

Improved Sclerotherapy by Transillumination

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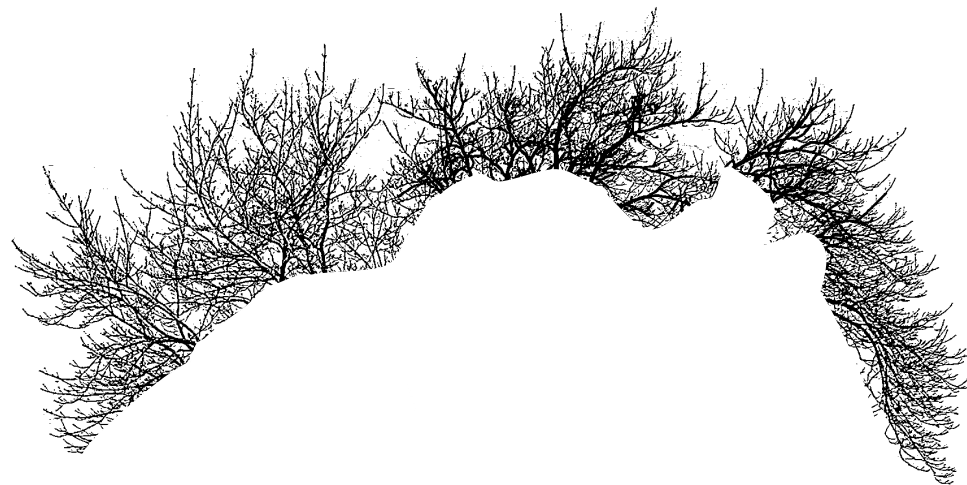
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The Idea behind

Spider veins

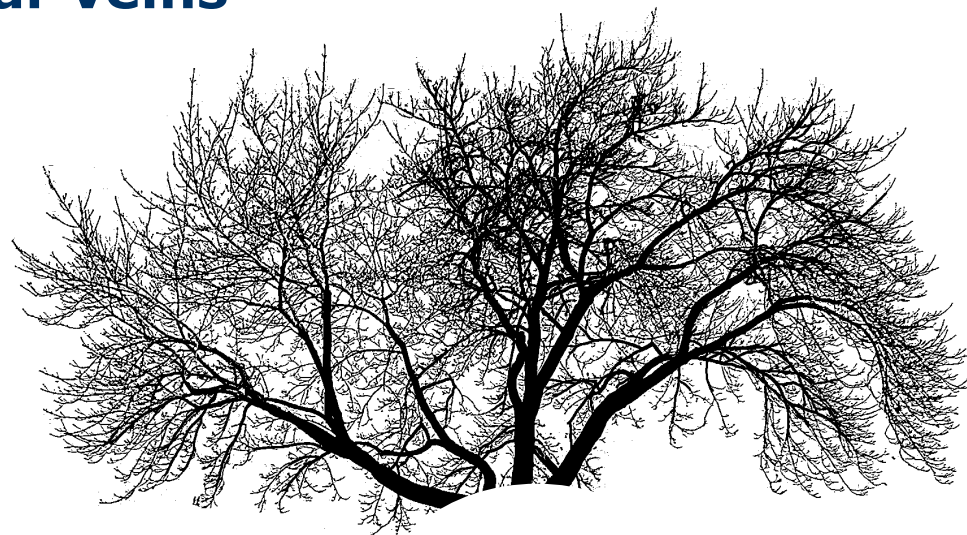
Standard technique
former „state of the art“



