

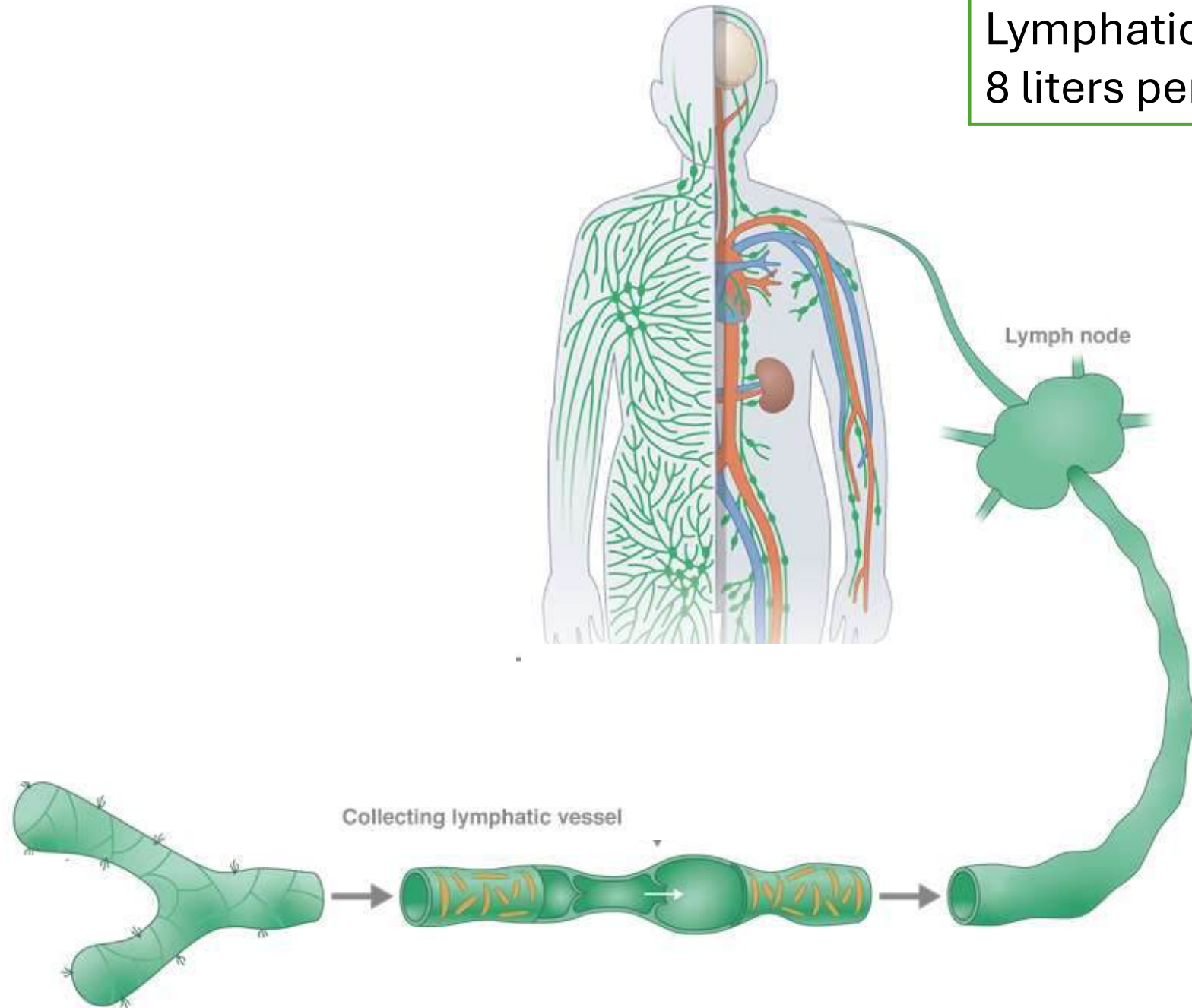
Understanding and Managing Lymphatic Problems in CHD

