

ADVANCED BIOLOGIC INJECTIONS FOR LBP

- **CONDITIONS TREATED**
 - Lumbar disc herniation
 - Lumbar degenerative disc disease
 - Lumbar spondylosis/facet arthropathy
 - Lumbar spinal stenosis

How do we treat back pain?

- Currently the commonly accepted treatments for low back pain are PT, exercise, acupuncture, medications, steroid injections, nerve ablations, surgery

Why are these treatments so often ineffective?

- The current treatment model assumes that pain is focal, that is coming from only one or a limited number of isolated “pain generators” that are amenable to treatments
- At the present time we treat back pain by trying to resolve symptoms but not get to the underlying cause of the pain.

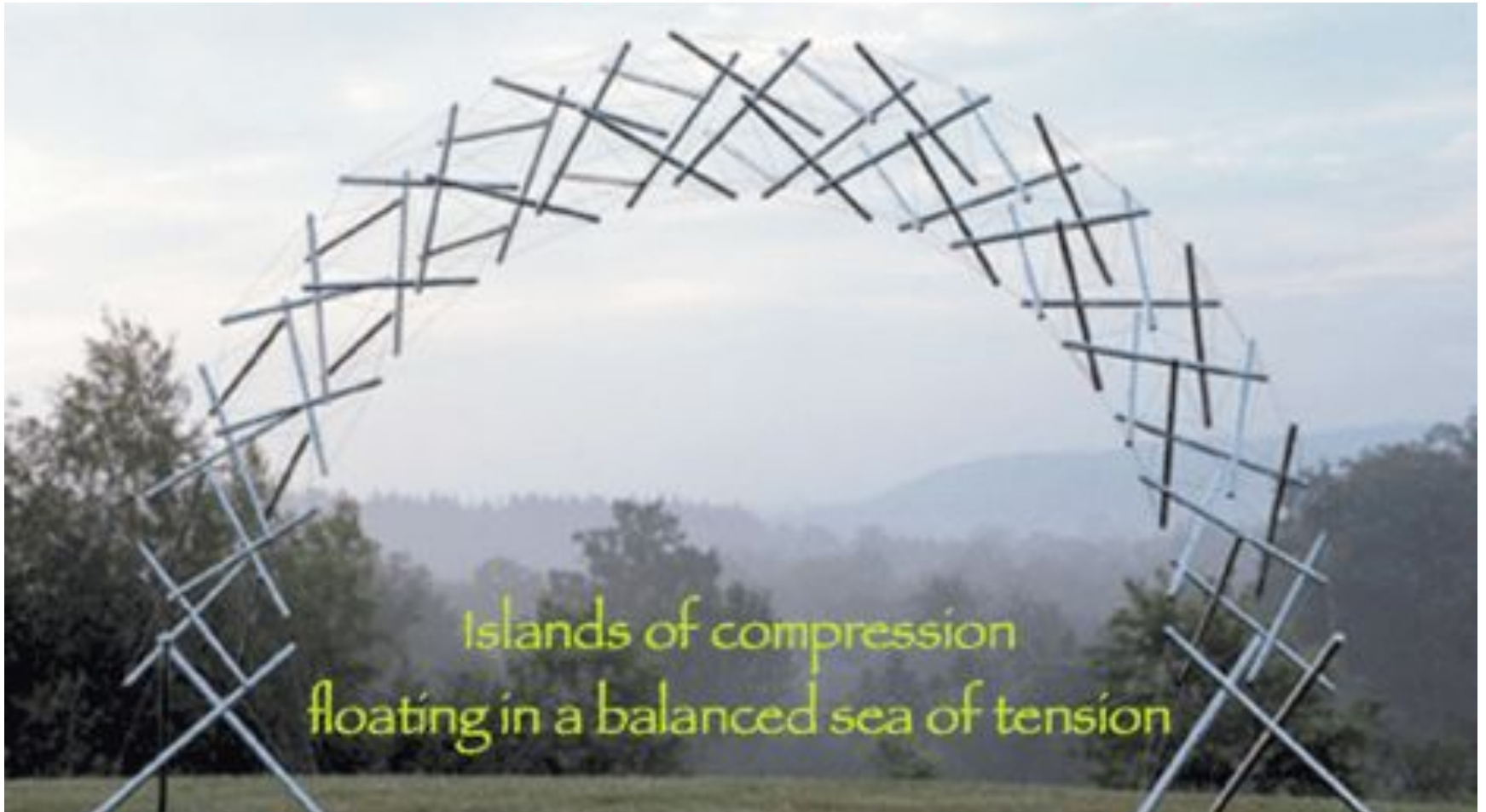
A NEW PARADIGM

- WE ARE SEEING A PARADIGM SHIFT AWAY FROM “FINDING THE SINGLE PAIN GENERATOR” TO LOOKING AT THE SPINE AS A FUNCTIONAL UNIT THAT NEEDS TO WORK TOGETHER
- THIS NEW PARADIGM IS THE BIOTENSEGRITY MODEL

TENSEGRITY--

- An engineering concept
