

LONGEVITY-HAT®

THE INNOVATIVE
BLOOD PURIFICATION
IN THE SWISS MOUNTAIN CLINIC

Do something good for your body,
so that your soul wants to live in it.

Teresa from Avila

NEW
AS OF
01 MAY 2025



LONGEVITY-HAT®

The Innovative Blood Purification

As of May, The Swiss Mountain Clinic will offer hemoperfusion (whole blood purification). It is an effective method to purify the blood and is used to treat chronic diseases such as Long-covid and ME/CFS (Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome).

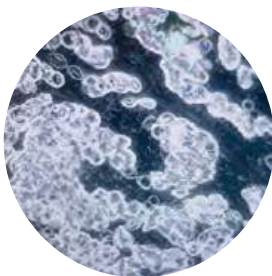
WHAT IS HAT®?

HAT® refers to hemoadsorption therapy and is a form of hemoperfusion. Inflammatory and other harmful molecules are absorbed and filtered from the blood. Different absorber filters are available for this purpose, equipped with high-tech polymer beads to which freely circulating toxins can adhere. Multiple filters can be connected in series during a single therapy session. This allows for an individualized approach tailored to the specific needs of each patient.

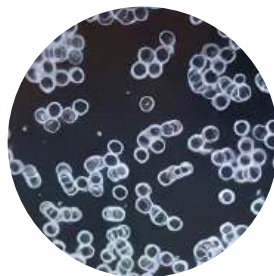
WITH HAT® NUMEROUS AILMENTS CAN BE EFFECTIVELY TREATED AT THE SAME TIME WITH VERY FEW SIDE EFFECTS.

One treatment session lasts 3.5 hours and during this time, all the body's blood runs through the purification process up to 14 times.

Dark field picture
before HAT®



Dark field picture
after HAT®



THE SWISS MOUNTAIN CLINIC

We are located in the Swiss Alps in a small village called Castaneda. Our clinic is the perfect place to find peace and to regenerate body and soul. Our restaurant offers organic and gluten-free food. Among other things, our water is biological and the environment is EMF-reduced. Combined together, these things provide optimal conditions for regeneration and healing. Discover for yourself, all the things we have on offer.

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What is the difference between apheresis and HAT®?

Within the framework of HAT®, hemoperfusion (absorption) differs from apheresis due to the way the whole blood is purified. In apheresis, only the blood plasma is cleansed through a filter. The available surface of an absorber cartridge is between 35.000 m² and 68.000 m², depending on the cartridge used. In contrast, an apheresis filter has a surface of maximum 2 m². In addition, HAT® has a many times higher blood flow rate than apheresis (purification volume of up to 70 l of whole blood).

This all leads to the proven removal of toxins such as environmental pollutants, heavy and light metals. Pathogens such as viruses, bacteria, as well as other intercellular pathogens are eliminated as well as a great number of pro- and antiinflammatory mediators.(1)

HAT® HAS BEEN SUCCESSFULLY USED FOR THE FOLLOWING INDICATORS:

- Long-covid
- ME/CFS (Myalgic Encephalomyelitis/Chronic Fatigue Syndrome)
- Pollutants, heavy metals, environmental toxins
- Autoimmune diseases (MS, Morbus Crohn, Ulcerative Colitis, Hashimoto Thyroiditis)
- Liver diseases
- Lung diseases (ARDS)
- Kidney diseases
- Heavy metal pollution
- Rheumatic diseases (arthritis, arthrosis, gout)

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HAT® is entirely different from apheresis due to its massively higher blood flow rate.

HAT® is an innovative treatment method.



HEMOPERFUSION

Hemo-absorbers from the Jafron HA Series are used with a compatible machine (the Future F20 Machine) from Jafron Biomedical Co.

Hemoperfusion is an extracorporeal blood purification technique to eliminate toxic substances from the blood. The way these hemo-perfusion filters (columns) work is based on the absorption properties of a neutral microporous resin. With the help of this filter, many chemical compounds and pollutants can be eliminated, including mid-sized toxins (pollutants), protein bound toxins, inflammatory mediators and cytokines. Depending on the indicator, the most appropriate absorber filter can be used, since each filter has very different characteristics. If need be, a series connection can also be used.

