

Punching Back at Parkinson's with Exercise

Presentation by Dr. Michael Braitsch PT, DPT

Disclosure slide



- The presenter is an avid exercise enthusiast, a licensed physical therapist, is extremely biased in terms of promoting exercise, physical therapy, and martial arts training.
- All forms of exercise are not appropriate for all people. Topics covered should not be used as a blanket treatment method or an individual exercise prescription. Each person must rely on their own judgement and reasoning to determine the suitability of exercise with input from their care team and medical professionals before initiating any new activity.
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Session Objectives

- Discuss current concepts from research to address impairments
- Explore key themes in using exercise for improving:
 - Strength
 - Flexibility
 - Balance

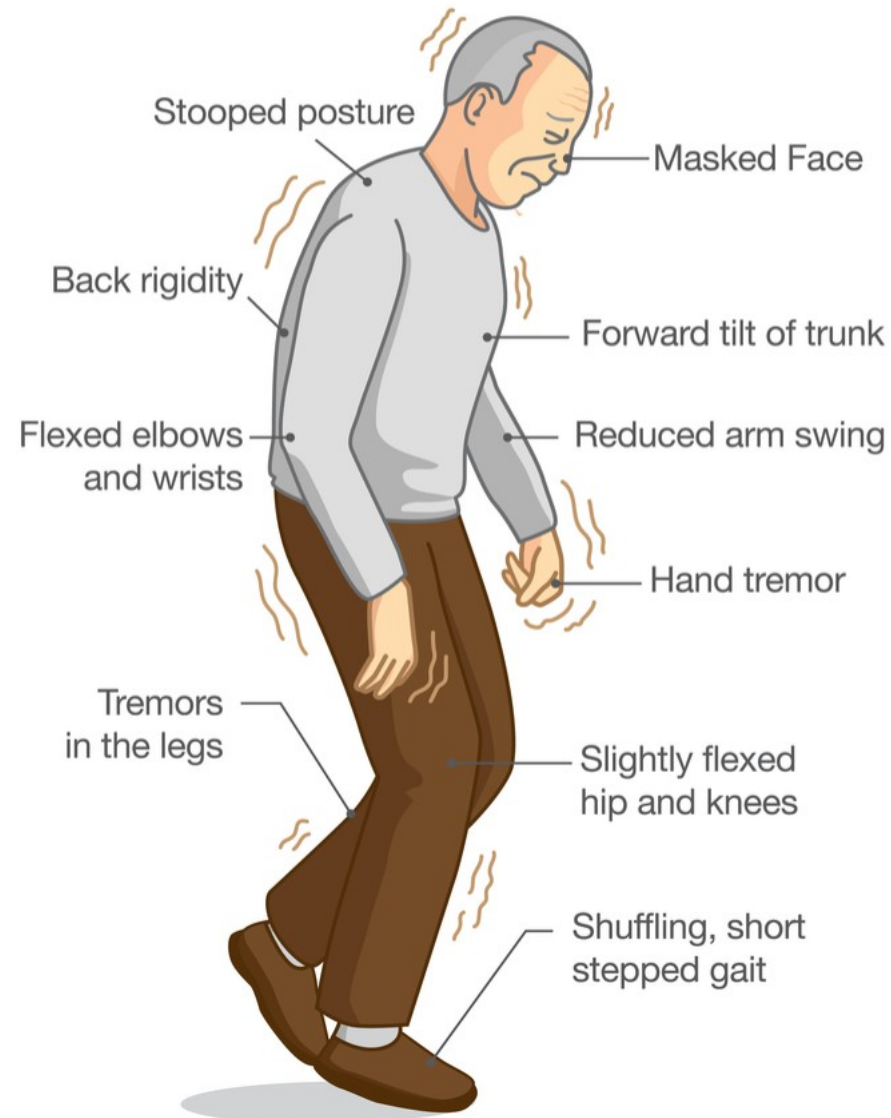
Common Reasons for 1:1 Physical Therapy



- 1) Annual “Tune Up”
- 2) Recent change in status
- 3) You’re starting to fall
- 4) Freezing Episodes
- 5) Feeling weak
- 6) To boost balance
- 7) Work on Walking
- 8) Acute flare up of chronic episode
- 9) The list goes on....

