



I) Exercise Myths - Sacred Cows



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Sacred Cow



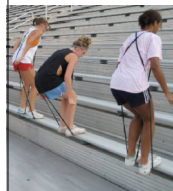
- an object, belief, or practice which is considered to be exempt from criticism or questioning

Lot of Cowboys

- Individuals who take a 3 month training course & become personal trainers and can do more harm than good if not guided.



More is Better?





Is Bigger Better?

- Trainers - boot camp
 - more is better
 - Quantity over quality (3 X 10)



One size fits all?

- Yoga or Fitness class - 1 size fits all
 - large classes



Less Stable is Better?



Before We Begin

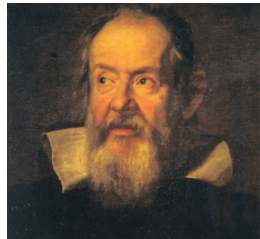
- Making Assumptions



- Can Hold Back Progress

Galileo's Trial

- Belief vs. Science



Hippocrates of Cos 460-380 BC

Physician Philosopher and
Father of Modern Medicine

**“Experience is fallacious
and judgment difficult.”**

US Supreme Court Finally Agrees

(Daubert Vs Merrill Dow, GE Vs Joiner, Kohmo Tire Vs Carmichael, Weigram Vs. Marley

Prospective Results since 2000?

- Relying on
**Retrospective
Study?**

*Provides the
Hypothesis*

- **Prospective
studies?**

*Test the
Hypothesis to see
if it is true!*

Beyond Strength & Flexibility

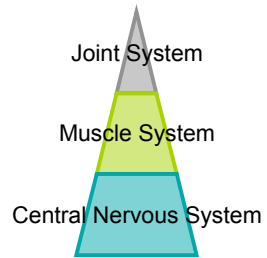
- Stability is the
starting point!
- Where to stretch
- Where to strengthen
- Quality over
Quantity



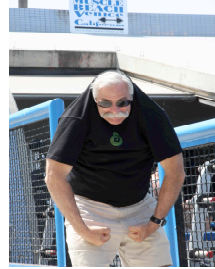
Core Stability

- The spinal column w/out muscles buckles at a load of 90 N (20 lbs)
- "This large load carrying capacity is achieved by the participation of well-coordinated muscles surrounding the spinal column"

M Panjabi



Science Explores Hypothesis



- Muscle activation vs Spine load during exercise
- Sit-up
- Trunk Extensions
- Squat
- Hip Press

Sit-Ups

Sit-up - 3350 N



Sit-Ups

McGill Curl-Up - 2000 N



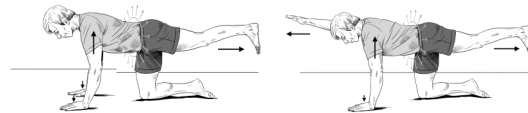
Trunk Extension



Prone Superman -
4300 N



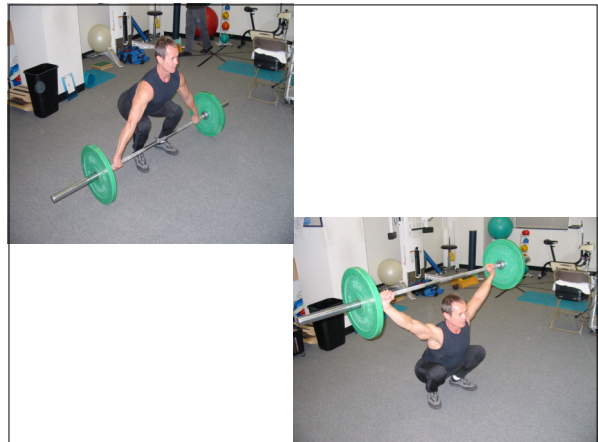
Trunk Extension



Quad Leg Raise - 2000-2300 N

Bird Dog - 3000 N

Squats



Hip Hinge – p645



- Teach patient to spare their spine
- Use legs to get up & down from chair, bed, etc.
- Maintain upright spine position (neutral lordosis)



Box Squats Gone Bad



Hip Press



Hip Press



What vs When

- When is the disc most vulnerable?



Acute-subacute care vs. Injury Prevention-Performance Enhancement

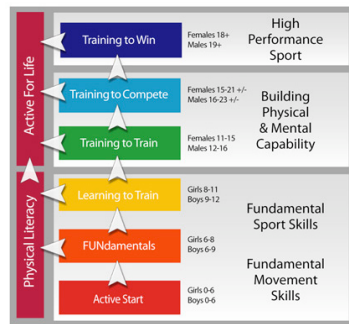
- Are McGill's Rehab exercises inappropriate for fitness?



The Dangers of Inappropriate Exercise Rx

- “Too much too soon” - boot camp
- Inadequate knowledge of the patient's:
 - Medical History
 - Activity History & Goals
 - Neuro-Orthopedic findings
 - Functional assessment

Long Term Athletic Development



Long Term Athletic Development is about....

- *Achieving optimal training, competition and recovery throughout an athlete's career, particularly in relation to the important growth and development years of young people*

Why is it important?

- Young players under train & overcompete
- Adult programs are used for the youth
- Male programs for females
- Focus is on outcomes (wins/losses) instead of processes (skill/attitude)
- Chronological age NOT biological age is considered



UNTIL IT HURTS

America's Obsession
with Youth Sports and
How It Harms Our Kids

MARK HYMAN

Ten year rule for expertise

- “ the fight is won and lost far away from witnesses... behind the lines , in the gym and out on the road , long before I dance under those lights”
Muhammad Ali
- “ perhaps the single most important element in mastering the techniques and tactics of racing is experience. But once you have the fundamentals , acquiring the experience is a matter of time”
Greg Le Mond – Tour de France Cycling Champion

The Golden Thread

- From early childhood to maturation, people go through several stages of development, which include pre-puberty, puberty, post-puberty and maturation. For each development stage there is a corresponding phase of athletic training (Bompa).

Movement Literacy

- FUNdamentals
- ABCs
 - Agility
 - Balance
 - Coordination



In a Nutshell

- The sports medicine specialist, Stanley Herring says, "signs and symptoms of injury abate, but these functional deficits persist.... adaptive patterns develop secondary to the remaining functional deficits."

Herring SA, Rehabilitation of muscle injuries. Med Sci Sports Exer 1990;22:453-456.



Is More Better?

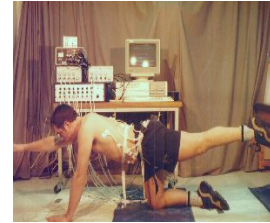
- “Practice doesn’t make perfect, it makes permanent”

Aristotle

Ideal Exercises



- Establish a “positive slope”
- Challenge muscle
- Impose minimal joint loads to spare the spine
- Train joint stability in a “neutral posture”
- Reinforce whole body stabilization principles
- Train functionally



<http://video.nytimes.com/video/2009/06/17/magazine/1194841000095/core-values.html?scp=1&sq=stuart%20mcgill&st=cse>

Thank you!

