



CONTROVERSES  
ET ACTUALITÉS EN CHIRURGIE VASCULAIRE  
**CONTROVERSIES  
& UPDATES  
IN VASCULAR SURGERY**



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# Sclerotherapy (technique, tactics, results) The French method

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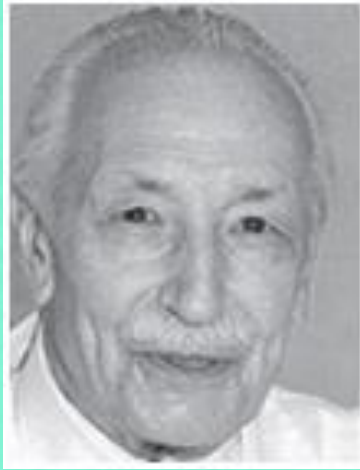
[www.cacvs.org](http://www.cacvs.org)

**Disclosure for this presentation**

**Claudine Hamel-Desnos:**

I do not have any potential conflict of interest

# History *Tactics*



1893- 1981

In the 1940s invented the term of « Phlébologie »  
and created the French Society of Phlebology  
(1<sup>st</sup> scientific society of Phlebology in the world)

# French tactic by Tournay (1940)

## The top-down technique :

- Treating first the highest or largest leakage points: saphenofemoral junctions or saphenopopliteal junctions, saphenous trunks, perforating veins, etc
- Tributary veins not initially treated, only injected at a later time if necessary

*No need for a post-sclerotherapy compression*

# Alternative techniques

- **The bottom-up Swiss technique by Sigg (1912-1987)**
  - distal varicose veins : treated first
  - deferred treatment of the trunks, if necessary
  - lengthy treatment (numerous sessions required)
- **The Irish technique by Fegan (1921-2007)**
  - primary importance to perforating veins: treated first
  - usually trunks and junctions untreated

*Compression-sclerotherapy*

# Tactics : the French heritage

Successful sclerotherapy requires thorough planning. Sclerotherapy is generally performed in the order of proximal to distal leakage points, and proceeding from the larger to the smaller varicose veins.

When treating incompetent saphenous junctions and saphenous stems by direct puncture, it is recommended that one venous puncture should be performed in the proximal thigh (great saphenous vein and anterior accessory saphenous vein) or calf (small saphenous vein) area;



# History

## *Technique of injection*

**D. ZOLLIKOFER - Switzerland**

**First reported sclerotherapy procedure, in 1682:  
he injected an acid into a vein to induce thrombus formation**

**Charles PRAVAZ (1791-1853) - France**

**In 1851, he invented  
the sharpened hollow needle.  
Direct venous puncture was born !**



# The French Method

- ✓ Top-down tactic
- ✓ Staged injections
- ✓ Direct venous injection with needle



# *Tactic*

✓ Good clinical and DUS evaluation

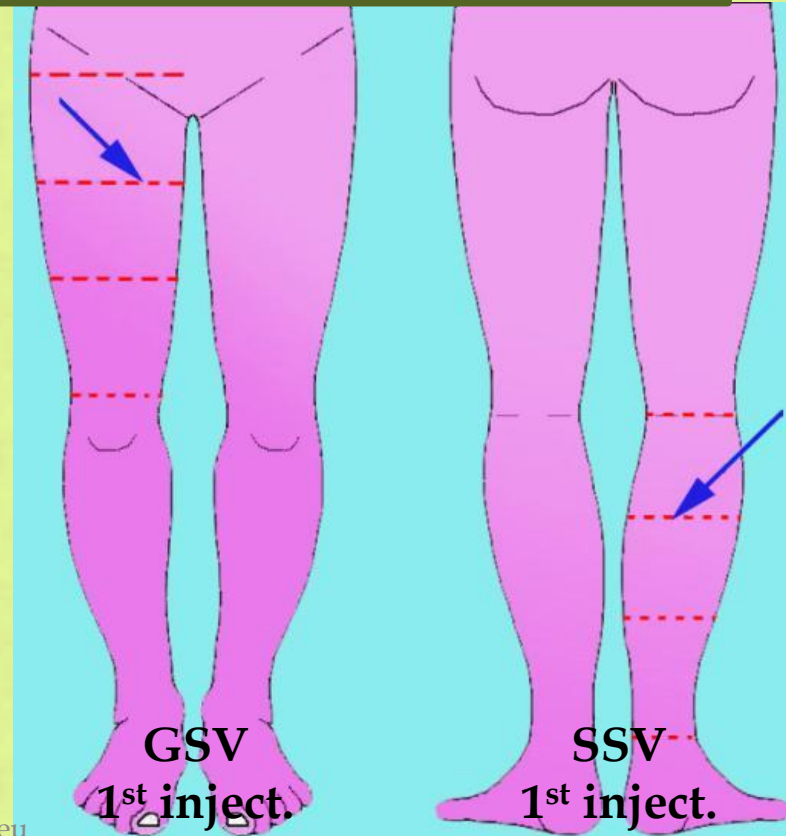
✓ Elaboration of a logical tactic for a given area

