

# Targeted Conditioning of the Interstitium

## Focus on the Stress Cycle of the Hypothalamus creating a healthy Homeostasis.

Breath-work and Flossing of the Interstitium is combined to decrease the level of tone in the Interstitium to mitigate the negative effects of a higher level of tone in the Interstitium creating an environment by which the individuals Homeostasis is out of balance.

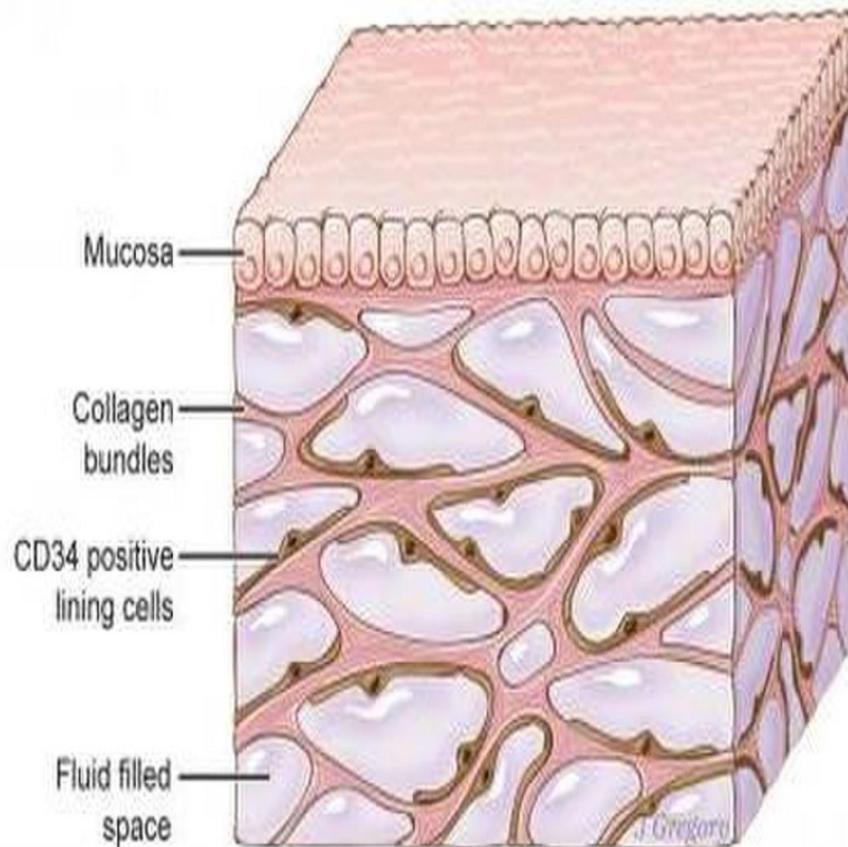
The Interstitium has just been recently acknowledged as an Organ, Published March 27 in *Scientific Reports*, a new study co-led by an NYU School of Medicine pathologist reveals that layers of the body long thought to be dense, connective tissues - below the skin's surface, lining the digestive tract, lungs and urinary systems, and surrounding arteries, veins, and the fascia between muscles - are instead interconnected, fluid-filled compartments. The **INTERSTITIUM** is a contiguous fluid-filled space existing between a structural barrier, such as a cell wall or the skin, and internal structures, such as organs, including muscles and the circulatory system. The fluid in this space is called *interstitial fluid*, comprises water and solutes, and drains into the lymph system. The interstitial compartment is composed of connective and supporting tissues within the body – called the extracellular matrix – that are situated outside the blood and lymphatic vessels and the inner workings of organs.

Prior to this it has been referred to as the Primo Vascular System in the 1960's by **Kim Bong-han** a North Korean medical surgeon at Pyongyang Medical University and Kyung-Rak institute (KRI). He is primarily known for his research on a proposed mechanism for acupuncture that was not accepted by the mainstream medical community that has come to be called the "primo-vascular system".

