

Proportions and Perspectives: The Magnitude of Our Relationships

Nathalie Barr Lecture
October 25, 2013

Paul LaStayo, PT, PhD, CHT



Nathalie Barr Recipients since 1986

1986 Evelyn Mackin

1987 Maude Malick

1988 Judith Bell-Krotoski

1989 Elaine E. Fess

1990 Gloria DeVore

1991 Mary Kasch

1992 Bonnie Olivett

1993 Nancy Cannon

1994 Kenneth Flowers

1995 Carolina S deLeeuw

1996 Roslyn Evans

1997 Anne Callahan

1998 Mark Walsh

1999 Judith Colditz

2000 Jean Casanova

2001 Georgiann Laseter

2002 Lynnlee Fullenwider

2003 Janet Waylett-Rendall

2004 Jim King

2005 Joy MacDermid

2006 Patricia Taylor

2007 Donna Breger Stanton

2008 Susan Michlovitz

2009 Karen Lauckhart

2010 Maureen Hardy





Photos courtesy of Bronze Black and Charlie Casey

Serendipity



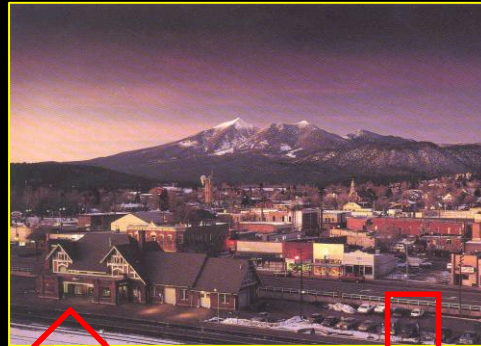
Mamaroneck, NY



Colorado Springs, CO



Philadelphia, PA



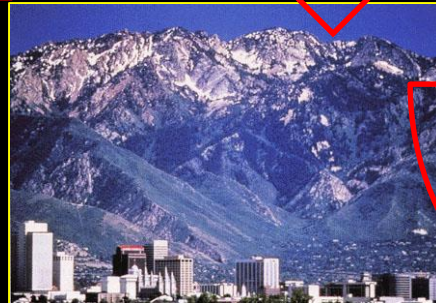
Flagstaff, AZ



LaStayo-Lawless Clan



Gainesville, FL



Salt Lake City, UT

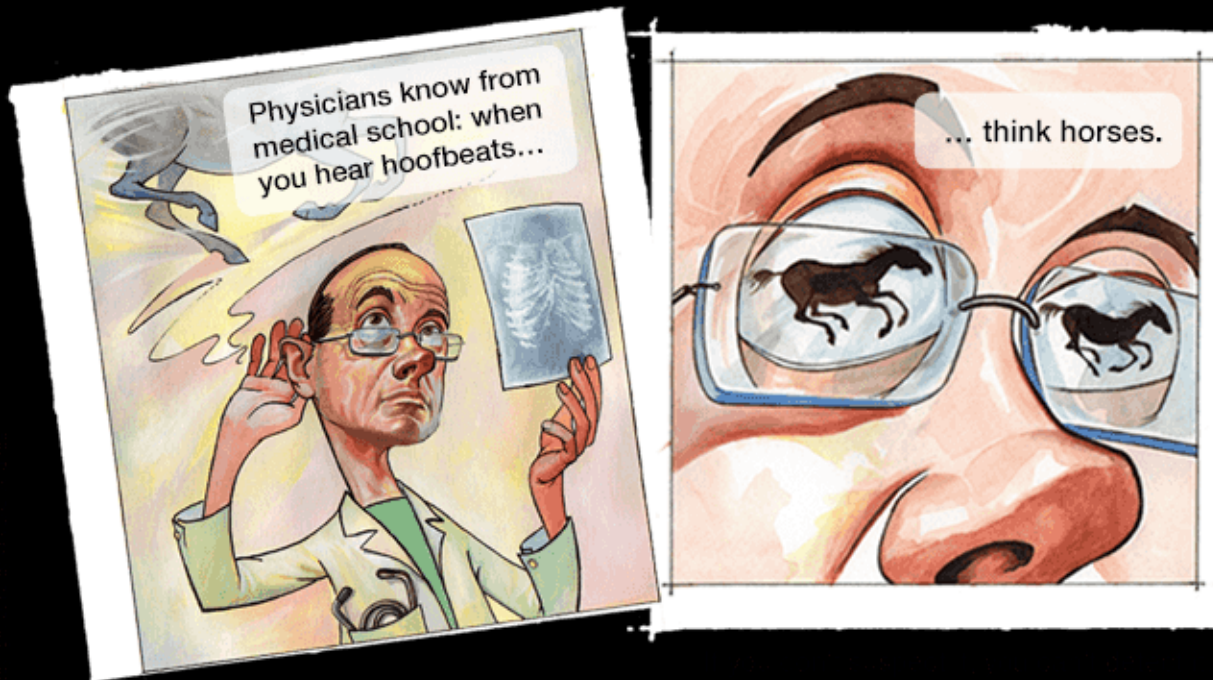


Mt Rainier and Seattle, WA

“Finding something valuable or delightful when you are not looking for it.”

1) When you hear hoof beats think horses,

Not Zebras



The Master Clinician

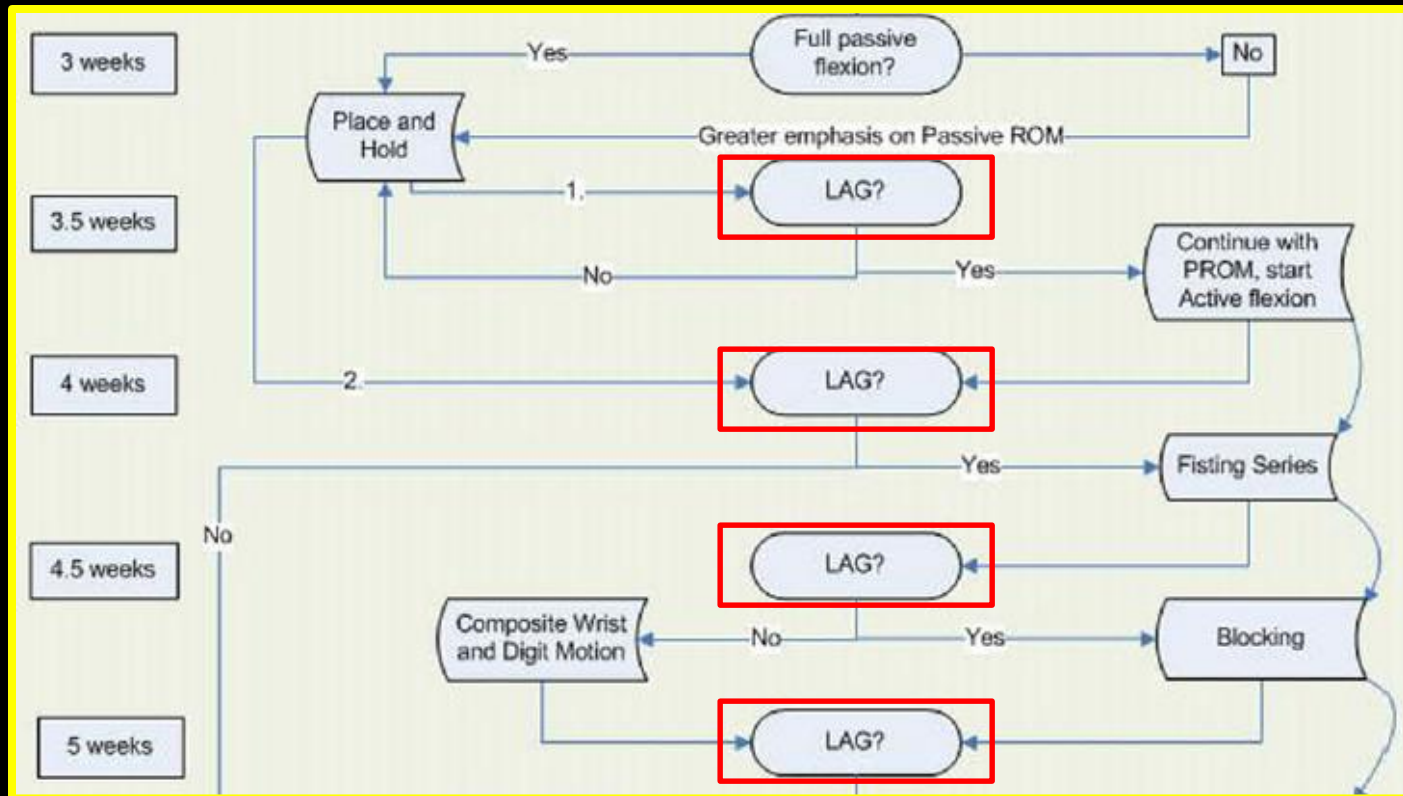
Tendon Lag

- **Students/Newbies vs Master Clinicians:**
 - **When PROM >> AROM**
 - **Weakness**
 - **Neurologic**
 - **Pain/fear**
 - **Scar/Adherence**