✓ Relevant choice of the first site of injection



# First injection site of the GSV and SSV (in case of an axial reflux)

- ✓ Not too far from SFJ/SPJ (for better effectiveness)
- ✓ Not too close to SFJ/SPJ (safety reasons: to avoid the arteries in the groin or in the popliteal fossa)
- ✓ Staged technique (proximal to distal)



# WATKINS

deactivation of STS (sodium tetradecyl sulphate)

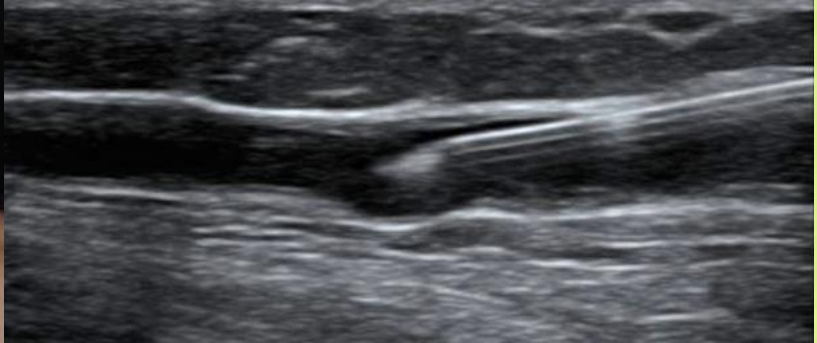
0.5 mL of blood deactivates 1 mL of 3% STS (liquid)

- Staged technique could be more adequate:  
“to introduce fresh sclerosant along the length of the vein could improve the efficacy of sclerotherapy”

*Watkins M.R. Eur J Vasc Endovasc Surg 2011*

# Right technique of injection

The direct puncture and injection with needle allows an accurate tactic, with easier staged injections



