

BAPMEDICAL
MEDICAL CARE FOR THE SKIN

THE SCAR GUIDE

How to treat scars

Hi, I'm Dr Jennifer.
I'm here to answer all
your questions about scars



How do scars
actually develop?



How can I
prevent
scar growth
and other
complaints?

What kinds
of scars give
problems?





ALHYDRAN

MEDICAL CARE FOR THE SKIN

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DOCTORS AND
SKIN THERAPISTS

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ALHYDRAN®, for treatment and aftercare of vulnerable skin.

Publication information

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- Rotterdam Burns Centre - *Maasstad Hospital, the Netherlands*
- Scar Expertise Centre, Department of Plastic Surgery - *Maastricht UMC+, the Netherlands*
- Oscare, the aftercare and research centre for burns and scars - *Antwerp, Belgium*



Sources include:

- Middelkoop E, Monstrey S, Teot L, Vranckx JJ. *Scar Management Practical Guidelines*. Maca-Cloetens: **2011**; 1-109
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- Klotz T, Kurmis R, Munn Z, Heath K, Greenwood J. *Moisturisers in scar management following burn: A survey report*. **Burns** **2017**

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The background is a solid teal color. It features several large, overlapping, abstract shapes. One is a large, light blue, semi-transparent circle that overlaps the top and right sides. Another is a darker teal, semi-transparent shape that overlaps the bottom and left sides. A thin white line forms a large, irregular loop that encircles the text.

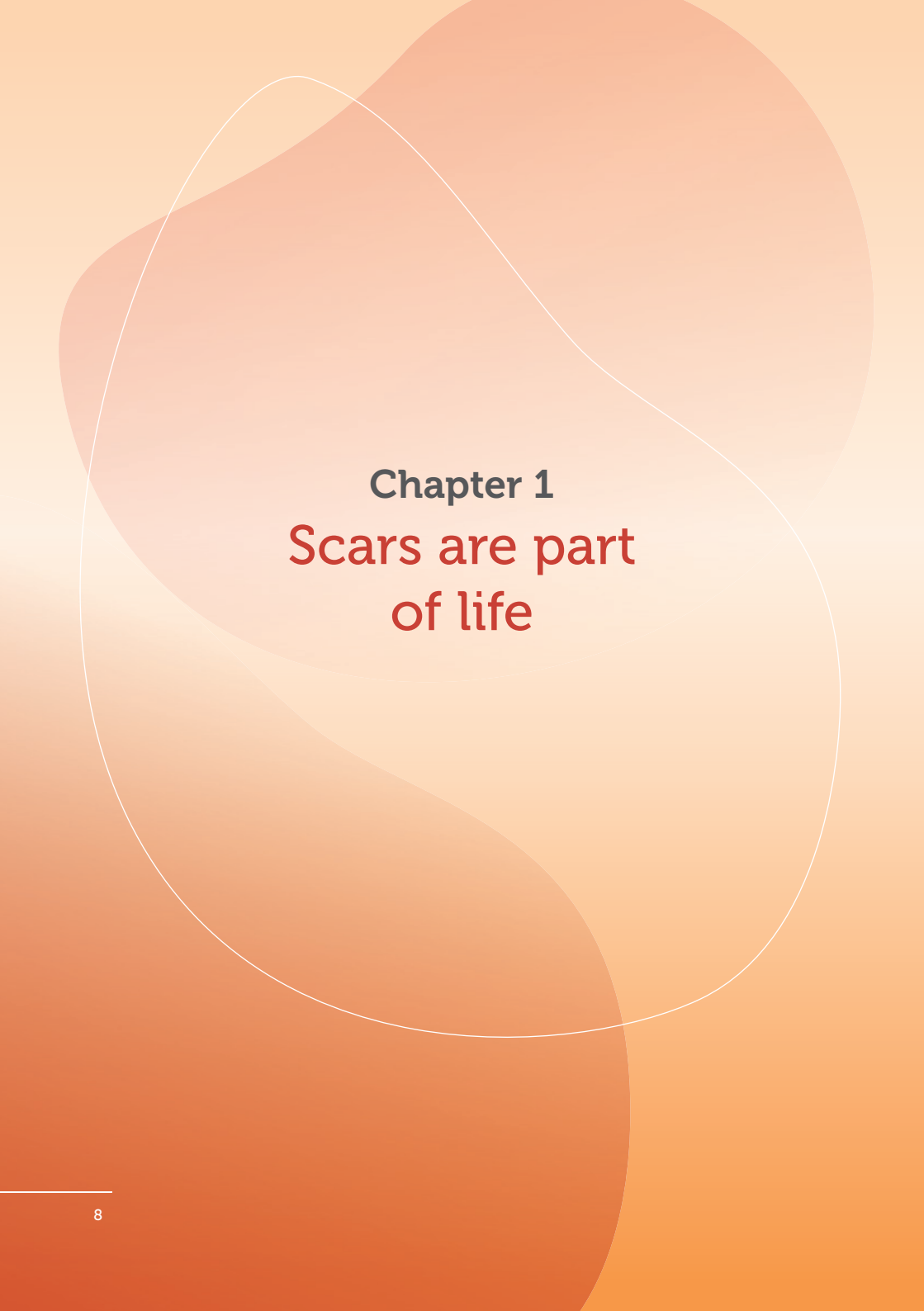
Introduction: Dr Jennifer

Hi! I'm Dr Jennifer

I'm here to explain things – like the difference between a **normal scar** and an **abnormal scar**. And I'll answer questions, like:

- How can you identify scars?
- Do scars give complaints?
- Can you prevent these complaints, or treat them?
- What risks should you be aware of?