### **EXTRACELLULAR MATRIX**

Findley and Schleip (2009) have defined fascia broadly to include all of the soft fibrous connective tissues that permeate the human body. We can view the fascia as “one interconnected tensional network that adapts its fiber arrangement and density according to local tensional demands.” Pischinger (2007) describes the fascial system as the largest system in the body as it is the only system that touches all of the other systems. Finando and Finando (2011) summarize evidence that the

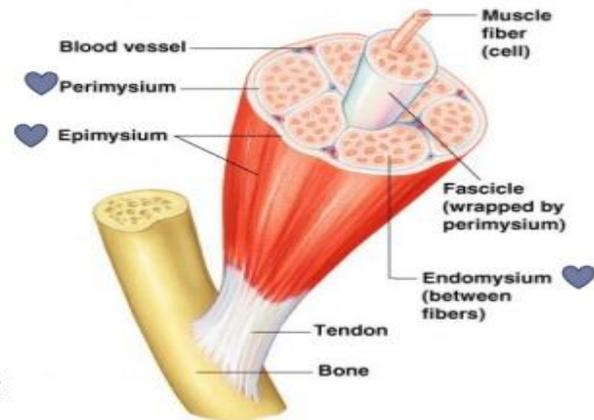
ancient acupuncture meridian system shares many structural, functional, and clinical characteristics with the fascial system. Specifically, like the acupuncture meridian system, the fascia may be viewed as a single organ, a unified whole, the environment in which all body systems function. There is a virtually one-to-one correspondence between the therapeutic approaches to the fascia and to acupuncture. For example, Pischinger (2007) states that needle puncture produces a reaction in the entire intercellular–extracellular matrix. The diversity of conditions that respond to acupuncture treatment may be explained by a review of the recently understood properties of the fascia. The involvement of the fascia in dysfunction and disease is pervasive. It is believed that, to some extent, the fascia will necessarily be involved in every type of human pathology (Paoletti 2006; Pischinger 2007). The fascia is the one system that connects to every aspect of human physiology.



# FASCIA

## Connective Tissue Wrappings of Skeletal Muscle

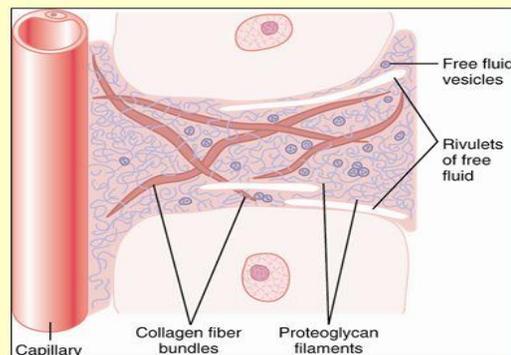
1. **Endomysium** – wraps a single muscle fiber
2. **Perimysium** – wraps a fascicle (bundle) of fibers
3. **Epimysium** – wraps entire muscle



# INTERSTITIUM

## INTERSTITIUM AND INTERSTITIAL FLUID

- Space between cells is called *interstitium*; fluid in this space is called *interstitial fluid*.
- Two major types of solid structures in interstitium are *collagen* fibers and *proteoglycan* filaments (coiled molecules composed of hyaluronic acid).
- Almost all fluid in interstitium is in form of *gel* (fluid proteoglycan mixtures); there is very little free fluid under normal conditions.



## HYALORONIC ACID

Is a ubiquitous carbohydrate polymer that is part of the EXTRACELLULAR MATRIX.- For example, hyaluronic acid is a major component of the synovial fluid, and was found to increase the viscosity of the fluid. Along with lubricin, it is one of the fluid's main lubricating components.

Hyaluronic acid is an important component of articular cartilage, where it is present as a coat around each cell (chondrocyte). When aggrecan monomers bind to hyaluronan in the presence of HAPLN1 (hyaluronan and proteoglycan link protein 1), large, highly negatively charged aggregates form. These aggregates imbibe water and are responsible for the resilience of cartilage (its resistance to compression). The molecular weight (size) of hyaluronan in cartilage decreases with age, but the amount increases.