Parkinson's Disease Symptoms

**What can
that look
like?**



Current Concepts in Exercise for Parkinson's

How does exercise help?

"Not only is it good for:

- the heart*
- the brain*
- and muscles*

*in the same way it is for healthy people;
exercise also -*

- **modifies signs and symptoms of
Parkinson's disease.**"*

– Dr. Daniel Corcos

Improved motor performance!

- Systematic review and Meta-analysis of 18 randomized control trials
- **Aerobic exercise showed immediate beneficial effects** in improving
 - 1) motor action
 - 2) balance
 - 3) and gait in patients with Parkinson's

(Hai-Feng Shu et al., 2013)

Neuroplasticity



process by which the brain encodes experiences and learns new behaviors



Definition: the modification of existing neural networks by addition or modification of synapses.

Let's TRY....

Concepts of Neuroplasticity

1. Use It or Lose It

2. Use It and Improve It

3. Specificity

4. Repetition Matters

5. Intensity Matters

6. Time Matters


7. Salience Matters

8. Age Matters

**9. Transference or
Generalization**

10. Interference

To slow the progression...



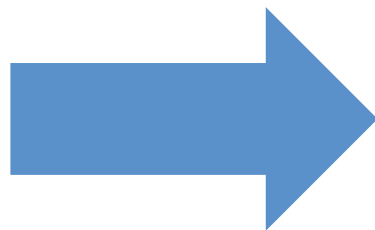
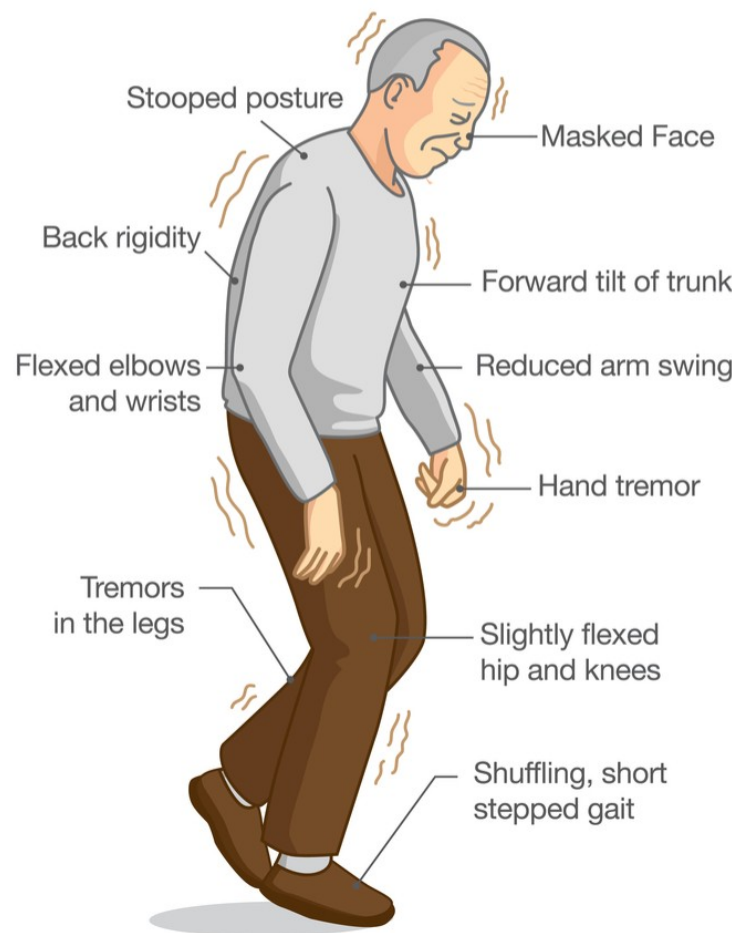
**Intensity
Matters!**

High-intensity training on motor & non-motor symptoms:

