Tai Chi  
Feldenkrais  
Yoga  
Pilates  

What is the Evidence?

Exercise and Health

- Cardiac  
- Pulmonary  
- GI  
- Immune  
- Muscles/fascia  
- Brain/Nerves  
- Bone/skin

Actions of Exercise

- Increase
  - Perfusion and oxygenation of tissue  
  - “Natural” anti-oxidants  
  - Detoxification  
  - Intrinsic chelators

- Enhance organ function  
- “De-stress”
Which is Best?

The one that is done consistently

**Pilates**
- Nonimpact exercises designed to develop strength, flexibility, balance, and inner awareness.

**Feldenkrais**
- "...an educational system trying to give individuals a greater functional awareness of the self."

**Yoga**
- "A Hindu discipline that promotes spiritual unity with a supreme being through a system of postures and rituals."

**Tai Chi**
- Chinese health / self awareness and martial art system.
Common Aspects

- Breathing
- Increased flexibility
- Increased strength
- Increased awareness of self
  - Spirit-mind-body connection

Evidence-based medicine

- "... the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients."  - Center for Evidence-Based Medicine

- **Level A**: Good evidence... benefits substantially outweighs risks.
- **Level B**: Fair evidence... benefits outweighs risks.
- **Level C**: Fair evidence... benefits/risk too close for general recommendations
- **Level D**: Fair evidence... risks outweighs benefits.

U.S. Preventive Services Task Force

- **Level I**: At least one properly designed randomized controlled trial.
- **Level II-1**: Well-designed controlled trials without randomization.
- **Level II-2**: Well-designed cohort or case-control analytic studies, preferably
  - one center or research group.
- **Level II-3**: Multiple time series with or without the intervention.
- **Level III**: Opinions of respected authorities, based on clinical experience,
  descriptive studies, or expert committees.

U.S. Preventive Services Task Force
Pilates

- Joseph Pilates (1880-1965)
- Resistance exercise (with awareness of movement)
- “Necessity is the Mother of Invention”
  - Hospital bed and springs
- Weight lifting favors specific muscle groups
  - Strong muscles become stronger
  - Weak muscles become weaker
- Core muscles
- Relaxed breathing
- Awareness of movement - proprioception
- Group sessions
- Individual Therapist

- www.pilates-central.co.uk/
- www.yoga.org.nz/pilates.htm
- www.publispain.com/metodo-pilates
Pilates

- Quality of Evidence: B / Level II-2

- May improve endurance in hospitalized patients
  - BMC Geriatr. 2003

- Improve jumping ability

- Low back pain

- Body composition
  - Prev Med. 2006

- May be better for sports-related injury

- Used in traditional physical therapy

- May need equipment for optimal results

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Yoga

- >5,000 years...unknown origins
- Not a specific therapy
  - Path to balance body, mind, spirit
- Five Disciplines
  - Relaxation...sarasana
  - Exercise...asanas
  - Breathing...pranayama
  - Diet...vegetarian
  - Meditation...dhyana

Yoga

Many different styles

Preference

Availability

- Ananda...classic Hatha...not aerobic
- Anusara...spiritually oriented
- Ashtanga...physically demanding...strength, stamina, flexibility
- Bikram...26 asanas in 104°
- Kundalini...chanting, breathing
- Iyengar...use apparatus to achieve position
Yoga

- Quality of Evidence A / Level I
- PubMed... 1061 citations

www.yoga-age.com

Low Back Pain

- Ann Intern Med. 2005
- 12-week sessions of yoga, conventional therapeutic exercises classes or a self-care book
- Secondary outcomes were days of restricted activity, general health status, and medication use
- Yoga vs book (P < 0.001)
- Yoga vs exercise (P = 0.034)

- Ann Intern Med. 2004
- 6-week modified hatha yoga
- N=22, chronic low back pain randomized to yoga or no treatment
- Oswestry Disability Index and Beck Depression Inventory, forward reach and sit and reach tests
- Improvement but high drop out in control group

