

Casual Friday Series

# **The Role of the Lymphatic System**

A Biogenetix Clinical Presentation

[BIOGENETIX.COM](http://BIOGENETIX.COM)



# Disclaimer

- *Information in this presentation is not intended, in itself, to diagnose, treat, reverse, cure, or prevent any disease. While this presentation is based on medical literature, findings, and text, The following statements have not been evaluated by the FDA.*
- *The information provided in this presentation is for your consideration only as a practicing health care provider. Ultimately you are responsible for exercising professional judgment in the care of your own patients.*



# Why are most of us here?

- The easy of being a functional practitioner?
- The hours of extra study we need to do?
- The bankers hours?
- People thinking we are crazy?



# Impact!!

- Over 1M followers across platforms
- Recent online challenge with over 28,000 emails collected
- Facebook group of >50,000 members
- Over 1,000 people on the live webinars
- **100's of testimonials of positive change in less than a week!**

The background of the slide features a light gray, semi-transparent pattern of molecular structures, including various rings and chains of atoms, scattered across the white background.

Remember...

Everybody is different.

Even though we know everyone could benefit from lymphatic drainage, there are some people that we need to consider their condition before launching into it.

# Who do we need to consider?

01

Congestive Heart Failure

02

Kidney Failure

03

Active Cancer

04

Blood Clots

05

First Trimester

06

Acute cold with fever

KIDNEY

GUT

LIVER

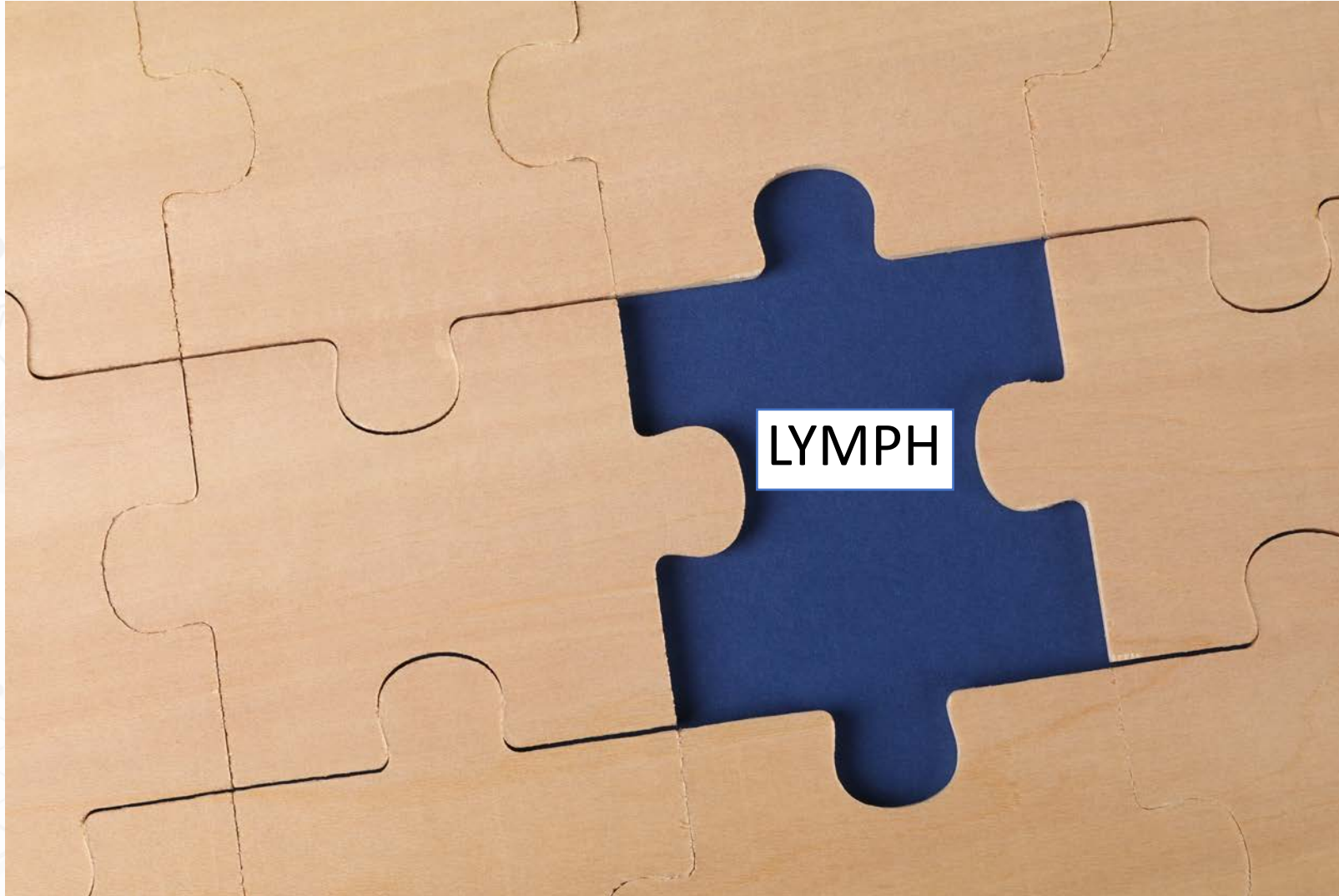


But is there a Missing or Forgotten Piece?