- 32 weeks: 2-3x/week of high intensity resistance, cardiovascular, balance, and flexibility training
- Improvements in UPDRS motor, ADL, and mentation scores
- PDQ-39 questions on emotional well-being & bodily discomfort substantially improved

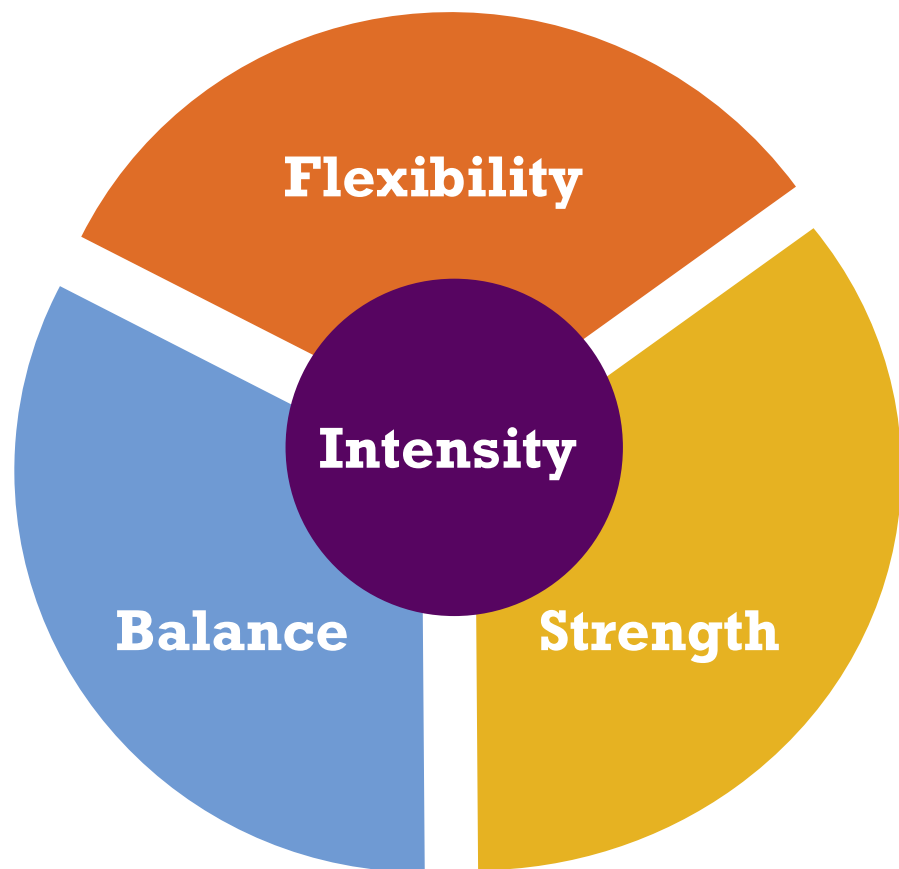
Morberg BM, et al. NeuroRehabilitation. 2014 Jan 1; 35(2): 291-298.

How to get from this → to this?



Key themes in exercise programming

Everyone should target:



Other key elements:

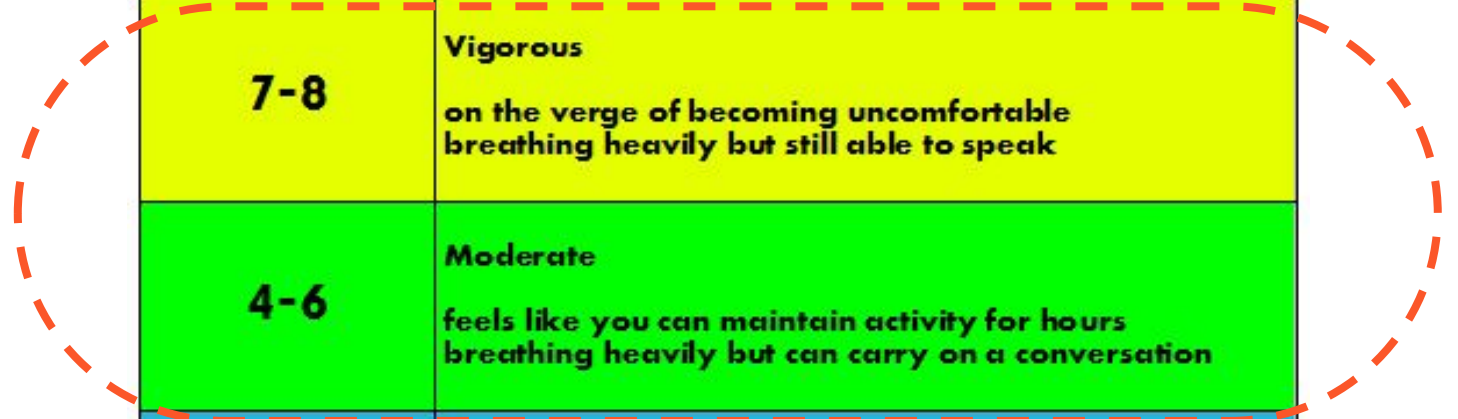
- Weight shifting
- Big, dynamic movements
- Multiple planes of motion
- Multiple directions
- Axial rotation

