

HAEMO-Laser® therapy for the treatment of long COVID symptoms Evaluation of patient documentation sheets

In the period from January 2021 to february 2023, 88 patients who showed symptoms of long COVID were treated with intravenous laser blood irradiation (Haemo-Laser®), among other treatments, during inpatient rehabilitation (duration of stay 3 weeks) or outpatient treatment. Prior to starting Haemo-Laser therapy, a documentation sheet was filled in together with the patients. After completion of Haemo-Laser therapy, the documented symptoms, sleep patterns, changes regarding pain and any recorded laboratory values for CRP and ESR were compared. This evaluation is intended to provide an overview of the possible applications and outcomes in case of symptoms of long COVID.

Number of patients: 88 (62 female / 26 male) **Age:** 16 – 77 years

49 patients were treated by Haemo-Laser® therapy with red laser light (660nm) only and 39 patients were treated by a combined therapy of red laser light (660nm) and blue laser light (405 nm).

Laser device used: HILARIS HAEMO red/blue, Heltschl GmbH Medizintechnik or
HILARIS TL 100 with haemo-laser patient adapter, Heltschl GmbH
Medizintechnik

Wavelength: 660 nm (red), 405 nm (blue)

Power output: 2-5 mW at distal end of single-use optical fibre

Duration of treatment / session: 45 min. (red), 20-30 min. (blue)

Number of treatments: 3-12 **Frequency:** 2-3 / week (inpatient rehab.)
1-3 / week (outpatient tr.)

Documented changes / improvements:

All patients showed a comparative SpO2 value increase by 1-4% after Haemo-Laser treatment.

Symptoms / improvement:

Symptom	Number of patients	Of which improved after therapy
Fatigue syndrome	80	67
Loss of sense of smell / taste	24	23
Coughing	26	26
Pain	45	34
Shortness of breath	43	32
Other neurological disorders	12	8
Decreased concentration and memory	33	24
Impaired sleep patterns	60	44
Muscle weakness	5	3

Changes regarding pain:

The values of the VAS improved in about 90 % of the patients. The improvement ranged from 1 to 5 points on the VAS. Analgesic medication could mostly be reduced or completely discontinued.

Conclusion:

This evaluation of a group of patients shows that intravenous Haemo-Laser therapy offers a useful therapy option without any major adverse effects for symptoms of long COVID.