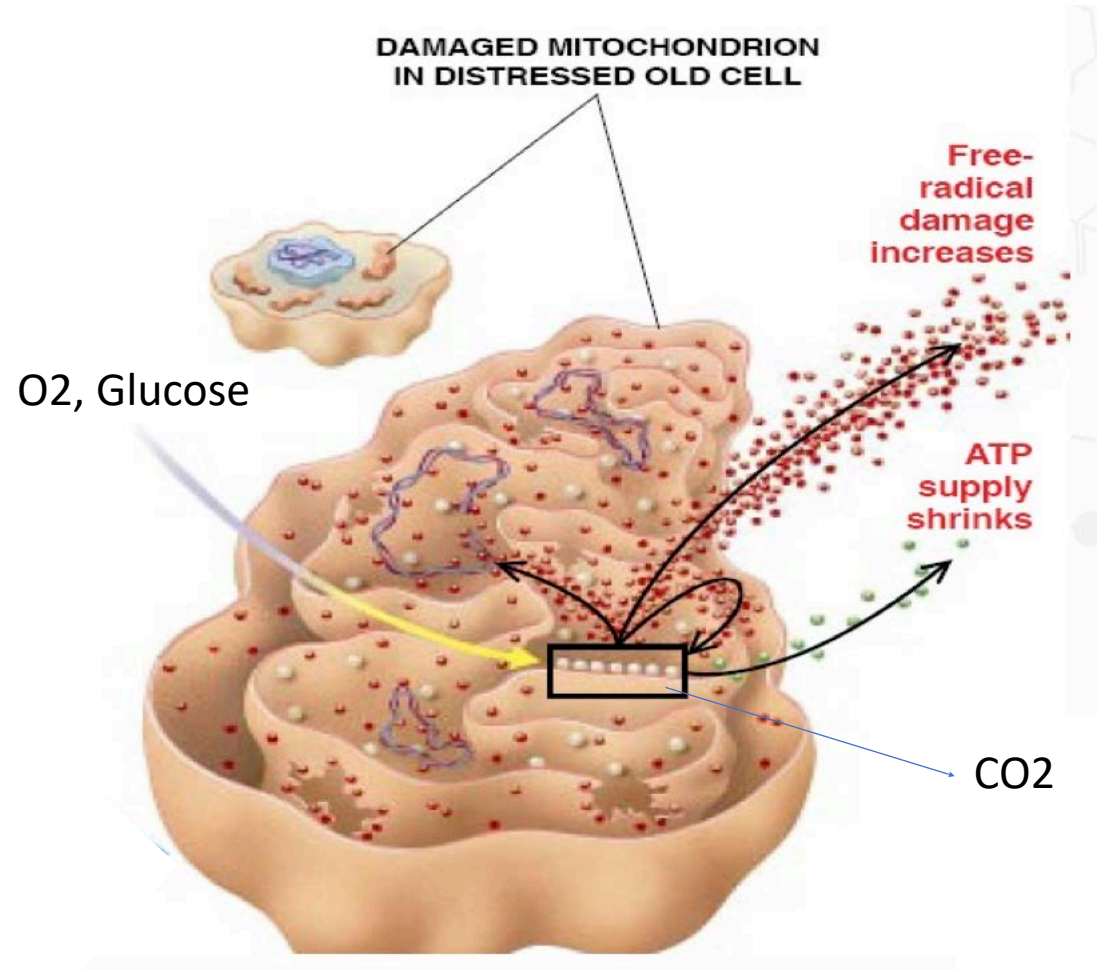
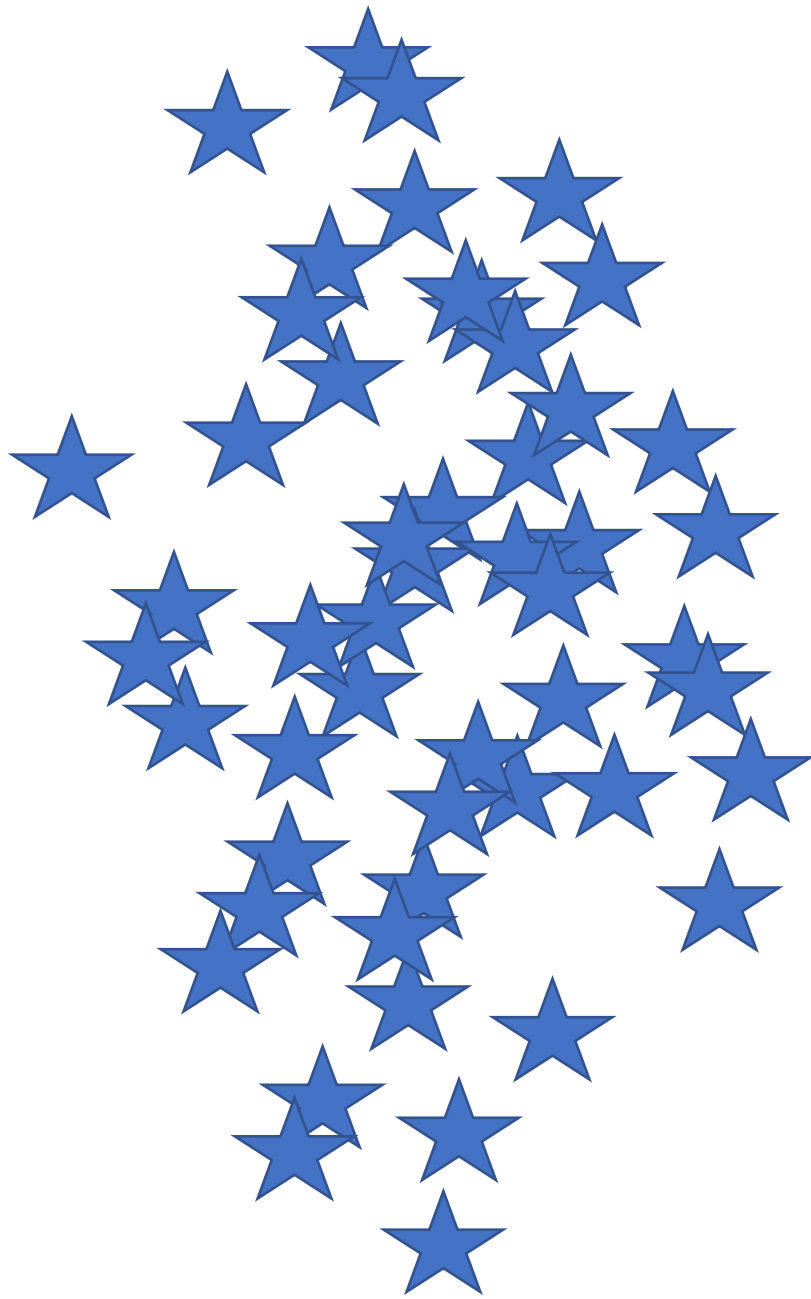


But is there a Missing or Forgotten Piece?