Intensity

(Think CARDIO!)

- Treadmill
- Elliptical
- Boxing
- Dancing
- Running/Walking
- Cycling
- Pole walking
- Rowing Machine
- Kickboxing (maybe)

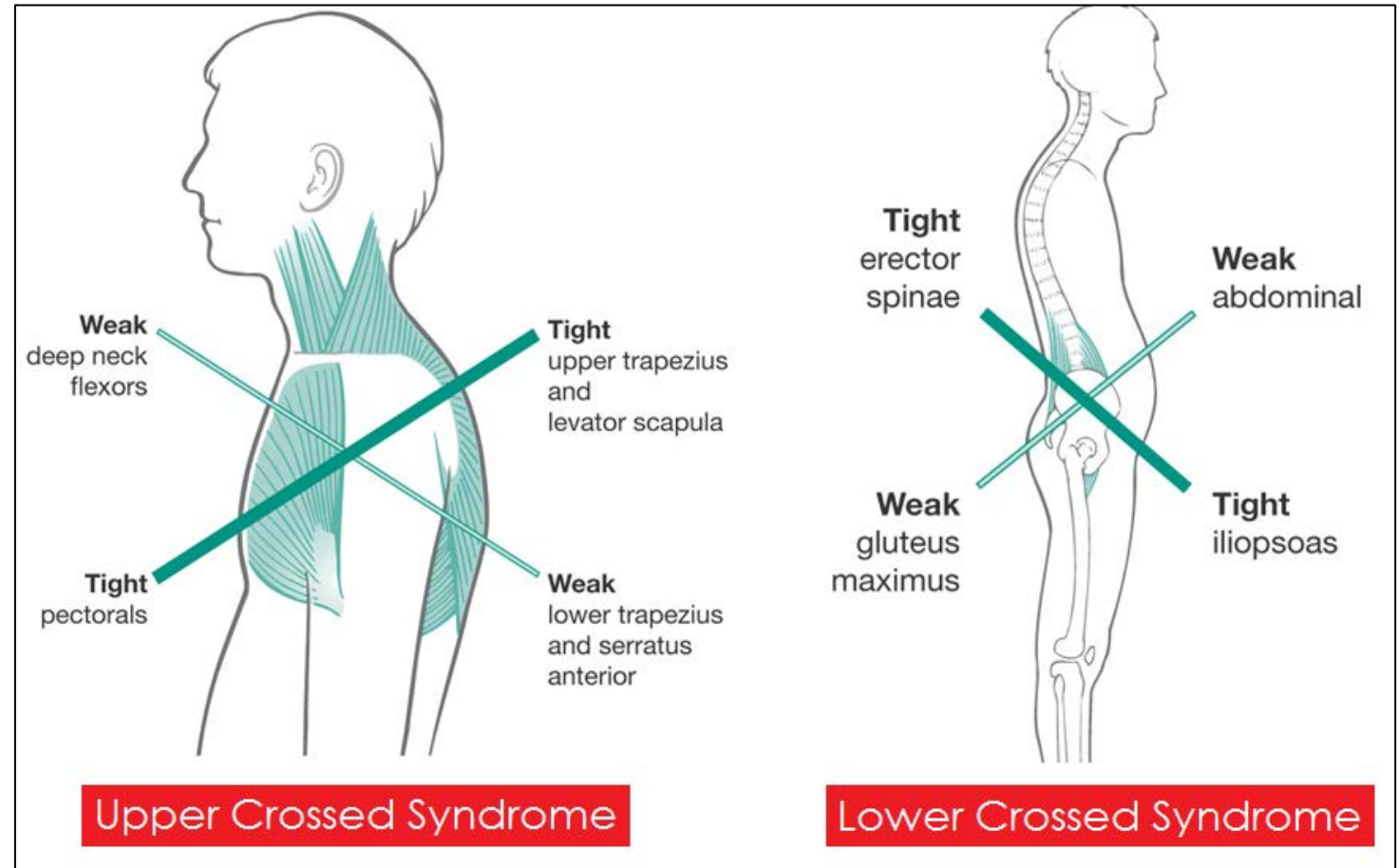
Modified RPE
4/10 - 8/10
is ideal



10	Maximum Effort feels almost impossible to continue no conversation possible
9	Very Hard difficult to maintain exercise intensity conversation becomes difficult
7-8	Vigorous on the verge of becoming uncomfortable breathing heavily but still able to speak
4-6	Moderate feels like you can maintain activity for hours breathing heavily but can carry on a conversation
2-3	Light feels like you can maintain activity for hours easy to breathe and carry on a conversation