A lubricating role of hyaluronan in muscular connective tissues to enhance the sliding between adjacent tissue layers has been suggested. A particular type of fibroblasts, embedded in dense fascial tissues, has been proposed as being cells specialized for the biosynthesis of the hyaluronan-rich matrix. Their related activity could be involved in regulating the sliding ability between adjacent muscular connective tissues.<sup>1</sup>

For this reason the primary focus of Targeted  
Conditioning of the Interstitium is

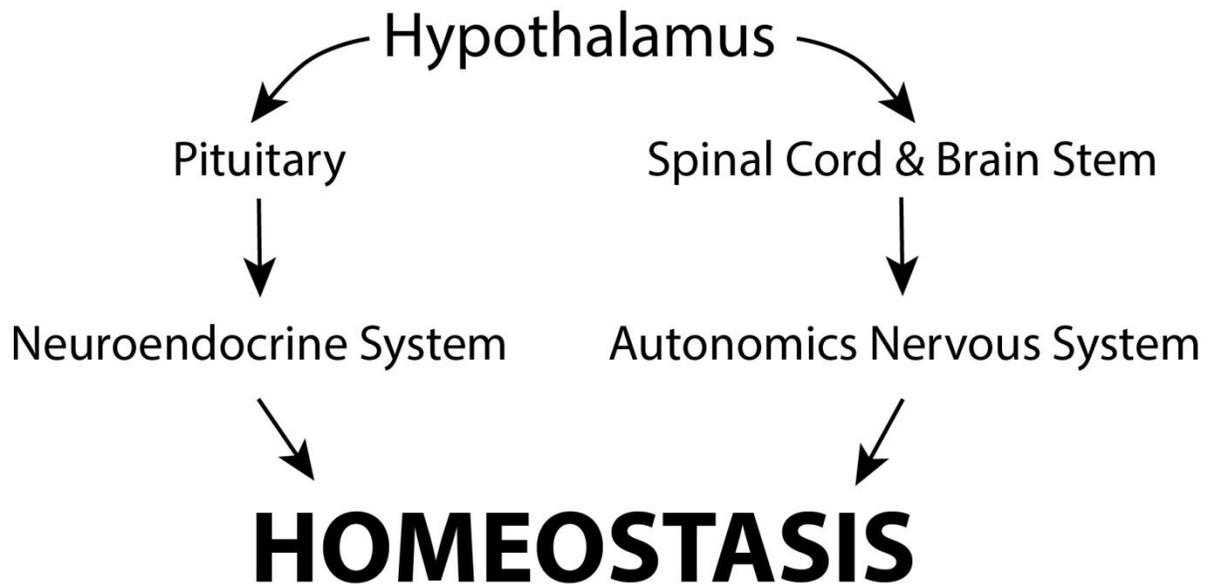
**FLOSSING.**

Combining the Breathwork with Flossing will address the  
Autonomic Nervous System, the Endocrine System and  
the Endocannabinoid System to address Homeostasis.

# STRESS RESPONSE CYCLE

## HPA Axis

The cycle of how the Hypothalamus functions:



Autonomic Nervous System – Breath work

Sympathetic Response – Inhale

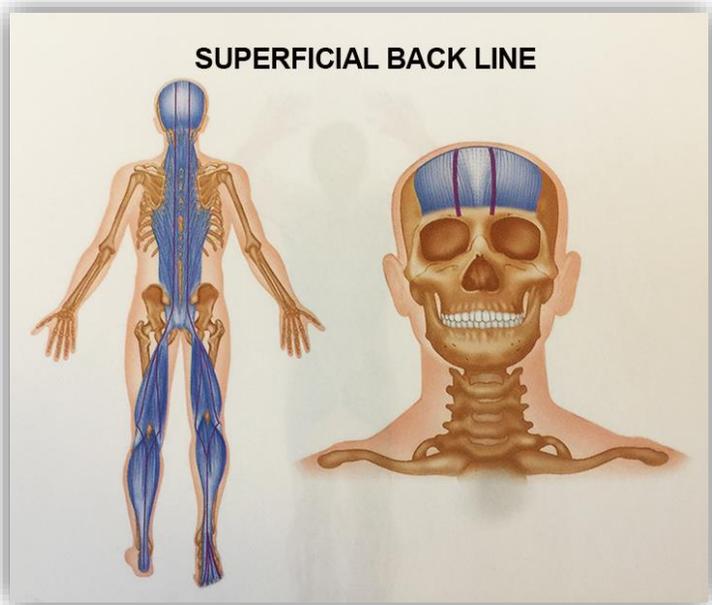
Parasympathetic – Exhale

Endocrine System – Hormonal Response

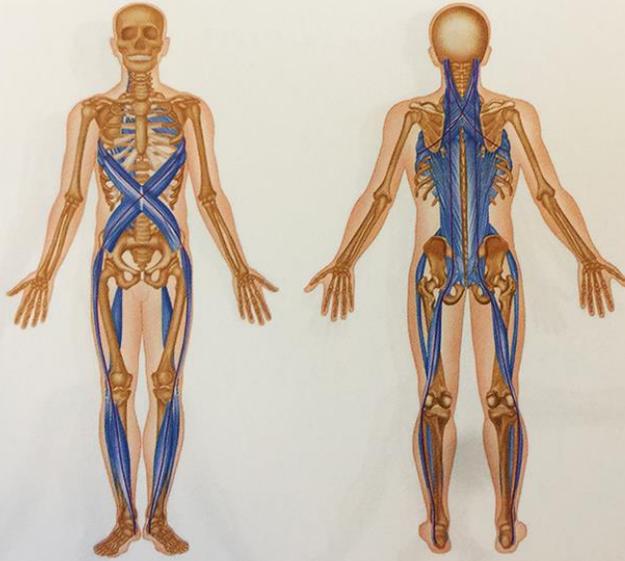
Endocannabinoid System – Modulator of Endocrine System

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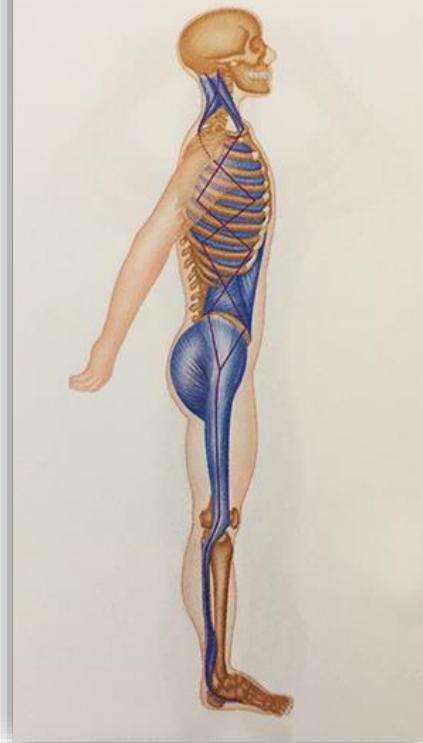
## Understand the Fascial Planes

