

FASCIAL DYSFUNCTION

Manual Therapy Approaches

Global Postural Re-education®: Soucharad method

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RPG STANDS FOR GLOBAL POSTURAL REEDUCATION
SO IN ENGLISH SPEAKING COUNTRIES WE CAN REFER
TO IT WITH G.P.R. OR R.P.G. INDIFFERENTLY.

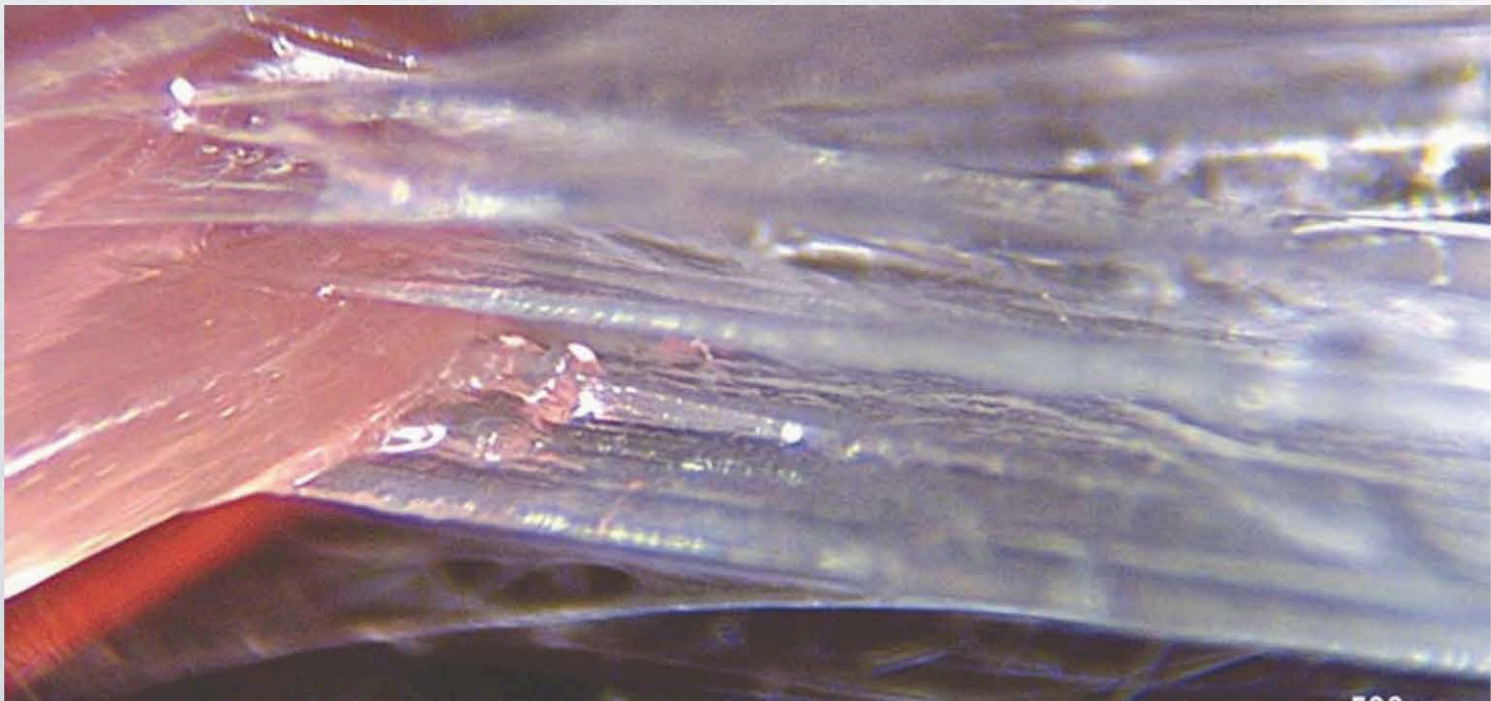
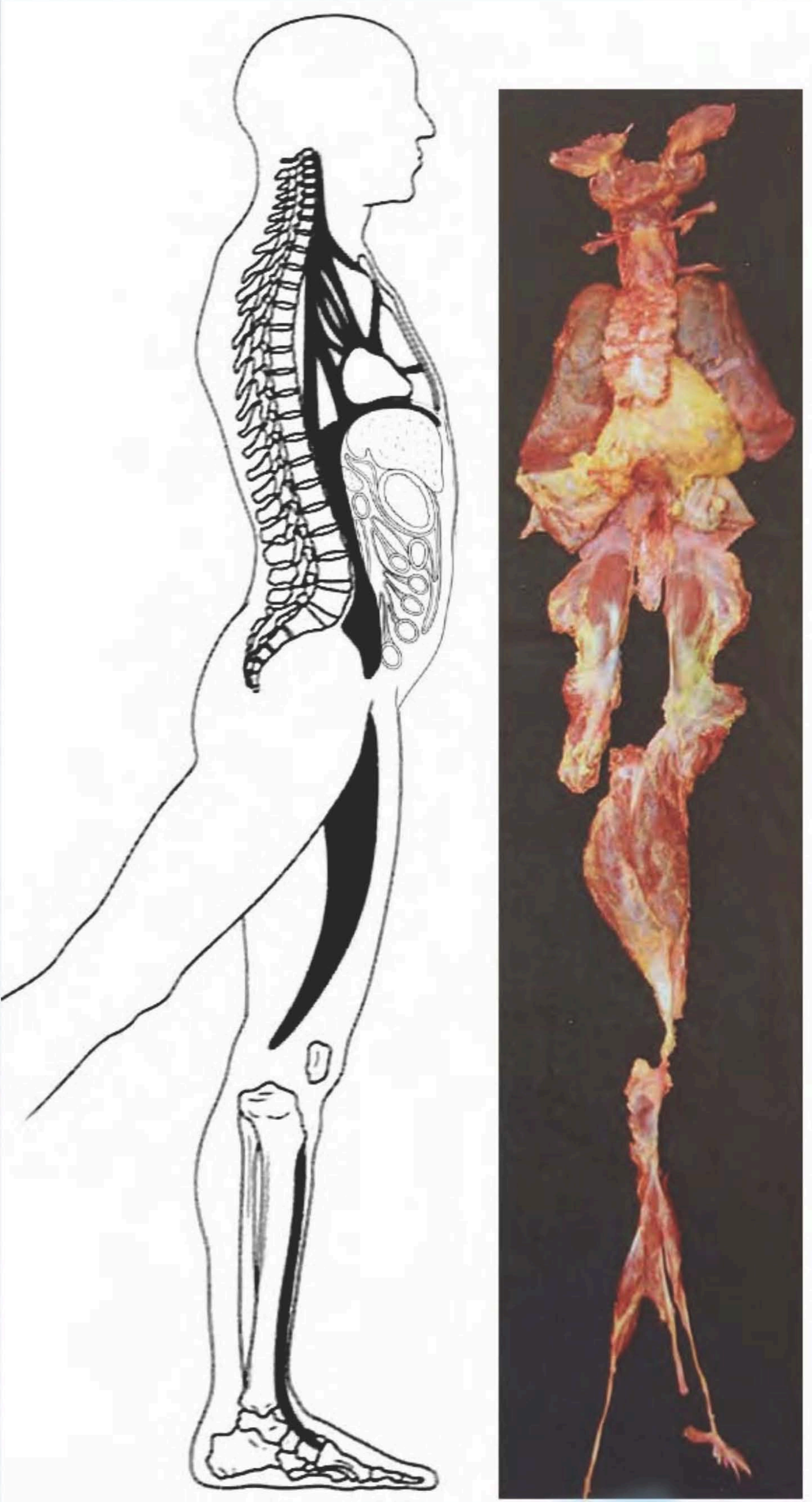
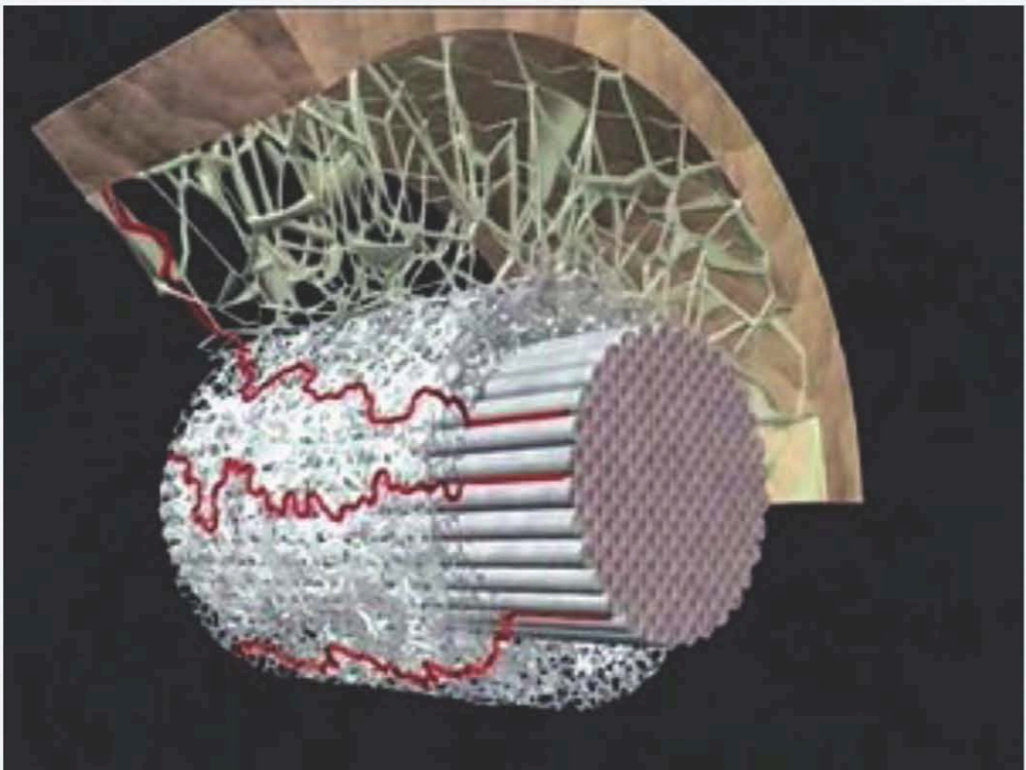
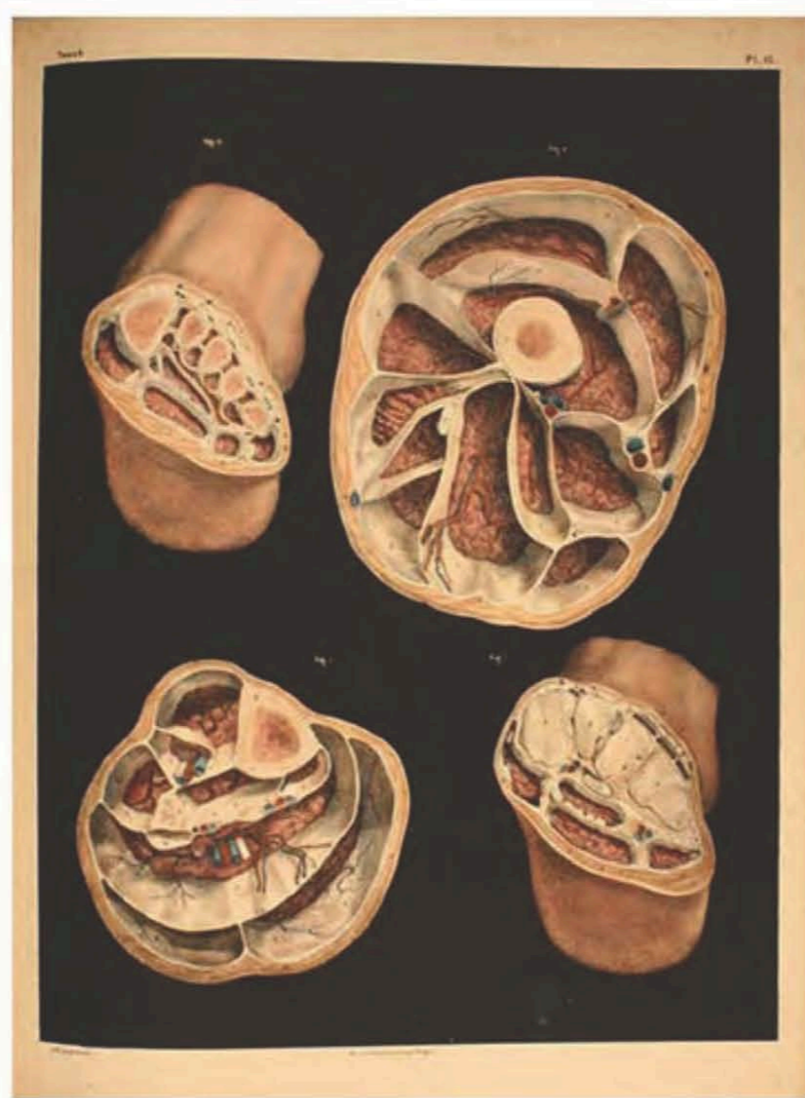
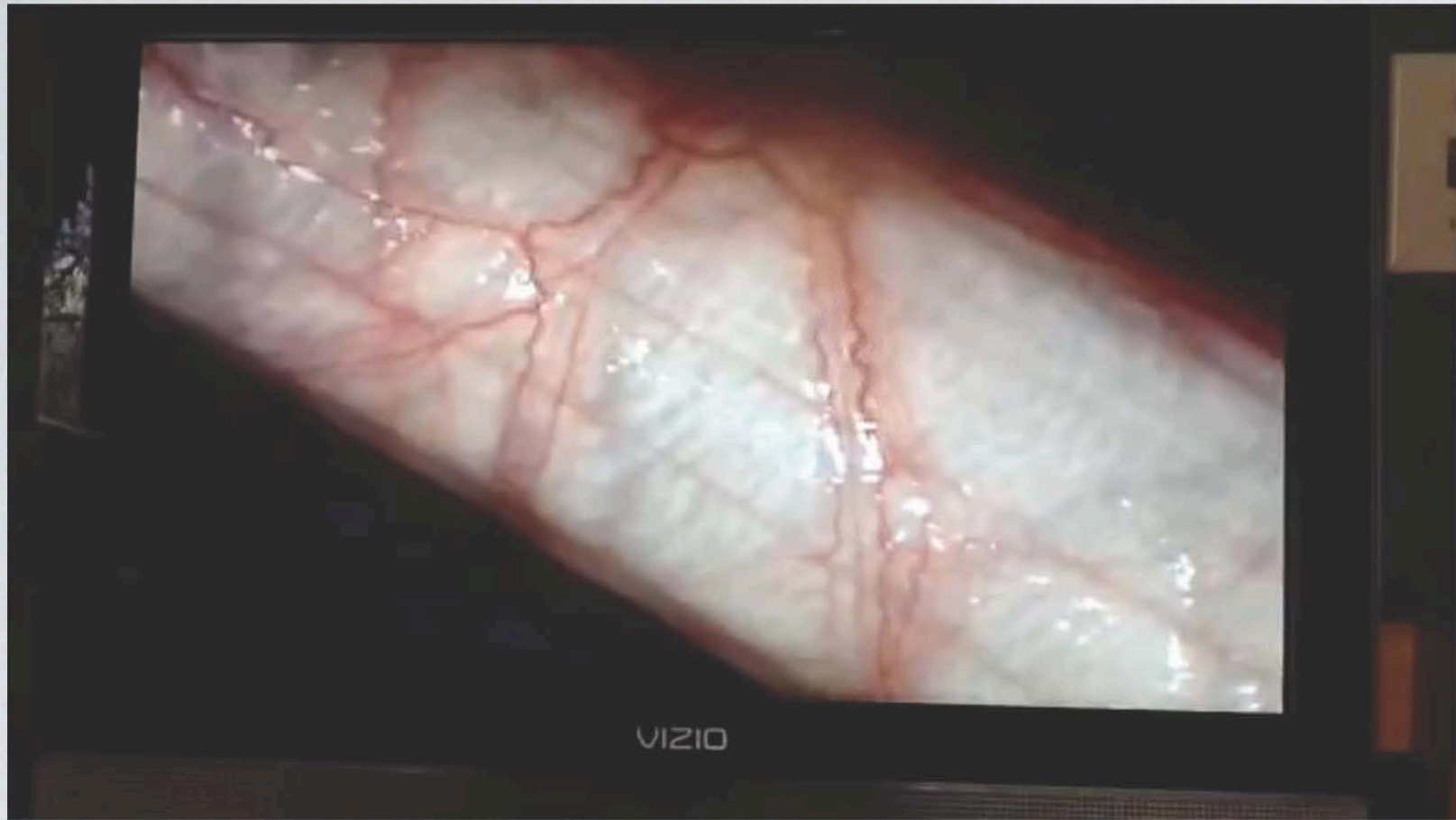
GPR was born more than 38 years ago (in 1980 was released the first book) in France and is now taught in more than 18 countries in the world with more that 22.000 Physical therapist actually formed (the technique is just for physio). In south America we also have two big Foundations. In the past 4 years, as the scientific evidences and clinical studies become to be more represented (now we have about 75 publications and several are RCT) the interest around it is growing.



