompt assessment and diagnosis.

The hallmark of Raynaud's is biphasic or triphasic colour changes (white and/or blue and red) of the extremities on exposure to the cold, or to sudden but slight temperature changes or stress. The symptoms usually occur in the fingers and toes but ears, lips, nose, nipples and penis may also be affected. The patient may also complain of pain, numbness or tingling.

The symptoms of Raynaud's, whether isolated (primary Raynaud's phenomenon) or secondary to another condition, may cause severe pain, discomfort and problems with hand function. For the vast majority of sufferers, Raynaud's is a benign primary condition which may interfere with patients' daily activities but does not cause any long term damage to the extremities. However, patients who have Raynaud's phenomenon secondary to an underlying disease such as scleroderma, will often suffer more acute symptoms and in severe cases may develop persistent finger and/or toe ulcers, infection and ultimately gangrene.

# SCLERODERMA (Systemic sclerosis)

The word scleroderma comes from two Greek words, 'sclero' meaning hard and 'derma' meaning skin. Scleroderma is a disease of the immune system, blood vessels and connective tissue. In this condition the skin, usually of the hands and feet, becomes stiff, tight and shiny. This is because of swelling and then thickening of the connective tissue which becomes fibrotic or scarred. Scleroderma patients may have problems with dryness of the mouth and eyes, due to a decrease in secretion from the salivary and tear glands. They may experience difficulty in swallowing, bloating or abdominal pain, tiredness, lack of energy, general weakness, weight loss and aching muscles, joints and bones. Involvement of the lungs, heart and kidneys may occur.

## Types of scleroderma (SSc)

### **Diffuse Cutaneous Systemic Sclerosis (dcSSc)**

Shortly after the onset of Raynaud's, the patient presents with skin changes (puffy or hidebound), has truncal skin involvement and 'creaking' tendons at joints e.g. wrists and elbows. Early lung disease, kidney, gastro-intestinal and heart involvement, may become evident in some patients. There are changes in the nailfold capillary and certain antibodies may be present in the blood. A specific marker of scleroderma, usually the progressive diffuse form, is Scl-70 which is present in 30% of patients. Anyone with diffuse SSc needs to be checked frequently (at least every 6-12 months), in the first 5 years.

### **Limited Cutaneous Systemic Sclerosis (lcSSc)**

Patients with limited SSc will have had Raynaud's for years, occasionally decades, and there will be skin involvement to the hands, face, feet and forearms. These patients used to be classified as having CREST syndrome. Patients with limited disease need checking every 6-12 months, depending on the stability of the disease. Pulmonary hypertension (PHT) which usually shows itself from five years onwards in patients with lcSSc is a rare complication, occurring in 1 in 7 people with scleroderma.

### **Localised scleroderma**

There are two types of localised scleroderma - morphoea, linear or a mixture of the two. These types of scleroderma are more common in childhood-onset disease but can affect any age group.

**Morphoea** affects the skin, beginning with an inflammatory stage, followed by the development of one or many slowly enlarging patches or plaques. These plaques are usually oval in shape but vary in size and colour and may enlarge or shrink, sometimes disappearing spontaneously.

**Linear scleroderma** usually develops in childhood and can affect the growth of a limb. It is a form of localised scleroderma, which starts as a band-like thickening of skin, usually limited to one area such as an arm, leg or forehead (en coup de sabre). Unlike morphoea, linear scleroderma tends to involve layers of tissue below the skin. It can sometimes affect the muscles and bones and finally the mobility of the underlying joints.

# ADVICE AND INFORMATION

This needs to be ongoing as people tend to ignore their feet until pain or discomfort occurs and this may involve the person changing a habit of a lifetime. In cold weather Raynaud's attacks become more frequent with the result that tissue damage can occur. Sudden changes in temperature, e.g. the freezer section in supermarkets or going into air conditioned buildings, may be enough to initiate an attack. It is very important to try and maintain a constant body temperature whenever possible.

## CARE OF THE FEET

The areas most affected on the feet are the tips of toes and around the nails.