# Technique : the French heritage

## Direct puncture/injection with needle

The needle is mounted on a syringe filled with sclerosant

The dominant hand performs the injection; the second hand acts as a help



Logical continuation

Visual sclerotherapy is the basis of the sclerotherapy for more than a century

US Guided Foam Sclerotherapy

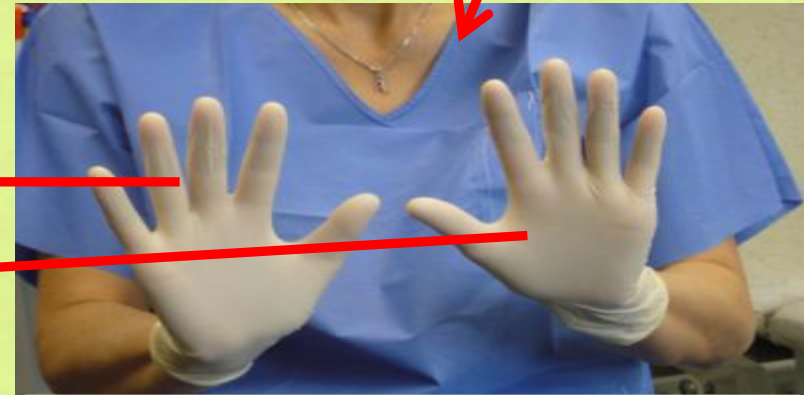
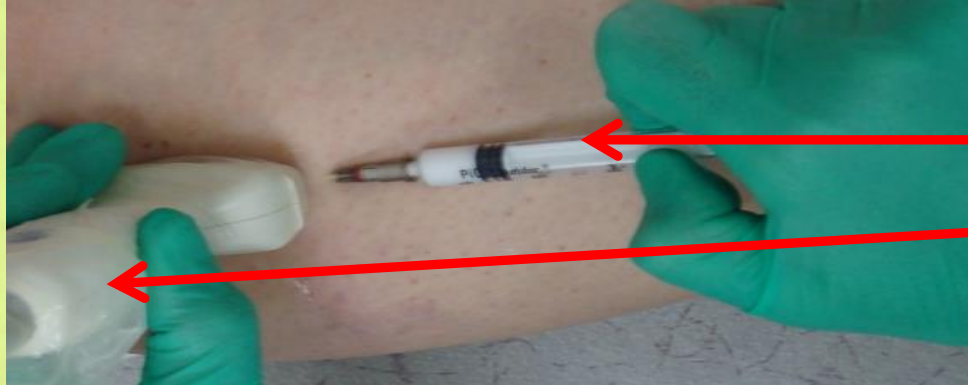
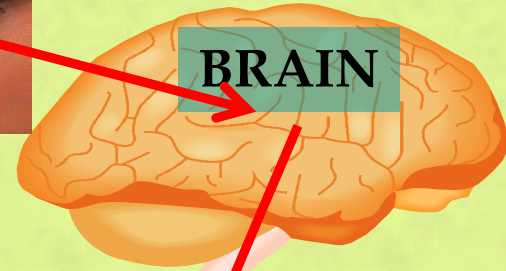
*Schadeck Phlébologie 1986 - France*



# For UGFS, you need 2 hands and... a brain (coordination)



2D

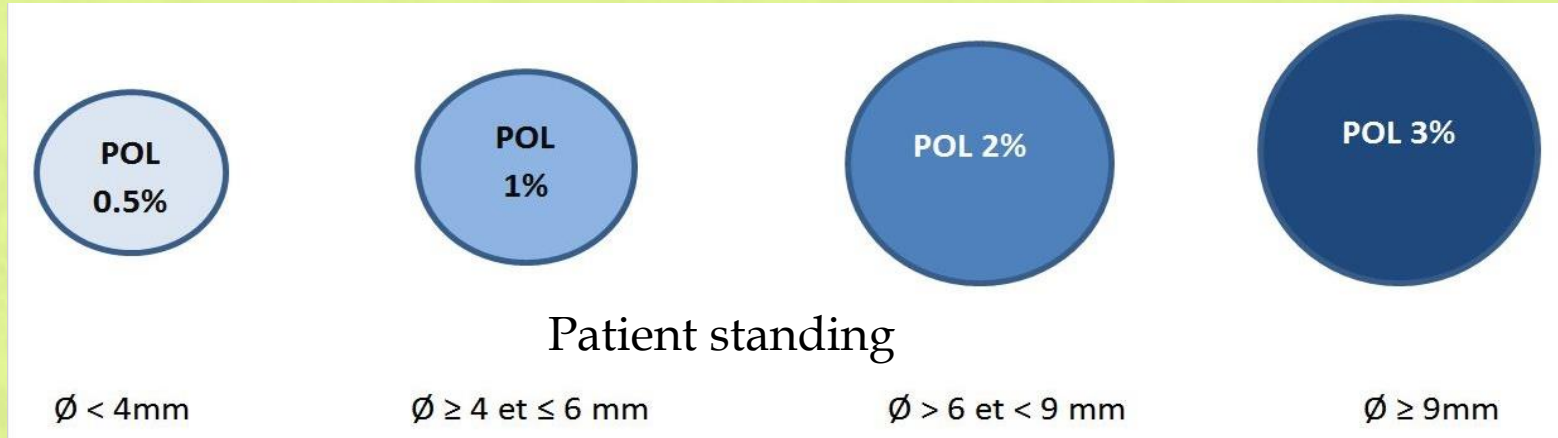


Both hands act separately;  
coordination is needed



# *Adapted Concentrations*

**Chosen in relation to the diameter of the venous segment to be treated.** *European guidelines; Rabe et al Phlebology 2014*



