  
**ENGLEWOOD HEALTH**  
**Endovenous Ablation: What To Use When?**  
**Thermal or NonThermal:  
 Not A Binary Choice**  
  
**Steve Elias**  
 some slides courtesy of Mark Meissner MD

**DISCLOSURES**

|                   |                      |
|-------------------|----------------------|
| BD                | Consultant           |
| Boston Scientific | Advisory Board       |
| Cook              | Advisory Board       |
| Crossfire Medical | Consultant           |
| Elastimed         | Consultant           |
| EnVeno            | Stock options        |
| Medtronic Inc.    | Advisory Board       |
| Philips           | Advisory Board       |
| Sun Scientific    | Advisory Board       |
| Tactile Medical   | Advisory Board       |
| Theraclon         | Consultant           |
| USA Therm         | Advisory Board/Stock |
| WVT Medical       | Advisory Board/Stock |
| VB Devices        | Advisory Board/Stock |

**Aren't TT, NTNT, TNT Equivalent?**

- **YES** – in certain situations
- **NO** – in certain situations
- **MAYBE** – in some situations

**What's Available?: 20 options (at least)**


| <u>TT/TNT</u> | <u>NTNT</u>          |
|---------------|----------------------|
| RF – 4        | MOCA – 3             |
| Laser – 5     | Cyanoacrylate – 3    |
| <u>TNT</u>    | Foam proprietary – 2 |
| HIFU          | Foam "home made" - 2 |

**Thermal or Non-Thermal Ablation**  
**Non-Thermal Non-Tumescent (NTNT) Ablation**

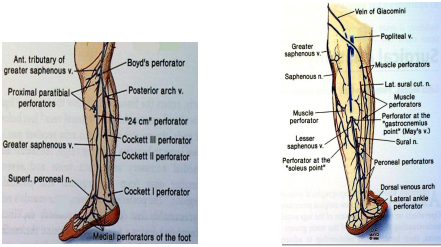
*Non-Thermals As Good If Not Better Thermal Techniques*

- I. Equivalent efficacy
- II. Fewer complications
- III. Fewer compromise
- IV. Broader treatment

*Others (On the Way)*  
 Mechanical, Radiofrequency, HIFU



**BK sensory: saphenous, sural**



### BK - motor and sensory nerves

Labels in diagram: Tibial nerve, Popliteal vein, Popliteal artery, Common peroneal nerve, Medial gastrocnemius, Lateral gastrocnemius, Soleus, Achilles tendon.

### BK Better Choice: NTNT

- **Axial** – BK GSV/SSV –retrograde or inframalleolar access
- **VV** – periulcer VV
- **Tumescence** - difficult

Avrahami M, Silverberg D, Elias S et al. Inframalleolar access in endovenous treatment of venous ulcers and C5 disease with NTNT procedures. JVS V&L March 2022.

Kim SY et al. Mechanochemical ablation as an alternative to venous ulcer healing compared with thermal ablation. JVS V&L 2019;7:699-705.

### Rules To Live By 2024

- All technologies work
- More advanced disease, the lower you go
- Treat to the lowest point of incompetence
- Need at least 1 TT and 1 NTNT
- Societies and guidelines endorse NTNT/TT

### The 2022 Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society Clinical Practice Guidelines for the Management of Varicose Veins of the Lower Extremities. Gloviczki et al. JVS V&L Oct. 2022

- 3.1.1. For patients with symptomatic axial reflux of the **great saphenous vein**, we recommend **both thermal or non-thermal ablation** from the groin to **below the knee**, depending on the available expertise of the treating physician and the preference of the patient. 1B
- 3.1.2. For patients with symptomatic axial reflux of the **small saphenous vein**, we recommend **both thermal or non-thermal ablation** from the knee to the **upper or mid-calf**, depending on the available expertise of the treating physician and the preference of the patient. 1C

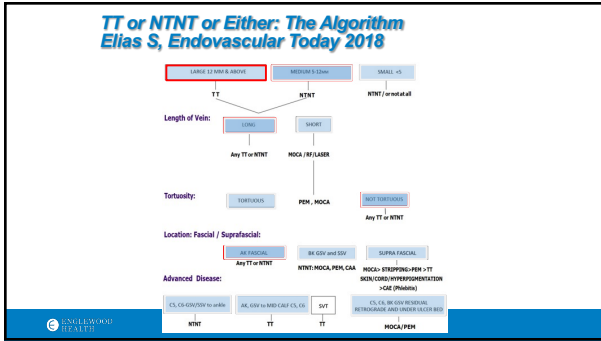
### Am I Missing Something?

#### NTNT: better patient experience, no nerve injury, BK

- In summary, both thermal and non-thermal ablation techniques are safe and effective, but **we cannot recommend one technique over the others**. All techniques result in improved QoL scores and good clinical effectiveness 3 to 5 years after the procedures.

### SUMMARY: WHAT TO USE WHEN?

- **SIZE:** >8-10mm – TT  
<8 – NTNT or TNT
- **LOCATION:** AK – anything  
BK – NTNT
- **TORTUOUS:** NTNT (foam)
- **SUPRAFASCIAL:** NTNT – MOCA, MOSCA, INVERSION STRIP/ TUMES  
**NOT GLUE, TT (cord)**
- **POST SVT:** TT, NTNT **NOT MOCA/MOSCA**



### The Questions To Ask Yourself:

*When TT, When NTNT, When Doesn't It Matter?*

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