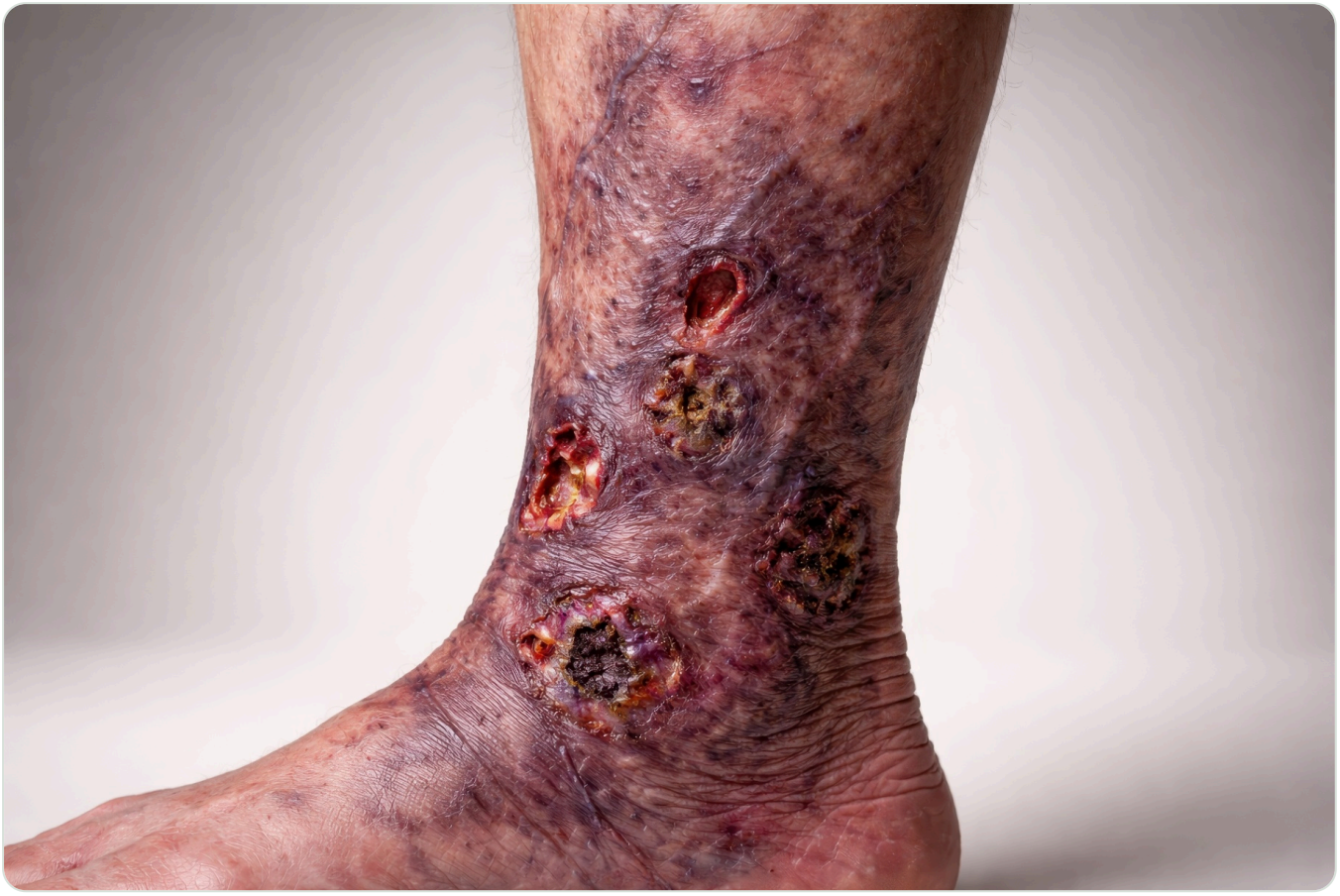
Venous leg ulcer (ulcus cruris venosum): Causes and modern treatment

A **venous leg ulcer** - *ulcus cruris venosum* - is the most severe stage of chronic venous insufficiency and affects **1-3% of adults over 65** [1]. The ulcers heal slowly, recur frequently and are often the result of many years of untreated varicose veins. The good news: with modern **endovenous laser ablation (EVLA/EVLT)**, healing time can be more than halved [2].