*Are we really getting any better,
and if not, how might we do it?*

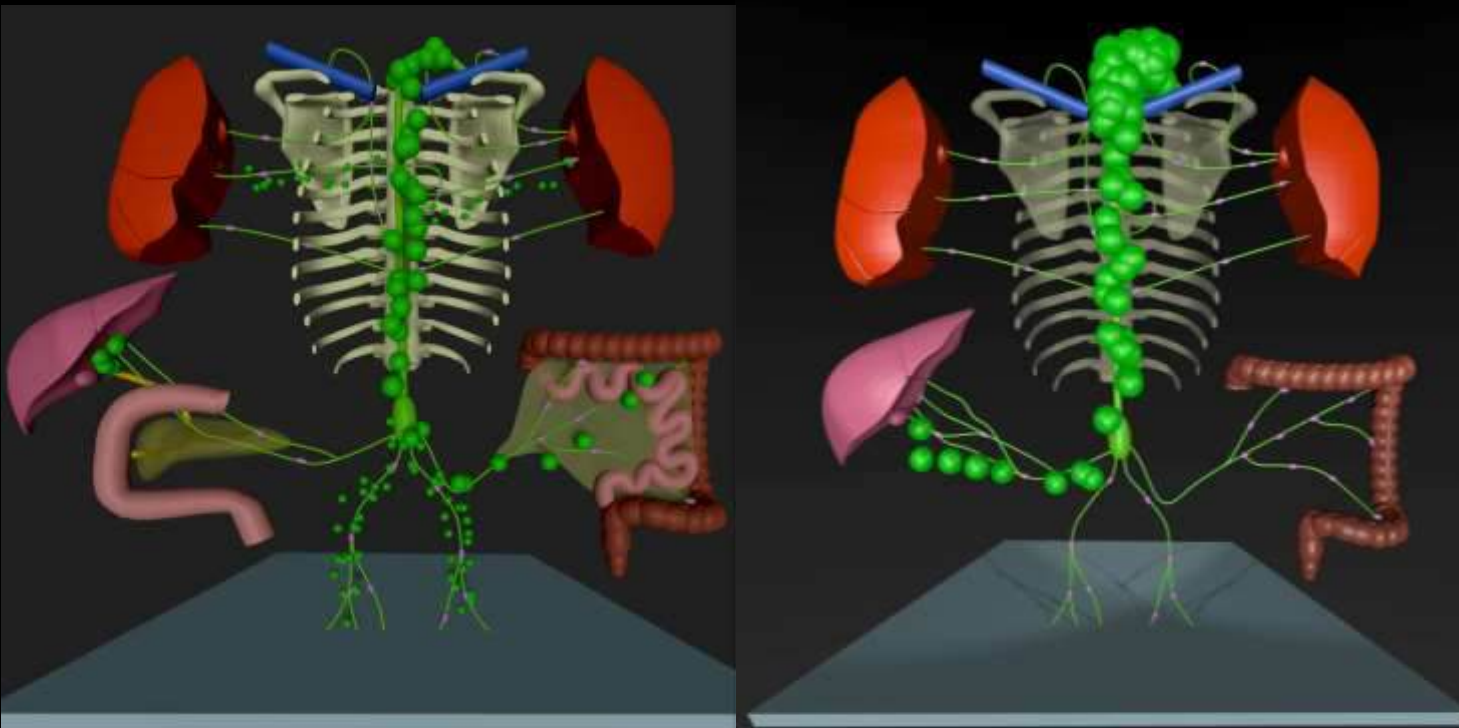
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CARDIOLOGY
2025 