Chapter 1
**Scars are part
of life**



How do scars actually develop?

Scars can be caused by:

- An accident (trauma)
- A burn
- A skin disease
- A graze
- A cut (or surgery)



A skin wound

After an injury, the body wants to close the skin as soon as possible.

If this happens, and happens quickly, you'll have few complaints and the scar will be hardly noticeable.

Infections or other causes may delay wound closure. The risk of thickening of the scar is then greater. A scar can cause annoying complaints such as dryness, pulling, itching, redness and pain. Fortunately, a scar can be treated as long as it is active (**Chapter 5**).

Is it really necessary to treat my scar?



Scar treatment is sometimes really necessary!

In other cases, it could be optional. It is almost always beneficial to treat a scar.



My tip!

Abnormal scars (hypertrophic or keloid) develop more often than you think. Complaints may worsen if you do nothing. So keep a close eye on your scar and start scar treatment in time.



Scar development

Scars are part of life, but sometimes things go wrong. Scar healing can then be abnormal.

There are two approaches to abnormal scars:

1. Prevent abnormal growth and complaints
2. Treat abnormal scars

An abnormal scar can:

- Be very noticeable
- Continue to grow
- Hurt
- Make movement difficult
- Cause complaints, such as itching
- Be embarrassing

Types of abnormal scars

A **hypertrophic scar** (see chapter 3) heals more slowly than a normal scar, is thick and gives rise to complaints. Treatment is therefore recommended.

A **keloid scar** (see chapter 3) is thick, continues to grow in the surrounding, healthy skin (proliferates) and gives rise to annoying complaints. Scar tissue rarely returns to normal. For this reason surgical treatment (possibly in combination with radiotherapy) is generally necessary. Please contact your practitioner in this regard.

Always treat your scar if:

- Your doctor advises and/or prescribes it
- Risk factors (see chapter 2) are present
- You are worried about your own or your child's scar
- You have a hypertrophic/keloid (abnormal) scar

Some figures

- 60% of people retain their hypertrophic scar if it is not treated
- 50% of surgical scars become hypertrophic
- 70% of burn scars become hypertrophic

Why should I
treat my scar?

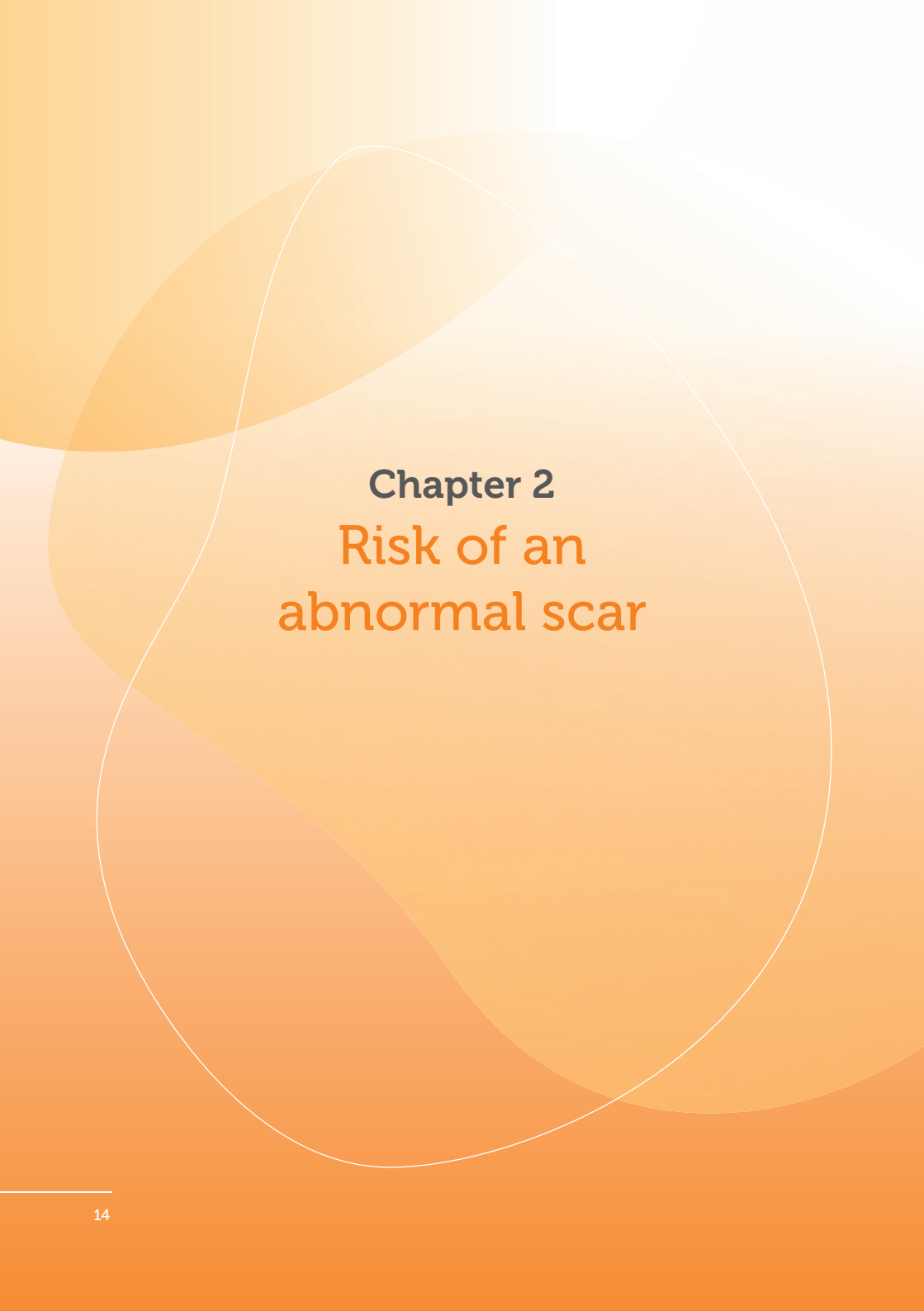


**A scar can seriously affect your
(social) life.**

Scar treatment can:

- Reduce or prevent your complaints such as redness, thickening, dryness, itching and pain.
- Reduce your risk of an abnormal, thickened scar.
- (Cosmetically) improve appearance.





