

# Digital Ulcers

A Guide for  
Management  
& Treatment



# What are digital ulcers?

A digital ulcer is a break in the skin of a finger or (less commonly) a toe. Digital ulcers can be extremely painful and can become infected making daily activities very problematic.

**“I have experienced digital ulcers since my early twenties, they took between six and eighteen months to heal. I have managed to avoid these since by taking strict care of any changes in my skin.”**

Julie, Nottingham

## **I have Raynaud’s phenomenon - what are my chances of developing an ulcer?**

Digital ulcers do not occur in people with primary Raynaud’s, where there is no underlying medical cause. In contrast approximately half of all people with scleroderma, who experience secondary Raynaud’s due to this medical condition, are likely to develop a digital ulcer at some point in their life. Scleroderma and secondary Raynaud’s can lead to the occurrence of an ulcer.

## **Why do digital ulcers develop?**

Ulcers normally develop due to a combination of poor blood flow, as a result of blood vessel damage caused by scleroderma and the skin changes (being more tight) in scleroderma. They may also be triggered by trauma to the digit, particularly over the backs of the hands and joints where they are more exposed. They may also develop over areas of calcinosis (calcium deposits beneath the skin found in some people with scleroderma).

**“Despite the ulcers and calcinosis, I can still practice nursing and I have found numerous ways to keep my hands warm and help with my Raynaud’s symptoms, however, antibiotics and pain relief are a must and help in making the ulcers more manageable.”**

Sally, Associate School Nurse, Essex

## Where do ulcers develop?



Finger ulcers tend to occur at two main places on the hands: at the fingertips (see left) and over the small joints of the fingers.

The ulcers over the joints occur especially in people with scleroderma who have contractures of their fingers: a finger contracture meaning that the finger is bent because of the skin tightness (scleroderma) and cannot fully straighten. Therefore, a pressure point can develop over the joint and the skin can break down to form an ulcer.

Ulcers occurring on the toes are less common than on the hands, but can also be difficult to manage. It is important to watch toe ulcers carefully and if possible prevent them from happening in the first place by taking care of the feet, for example, not wearing shoes that might rub and cause an ulcer. A podiatrist (chiropodist) will be able to advise on the most suitable type of footwear. If you have ulcerations to the feet, make sure that your podiatrist is aware that you have a diagnosis of Raynaud's and/or scleroderma.

**“For pain relief I usually start with paracetamol, then ask my local pharmacist what is available. If I need something stronger I see my GP. Some slow release medications are good at giving a more even dose over 12 hours.”**

Julie, Nottingham

## What exactly is meant by calcinosis?

In some people with scleroderma, calcium deposits ('calcinosis') can develop beneath the skin and these can break through the surface of the skin and cause ulcers. These ulcers can be extremely painful and difficult



to heal. They also can easily become infected, so these need to be watched carefully. Ulcers related to calcinosis can occur not only at the fingers but also at other places, for example the elbows and knees.

## **How do I know if an ulcer has become infected?**

Typical signs of infection might include the ulcer being much more painful than previously and it may be red, hot or with surrounding swelling. At this point it is important to see a doctor or specialist nurse and to be assessed, as you may need to start on antibiotics. If in doubt get it checked out early to avoid the infection getting worse.

**“I feel mostly mild to moderate, intermittent, stinging/ burning pain, but if an infection is present, this becomes severe and throbbing. If any pressure is applied or I accidentally knock an ulcer, the pain is excruciating and shoots through my finger!”**

Julie, Nottingham

## **How are digital ulcers treated?**

While there is no single way of treating a digital ulcer, there are several options:

### **Wound care/dressings**

These are important in the treatment of ulcers, and are discussed in detail further on in this leaflet.

### **Antibiotics**

These will be required if there is any suggestion of infection.

Signs of infection need to be assessed very carefully because infected digital ulcers can be very problematic e.g. because the infection can potentially progress deeper into the bone if left untreated (called osteomyelitis). Doctors and nurses may take swabs and send them to the laboratory to find out what types of bacteria are potentially worsening the situation. If there are signs of infection, seek treatment immediately.

Oral or intravenous (IV - directly into the vein by needle/syringe) antibiotics are often recommended by healthcare professionals.