# Important Features of The Lymphatic System

- The Lymphatic System is responsible for...
  - Removal of Excess Body Fluid and Waste Products (particularly from cell metabolism)
  - Production of Immune Cells to Help Fight Infection
  - Absorption of Fatty Acids from Digestion.
- So what can go wrong when this system is not working properly?



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# What does this mean?

## LYMPHATIC

You go room to room picking up the trash and placing it in bags

## LIVER

Sorts through those bags and separates it into waste and recyclables. Also takes the trash out to the curb

## COLON AND KIDNEYS

The appropriate truck comes and picks up the trash or recycling and removes it from your property

**Lymphatic System:**  
Cellular trash removal



**Gut & Kidneys:**  
Trash removal



**Liver:**  
Sorting out and breaking down the trash



# Lymphatic System: An Active Pathway for Immune Protection

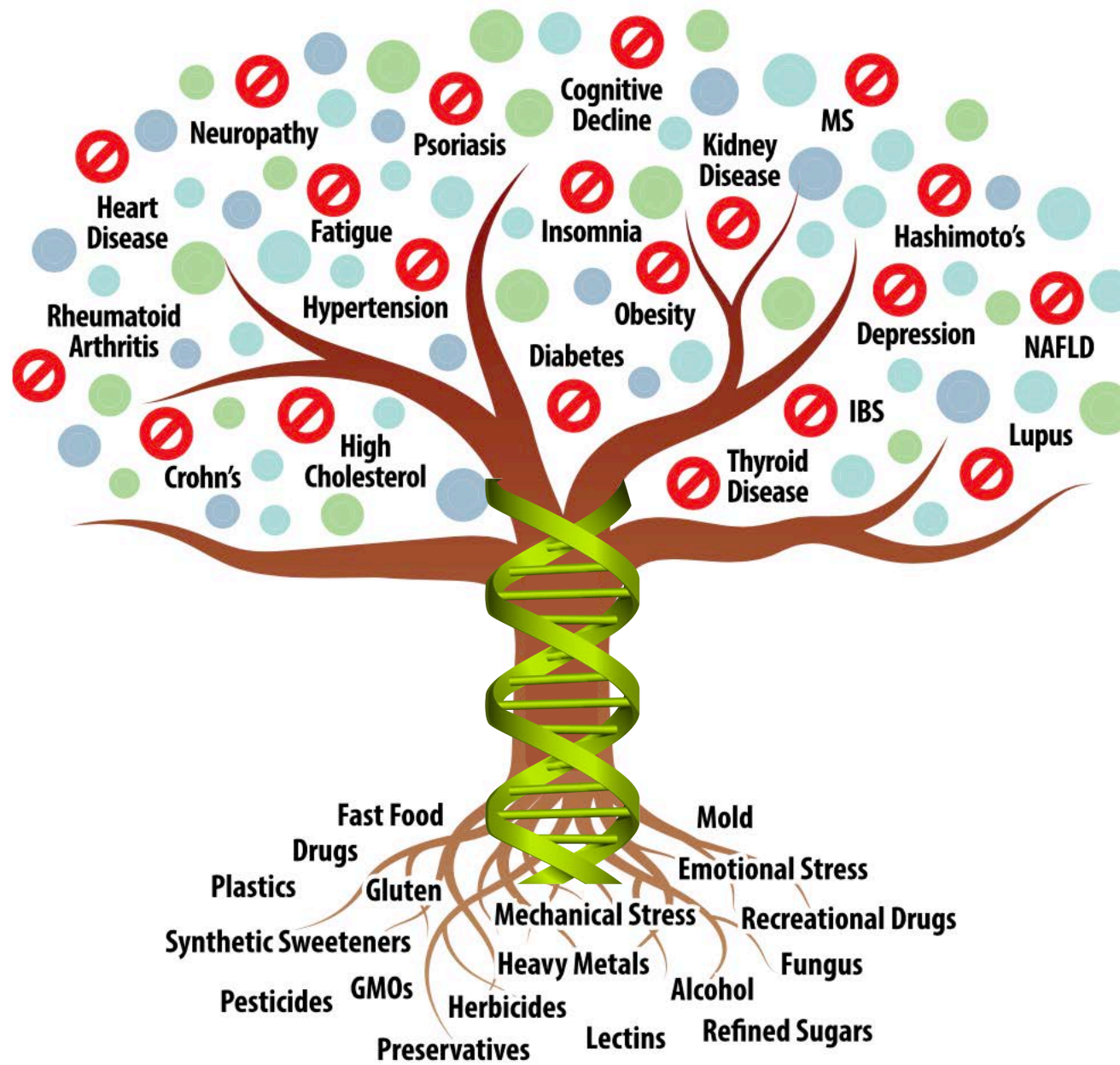
[Shan Liao](#),<sup>1,\*</sup> [Pierre-Yves von der Weid](#),<sup>2</sup> and Inflammation Research Network, Snyder Institute for Chronic Diseases

Lymphatic vessels are well known to participate in the immune response by providing the structural and functional support for the delivery of antigens and antigen presenting cells to draining lymph nodes. Recent advances have improved our understanding of how the lymphatic system works and how it participates to the development of immune responses. New findings suggest that the lymphatic system may control the ultimate immune response through a number of ways which include guiding antigen/dendritic cells (DC) entry into initial lymphatics at the periphery; promoting antigen/DC trafficking through afferent lymphatic vessels by actively facilitating lymph and cell movement; enabling antigen presentation in lymph nodes via a network of lymphatic endothelial cells and lymph node stroma cell and finally by direct lymphocytes exit from lymph nodes. The same mechanisms are likely also important to maintain peripheral tolerance. In this review we will discuss how the morphology and gene expression profile of the lymphatic endothelial cells in lymphatic vessels and lymph nodes provides a highly efficient pathway to initiate immune responses. The fundamental understanding of how lymphatic system participates in immune regulation will guide the research on lymphatic function in various diseases.

