

Psoriasis and the Sun



A positive approach

to psoriasis and

psoriatic arthritis



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What are the aims of this leaflet?

The aims of this leaflet are to help those with or affected by psoriasis, or those who have a predisposition to developing the condition, to understand how the sun can affect psoriasis and to promote the importance of good sun sense.

What is psoriasis?

Psoriasis (sor-i'ah-sis) is a long-term (chronic) disease, causing inflammation and scaling of the skin. It affects 2% to 3% of the UK population. It usually appears as red, raised, scaly patches known as plaques. Any part of the skin may be involved but the plaques commonly appear on the elbows, knees and scalp, while the face is usually spared. It can also affect the palms of the hands, the soles of the feet and the nails. It can be itchy but is not usually painful. Nail changes, including pitting and ridging, are present in 40% to 50% of people with psoriasis. Around 30% of people with psoriasis will develop psoriatic arthritis. There does not seem to be any link between the severity of the psoriasis affecting the skin and the severity of psoriatic arthritis. For more information, see our leaflet ***What is Psoriatic Arthritis?***



What happens in psoriasis?

Normally a skin cell matures in 21-28 days and during this time skin cells move to the skin surface, where they are lost in a constant, invisible shedding of dead cells. In patches of psoriasis the turnover of skin cells is much faster, around 4-7 days. This means that these cells do not undergo the normal changes in their structure and at

the surface they are still stuck to the surrounding cells. This results in a build-up of large skin flakes, causing the raised plaques of psoriasis. The extent of psoriasis and how it affects an individual varies from person to person. Some may be mildly affected with small patches hidden away which do not bother them, while others may have large, visible areas of skin involved that significantly affect daily life and relationships. Psoriasis is not contagious, so you cannot catch it from another person. The cause of psoriasis is currently unknown. To find out more about psoriasis, read our leaflet **What is Psoriasis?**

Will the sun help my psoriasis?

Most people who have psoriasis find that the sun helps to improve their skin's appearance. For some the change is dramatic, with red scaly patches almost disappearing altogether during summer months in a warm climate.

In order to help clear psoriasis,

sun exposure needs to be

spread over time. A week

on a sunny holiday

may help but rarely

completely clears

psoriasis, and if the skin

is exposed too soon for

too long, sunburn can

result, which could cause

injury to the skin. In some

people with psoriasis such

injury can start a new plaque of

psoriasis at the site of the injury. This is known as

Koebnerisation, after the German dermatologist Heinrich

Koebner. Therefore it is important to increase exposure to

the sun gradually, to allow your skin to adapt to the sun

without burning.

Because ultraviolet light is so effective for many with

psoriasis, it is often used in various artificial forms.

Ultraviolet (UV) phototherapy is a highly effective set of

treatments for psoriasis given by hospital dermatology



departments and specialist phototherapy centres. UV phototherapy is used in one of two forms: UVB or PUVA. UVB (ultraviolet B) uses short-wave UVB light while PUVA (psoralen + ultraviolet A) uses a plant-derived photosensitiser (psoralen) with long-wave UVA light. If you need these treatments, your GP or healthcare provider can refer you to a dermatologist who will discuss the most suitable treatment for your psoriasis, including phototherapy.

What is ultraviolet light?

The energy in sunlight ranges in wavelength from about 2500nm (1nm is one millionth of a millimetre) down to 280nm. Visible light lies between about 400nm in the violet to 700nm in the deep red. Beyond 700nm is infrared, which is felt as heat. Infrared is strongly absorbed by water, so when clouds pass in front of the sun we immediately feel the reduction in warmth. Wavelengths shorter than 400nm are ultraviolet: our atmosphere protects us from wavelengths shorter than 280nm, so we are exposed to ultraviolet wavelengths from 280-400nm. This region of sunlight is arbitrarily split into long-wave ultraviolet A (UVA) from 315nm – 400nm, and short-wave ultraviolet B (UVB) from 280-315nm.