Lag is the signal

Sueoka, S; *J Hand Ther*, 2008



Cifaldi, JHT 1991

“Early progressive resistance following immobilization of flexor tendon repairs”

Etc

A long-exposure photograph of a night sky. The sky is dark blue, and numerous white and light blue streaks of light, representing star trails, are visible. A large, dark, rocky mountain peak is silhouetted against the sky on the right side. The foreground shows dark, rocky terrain. A red rectangular box is overlaid on the image, containing the text "Rule benders...".

Rule benders...

2) Clinical Principles:

that I hang my hat on after having made big mistakes

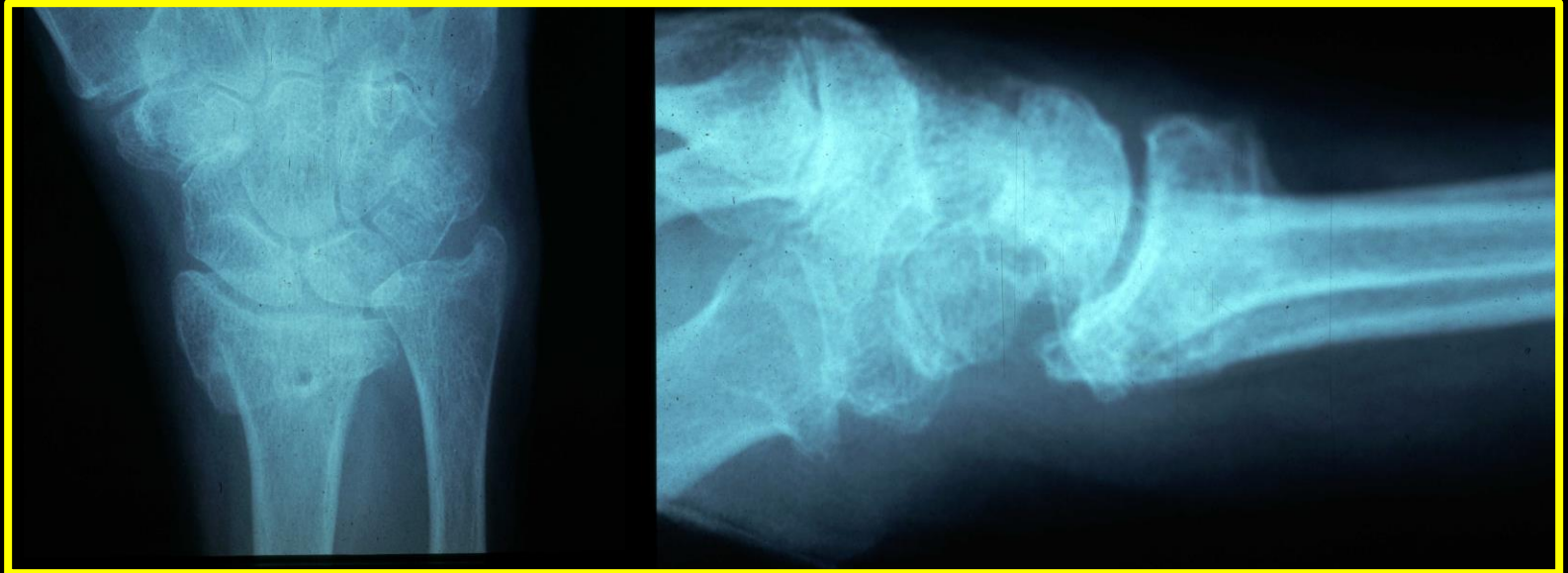
- **Anatomy/mechanics is power**
- **Do no harm**
- **Diagnosis**
 - diagnosis
 - diagnosis



Evolution from newbie to “expert”