What is a venous ulcer?



A venous ulcer is a chronic skin defect - typically on the **medial ankle ("gaiter area")** - that does not heal within 4-6 weeks. It develops when **chronic venous hypertension** damages the skin and subcutaneous tissue:

1. Defective venous valves → blood flows backwards (reflux)
2. Elevated venous pressure in the lower leg

3. Leakage of red blood cells and protein through the capillary wall
4. Inflammation, fibrosis and oxygen deficiency in the skin
5. The skin barrier breaks down → ulcer

The stages before a venous ulcer (CEAP)

Venous disease is classified by **CEAP** [3]:

Stage	Signs
C0-C1	No visible signs / spider veins
C2	Visible varicose veins
C3	Swollen legs and ankles
C4a	Pigmentation, venous eczema
C4b	Lipodermatosclerosis, atrophie blanche
C5	**Healed venous ulcer**
C6	**Active venous ulcer**

By the time you reach C4-C5, the risk of a full venous ulcer is markedly increased - and at this stage treatment of varicose veins is most effective as prevention.

Symptoms and characteristics

- Ulcer on the inside of the ankle, rarely on the foot or above the knee
- Irregular edges, shallow base, yellow-red wound tissue
- Surrounding **brown pigmentation** and venous eczema
- Chronic swelling that improves with elevation
- Pain (often less than with arterial ulcers)
- Odour and exudate if infected

When to see a doctor?

Seek medical attention **immediately** if you have:

- An ulcer on the leg that does not heal within 2 weeks
- Increasing pain, redness or fever (infection)
- Sudden worsening of a chronic ulcer
- Ulcer + diabetes or peripheral arterial disease (different treatment required)

Early referral halves the risk of chronicity [4].

Work-up

1. **Clinical examination** - CEAP classification, ulcer size, location.
2. **Doppler ultrasound (duplex scan)** - gold standard for locating valve failure and reflux [3].
3. **Ankle-brachial index (ABI)** - excludes concurrent arterial disease (important before compression!).
4. **Wound culture** if signs of infection.
5. **Biopsy** for ulcers >3 months without healing (to exclude malignancy).

Modern treatment

1. Compression - the cornerstone [5]:

- Class III compression stocking (34-46 mmHg) or multilayer bandage
- Requires normal ABI (>0.8)
- Healing rate ~70% at 24 weeks with correct compression alone

2. Endovenous laser ablation (EVLA/EVLT):

The landmark randomised **EVRA study** (NEJM 2018) showed that early laser ablation of incompetent trunk veins:

- **Halves the healing time** (median 56 vs. 82 days)

- Markedly reduces the risk of recurrence
- Is now recommended in all international guidelines [2,6]

The treatment is performed under local anaesthesia and takes 30-45 minutes per leg.

3. Wound care:

- Atraumatic dressings (foam, hydrofibre, alginate by wound type)
- Local debridement, possibly larval therapy for necrosis
- Antibiotics **only** for clinical infection - not for colonisation

4. Prevention of recurrence:

- Lifelong compression stocking (class II)
- Weight loss if BMI >25
- Daily exercise → activates the calf muscle pump
- Skin care with moisturiser

Treatment at Kirurgen.dk

We offer Doppler ultrasound and **endovenous laser ablation (EVLA/EVLT)** under the public health insurance scheme for patients with both active and healed venous ulcers. See also our articles on treatment of varicose veins, heavy, tired legs and swollen legs and ankles.

References

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3. Lurie F, et al. *The 2020 update of the CEAP classification system.* J Vasc Surg Venous Lymphat Disord 2020;8(3):342-52.
4. O'Donnell TF Jr, et al. *Management of venous leg ulcers: clinical practice guidelines of the SVS and AVF.* J Vasc Surg 2014;60(2 Suppl):3S-59S.

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