Chapter 2
**Risk of an
abnormal scar**



Do I have a big risk of getting an abnormal scar?

Anyone can get an abnormal scar. Whether it will happen in your case cannot be predicted.

However, you can estimate whether you run a higher risk according to a number of factors. If you have any questions about this, please discuss them with a specialist.



Risk factors

The risk of getting an abnormal scar depends on:

- Seriousness of the wound
- Cause of skin damage
- Speed of wound healing
- Age
- Genetic predisposition and skin colour
- The location of the scar

Seriousness of the wound

The risk increases with more serious damage to the deeper skin layers. Large, wide, deep wounds present the most risk.

Cause of skin damage

After surgery, surgeons try to take existing skin folds into account when closing wounds. This is to avoid the risk of an abnormal scar. Wounds caused by accidents often run across skin folds. A scar that does not run parallel to the existing skin lines is more likely to become abnormal.

Speed of wound healing

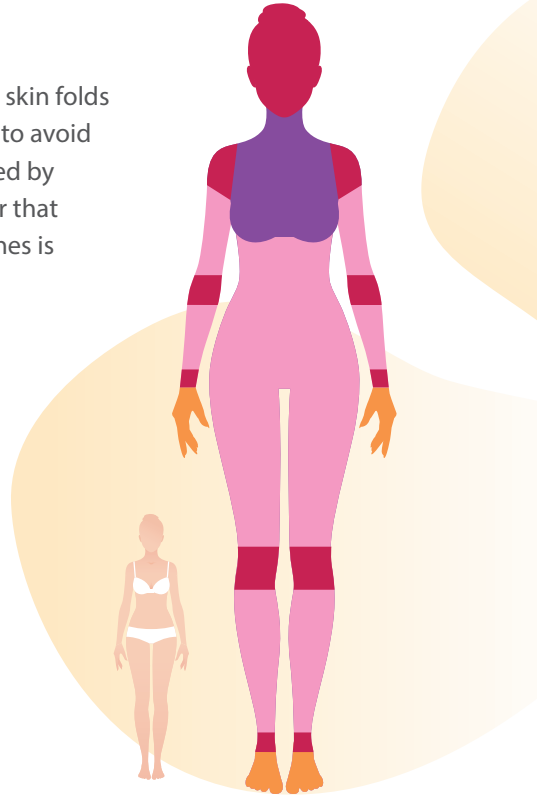
If wound healing is slow, the risk of an abnormal scar increases. Healing can be slowed, for example, by infection. A wound that is still open after 2 to 3 weeks has a greater chance of developing an abnormal scar.

Age

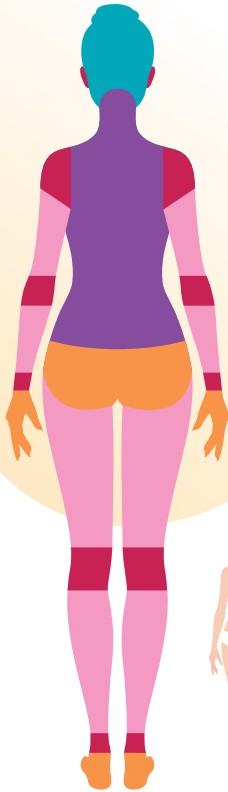
You are more likely to develop an abnormal scar when young. Younger skin does heal faster, but it also grows faster. A child is therefore more likely to have an abnormal scar than an adult.

Genetic predisposition and skin colour

Genetic factors play a role in the development of abnormal scars. If you or a member of your family has previously had an abnormal scar, you are more predisposed. People with a darker skin colour are also more likely to have an abnormal scar. This also applies to (red-headed) people with a (very) light skin tone.



Front view



Rear view



My tip!

If one or more risk factors apply to you, it's smart to take the precaution of treating your scar. It's easier to prevent an abnormal scar than to treat one.