The type of hemoperfusion that we have is also used in intensive care settings as well in emergency rooms. It is used to treat sepsis, drug poisoning, multiple organ shut down, Systemic Inflammatory Response Syndrome (SIRS) and lung diseases such as ARDS (Acute Respiratory Distress Syndrome).

Examples of publications:

1. Survival Outcomes of Hemoperfusion and Hemodialysis versus Hemodialysis in Patients with End-Stage Renal Disease: A Systematic Review and Meta-Analysis. Cheng, W., Luo, Y., Wang, H., Qin, X., Liu, X., Fu, Y., & Ronco, C. (2021). Blood Purification, 1-13.
2. THE SUCCESSFUL TREATMENT OF HIGH LETHAL DOSE PARAQUAT POISONING WITH HEMOPERFUSION. MOHAMMADI, A. B., NAHANDI, M. Z., MOHAMMADIAN, S. (2020). INTERNATIONAL JOURNAL OF MEDICAL TOXICOLOGY AND FORENSIC MEDICINE, 10(3), 26726-26726
3. Changes of inflammatory mediators and oxidative stress indicators in children with Henoch-Schönlein purpura and clinical effects of hemoperfusion in the treatment of severe Henoch-Schönlein purpura with gastrointestinal involvement in children. Zhu, Y., Dong, Y., Wu, L., & Deng, F. (2019). BMC pediatrics, 19(1), 1-10.





ANTICOAGULATION

The blood considers all the components of HAT® to be foreign surfaces, even though they are made of high-quality materials. When blood leaves the vascular bed and comes into contact with foreign surfaces (this means the body's own tissue), it begins to coagulate, which means, it forms clots. This is a natural defense mechanism of the body to stop the loss of blood. When a patient is hooked up to

HAT®, the blood will react in a similar way – it will clot, even though there is no danger of blood loss. This natural process of coagulation can, within minutes, lead to the complete blockage of the oxygenator, which hinders the circulation of blood in the system. This is why patients must receive blood thinners, usually Heparin, when they have a HAT® treatment. Patients are given a one-time dose, usually in the form of a bolus, before treatment begins.

THE LONGEVITY HAT®

The uniquely innovative therapy for chronic diseases such as Long-COVID and ME/CFS

LONG-COVID AND ME/CFS: A MEDICAL CHALLENGE

Long-COVID and ME/CFS are chronic diseases, whose origins are unknown. It is assumed that a combination of epigenetic, immunological, neurological and environmental factors plays a role in all chronic diseases. This is part of the reason why afflicted people are not content with the treatment they receive and have to deal with these diseases their whole lives. The guidelines of traditional medicine limit treatment to the lessening of symptoms.

Long-COVID is characterized by symptoms that persist for more than four weeks after the initial acute Covid-19 infection or even show up new. These people suffer from persistent fatigue, weakness (fatigue, footnote), respiratory problems, cardiovascular problems, or neurological symptoms such as forgetfulness, brain fog along with other symptoms. These complaints can often continue for months after the actual infection.

On the one hand, standardized diagnostic criteria are lacking, so the diagnosis is often based solely on the patient's description of symptoms, without the availability of specific tests to confirm the diagnosis. On the other hand, the diversity of individual disease progressions makes it difficult to establish a uniform definition. While some patients experience improvement within weeks, others report worsening or fluctuating symptoms over the course of months or even years. According to a U.S. study by Ziyad Al-Aly and his co-authors,

published in Nature Medicine in 2022, the cumulative global incidence of Long-COVID estimated at around 409 million people (2).

One challenge in diagnosing Long-Covid is that its symptoms overlap with those of other chronic illnesses, such as chronic fatigue syndrome, also known as Myalgic Encephalomyelitis (ME/CFS). In a Russian study published in the medical journal Diagnostics in 2023, all patients who continued to experience symptoms more than twelve weeks after an acute Covid infection met the diagnostic criteria for ME/CFS, confirming the correlation between Long-COVID and ME/CFS. These overlaps make it difficult to distinguish Long-COVID from other conditions.