If the ulcer doesn't improve a second course may be needed. Intravenous antibiotics may be required if the infection is severe, as these penetrate the deeper tissues and bone better.

### **Pain killers**

Ulcers are often very painful, so strong painkillers may be required (particularly in the short term).

### **Medications to improve blood flow**

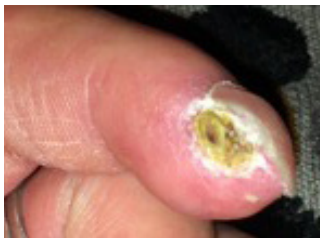
Intravenous prostanoids, for example iloprost\* may be beneficial for some people with ulcers and will be given cautiously, starting with a low rate of infusion (via an intravenous drip) and then gradually increasing. Iloprost helps to widen the blood vessels and so increases the blood flow, but also reduces the stickiness of the blood. However, it may cause side effects such as nausea, headaches, flushing of the face, or a drop in blood pressure. People are often prescribed treatments to improve blood flow (including to help with flare ups of Raynaud's), which can help prevent digital ulcers. These are discussed later.

### **Surgery**

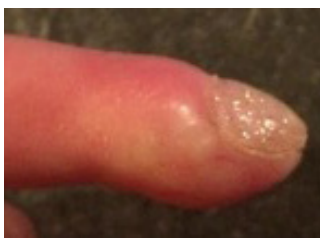
Surgery is sometimes required. There may be a small collection of pus (like a small abscess), or some damaged tissue, which needs to be removed by a careful procedure called 'debridement', which essentially means 'cleaning up' the ulcer. Very rarely more complex surgery is required. When there is an area of calcinosis underlying the ulcer it may be necessary to surgically remove some of the calcinosis to help heal the ulcer.

### **The importance of early treatment**

Sometimes infection in digital ulcers can spread to involve the underlying bone, and the earlier treatment is given, the less likely this is to happen. Osteomyelitis can sometimes be difficult to diagnose. If your doctor is not sure if the bone is infected s/he may arrange further tests, for example, a magnetic resonance imaging (MRI) scan which can help to demonstrate bone infection.



During treatment



Following treatment  
(same finger)

\*Iloprost injection is not licensed in the UK for treatment of digital ulcers.

“Once an ulcer has healed, the resulting scar can be sensitive to touch, and again briefly painful if knocked, particularly if on the fingertip where the scar tends to be much thicker. To relieve dry tight skin on and around the healed area I use hand cream emollients and gentle massage to help with desensitising.”

Julie, Nottingham

## How can I minimise my chance of developing digital ulcers?

If you are prone to developing ulcers, care should be taken to maintain good circulation by keeping your hands and feet warm. Try to reduce exposure to water (which can dry the skin out and lead to fissures or breaks in the skin), for example, by using a dishwasher if possible. Use soap substitutes such as aqueous cream and ensure that you moisturise your hands every time after you put them in water. If you manicure your cuticles then do be careful to do this gently, so as not to damage the skin.

Your doctor will probably recommend medication to improve blood flow, with the aim not only of helping the Raynaud's but also of reducing the likelihood of ulcers. Treatments called calcium channel blockers (for example nifedipine) are often recommended for Raynaud's but there are many others. Examples of other drugs used to treat Raynaud's are losartan\* and (especially for people with digital ulcers) sildenafil\*. Bosentan may be indicated to reduce the number of new digital ulcers in people with scleroderma, especially in those with recurrent and on-going ulcers.

Some people try complementary therapies such as ginkgo biloba, acupuncture and biofeedback. However, there is no good evidence to support the use of these alternatives.

“I try and combat my Raynaud's symptoms with nifedipine, losartan and sildenafil medication and regular iloprost treatments, along with alternative medicines including high doses of vitamins E & C and evening primrose oil. Unfortunately, I still have problems with my fingers switching from hot to cold and generally, being quite blue.”

Sally, Associate School Nurse, Essex

“Winter can also be a challenge in trying to keep my hands warm, and if I have an ulcer I know the healing will be slower if my fingers become blue and numb... My advice is accept any help offered.”

Julie, Nottingham

\*Losartan and sildenafil are not licensed in the UK for treatment of digital ulcers.

