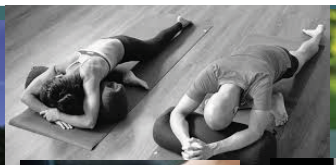
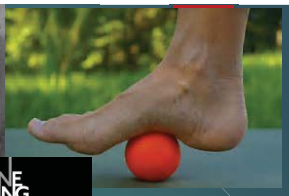
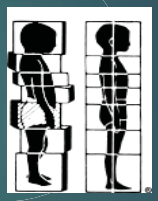
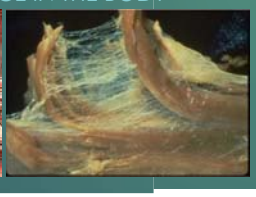






Are you Connected?”

FINDING BALANCE IN THE BODY



Sacred Self

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& Teal Blake Yoga

What is Connective Tissue?

- Take a look inside an orange.
- Connective tissue in the body is similar to what you see on the inside of an orange.
- Connective tissue separates, wraps, connects and protects the tissues of the body.

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A Once Overlooked System

- For a long time Fascia was ignored, thought to be filler in the body.
- In dissections, fascia would be discarded and disregarded
- The study of fascia is relatively new
- The first Fascia Research Congress – Boston 2007
- The field of fascia research is evolving and new discoveries are happening all the time.
- Still much to be learned about this fascinating and mysterious tissue.

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Everything is interconnected.

4 Types of tissue :

Muscle

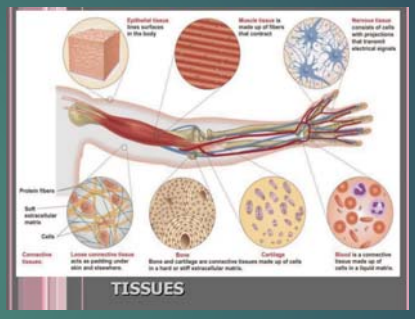
Nervous

Epithelial (Skin, Lining organs, vessels and cavities)

Connective Tissue

There is no definitive ending from one tissue to another.

➢Muscles are 30% Fascia alone.
➢Connective Tissue is the tissue that holds everything together and at the same time keeps everything apart.



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The Soup

- Our connective tissue supports and separates our skeleton, muscles, organs and skin.
- It holds together the "soup" of our tissues.
- Without it, we would end up as a puddle on the floor.
- Connective tissue takes on many forms within the body.

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The Ingredients:

- Bones
- Blood
- Cartilage
- Adipose
- Collagenous fibers
- Elastic Fibers
- Reticular Fibers
- Ground Substance
- Fibroblasts
- Nervous Tissue
- Lymph

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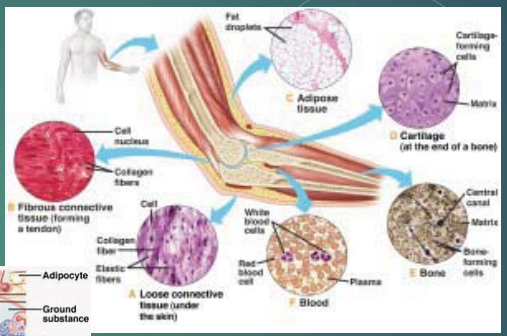

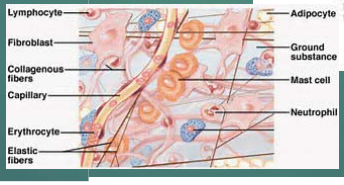

The Connective Tissue Matrix:

- **Loose Connective Tissue:** Small, loosely entwined fibres with many cells embedded. Our innermost layer of skin is made up of loose connective tissue. Holds organs in place and attached epithelial to underlying tissues
- **Dense Connective Tissue:** Thicker Fibres, fewer cells and a little ground substance. Tendons which attach muscle to bone, and ligaments which attach bone to bone are dense connective tissues.
- **Cartilage:** Flexible, strong supportive tissue provides a degree of structure and firmness. Our ears and our noses are examples of cartilage. Found as a cushion within the skeletal system. Cartilage does not contain blood vessels and receives its nutrients from synovial fluids.
- **Bones:** Made up of different types of connective tissues that includes bone tissue and Marrow. Bones contain Collagen and calcium salts. Collagen aids in resisting tension or compression. Bones have a great deal of blood in them making them quick healers.