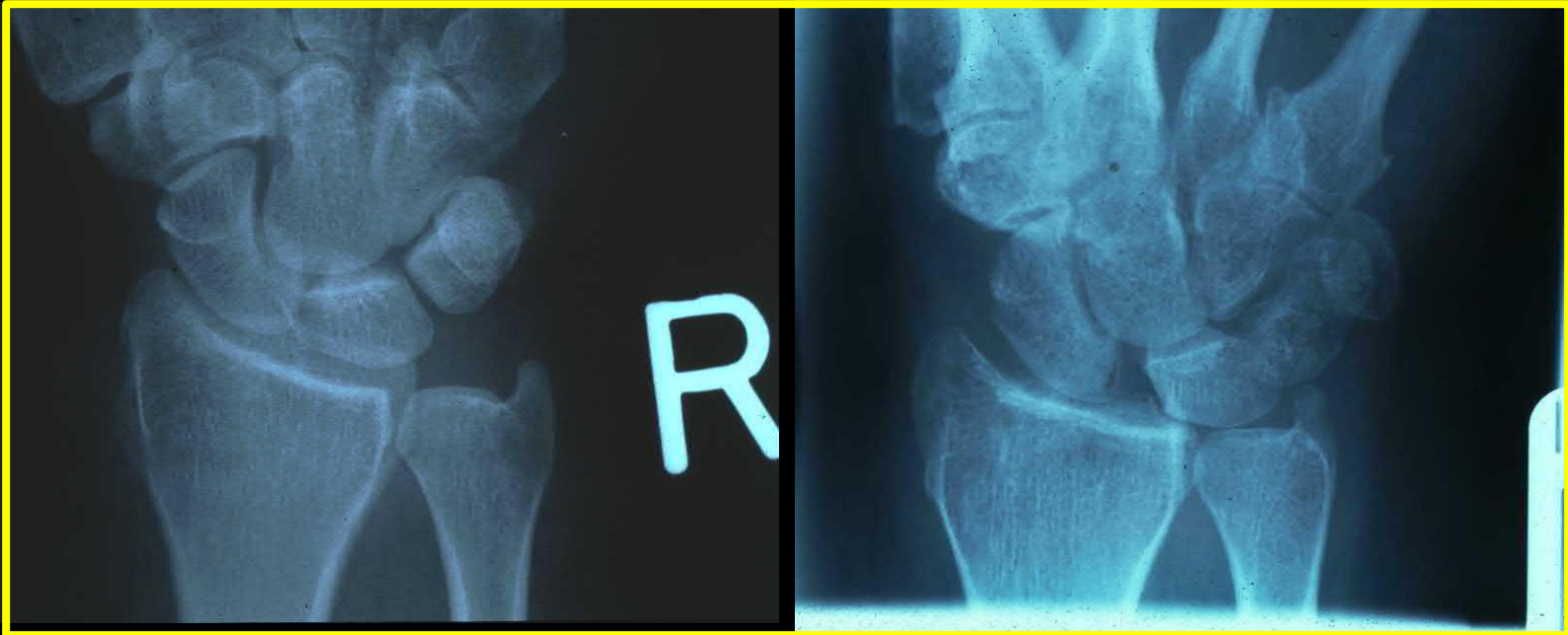


“Mal”-Anatomy



Utilize your X-Ray vision

Wrist Sprain?



Good or bad?

Which is worse?

Who did it?

A scenic view of a waterfall cascading over reddish-brown rocks into a pool. In the foreground, there are large, light-colored rocks and lush green plants with small red flowers. The water is clear and flows smoothly over the rocks.