## Regulation of Immune Function by the Lymphatic System in Lymphedema

[Raghu P. Kataru](#), [Jung Eun Baik](#), [Hyeung Ju Park](#), [Itay Wiser](#), [Sonia Rehal](#), [Jin Yeon Shin](#), and [Babak J. Mehrara](#)\*

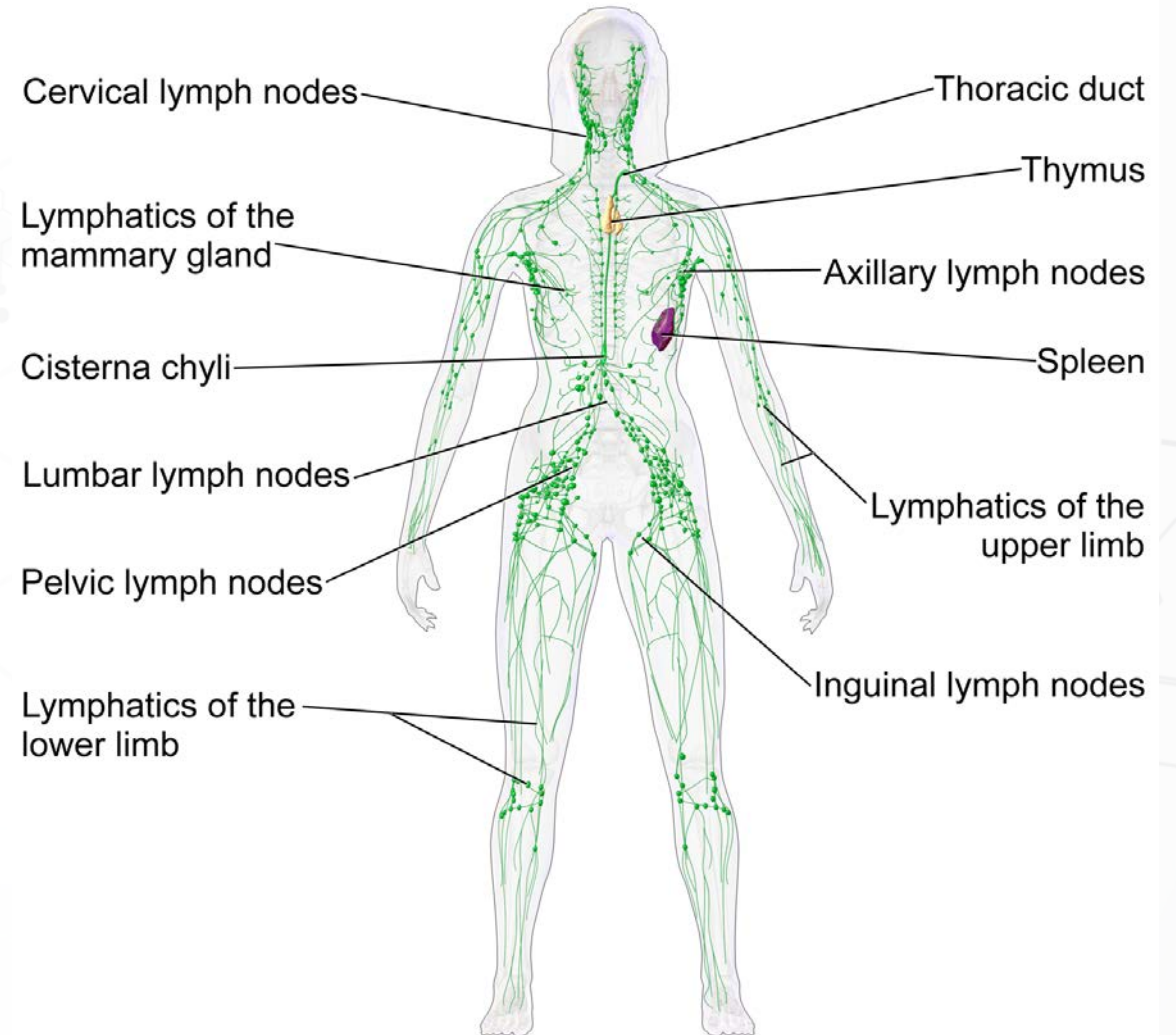
The lymphatic vasculature has traditionally been thought to play a passive role in the regulation of immune responses by transporting antigen presenting cells and soluble antigens to regional lymph nodes. However, more recent studies have shown that lymphatic endothelial cells regulate immune responses more directly by modulating entry of immune cells into lymphatic capillaries, presenting antigens on major histocompatibility complex proteins, and modulating antigen presenting cells. Secondary lymphedema is a disease that develops when the lymphatic system is injured during surgical treatment of cancers or is damaged by infections. We have used mouse models of lymphedema in order to understand the effects of chronic lymphatic injury on immune responses and have shown that lymphedema results in a mixed T helper cell and T regulatory cell (Treg) inflammatory response. Prolonged T helper 2 biased immune responses in lymphedema regulate the pathology of this disease by promoting tissue fibrosis, inhibiting formation of collateral lymphatics, decreasing lymphatic vessel pumping capacity, and increasing lymphatic leakiness. Treg infiltration following lymphatic injury results from proliferation of natural Tregs and suppresses innate and adaptive immune responses. These studies have broad clinical relevance since understanding how lymphatic injury in lymphedema can modulate immune responses may provide a template with which we can study more subtle forms of lymphatic injury that may occur in physiologic conditions such as aging, obesity, metabolic tumors, and in the tumor microenvironment.





