

A group of people, including men and women, are sitting on a grassy field. The image is overlaid with a cyan tint and a grid pattern. The text is centered over the image.

COMMUNITY-BASED WELLNESS: Evidence for Mind-Body Exercise

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OBJECTIVES


- Review the current evidence supporting the use of mind-body exercise to improve health.
- Identify patient populations that might benefit from mind-body exercise.
- Discuss implementation strategies for incorporating mind-body exercise into clinical practice



WHAT IS MIND-BODY EXERCISE?

A mind-body exercise is a physical exercise that is performed with an intense focus.

<http://naturalhealthperspective.com/resilience/mind-body-exercise.html>



National Center for Complementary and Alternative Medicine: Definition of Mind-Body Medicine

“Mind-body medicine focuses on the interactions among the brain, mind, body, and behavior, and the powerful ways in which emotional, mental, social, spiritual, and behavioral factors can directly affect health. It regards as fundamental an approach that respects and enhances each person’s capacity for self-knowledge and self-care and emphasizes techniques that are grounded in this approach.”

Health Information. Mind–Body Medicine.
National Center for Complementary and Alternative
Medicine; 2006. [Online]. Available at: [http://
nccam.nih.gov/health/backgrounds/mindbody.htm](http://nccam.nih.gov/health/backgrounds/mindbody.htm)

WELLNESS

ECONOMICAL



OCCUPATIONAL



EMOTIONAL

SPIRITUAL

PHYSICAL

INDIVIDUAL

COGNITIVE

SOCIAL

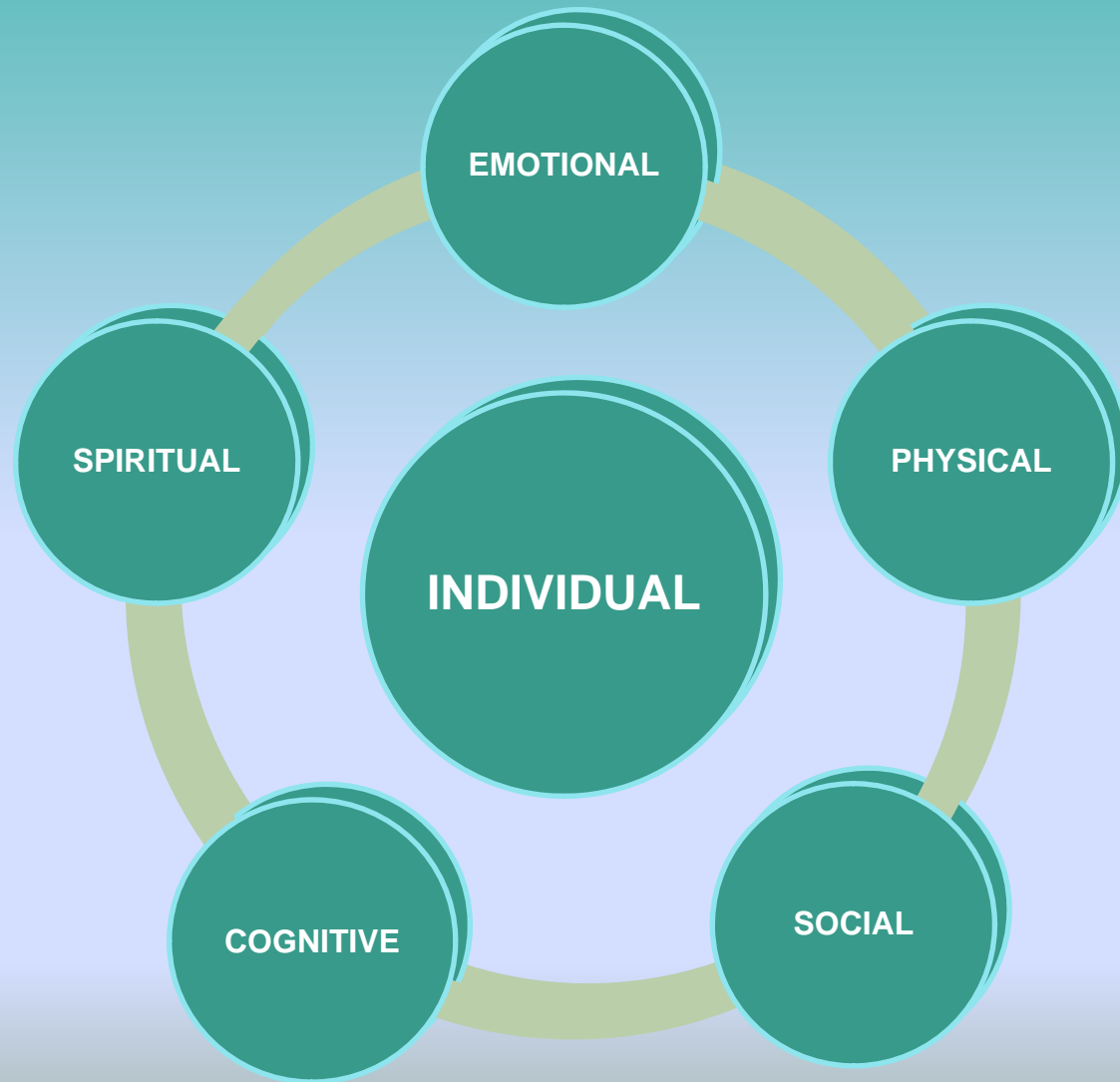
ENVIRONMENTAL



MEDICAL



MIND-BODY EXERCISE



WELLNESS

COMMUNITY-BASED EXERCISE RESOURCES



Tai Chi

Qigong


Yoga

Pilates

TAI CHI CHUAN



- Originated in China as an internal/soft martial art
- 5 main styles; Yang most popular (13-108 postures)
- Involves slow, gentle body movements while incorporating deep breathing and meditation (“moving meditation”)
- Is adaptable for individuals of all ages with a wide range of abilities and conditions

- 
- <http://www.youtube.com/watch?v=-ZtpwmjMC7Q&feature=related>



TAI CHI EVIDENCE

Meta-analyses

❑ **Dementia** (Forbes D, Forbes S, et al. Physical activity programs for persons with dementia. Cochrane Database Syst Rev. 2008 Jul 16;(3):CD006489. Review.)