- Building three-dimensional structures consisting of contiguous members that are under tension and other members under compression that are not contiguous
- Very strong and stable as long as tension is maintained

Tensegrity structures



BIOTENSEGRITY

- Many biological structures are actually tensegrity units, at the cellular and gross tissue/structural level
 - The spine has been recognized to be a biotensegrity unit
 - It joins with the pelvis and ultimately with the appendicular skeleton with fascia, muscles, and ligaments serving as the requisite compression and tension elements.

Why back pain?

- Chronic back pain develops when we lose biotensegrity in the spine
 - Loss of the tension that holds the structure together
 - Loosening of the ligaments

Why do we develop loss of biotensegrity

- Genetics
- Overuse with poor biomechanics
- Infections
- Smoking
- Congenital or acquired deformity

WHY DO WE DEVELOP BACK PAIN

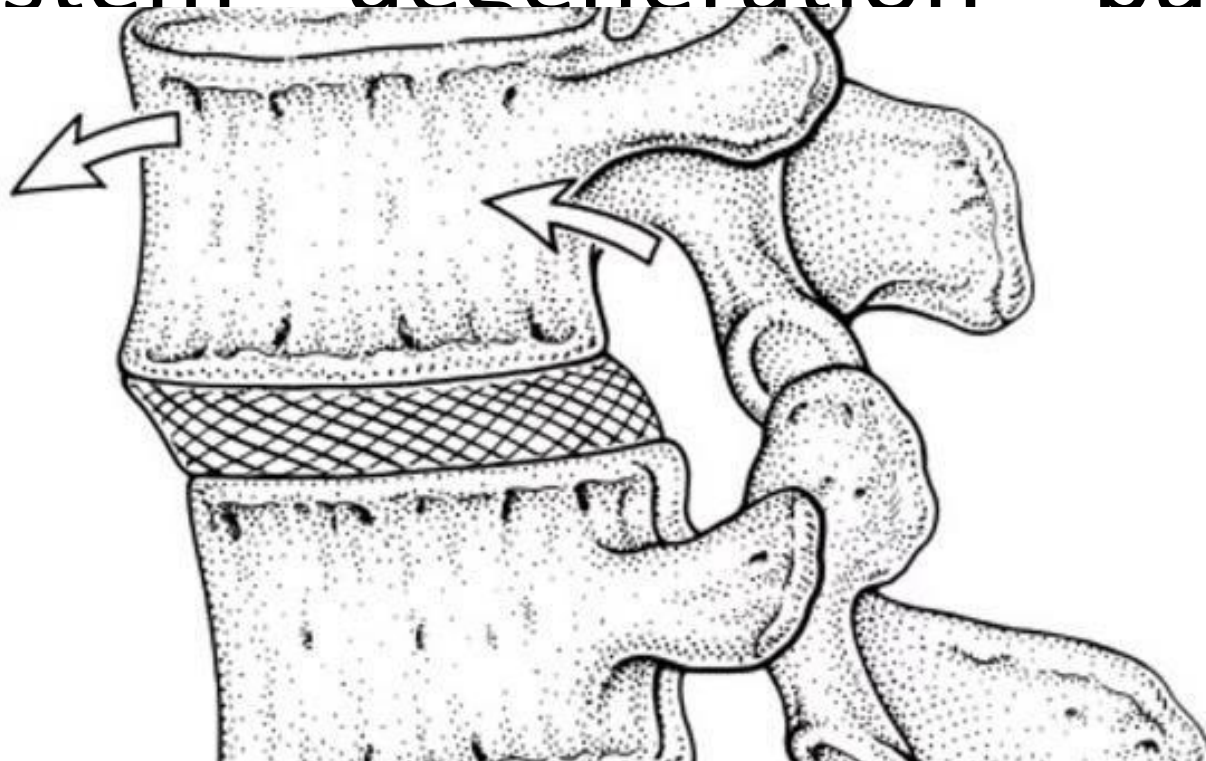
- LOOSENING OF THE STRUCTURES LEADS TO ABNORMAL MOVEMENT, WEAR AND TEAR, BULGING OF DISCS, THEN DEGENERATION, BONE SPURS, STENOSIS AND CHRONIC PAIN AND DYSFUNCTION OF THE SPINE