ME/CFS is a chronic illness characterized by persistent, extreme fatigue that cannot be alleviated by rest or sleep and is not attributable to any other medical condition. This exhaustion is often accompanied by additional symptoms such as sleep disturbances, cognitive impairments, muscle pain, and joint pain – frequently without detectable inflammation. The global prevalence of ME/CFS is estimated to be between 17 and 24 million people. Due to the nonspecific nature of the symptoms and the lack of biomarkers, patients with ME/CFS are often misdiagnosed or receive a delayed diagnosis. Their symptoms tend to worsen over the years, severely impacting their quality of life and daily functioning. →



→ **THE JAFRON HEMO-ABSORPTION FILTER IS USED FOR A VARIETY OF SERIOUS CLINICAL CONDITIONS IN WHICH THE TARGETED REMOVAL OF TOXINS AND INFLAMMATORY MEDIATORS IS REQUIRED. THE MAIN INDICATIONS INCLUDE:**

- **Open-heart surgery:**
Support in the treatment of inflammatory responses and toxin burden during and after cardiac surgical procedures.
- **Sepsis and septic shock:**
Support in the removal of pro-inflammatory cytokines and toxins released during sepsis, thereby improving organ function.
- **Acute pancreatitis:**
Alleviation of inflammation and support of organ function in severe cases.
- **Severe burns:**
Assistance in the removal of toxic substances and pro-inflammatory molecules that arise during burn trauma.
- **Severe trauma:**
Reduction of inflammation and toxins resulting from serious injuries and trauma.
- **Severe infections:**
Support in the treatment of infections by removing pro-inflammatory mediators and toxins.
- **Acute respiratory distress syndrome (ARDS):**
Improvement of lung function through the reduction of inflammatory processes and toxin accumulation in the blood.

The Jafron hemo-absorption filter contributes to circulatory stabilization and improvement of organ functions by removing harmful substances from the blood that can lead to a deterioration in health in these critical conditions (1).



The Longevity HAT® blood purification is a suitable therapeutic option for chronic conditions such as Long-COVID and ME/CFS.

IT CAN REDUCE INFLAMMATORY PROCESSES IN THE BODY.

Intracellular pathogens such as viruses and bacteria, as well as harmful substances like heavy metals, can cause oxidative cellular stress and trigger or intensify inflammatory processes (2,3).

An observational study published in 2021 at the University Hospital CHU in Lille, France, showed that intensively cared for COVID-19 patients frequently experienced reactivation of latent viruses such as the Epstein-Barr virus (EBV), the cytomegalovirus (CMV), and the human herpesvirus 6 (HHV-6). COVID-19 infections can trigger reactivation of these latent viruses, setting off inflammatory processes (4).

During the HAT® blood purification, a wide range of inflammatory mediators and free radicals are filtered out, including cytokines such as interleukin-6 (IL-6), interleukin-8 (IL-8), tumor necrosis factor-alpha (TNF-α), and C-reactive protein (CRP). These substances play a central role in the regulation and control of the immune system and are responsible for communication between immune cells (5). Due to their pro-inflammatory properties, cytokines can trigger or intensify inflammatory responses in the body.

A study examined the cytokine profiles of patients with ME/CFS. The research team found elevated concentrations of 17 different cytokines in the patients' blood, indicating an immunological involvement in the pathogenesis of these conditions (6).

A study published in 2023 in the journal Blood Purification showed that hemo-absorption therapy in critically ill Long-COVID patients resulted in a significant reduction of inflammatory mediators and regulation of the immune response. This can lead to an improved hemodynamics, organ and cellular function, and thus contributed to the alleviation of symptoms in Long-COVID and ME/CFS (7,8,9).

IT CAN CONTRIBUTE TO THE DETOXIFICATION OF TOXIC POLLUTANTS AND HARMFUL ENDOGENOUS SUBSTANCES, THEREBY HELPING TO IMPROVE ORGAN FUNCTION.

Reduction of long-term exposure to heavy metals:

The hemo-adsorption filters contain specially developed absorbent materials that are capable of binding molecules of specific sizes and properties. These materials have a high surface structure, enabling them to effectively capture toxic substances such as heavy metals like **lead, mercury, arsenic,** and **cadmium** as well as toxic drugs in cases of drug poisoning. →

→ Due to their chemical properties, toxic substances have an affinity for the surfaces of the filter. Through interactions with the filter's absorbent materials, heavy metals and toxic drugs can be filtered out of whole blood. Thus, HAT® provides a preventive protection against long-term functional organ damage or can reduce its progression.