## What you need to know about dressings for ulcers

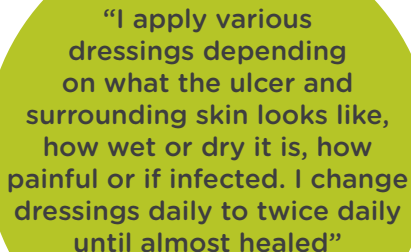
Ulcers should be dressed regularly; the frequency with which the dressings are changed will vary from person to person. Sometimes an ulcer requires daily dressing but often two to three times per week is sufficient.

Dressings can help in several ways; they alleviate pain, contain any discharge, and prevent dirt and infection from entering the wound. It is also believed that there is an optimum moisture level to help with healing. There are many different dressings available to try and provide the correct moisture level in the ulcer wound. Again the choice of dressing will be dictated by the type of ulcer. For ulcers on the fingers and toes a dry dressing is often all that is needed. Dressings must be as sterile as possible to reduce the chance of infection.

It is advisable to see your district nurse/ tissue viability nurse/ specialist nurse to find the most appropriate dressing, as there are many different options. Recommended dressings include:

- **Inadine** - this is impregnated with iodine. An orange residue can be seen on the skin from the iodine but this can be cleansed off with water. It is licensed for use on infected ulcerated wounds. However, if you are sensitive to iodine then you should not use it.
- **Mepitel** - this is made of a flexible polyamide net coated with soft silicone. It is slightly tacky so it is easy to put on and shape to the ulcer. It helps minimise the risk of maceration (a softening of tissue surrounding the ulcer that can lead to further breakdown of the wound area).
- **Allevyn** - this consists of a layer of foam about 4mm thick providing a cushion for maximum protection.

Also, it may be advisable to wear a splint and this is worth discussing with your occupational therapist, especially if your fingers are curling. This is because ulcers have a tendency to develop over contracted (bent) fingers.



**“I apply various dressings depending on what the ulcer and surrounding skin looks like, how wet or dry it is, how painful or if infected. I change dressings daily to twice daily until almost healed”**

Julie, Nottingham

“Luckily, the digital ulcer clinic at the Royal Free and the specialist nurses there were excellent. They ran an x-ray and did blood tests before making sure that the ulcer was dressed properly. You have no idea how tricky it is to dress your own finger.”

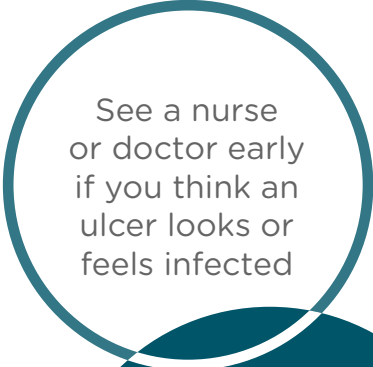
Sally, Associate Nurse, Essex

Prevention is better than cure. This could not be more true when it comes to digital ulcers. Keeping your hands warm and dry, whenever you can, may help prevent ulcers from developing.

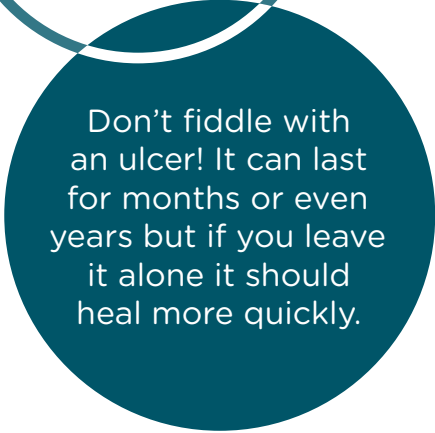
Further reading on how to keep warm can be found on [www.sruk.co.uk](http://www.sruk.co.uk) and specialist products to help can be purchased from [www.srukshop.co.uk](http://www.srukshop.co.uk)

## Tips

- Keep the ulcer and surrounding area clean.
- Try not to touch any area of broken skin because you could run the risk of further infection.
- Because dressings and medication can be very expensive, a prescription pre-payment certificate (PPCs) may be an eligible way of reducing costs, if you do not already receive free prescriptions. To find out more about what you can save with PPCs go to [www.sruk.co.uk/ppc](http://www.sruk.co.uk/ppc) or call one of our friendly team on **020 3893 5998**.



See a nurse or doctor early if you think an ulcer looks or feels infected



Don't fiddle with an ulcer! It can last for months or even years but if you leave it alone it should heal more quickly.