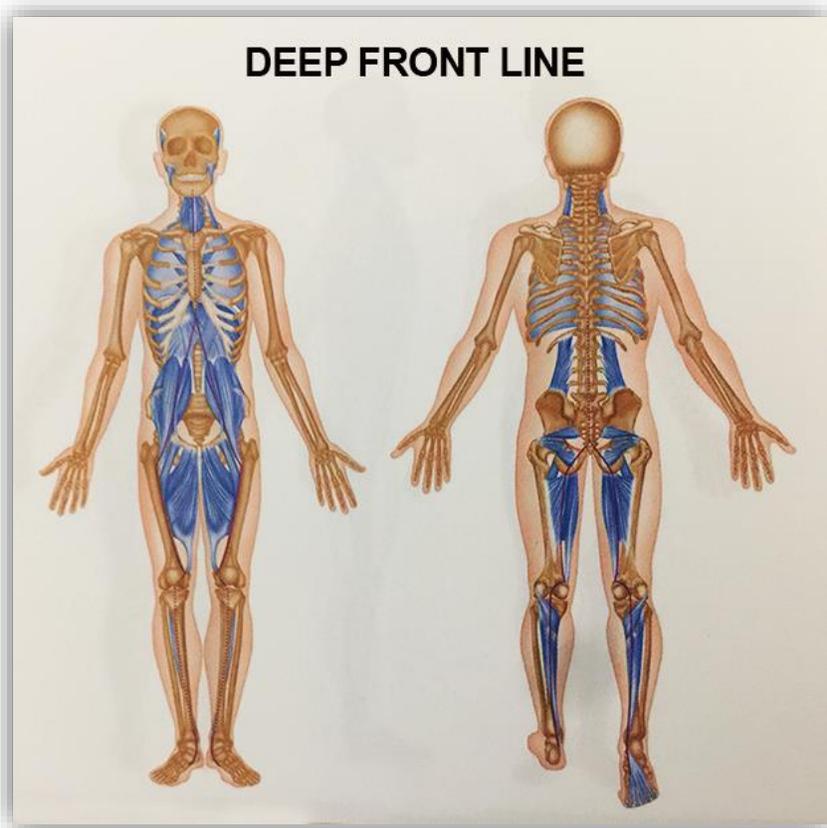
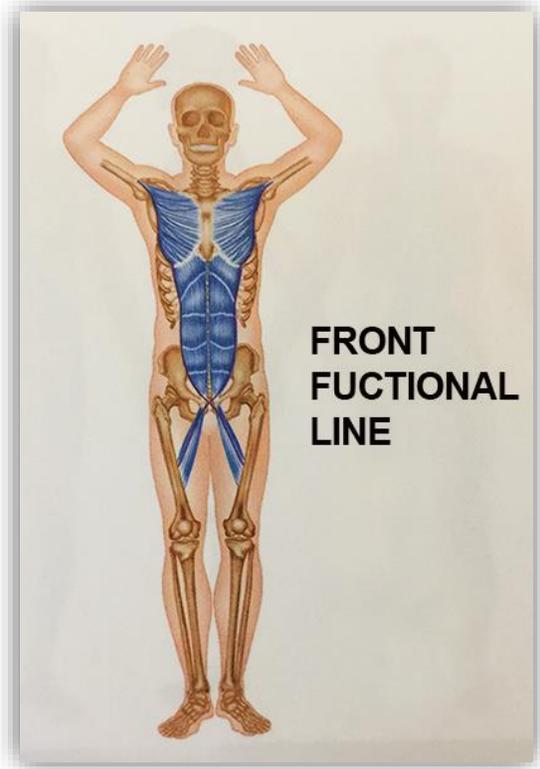
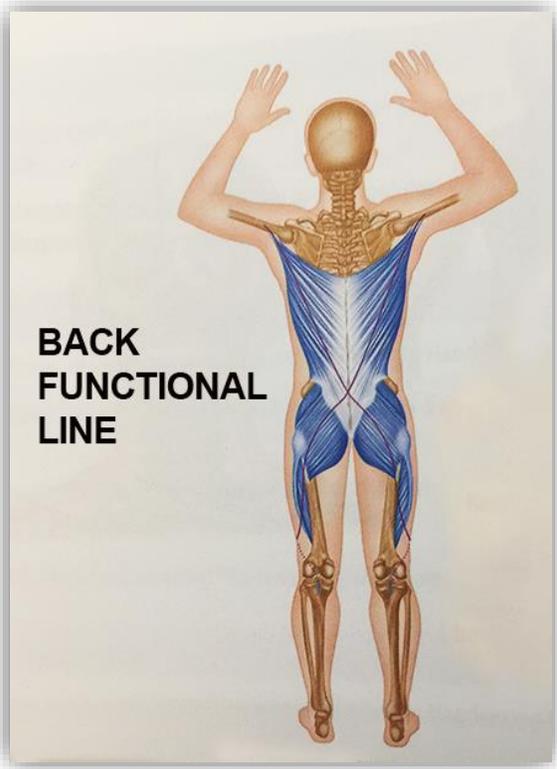