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And So Much More…

- **Blood:** Blood plasma is the watery component of blood, it contains many dissolved substances, such as proteins and nutrients. Red and White blood cells as well as platelets are found within it's liquid matrix.
- **Lymph:** A clear fluid and consists of various cells, some of which include lymphocytes a type of white blood cell.
- **Adipose Tissue:** or simply body fat. Its main role is to store energy in the form of lipids, although it also cushions and insulates the body. In recent years, it has been recognized as a major endocrine organ, as it produces hormones such as leptin, estrogen, resistin, and the cytokine TNF α.

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And More…

- **Collagenous fibers:** Collagen is a hard insoluble protein that is stronger than steel and able to hold 10,000x its own weight! Collagen fibres are what give tissues their tensile strength. They are the least elastic fibres and resist stretching but can bend and slide along each other.
- **Elastic Fibers:** A highly elastic protein that allows many tissues in the body to return to their original shape after being stretched. Bundles of elastin are like rubber bands and can stretch up to 1.5x their length and snap back to original shape.
- **Reticular Fibers:** Secret materials that make a very thin fibre. These fibres form a mesh and help to support our internal organs
- **Nervous Tissue:** The brain and spinal cord of the central **nervous** system (CNS), and the branching peripheral nerves of the peripheral **nervous** system (PNS), which regulates and controls bodily functions and activity.

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And Still More…

- **Ground Substance:** A thick transparent fluid that surrounds all the cells in the body. Ground substances are sometimes referred to as cement substances, lubricate collagen, elastin and muscle fibres allowing them to slide over one another. Made of 60-70% water, has the ability to go from a jelly like state to a liquid state.
- **Fibroblast:** The most abundant cell in connective tissue proper (loose and dense connective tissue). One of the main functions of fibroblasts is to produce the extracellular matrix and collagen needed for our tissues. Fibroblasts secrete Hyaluronic Acid (HA) which aides in lubricating our joints.
- **Superficial Fascia:** Thin layer of loose fatty tissue found directly under the skin. Stores fat for insulation and cushioning.
- **Deep Fascia:** Denser and tougher significantly less elastic in consistency than superficial fascia. Covers and permeates the bones, muscles, nerves and blood vessels of the body.

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Connective tissue

The non-cellular matrix determines the properties and appearance of a connective tissue.

- Matrix has two major components – fibres and 'ground substance'.
- Fibres are threadlike, as the name suggests. Since they have this distinct form, they are also called the 'formed elements' of the matrix.
- The ground substance is 'formless' or amorphous, jelly-like, and fills all the space which is not occupied by cells and fibres in a connective tissue.
- Watch/Listen to "The Fuzz" video.

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Fascia

- Myofascia Is a 3D Matrix Fascia forms a whole-body, continuous three-dimensional matrix of structural support around our organs, muscles, joints, bones and nerve fibers.
- This multidirectional, multidimensional fascial arrangement also allows us to move in multiple directions (Myers 2001; Huijing 2003; Stecco 2009).

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Connective Tissue Disorders

- Chronic inflammatory **autoimmune disorders** affecting the **connective tissues**.
- **Autoimmune connective tissue disorder**: any disease that has the connective tissues of the body as a target of pathology.
- These tissues form a framework, or matrix, for the body, and are composed of two major structural protein molecules: collagen and elastin.
- There are many different types of collagen protein in each of the body's tissues. Elastin has the capability of stretching and returning to its original length—like a spring or rubber band.
- Elastin is the major component of ligaments and skin. In patients with connective tissue disease, it is common for collagen and elastin to become injured by inflammation. Many connective tissue diseases feature abnormal immune system activity with inflammation in tissues as a result of an immune system that is directed against one's own body tissues.
- Autoimmune diseases such as **lupus**, **scleroderma**, **polymyositis**, **vasculitis**, **rheumatoid arthritis**, **Sjogren's syndrome** and **fibromyalgia** can all be involved in UCTD. UCTD is the very early stages of connective tissue disease and once it develops fully it can be further identified to it's **autoimmune disease** source.

Potentially Our Richest Sensory Organ

- The potential of the fascial network as one of our richest sensory organs.
- Given the right stature, the overall mass and volume may be bigger than that of the fascial body.
- However, the surface area of the many million endomysial sacs and other membranous pockets endows this network with a total surface area that by far surpasses that of the skin or any other body tissue.
- Interestingly, compared with muscular tissue's innervation with muscle spindles, the fascial network possesses a ten times higher quantity of sensory nerve receptors than its red muscular counterpart (van der Wal 2009).