## **Concentrations for Polidocanol foam**

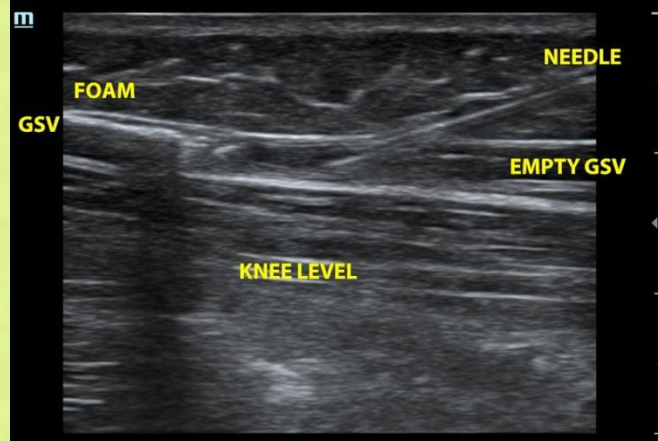
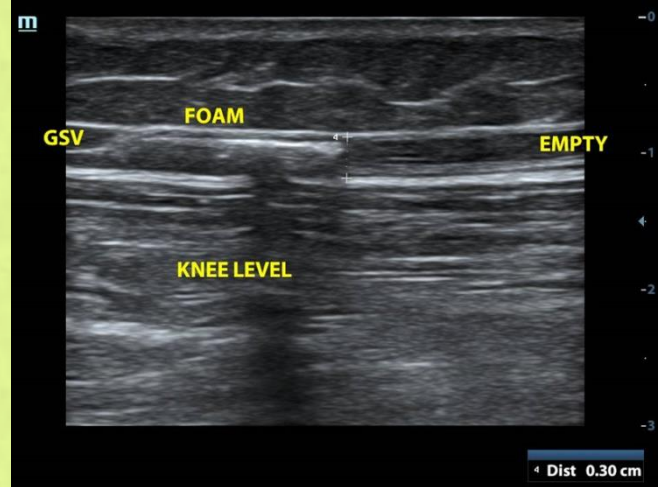
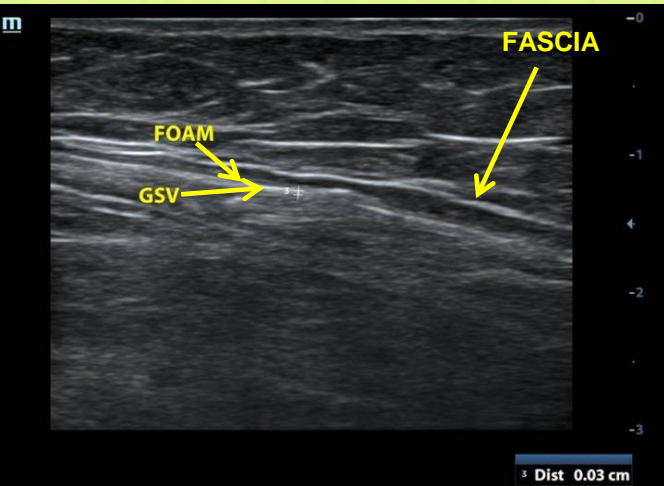
*Hamel-Desnos C. et al. Dermatol. Surg. 2003*

*Hamel-Desnos C et al. J Mal Vasc 2006*

*Hamel-Desnos C. et al. « The 3/1 Study ». Eur J Vasc Endovasc Surg 2007*

*Hamel-Desnos C. et al. in Traité de Médecine vasculaire. Elsevier Masson SAS 2011*