- Initially the area(s) may be itchy, almost chilblain-like, with a purple mottled white appearance, very quickly becoming painful (see inside back cover for advice on chilblains).
- For unbroken skin, simple treatments using Lasonil, and other proprietary chilblain treatments should be gently massaged all over the affected area. The areas may also need protecting with simple dry dressings, e.g. melolin.
- If there is localised necrosis (tissue breakdown) these areas are usually very painful, often in excess of their appearance and will need careful monitoring and observing by the patient and practitioner once this stage is reached.
- The aim of treatment is to assist in the healing process by providing a warm, moist, protective environment. Care must be taken, especially when instructing the patient how to dress the wound site, so as not to restrict the blood flow by applying dressings which are too tight.

### **Some examples used include the following;**

Betadine ointment - antiseptic containing iodine may also act as a slight irritant, which could help stimulate blood flow.

Mild antiseptic creams

Tulles help to protect the surrounding area

Gels - mild desloughing agents

Mepitel – silicone dressing, which may be used in conjunction with a gel

All dressings need to be changed every 1-2 days, in order to monitor the wound.

N.B. It may be necessary to refer the patient to the GP for systemic treatment to improve the circulation e.g. calcium blockers and other drugs which cause peripheral vasodilation.

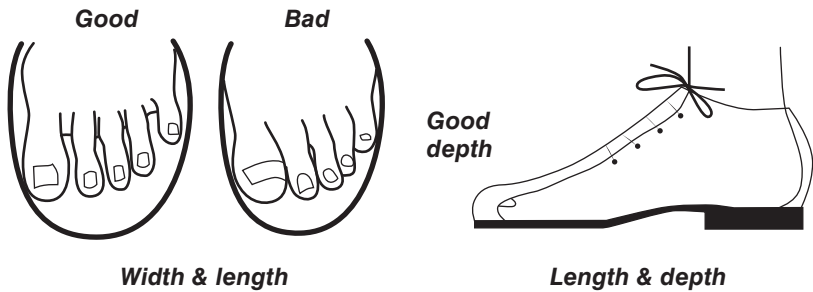
# AT THE SHOE SHOP

1 If you are being measured for footwear, ask the assistant to measure your feet whilst you are standing up, as well as when you are sitting down. This is because some people have feet which spread in length and width more than the 'average' which shoe fitters allow for.

2 As well as standing in shoes, walk around the shop in them for a few minutes, remembering to allow for any insoles and the thickness of the socks to be worn with the shoes. Shoes that are too tight will restrict circulation to your feet.

3. Check for thick soles for comfort and warmth, water resistance and thermal linings if possible.

## POINTS TO NOTE



There should be:

No slipping at the heel

No pressure at the heel, around the top of your toes, or on the sides of your feet

Heel height up to 1" (2.5cm)

A feeling of stability

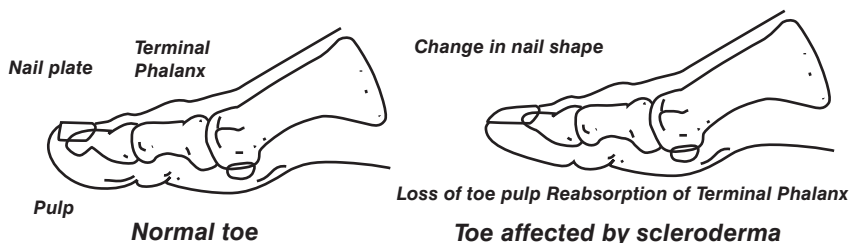
No pressure on the top or sides of your toes

If you are unsure about the fit of the shoes, do not try, or be persuaded to break the shoes in as this may cause problems, particularly if you have reduced sensation in your feet. Ask the shop if you can exchange the shoes for another style if they are unsuitable. If they will do this, then bring the shoes to your podiatrist to check before you wear them.

# TREATING PATIENTS

## Nails

There may be changes in the shape of the digits due to reabsorption of the terminal phalanges and the tightening of the skin, causing tapering, contraction of the digits and changes in the shape of the nails. This change in the shape of the nail often makes them more prone to growing into the sulcus and could be further compounded by calcinosis and digital infarctions. The contracture of the digits also makes the toes particularly prone to corns and callus which may ultimately ulcerate.



## Calcinosis

This is a localised build up of calcium present in the soft tissues, often but not exclusively in the extremities. It may appear almost like a corn and may or may not be covered by callus. If treated it will feel as though you are cutting through a piece of chalk.