OVERVIEW

- The primary objective of **GPR** is the rebalancing of the relationship between altered structures, by eliminating identified asymmetric tensions and/or myofascial restrictions that negatively effect and modify macroscopic structural balance.
- in order to achieve and maintain postural balance, specific exercises known as **'therapeutic postures'** are used.
- therapeutic postures involve a precise use of **contractions, stretch reflexes, light and controlled manual tractions and sustained elongations**. Recent studies confirm the potential for this modulated passive/active approach to lead to a durable therapeutic outcome (**Pillastrini et al. 2016, De Deyne 2001**).
- Therapeutic postures are designed to actively permit **micro-adjustments (articular corrections and tissue tension normalization)** with an objective of global rebalancing.

Fascia ?



Fascia today

Padua, Italy, University 2018



Cells

Extracellular Matrix

Nerve Elements

Fibroblasts

Myofibroblasts

Fasciocytes

Telocytes

PubMed Search form

The fasciocytes: A new cell devoted to fascial gliding regulation.
 Stecco C, et al. Clin Anat. 2018.

Authors
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 Clin Anat. 2018 Jul;31(5):667-676. doi: 10.1002/ca.23072. Epub 2018 Apr 14.

Fibers

Ha and Water

Collagen Fibers Types I & III

Elastin and Fibrillin

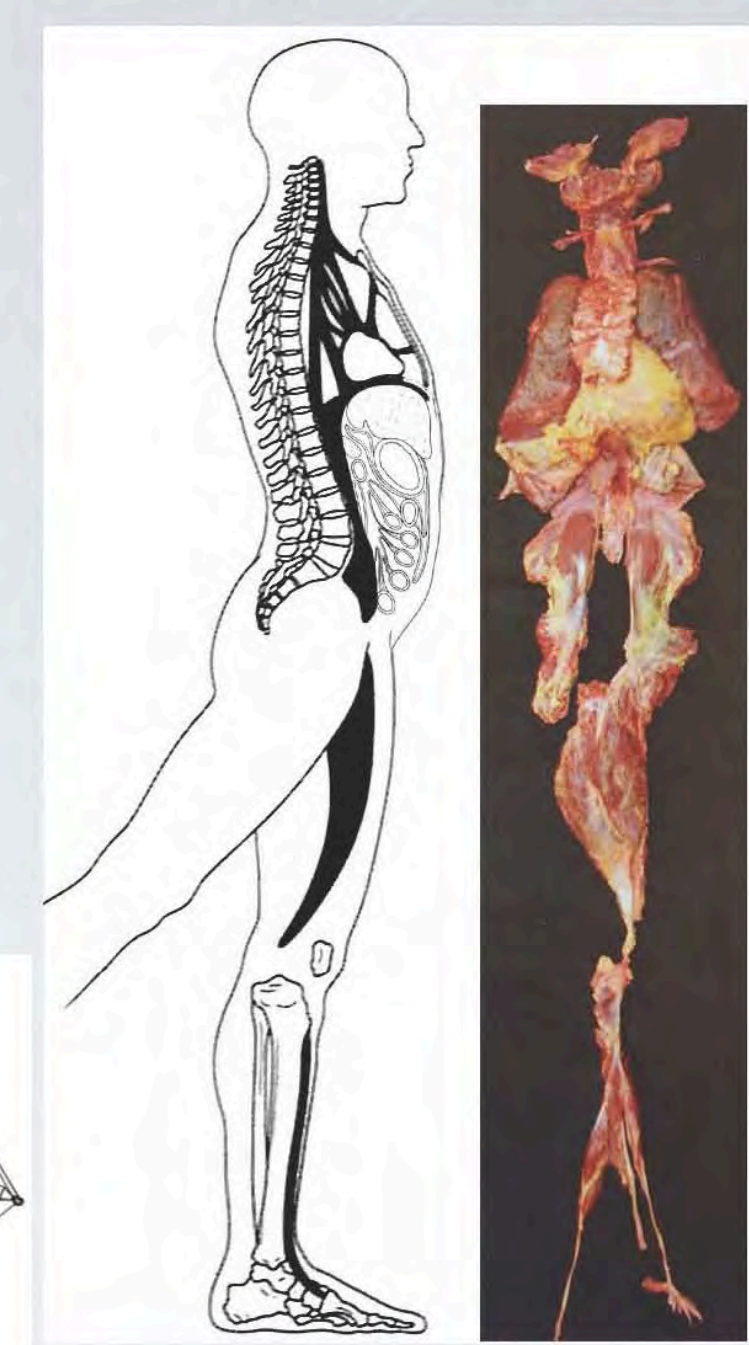
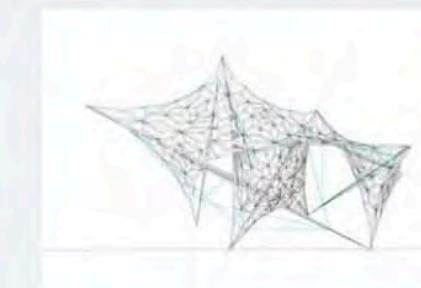
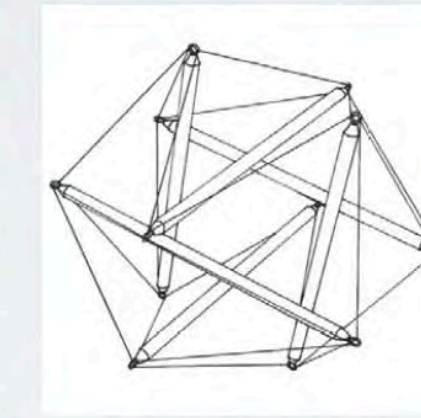
Free nerve endings

Pacini and Ruffini

Muscle Spindles and Golgy

GLOBALITY

- Observing how both **deep** and superficial fascial and myofascial tissue is distributed **highlights the necessity for a global approach** (Myers 2001).
- Frameworks such as the thoracolumbar fascia, reciprocally tensioned chain-organized myofascial structures, make globality a necessary approach and a **coherent** clinical application of the tensegrity concept.
- Muscular chains were described in 1946 by Hermann Kabat and developed further in 1980 by Professor Souchart, elaborated further into so-called myofascial lines (Kabat 1959, Souchart 1981, Myers 2001).
- When dealing with postural functions, it is now commonly accepted how it is impossible to correct a spinal segment, without causing compensations on other tracts.



Therapeutic Postures **Static Correction:** WHY?

