

OMED 2017

Philadelphia 10/7-10/17

American Academy of Osteopathy

Functional:

Laughlin-Still techniques

Tuesday 9:45-11:45 am

Harriet Shaw, DO

Edward Stiles, DO, FAAO

When is gait diagnosis and treatment helpful ?

• You have given what appears to be an effective O.M.T. treatment

• The patient states the pain has improved only 50-70%.

• The patient complains about a “catch” as they walk or move.

• You recheck the landmarks and tests:

• Standing and sitting F.B.T. tests are normal.

• Sacral bases, sulci, I.L.A. and L₅ are all normal.

• Sphinx and Spring tests are normal.

• Lumbar spine is functional.

• “what is going on ?” . . . Answer: “Will take time to heal”

• Need to check sacral and innominate mechanics during gait . . . a real dynamic test.

• The problem:

• Ipsilateral sacrum base can get to neutral but not into anterior compartment on heel strike.

• Ipsilateral innominate can get to neutral but not into posterior compartment on heel strike.

This explains why all the findings and tests are normal !

FUNCTIONAL:

Laughlin - Still

Basic Principles

Vectored
compression

Self
Healing
Forces

Indirect



2017

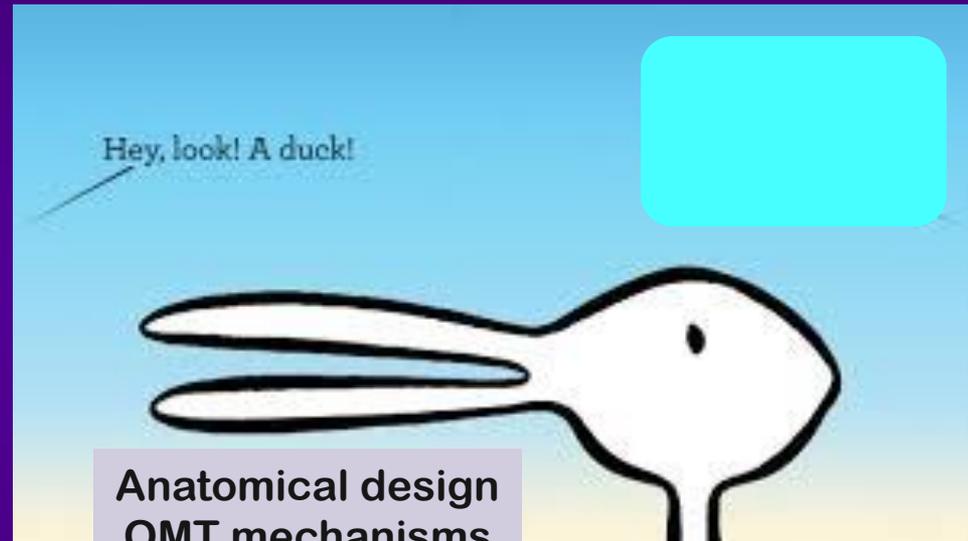
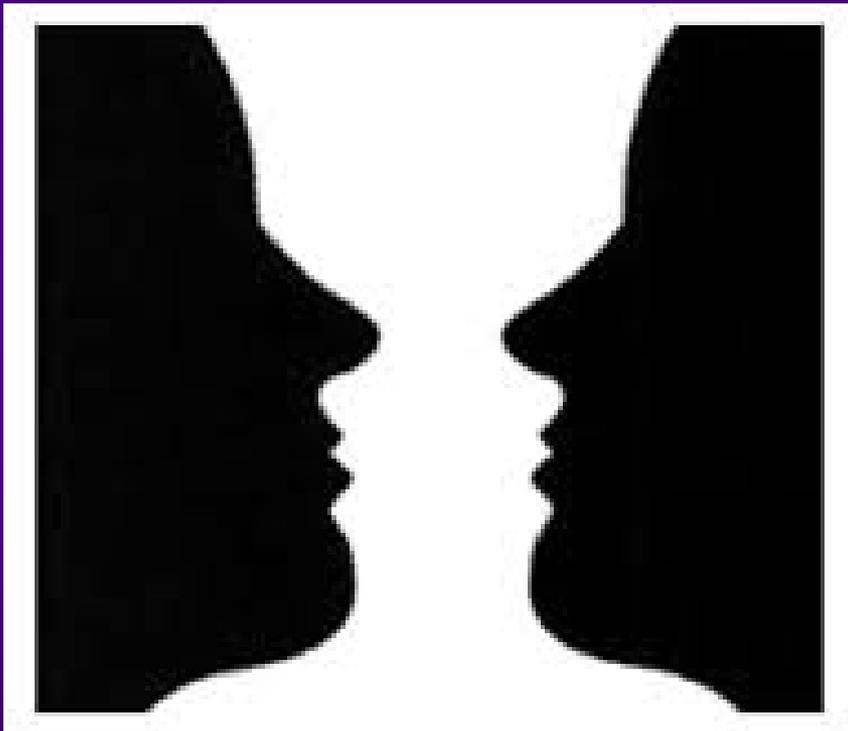
OBJECTIVES:

- Consider role of paradigm shifts
- Understand the characteristics of Tensegrity systems
- Understand pelvic Tensegrity applications
- Understand the principles of Functional techniques
- Understand how to apply these principles to:
 - Lumbar S/D
 - L/L sacral torsion
 - L. posterior innominate
- Understand new gait mechanics model (Stiles / Sale)
 - Be able to diagnose & treat gait restrictions
 - L/L sacral torsion gait restrictions
 - R/R sacral torsion gait restrictions
 - L. posterior innominate gait restrictions
 - R. posterior innominate gait restriction
 - Present clinical data demonstrating the benefits of Functional / Laughlin-Still treatment

Paradigm Shift:

2016

looking at familiar data, come to new understanding &
new way of explaining old observations



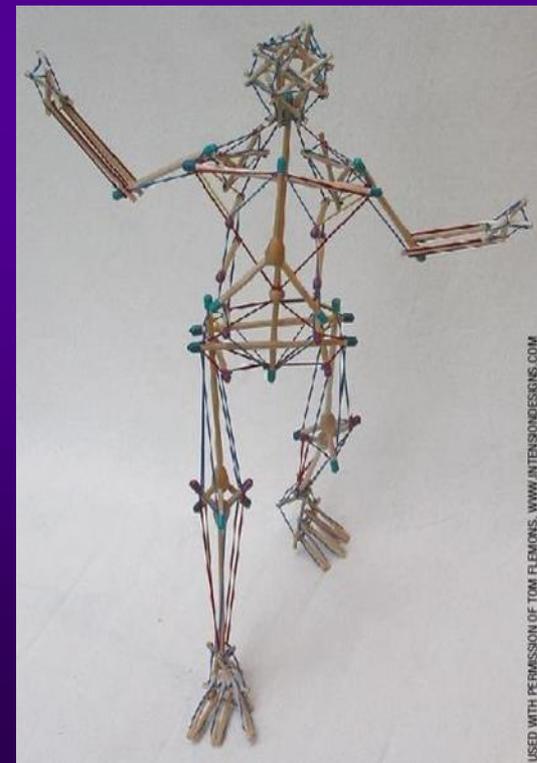
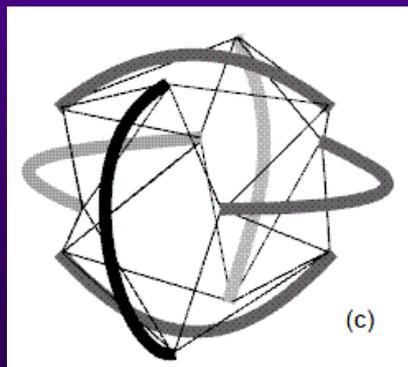
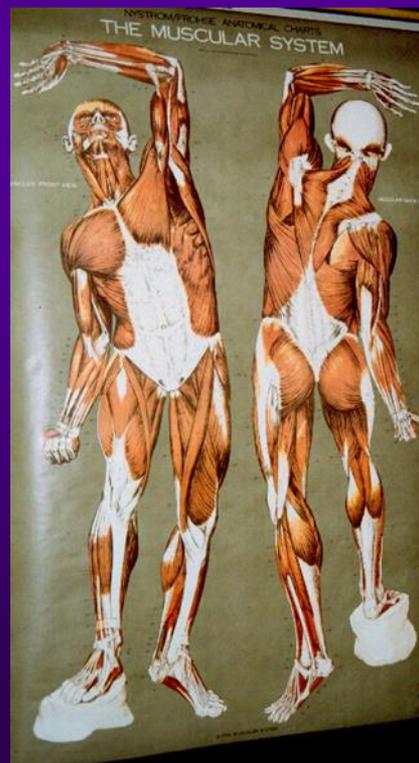
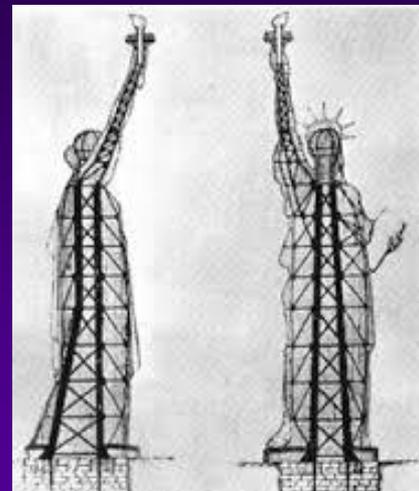
“Learn the principles and get them
to work for you.”