- Pain. 2005
- 16 weeks, Iyengar yoga to an educational control group
- Significant reductions: pain (64%), functional disability (77%), medication usage (88%)

- Ann Intern Med. 2007
- Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society
- Chronic or subacute low back pain - (preferably) yoga
Depression

- J Clin Psychol. 2008
- Yoga meditation (+ psychoeducation), hypnosis (+ psychoeducation), psychoeducation
- Yoga meditation significantly better than control
- Hypnosis slightly better than control
- Control with 3 remissions

- Acta Psychiatr Scand. 2007
- Yoga as "add-on" therapy for schizophrenia
- Yoga (n = 31), physical exercise therapy (n = 30) for 4 months
- Yoga group significantly better after 4 months. Significantly greater social, occupational functioning, QOL.

- Indian J Physiol Pharmacol. 2006
- Major depression
- Yoga meditation + Rx (n=15), Rx alone (n=15)
- Yoga meditation + Rx significantly better on several measures (P < 0.05).

Yoga

- Hot flashes
- Cardiac risk factors
- Asthma
- Gait and balance in the elderly
- Diabetes
- Cancer-side effects

Contraindications

- Glaucoma
- Dizziness
- Postural hypotension
- Unstable HTN

Evidence

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<td>International Association of Yoga Therapists Prescott, AZ <a href="http://www.iayt.org">www.iayt.org</a></td>
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Feldenkrais

- Moshe Pinhas Feldenkrais
- Electrical engineer, martial art expert
- Re-education of body and nervous system
  - Awareness of movement dysfunction
  - Movement without pain

Feldenkrais

- Quality of Evidence: B / Level II-3
- Pubmed: 30 citations

Feldenkrais

- Pain-back and neck
- MS
- Controversial
- Very limited research
- Group session
- Therapist – directed
- Physical therapy
### Feldenkrais

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### Tai Chi / Qigong

- **Bodhidharma-Shaolin Temple**
  - Fitness program
  - Self defense applications
- **Most common form of ‘exercise’-worldwide**
  - Thousands of different styles
    - Slow
    - Fast
- **Pubmed**
  - 356 citations…Tai Chi
  - 2131 citations…qigong

### Quality of Evidence

- **A / Level I**
**Geriatrics…Balance**

- **Improvement on balance and falls (+/-)**

**Osteoarthritis**

- **Improvement in function and pain**

**Osteoporosis**

- **No improvement**
  - Multiple studies vs. no treatment-no specific benefit from tai chi.
  - However, all studies are less than one year.
  - Some show increase BMD in tibia.

**Frailty**

- **Improvement on several parameters**
- **Cardiovascular**
  - Improvement in HTN, lipid profile
  - Tai Chi as an adjunct to cardiac rehabilitation exercise training. J Cardiopulm Rehabil 2003
  - A 10-week Tai Chi program improved the blood pressure, lipid profile and SF-36 scores in Hong Kong Chinese women. Med Sci Mind 2006
  - The effects of aerobic exercises and Tai Chi on blood pressure in the elderly. Circulation 1998

- **Better than:**
  - Walking (elderly)...strength / balance / flexibility - Age and Ageing 2006
  - Physical therapy...balance / gait
  - Walking...cardiac fitness post CABG Med Sci Sports Exerc 1999
  - Aerobic exercise...cardiac fitness
  - Arthritis programs...ROM, pain reduction, function

- **Diabetes**
- **Depression**
- **Back pain**
- **Parkinson's disease**
- **Immune function**
- **Cancer**
- **Alzheimer's disease**
- **Coordination**
- **Stress reduction**
- **Menopause**
- **Vaccine**
- **Asthma / lung function**
## Tai Chi / Qigong

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<td>So specific governing body…park districts, hospitals, health clubs, martial art schools</td>
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“Do not be afraid to try something new.

A lone amateur built the ark.

A large team of experts built the Titanic.”

David Barry

Thank you
Patrick B. Massey MD, PhD

Medical Director
Complementary and Alternative Medicine
Alexian Brothers Hospital Network
Elk Grove Village IL