The Idea behind

Spider veins – reticular veins

Standard technique
former „state of the art“

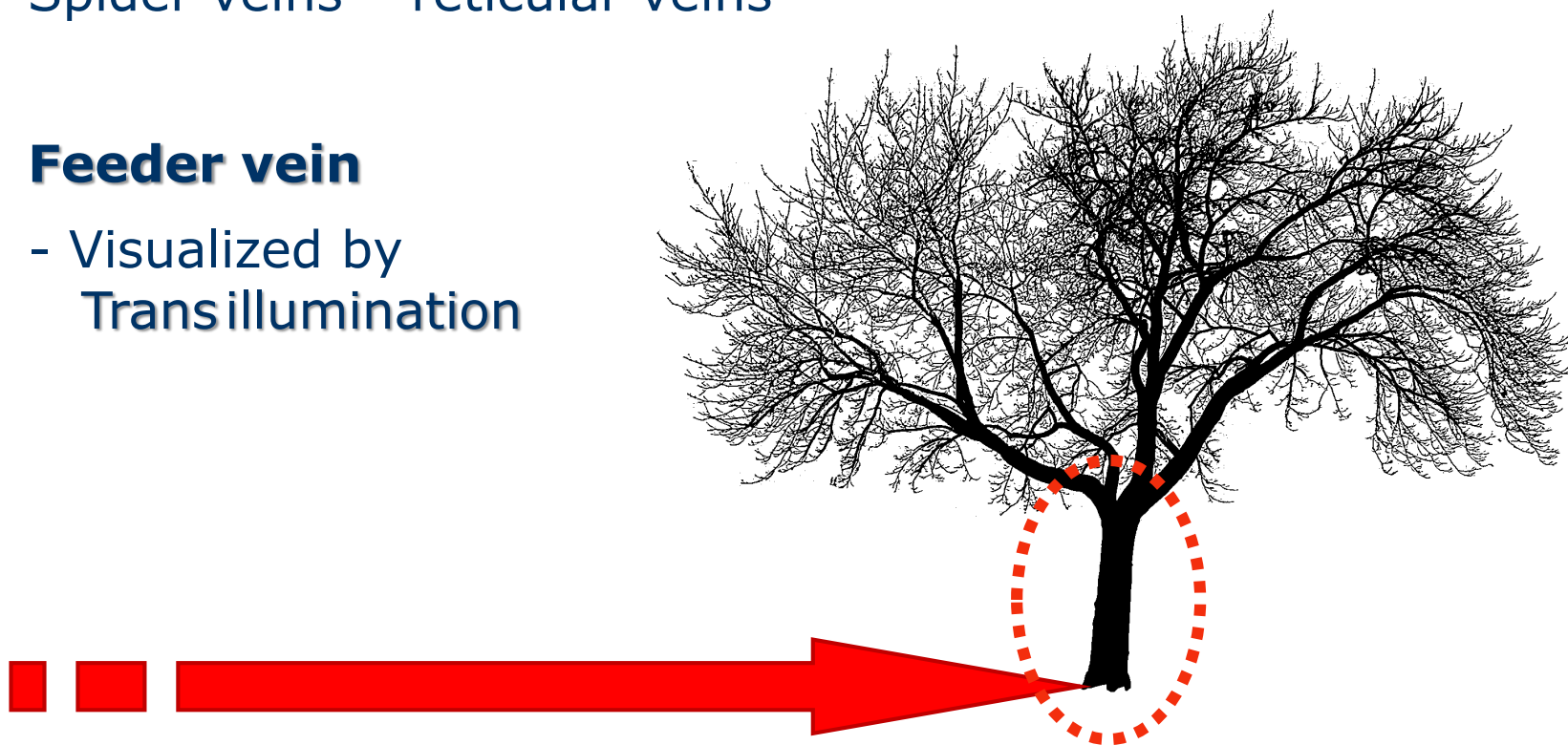


The Idea behind

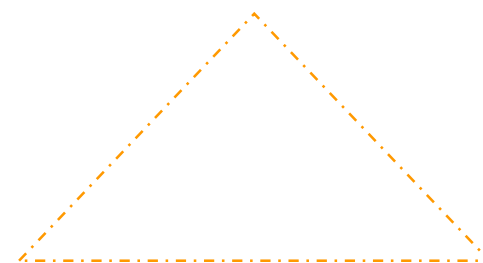
Spider veins – reticular veins

Feeder vein

- Visualized by
Transillumination

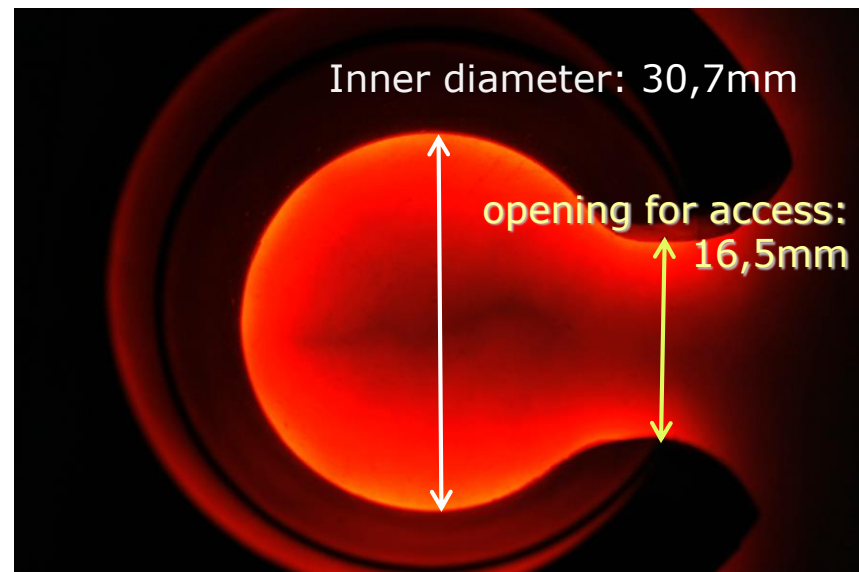
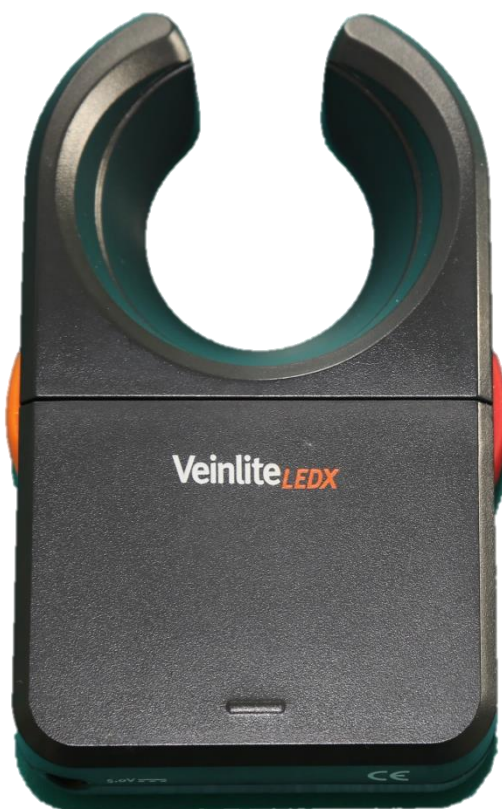