On its own, UVA is not effective in improving psoriasis, which is why psoralen is used to sensitise the skin before exposure to UVA. However, UVB is very effective at improving psoriasis, providing that the plaques are not too thick or reflective. So, sunlight can help psoriasis by virtue of the UVB wavelengths it contains. The UVB wavelengths in sunlight are also very effective at causing the production of vitamin D in the skin. Vitamin D is essential for bone and skin health. For more information about the use of artificial sunlight see our **Psoriasis and Phototherapy** leaflet.

What are the risks of sun exposure?

As with any source of UV, sunlight comes with some dangers. UVA wavelengths penetrate to the deeper layers of the skin and are largely responsible for the tanning effect of the sun. However, UVA can eventually cause damage to the skin, resulting in the typical signs of photo-ageing: wrinkles, broken veins, sagging skin and 'age spots'. Meanwhile, UVB is largely responsible for sunburn. It is thought that episodes of severe sunburn, especially in young people, increase the risk of melanoma skin cancer in the future. Also, bad sunburn can cause psoriasis to start where the skin is burned (Koebnerisation). So, it is wise to gradually expose your skin to the sun in order to avoid sunburn. Excessive lifetime exposure to all wavelengths in sunlight can increase the risks of skin cancers, and this has been illustrated in the great increase in the numbers of skin cancers seen in recent decades since overseas holidays have been affordable and widely available. You are at the highest risk if you are fair and your skin does not tan easily. Always check your skin type (see section on the Fitzpatrick phototyping scale) for suitable sun care protection.

You should also be aware that some chemicals used in industry and medications may cause photosensitivity, which may increase your risk of a sunburn reaction on exposure to sunlight. Photosensitivity is an abnormally high sensitivity to sunlight which can be caused by some medications. Consult your doctor about the medications you are taking or the chemicals used in your workplace that may make you more sensitive to sunlight.

Some food and dietary supplements, and certain herbal preparations or supplements, such as St John's Wort, can cause photosensitivity in people. If you are taking these supplements and are embarking on a course of phototherapy treatment or spending time in the sun, you should advise your phototherapy service of the supplements that you are taking, for further advice and guidance. Remember, Vitamin D is essential for bone and skin health. If a diet is deficient in Vitamin D, sunlight will provide what is needed and this may improve some skin disorders, including psoriasis.

Special considerations

Babies and children

It is estimated that if one parent has psoriasis then there is a 15% chance that a child will develop the condition. If both parents have psoriasis this increases to about 75%. If a child develops psoriasis and neither parent is affected there is a 20% chance that a brother or sister will also get psoriasis. However, it is known to skip generations, so there may be a familial link to a relative via either or both parents. Parents should be extra cautious and follow a good, consistent suncare regime for their children, protecting them from the harmful effects of the sun, including the burning which might trigger psoriasis due to the Koebner phenomenon.

Ageing skin

Skin ageing is a natural part of growing old. Certain factors can contribute to the speed at which skin ages – too much sunlight, smoking and alcohol are three major causes of accelerated skin ageing.

The actual mechanism of skin ageing is not fully understood. However, there appear to be a number of factors which combine together to produce an effect that differs in severity from person to person.

What is similar, however, is the effect. As we age our skin undergoes changes that reduce its ability to protect itself. Firstly, the collagen in the outer layer reduces by around 1% per year, causing the skin to thin. Since collagen gives skin its tensile strength, reduced collagen leads to wrinkling. Decreased elasticity is also a feature as elastin fibres significantly decrease in size and number.

Decreased blood supply in the dermis with age adds to the difficulty of healing damaged skin and a slowing of cell replacement causes the turnover of cells in the epidermis to reduce by up to 50%, which also slows the healing process.

Aged skin also suffers from increased dryness as the eccrine glands decrease in number and sebum production decreases. It is the sebum produced by the sebaceous glands which helps the skin to remain moisturised. The loss of subcutaneous fat on hands, face, shins, waist in

men and thighs in women leads to sagging and folds, which can then become infected.