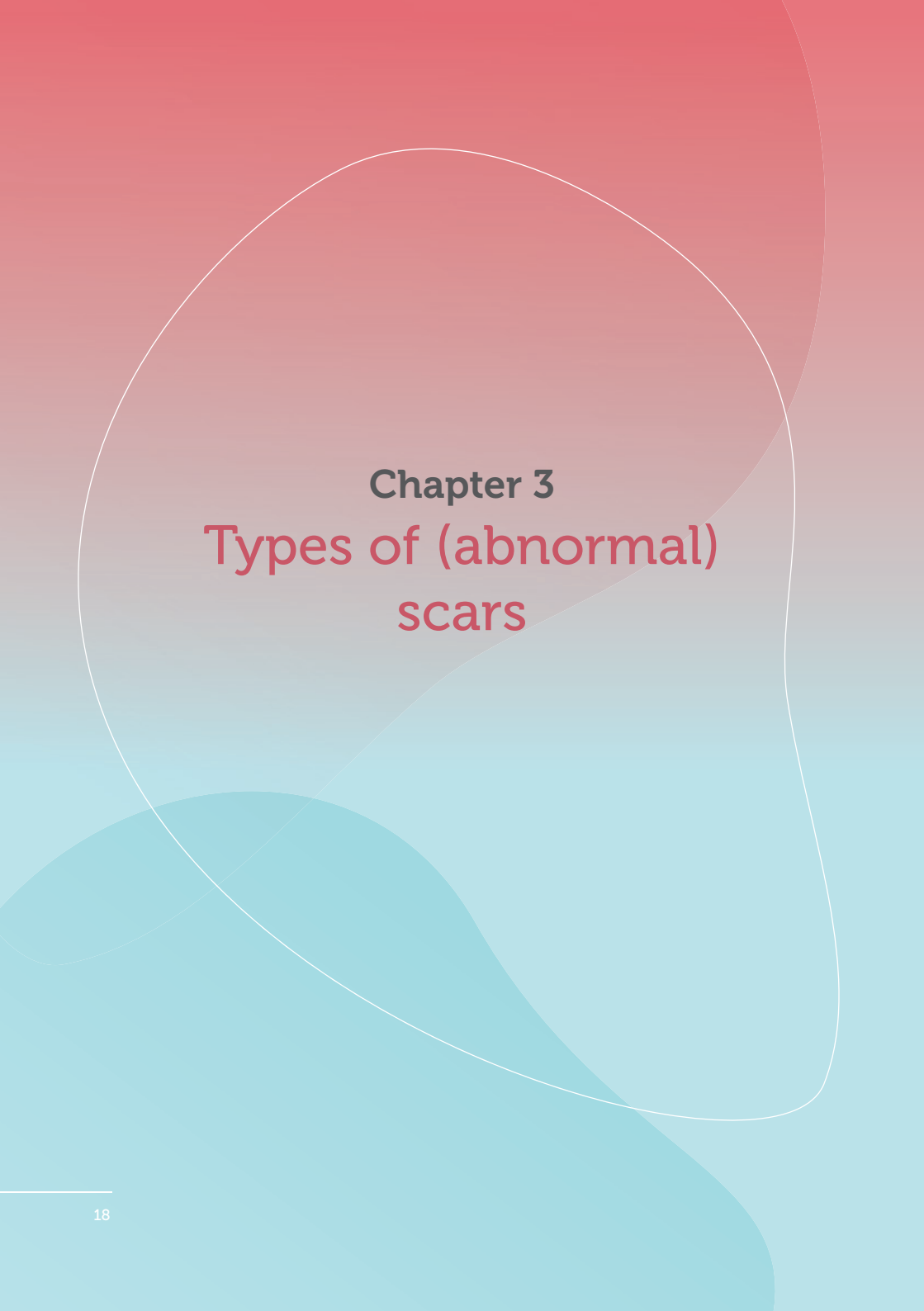


The location of the scar

If the scar is subject to changes in tension, the risk of abnormality is higher. For example, on joints.

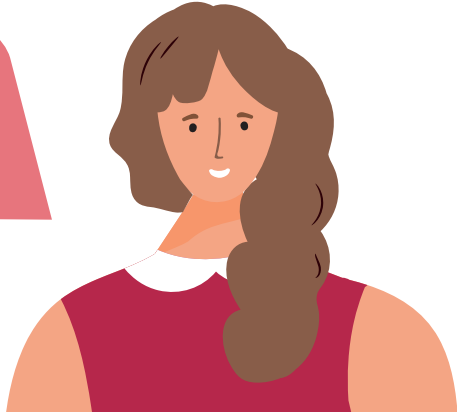
The illustrations alongside show which parts of the body have the highest skin tension and thus the highest chance of scar abnormality.

- **Very high risk:** upper back/lower back/chest
- **High probability:** ankles/knees, front and back/wrists/elbows + elbow crook/shoulders/face/ears
- **Average risk:** abdomen/upper and lower legs/upper and lower arms
- **Low risk:** head
- **Minimal risk:** feet/hands/buttocks



Chapter 3
Types of (abnormal)
scars

What types
of scars develop
problems?

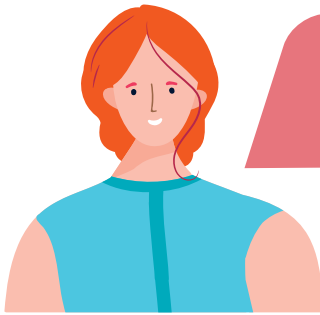


**Hypertrophic and keloid
scars cause problems.**

These scars commonly occur
following surgery, burns and
accidents involving tissue loss.

What is a normal, hypertrophic or keloid scar?

Hypertrophic and keloid scar develop in a different way from normal scars. These thickened scars cause annoying complaints and differ in appearance.



How do I recognise a normal scar?

A normal scar is not really noticeable. The colour of normal scar tissue is similar to that of the surrounding skin. The scar may cause slight discomfort.

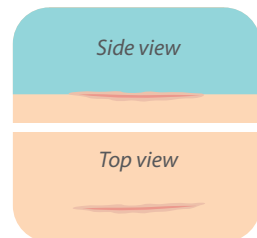


A normal scar

A normal scar may be slightly red in the first few weeks. It may also slightly itch, hurt and/or thicken. The scar remains within the edges of the original wound. After a few months the scar will become flatter, softer and change colour. Sometimes the scar is slightly lighter than the surrounding, normal skin. This is called hypopigmentation. If the scar darkens slightly, this is called hyperpigmentation.

Development

A normal scar will be flat after about one year. The shape and colour of this scar will then not change any further. Up to this point there is a chance that it may still develop into an abnormal (hypertrophic) scar. **So keep a close eye on your scar.**



Normal scar



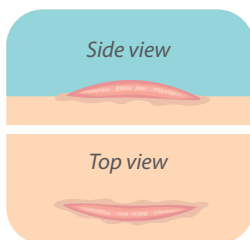
How do I recognise a hypertrophic scar?