About the System



Device

Veinlite LEDX - *portable* with LED's



10,2 x 6,5 x 2,1 cm



Veinlite LEDX[®]

**higher luminosity and brightness,
higher contrast**

32 LED → 24 orange
 → 8 red

superficial veins
deeper veins
darker skin

605 nm

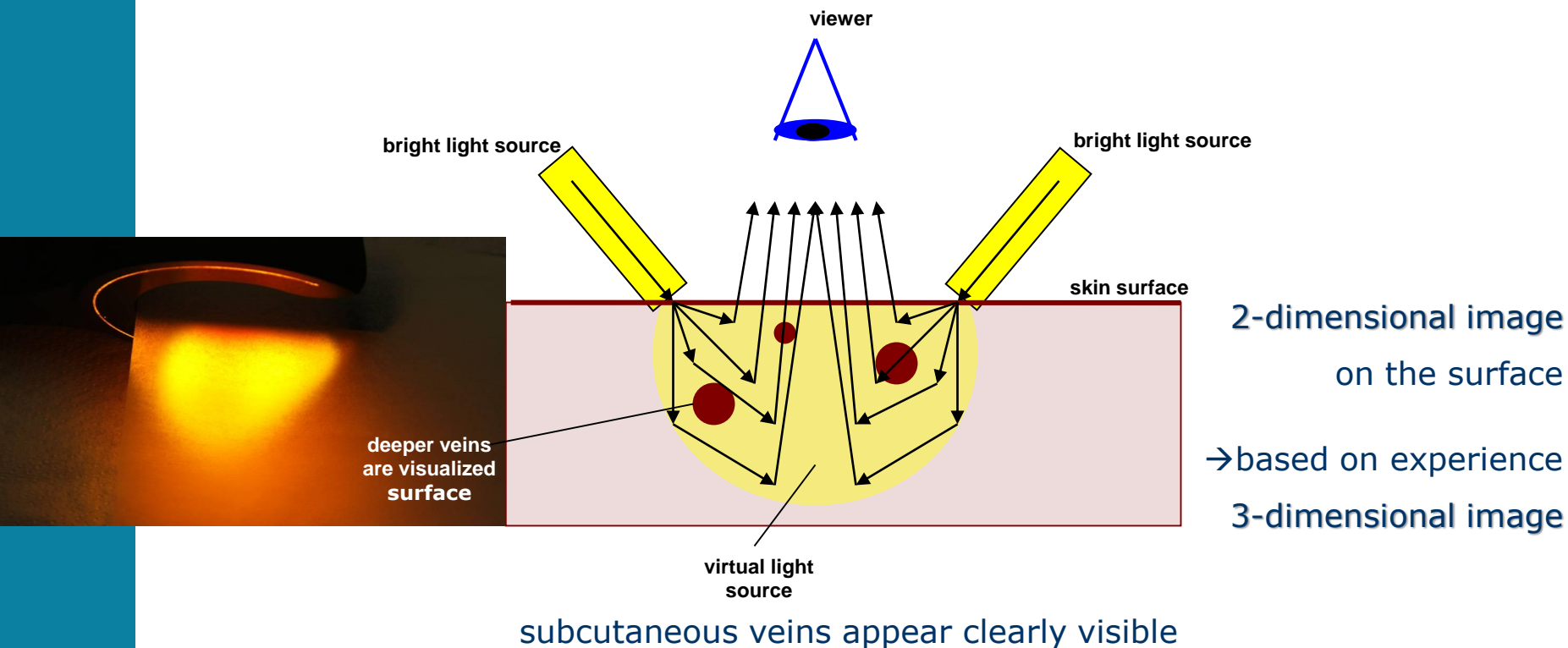
660 nm

- Coloured diodes are switchable separately or combined
- Rechargeable battery (Lithium-Ion)

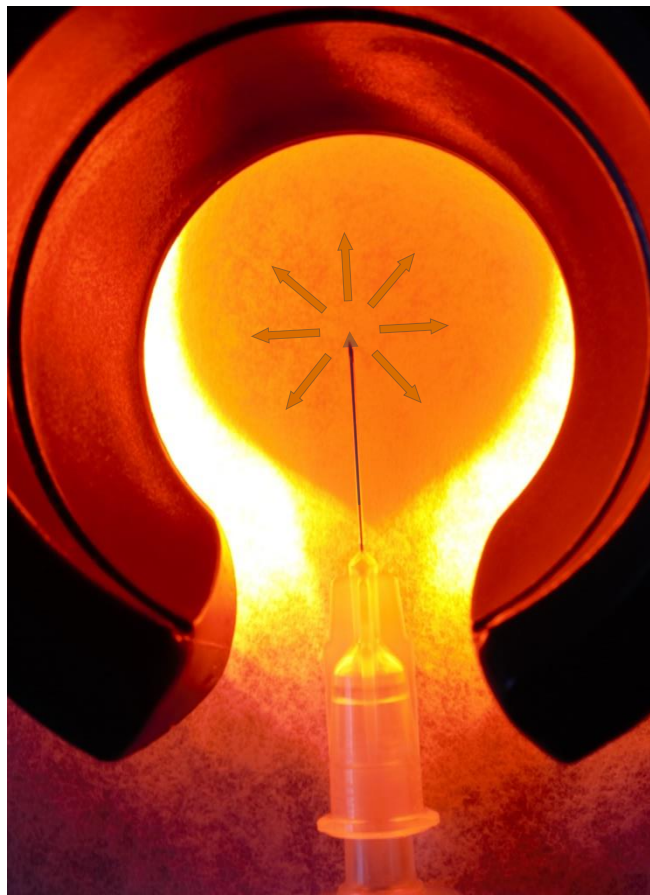
A close-up photograph of a medical procedure. A bright, yellow-orange laser beam is directed at a patient's leg. The beam originates from a curved, metallic-looking device positioned above the leg. The leg itself is a light skin tone, and the background is dark. The text 'Beam angle ~45°' is overlaid on the image, indicating the angle of the laser beam.

