



## RYGG MÄRGS SKADA

<http://www.ryggmargsskada.se>

The following text is a selection from the website.

**Author:** Madeleine Stenius,  
Education officer/ Assistant  
nurse



**Translation:** funded by Allmänna  
Arvsfonden & project RG Integration.

<http://www.rgintegration.se/en/>

## Spinalis®

The website [Ryggmargsskada.se](http://www.ryggmargsskada.se)  
is made by Spinalis.

The Spinalis Foundation is a charitable foundation with the mission to promote research and develop treatments for people with SCI.

<https://www.spinalis.se>

## Pressure sores

This is a common complication in people with a spinal cord injury. Almost everyone gets a pressure sore at some point. Wheelchair users have poor pressure relief and have too few position changes, which are the main causes of pressure sores.

People bound in wheelchairs develop pressure sores in their pelvic region and these can lead to major limitations in everyday life since long-term bedrest is required for the sores to heal. In case of pressure sores, the root cause must always be found and addressed!

### WHAT IS A PRESSURE SORE?

A pressure sore is an area of damaged skin with underlying tissue injury caused by lack of circulation and muscle damage. When muscle tissue is pressed against bone, the muscle cells stretch out and harmful substances leak into the tissue.

Pressure sores develop when blood vessels and muscle cells are damaged. Then the cells do not get vital nourishment and cannot discharge their waste. The cells die and the pressure sores becomes a fact. The extent of damage depends on how long the pressure lasts and how high it is.

Pressure sores are caused by pressure or shear, or a combination of these, and occur in the vast majority of cases over a bone process, most commonly in the pelvic bones, hips, sacrum, metatarsals (malleolla) and heels.

**Short-term high pressure is as harmful as a long-term low pressure!**



This is a model made of silicone that shows how the buttocks with atrophied muscles and bed sores can look like.



## RYGG MÄRGS SKADA

<http://www.ryggmargsskada.se>

The following text is a selection from the website.

**Author:** Madeleine Stenius,  
Education officer/ Assistant  
nurse



**Translation:** funded by Allmänna  
Arvsfonden & project RG Integration.

<http://www.rgintegration.se/en/>

## Spinalis®

**The website Ryggmargsskada.se  
is made by Spinalis.**

The Spinalis Foundation is a charitable foundation with the mission to promote research and develop treatments for people with SCI.

<https://www.spinalis.se>

### WHAT ROLE DOES SPINAL CORD INJURY PLAY?

Living with a spinal cord injury often involves impaired movement that makes many everyday procedures more difficult, such as moving around, dressing, showering, going to the toilet and eating.

The spinal cord injury can also cause loss of sensitivity, muscle atrophy, skeletal calcification and incontinence, which increases the risk of developing sores. Urinary tract infections and lack of blood are additional risk factors that can appear in persons with spinal cord injury. In addition, more than 200 other patient-related and environmental risk factors are added.

In the case of paralysed persons, there is intense pressure on the seat bone in a sitting position. The pressure continues uninterrupted because of the lack of small involuntary movements that restore blood flow in the tissue. The pressure from inside the leg and from the underlying surface, along with the lack of feeling when it's time to change position, makes it easy for people with spinal cord injuries to develop pressure sores.

Studies show that 95% of all persons with a spinal cord injury develop a deep pressure sore in category 3-4 at some point. Extensive clinical experience with pressure sores in patients with spinal cord injuries shows that EVERYONE develops a pressure sore at some point. Preventing pressure sores and reacting promptly are of the utmost importance in addressing the problem as quickly as possible and reducing further impact on everyday life.

In short, spinal cord injuries plays a major role in the risk of developing pressure sores.

### HOW DO I KNOW IF I HAVE A PRESSURE SORE?

A reddish area of skin that does not fade when pressure is removed is considered a category 1 pressure sore. It can be difficult to recognize when you have a pressure sore when your skin is still intact. (The wound is under skin). Relieve the strain on the area as it will quickly worsen if it continues to be exposed to pressure.