A hypertrophic scar stays within the edges of the original wound, but protrudes above the skin.
The scar gives rise to complaints and often hurts. The colour is bright red to purple.



A hypertrophic scar

This type of scar often appears in the first weeks after delayed wound closure, but can also occur after a few months. The scar is often dry, thick, can 'pull' and can be extremely itchy. The scar tissue may contract and become rigid, restricting movement (this is called contracture).



Hypertrophic scar

Development

A hypertrophic scar often develops in the first weeks and can continue to develop up to 6 to 9 months after wound closure. After that, scar activity can slow down of its own accord.

Keep a close eye on your scar. It is recommended that you treat a hypertrophic scar as soon as possible.

How do I recognise a keloid scar?



A keloid scar gives rise to complaints, is extremely thick and proliferates. The scar tissue continues to grow and can extend far beyond the edges of the original wound. Often the scar is dark in colour (e.g. dark purple). But it can also be (bright) red.



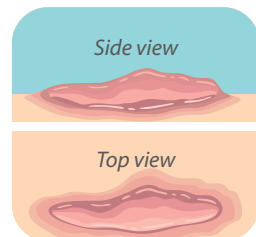
A keloid scar

This proliferating scar is unsightly and will cause increasingly more complaints (itching, pain and pulling of the skin). The scar tissue can become stiff and thick and restrict movement. This can cause problems, especially on the hand, elbow and other joints.


Development

A keloid scar can appear immediately after wound closure or only arise after some time. The scar tissue continues to grow (proliferate) and causes increasingly more complaints.

A keloid scar seldom normalises on its own. Treatment is therefore necessary.



Keloid scar

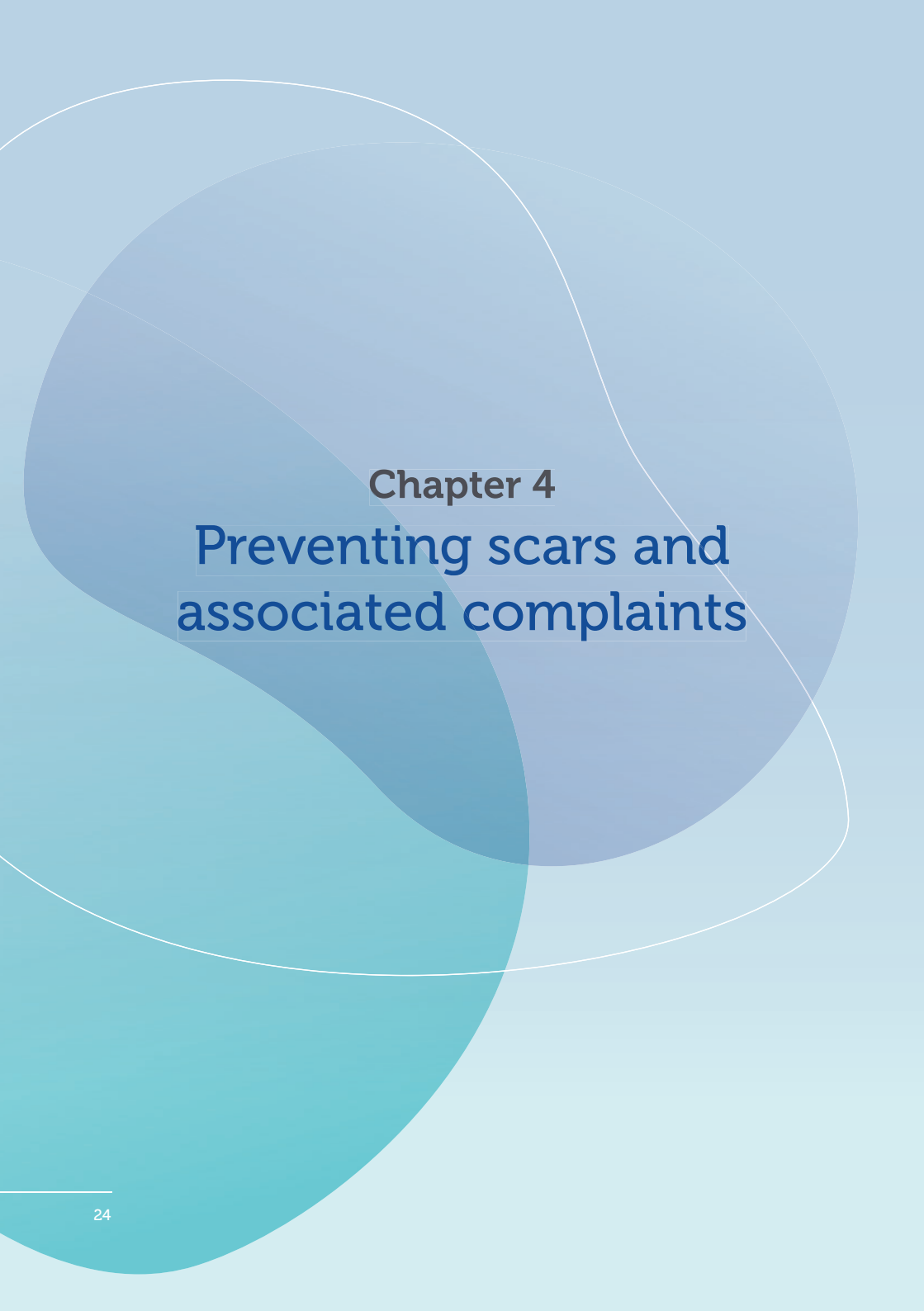


How often does a keloid scar occur?