1	Very Light little to no activity

Posture - Upper & Lower Crossed Syndromes

Fight the posture!



Strength

- Free weights
- Weight machines
- Body-weight
- Yoga
- Pilates
- Crossfit (maybe)
- PWR! Moves

Chronically weak muscle groups often include:

Neck, shoulders

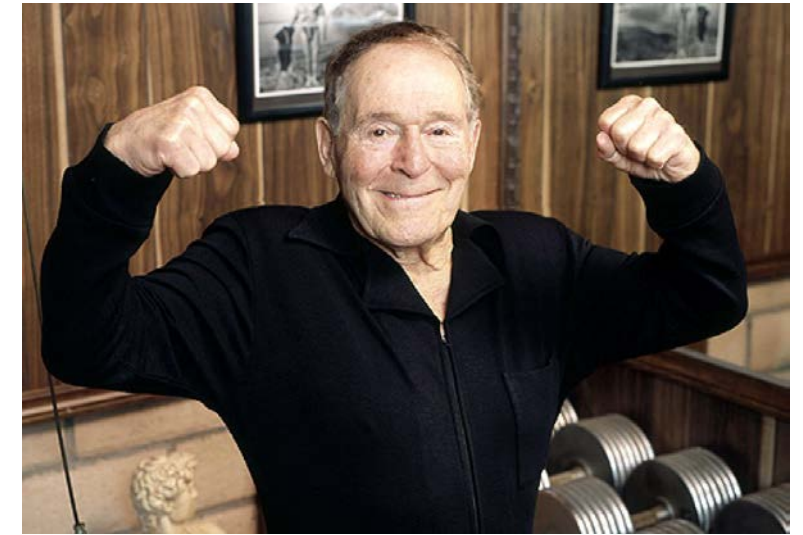
- Mid-trap, low trap
- Serratus anterior
- Deep neck flexors
- Deep neck extensors



<https://networkbio.net/wp-content/uploads/2015/02/Jack-LaLanne.jpg>

Legs, back, hips

- Glutes: Gluteus maximus, Gluteus medius
- Gastrocnemius, soleus



http://assets.nydailynews.com/polopoly_fs/1.149595.1313999240!/img/httpImage/image.jpg_gen/derivatives/article_970/alg-jack-lalanne-jpg.jpg

CORE!