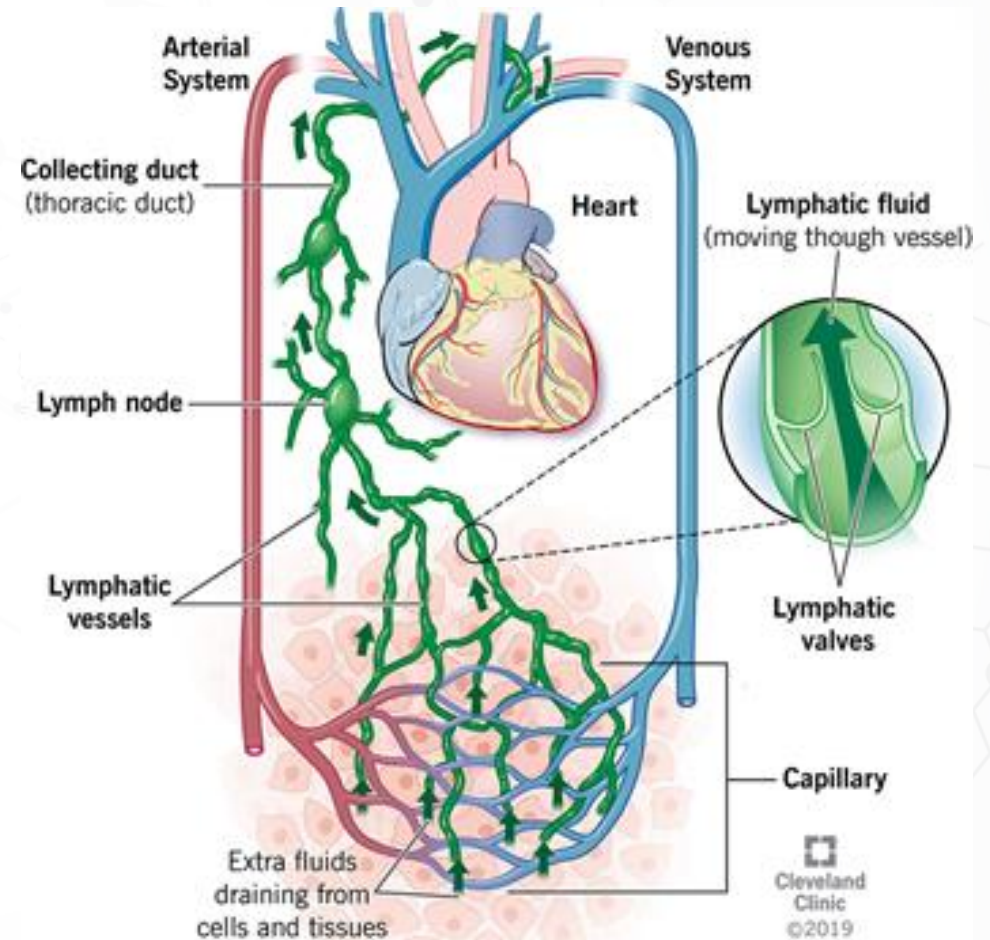
# The Lymphatic System

- Lymph Vessels
- Lymph Nodes
- Spleen\*
- Bone Marrow
- Tonsils\*
- Thymus



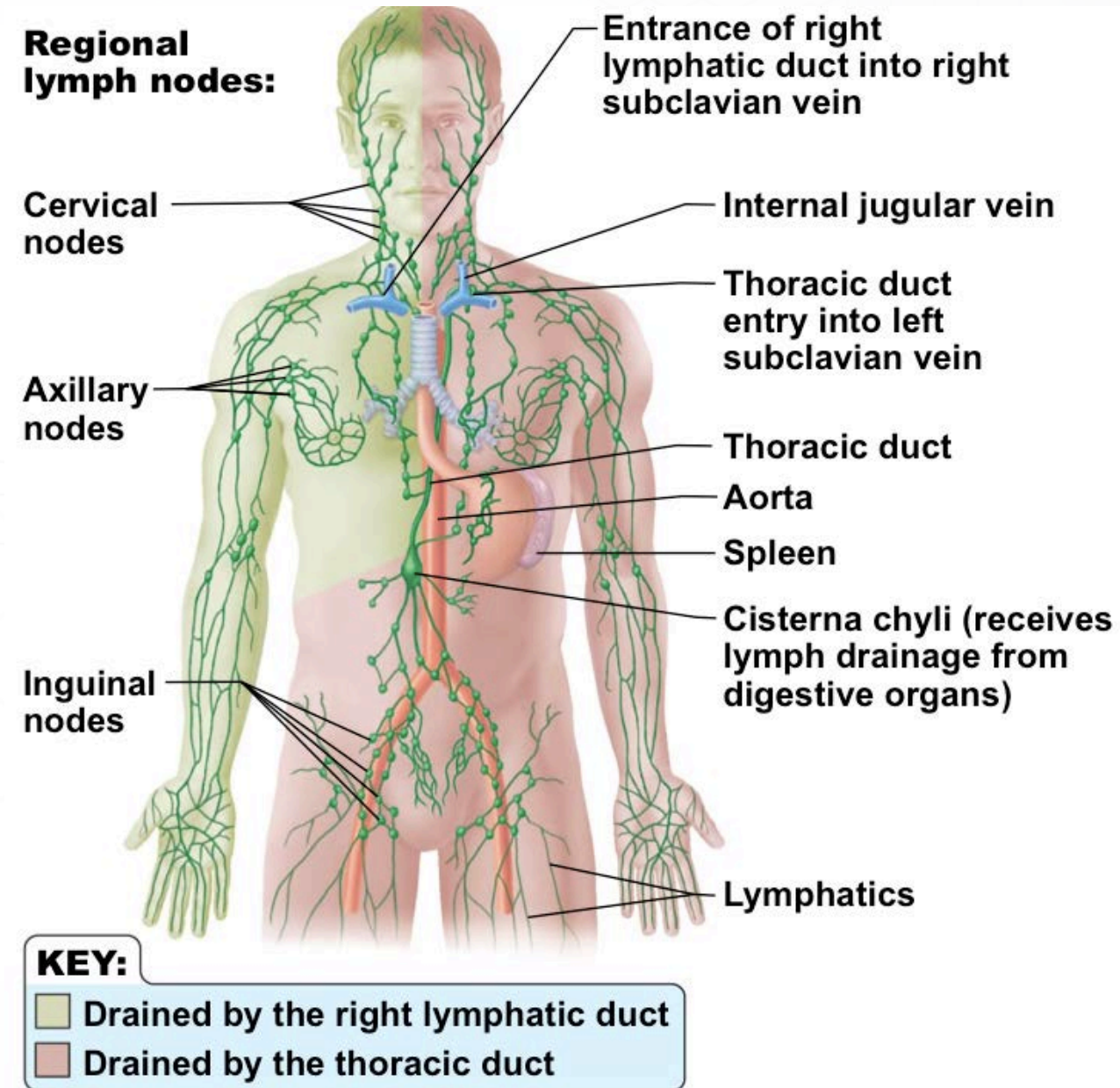
# Mirror of the Vascular System

- Vasculature for Oxygen and Blood... Lymph for waste and toxins
- 70% is just under the skin
- No pump and a one way street
- Lymph fluid flows up the body to the clavicles where it is returned the blood supply