Paul E. Kimberly, DO, FAAO



Tensegrity structures are:

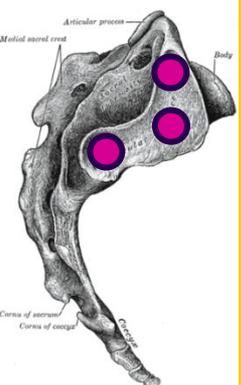
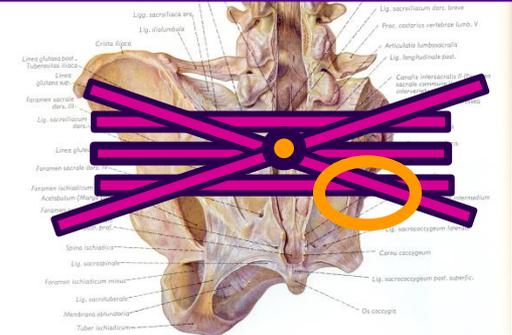
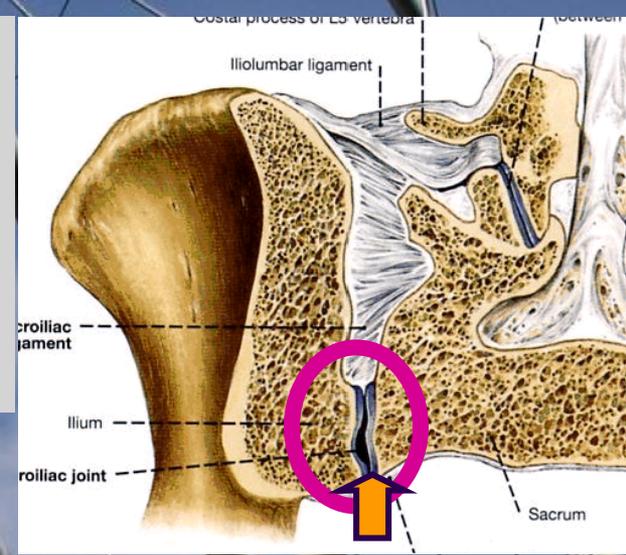
- Light weight
- Much stronger than experts had predicted
 - Multi / Omni - directional
 - Whole system adapts to stressors
- Protects the “weakest link” / the A.G.R.
 - defy gravity
- Non-metallic materials, organized in a Tensegrity arrangement, can conduct electricity
- ‘wired’: keep eyes level, evenly distribute weight among all 4 quadrants.
- Conduct vibratory information
- **Would it not make sense to identify, the A.G.R. (area of greatest restriction - hindrance) in this flexible & adaptive system ?**



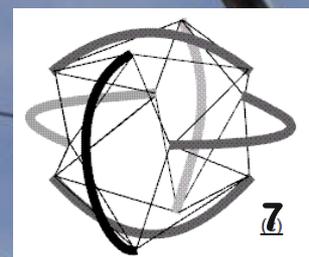
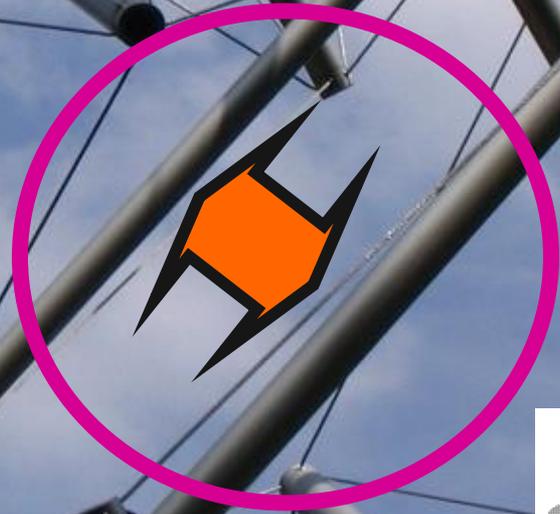
TENSEGRITY & FRACTAL GEOMETRY MODEL:

2005 M.E.T. 3 VISIONS PLUS 2008

- SI/J UNIQUE SIDE TO SIDE
- FRACTAL / ROUGH & NON-LINEAR PROVIDES A PROTECTIVE DESIGN !
- WHY DENSE POST. S/I LIGAMENTS ?
(HOLDING TWO SURFACES TOGETHER? OR APART?)
- ENABLE COMPLEX SACRAL MOVEMENT ?
- 'FLOATING COMPRESSION' PLUS 6 FUNCTIONAL AXES . . . QUANTUM #
(INTERSECTING ITA AND OA' s)
- NOTE: STA IS ANTERIOR TO ITA . . . ROLE ?
(an oblique oblique axis – 2 planes)
- IF TENSEGRITY PHENOMENA IS FUNCTIONING DO WE NEED FORM / FORCE CLOSURE ? IS THAT A BACKUP SYSTEM ?

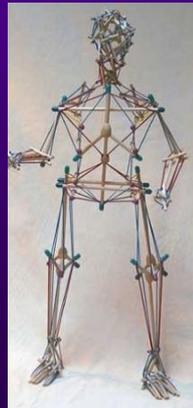
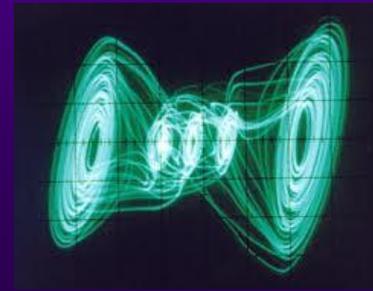
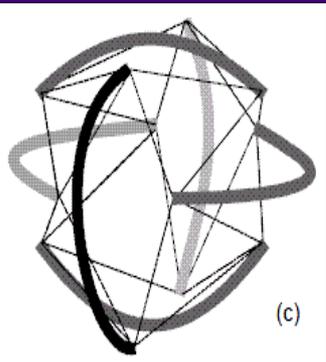
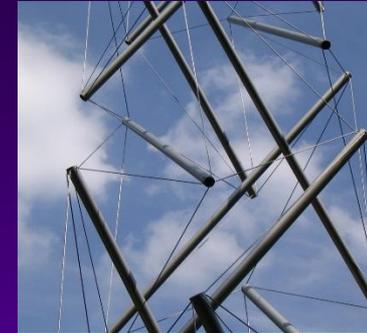
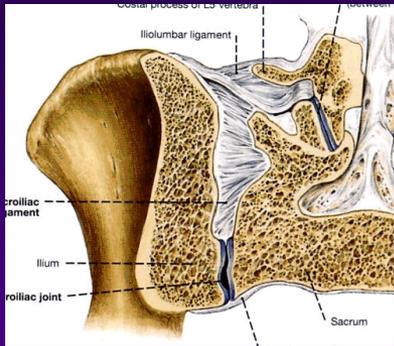