**The key point is that if you have an ulcer you should seek medical advice as soon as possible. This is so that treatment can commence without delay if needed.**



## Remember

Ulcers can sometimes take a long time to heal and therefore great patience is required. There are many effective treatments to both prevent and treat digital ulcers. You can do many things yourself to



help prevent ulcers, for example taking care of the fingers and toes, and stopping smoking. If a digital ulcer does occur, take care of it by keeping it clean and seek medical advice early if there are any signs of infection. This will lead to improvement in pain and increase independence.

We would like to thank the authors who provided the information contained within this booklet. We have received expert guidance and input from Professor. Ariane Herrick (below left) and Dr. Mike Hughes (below centre) from Salford Royal NHS Trust and also Lead Connective Tissue Disease Nurse, Louise Parker (below right) from Royal Free NHS Hospital Foundation Trust.

**Thank you also to our community who have allowed us to use their images and comments.**



*Disclaimer: The content of this leaflet is supported by references and has been approved by medical reviewers to standards in line with the Information Standard.*

*If you are interested in accessing this list of references, please contact us on 020 3893 5998 or email [info@sruk.co.uk](mailto:info@sruk.co.uk)*

# Glossary

**Acupuncture:** a treatment derived from ancient Chinese medicine. Fine needles are inserted at certain sites in the body for therapeutic or preventative purposes.

**Biofeedback:** a technique you can use to learn to control your body's functions, such as your heart rate. With biofeedback, you're connected to electrical sensors that help you receive information (feedback) about your body (bio).

**Blood Vessel:** part of the circulatory system that transports blood throughout the human body.

**Bosentan:** a vasodilator (blood-vessel opening drug).

**Debridement:** the medical removal of dead, damaged, or infected tissue to improve the healing potential of the remaining healthy tissue.

**Flare-Up:** also known as a Raynaud's attack. The blood supply to the extremities is suddenly disrupted causing colour changes and possibly discomfort or pain.

**Ginkgo Biloba:** an herbal supplement for use as a circulation aid, increasing blood-flow to the body.

**Iloprost:** a substance that widens blood vessels and therefore improves blood flow. It is usually given by infusion (drip) in hospital, usually continuously for approximately six hours a day over three to five days in a row.

**Intravenous (IV):** simply means 'within vein'. Intravenous therapy is the infusion of liquid substances directly into a vein via needle or syringe.

**Losartan:** a drug that helps to keep blood vessel from narrowing.

**Magnetic resonance imaging (MRI):** a type of scan that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body.

**Nifedipine:** a calcium channel blocker – a type of medication that encourages the blood vessels to widen.

**Osteomyelitis:** a bone infection, usually caused by bacteria.

**Podiatrist:** health care professional who has been trained to prevent, diagnose, treat and rehabilitate abnormal conditions of the feet and lower limbs.

**Pressure Points:** a point of the surface of the body sensitive to pressure.

**Scleroderma:** a rare autoimmune disease where the body produces too much collagen causing fibrosis (thickening) of the skin and organs.

**Sildenafil:** Sildenafil is a drug with a vasodilator (blood-vessel opening) effect. Sildenafil is licensed in the UK for treating pulmonary hypertension in adults and children.

**Specialist Nurse:** a nurse that is specially trained for a certain type of medical issue or department.

**Tissue Nurse:** a nurse who supports people with a wound that requires specialist care eg. Digital ulcers.



## We're here to help

We are the only charity dedicated to improving the lives of those affected by Scleroderma & Raynaud's.

We exist to improve awareness and understanding of these conditions, to support those affected and, to ultimately, find a cure.

Every year we support more and more people to understand and manage their conditions by providing expert information, through events, publications and our website.

Our helpline volunteers offer a listening ear 365 days a year and are there for you, when you need us. You can call our helpline on 0800 311 2756.

As a small charity we make a big investment into research, we believe that research has the power to change the lives of everyone affected by Scleroderma and Raynaud's.

You can support our work by donating today, simply call **020 3893 5998** or visit: **[sruk.co.uk/donate](http://sruk.co.uk/donate)**

If you would like to receive more information from us, simply join our free monthly newsletter by calling our team or visiting our website and keep up to date with all the latest news, events and research.

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