# Lymph Nodes

- Reminder that most are located in the head, gut, and joints.
- They filter through the waste, remove toxins, and destroy anything that is a threat.
- Will produce Neuts or Lymphs based on what is passing through.
- If a node is swollen or hard it is going to prevent flow
- We can have anywhere between 600-1000
- Main “drain” is near the clavicle called the termini.



**Regional lymph nodes:**

Cervical nodes

Axillary nodes

Inguinal nodes

Entrance of right lymphatic duct into right subclavian vein

Internal jugular vein

Thoracic duct entry into left subclavian vein

Thoracic duct

Aorta

Spleen

Cisterna chyli (receives lymph drainage from digestive organs)

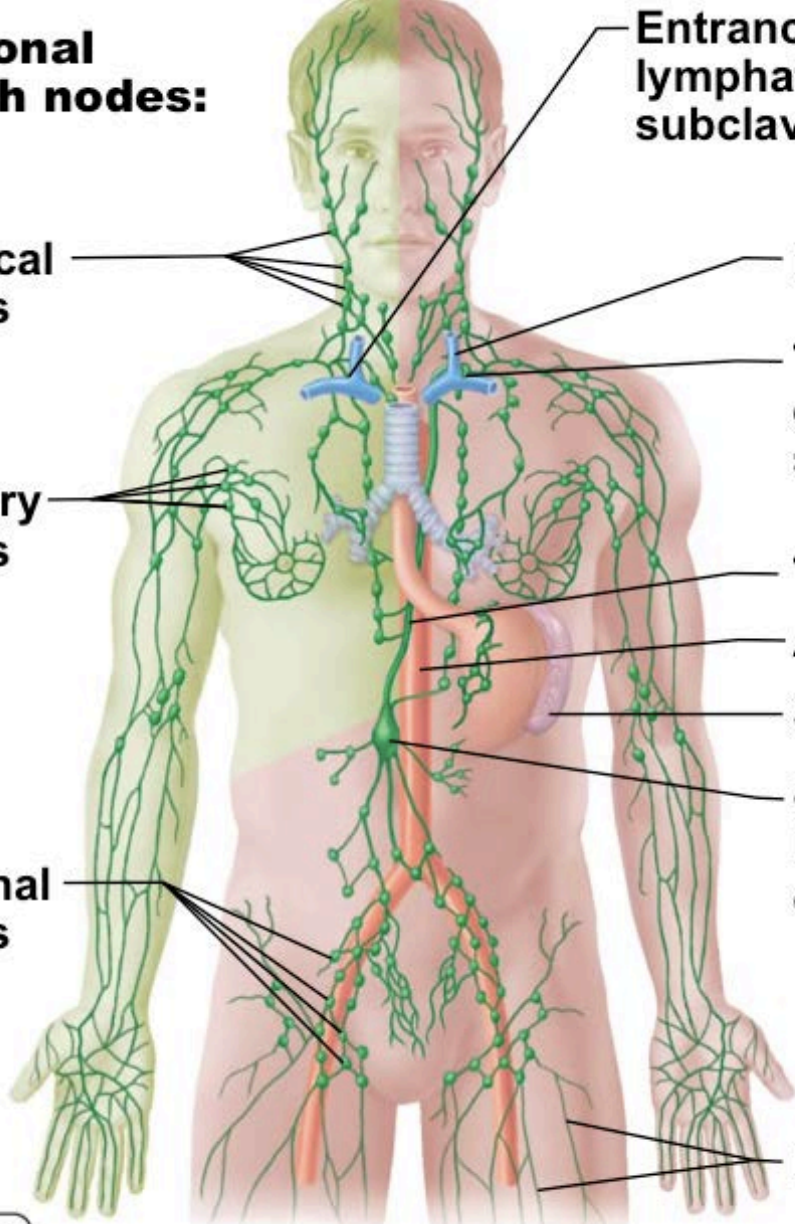
Lymphatics

# Lymphatic Drainage

- Right Lymphatic Duct drains into the right subclavian vein
- Left Thoracic Duct drains into the Left subclavian vein

**KEY:**

- Drained by the right lymphatic duct
- Drained by the thoracic duct



# Symptoms Associated with a Congested Lymphatic System

- - Depression
  - Digestive Issues
  - Dry, Itchy skin
  - Enlarged Lymph Nodes
  - Fluid retention
  - Food Sensitivities
  - Get sick easily
- Allergies
- Bloating
- Brain Fog
- Breast swelling
- Chronic fatigue
- Cold hands and feet
- Constipation
- 
- Headaches
- Muscle or Joint pain
- Parasite Infections
- Sinus Infections
- Stiffness in the am
- Weight gain

# What causes congestion to occur!

01

Sitting for long periods of time

02

Removal of Lymph nodes

03

Chronic infections

- lyme
- mold
- EBV etc

04

Wearing tight clothing

05

Consuming conventional dairy

06

Dehydration

07

Toxic exposures

- home
- work
- day to day

08

Scars and facial adhesions

- surgeries
- radiation

09

Other congested pathways

- liver
- gut
- kidneys
- skin
- lungs

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Why do I think EVERYONE needs to consider this with the cases we see?

Because of what causes stagnant lymph!