Flexibility

- Tai Chi
- Yoga
- Pilates
- PWR! Moves
- Stretching

Chronically tight muscles often include

Neck/Shoulders

- Upper trapezius
- Levator scapula
- Pectoralis minor

Legs/low back

- Hip flexors
- Hamstrings
- Piriformis



<http://2.bp.blogspot.com/-UR4jplU3zWk/UP6PKftxYZI/AAAAAAAAAm8/TqWDnx8m8yI/s1600/ShiFu+YanLei+Shaolin+Sml.jpg>



Balance/ Postural control

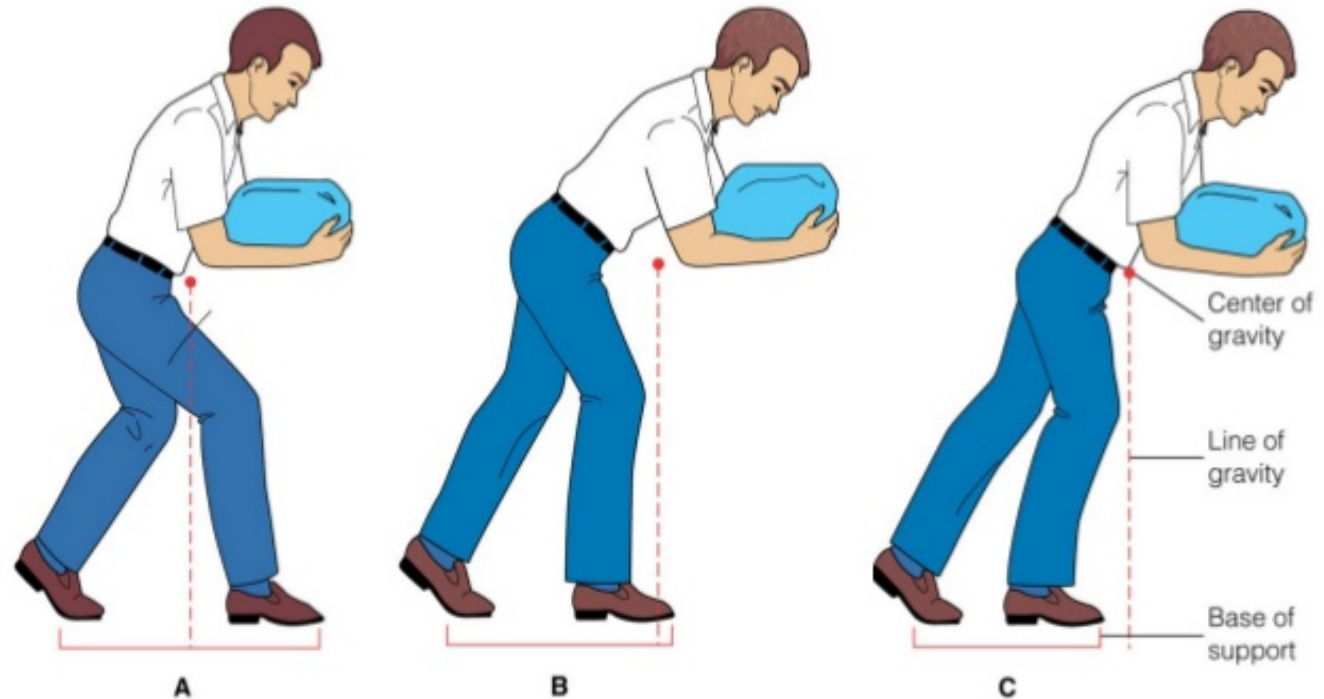
- Tai Chi
- Yoga
- Pilates
- Dancing
- Boxing
- Martial arts
- Feldenkrais
- LSVT BIG
- PWR! Moves

Overall theme

Keep Center of Mass (COM)

over

Base of Support (BOS)

