

10 – 12°

HILOTHERAPY®

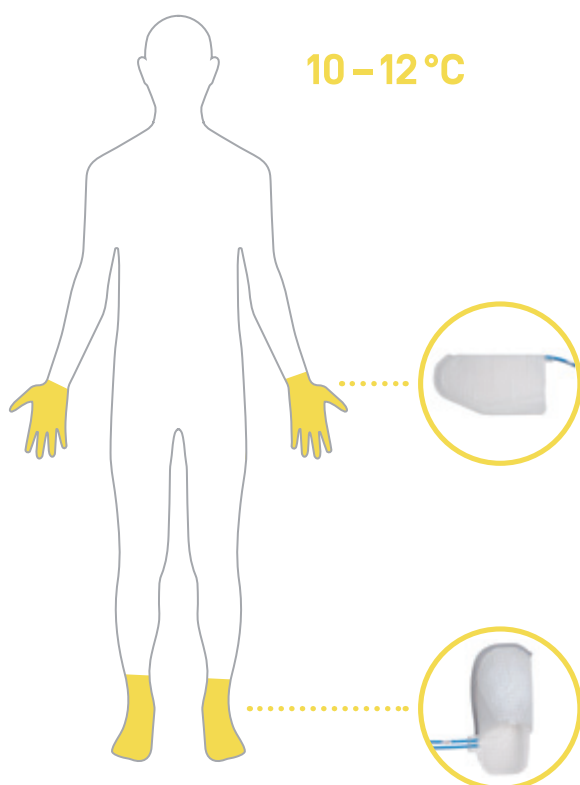
**for the Prevention of
Polyneuropathy [CIPN] and
Hand-Foot Syndrome [HFS]**

10 – 12 °C

HILOTHERAPY ChemoCare®

The temperature-controlled prophylaxis

HILOTHERAPY® is a form of physical thermo therapy that involves applying constant temperature within the range of 10°C to 12°C in a localized and targeted manner. During this procedure, applications lasting several hours without temperature deviations can be implemented. When deployed prophylactically, HILOTHERAPY® can significantly reduce the risk of chemotherapy-induced polyneuropathy.



Polyneuropathy [CIPN] and Hand-Foot Syndrome [HFS]

One frequent complication of chemotherapy which occurs with specific cytostatic drug, such as carboplatin, capecitabin, 5-FU, cyclophosphamide, cytarabine, docetaxel, doxorubicin, oxaliplatin, paclitaxel, sorafenide and sunitinib, is hand-foot syndrome. This comprises side effects affecting the hands and feet, which may occur right after the start of chemotherapy, during ongoing application of the same or even some month later.

How does HILOTHERAPY® prevent Polyneuropathy [CIPN] and Hand-Foot Syndrome [HFS]?

To prevent the chemotherapeutic agent from penetrating the capillaries of extremities, both blood circulation and metabolism have to be slowed down. This is done by lowering the tissue temperature. For example, lowering the temperature by 10°C already reduces the metabolic rate by 50%. Using HILOTHERAPY®, the localized tissue temperature in the area of the hands and feet can be configured to an individual value and both can be kept constantly cool. Reducing metabolism and blood circulation to a constant level limits the penetration of the chemotherapeutic agent in the extremities and hence the amount which is discharged via the sweat glands.

Benefits

- +** A reduced blood flow in the hands and feet throughout the entire chemotherapy process
- +** A clear reduction in the amount of chemotherapeutic agents reaching the extremities
- +** Elimination of side effects affecting the hands and feet
- +** Eliminating the need for related lengthy follow-up treatment
- +** An enhanced quality of life

Function

HILOTHERAPY® works with the HILOTherm ChemoCare device, which forms a closed-loop system with cuffs and piping, through which the coolant flows. Monitor sensitive sensors ensure constancy of temperature throughout the entire therapy period – even over many hours.

The therapy device HILOTherm ChemoCare

- Temperature: 10 – 12 °C [controllable to the nearest degree]
- Constant-temperature long-term usage [sensors maintain the adjusted temperature]
- Coolant: distilled water



Information

How does CIPN develop?

The general understanding is that any attack on the sensitive nervous system is exacerbated when the blood supply to these nerve cells is populated by fenestrated capillaries. In other words, the altered protein composition of the cell wall is more permeable to specific chemotherapeutic substances. The substances in question then inflict fundamental damage on the nerve cells. This damage to cellular as well as mitochondrial DNA, plus disrupted calcium balance and oxidative stress, are what

encourage the dissolution of ganglion cells. Since the long nerve fibers are more sensitive to these damaging impacts, CIPN tends to be considered length-dependent, with a focus on the lower extremities.

Three degrees of severity for Polyneuropathy (CIPN)

According to the definition of the World Health Organization (WHO) and the National Cancer Institute (NCI), three degrees of severity can be used to distinguish symptoms.



Grade 1: Numbness, dysesthesia, paresthesia. Difficulties which do not impact on everyday life.



Grade 2: Painful swellings and/or erythema. Difficulties which impact on everyday life.



Grade 3: Extensive blistering; oozing, scaly skin; ulcerations, severe pains. This often results in onycholysis, namely losing one or more nails. Considerable difficulties, which render everyday life impossible.

The lack of any casual therapy for both complexes of clinical signs means that in the worst case scenario, chemotherapy may have to be suspended or abandoned.

Our range of products: HILOTHERAPY® – Temperature-controlled thermo healing

10 – 35 °C

HILOTHERM Clinic®

12 – 22 °C

HILOTHERM PROFESSIONELL®

15 – 22 °C

HILOTHERM HomeCare®

**Prevention of swellings,
hematomas,
inflammations and pain**

15 – 22 °C

HILOTHERM HomeCare®

**Pain relief from
rheumatism**

10 – 12 °C

HILOTHERM ChemoCare®

**Prevention of
Polyneuropathy [CIPN] and
Hand-Foot Syndrome [HFS]**

35 – 43 °C

HILOTHERM Calido®

**Heat therapy for
tissue dissections and
transfers**



HILOTHERAPY®

HILOTHERAPY® is a thermal healing treatment that operates in a localised manner on damaged parts of the body and affects the oxygen requirement, the metabolism, the blood circulation and the pain receptors of the affected tissue. In the form of cryotherapy, it has a slow-down effect, and a stimulatory effect with hypothermia. The HILOTHERAPY® allows such effects while offering temperature controllable to the nearest degree, relative to the respective indication, within the specified temperature range.



Is ice really a pain killer?

HILOTHERAPY®'s ability to maintain a constant temperature, gives it an essential advantage over conventional alternatives such as ice gloves etc... These will thaw and lose their cooling effect, meaning they need to be changed throughout the treatment process. Patients who are exposed to these alternatives also risk developing skin burns, due to the extremely cold temperatures.