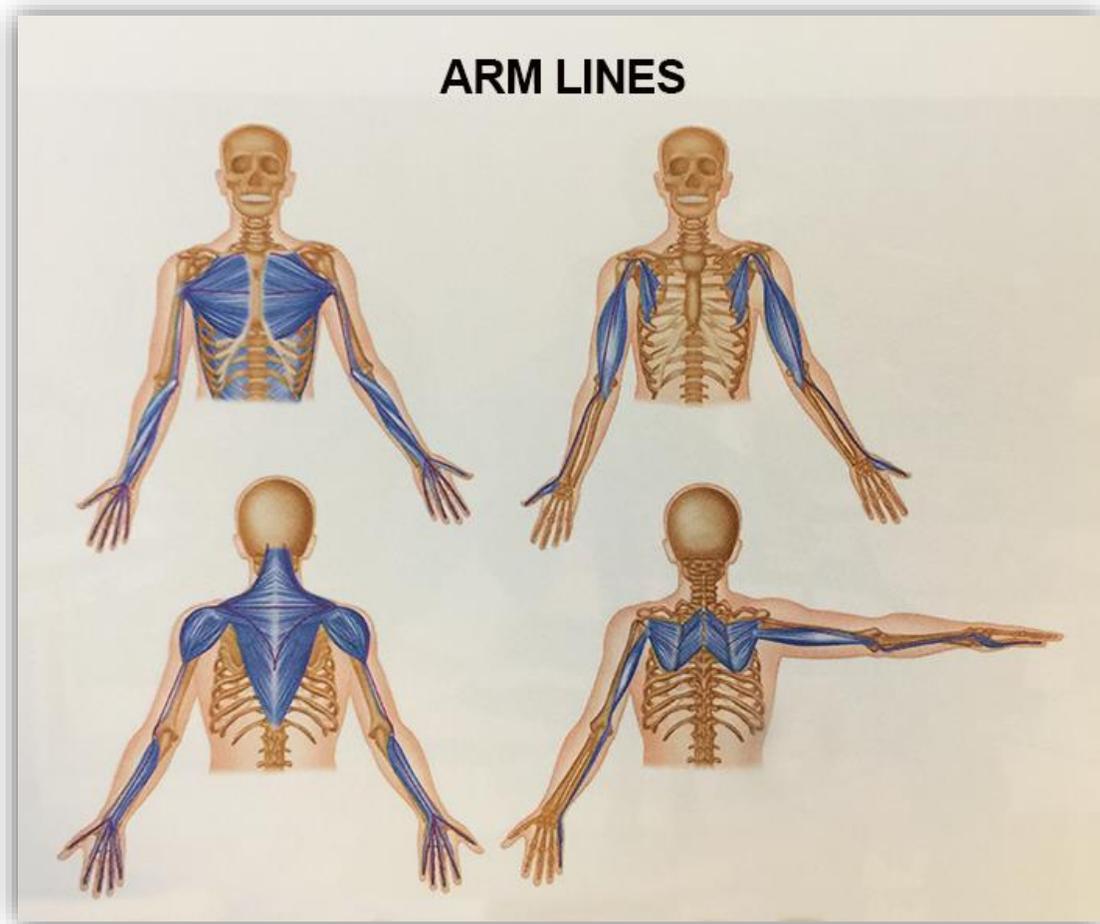
## SPIRAL LINE



## LATERAL LINE







## Conclusion

Understanding the Interstitium is in it's infancy, from today you should have a vision of how it impacts your clients when you work with them. To learn more there is free online content for flossing the Fascial planes at: [www.i-training.ca](http://www.i-training.ca). Look for a certification of ECS Training for Pilates, Yoga and Suspension Training and ESC Therapists at: [www.bcecra.ca](http://www.bcecra.ca)

BC Endocannabinoid Research Association.