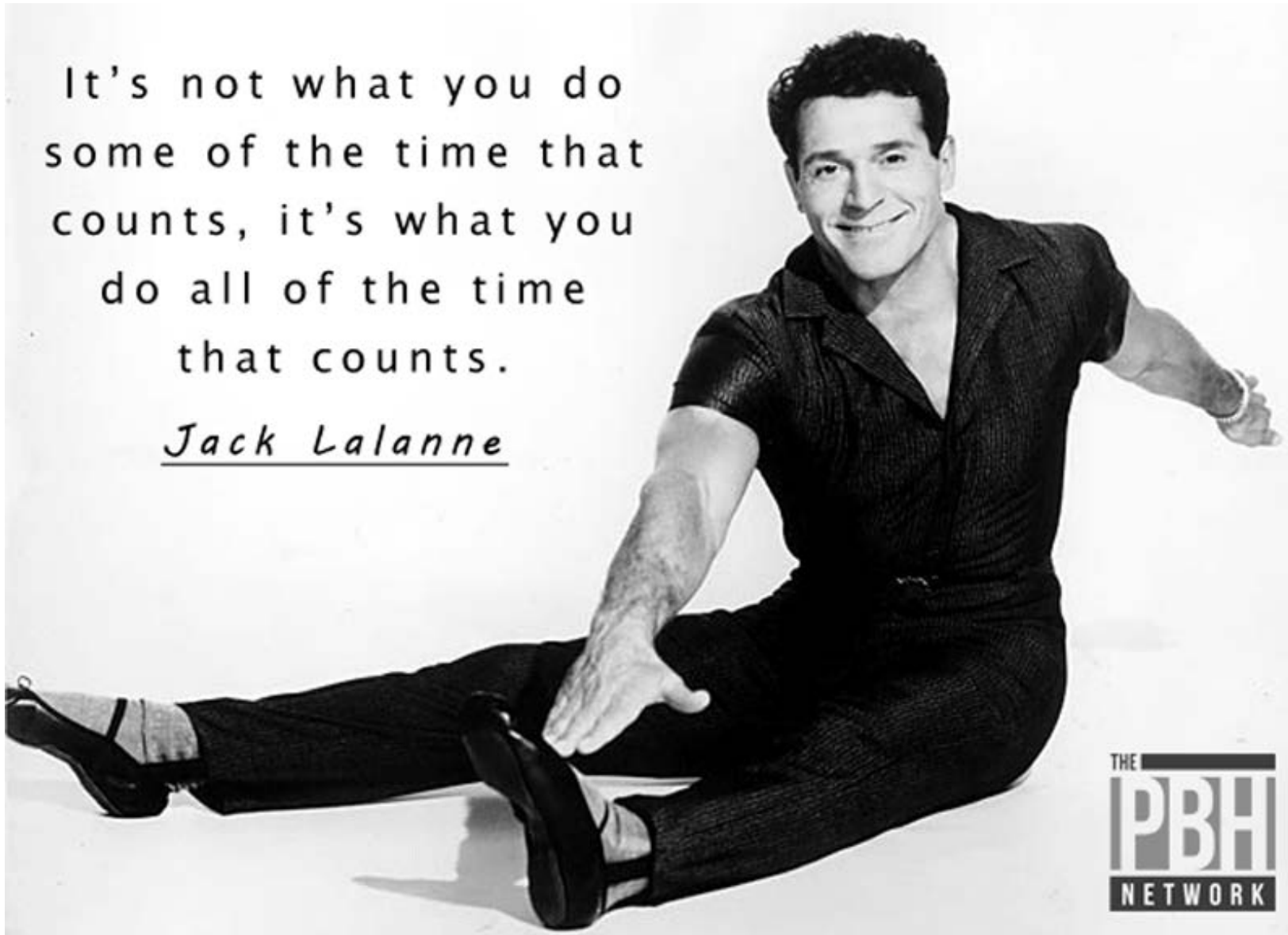


<https://image.slidesharecdn.com/bodymechanics-130211044523-phpapp01/95/body-mechanics-5-638.jpg?cb=1360557990>

Then, gradually challenge and progress safely

It's not what you do
some of the time that
counts, it's what you
do all of the time
that counts.

Jack Lalanne





THANK YOU!

Questions, Appointments & Training:

Dr. Michael Braitsch PT, DPT

TribeWellnessLLC@gmail.com

Phone (214) 702-6559

Fax (469) 779-1064

Tribe Wellness

100 N Cottonwood Drive

Suite 108

Richardson, Texas 75080