People who have had long-term (chronic) psoriasis may have been exposed to therapies that can cause damage to the skin, such as high-potency topical steroids or artificial sunlight treatment, including PUVA and UVB. These individuals could be at a higher risk of developing skin cancers, so extra care should be taken with their sun protection. It is advisable to check regularly for changes in the skin, including moles, in consultation with a healthcare provider.



Where can I get advice on sun safety?

There is a lot of advice available about how to protect your skin in the sun. Talk to your healthcare provider or pharmacist, or visit useful sites such as NHS Choices, where you can find information from the National Health Service on conditions, treatments, local services and healthy living.

How long can I expose my skin to the sun before burning?

This depends on many factors, including:

The strength of the sun

This can be assessed by the UV index, announced in summertime weather reports. The UV index is a number representing the strength of the sun, and ranges from 1 to 11+. 1-2 represents low UV, 3-5 moderate UV, 6-7 high UV, 8-10 very high UV and 11+ extreme UV. In the UK the UV index rarely goes above 6 or 7.

Other factors also need to be taken into consideration. For the UK some very approximate guidance can be given on how long individuals can tolerate the sun before

burning. Assuming moderate sun strength (in Plymouth, a typically sunny area of the UK, the average sun strength in May to August is UV index 6), and for previously unexposed and currently unprotected skin, then exposure times possible before onset of sunburn are approximately: phototype I, 5-10 minutes; phototype II, 10-20 minutes; phototype III, 20-30 minutes; phototype IV, 40 minutes (Source: EU fabric sun protection factor Standard 801).

Your sun sensitivity

This is assessed by the Fitzpatrick phototyping scale, which describes how the skin reacts to sun exposure. It was developed in 1975 by Thomas B. Fitzpatrick, the American dermatologist, as a way to classify the typical response of different types of skin to sunlight. The Fitzpatrick scale remains a recognised tool for dermatological research into human skin pigmentation.

- Type I: Pale white; blond or red hair; blue eyes; freckles — Always burns, never tans
- Type II: White; fair; blond or red hair; blue, green, or hazel eyes — Usually burns, tans minimally
- Type III: Cream white; fair with any hair or eye colour; quite common — Sometimes mild burn, tans uniformly
- Type IV: Moderate brown; typical Mediterranean skin tone — Rarely burns, always tans well
- Type V: Dark brown; Middle Eastern skin types — Very rarely burns, tans very easily
- Type VI: Deeply pigmented dark brown to black — Never burns, tans very easily.

What increases the chances of burning?

This also depends on many factors, including:

- **Which areas of skin are exposed**
Scalp, neck, face (particularly the nose and lips), upper back and shoulders are more sensitive to the sun than the lower legs.
- **How much exposure you have already had**
For example, if you have a tan.
- **If you are taking any medication that makes you more sun-sensitive**

For example, some antibiotics and painkillers can increase sun sensitivity in some people.

- **Whether you are using sun protection**

For example, a sunscreen.

Sunscreens

The benefits of the sun in psoriasis can be positive but it must be remembered that you still need to consider protecting your skin; it is important to use the most appropriate sunscreen. These are graded under a sun protection factor (SPF). For example, SPF30 means that 1/30th of the burning radiation will reach the skin, assuming sunscreen is applied evenly at a relatively thick dosage of 2mg per square centimetre (mg/cm²). It is important to make sure that you use the most appropriate SPF to match your skin type according to the Fitzpatrick scale.

Remember, appropriate clothing becomes your first line of defence against the burning and blistering which could lead to the Koebner phenomenon. Sunscreens, clothing, a hat and UV protective sunglasses should become your friends.



I am too embarrassed to sunbathe

People with psoriasis often face a dilemma: they have heard that the sun is good for their condition, yet are loath to reveal any more of their skin than they absolutely have to. You aren't alone if you never sunbathe or are one of those who wear polo necks, long sleeves and trousers or leggings even on the hottest summer days. See our ***Psychological Aspects of Psoriasis*** leaflet for more advice on self-esteem and self-consciousness.