Lymphatic fluid
8 liters per day



Challenged lymphatics in CHD



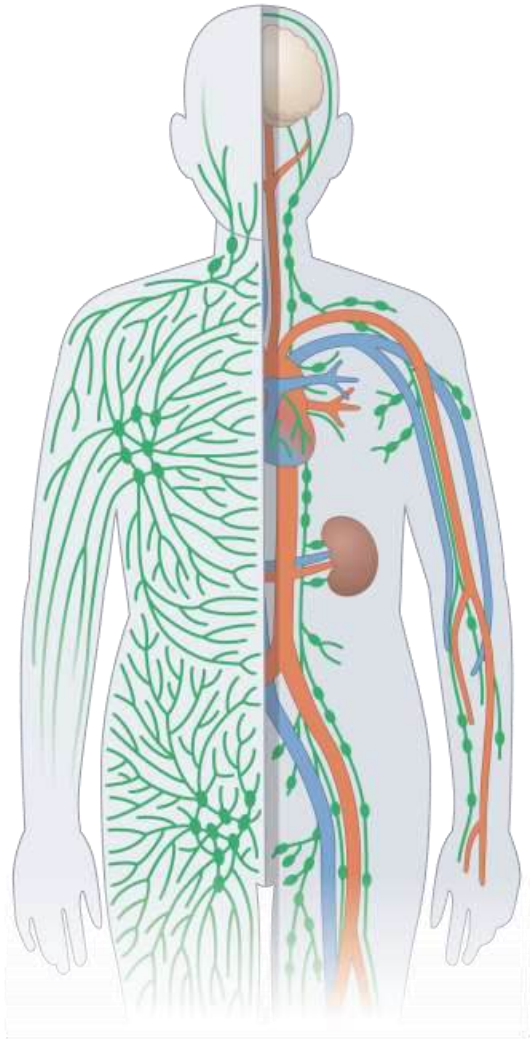
Normal

Elevated CVP

Lymphatic related diseases

- Protein losing enteropathy (PLE)
- Plastic Bronchitis (PB)
- Ascites
- Chylothorax
- Chylopericardium
- Vaginal lymphatic leak