A study published in 2021 examines the toxic effects of five heavy metals on the human body and shows how these metals increase the risk of oxidative damage, inflammation, and cellular dysfunction, which can in the long-term lead to chronic diseases. It explains the connection between heavy metals and their impact on mitochondrial function, the immune system, and inflammatory processes, highlighting the need to reduce intracellular heavy metal burdens (10).

Heavy metals such as cadmium and mercury have been shown to have harmful effects on heart, kidney, and brain functions, increasing the risk of different chronic diseases (11). A study published in 2023 in Environmental Research examined the effects of cadmium on the kidneys and found that long-term cadmium exposure can impair kidney function and contribute to an increased risk of kidney disease (12).

Prenatal early exposure to arsenic can raise the risk of cardiovascular diseases, diabetes, neurological disorders due to epigenetic changes, oxidative stress, persistent inflammatory reactions, and cancer development (13).

The symptoms of lead poisoning are often non-specific and may include abdominal cramps, constipation, and persistent fatigue. Additionally, lead exposure can cause neuronal cell damage, disrupted blood formation (hematopoiesis), leading to anemia, and impaired kidney function (14).

Replacement in cases of drug poisoning and exposure to environmental toxins:

Certain drugs and toxic substances that are present in excessive amounts in the body, such as in the case of an overdose or side effects of drugs, can be removed through HAT®-blood purification. The filter is designed to specifically absorb pharmaceutical substances that could be harmful to health.

A study by Liang MJ and Zhang Y from 2015 examines the combination of hemo-perfusion and the drug phencyclidine hydrochloride in the treatment of acute poisoning from organophosphorus pesticides. The study shows that hemoperfusion is an effective method for removing these environmental toxins from the blood, particularly in the treatment of acute organophosphorus compounds, which are key ingredients in herbicides, pesticides, and insecticides, as well as components of plastics and solvents. Environmental toxins like pesticides are neurotoxic and can cause symptoms of severe poisoning. By using hemoperfusion, these toxins can be quickly and effectively removed from the body, leading to an improvement in clinical symptoms (15).

The scientific research team of Furukawa T., Lankadeva Y., Baldwin IC, et al., was able to demonstrate that the hemo-adsorption filter is capable of **absorbing antibiotic drugs such as vancomycin and gentamicin** in an experimental setting. The **absorption capacity** is particularly significant if there is an **overdose of antibiotics**, especially in situations where **these medications could have toxic effects** on the body (16).



The study Vancomycin absorption during in vitro model of Hemoperfusion with mini-modules of HA380 cartridge from 2023 also examines the absorption of vancomycin during hemo-perfusion with a mini-module of the HA380 hemo-adsorption filter and shows that the HA380 hemo-adsorption filter can effectively absorb vancomycin in an in-vitro-model (17).

Removal of burdening endogenous substances:

The HAT® therapy has proven effectiveness in removing harmful substances such as **myoglobin** and **bilirubin** from the blood, which can contribute to the treatment of patients with corresponding endogenous burdens.

A study shows that HAT® blood purification can reduce the **myoglobin concentration** in plasma from **99.3 ng/ml to 30.6 ng/ml** within just **4 hours**, corresponding to a reduction rate of 69%. The ability to remove excess myoglobin is especially important in patients with severe muscle injuries or rhabdomyolysis, as high myoglobin concentrations can damage the kidneys (18).

Another study shows that the Jafron HA-380 filter is capable of reducing high **bilirubin levels** in the blood. Bilirubin, a breakdown product of hemoglobin, can lead to **jaundice** and other problems with the liver when present in elevated concentrations. The HA-380 filter helps to efficiently remove excess bilirubin, which could support liver function and alleviate the patient's symptoms (19).

IT CAN SUPPORT MITOCHONDRIAL FUNCTION AND SUPPORT THE REGULAR METABOLISM.

The mitochondria, often referred to as the "power-houses of the cells," play a central role in the body's energy production. Inflammatory processes and external factors such as heavy metals, environmental toxins, medications, as well as an unhealthy diet and lifestyle can lead to oxidative cellular stress and nitrosative stress (nitro-stress), which can affect cellular metabolism, cell proliferation, apoptosis (programmed cell death), and mitochondrial energy production via ATP (adenosine triphosphate).