Beam angle $\sim 45^\circ$

Side-Transillumination



For visualisation of all intra/subcutaneous venous structures, esp. Feeder Veins



also mind:
jammed veins all
around and below
an **ulcer**

Infection Control During Sclerotherapy

N. Mullani et al., ACP 2010



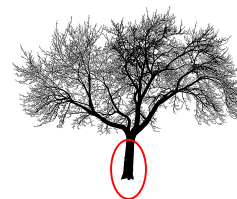
„3 step procedure“

- 1. „Find“ Easy and precise detection of veins, spider veins and reticular veins down to 1 cm depth (>1 cm: ultrasound guided punkture)
- ✓ for liquid and micro/foam sclerotherapy* (bubbles are very well seen)
- 2. Push down to compress blood-flow with the C-shaped ring
- 3. Pull back to stretch skin = makes vein puncture easier

(→ taboret, tambour frame)

*





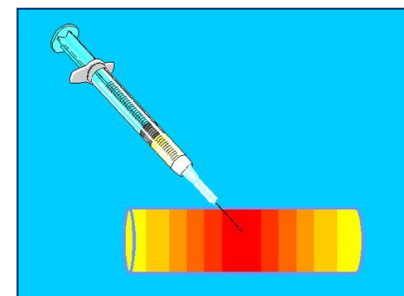
- Punction and Obliteration of the „trunk“ („very point method“)
- control of optimal amount of sclerosant fluid

(Äthoxysklerol \triangleq Polidocanol \triangleq Lauromacrogol 400)

- guide the fluid or the bubbles through the vein
- Patient can rest in supine position

(gently to cardiovascular system; take advantage of local effect = higher and longer lasting concentration on site » longer interaction with vessel intima)

- By the way: direction of blood flow can be determined by wiping out and can be used for diagnostic purposes



Important notice

- Light should be dimmed down to benefit from higher contrast

Further Applications

Prior to Operations
(in particular for Mini-Phlebectomy with Várady-Hooks)

Mapping of veins prior to operation
with legs positioned exactly as it will be
after skin prepped and legs draped

→ faster

→ accurate position for incision

(veins shift cm's from upright standing
to lie)



Advantages following sclerotherapy

- (Technique „sewing machine“) Occasionally blood becomes trapped in treated veins: painful, annoying, discomforting to patients and → causes skin discoloration (hyperpigmentation)

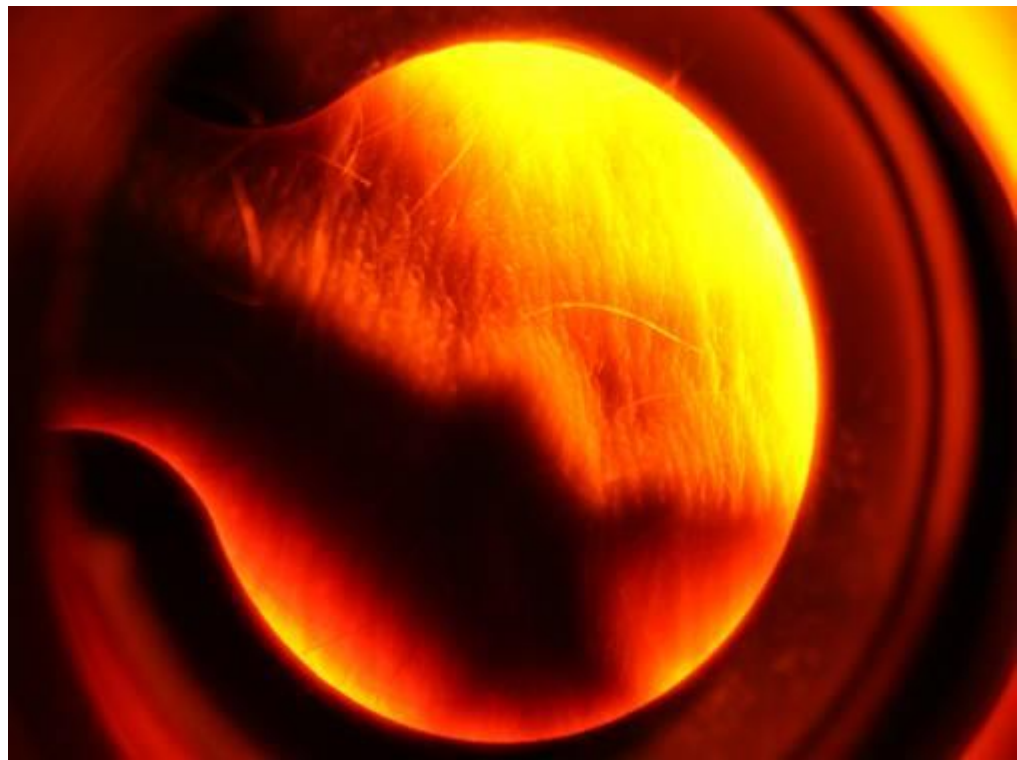
- *Veinlite* guides your way to trapped blood