#### Perform a pressure test to see if the red mark is a pressure sore:

- Press your index finger briefly on the area where the skin is red.
- If the mark turns white when the finger is removed, it is only a warning signal.





## RYGG MÄRGS SKADA

<http://www.ryggmargsskada.se>

The following text is a selection from the website.

**Author:** Madeleine Stenius,  
Education officer/ Assistant  
nurse



**Translation:** funded by Allmänna  
Arvsfonden & project RG Integration.

<http://www.rgintegration.se/en/>

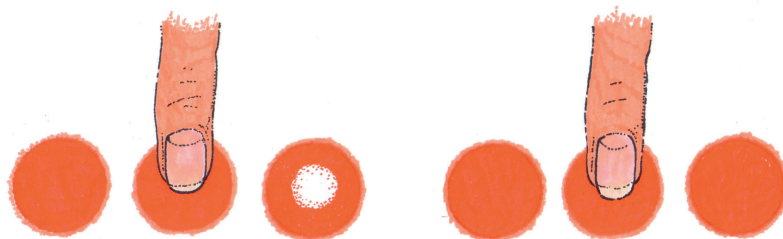
## Spinalis®

**The website Ryggmargsskada.se  
is made by Spinalis.**

The Spinalis Foundation is a charitable foundation with the mission to promote research and develop treatments for people with SCI.

<https://www.spinalis.se>

- If it is still red, it is a category 1 pressure sore!



### HOW DO I PREVENT PRESSURE SORES?

Daily skin inspections are the key to avoiding pressure sores. Immediately relieve the pressure when you detect an area of redness. Regularly review your transfer technique and your need for relieving aids such as a mattress, wheelchair cushion and shower chair/toilet.

Do you need a sliding sheet/mat, anti-slip material or a heel rest? Consider the length of time you are sitting and try to add natural breaks during the day to relieve the pressure.

Sometimes it is enough to change positions in the wheelchair regularly, small adjustments are often better than a large one!

In case of pressure sores in the pelvic region, seat restrictions apply to wheelchair-bound persons. Remedy any incontinence problems as best as possible, since damp skin breaks more easily.

If you have developed redness/sores, the single most important measure for all pressure sores is to relieve pressure on area, without increasing pressure and risking developing pressure sores in other areas of the body.

Reduced sensitivity also increases the risk of burns when the warning signals are not detected. The lack of sensitivity must therefore be compensated for by checking that the temperature is good where you have full sensitivity and taking an extra look at parts of the body with reduced sensitivity. Unfortunately, burns are relatively common in people with a spinal cord injury!

**Moving Technique** – It is important to have a good transfer technique so that you do not scratch the tire on the wheelchair when moving. Remove the side cover of the wheelchair and use a slide mat/towel



## RYGG MÄRGSSKADA

<http://www.ryggmargsskada.se>

The following text is a selection from the website.

**Author:** Madeleine Stenius,  
Education officer/ Assistant  
nurse



**Translation:** funded by Allmänna  
Arvsfonden & project RG Integration.

<http://www.rgintegration.se/en/>

## Spinalis®

**The website Ryggmargsskada.se  
is made by Spinalis.**

The Spinalis Foundation is a charitable foundation with the mission to promote research and develop treatments for people with SCI.

<https://www.spinalis.se>

to protect the tire when moving with a naked buttocks to avoid scratching the skin. If movement is difficult, use a sliding board.

**IAD (skin damaged by moisture)** - Review the toilet procedures! Moisture and leakage or incontinence protection (diapers) "in case" may cause skin damage caused by moisture known as "IAD" Incontinence Associated Dermatitis or infections. If you have superficial surface sores with blurred edges that develop around the anal opening, this is not a pressure sore, but is classified as IAD.