The photograph illustrates the foot of a patient with limited systemic sclerosis showing;



**Calcinosis under toe**

- Tapering of the apex of the toes
- An area of calcinosis under the toe
- Tight smooth skin

Areas of calcinosis are often very painful particularly if on a weight bearing area and will require regular treatment. DO NOT try to enucleate the calcinosis as this is both painful and often leads to necrosis (tissue breakdown) and infection. If the calcinosis becomes extremely painful, this may need surgically removing by curettage or drilling. If any surgery is to be considered this should be done with consultation between the rheumatologist, vascular surgeon and podiatrist.

## Callus

This should be removed if uncomfortable, using minimal scalpel work. The use of alternatives such as emollients, shoe adaptations, orthotics, insoles or specially made shoes (with orthotics) may be helpful. Some patients may find the removal of callus very painful during treatment and for several days afterwards (even though the callus may not be very thick). The regular application of emollient cream twice daily, may help make treatment a little less uncomfortable. After the removal of callus a simple dressing like melolin with Cetavlex, to protect the area for 1-2 days will help.

The use of adhesive padding to the skin is CONTRA-INDICATED and special shoes, orthotics etc., should be used. The regular application of emollients at least once a day, like E45, Aqueous cream and Diprobase, can be of great benefit.

## ULCERATION/TISSUE NECROSIS

Ulceration may be due to trauma, calcinosis, Raynaud's attacks or a combination. They will need to be dressed and all precautions taken as follows:

### Dressings

Apply dressings which are comfortable to the patient. They should be removed every 1-2 days for inspection of the wound (some patients find dressing changes very painful and may need to take analgesic prior to treatment). Post operative shoes, such as Derby sandals are helpful as they can be adapted with cut-outs, padding etc. and allow plenty of room for dressings. One disadvantage is that they are open toed, so will require extra layers of gauze and bandage to keep the foot warm). The patient must rest as much as possible to reduce pressure on the lesions.

### Infection

Observe for signs of infection (redness, swelling, pain, discharge or pus). The classic signs may not always be obvious and the only indicator may be pain. If infection is present the area should be swabbed for culture and sensitivity (C & S). It is also good to examine the removed dressing for the amount and type of discharge. If infection is present, antibiotics are normally prescribed on average for a period of 2 to 3 weeks, e.g. flucloxacillin and erythromycin (if allergic to penicillin). Once the C & S results are obtained, the antibiotics may need changing. This should be done on the clinical picture and discussion with microbiology and physician.

**REMEMBER ulcerated, necrotic areas may take months to heal.**

It is important that the patients with scleroderma and severe Raynaud's should have open access to a podiatry department/clinic due to the nature of the problems that can occur with their feet. There could be disastrous consequences if they are not treated promptly.

## Referral

The patient should be referred to a GP/specialist unit as a matter of urgency, should the area of necrosis be deteriorating or the pain becoming unbearable. In the early stages high doses of oral antibiotics and using vasodilator drugs such as nifedipine or glycerol trinitrate patches (Percutol cream) should be used to improve the circulation. The patient may need admission for intravenous antibiotics and prostacyclin (eproprostenol) or iloprost infusions, to improve the peripheral circulation and to establish adequate pain control. Referral to a vascular surgeon to assess the need for a regional sympathectomy to improve the peripheral circulation, surgical debridement of necrotic tissue or amputation is advisable.

## FUNGAL INFECTIONS

Fungal infections in patients with scleroderma and severe Raynaud's should be treated. Fungal infections may give rise to secondary bacterial infections due to cracks in the skin, blisters (vesicles), and thickened fungal nails. Thickened fungal nails may cause ulceration of the nail bed. It is for these reasons that fungal infections should be treated aggressively.

Fungal infections can affect the feet in several ways:-

Mild infections can be treated with topical applications but see your podiatrist for advice.

More extensive fungal infections of skin and/or nails will need systemic therapy.

It is best to carry out fungal cultures to identify the exact type of fungus that is infecting the feet, therefore enabling the most effective treatment.

Cultures of skin and nails can take up to 6 weeks to be identified.