# Adapted volumes



SPASM



FILLING

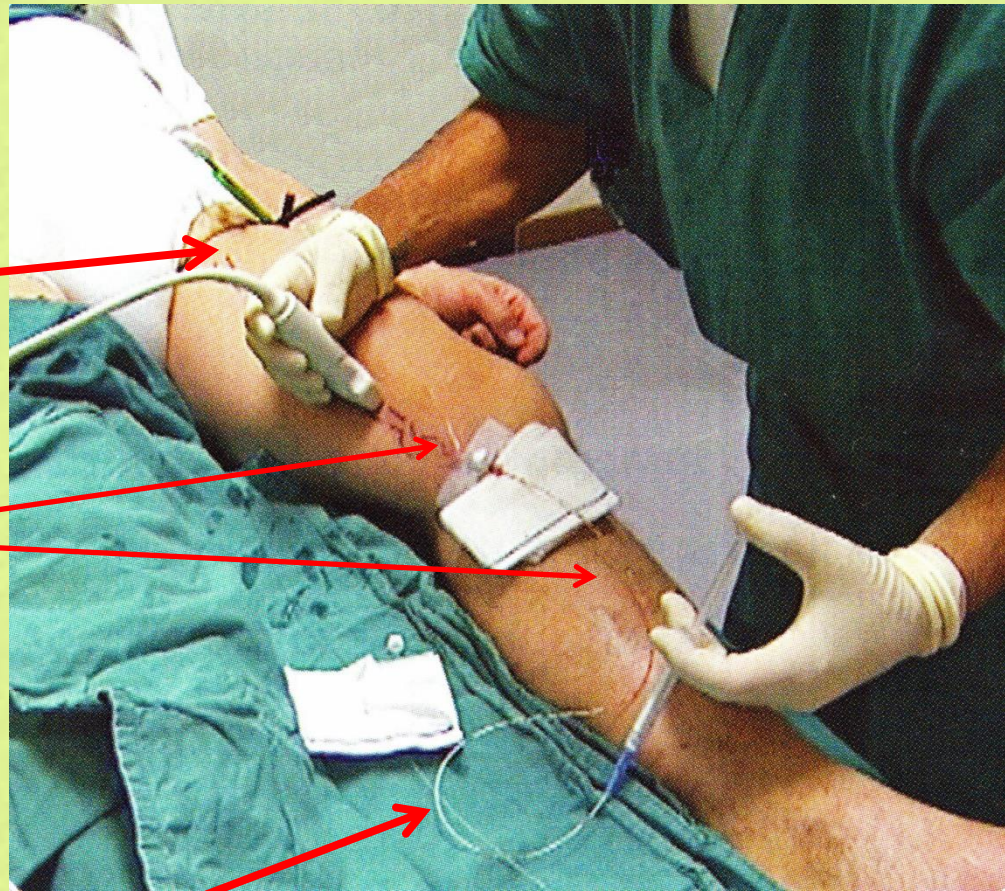


TAILORED  
VOLUMES

# Why the French VPs do not use a cannula?

Weak foam in the proximal part of the GSV (crucial segment)

Risk of inflammation (overdose)

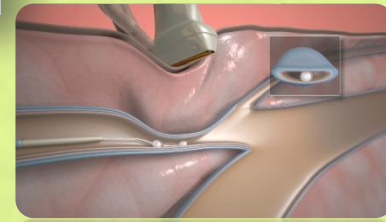
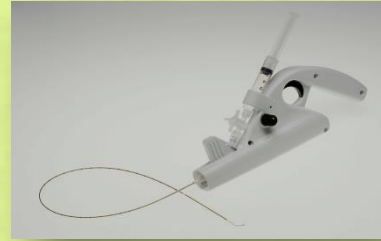
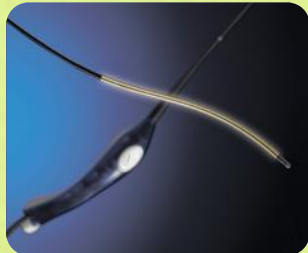
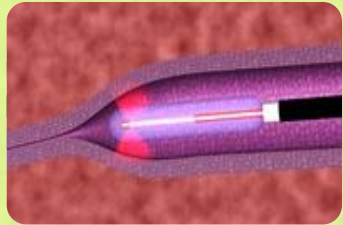