A keloid scar is less common than a hypertrophic scar, but is seen more often in people with darker skin.

Up to 16% of all people with darker skin who get a scar have a keloid scar. This percentage is much lower among people with lighter skin.





Chapter 4

Preventing scars and associated complaints

How can I prevent abnormal scars and associated complaints?



There are three things you can do to prevent or limit abnormal scar growth and complaints.

You should:

- 1.** Take good care of wounds, for fast healing
- 2.** Prevent excessive moisture loss from the scar
- 3.** Start scar treatment as soon as possible after wound closure



Take good care of your wound, for fast healing

A wound heals better with proper care. The faster the wound heals, the smaller the risk of a (abnormal) scar.

But wound healing can also be disturbed. This is more likely to happen if you don't take good care of the wound. An infection, for example, can delay recovery. This increases the risk of complaints and of an abnormal scar.

My tip!

Take good care of your wound. Follow your specialist's instructions. He or she can best prescribe the required wound care for optimal healing.



Prevent excessive moisture loss from the scar

Every scar can use some help. Especially against increased moisture loss. In fact, high moisture loss is the main reason for abnormal scar growth.

Moisture in the skin usually evaporates too quickly from a scar, as the scarred skin is less able to hold back evaporation than healthy skin. This applies from immediately after wound closure for up to a year, or even longer. It is therefore advisable to protect the scar from this moisture loss. This can be done with a good scar cream.

Table: The difference between scars and healthy skin

Healthy skin	Scarred skin
Has a good moisture balance	Loses too much moisture
Feels smooth and supple	Is stiff and less elastic
Keeps itself healthy	May itch and become red and swollen
Protects your body from external influences	Is less able to protect your body (from harmful UV rays, bacteria, etc.)

Start scar treatment as soon as possible after wound closure

Treat scars immediately if any risk factors are present. Start immediately after the stitches are removed or have disappeared and the wound is closed. Start treatment early. Avoid being too late.

My tip!

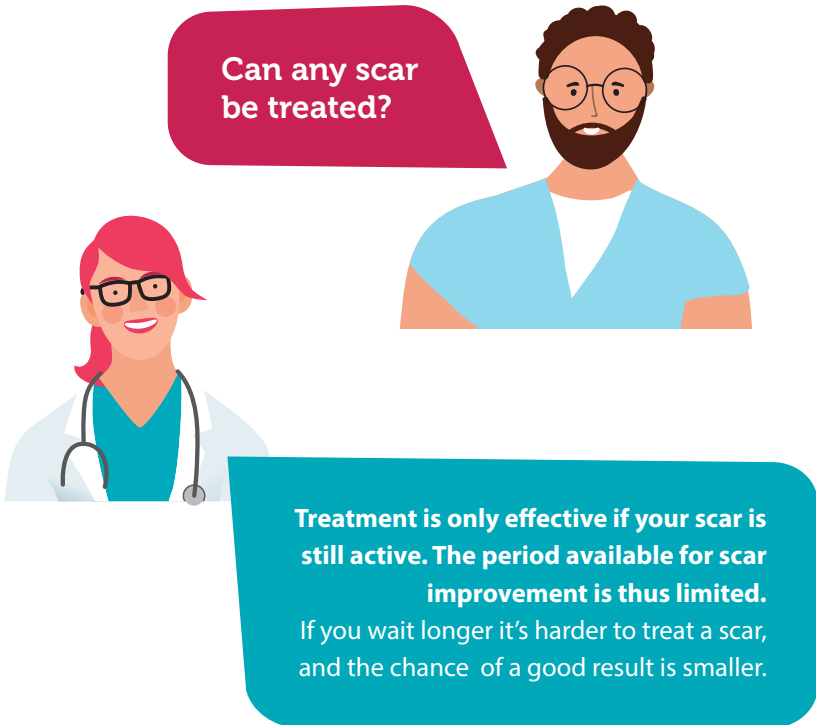
Preventing complaints is much easier than treating them. So don't miss an opportunity to do something about your scar: Start in time!





Chapter 5

Scar treatment



An active scar

Treatment is effective as long as the scar is still (bright) red in colour. This means the scar is still active.

Treatment of an active scar can reduce complaints such as dryness, itching, pain and redness. It can also influence the flexibility of the tissue and what the scar will eventually look like. The sooner you start treatment, the better the end result.

An inactive scar

When the redness subsides, the scar becomes less active and is white or light brown in colour. An inactive scar can be treated in some situations. Please contact a specialist for this.

My tip!

How can you tell if a scar is still active?

An active scar looks red or purple. When you press on the scar with your finger, you can see that it turns white (pushing out blood from the small blood vessels in the scar). When you remove the pressure, the scar quickly turns red again (filling the blood vessels with blood). If you do not see this colour change, the scar is mature and permanent.



How do I choose scar treatment?



There are 3 steps in treating an (abnormal) scar:

Step 1. UV protection

Step 2. Moisturising and retaining moisture

Step 3. Protect the scar from drying out with silicone scar products

The 3 steps for the treatment of (abnormal) scars

- Step 1 and Step 2 are recommended for all types of scars.
- Do you have one or more risk factors (**Chapter 2**)? Also apply step 3.
- Abnormal scar development? Then also apply Step 3.
- Tried every treatment and don't see any improvement after a few months? Make an appointment with your specialist.

Every scar is different. If in doubt, visit a specialist. He or she can best judge which treatment is right for your scar.



How do I protect my scar against UV rays?