Remember: The sun can be beneficial, but it can also be potentially dangerous if not treated with caution. The following tips may help.

- Do not stay in direct sunlight without protection
- Try to stay out of the sun at the hottest part of the day (between 10am and 3pm)

- Wear a hat
- Always protect your eyes
- Use suitable sunscreens with an appropriate SPF for your skin type. Always reapply your sunscreen every few hours, after sporting activities and especially after swimming if non-waterproof SPF is used
- Avoid sunburn. If you are in the sun for the first time in the season, start with short exposures and gradually build up over a week or two
- If sunburn occurs, take a cool bath with soothing oatmeal and/or other bland non-irritant moisturisers, especially if blistering has started to occur. After bathing leave the blisters alone to heal naturally. Do not burst them.
- Consult your pharmacist for additional information on alleviating the pain associated with sunburn injuries
- Always seek medical attention for severe sunburn if it is accompanied by headaches, chills or fever
- Do not get dehydrated. Do not consume alcohol excessively as this will dehydrate you further and may cause drowsiness, and can increase sun sensitivity
- Special care must be taken for children and babies
- Do not forget your lips need sun protection too; use a good sun block
- Moisturisers are important for the skin, especially after being out in the sun
- Do not fall asleep in the sun
- Don't forget that your feet can burn too. Remember to protect the soles.

Sunglasses: adequate protection of the eyes is essential. Too much exposure to ultraviolet light can cause cataracts. Only wear sunglasses with the UV400 label and a CE mark. If you work or sunbathe in the sun regularly, good quality sunglasses are essential. For those having artificial light therapy particular care should be taken. If you wear prescription glasses you should seek the advice of your optician for correct prescription sunglasses.

PUVA/phototherapy treatments: some of these treatments can cause light sensitivity. Please consult your

phototherapy service for expert advice on protecting your eyes. Other topical medications used in the treatment of psoriasis may also cause sensitivity to sunlight. Again, consult your phototherapy service for advice and be cautious about your exposure to sun. See ***Psoriasis and***



Phototherapy leaflet for more detailed information.

Sunlight and skin cancer: there is much evidence to show that long-term damage caused by sunlight can result in higher risks of skin cancer and premature ageing. Sunscreens, clothing and applying good sense can reduce your exposure and damage to skin. As always, if you are worried about any mole or other lesion on your skin it is advisable to get it checked for peace of mind. For useful advice and what to look out for, visit NHS Choices at www.nhs.uk.

Use and safety of tanning beds

It should be noted that commercial tanning beds in salons usually output UVA light, with some tubes also outputting very small amounts of UVB (4% or less). It is not advisable to use tanning beds because neither the type of tubes used (and thus the amount of UVB in the spectrum) nor the intensity (and thus the UV dose delivered in the exposure time) are accurately known. So the risks of excessive UVA exposure may not be offset by any benefits of helping to clear psoriasis. The same arguments apply to home sunbeds, especially if bought over the internet. There is strong evidence that use of sunbeds



increases the risk of skin cancers, including malignant melanoma. For those who start using sunbeds before the age of 35 years the relative risk of malignant melanoma almost doubles.

Sunbeds should never be used by these groups:

- Under 18 years of age
- Those with fair/freckly skin that does not normally tan with sun exposure
- Those with a large number of moles
- Those with a history of skin cancer
- Those with abnormal sensitivity to the sun either due to photosensitive skin diseases (sun allergies) or medication.

Myths busting some “facts” of using sunbeds

- Tanning by use of sunbeds is NOT safer than sunbathing in the sun
- You can damage your skin long before you actually get burnt or your skin starts to go red even on a sunbed
- You cannot protect yourself by gradually building up the periods you use a sunbed
- Short intense periods on a sunbed can damage your skin
- Using a sunbed before your holiday will not protect you when you go on holiday from the sun’s risks. Using a sunbed gives the equivalent protection of a sunscreen with SPF of 2-4.