**Of course...
but maybe?**

3) Perceptions (bias) can be deceptive

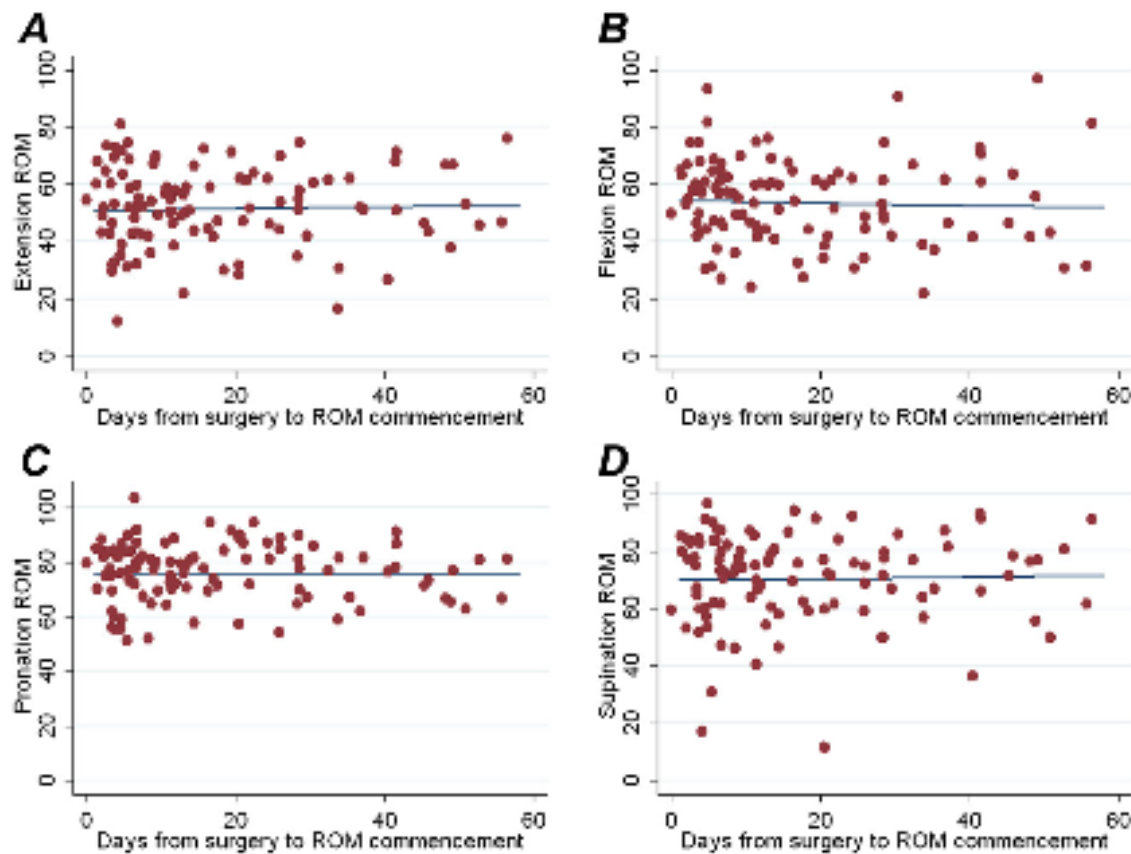
- **Confirmation Bias:**
 - *Evaluate evidence that supports a prior belief differently from evidence that challenges these convictions*
- **Long-term Follow-up:**
 - *Nothing ruins good outcomes more than long-term follow-up*
- **Sufficiency of Proof Axiom:**



Of course...early is better than late

Driessens et al; JHT 2013

“A retrospective cohort investigation of active range of motion within one week of open reduction and internal fixation of distal radius fractures



Surgical Treatment of Distal Radial Fractures with a Volar Locking Plate Versus Conventional Percutaneous Methods

2013

A Randomized Controlled Trial

Alexia Karantana, FRCS(Orth), Nicholas D. Downing, FRCS(Orth), Daren P. Forward, FRCS(Orth), DM,
Mark Hatton, FRCS(Orth), Andrew M. Taylor, FRCS(Orth), DM, Brigitte E. Scammell, FRCS(Orth), DM,
Chris G. Moran, FRCS(Ed), DM, and Tim R.C. Davis, FRCS

- Volar Plate (ORIF)

- Palmar tilt = 8 deg (+/- 6)

- Percutaneous (CREF)

- Palmar tilt = 2 deg (+/-10)

It can feel like...



Emotions associated with: *Our Science vs Our Opinion*

- “Clinical instincts” (+/- previous evidence) supporting HT conflicts with the higher level evidence?



...the feeling of discomfort that results from holding two conflicting beliefs

Feelings I have experienced:

surprised/confused, embarrassed/guilty, fearful/angry

A Prospective Randomized Controlled Trial Comparing Occupational Therapy with Independent Exercises After Volar Plate Fixation of a Fracture of the Distal Part of the Radius

J. Sebastiaan Souer, MD, Geert Buijze, MD, and David Ring, MD, PhD

Investigation performed at the Orthopaedic Hand and Upper Extremity Service, Massachusetts General Hospital, Boston, Massachusetts

Background: The effect of formal occupational therapy on recovery after open reduction and volar plate fixation of a fracture of the distal part of the radius is uncertain. We hypothesized that there would be no difference in wrist function and arm-specific disability six months after open reduction and volar plate fixation of a distal radial fracture between patients who receive formal occupational therapy and those with instructions for independent exercises.