Nitro-stress can promote pathological intracellular reactions and disturbances in mitochondrial metabolism, such as reduced cellular energy production and impaired cell function. This, in turn, can lead to organ damage and the development of chronic disease patterns with secondary symptoms, such as Long-COVID and ME/CFS, cardiovascular diseases, neurodegenerative disorders such as ALS (amyotrophic lateral sclerosis) or MS (multiple sclerosis), Parkinson's disease (PD), epilepsy, gastrointestinal disorders, and autoimmune diseases, among others (20). →

→ Nitro-stress can also contribute to the inhibition of enzymes that are part of the mitochondrial respiratory chain, leading to a loss of ATP and potentially damaging cells with high energy demands, such as immune cells, muscle cells, or nerve cells (21,22).

The HAT® hemo-adsorption (blood purification) can help restore or improve mitochondrial activity and reduce cellular dysfunctions by removing pro-inflammatory mediators and reducing oxidative cellular stress and nitro-stress. This can help alleviate neurological symptoms such as brain fog or chronic fatigue, which often affect patients with ME/CFS (23).

IT CAN LEAD TO AN IMPROVEMENT OF THE MICROCIRCULATION.

Studies have shown that hemo-adsorption therapy can contribute to an improved overall hemodynamic stability in critically ill patients. The reduction of cytokine levels and the associated attenuation of the systemic inflammatory response can help stabilize hemodynamics, which in turn can enhance microcirculation and support organ perfusion and function (24,25).

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INDICATIONS FOR LONGEVITY HAT®

- Long-COVID, ME/CFS
- Toxic load, heavy metal exposure, environmental toxin exposure
- Autoimmune diseases (multiple sclerosis, Crohn's disease, ulcerative colitis, Hashimoto's thyroiditis, etc.)
- Liver disease
- Lung disease (ARDS)
- Kidney disease Rheumatic diseases (arthritis, arthrosis, gout, etc.).

THE SWISS MOUNTAIN CLINIC LONGEVITY HAT® PROTOCOL

Day 1

Heavy metal detox protocol (lasts around 3.5 hours).

- a) Initial consultation including preliminary examinations
- b) Microcirculation therapy and H₂ therapy
- c) Unique four-hour heavy metal detox protocol
 - Antioxidants
 - Basis infusion throughout the entire protocol

Day 3

Control and Rebuilding Infusions, (approx. 2.5 hours)

- a) Methylene Blue infusion
- b) Immunoboost infusion

Day 2

HAT® Treatment and Infusion, (approx. 5 – 6 hours)

- a) Preliminary discussion and patient preparation
- b) Sheldon catheter (ultrasound-guided)
- c) Afterwards the hemoperfusion equipment is connected. The patient remains awake during the treatment
- d) After HAT® (Hyperbaric Oxygen): a restorative infusion

After 3 – 4 Weeks

Gut Detox and Integrative Remediation, including Biofilm

HAT® HEMO-ABSORPTION THERAPY

In the HAT® procedure, only the absorption column and an external pump are used to eliminate toxins from the body. The coating of the absorption medium is important for biocompatibility to avoid damage to blood cells. The absorber cartridge removes a variety of pro- and antiinflammatory mediators as well as a wide range of toxic substances, such as drugs and metals. It has a molecular weight range of 10 to 60 kDa and a surface area of up to 68,000 square meters.

Procedures and Treatment Guidelines

- Hemoperfusion with integrated absorbers
- Treatment time: approximately 3.5 hours
- Normothermic

A combination of different absorbers is possible.

Healing
needs truth®

Heilung
braucht
Wahrheit®



DR. WIECHEL · AL RONC · CASTANEDA / CALANCA
INTERNATIONAL COMPETENCE CENTER FOR
REGULATIVE AND FUNCTIONAL MEDICINE

LOCATIONS OF POWER AND ENERGY

Geomagnetic energy fields are places where the rotation of the earth has created magnetic currents which are a source of healing and wellbeing for the human mind, body and spirit. We are fortunate to have two high-energy fields in the garden at Swiss Mountain Clinic.

The modern lifestyle of constant activity and technology has separated us from the ability to sense these healing places. With intention, awareness and quiet we are able to perceive and enjoy the benefits of this powerful gift of nature. We invite you to receive the healing of nature by resting in the energy fields at Swiss Mountain Clinic.



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