- Edema

New treatments for lymphatic problems in CHD



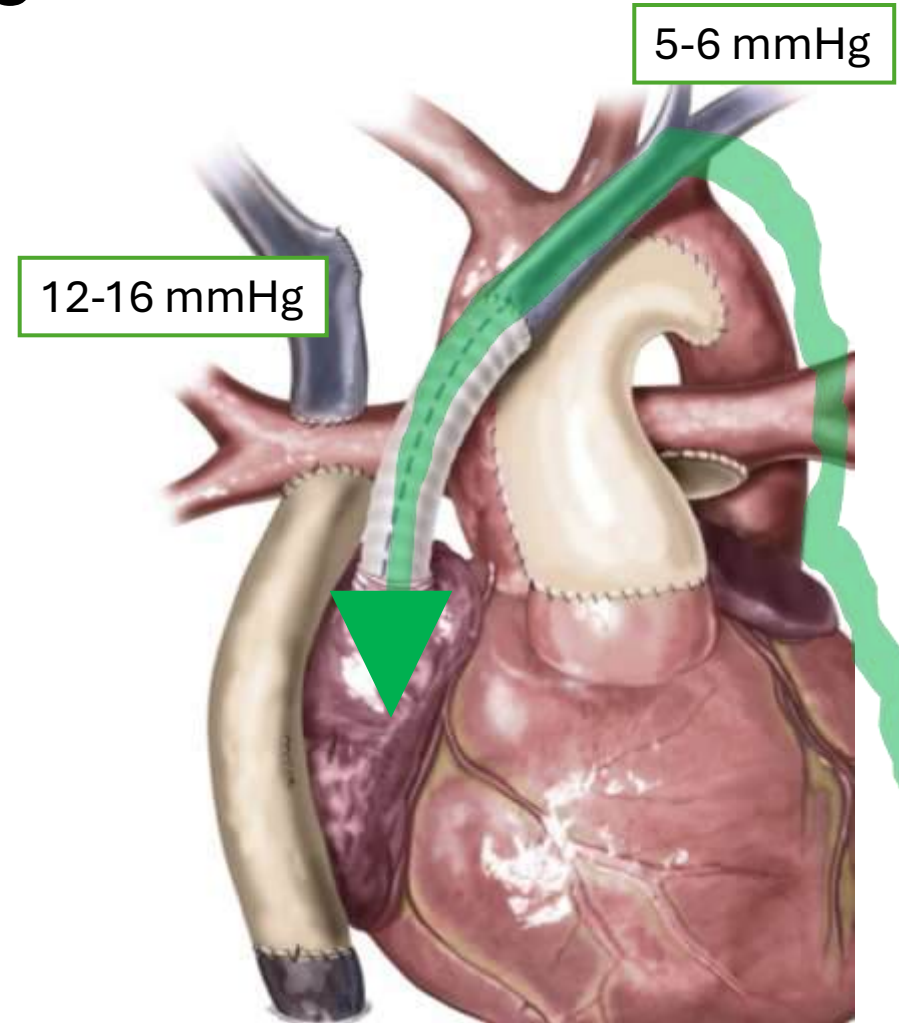
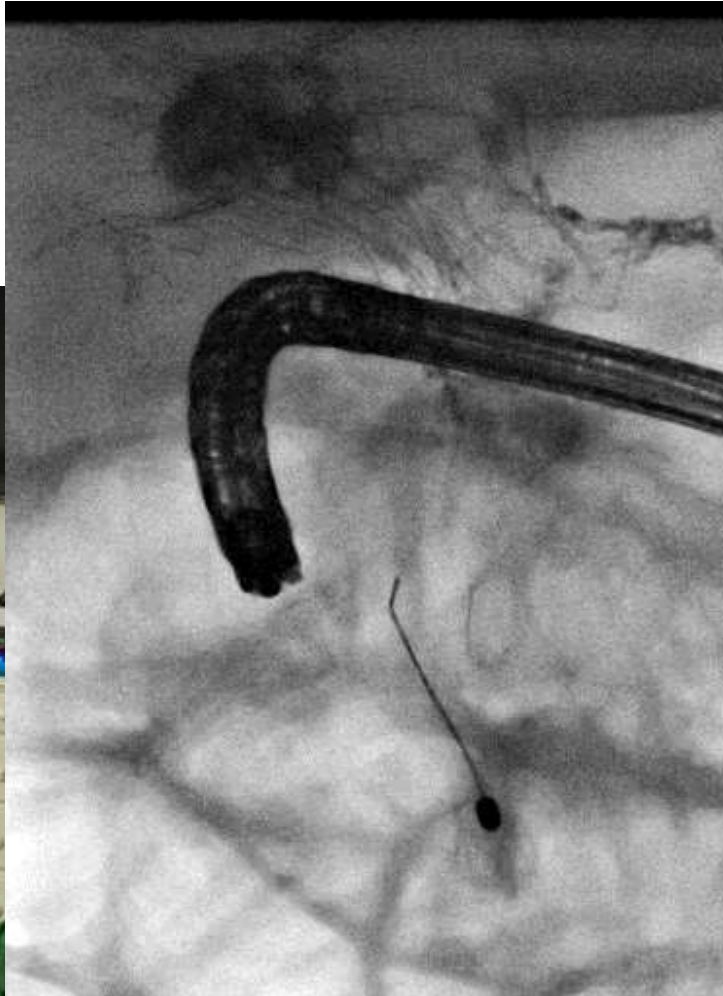
1. Embolisation
2. Decompression
3. Lymphovenous anastomoses
4. Lymphocutaneous anastomoses
5. Anti lymphangiogenic medication