- Chaudhry et al. (2007) observed that to produce a deep tissue modification there **should not** be an increment over time on the degree of correction force, before going to the new barrier .
- Hicks et al. (2012) showed that a **sustained and moderate correction stretch** stimulates fibroblasts to produce **interleukin 6** that promotes muscular tissue repair and **anti-inflammatory processes** (see also Cao et al. 2013).
- Dittmore et al. (2016) and Humphrey et al. (2014) indicate that unbalanced tension causes collagen fibrils to warp and buckle in response to overloading, possibly leading to a fibrosis and/or dysfunction. Static active postures are an approach to balance the tissue involved in fascial restrictions in a precise way, reducing the risk of side effects due to unbalanced intra and extracellular tension.
- **Thixotropic Effect:** If we apply a force that is too rapid, the response will be an increased tissue resistance (visco-elastic effect time/force dependant).



• In GPR therapeutic postures, a light force of correction is applied and **maintained for as long as required** for the superficial and especially deep myofascial tissue to adapt.

- Maintained light corrections furthermore respect the here-simplified concept of 'creep', the deformation of a tissue under a maintained load:
$$\frac{\text{Elongation Force Applied}}{\text{Elasticity Coefficient}} \times \text{Time} = \text{Elongation Achieved}$$
- Creep concept suggests that we can apply low correction forces and increase the time, especially if the tissue is more resistant (stiff, thus with low elasticity coefficient) to achieve the same or even more elongation, without the risk of tissue trauma due to higher forces applied.

SLOW & GENTLE PROGRESSION: WHY ?

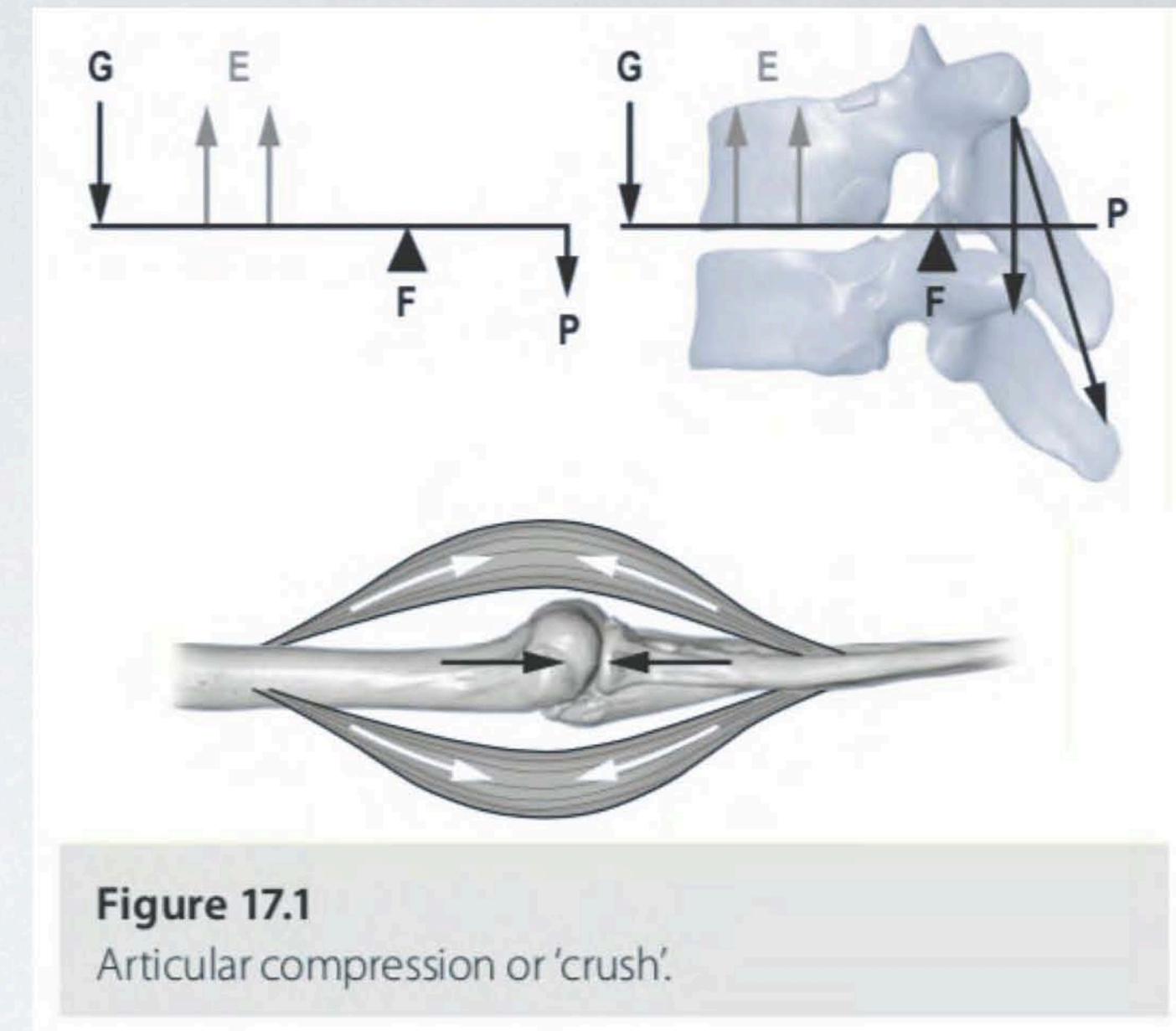
- Fibroblasts modify the ECM in response to mechanical load – such as stretching – and that in order to **increase their collagenase production they need to be elongated to at least 10%** of their elasticity. **Biochemical effect.**
- In **2005 Langevin**: moderate intensity stretching (25% of elasticity of the tissue) delivers an **augmentation of the perimeter of the fibroblast cells, resulting in a relaxation of the connective tissue** (confirmed again by Langevin in **2013**).
- In **2009 Fourie**: stretch for every connective tissue **should not exceed 20% of the elasticity of the tissue**, and proclaimed the ideal value to be between 5% and 6% (see also **Standley 2007**).
- More recent and specific tendon-related studies suggest that **maintaining** the degree of load intensity at between 4% and 8% is the ideal (**Cao et al. 2015, Wang et al. 2012**).