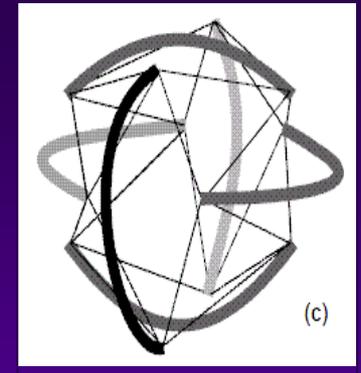
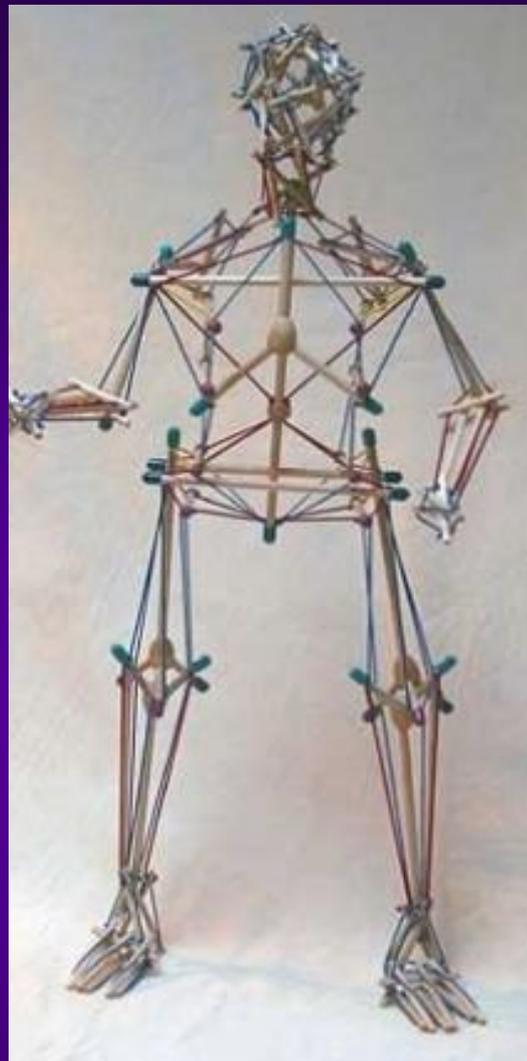
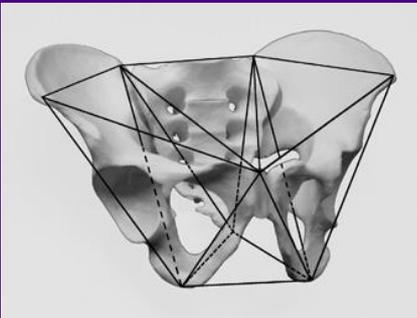
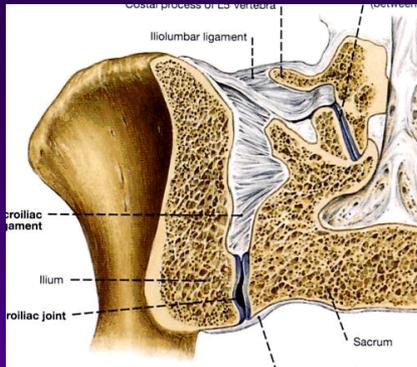
HAS SIGNIFICANCE OF ROUGHNESS BEEN MISINTERPRETED ?
(OCCURS DURING 2d & 3d DECADES)
MITCHELL-TENSEGRITY DESIGN
ENABLE COMPLEX MOVEMENT PATTERNS
AND PREVENT 'WEAR & TEAR ?



“FLOATING COMPRESSION”

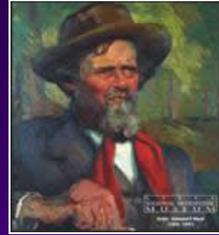
DESCRIBES A
CLOSED STRUCTURAL SYSTEM
COMPOSED OF A SET OF
THREE OR MORE
ELONGATED
COMPRESSION STRUTS
WITHIN A
NETWORK OF TENSION TISSUES,
THE COMBINED PARTS ARE MUTUALLY SUPPORTIVE
IN SUCH A WAY THAT THE
STRUTS DO NOT TOUCH EACH OTHER,
BUT PRESS OUTWARD AGAINST NODAL POINTS
IN THE TENSION NETWORK
TO FORM A
FIRM, TRIANGULATED, PRESTRESSED
TENSION AND COMPRESSION UNIT





The lumbar, sacral & innominate areas
are
very complex plus very dynamic

Functional: Laughlin-Still basics

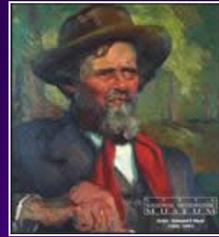


- establish a S/D diagnosis
(works best if at A.G.R. / Key “lesion”)
- start technique at Positional Diagnosis position
(take “doodad where it wants to go”)
(“position of ease”)
(use translation & have at apex of F/E, SB & R curves !)
- “fine-tune” dysfunctional joint so maximally relaxed
(“fiddle and diddle” to “fine-tune positioning at D.B.P.”)
(Dynamic Balance Point)

Biodynamics language: at “loose-packed” position

- add vectored compression
(from side towards which dysfunction will initially rotate)
 - allow to “unwind”
(initially away from restricted barrier, hits a ‘still point’ and then spontaneously into the previously restricted compartment)
- recheck: know made a positive change

Functional: Laughlin-Still basics



- establish a S/D diagnosis
(works best if at A.G.R. / Key “lesion”)
- start technique at Positional Diagnosis position
(take “doodad where it wants to go”)
(“position of a...”)
(use translation & have at... R curves !)
- “fine-tune” dysfunction initially relaxed
(“fiddle and did... at D.B.P.”)



- Biodynamic... “packed” position
compression
(from side to... dysfunction will initially rotate)
allow to “unwind”
(initially away from restricted barrier, hits a ‘still point’ and then spontaneously into the previously restricted compartment)
- recheck: know made a positive change

ESSENTIALS:

- ANT. LUMBAR IS 'LOOKING' LEFT (SIDE LOAD)
- RIGHT FACET PR. IS DYSFUNCTIONAL (SIDE FLOAT)

FASCIAL LOAD

TOWARD R. FACET PAIR

POSITION:

L₃ FRS_L

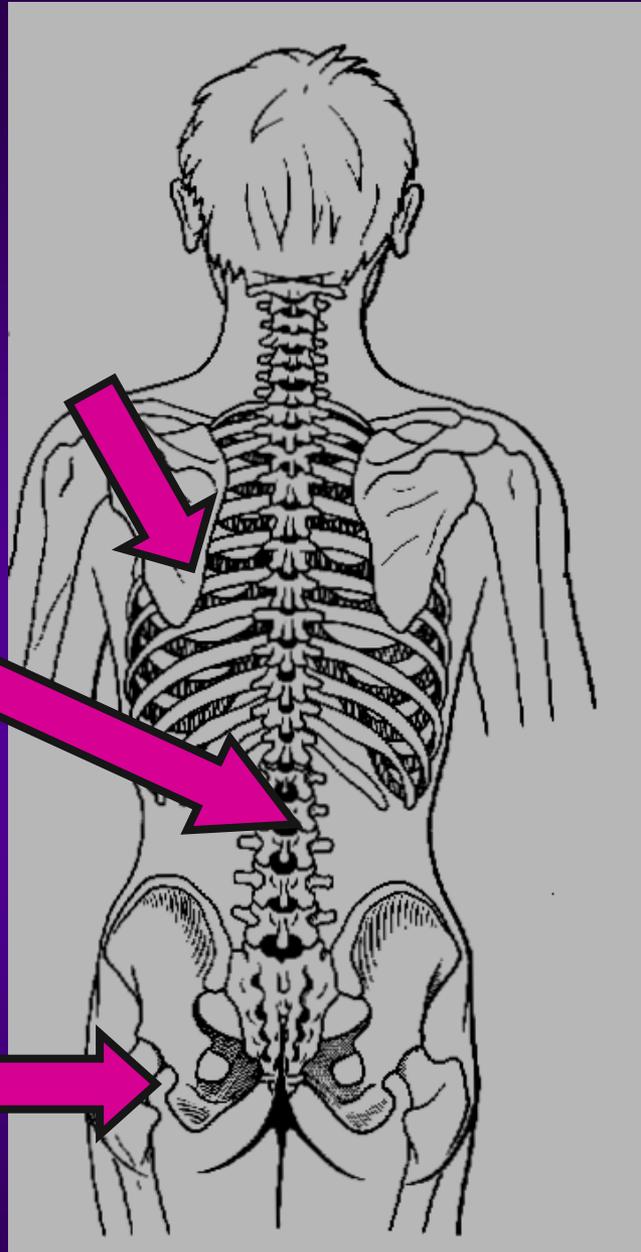
USING TRANSLATION 'FLOAT' R. FACET PAIR

LOAD OR

BEAR WEIGHT

ON

L. I/T



AS SLOWLY ADD COMPRESSION

TOWARD

RIGHT

FACET PAIR,

THE BODY WILL AUTOMATICALLY

- ROTATE LEFT
- HIT A "STILL POINT"
- THEN ROTATES TO RIGHT TOWARD PREVIOUS RESTRICTED BARRIER



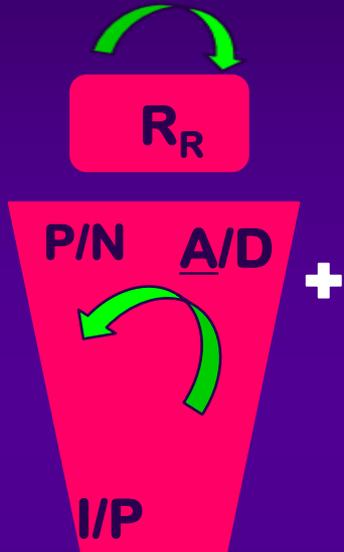
LUMBAR DYSFUNCTION: L₃ FRS_L

L / L SACRAL TORSION

- right sacral base anterior
(deep r. sulcus)
- positive sitting FBT test on the right
 - increased lordosis
 - L₅ rotated right !!!
- left ILA inferior and posterior
 - short left leg (prone)
- findings improve with sphinx test
 - spring test is negative
- **NOTE: MAKE SURE ALL FINDINGS FIT THE DIAGNOSIS**