- stabilized through the ring

- Stab puncture with 18 gauge needle (1,2mm), blood lancet or microscalpell

- Evacuate („blackberry jam“)

→ avoid discoloration



→ Every venous structure can be visualized
e.g.:

➤ i.v. lines (see video on YouTube and homepage)

→ Tourniquet-free injection

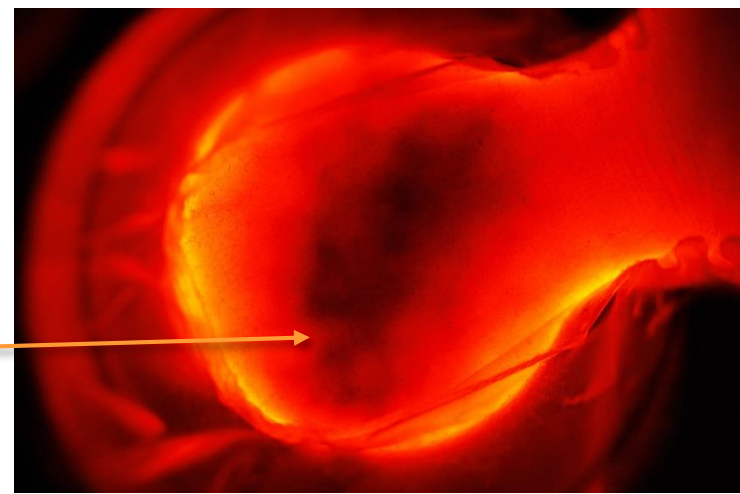
➤ Visualise veins prior to estetic intervention/plastic surgery to avoid perforation and cause hematomas

➤ Difficult on-site procedures (first aid, pediatric, paramedics, oncology, ...)

➤ Congenital Vascular Malformations
(neonates, infants)

➤ To establish a differential diagnosis:
hematomas, foreign bodies

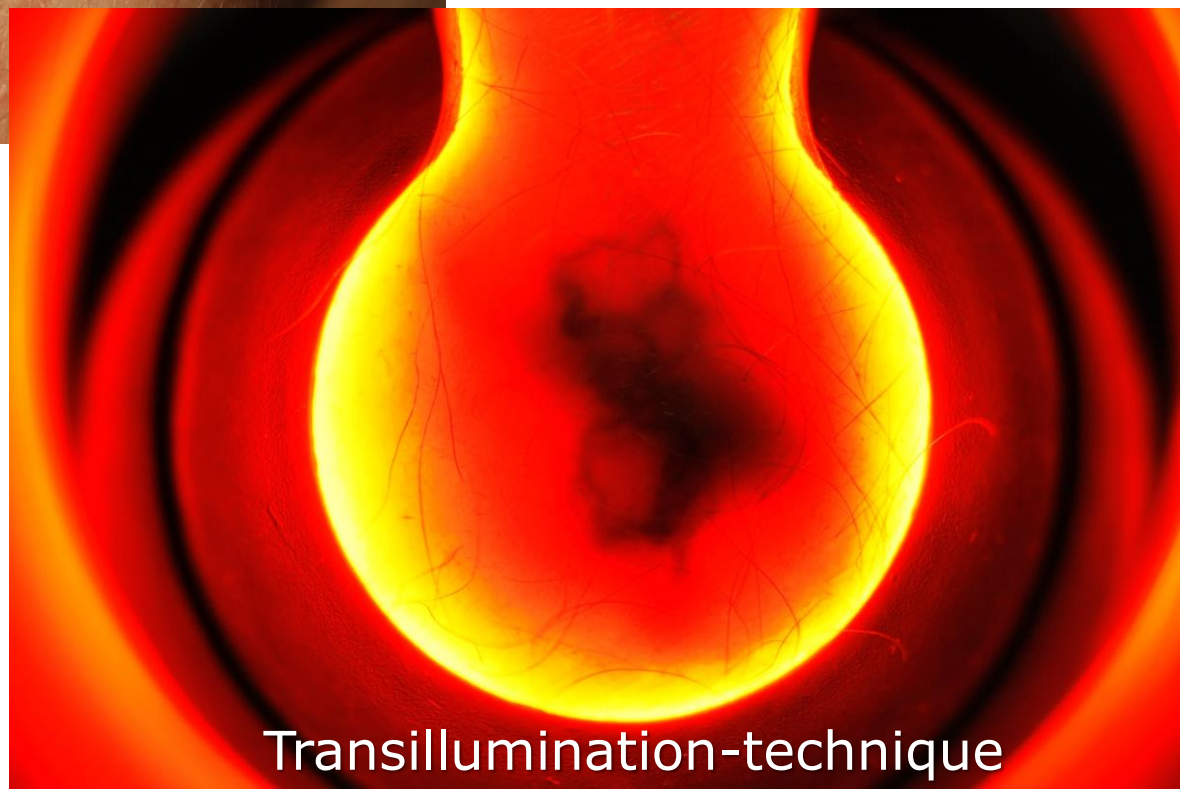
➤ and ...