**Wheelchair Cushions** -When choosing a cushion, it is important to remember that the cushion should be customised for the individual person, be able to spread the pressure over a larger area and provide the right amount of support for everyday activities. A cushion with a pelvic hollow (contour) distributes the pressure under the buttocks and reduces the load on the pelvic bone better than a flat cushion. If you have problems with incontinence/moisture, a cushion made with an airy material may be needed, and it should also be washable.

All of them should have several cushion covers printed, in order to be able to wash and replace them regularly. It is important that you use and care for your aids correctly to reduce the risk of developing pressure sores. It is very important to change the position regularly in both sitting and lying position to prevent pressure sores!

### WHEN SHOULD I SEEK MEDICAL ATTENTION?

- You should seek medical attention if you are not sure if your aids are properly adjusted or if they are worn out.
- If you need help finding strategies for reducing pressure.
- If you suspect that you are developing or have developed a pressure sores or have a wound that does not heal.
- If you have a wound and develop a fever or suspect wound infection for other reasons.

### IF YOU ARE IN BEDRIDDEN OR IN HOSPITAL

Please be aware that you need to be treated as a high-risk patient for pressure sores! This can be missed in hospitals as they usually think it only applies to people over 65 years of age or those who are undernourished. After surgery or a long time in bed, you may need to lie on a therapy air mattress with a pump.





## RYGG MÄRGS SKADA

<http://www.ryggmargsskada.se>

The following text is a selection from the website.

**Author:** Madeleine Stenius,  
Education officer/ Assistant  
nurse



**Translation:** funded by Allmänna  
Arvsfonden & project RG Integration.

<http://www.rgintegration.se/en/>

## Spinalis®

**The website Ryggmargsskada.se  
is made by Spinalis.**

The Spinalis Foundation is a charitable foundation with the mission to promote research and develop treatments for people with SCI.

<https://www.spinalis.se>

### INDIVIDUAL RESPONSIBILITY FOR PERSON WITH SPINAL CORD INJURY

#### Self-care

- Learn how to prevent and contribute to heal pressure sores
- Check the skin, especially where there is no sensation (use mirror/mobile camera with selfie stick)
- Position changes/pressure relief as needed
- Check your aids and care for them as recommended
- Actively participate in your treatment of the pressure sores to accelerate healing and prevent new sores from developing.
- Toilet routines and personalised incontinence aids as required.
- Use established strategies for cognitive problems

#### Assistants together with the user

- Wound rescheduling
- Food & Fitness
- Pressure relief /position change
- Incontinence

#### WOUND TREATMENT

Step one is always to make a diagnosis in order to be able to provide the right treatment depending on the type of wound you have.

The bandaging method must be adapted to the wound's appearance, location and knowledge of the person affected. Then, actively treat the wound with modern dressings that can remain in place for a few days and provide the optimal environment (correct moisture content and temperature) for the wound. It is important to heal the wound from the inside and tuck the bandage in properly, otherwise the wound may heal incorrectly! The dressing should be in contact with the wound bottom. Photograph, draw and measure the pressure sore every week and keep an eye on how it is healing/the healing process to show the person affected. Stop smoking and chewing tobacco, as it will constrict the blood vessels and impair wound healing!

**Do not use old methods** such as a gauze fabric compressor, aeration, or massage – this will disrupt the healing!

**Nutritional Supplements** – With pressure sores, it is important to increase your intake of energy, protein, and fluid. In the case of extruding sores, protein leaks out of the wound and must be replaced.

**Pain & Spasticity** – Pain causes blood vessels to contract, which reduces the wound healing process. For paralysed individuals, pain may appear as spasticity instead, and pain medication should be used instead of drugs to treat the spasticity.



## RYGG MÄRGS SKADA

<http://www.ryggmargsskada.se>

The following text is a selection from the website.

**Author:** Madeleine Stenius,  
Education officer/ Assistant  
nurse



**Translation:** funded by Allmänna  
Arvsfonden & project RG Integration.

<http://www.rgintegration.se/en/>

## Spinalis®

**The website Ryggmargsskada.se  
is made by Spinalis.**

The Spinalis Foundation is a charitable foundation with the mission to promote research and develop treatments for people with SCI.