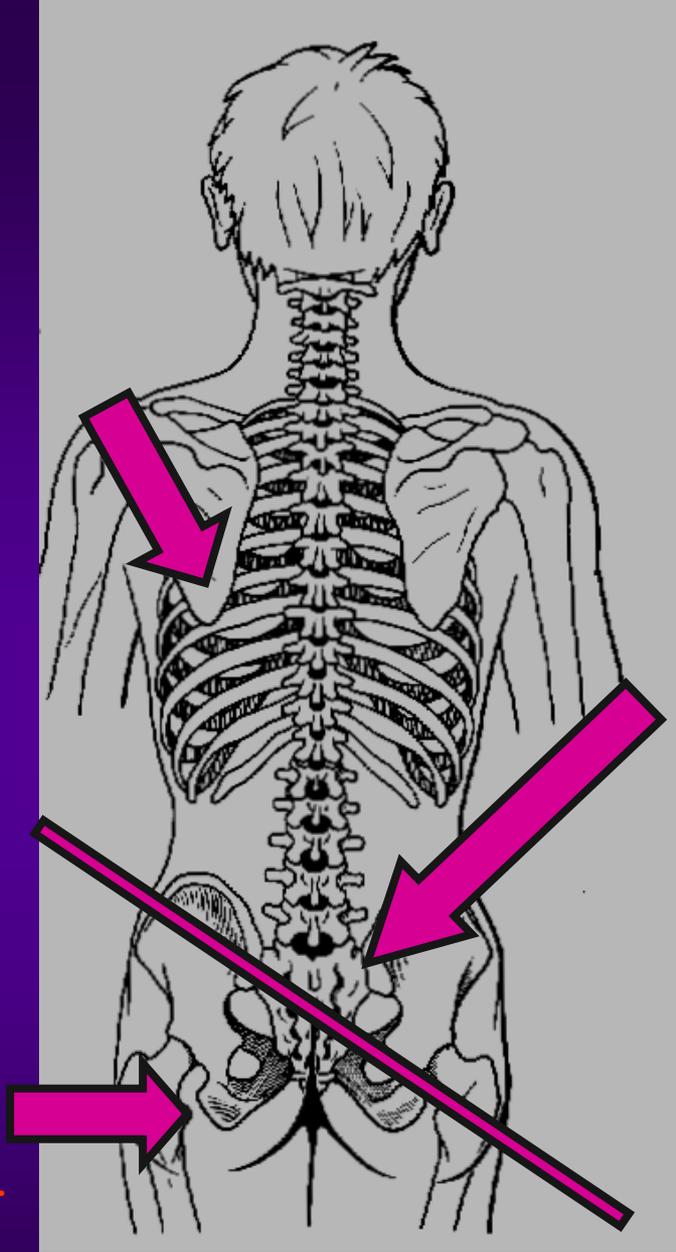


FASCIAL LOAD



LOAD OR
BEAR WEIGHT
ON L. I/T

I/T THE SACRUM 'LOOKING AT



ESSENTIALS:

- SACRUM IS 'LOOKING' LEFT (SIDE LOAD)
- RIGHT SI/J IS DYSFUNCTIONAL (SIDE FLOAT)

"FLOAT"
RIGHT SI/J
(WHERE PALPATE)

LOCATE
MTA

USING A/P TRANSLATION

TURN M.T.A.
INTO
L.O.A.

USING SIDEBENDING

LEFT ON LEFT SACRAL TORSION

FASCIAL
LOAD

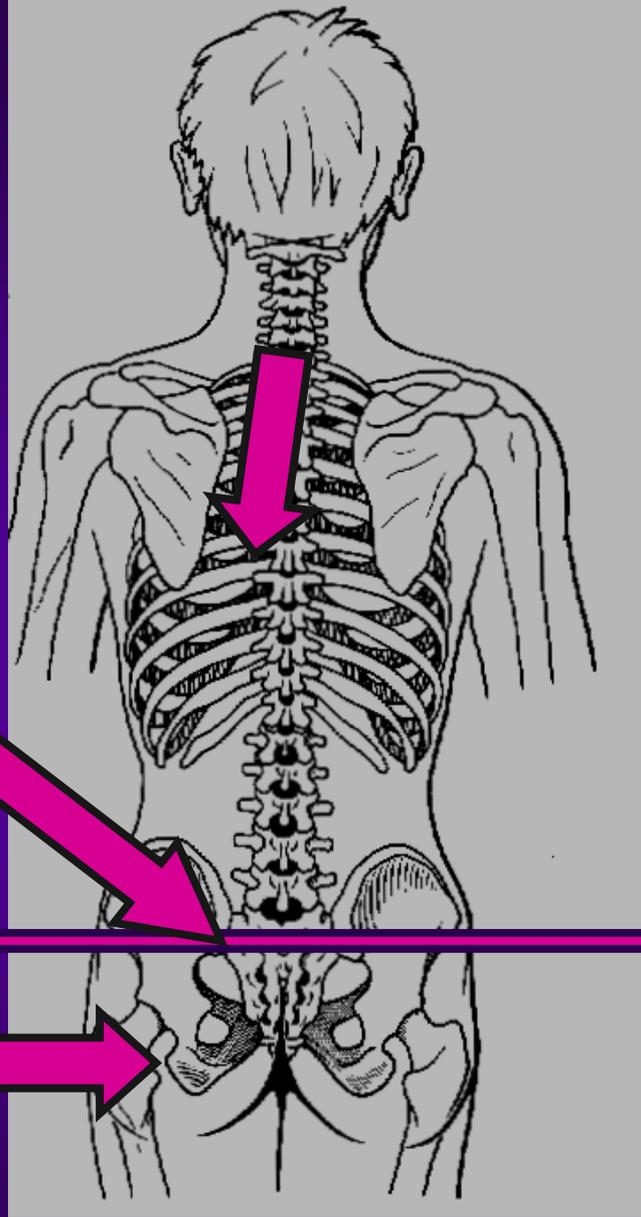
"FLOAT"
LEFT S/IJ

(WHERE PALPATE)

LOAD OR
BEAR WEIGHT
ON

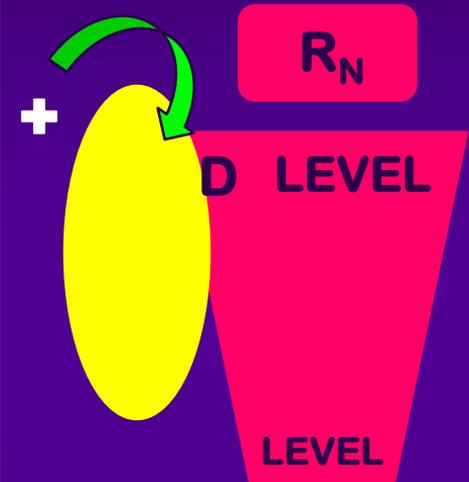
L. I/T

WHY THIS ONE ?



ESSENTIALS:

- ANT. PELVIS IS 'LOOKING' LEFT (SIDE LOAD)
- LEFT I/SJ IS DYSFUNCTIONAL (SIDE FLOAT)



LOCATE
ITA

USING A/P
TRANSLATION

LEFT POSTERIOR INNOMINATE

“The scientific method of phenomenology

(Goethean Scientific Method)

is used to create a synthesis

between

modern orthodox embryology

and a

holistic view of the human being.

The human embryo reveals
who we are and what we are meant to be.