Protein Losing Enteropathy

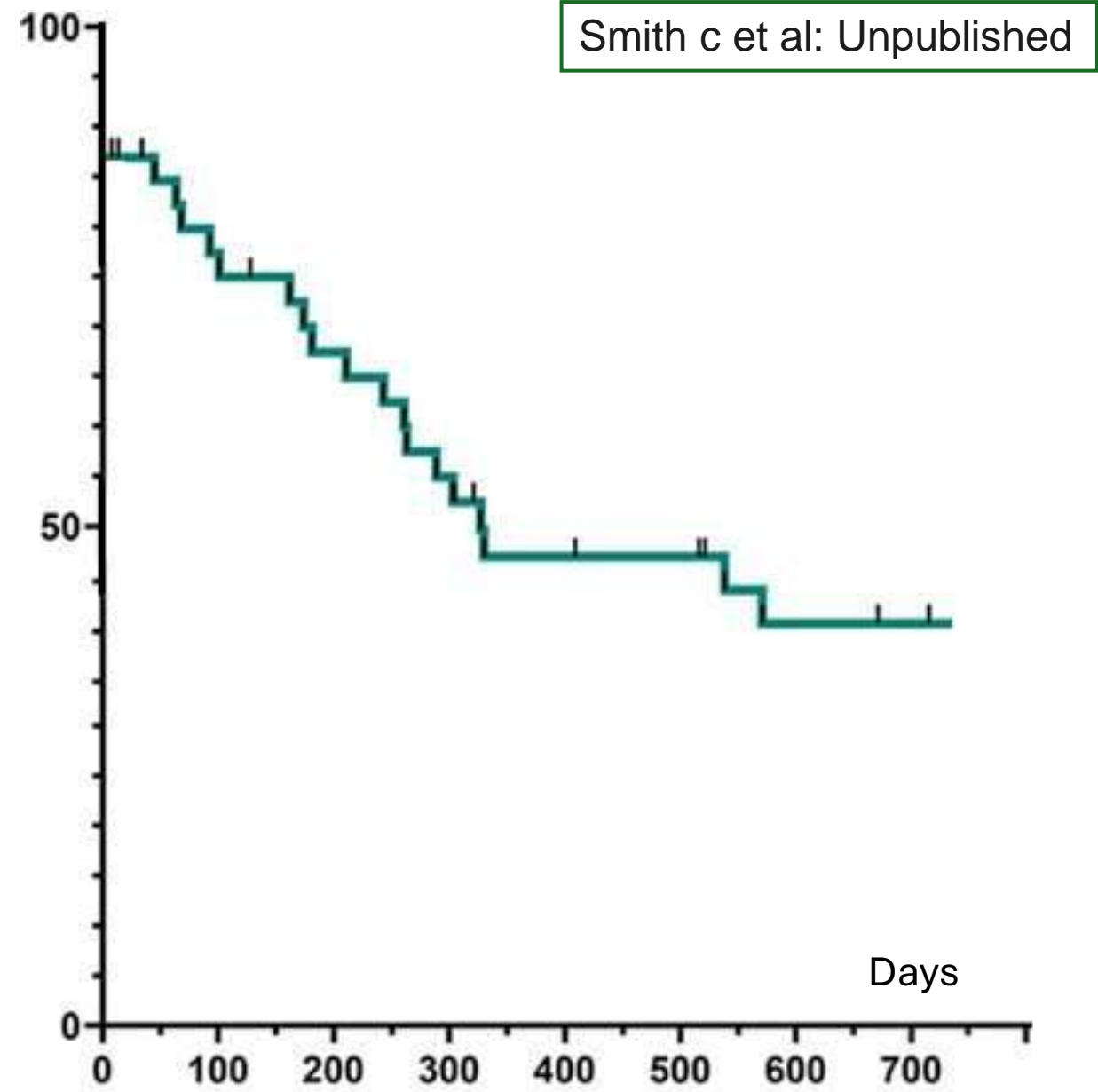


Embolisation of anomalous lymphatic vessels

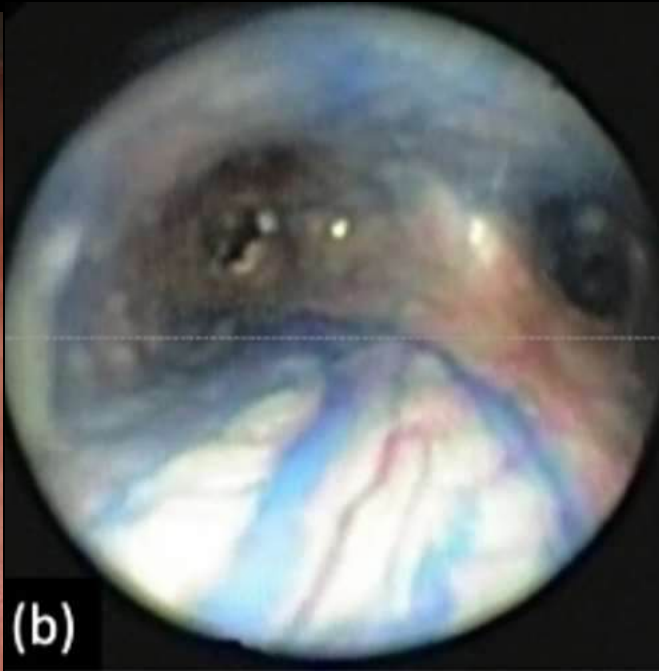
Decompression w/ Hraska procedure



Freedom from PLE



Plastic Bronchitis



Plastic Bronchitis

Selective Embolisation

FU 1.5 years	N=70
Casting	
Resolution	54%
Improvement	16%
Repeat Intervention	19%

Unpublished data



Where are we now?

Are we really getting any better?

YES we are!

LS actively transport fluid

LS is challenged in CHD

Anomalous Lymphatic
Vessels

Leak into cavities

MR, X-Ray, US (\pm contrast)