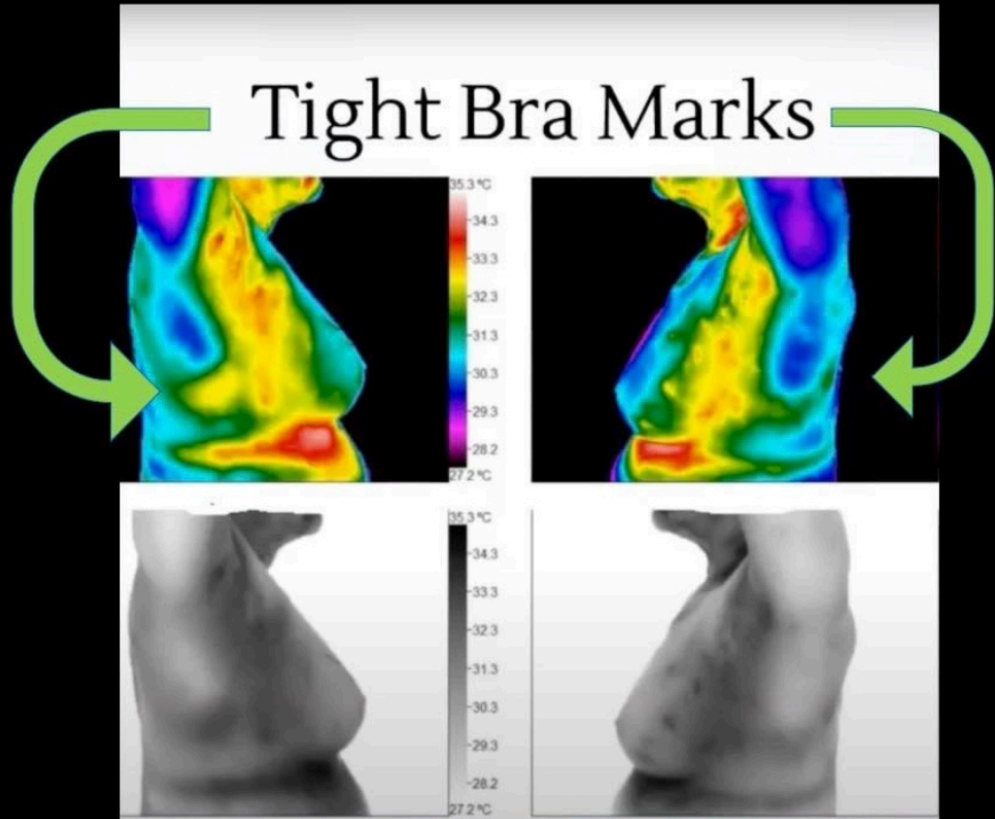
blodgett dentalcare

Following



Root canals, bras and constricted lymph flow: Why women get breast cancer 100x more than men!

### Tight Bra Marks



Thermography scan showing increased inflammation



blodgett dentalcare

Following



Lymph from the mouth drains into the chest. Underwire bras ensure it stays there.



# How do we get Lymph Moving?

- MOVEMENT =)
- Manual Lymphatic Massage
- Proper Nutrition
- Diaphragmatic Breathing
- Vibration or Rebounding
- Proper Sleep
- Herbs and Supplements



# Simple Steps to Walk Away With

- Most important step in Manual Lymphatic Massage
- Locate and “open/clear” the termini
- Binder Pro

Termini are the most important because ALL of the lymphatic fluid drains there....