Practitioners have found that

comprehending embryological forces

supports a holistic and biodynamic approach to healthcare

because the same forces that formed the body are

continuously at work throughout life,

carrying the blueprint of health into manifestation.”

Jaap van der Waal, MD, PhD

The Embryo in Us

May 19-22 2016



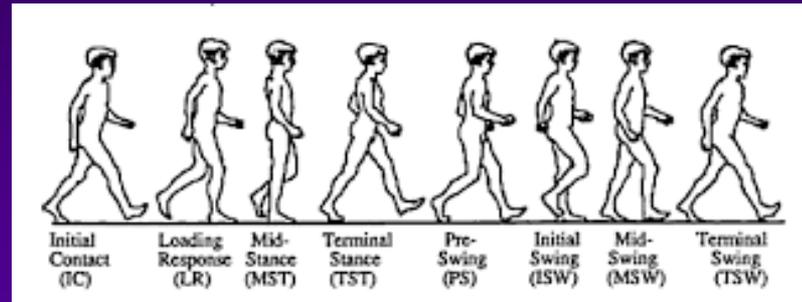
A.T. Still: find S/D hindrances, effectively manage the S/D hindrances and enable the “blueprint of health” to emerge / to manifest.

Forces we are tapping into by removing S/D hindrances.

History of Gait Mechanics Theories

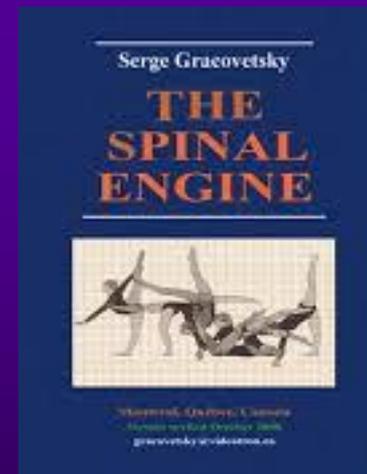
• Leg driven model

(pedestrian model)



Good
linear
thinking

• Gracovetsky: Spinal Engine model - 1988



Complex
non-linear
thinking
required

Back &
abdominal
muscle role

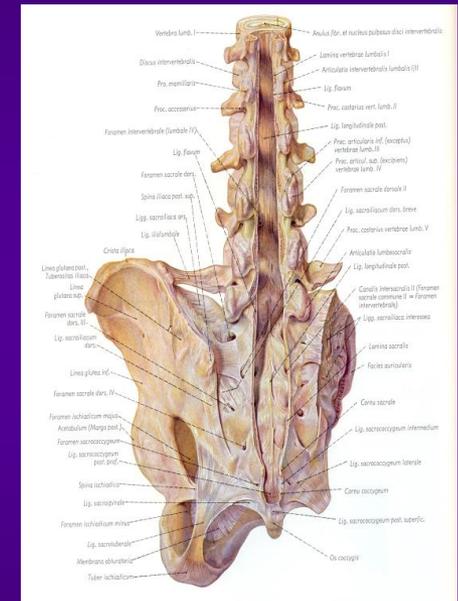
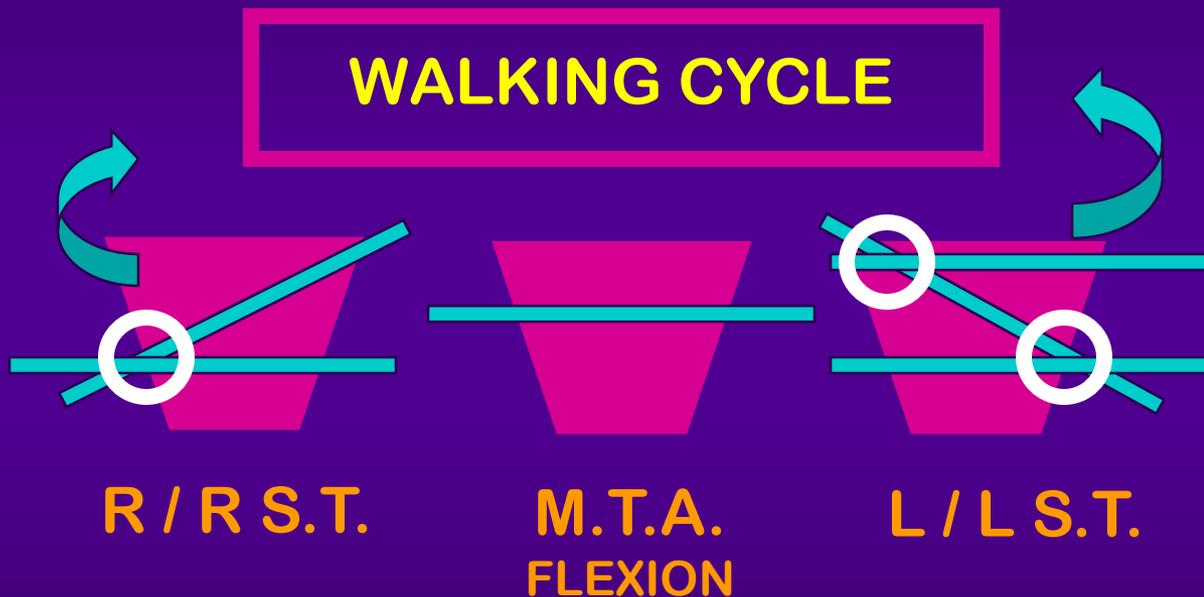
• Missing gait piece: Mitchell Pelvic Model – 2004

Preparation for AAO program: MET – 3 Masters

PELVIC AXES: GAIT SIGNIFICANCE

TORSIONS OCCUR AROUND OBLIQUE AXES:

- ◆ LEFT OBLIQUE = left on left sacral torsion
- ◆ RIGHT OBLIQUE = right on right sacral torsion



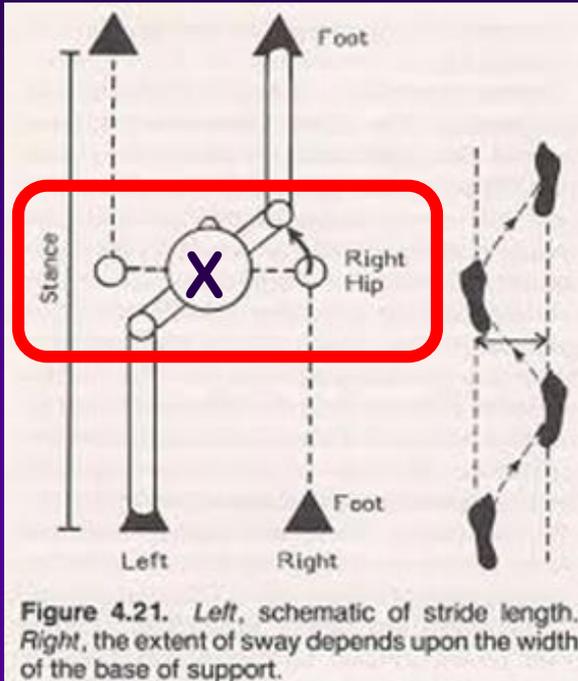
SIGNIFICANCE: MOST STABLE WHEN S.B. ANT & IPSILAT. ILIA POST.

- OA & ITA CROSS:
- ENHANCES INNOMINATE MOBILITY POTENTIAL
- OA & STA CROSS: INC. S/B ADAPTATION @ OTHER END DURAL TUBE !
- SUPERIOR END OF OBLIQUE AXIS ANTERIOR TO INFERIOR END . . .
- THIS IS CRUCIAL TO APPRECIATE TO UNDERSTAND GAIT MECHANICS