Chicken or the egg?

- Are the disc bulges, arthritic changes, stenotic areas that we see on MRI and are told are the cause of the back pain really the cause or the effect???

Ligament

laxity—movement—weakening of
the biosensory
system—degeneration---pain



What can we do

- Strengthen and stabilize all of the points where biotensegrity has weakened or broken down
- Treat the spine as a functional unit, not just a collection of isolated potential “pain generators”

HOW CAN WE DO THIS

- MUST IDENTIFY THE “WEAK LINKS” IN THE BIOTENSEGRITY STRUCTURE
 - LIGAMENTS
 - MUSCLES
 - JOINTS
 - NERVES
 - DISCS

How do we do this

- Inject potent healing/strengthening substances into these areas
- These substances can not only strengthen and heal the lax ligaments but improve the micro-environment around the tissues, and lessen the inflammatory changes that perpetuate this weakening

TREATMENT OPTIONS

- PROLOTHERAPY – DEXTROSE SOLUTIONS
- PLATELET RICH PLASMA
- STEM CELLS

GOALS OF TREATMENT

- RESTORE STABILITY
- REDUCE INFLAMMATION ESPECIALLY AROUND NERVES
- RESTORE NORMAL FUNCTION

GOALS OF TREATMENT

- No tissue destruction
- Repair, regenerate and restore tissues
- Minimally invasive
- Safe

