

# Cold injury

## Frostbite

Frostbite occurs as a result of exposure of parts of the body to a cold environment. The most frequently damaged organ is the skin, but damage can also affect deeper tissues (under the skin, muscles, tendons, and even bones and joints). The most risky parts are the peripheral parts of the body (fingers of the upper and lower limbs, chin, nose, earlobes, etc.). The resulting disability depends mainly on the intensity of the cold and the time for which the organism is exposed to the cold, but it is also affected by the humidity of the air and the speed of its flow. It is therefore not excluded that frostbite could also occur at temperatures above the freezing point.

## Symptoms

The first symptoms of frostbite include pale and cold skin that loses its sensitivity. Later, the skin becomes marbled, with a blue tinge. Stinging and pain occurs. Blisters appear. Frostbite begins to develop only after it warms up. So it is not immediately clear from the start how serious the damage has been and what its consequences will be.

Frostbite, like burns, can be divided into four groups:

1. Redness
2. Blisters with clear or cloudy contents
3. Blisters with bloody contents
4. Mummification

Since this division has no effect on the method of treatment, it is gradually being abandoned. Frostbite is now divided into **superficial** and **deep**. The criterion for distinguishing these two types is whether deeper tissues are also damaged.

## Prevention

If we are in places where there is a risk of frostbite, it is necessary to be sufficiently equipped for these conditions. High-quality shoes and gloves are very important. We should also not forget to take spare clothes with us so that we can always exchange wet things for dry ones in time. Tight clothing and shoes also increase the risk of frostbite. The face must be protected with a sufficient layer of sunscreen. We protect previously frozen surfaces with particular care.

The prognosis for frostbite is better the sooner we start treating it. Therefore, it is important to actively look for the first symptoms. Children are especially a risk group.

## First Aid

At the first signs of frostbite, the victim must be transported to a safe place in the leeward direction. There we will change their wet clothes for dry ones. We will serve them warm soft drinks. The affected area is heated by body heat, **we must not rub it under any circumstances!** Now it is necessary to get the affected person warm as quickly as possible. Immerse the frostbitten area in warm, not hot, water to which it is advisable to add disinfectant. After acquiring a normal color, dry, cover with sterile squares and loosely bandage. In case of serious injury, it is necessary to provide professional help.

When examining a patient with frostbite, it is necessary to always think about the fact that they may be severely hypothermic and therefore not only focus on the affected area, but also on the patient's overall condition, especially on basic vital functions. <sup>[1]</sup>

## References

### Related articles

- Burns

### Sources

- LEJSEK, Jan – RŮŽIČKA, Petr. *První pomoc*. 1. edition. Praha : Karolinum, 2010. ISBN 978-80-246-1845-6.
- FRANĚK Ondřej, SUKUPOVÁ Petra. *První pomoc nejsou žádné čáry*

### External links

- Injuries caused by heat, cold and electric current - audio-recorded lectures 1LF (<https://el.lf1.cuni.cz/nm04>)



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## References

1. LEJSEK, Jan – RŮŽIČKA, Petr. *První pomoc*. 1. edition. Praha : Karolinum, 2010. ISBN 978-80-246-1845-6.