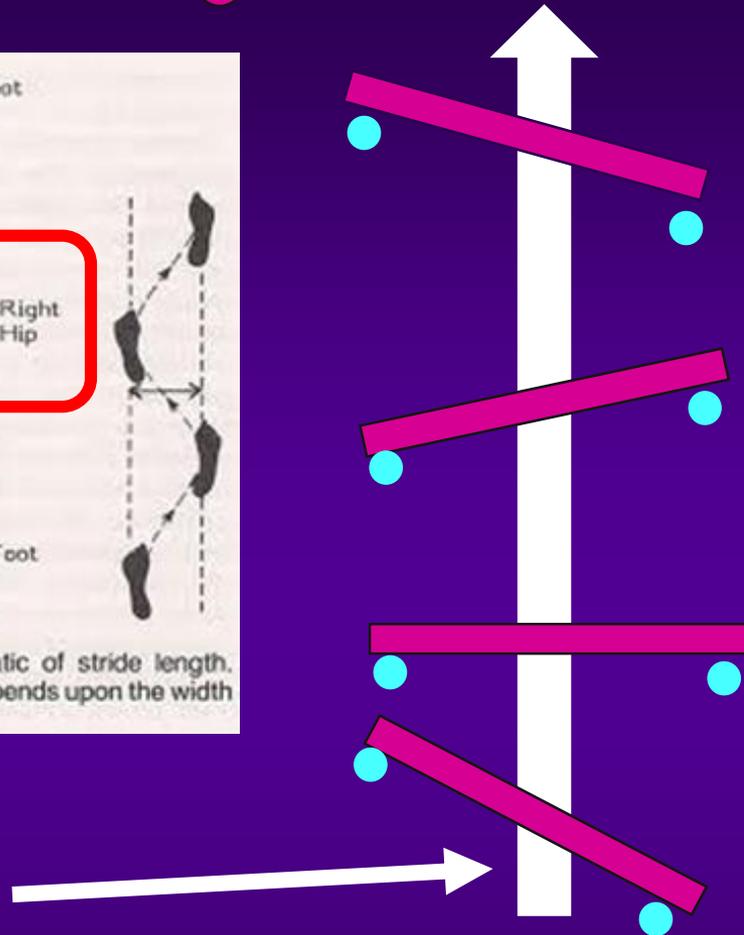
When evaluating gait:

- Palpate sacral bases as patient walks
 - Do both sides go from neutral to anterior compartment at ipsilateral heel strike ?
 - Go into left on left sacral torsion @ R. heel strike ?
 - Go into right on right sacral torsion @ L. heel strike ?
- If not, treat the sacral component
- Next, palpate the PSIS as patient walks, at heel strike does the ipsilateral PSIS glide caudad ?
- If not, treat the innominate gait restriction

● palpation sites



Forward glide pathway
and
action
of the
Sacrum
(pelvis)



R. Leg role during gait

(it will be the mirror image for L. leg)

R. Toe off

- L. heel strike
- R/R torsion starts
- L. piriformis fires
- Wt. bearing L. leg



Mid stance phase

- L./L. torsion continues
- R. piriformis cont. to fire

R. Early weight bearing

- L/L torsion carries right pelvis forward
- R. piriformis maintains LOA

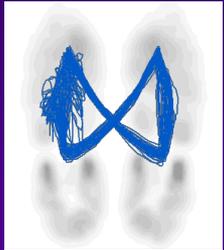
R. Heel strike

- MTA converts into LOA
- R. Piriformis fires
- R ilia post. rotated

TREATMENT: GAIT DYSFUNCTIONS

Kimberly:

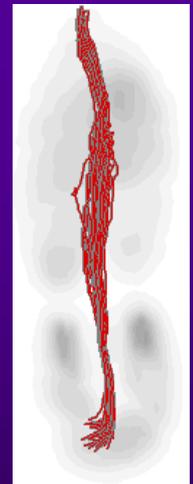
“learn the principles and get them to work for you !”



If you treat a left on left sacral torsion with a functional technique, the sacrum will initially rotate to the left. You are going to utilize that truth to restore the left on left sacral torsional movement. This stimulates the S/IJ mechano-receptors and re-establishes normal “firing patterns” of leg and trunk muscles.



Use the same principle for treating the innominate posterior gait restrictions . You treat it like it was a L. or R. post. innominate



Gait Diagnostic Terminology

- Left on left gait restriction
- Right on right gait restriction
- Left posterior innominate gait restriction
- Right posterior innominate gait restriction
- What going on at cranial base during gait ?
(the other end of the dural tube)

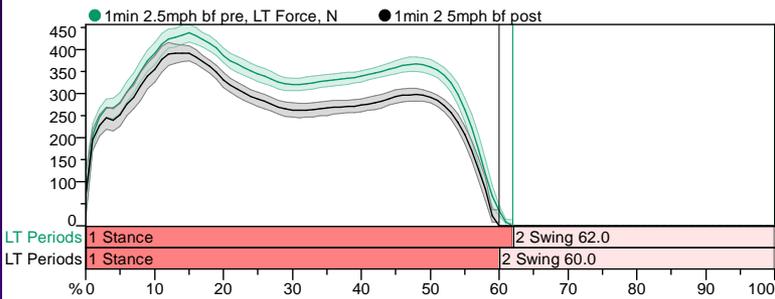
Key:

the dysfunctions can get to neutral but,

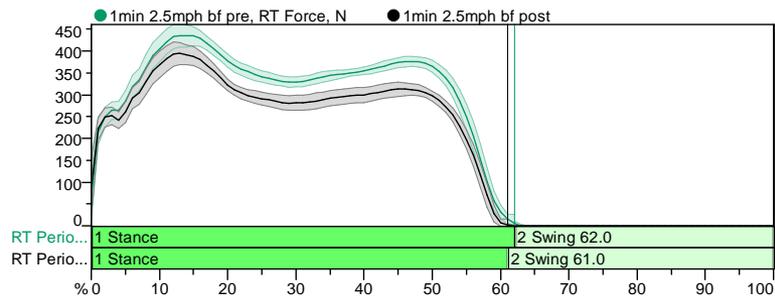
Sacrum can't get into the anterior compartment at heel strike

Innominate can't get into the posterior compartment at heel strike

Left Side



Right Side



Novaxon Myopressure Bilateral Gait Report & 3 Zones Report



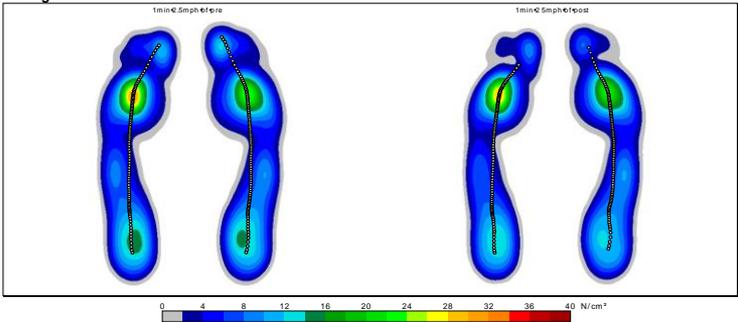
Record

Name: 1min 2.5mph bf pre
Date Measured: 3/16/2017 15:17
Number of periods: 58

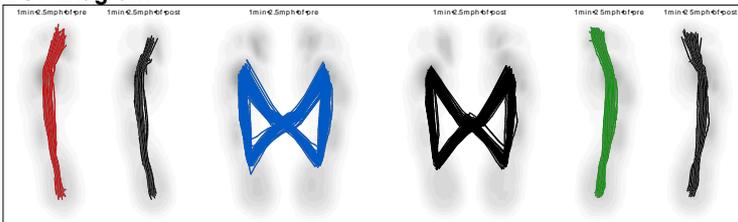


Pressure Prints

Average



COP Diagram

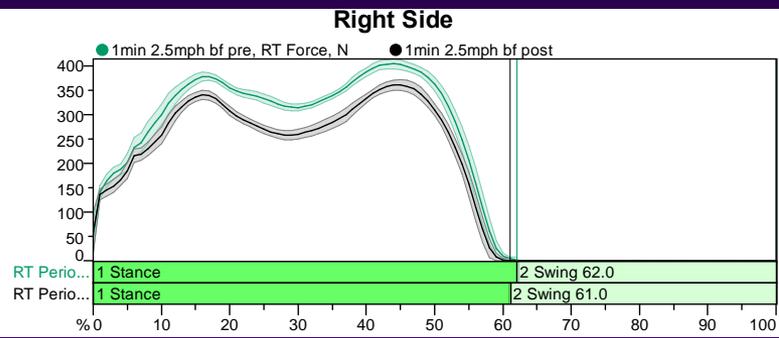
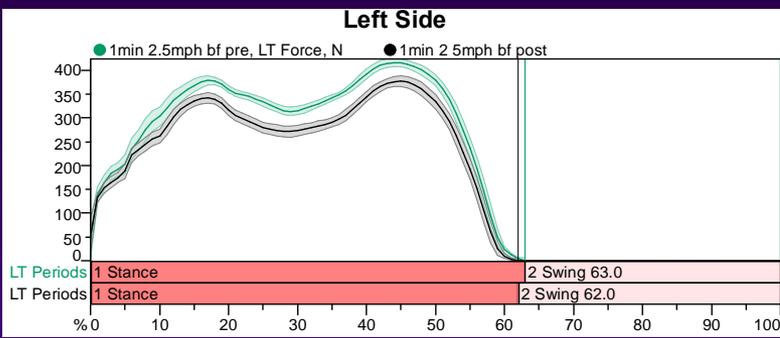