Foam degradation in the tube



# Tactics : the French heritage

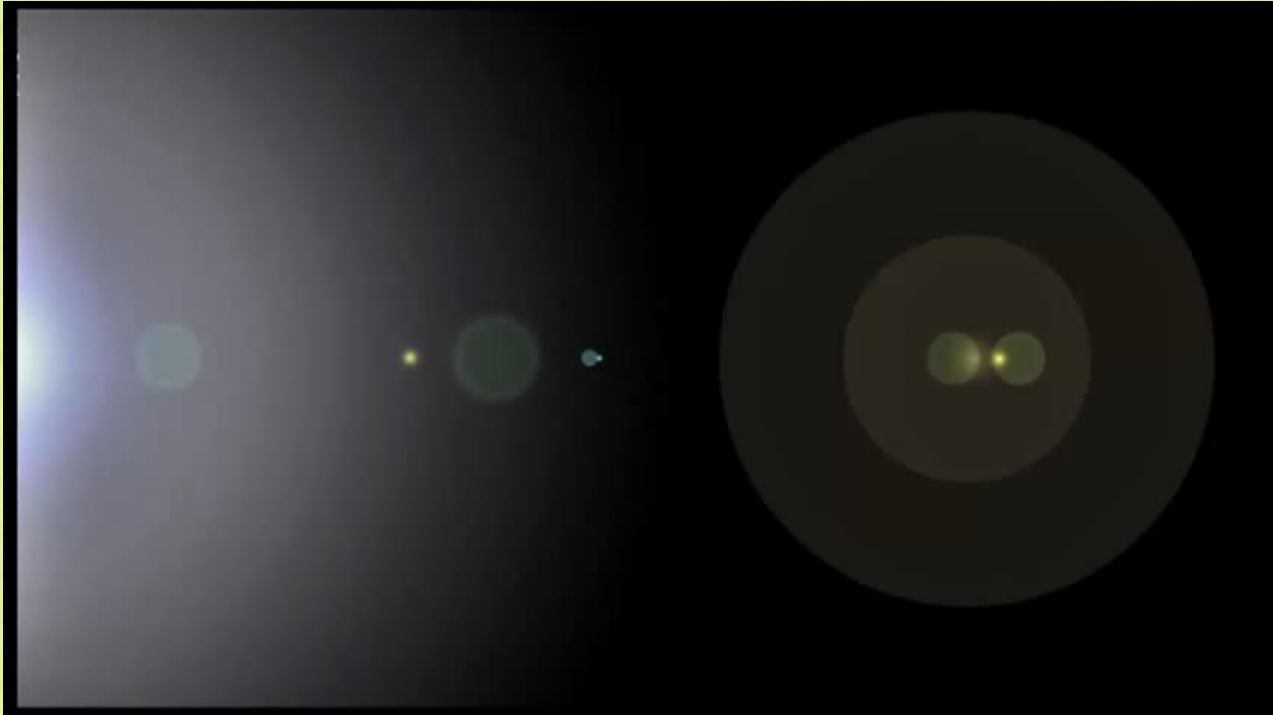
**The French top-down and staged technique, developed for sclerotherapy in the 1940s, remains the method of reference for all endovenous treatment of varicose veins of the lower limb.**



# French Method - Results

- 1. Wright et al. : the French phlebologists obtained better results than the European surgeons for sclerotherapy**
- 2. Gillet et al. : 20 French VPs treated by USGFS 1025 SV (818 GSV and 207 SSV), with a success rate (total occlusion) of 90.3%**
- 3. Gillet et al. : 22 French VPs treated by USGFS 331 SSV with a success rate (total occlusion) of 93.4%**
- 4. Hamel-Desnos et al. : RCT UGFS SV compression/no compression, 2 French VPs; rate of total occlusion of 100% (blind control by independent expert)**

1. Wright D., Gobin J P., Bradbury AW., Coleridge-Smith P., Spoelstra H., Berridge D., Wittens C H A., Sommer A., Nelzen O., Chanter D. Varisolve® polidocanol microfoam compared with surgery or sclerotherapy in the management of varicose veins in the presence of trunk vein incompetence: European randomized controlled trial. *Phlebology* 2006; 21:180-90
2. Gillet JL, Guedes JM, Guex JJ, Hamel-Desnos C., Schadeck M., Lausecker M. Side effects and complications of foam sclerotherapy of the great and small saphenous veins: a controlled multicentre prospective study including 1025 patients. *Phlebology* 2009; 24: 131-138
3. Gillet J-L., Lausecker M., Sica M., Guedes J-M., Allaert FA. Is the treatment of the small saphenous veins with foam sclerotherapy at risk of deep vein thrombosis? *Phlebology* 2014; 29 (9): 600-7
4. Hamel-Desnos C, Guias B.J., Desnos P.R., Mesgard A. Foam sclerotherapy of the saphenous veins: randomized controlled trial with or without compression. *Eur J Vasc Endovasc Surg* 2010; 39: 500-7





# Thank you for your attention



**« Pourquoi faire simple quand on peut faire compliqué? »**