More information about cancers and the risks of sunbeds can be found at www.cancerresearchuk.org.

Travelling abroad

When travelling abroad, please bear in mind that you may need extra protection due to extra hours of daylight, stronger UVA and UVB rays and other climatic conditions. It is essential to bear this in mind when choosing sunscreens, clothing, headwear etc.

Be aware that antimalarial medication can make you photosensitive and has been reported to be a trigger for psoriasis.

Remember to check your medications and any vaccinations you may need with your doctor before booking your holiday or travelling.

If you have any views or comments about this information or any of the material PAPAA produces you can contact us via the details on the back page or on line at www.papaa.org/user-feedback

Glossary of terms

nm	Nanometre: one millionth of a millimetre, 0.000000001 metre
UV	Ultraviolet: wavelengths of light shorter than 400nm, beyond the blue/violet end of the colour spectrum
UVA	Ultraviolet A: light with wavelengths from 315nm to 400nm, or long-wave UV.
UVB	Ultraviolet B: light with wavelengths from 280nm to 315nm, or short-wave UV
PUVA	Psoralen plus UVA: phototherapy treatment where the skin is sensitised using psoralen before exposure to UVA light.
NB UVB	Narrowband UVB: phototherapy using special UVB lamps.
TL-01 UVB	The same as NB UVB; TL01 is the designation of the special UVB lamps produced by Philips in the Netherlands.

Useful contacts:

For information about health matters in general and how to access services in the UK, the following websites provide national and local information.

- NHS Choices (England): www.nhs.uk
- NHS 24 (Scotland): www.nhs24.com
- Health in Wales: www.wales.nhs.uk
- HSCNI Services (Northern Ireland): <http://online.hscni.net>

These are the official sites for the National Health Service and provide links and signposting services to recognised organisations and charities.

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<http://www.cancerresearchuk.org/about-cancer/causes-of-cancer/sun-uv-and-cancer/sunbeds-and-cancer> Accessed March 2018

The above list is not exhaustive. For further references used in the production of this and other PAPAA information contact us or go to: www.papaa.org/resources/references

About this information

This material was produced by PAPAA. Please be aware that research and development of treatments is ongoing.

For the latest information or any amendments to this material please contact us or visit our website: www.papaa.org. The site contains information on treatments and includes patient experiences and case histories.

Original text written by PAPAA in 2004.

A peer review has been carried out by C. Edwards, PhD, MIPEM, Aneurin Bevan Health Board – Dermatology in July 2013, August 2015 and March 2018.

A lay and peer review panel has provided key feedback on this leaflet. The panel includes people with or affected by psoriasis and/or psoriatic arthritis.

Published: June 2018

Review date: September 2020

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- **accurate**
- **evidence-based**
- **impartial**
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- **well-written.**

The assessment of information producers is provided by independent certification bodies accredited by The United Kingdom Accreditation Service (UKAS). Organisations that meet The Standard can place the quality mark on their information materials and their website - a reliable symbol of quality and assurance.





The charity for people with psoriasis and psoriatic arthritis

PAPAA is independently funded and is a principal source of information and educational material for people with psoriasis and psoriatic arthritis in the UK.

PAPAA supports both patients and professionals by providing material that can be trusted (evidence-based), which has been approved and contains no bias or agendas.

PAPAA provides positive advice that enables people to be involved, as they move through their healthcare journey, in an informed way which is appropriate for their needs and any changing circumstances.

Contact: PAPAA

www.papaa.org

Email: info@papaa.org

Tel: 01923 672837

**3 Horseshoe Business Park, Lye Lane,
Bricket Wood, St Albans,
Herts. AL2 3TA**



Psoriasis and Psoriatic Arthritis Alliance is a company limited by guarantee registered in England and Wales No. 6074887

Registered Charity No. 1118192

Registered office: Acre House, 11-15 William Road, London, NW1 3ER