Precaution: Over-treatment

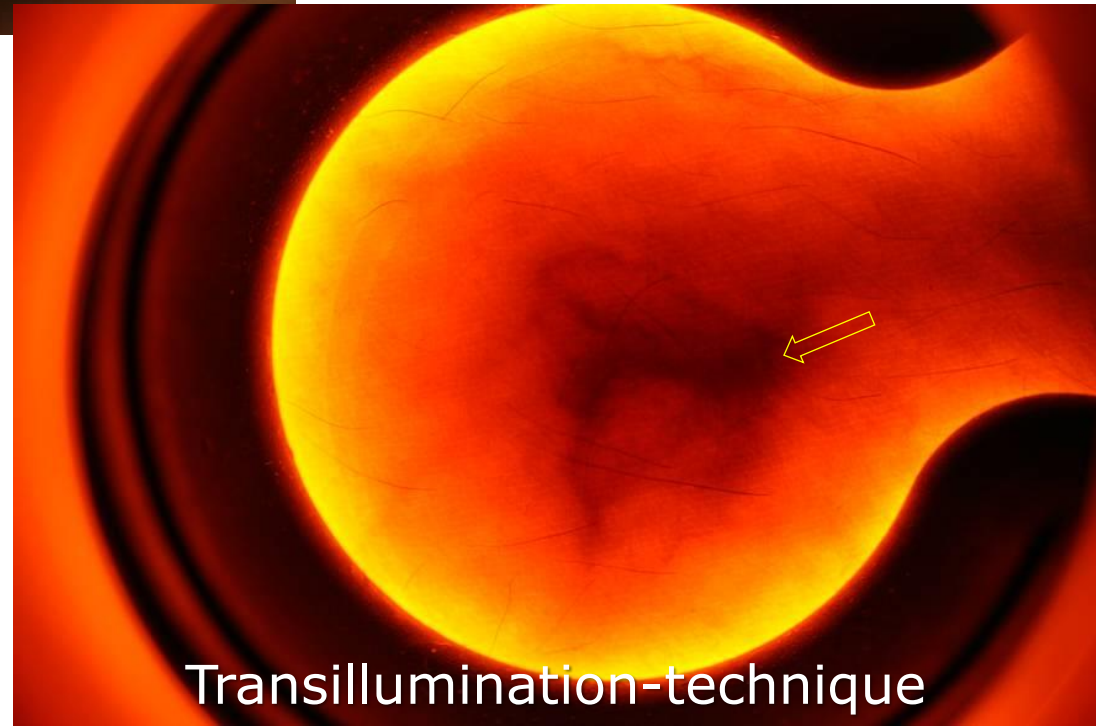
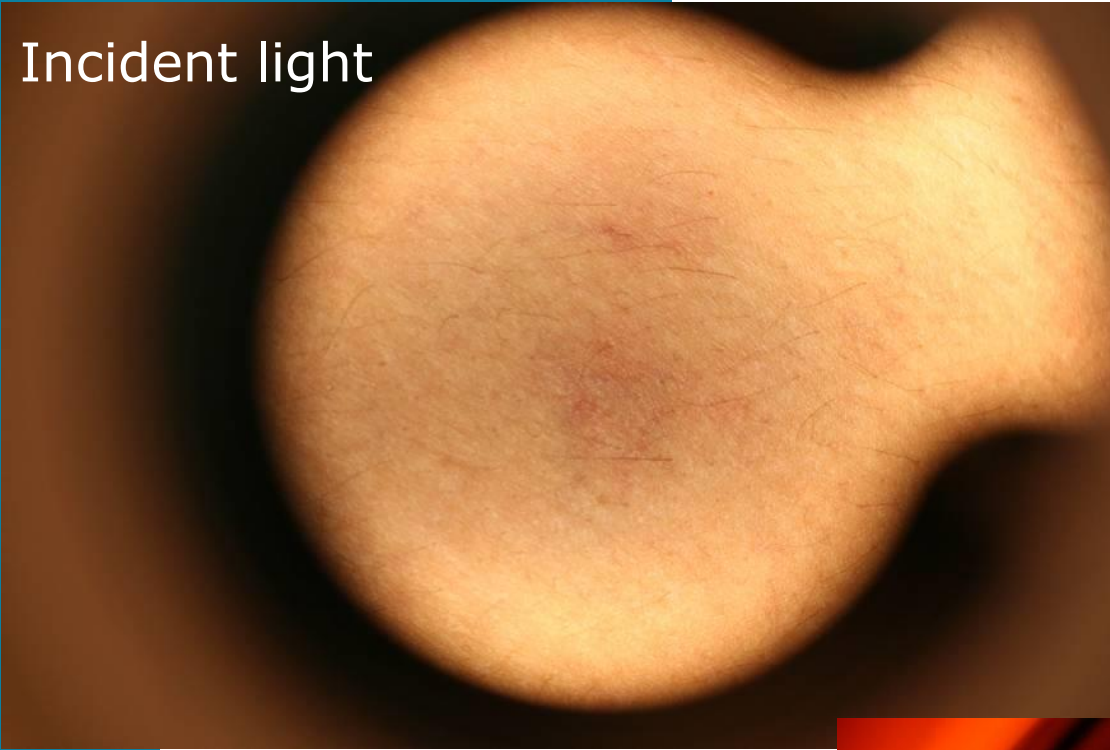
- concentration %
- the amount which is needed ml „Quantum satis“
- inject slowly v
- low pressure p
- fractional / intermittent ~