Methods: Ninety-four patients with an unstable distal radial fracture treated with open reduction and volar locking plate fixation were enrolled in a prospective randomized controlled trial comparing exercises done under the supervision of an occupational therapist with surgeon-directed independent exercises. The primary study question addressed combined wrist flexion and extension six months after surgery. Secondary study questions addressed wrist motion, grip strength, Gartland and Werley scores, Mayo wrist scores, and DASH (Disabilities of the Arm, Shoulder and Hand) scores at three months and six months after surgery.

Results: There was a significant difference in the mean arc of wrist flexion and extension six months after surgery (118° versus 129°), favoring patients prescribed independent exercises. Three months after surgery, there was a significant difference in mean pinch strength (80% versus 90%), mean grip strength (66% versus 81%), and mean Gartland and Werley scores, favoring patients prescribed independent exercises. At six months, there was a significant difference in mean wrist extension (55° versus 62°), ulnar deviation (82% versus 93%), mean supination (84° versus 90°), mean grip strength (81% versus 92%), and mean Mayo score, favoring patients prescribed independent exercises. There were no differences in arm-specific disability (DASH score) at any time point.

Conclusions: Prescription of formal occupational therapy does not improve the average motion or disability score after volar locking plate fixation of a fracture of the distal part of the radius.

Level of Evidence: Therapeutic Level I. See Instructions for Authors for a complete description of levels of evidence.