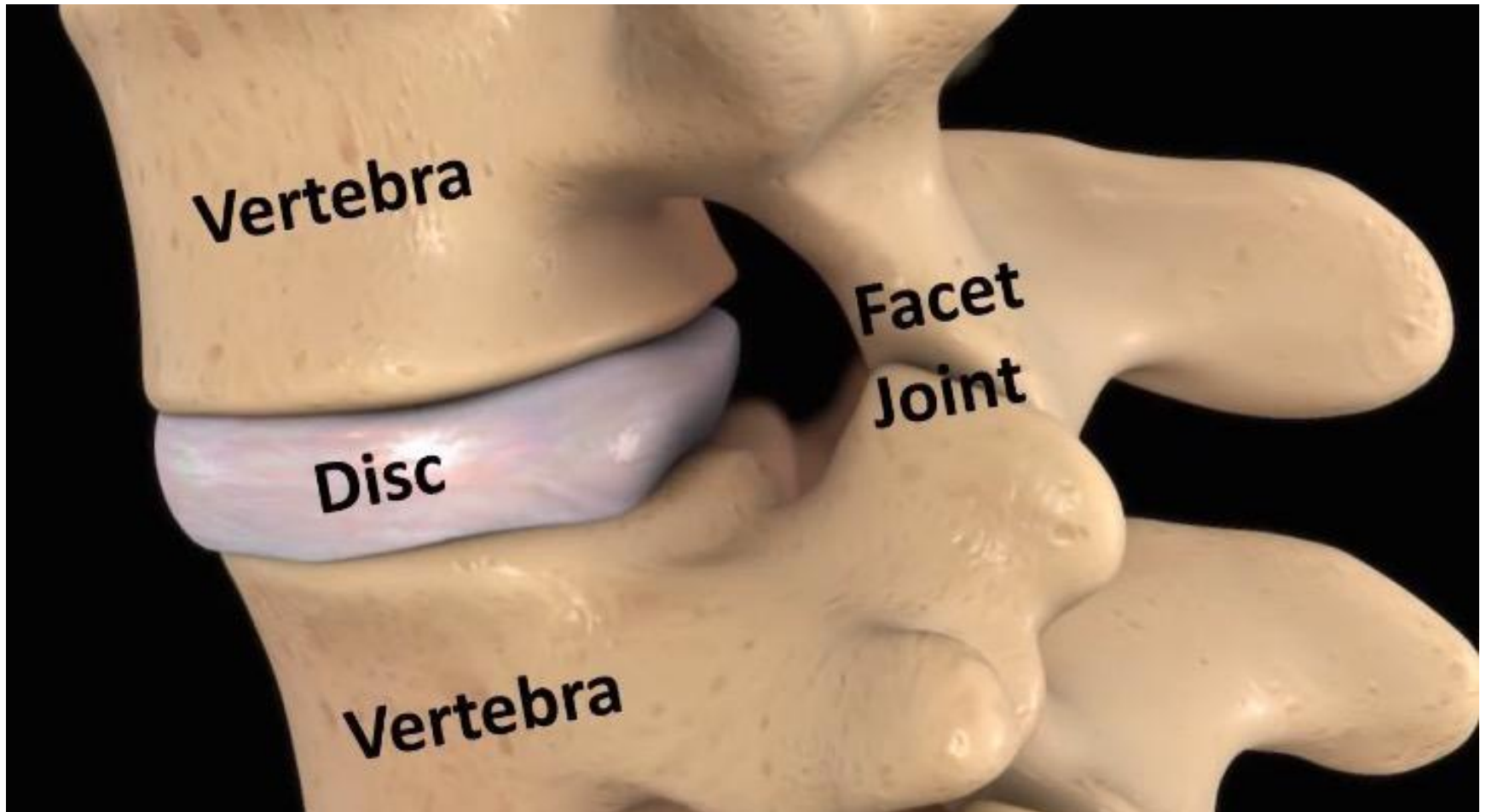


What are our treatment targets

- Ligaments
 - Supraspinous
 - Interspinous
 - Ilio-lumbar
 - transverse
 - Sacral
- Muscles
 - Multifidi
- Joints
 - Facets
 - Discs

Model of spinal segment

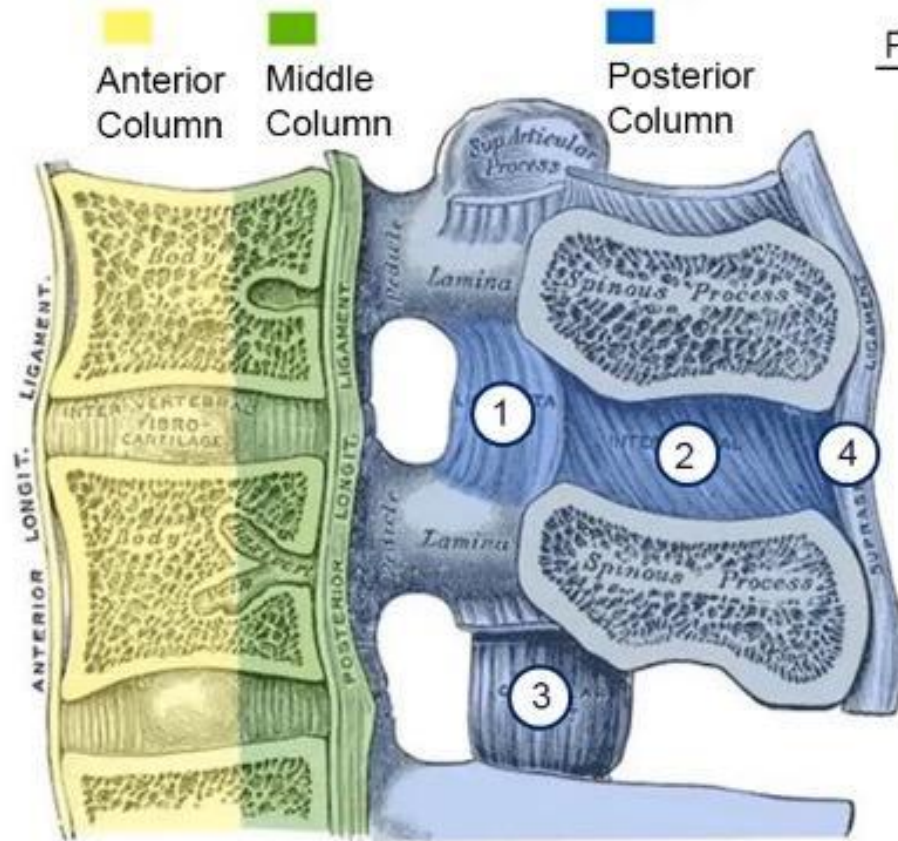
SIDE VIEW



Spinal segment—side view

major cause of spinal instability is loose ligaments, disc degeneration, and weak stabilizing muscles.