Surface illumination



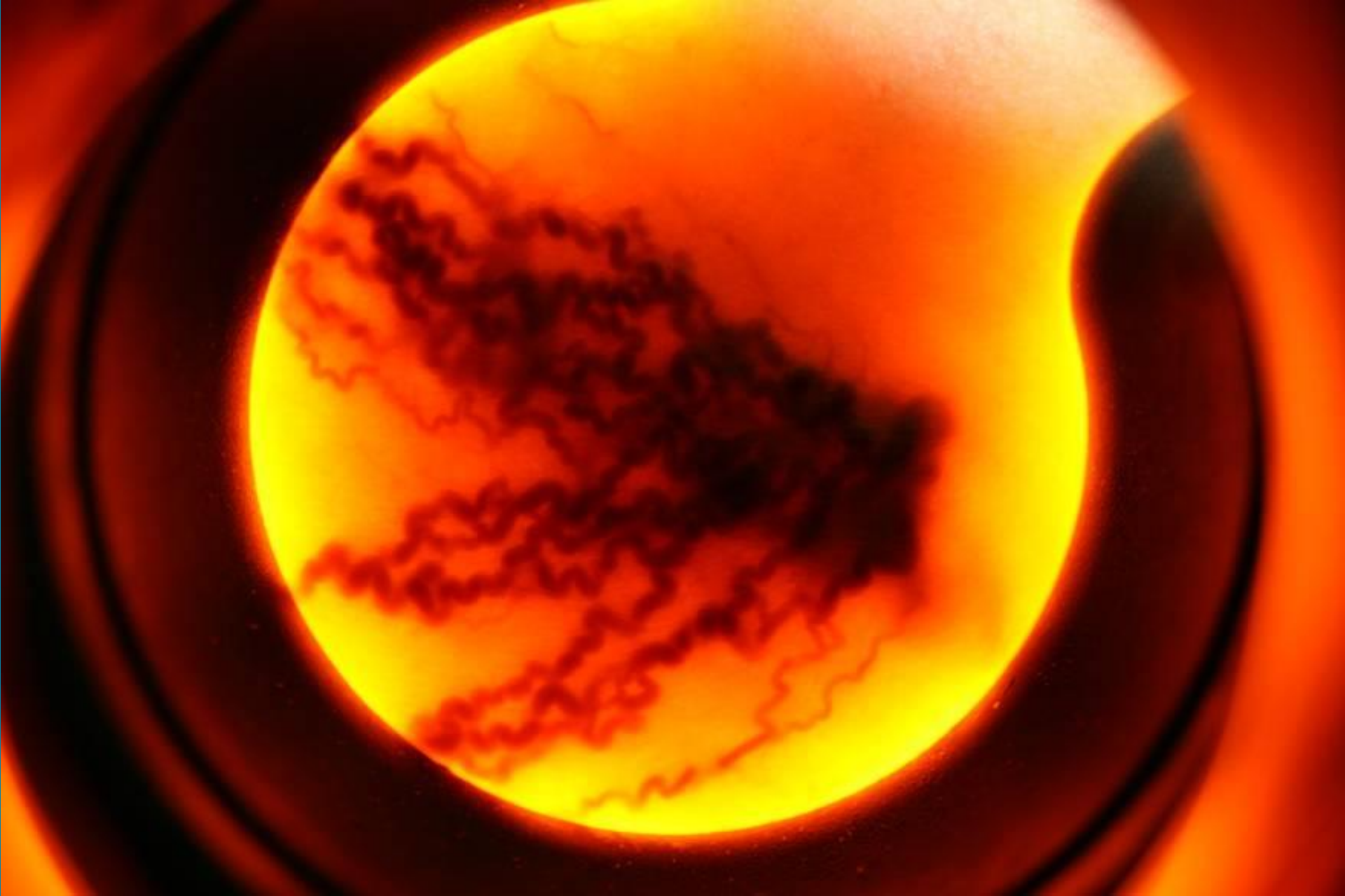
*Notice:
all pictures without
any postprocessing!*

Incident light



Transillumination-technique







Transillumination with
white light

A close-up photograph of a medical procedure. A bright, circular light source is positioned over a patient's skin, creating a strong red glow. The light is focused on a specific area, likely a vein, which is visible as a darker, circular structure within the illuminated area. The surrounding skin is dark, and the overall scene is dominated by the intense red light.

