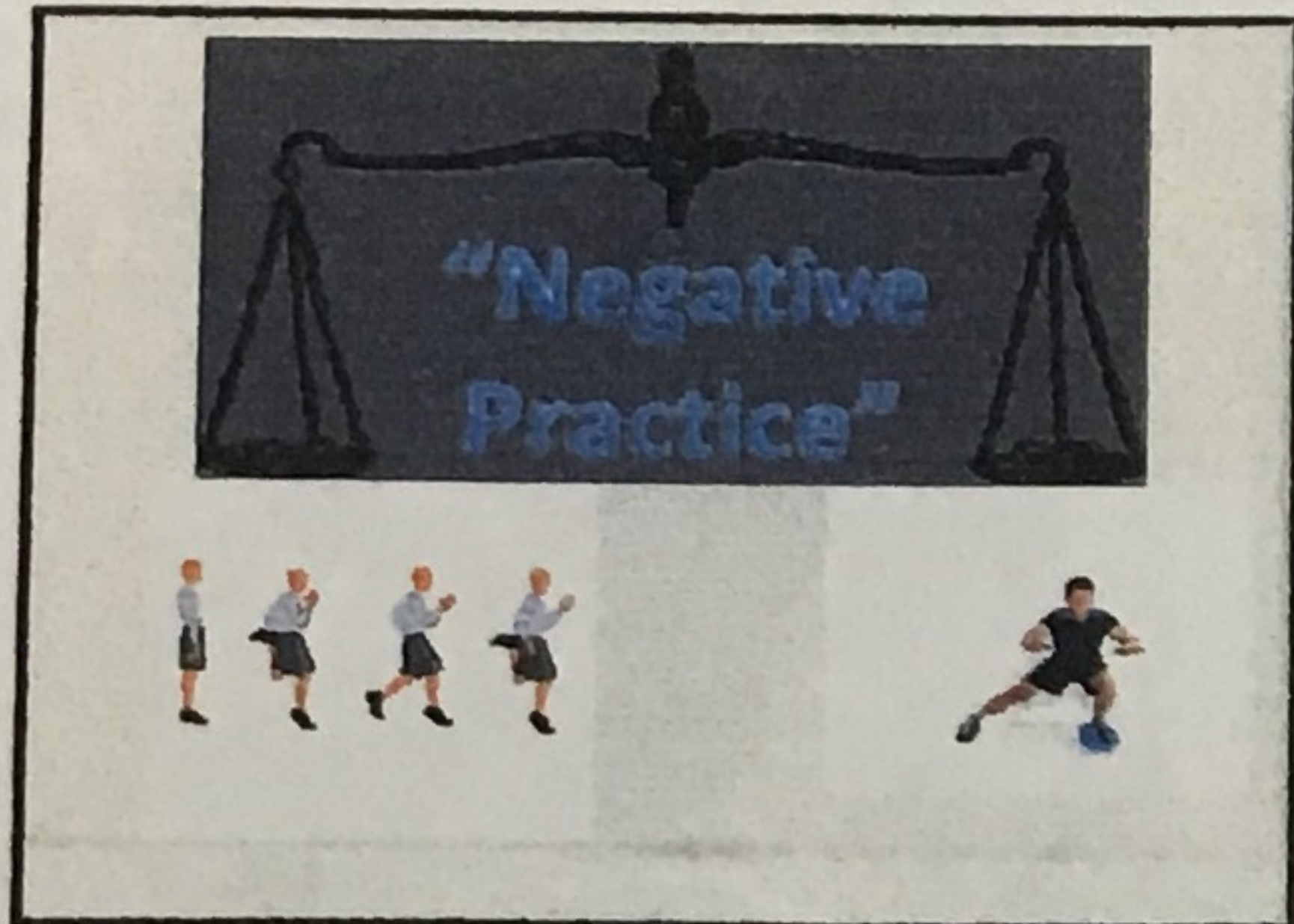


When a stretch doesn't get a kid ready for when the gun goes off, or ball is kicked, why do it?!