4) Responding is important

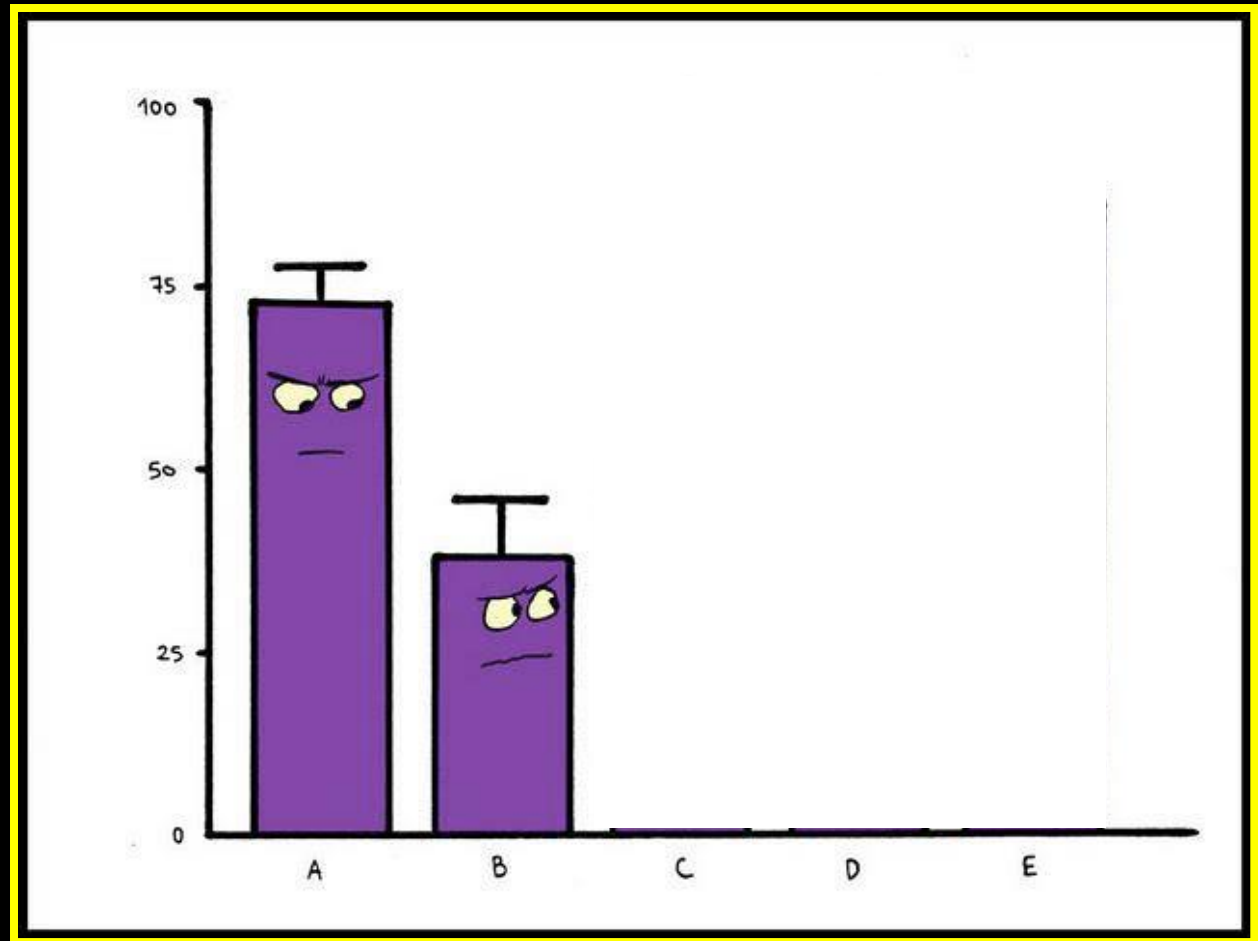


**If something does not
smell right challenge
it...but be open to
how it can enlighten.**

*It is how we remain open to data or luck
(serendipity: fortunate or accidental discoveries)
and how we respond to this that matters.*

5) Clinical trials do not always reflect clinical reality

- Statistical Significance
- Clinically Important Differences
- Variability
 - *“All patients are different”*



6) Observation is the seed of innovation

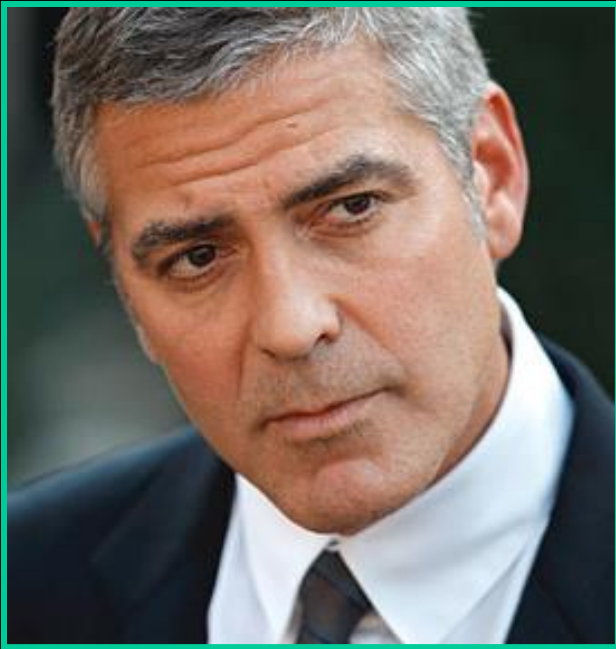
Acknowledge your biases; embrace your keen observational senses; and ignite your problem solving skill sets.



If it makes sense and the results are favorable explore if your **bias was controlled.**

If the results induce an internal dissonance at best, and anger at worst, then look for:

- **variability** in how they approached the problem or the results.
- **lumping** all pts together.



7) It is easier to stereotype

Up in the Air, 2009

“I'm like my mother, I stereotype. It's faster.”

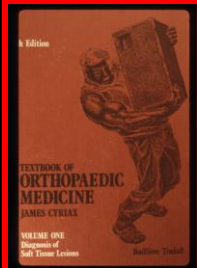
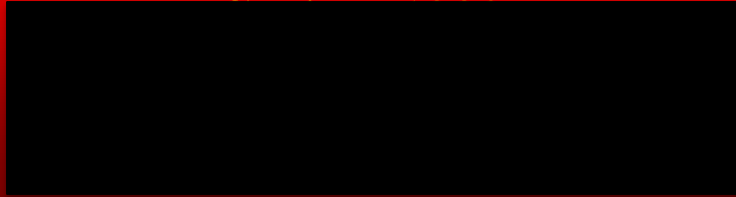
Who really needs hand therapy?

Who needs 1 on 1 or just HEP?

Who needs Rx to stop/continue?

Who needs to be rested or restored?