UV protection

Our advice is to observe the recent International Scar Guidelines:

1. Keep your scar out of the sun as much as possible. Cover it with clothing, for example.
2. Regularly apply a product with a high protection factor (SPF 30 or higher) to your scar.



Good to know!

You'd like to fully protect your skin from harmful UV rays. But there is no such thing as 100% protection. SPF 30 provides 97% protection. SPF 50 provides 98% protection.

The difference between SPF 30 and SPF 50 is 1%. Not as much as people may think. At 97%, Alhydran SPF 30 has a high level of UV protection.



Step 1: UV protection

UV radiation from sunlight can damage a scar. A newly-formed scar is not (yet) able to effectively resist UV radiation. This allows sunlight to enter the skin, unfiltered.

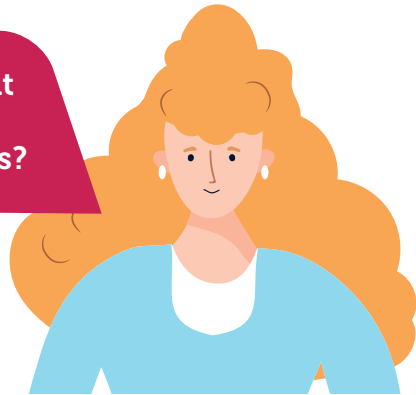
A scar can then, for example, become much darker in colour and stand out more. Permanent discolouration of scars is common.

A scar needs additional protection for 1 to 2 years after its formation. So be careful with sunlight when the scar is still active, and use products with a high protection factor.

For example, ALHYDRAN SPF 30.



How do I prevent scar growth and other complaints?



Moisturising and retaining moisture

A scar with a good moisture balance results in fewer complaints. This also reduces the risk of an abnormal scar.

For example, if itching causes you to scratch and open recently closed skin, it can become infected. The scar may eventually thicken because of this.

Step 2: Moisturising and retaining moisture

A scar loses more moisture than healthy skin. This can cause symptoms such as itching and pain. The scar may even become redder and thicker. Therefore, make sure that the scar is well hydrated and has good moisture retention. Prevent dehydration!

For this purpose, it is best to use a moisturising cream that contains substances with the following 3 properties:

1. It attracts water from deeper skin layers or from the environment
(i.e. it's a humectant – such as Aloe Vera Gel)
2. It prevents your skin from losing too much moisture
(i.e. it's an occlusive substance - such as a natural oil)
3. It makes the skin soft, smooth and supple
(i.e. it's an emollient - such as jojoba oil)

You should also avoid using a cream that could irritate the scar. Use products with as few preservatives, colourings and perfumes as possible, and those made especially for sensitive skin.

Apply a moisturising (scar) cream:

- After wound closure, 2-3 times a day
- Whenever the skin demands it (when the skin is tight, itches, etc.)
- As long as the scar is active (**see page 29**)




My tip!

To allow your skin to recover properly, it is wise to apply a (scar) cream.


This cream must contain humectants, occlusives and emollients.

So use ALHYDRAN, for example.





Are there any other ways to hydrate?



As of four weeks after wound closure, you can supplement scar treatment with hydrating cream by using medical silicone scar therapy.

Step 3: Protect the scar from drying out with silicone scar products

In order to protect a scar from drying out, the International Scar Guideline recommends silicone scar therapy in most cases.

Silicone scar therapy helps:

- To prevent abnormal scar development
- In the treatment of abnormal scars

Silicone scar therapy improves the moisture balance of the skin. This inhibits the production and growth of collagen (scar tissue).

The scar will become less thick and red, and symptoms will be less noticeable as itching and pain decrease. This is why silicone scar therapy is the recommended treatment, after Step 1 and Step 2, for the prevention and treatment of abnormal scars.

What is the treatment duration for medical silicone scar therapy?



Silicone scar treatment lasts 6 to 12 months, on average. But scar treatment lasting 2 years is certainly not unusual.

Use silicone scar therapy as long as the scar is painful, red or raised. Your scar will usually be more flexible after a few days treatment. Improvement in terms of colour and thickness takes much longer.



My tip!

Wound closed, stitches removed and scabs disappeared? Then you can start scar aftercare. Proper aftercare reduces the risk of an abnormal scar (hypertrophic or keloid).

Good aftercare helps prevent scarring. The earlier you start treatment, the more effective it is.



Medical silicone scar therapy

Silicone is applied as a protective layer to the scar and the surrounding skin. This additional, protective layer stops water from evaporating from the skin, which results in better hydrated skin. Improved moisture balance reduces scar complaints and makes the scar less visible.


Scientifically substantiated and user-friendly

Silicone is applied to the surface of your skin. You use the therapy externally. It is not absorbed into the skin. As a result, there are few risks and, according to science, this treatment is one of the most user-friendly treatments

The table below provides step-by-step instructions on how to proceed with scars ranging from calm to abnormal. If these steps do not produce sufficient results, please contact your specialist.

Situation	Action
Your scar is calm and there are no complaints	Step 1: UV protection Step 2: Hydrate and restore moisture balance
At least one of the risk factors apply (see chapter 2) for development of abnormal scars	Step 1: UV protection Step 2: Hydrate and restore moisture balance Step 3: Protect the scar further against drying out, by using silicone scar products (in consultation with your specialist)
Despite following Step 1 and Step 2 , your (abnormal) scar continues to generate complaints	Step 3: Protect the scar further against drying out, by using silicone scar products (in consultation with your specialist)

Table: Step-by-step plan for scar treatment



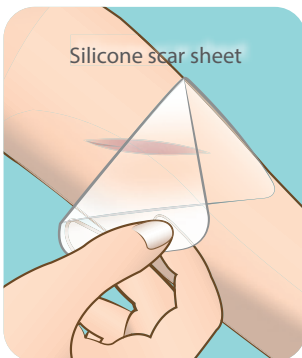
Chapter 6
Silicone
scar products

Which silicone scar products are available?