COP Parameters

Parameter	Side	1min 2.5mph pre	1min 2.5mph post
Length of gait line, mm	Left	1228.3	1228.3
	Right	1228.3	1228.3
	Left	1228.3	1228.3
	Right	1228.3	1228.3
Single support line, mm	Left	1228.3	1228.3
	Right	1228.3	1228.3
	Left	1228.3	1228.3
	Right	1228.3	1228.3
Ant/Post position, mm	1min 2.5mph pre	148.2	148.2
	1min 2.5mph post	148.2	148.2
Lateral symmetry, mm	1min 2.5mph pre	13.4	13.4
	1min 2.5mph post	13.4	13.4

elite female runner # 1

- Cc: B/L tight , painful gluts x 4 yrs.
- Left upsheared innominate
 - L₃ FRS_L
 - T₈ ERS_L
- L. posterior innominate
 - Right on right gait restriction
- “my gluts are relaxed”
- “my glut pain is gone”



Noraxon Myopressure Bilateral Gait Report & 3 Zones Report

Record

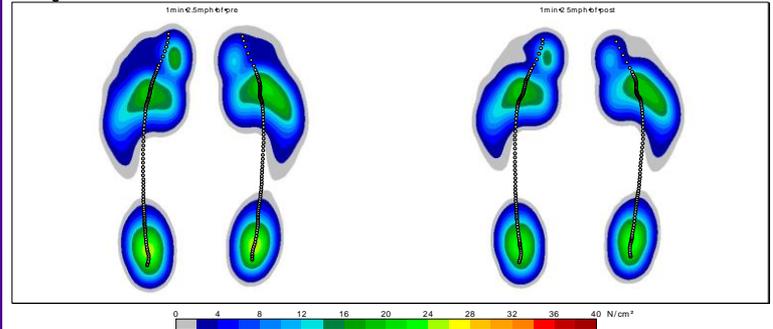
Name 1min 2.5mph bf pre

Date Measured 3/16/2017 12:19

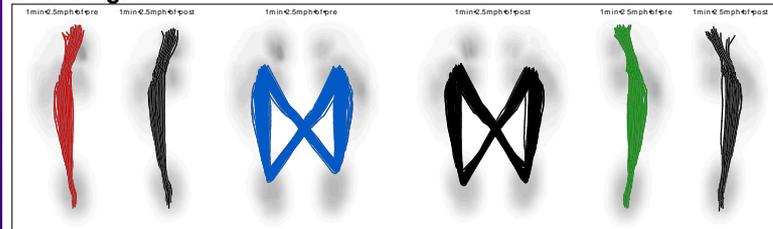
Number of periods 59

Pressure Prints

Average



COP Diagram

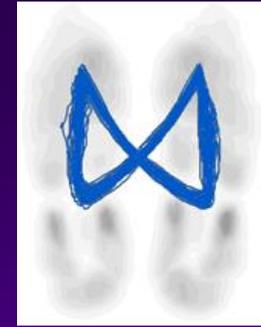
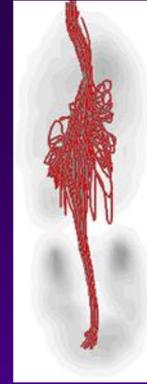
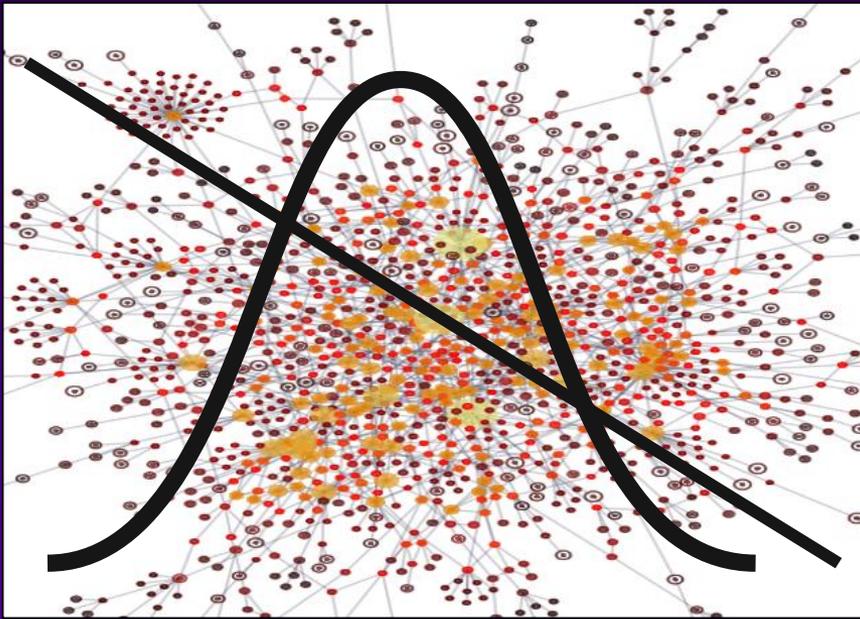


COP Parameters

Parameter	Side	Time	Value
Length of gait line, mm	Left	1min 2.5mph bf pre	2303.0
		1min 2.5mph bf post	2223.0
	Right	1min 2.5mph bf pre	2292.0
		1min 2.5mph bf post	2181.7
Single support time, mm	Left	1min 2.5mph bf pre	1424.4
		1min 2.5mph bf post	1481.0
	Right	1min 2.5mph bf pre	1291.4
		1min 2.5mph bf post	1369.0
Ant/Post position, mm	1min 2.5mph bf pre	1371.3	
	1min 2.5mph bf post	1361.3	
Lateral symmetry, mm	1min 2.5mph bf pre	31.2	
	1min 2.5mph bf post	25.2	

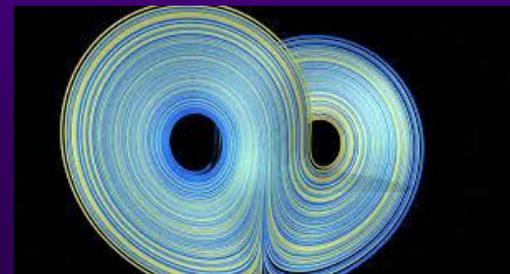
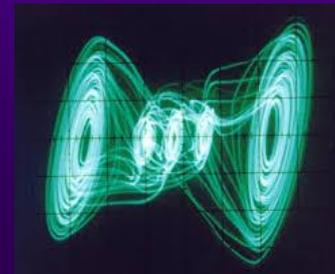
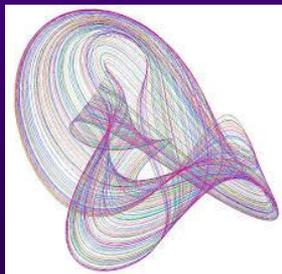
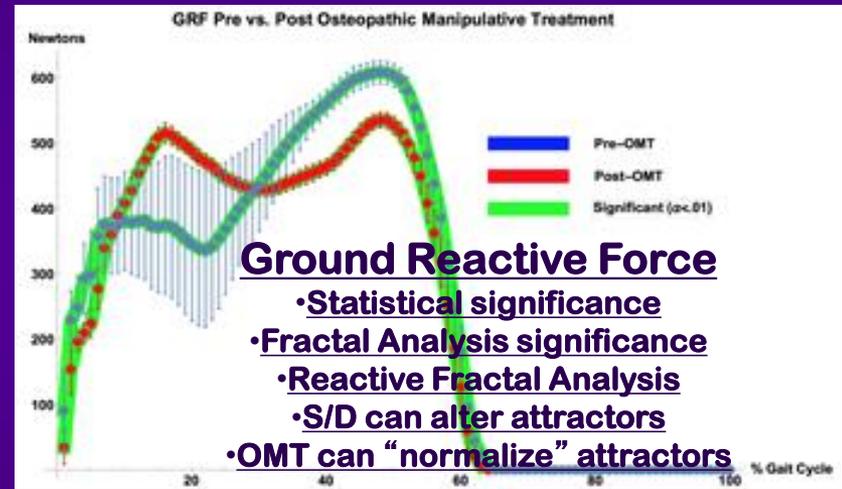
elite female runner # 2