Characterizing and Stratifying



Profiling:

“the act or process of extrapolating information about a person based on known traits or tendencies”

Pain

ROM

Palpation

Resisted Test

Grip Test

Lateral Elbow Pain - Splint Decision Tree

Severe Symptoms



Moderate Symptoms



Mild Symptoms



REST PHASE

Lateral Elbow Pain - Eccentric Exercise Decision Tree

Severe Symptoms



Moderate Symptoms



Mild Symptoms



RESTORATIVE PHASE

8) “Clinical Research”...we all do it

- **Accept that we are trying to marry our clinical experience and the evidence with the novelty that each patient brings to the clinical situation.**
- **Optimizing efficiency and cost effectiveness.**
- **Practice “Skeptical Empiricism”**

Gerald Holten, Prof of Physics and History of Science-Harvard

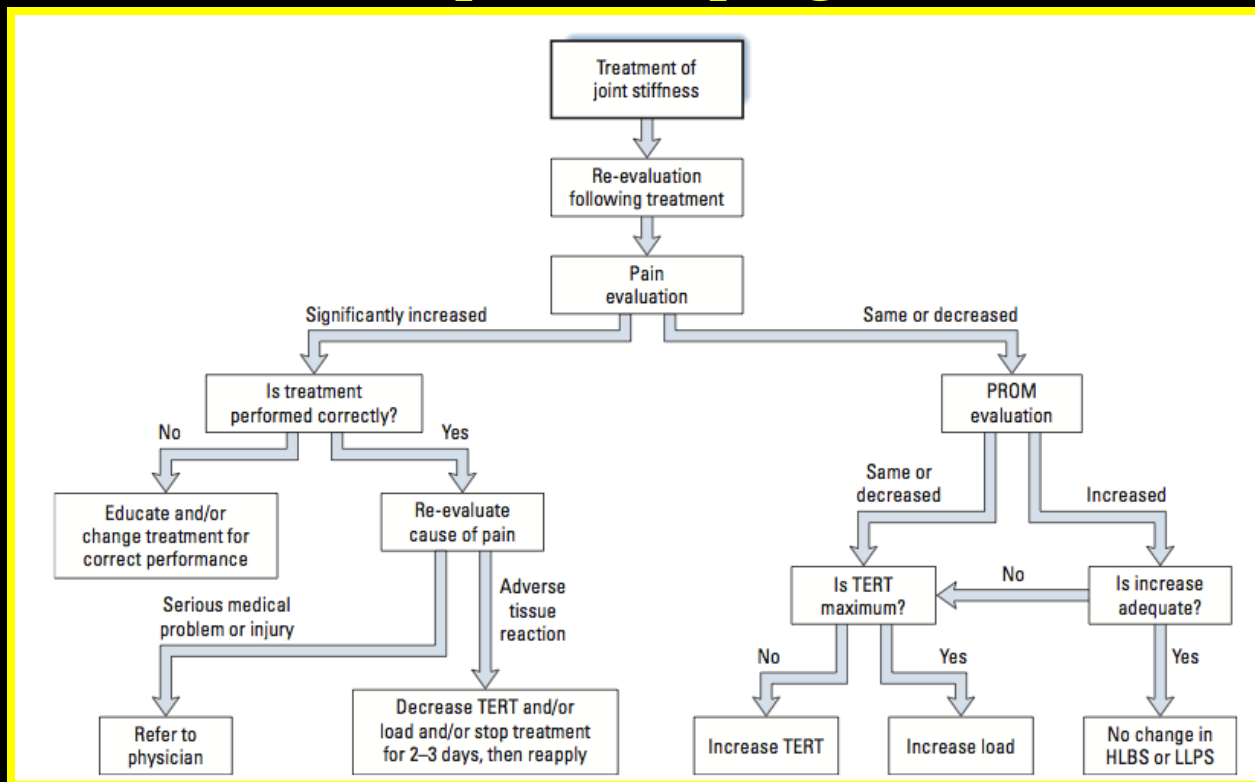
9) Know What You Are Looking At!

- ◆ Acknowledge Differences
- ◆ Stratify/Characterize
- ◆ Treat Accordingly Using a Strategic Approach

9) Seek the optimal dosage

Flowers, McClure, etc

We are constantly adding and subtracting stressors from our patient's programs



All of my relationships...

10) Whole is better than its parts

- Listening to **patients** and hearing their perspective as to their progress toward their dream recovery, and what resources they need to make this dream come true regardless of what we can offer.
- What proportion of their dream can **the team** predictably help with.
- The complete hand therapist is a direct result of **many parts**.

Thank You