**DEBATE**  
Passive Flexibility vs. Dynamic Mobility  
"Stretching/Manipulating vs. MOVING"

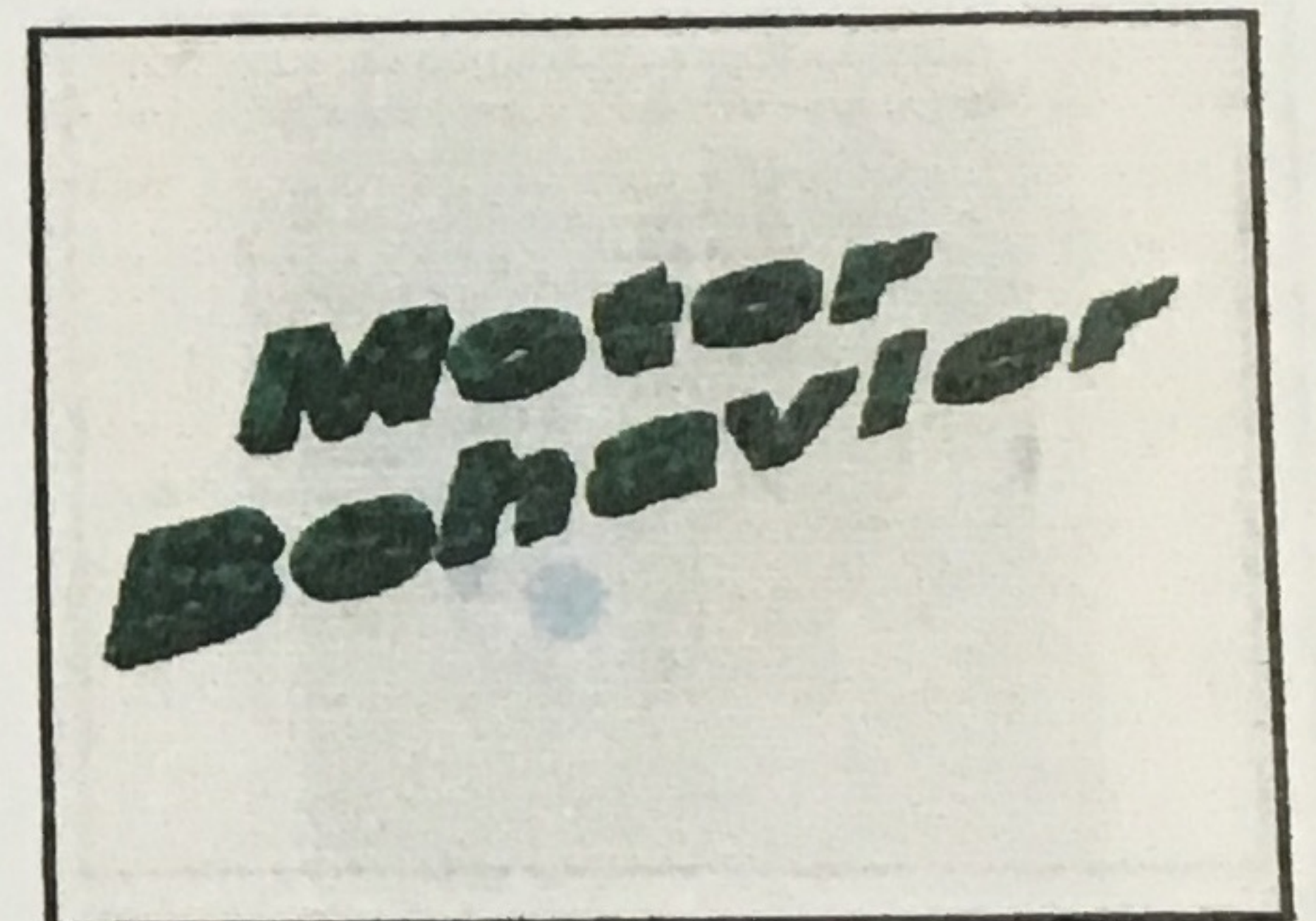
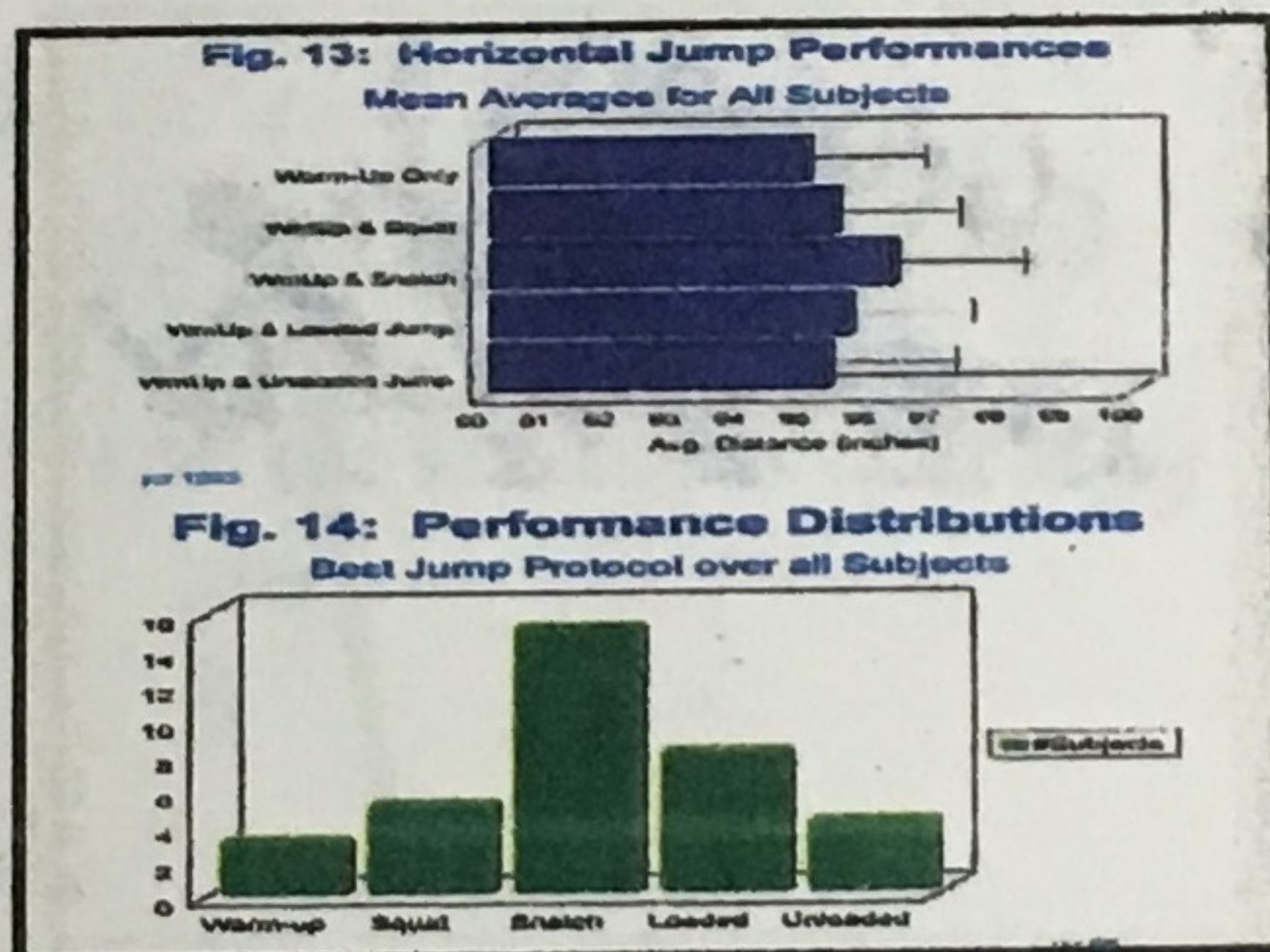
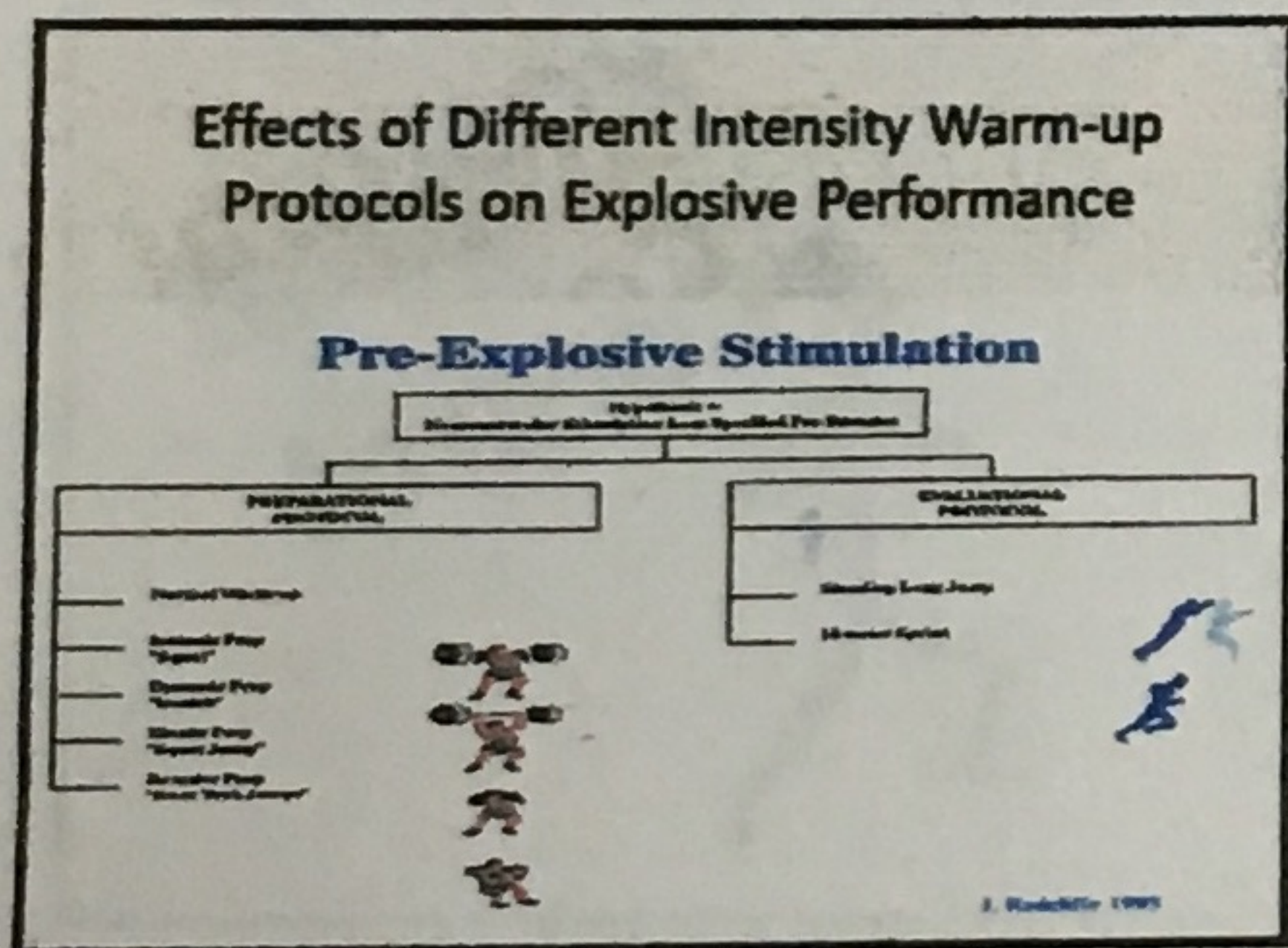
- Review of 33 studies utilizing Static, Proprioceptive Neuromuscular Facilitation (PNF), and/or Active Isolated (ballistic) stretching on performances. (Cramer 2005, Shrier 2004)
- 24 = decreases in performance
- 9 = no changes in performance
- 0 = increases in performance

**Dynamic Movement Benefits** (Young 2005)

- ↑ Increase in muscle temperature.
- ↑ Increased release of Oxygen.
- ↑ Increased metabolic processes.
- ↓ Decreased viscosity within muscle.
- ↑ Increase in nerve conduction.
- ↑ Increase in local muscle blood flow.
- ↑ Specific Skill Rehearsal
- ↑ Increase in Neural Pathway Efficiency
- ↑ Activation of specific motor units
- ↑ Psychological skill preparation
- ↑ Biomechanical skill preparation

Any time knees aren't distancing themselves, it not good. ex "butterflies" - moving at hips > moving at knees

24/33 studies showed decreased performance w/ static stretching



add load + speed + synchronization =  
Most effective way to prepare to run fast & jump high

**Stretch Responses**  
Responses to confront excessive stretch and tension as well as reflexive actions of powerful counter-movements

**The myoelectric (stretch) reflex**

**Muscle Mechanics**  
Contractile Components

**Series Elastic Element**  
**Parallel Elastic Element**

Concept = The "rate" of stretch is more important than the magnitude

**Proprioception**  
Potentiation

Concept = Training with a pre-stretch improves the efficiency of neuromuscular performance.

"rate" of stretch = more important than the magnitude