# GENERAL FOOTCARE ADVICE

## Nail care

The nail edge should always be visible and not hidden by the skin. It is therefore important to avoid cutting nails too short or down the side.

Nails should be cut regularly so that they do not press against the end of your shoe and cause bruising.

DO NOT use sharp instruments to clean the sides of the nail.

DO NOT use 'ingrowing toe nail solutions'

If your nails are painful or difficult to cut you need to contact your podiatrist/chiroprapist.



## Skin care

Wash feet daily in warm but not hot water, using a mild soap only. Dry carefully between the toes.

Hard Skin and Corns - DO NOT attempt to treat these yourself at all, contact your Podiatrist/Chiroprapist.

Dry Skin - After washing and drying apply a simple moisturising cream, avoiding the areas between the toes. Normal skin contains a high percentage of moisture which is prevented from drying out by a film of grease over the surface of the skin. Dry skin usually occurs due to failure to produce adequate levels of oil. This can be a problem for many Raynaud's and scleroderma sufferers.

## Rehydrating the skin

There are two ways of accomplishing rehydration. The first is to take a bath containing an emollient bath oil. The second is to use moisturisers, some of which contain lactic acid, urea or lanolin. A small number of people are sensitive to lanolin but this is rare. Unguentum M, Balneum and Neutrogena Dermatological Cream are lanolin free.

## First aid measures

Cuts and abrasions should be covered with sterile gauze and a simple antiseptic cream. DO NOT bandage or tape around the toes.

Cover blisters with a dry dressing. If the blisters are discharging apply an antiseptic cream first. Large blisters should be reported immediately.

If the injury does not respond to this treatment, within two days, contact your podiatrist/chiroprapist IMMEDIATELY as early treatment is essential.

# CHILBLAINS

Due to poor circulation, many Raynaud's patients develop chilblains, which can cause problems with footwear and walking.

## What is a chilblain?

A chilblain is a condition which results from defective blood circulation on exposure to cold. The skin may first become itchy, then red and swollen with a burning sensation and very tender to touch. An infection may occur should the skin break down. Chilblains usually appear on the extremities - fingers, toes and ears. Dampness and cold winds when temperatures are around freezing, can cause damage to unprotected skin. The elderly and very young are most vulnerable. Chilblains usually go away over 7-14 days but if you are prone to them they can recur.

## What can be done to prevent chilblains?

The aim is to keep warm at all times, wearing several layers of thin, loose clothing rather than one thick layer. This helps to trap insulating air between the layers. Keep the legs warm with woolly tights or long thermal socks and wear fleecy-lined shoes or boots, making sure they are not too tight fitting, as this will restrict the circulation and increase the chilling of the feet. It is often the quality of hosiery and footwear and not necessarily the quantity, which is important. Sheepskin is an ideal lining but a synthetic lining to a leather shoe will help. Slippers which cover the ankles, are better than mules for warmth.

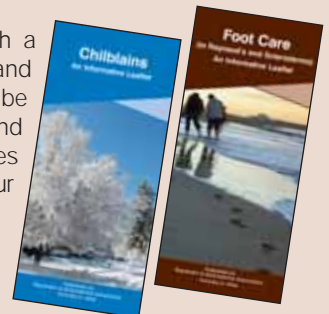
## Rewarming

If the hands and feet get very cold it is not advisable to put them on the nearest radiator or directly in front of the gas fire but to reheat them slowly, as too much heat too quickly can cause damage and considerable pain.

Dipping hands and feet alternately into a bowl of warm (but not hot water) and cold water, until they come back to life, can help. Make sure to dry thoroughly. Remove any damp clothes and have a hot drink and warm bath. Warm wrists by rubbing them together as this will stimulate the circulation to the hands. Do not put feet onto a hot water bottle in bed if you have chilblains. It is better to place a bottle behind your knees, well protected from your skin and wear bed socks.

## Treatments

If chilblains have developed, they should be covered with a loose, dry dressing and avoid clothing that rubs. Creams and ointments containing camphor or local anaesthetic can also be used for relief of pain in unbroken chilblains. Balmosa and some other topical creams can be effective. Plastazote insoles available from the podiatrist have thermal properties. (See our Chilblain and Foot Care leaflets for more information).



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