RPG: Slow & Controlled progression, what I called the “**micro-progressive approach**” gives the right stimulus to **modify the Extra Cellular Matrix and have a Biochemical effect**

ARTICULAR “CRUSH”

- An important concept for GPR is the articular compression component which **results from myofascial tissue restriction**. This includes, but is not limited to, muscles, vascular, neural systems and connective tissue in general.
- From a purely mechanical point of view, in a balanced system, the pressure on the fulcrum ('F' or force's application point) rises with the increase of both weight force ('G', the gravity force) and myofascial restriction, contraction or shortening ('P', the force applied).
- Articular **compression or 'crush' increases** in case of co-contraction, shortening or **stiffness of any of those myofascial structures**, especially if they 'bridge' a joint.
- In adults, this may evolve into early joint degeneration, pain, intervertebral disc and facet joint erosion (**Hodge et al. 1986, Schmitt & Rudolph 2007, Hublely- Kozey et al. 2008, Zeni et al. 2010**).



• ALWAYS articular DE-Compression before ANY correction

ACTIVE WORK: WHY ?

- In the extracellular matrix (ECM) there are as many as **10 times** the number of receptors present in muscles (van der Wal 2009, Schleip 2003).
- fascia can arguably be considered to be an extremely **active tissue**, with not only biomechanical, but also functional and neurologic roles (First Slide).
- We may consider it a neuromechanical tissue (Moore & Hutton 1980).
- To achieve a long-term result, it is necessary to inform the central nervous system, making **active work more important than passive approaches** (Siegel & Saprú 2010).
- **Active stimulation can also directly promote a constant information flow to the central nervous system** by the spinocerebellar tract (Bosco & Poppele 2001).



• During GPR Sessions **Active work** is achieved in several ways (autocorrections, isometric, excentric, etc)

2018 GPR THERAPEUTIC EFFECTS