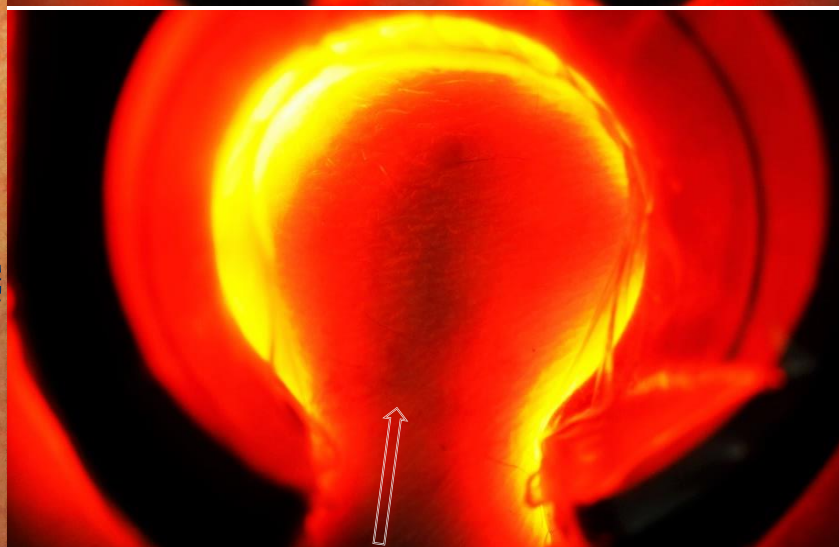
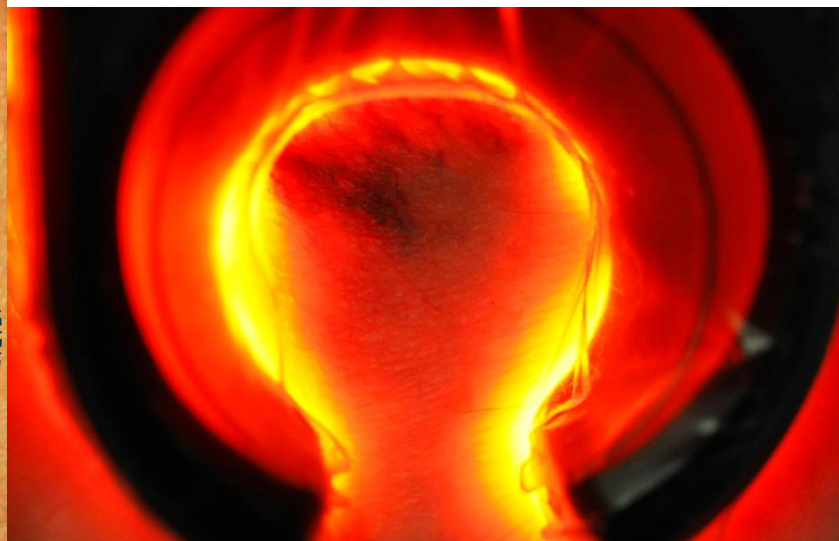


Transillumination with
orange light / LED

A close-up photograph of a medical procedure. A bright, circular light source is positioned over a patient's skin, creating a strong orange glow. The light is focused on a specific area, likely a vein, which is visible as a darker, circular structure within the illuminated area. The surrounding skin is dark, and the overall scene is dominated by the intense orange light.

right knee, inner side

Multiple unsuccessful sclerotherapies by several doctors, due to **Transillumination** the feeder vein becomes visible



Improved Sclerotherapy by Transillumination

Consequent Benefits

- exact localisation of vein puncture → „where“
- optimum amount of fluid → „how much“ *
- Patient Satisfaction and excellent Patient Care
- Doctor's Satisfaction → „happy to go to work every day“
- better „Compliance“ according to this principle: „WYSIWYG“
- Patient understands circulation
- Patient understands the logic principle („rationale“)
 - behind treating reticular veins
 - simplifies education and clarification (re-calling)
 - easier to explain treatment target (operation / sclerotherapy)
- ✓ Hand-held device

WYSIWYG is the abbreviation for "What You See Is What You Get"

*Attention: „blanching“ of the skin (→ skin necrosis)

Randomized Clinical Trials

Randomized Clinical Trials Show That Veinlite® Is Better Than AccuVein® and VeinViewer® for Venous Access

Randomized Clinical Trials are the gold standard for assessing how a device compares to standard of care (current method of vein access). Several clinical trials have now been done to assess whether vein finder devices help improve vein access in children and adults. These devices include the Veinlite®, AccuVein®, VeinViewer® and VeinLuminator™.

The results show that the Veinlite® clearly improves vein access in children, while near infrared devices, such as AccuVein® and VeinViewer®, are NO better than standard of care.

A full abstract of the publication can be obtained from the National Library of Medicine or from the web site www.pubmed.gov.

Veinlite® transillumination in the pediatric emergency department: a therapeutic interventional trial.⁽¹⁰⁾

A randomized clinical trial was carried out in 240 patients with hard to find vein in a pediatric emergency department

RESULTS – The study showed that Veinlite® improved cannulation success rate within two attempts in comparison to standard care.

*„Gold Standard“
for
Visualizing of Veins*

and to

*Improve considerably the
Success rate of Sclerotherapy*



Greetings from Salzburg

*Further Information and Videos
find at:*

veinlite.com