Embolization

Decompression

Lymphovenous anastomoses

Antiangiogenic medication



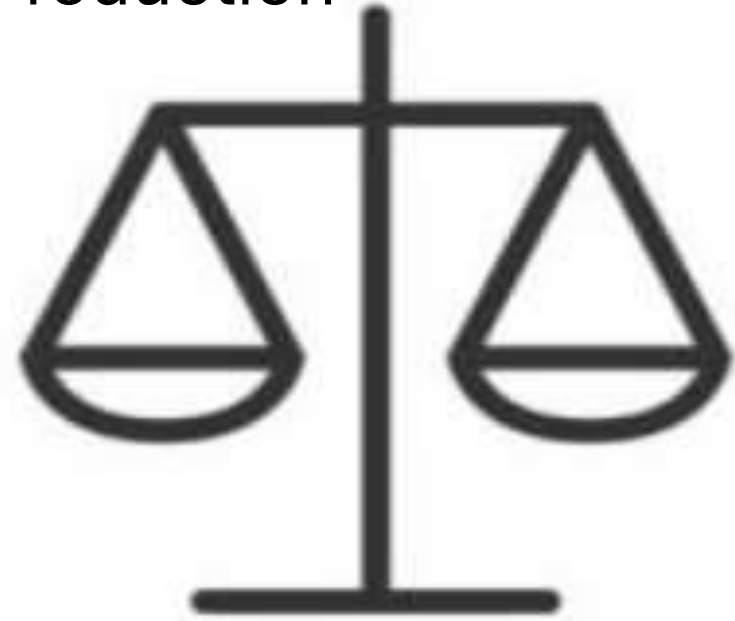
How might we get even better?

Improve drainage

1. Medication
2. Mechanical pump
3. Respiratory Interaction

Drainage

Production



Medication



Vasoactive drugs



Norepinephrine
Substance P
Acetylcholine
Glibenclamide
Paxiline
Furosemide
Veratridine



Nifedipine
Verapamil
Pinacidil
Bendroflumethiazid

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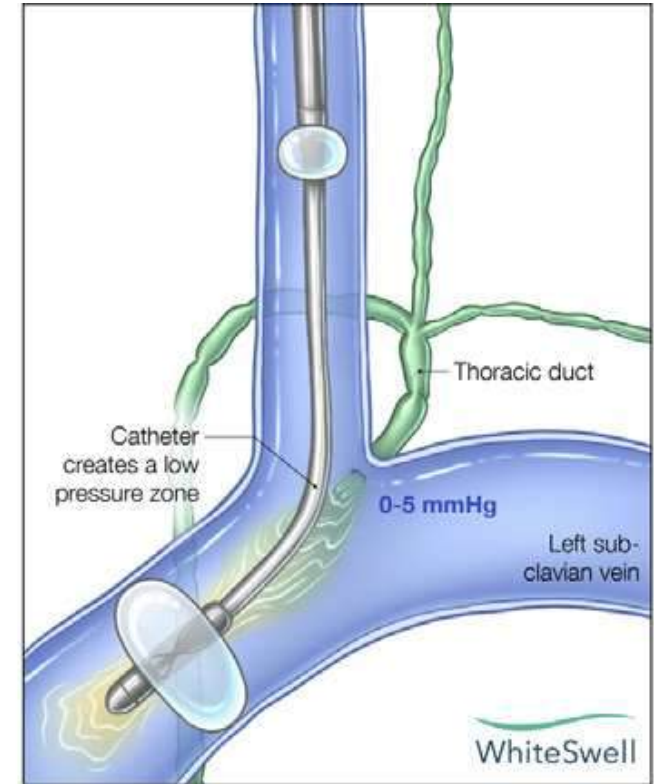
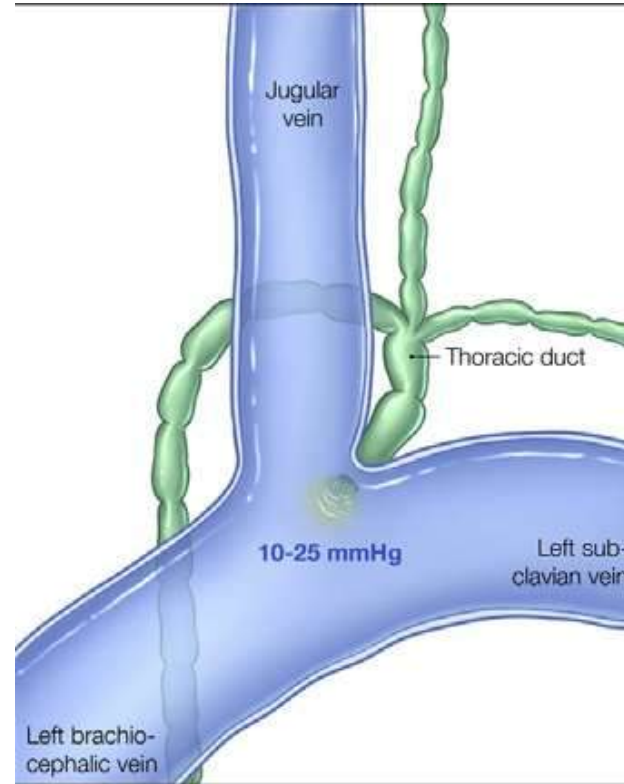
Drainage