Medical silicone scar therapy is available in the form of sheets and gel.

For visible locations (such as the face), it is mostly preferable to use a gel. Under clothing, sheets are often preferred.



Silicone scar sheet

How to use a silicone scar sheet

After the wound is closed and any scabs and stitches have disappeared, the silicone scar sheet is applied to the skin.

Stick the silicone scar sheet to clean, dry, hairless skin and make sure it extends 2 cm outside the scar edges. Cut the silicone scar sheet to the right size, if necessary.

E.g. SCARBAN of BAPSCARCARE

For how many hours can you wear a silicone scar sheet?

Silicone scar sheets can be worn from 12 to 24 hours a day.

The treatment can be effective from as little as 4 hours a day.

The best result is achieved when you wear the silicone scar sheet for at least 12 hours a day. In the event of vulnerable skin, such as a burn or a recent scar, the treatment duration should be slowly increased.

How long does a silicone scar sheet last?

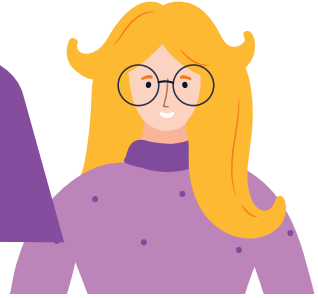
A silicone scar sheet remains effective as long as it still sticks to the skin effectively. If the adhesive strength decreases significantly, it is time for a new/clean silicone scar sheet. The period for which a silicone scar sheet lasts depends on its type (washable or disposable).

My tip!

Clean washable silicone scar sheets with a skin-friendly degreasing product. Some brands include this in the packaging.



Which silicone scar sheet treatment should I choose?



Choose a silicone scar sheet that is suitable for your scar.

Scar sheets are the most commonly used form of scar silicone therapy. So there is a broad choice of sizes, shapes, thicknesses and other characteristics. Your specialist can help you with this.



The right size and shape

A silicone scar sheet should stick to the skin effectively. It is also important that both the scar and an area extending 2 cm beyond it on all sides are covered by the silicone scar sheet. A silicone scar sheet can be cut to the right shape and should consist of one piece. For common surgeries, specially shaped silicone scar sheets are available. For example for abdominal surgery, caesarean section (C-Section) and breast surgery.

UV protection

Silicone scar sheets are available with or without high-level UV protection. Protecting the scar from UV radiation is very important. Unfortunately, not all clothing protects against this radiation.



Which
silicone scar gel
should I select?

**Consult your specialist as to which
silicone scar gel is the best for you.**

For scars in areas such as the face, it is important to avoid sunlight. A silicone scar gel with high sun protection level is therefore recommended.



Silicone scar gel

How do you use silicone scar gel

As soon as the wound is completely closed (wound healed closed and scabs/stitches gone), you can start using silicone scar gel. Clean and dry the skin before application. Apply a thin layer of silicone scar gel in one smooth motion, onto and around the scar, but do not rub. Once the silicone scar gel is dry, cosmetics can be applied on top of it.

My tip!

UV radiation from sunlight can seriously damage a scar. The International Scar Guideline is very clear in this regard: Keep scars out of the sun as much as possible.



For how many hours can you use silicone scar gel?

Silicone scar gel is usually applied to a scar 2-3 times a day. Applying a thin layer, several times a day, allows the silicone scar gel to work throughout the day.

How long does this treatment take?

It is recommended to get a specialist to evaluate silicone scar therapy treatment after 1 to 3 months. For optimal effect, total treatment duration is often 6 months to 1 year. However, treatment periods can be shorter, or longer.

Why use a silicone scar gel with UV protection?

New scars are not (yet) able to effectively resist UV rays. As a result, sunlight can enter the skin, unfiltered. Permanent discolouration of the scar is, as a result, particularly common. A scar can then become much darker in colour, stand out more, etc. Avoid UV rays from sunlight when the scar is still active.

Use a silicone scar gel with a high protection factor.

E.g. BAPSCARCARE gel SPF 40.





DRIES
IMMEDIATELY
AND SILKY
SMOOTH



BAPSCARCARE GEL

Silicone scar gel

- Scientifically substantiated
- Comfortable and easy to use
- For small scars and scars on face / neck
- Suitable for use under face cream and make-up
- Also available with high UV protection (Factor 40)



Bapscarcare.com

BAPSCARCARE® silicone scar gel, because every scar needs care!

Scarban®

Professional Scar Treatment

Most often recommended
by specialists for
(abnormal) scars



Silicone scar sheets

- Scientifically substantiated
- Available in various sizes, shapes and thicknesses
- With UV protection
- Easy to cut to size
- Washable (detergent included)



Scarban.eu

Scarban® silicone scar sheets, because every scar needs care!

The Scar Guide publisher

BAP Medical has provided solutions for skin problems since 2006. As a result, we have a great deal of knowledge and experience about abnormal scars. We also participate in various studies on skin disorders and we are in daily contact with patients, doctors, treatment providers and burn centres. We are committed to good scar care.

We provide this, among other ways, through our brands: **ALHYDRAN®**, **BAPSCARCARE®** and **SCARBAN®**.

Our scar products are all scientifically substantiated and proven to be effective. That's how we make a significant difference for patients with (abnormal) scars.



BAPMEDICAL
MEDICAL CARE FOR THE SKIN

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Scarban®
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