- For 2 years, felt like “could not get her left hip to glide forward as much as her right hip”
- When checked gait, while running on treadmill, she could not go into right on right torsional movement
- Tensegrity PT had been doing a lot of retaining exercises.
 - “Help somewhat”
 - L R₆₋₁₀ exhaled
 - L₄ FRS_L
 - L. posterior innominate
- Right on right gait restriction
 - “ I move freely now”
- “I can get that left hip forward without effort”



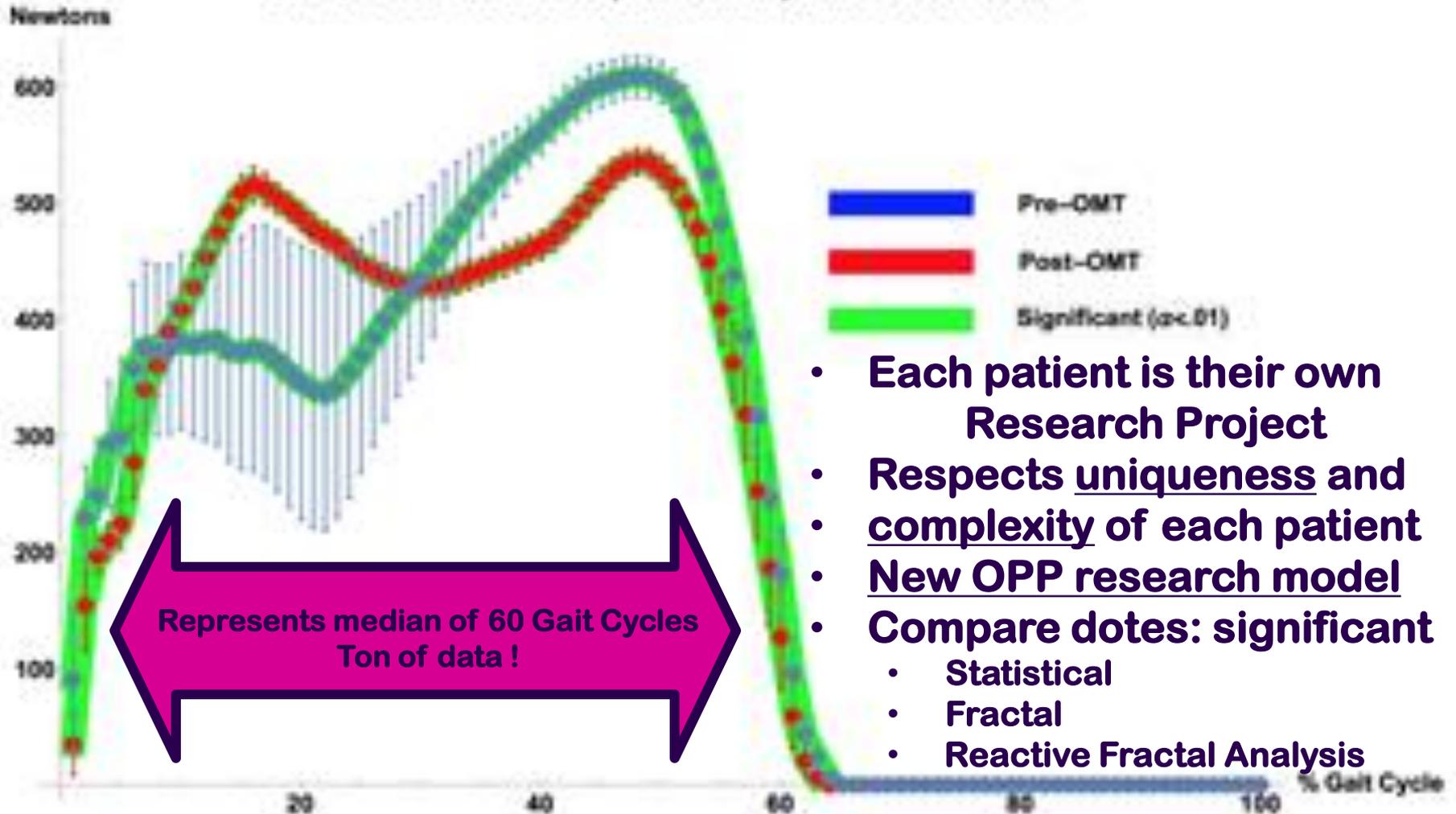
Statistical Methods:

- **Bell Curve: +/- 2 SD / noise**
- **Attractors: fractal (manager)**
- **Static / Power-Law**
- **Dynamic / "strange"**



Ground Reactive force (GRF)

GRF Pre vs. Post Osteopathic Manipulative Treatment

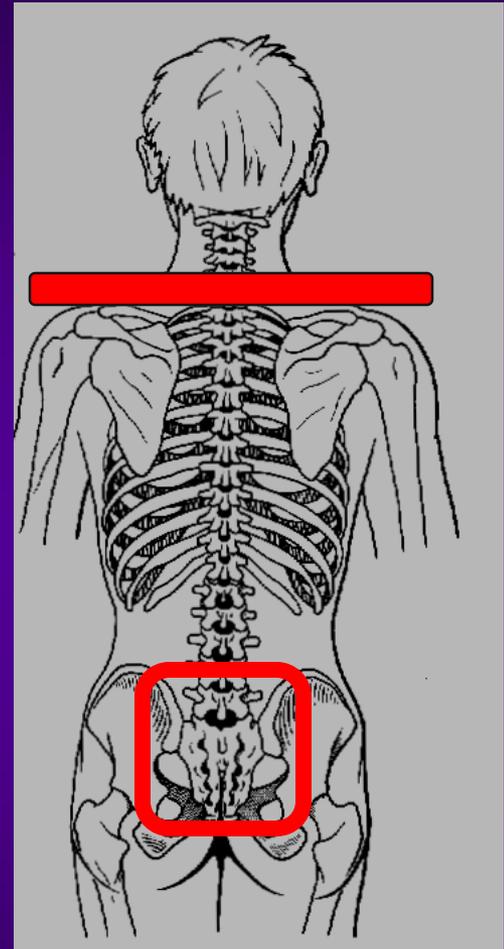


- Each patient is their own Research Project
- Respects uniqueness and complexity of each patient
- New OPP research model
- Compare notes: significant
 - Statistical
 - Fractal
 - Reactive Fractal Analysis

Stiles' Hypothesis:

During the 1960's,
George Andrew Laughlin
was intuitively doing the gait treatment
when he
“took the do-dad where it wanted to go”
and
“fiddled and diddled”
at the end of his treatment.

He was
over 50 yrs.
ahead of his time ! & E.B.M. !



Functional : Sacral & ilia treatments

diagnosis	I/T to "load"	S/IJ to "loose-pack"	Axis involved	Vectored compression
L. Sacral Flexion	<ul style="list-style-type: none"> • Right Sacrum facing right 	<ul style="list-style-type: none"> • Left Side of the Positive S₁ FBT 	<ul style="list-style-type: none"> • MTA 	<ul style="list-style-type: none"> • From R. shoulder toward L. SI/J
L./L. sacral torsion	<ul style="list-style-type: none"> • Left Sacrum facing left 	<ul style="list-style-type: none"> • Right Side of the positive S₁ FBT 	<ul style="list-style-type: none"> • Convert MTA Into LOA 	<ul style="list-style-type: none"> • from L. shoulder toward R. SI/J
L/R sacral torsion	<ul style="list-style-type: none"> • Left Sacrum facing left 	<ul style="list-style-type: none"> • Left Side of the positive S₁ FBT 	<ul style="list-style-type: none"> • Convert MTA Into ROA 	<ul style="list-style-type: none"> • From L. shoulder toward L. SI/J
R. Sacral extension	<ul style="list-style-type: none"> • Right Sacrum facing right 	<ul style="list-style-type: none"> • Right Side of the positive S₁ FBT 	<ul style="list-style-type: none"> • MTA 	<ul style="list-style-type: none"> • From R. shoulder toward R. SI/J
R. A/I	<ul style="list-style-type: none"> • Left Side pelvis facing 	<ul style="list-style-type: none"> • Right Side of positive S_T FBT 	<ul style="list-style-type: none"> • ITA 	<ul style="list-style-type: none"> • From L. shoulder toward R. SI/J
L. P/I	<ul style="list-style-type: none"> • Left Side pelvis facing 	<ul style="list-style-type: none"> • Left Side of positive S_T FBT 	<ul style="list-style-type: none"> • ITA 	<ul style="list-style-type: none"> • From L. shoulder toward L. SI/J



All you've done is chisel all day! Do something useful,
like helping your brother drag those rocks up the hill.

Paradigm Shift