<https://www.spinalis.se>

### SYMPTOMS OF INFECTION - SIGNS OF INFECTION

Increased pain, secretion (increased wound fluid) and odour, and increased heat and redness on the skin around the wound. Preventing wound infections therefore becomes an important part of professional treatment for pressure sores. When you have wounds or cracks on your feet, there is an increased risk of developing roseola (bacterial infection). Swollen legs/feet also increase the risk. Roseola can spread rapidly and must be treated with antibiotics, as in the worst case it leads to blood poisoning (septicism).

#### Symptoms

- Intense and sharply defined redness that spreads rapidly.
- Pain and swelling in the infected area.
- Fever, sometimes even nausea and vomiting can occur.

### FEET AND PRESSURE SORES

When pressure sores are found, the cause of the wound must always be found and corrected!

#### Are your shoes too tight?

When you have become paralysed you usually need shoes that are one size larger than what you had before. Sometimes you can just remove the insole. If you have sores, remove all pressure around the feet! Use sandals or ask for a referral to an orthopaedist to customise your shoes.

If you never wear shoes, the foot rest of the wheelchair can place a lot of pressure on a small point, a foot plate provides better pressure distribution. In the event of problems with **outward-rotated feet** or **spasticity** that cause **friction on your heel**, you may need to use a load-bearing boot. You can also use genuine sheepskin at the foot end of the pressure to prevent blisters. Do not puncture the blister, this increases the risk of infection and delays healing!

#### Support Socks

If pressure sores develop on swollen feet, support socks are needed to provide better healing. Many people mistakenly believe that this creates increased pressure on the sore.

However, the support socks may produce pressure sores in the foot/ knee fold. Try to choose a flat knit (vertical mesh) sock, since a round knit more easily causes stasis in the skin folds as it follows the shape of the leg. If this doesn't work, you may try tailor-made socks, and the next option is daily treatment with a pump boot to get the swelling down.





## RYGG MÄRGS SKADA

<http://www.ryggmargsskada.se>

The following text is a selection from the website.

**Author:** Madeleine Stenius,  
Education officer/ Assistant  
nurse



**Translation:** funded by Allmänna  
Arvsfonden & project RG Integration.

<http://www.rgintegration.se/en/>

## Spinalis®

**The website Ryggmargsskada.se  
is made by Spinalis.**

The Spinalis Foundation is a charitable foundation with the mission to promote research and develop treatments for people with SCI.

<https://www.spinalis.se>

### FEET AND PRESSURE SORES

If you have sores in the seat area, you must relieve the strain if you cannot stand! A pressure sore is caused by pressure, and if you continue to put pressure on the area, you can counteract the healing and cause a greater injury.

To get a pressure sore that requires relief to heal means a restriction in everyday life, since most of the time should be spent lying down. It is not only the one with sores that will suffer if a pressure sore develops, but the whole family, relatives, friends, and workplace will suffer. The economy will also be affected if you are forced to take sick leave. You may not be able to work full-time any longer, rather you must reduce your working hours to heal or/prevent new wounds.

### Sitting Restrictions Apply To Pressure Sores In The Seat Region

- Only sit up in your wheelchair on a pressure-relieving and positioning air cushion for a maximum of 30–45 minutes at a stretch 3 times a day (+1 more time if you cannot stand it). The time also includes shower and toilet visits. Do not sit in bed more than when eating. Relieving pressure is a must for healing a pressure sore!
- You also need to review your movement technique, positioning in bed, wheelchair, toilet, shower chair, diet, bandaging methods, and above all find the cause of the wound and fix the problem!
- It is important that everyone involved (patient, family and staff) understands the cause of the wound and what affects the healing. Spending a long time lying down involves the risk of complications! To prevent these, it is important to assume a seated position a few times a day, if only on the edge of the bed.