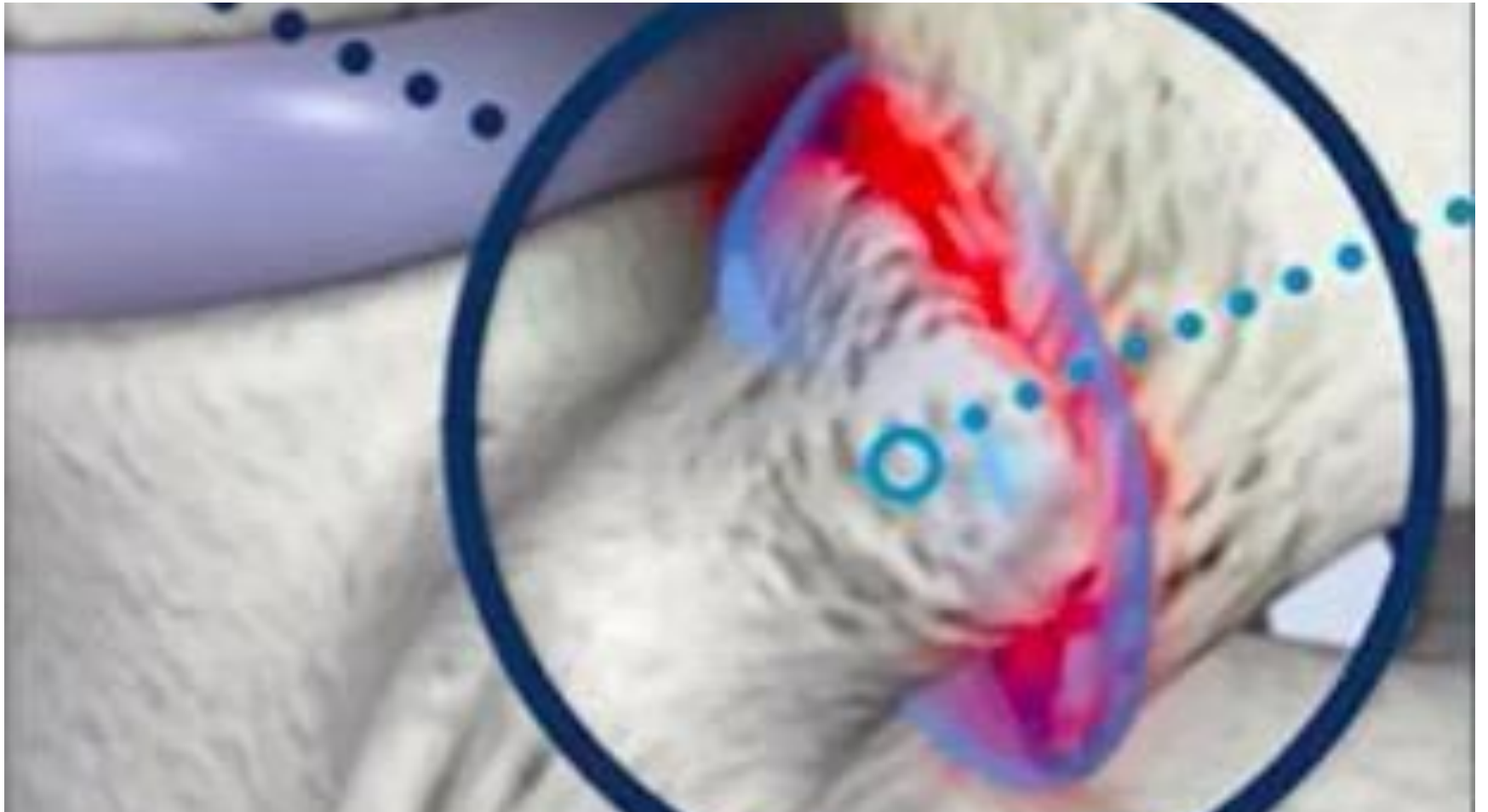
front



Posterior Ligamentous C

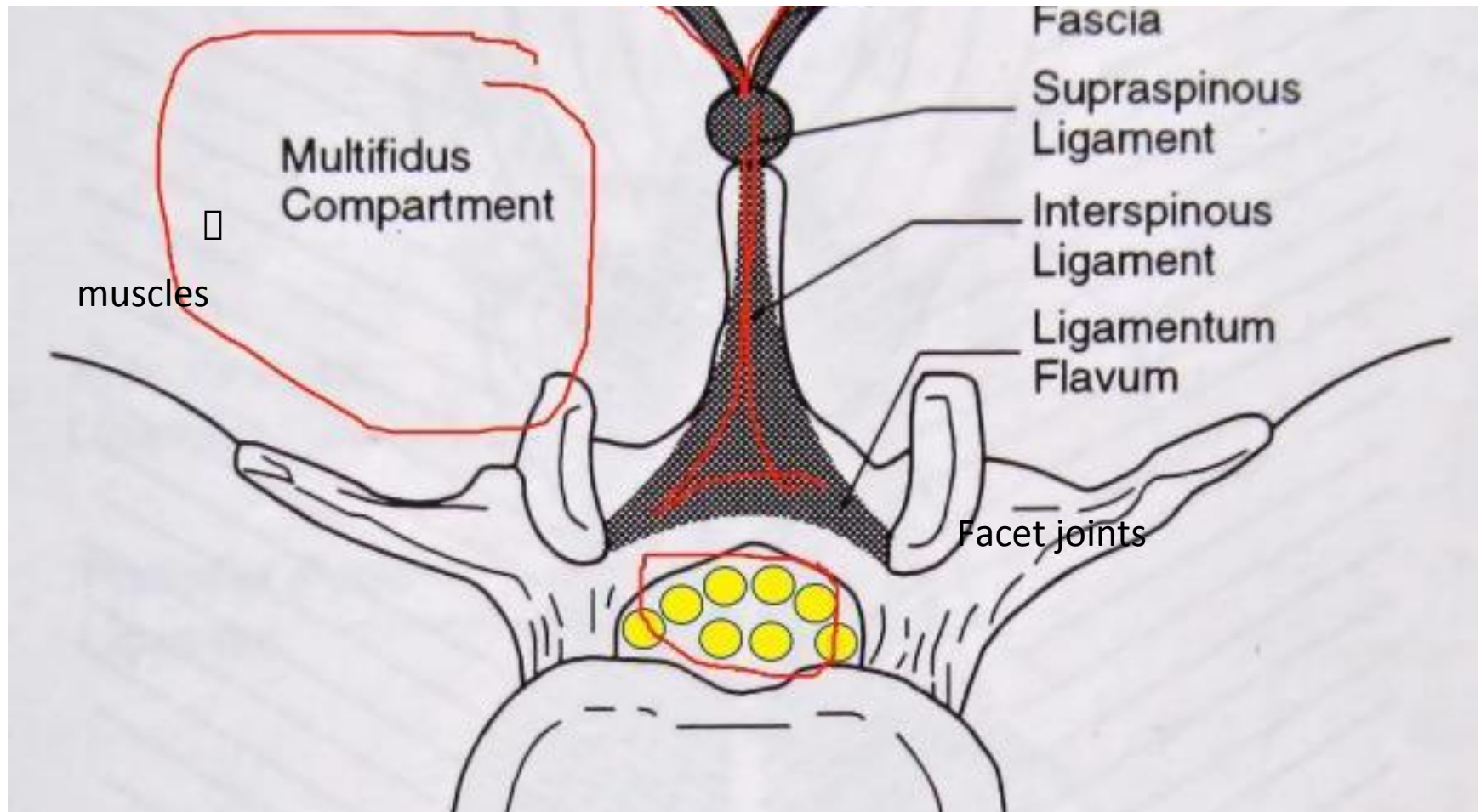
- ① Ligamentum flavum
- ② Interspinous ligament
- ③ Facet capsule
- ④ Supraspinous ligament

back



Target the stabilizing muscles and joints

Cross section view



Spine connects to the pelvis!