Production



Mechanical pump

Lymphatic decompression
for acute heart failure



Abraham et al 2021 JACC

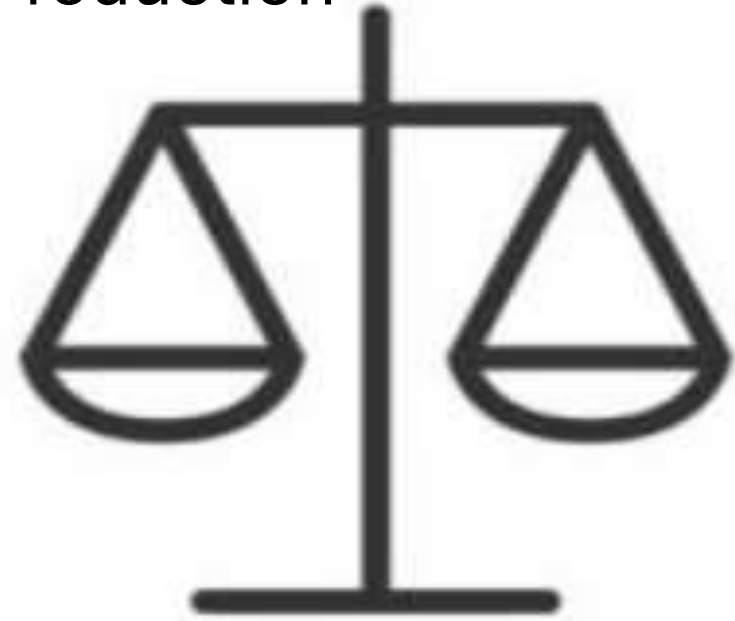
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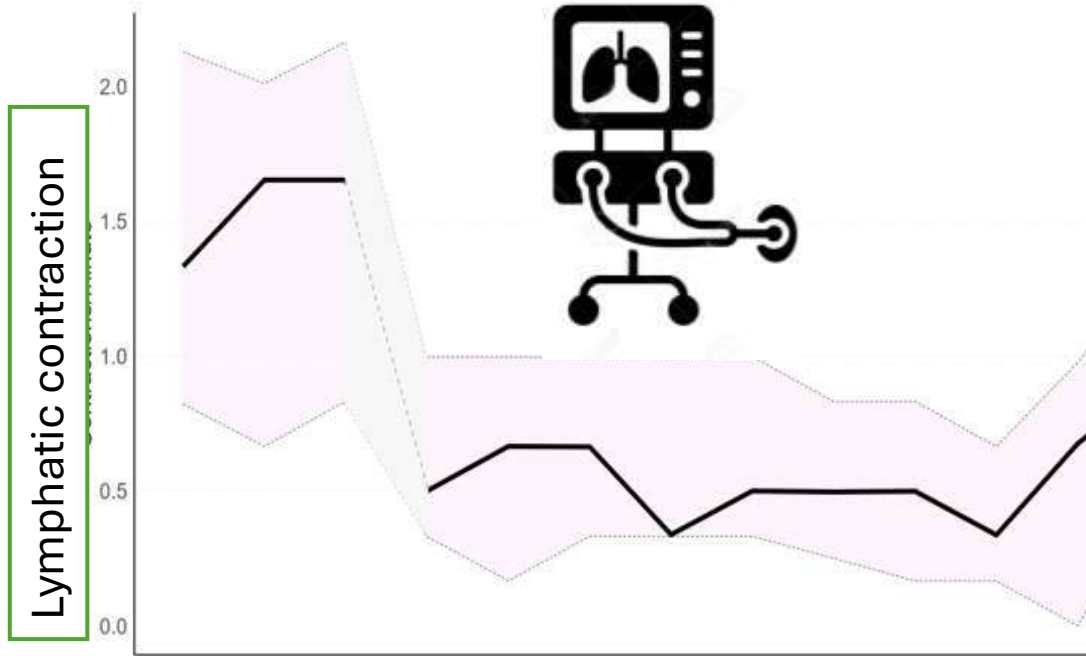
Respiratory Interaction



Impair?



Improve?



***“Are we really getting any better,
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