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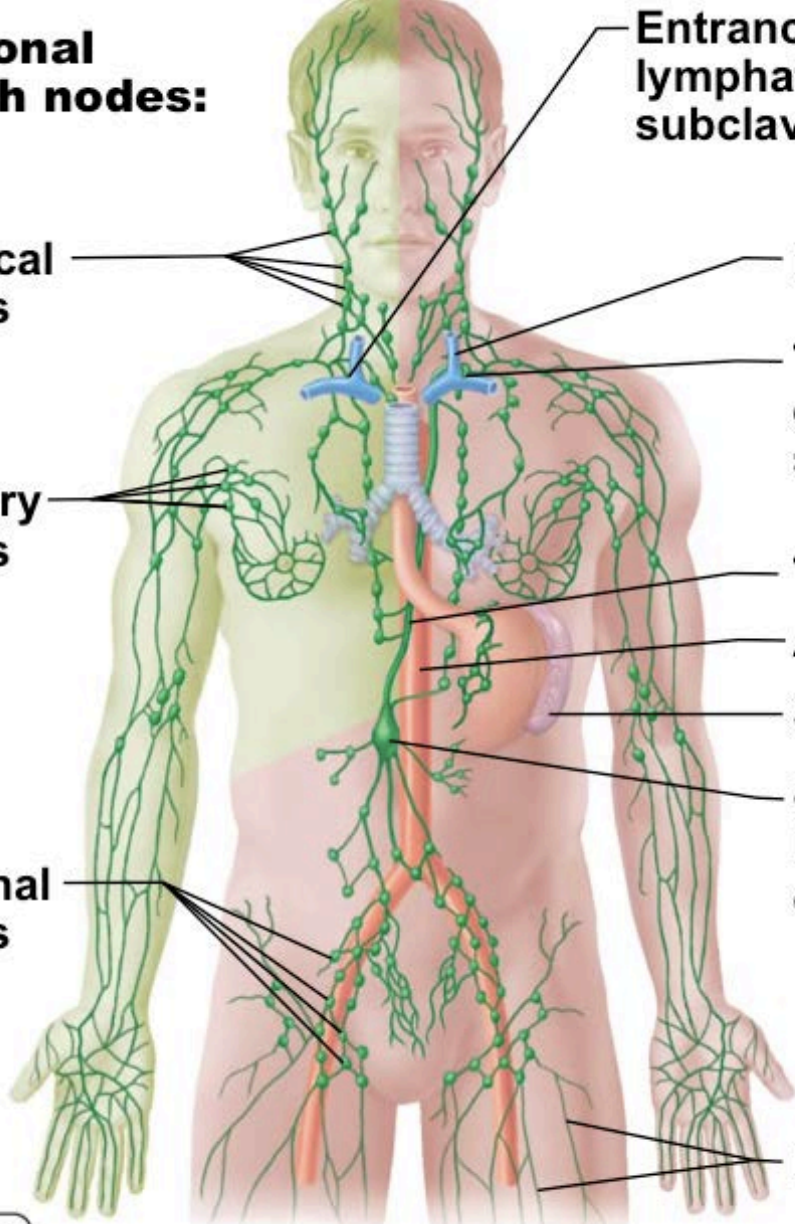
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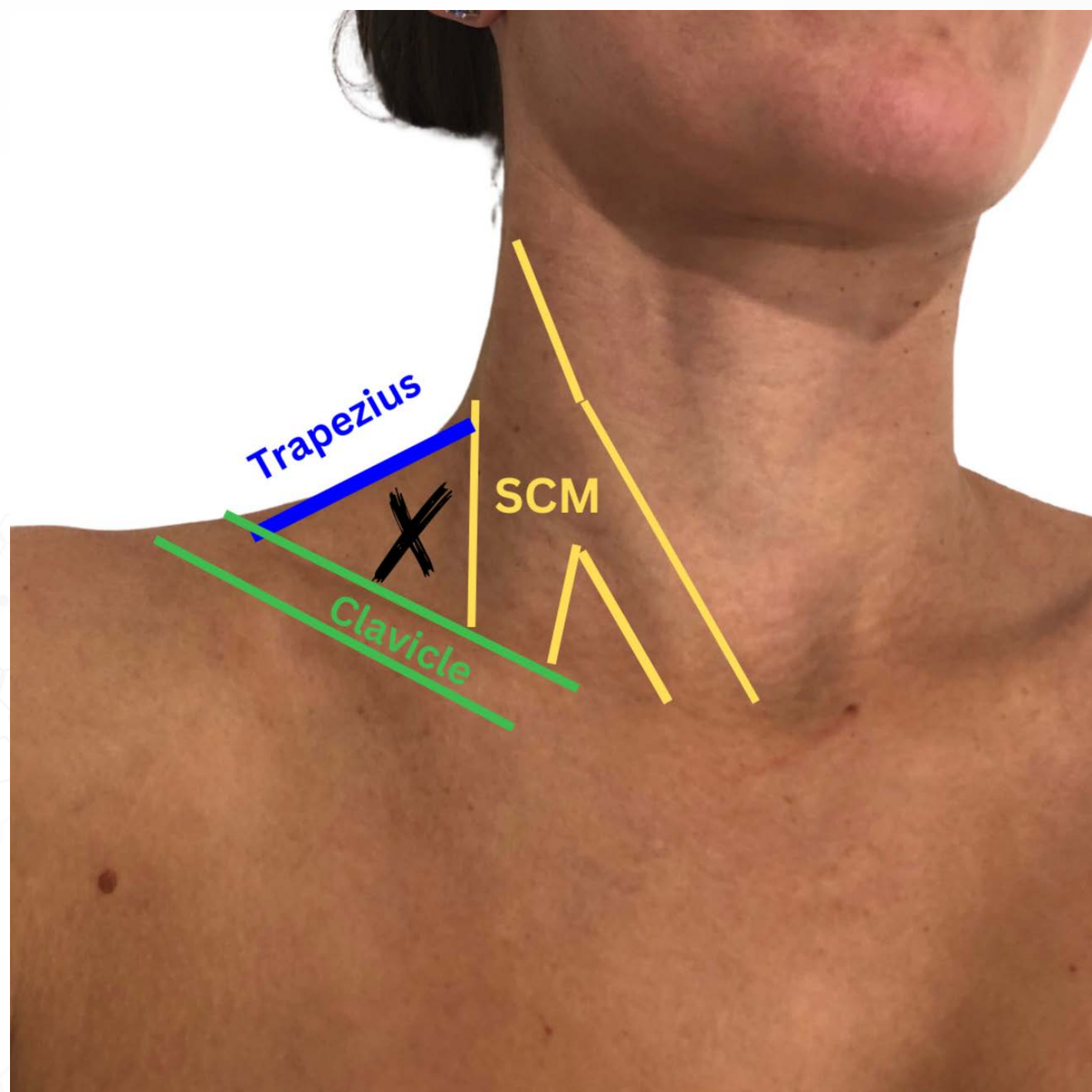
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# Supraclavicular fossa

- ABOVE THE CLAVICLE
- BELOW THE TRAPEZIUS
- OUTSIDE STERNOCLEIDOMASTOID (SCM)



# 3 Ways To Clear The Termini

First:

Placing the pads of your ring and middle finger on the termini.

Gently pump  
10-50x (1 pump per second)

# 3 Ways To Clear The Termini

Second:

Placing the pads of your ring and middle finger  
on the termini.

Gently rub in a circular motion  
10-50 seconds

# 3 Ways To Clear The Termini

Third:

Placing the pads of your fingers on the backside of your traps.

With your elbows at 90 you are going to bring your elbows towards your chest  
10-50 pumps (1 pump/sec)



# Pay attention to Pressure!

- It is less pressure than you might think.
- Place your over the top of your eyes...
- Apply some pressure in...
- The amount of pressure you would be comfortable pushing on your eyes is the pressure you use on your nodes.
  - If you are seeing stars... you're pushing too hard.

# Common Questions...

01

## Do I close the termini

No. We use the word open, clear interchangeably. You want to remove the congestion so that your lymph can drain

04

## I get an upset stomach or feel nauseated

That can also happen when you have a lot of waste built up your body is now dealing with

02

## I am peeing more or waking up in the middle of the night

That's normal in the beginning.  
It won't stay like that

05

## Achy or feel like the flu

Yet again this can happen if you are bringing your immune system attention to an old infection that's been hanging out

03

## I get a headache afterwards

That can happen if you have a lot of waste and debris you are finally moving

06

## Sore lymph nodes

This can also happen if you are finally clearing out the junk

# What to do if you experience symptoms

- Drink more water
- Move your body more
- Utilize the Binder Pro
- Slow down the drainage routine.

Casual Friday Series

**Happy Draining! Have a great weekend!**

For more details about drainage techniques, etc

Youtube: Doc Talks Detox