- Need to stabilize the connection between the spine and the pelvis
 - The lumbosacral area
 - Iliolumbar ligaments
 - SI ligaments and joint

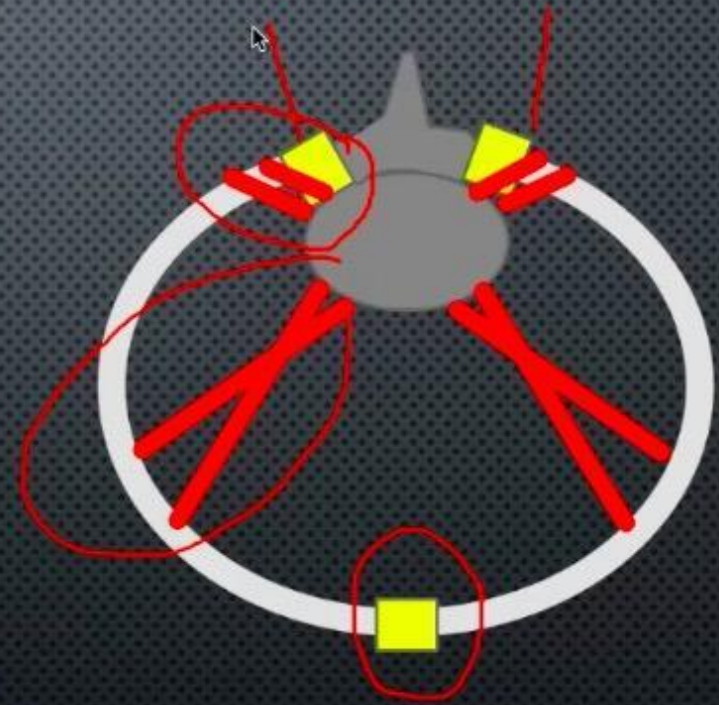
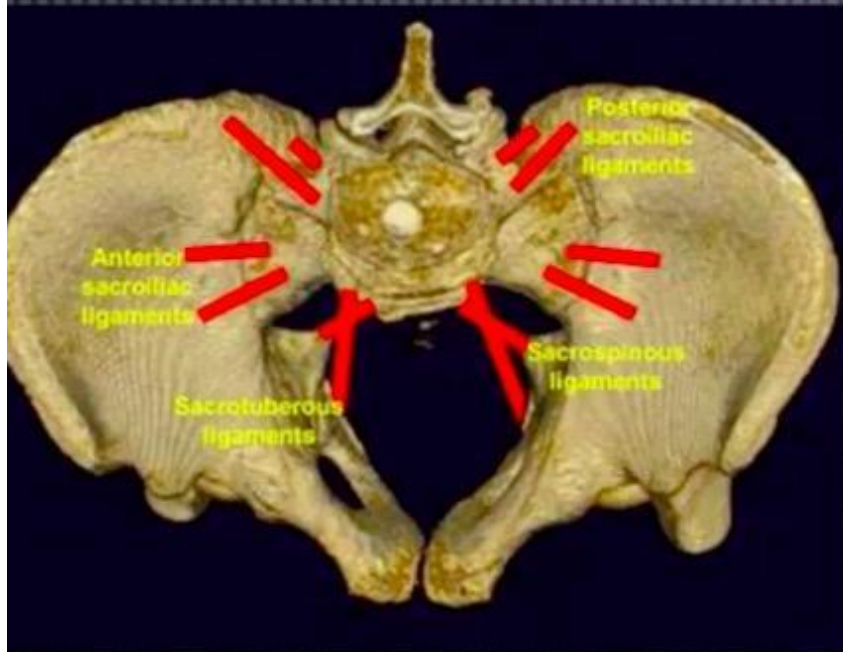
Ilio-lumbar ligaments and SI ligaments