Mood Influences Fascia

- Mood Influences Fascia
- In their book *The Endless Web: Fascial Anatomy and Physical Reality* (North Atlantic 1996), R. Louis Shultz and Rosemary Feitis discuss how our emotions are stored within the body, including the connective tissue.
- "The fascia is the emotional body. . . . Ideally, feelings are felt in the total body—emotions travel through the fascial web.
- We then interpret the physiological sensation as anger, affection, love, interest and so forth. . . . The reason your neck can't straighten and lengthen may be because of the shock of being continually bullied in childhood.
- Physical work will only partially open that problem unless there is recognition that there may be an emotional origin."
- Using this concept, develop a holistic approach to understanding posture and movement—an approach that sees them, not just as physical, but as emotional and psychological as well.
- Fascia may become stiffer and less compliant when someone is depressed, anxious and fearful (Shultz & Feitis 1996; Lowe 1989).

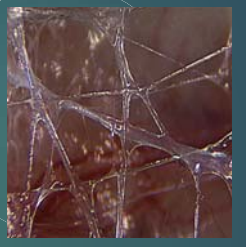
Plastic vs. Elastic

- Like tendons, ligaments that are stretched suddenly and farther than about four percent will be damaged and tear or remain stretched.
- In this regard ligaments and tendons are said to be plastic rather than elastic. Elastic materials, like our muscles or an elastic band, can be stretched considerably, and once stretched they will still revert back to their original shape.
- Plastic materials, like our ligaments or plasticine, if stretched will remain in the new shape. Once a ligament or tendon is stretched, it will not recover its original shape or size on its own.
- However, the body may repair it over time.

For these reasons, the way in which we exercise plastic tissues must be different from the way we exercise elastic tissues.

Repetition Is Good and Bad

- Davis's law states that soft tissue, a form of fascia, will remodel itself (becoming stiffer and denser) along lines of stress (Clark, Lucett & Corn 2008).
- This can have short-term benefits and long-term consequences. When we practice a movement repetitively, soft tissue will remodel itself in the direction of the desired movement so that the tissue becomes stronger at dealing with the forces in that particular direction.
- Long-term repetition can make fascia stiffer along the line of stress, but weaker in other directions, resulting in a possible higher frequency of tears in the fascia itself or immobility in the surrounding joints when moving in different directions.
- The same can be said of repetitive non-movement, such as sitting or standing, for long periods across days, months and years.



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Nurturing Healthy Connective Tissue

- **Good Healthy Food Sources**
- **Movement**
- **Healthy stress/Rest**
- **Yin Yoga**
- **Rolfing**
- **Chiropractic care and Graston**
- **Acupuncture and Gua Sha**
- **Deep Tissue Massage, Myofascial Release Techniques, Trigger point**
- **EFT (Emotional Freedom Techniques- Tapping)**
- **Supplements: Omega-3 fatty acids, Glucosamine, Vitamin D, Collagen.**

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Creating Healthy Systems From Within

Connective Tissue Repair Protocol

- Eat a diet high in good **quality protein** (ideally organic grass fed) meats, eggs and bone broths.)
- Eat **loads of veggies**, unpasteurised fermented veggies, kombucha (a fermented tea that makes the glucuronic detox pathway more effective)
- Eat **loads of berries, fruit, healthy fats** (fish, grass fed beef, extra virgin cold pressed flax oil / meal, eggs, avocado, nuts, seeds, coconut, butter, ghee, cold pressed EV olive oil, skate liver oil)
- A diet **low in grains and sugar** is the way to **eat your connective tissue healthy.**
- Keep a clean (**low toxin**) environment, clean drinking water
- Have plenty of **good quality sleep** and **keep stress levels low**.
- **Chiropractic**, **Acupuncture** and **Massage**.
- **Meditation**, **Yoga** and **Movement**
- **Detoxification**

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Myofascial Release Techniques:

What is Myofascial Release?

- Myofascial release is a form of manual therapy to stretch the fascia. The purpose is to relax these tissues or elongate them to restore tissue mobility.
- Injury, immobilization, disease and aging can result in fascial adhesions or restrictions, resulting in inefficient movement patterns, altered alignment, faulty mechanics and pain syndromes.

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Resources

The fuzz video

- https://www.youtube.com/watch?v=_FtSP-tkSug

- https://musculoskeletalkey.com/fascia-as-an-organ-of-communication/
- https://www.anatomytrains.com/fascia/tensegrity/
- http://www.yinyoga.com/index.php

- Beacon Hill Chiropractic and Massage
- www.getbetterfaster.ca
- sacredselfyoga@gmail.com
- Tealblakeyoga