Lumbosacral area key to stability

Illustration of a biotensegrity structure

THE LIGAMENT ANGLES FROM ABOVE



TREATMENT OPTIONS

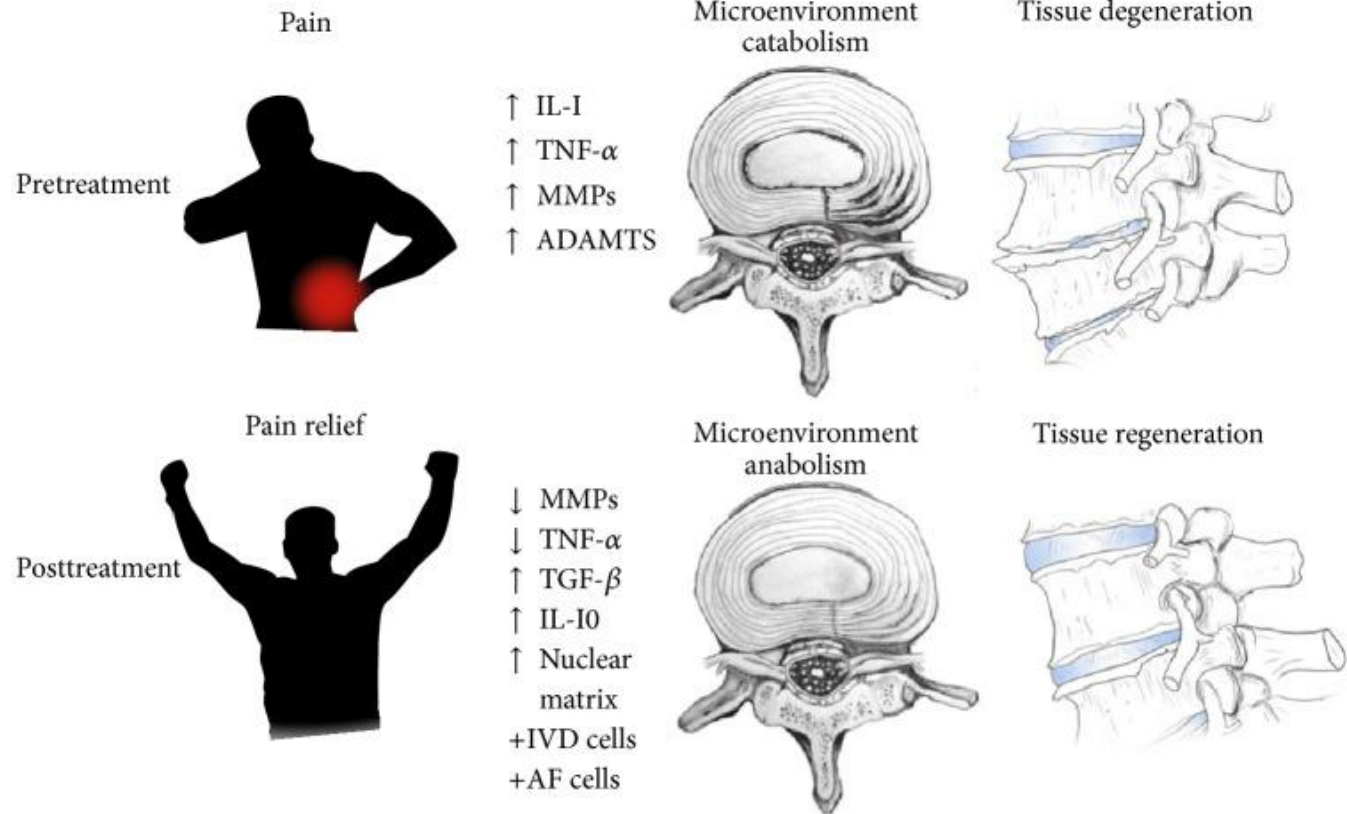
- PROLOTHERAPY
- PRP
- STEM CELLS

How is this done?

- USUALLY THESE INJECTIONS ARE DONE WITH VISUALIZATION—Ultrasound OR Fluoroscopy X-ray
- PROLOTHERAPY CAN BE DONE PALPATION GUIDED

Goal is to provide strengthening of the biotensegrity functional unit as well as change the inflammatory microenvironment

Goals of interventional treatment



CAVEAT

- NOT COVERED BY INSURANCE
- Very LABOR INTENSIVE
- Out of pocket expense incurred

HOW TO GET HELP FOR YOUR BACK

- If you have chronic back pain that has not been effectively managed with standard treatments, and are interested in new, cutting edge approaches to back pain, call Dr. Mark Greenberg, at Advanced Pain Care to discuss your condition to see how you might benefit
- 541-482-1712
- www.apcpain.net