➤ **insufficient evidence regarding physical activity**

❑ **Aerobic capacity** (Taylor,-Piliae RF. The effectiveness of Tai Chi exercise in improving aerobic capacity: an updated meta-analysis. Med Sport Sci. 2008;52:40-53.)

➤ **Improved in sedentary adults**



TAI CHI EVIDENCE

❑ **Balance in older adults** (Howe TE, Rochester L, et al. Exercise for improving balance in older people. Cochrane Database Syst Rev. 2007 Oct 17;(4):CD004963. Review.)

➤ **Included in exercise interventions for balance**

❑ **Chronic pain in older adults** (Morone NE, Greco CM. Mind-body interventions for chronic pain in older adults: a structured review. Pain Med. 2007 May-Jun;8(4):359-75. Review.)

➤ **8 mind-body interventions including yoga and Tai Chi**

➤ **Found safe but insufficient evidence**



TAI CHI EVIDENCE

Tai Chi Chuan in older adults (Verhagen AP, Immink M, van der Meulen A and Bierma-Zeinstra SMA. The efficacy of Tai Chi Chuan in older adults: a systematic review. *Family Practice* 2004; 21: 107–113.)

- **5 studies with cardiovascular variables, 2 with balance/fall outcomes)**
- **Effective in reducing falls and blood pressure in older adults**



TAI CHI EVIDENCE

□ **Chronic conditions in older adults** (Wang C, Collet JP, Lau J. The effect of Tai Chi on health outcomes in patients with chronic conditions. *Arch Intern Med.* 2004; 164: 493-501).

- **Safe and effective in promoting balance, flexibility and cardiovascular fitness in older patients with chronic conditions**



TAI CHI EVIDENCE

□ Systematic review for treatment of osteoarthritis

(Lee MS, et al. Tai chi for arthritis: a systematic review. *Clin-Rheumatol*. 2008 Feb; 27(2): 211-8.)

- 12 studies (5 RCTs) – mixed results
- Encouraging evidence for pain reduction; not conclusive for pain reduction or improved function



TAI CHI EVIDENCE

Effects of Tai Chi Exercise in Elderly with Knee Osteoarthritis
Lee, Hea-Young¹ Lee, Keum Jae²

연구의 필요성

골관절염은 관절의 통증과 뻣뻣함, 근 기능의 약화로 노인들의 관절을 불안정하게 하며, 기동성에 위협을 끼친다(van Baar,

Dekker, Lemmens, Oostendorp, & Bijlsma, 1998). 특히 체중부하가 무릎에 영향을 많이 미치기 때문에 슬골관절염은 슬관

절의 근육에 기능 저하를 야기하며, 균형을 이루는데 문제를 일으

킨다(Pandya, Draganich, Mauer, Piotrowski, & Pottenger, 2005). 따라서 슬골관절염은 낙상의 발생률을 증가시키는 내적

요인으로 간주된다(Tinetti & Speechley, 1998).



JOB OPPORTUNITIES

ENGLISH EDITOR WANTED[2008-12-17] · 关于刊登“中华医学会系列杂志从2009年开始标注数字对象惟一标识符”消息稿的通知 [2008-12-12]



TAI CHI – Current Clinical Trials

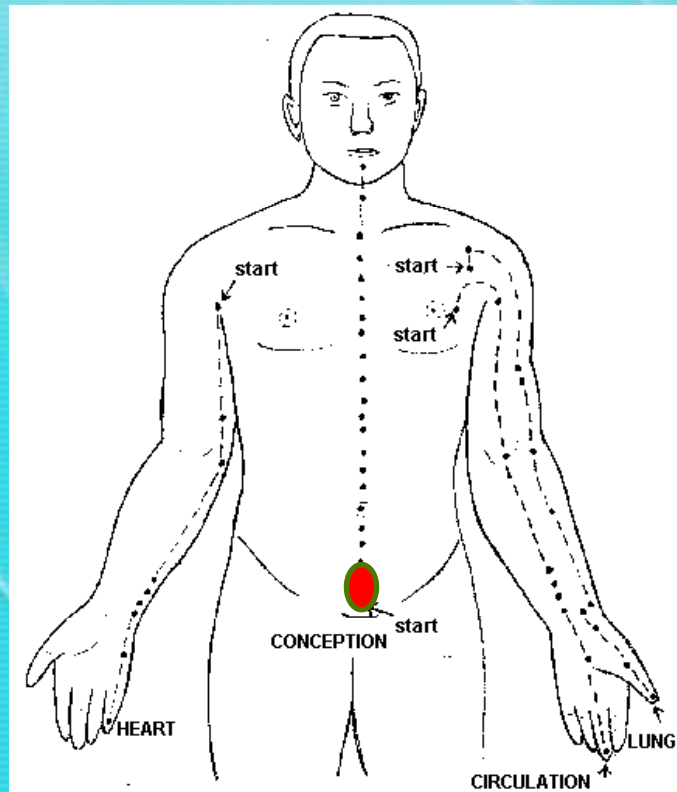
- **Bone health**
- **Rheumatoid arthritis**
- **Osteoarthritis of the knees and hips**
- **Chronic heart failure**
- **Sleep in older adults**
- **Fibromyalgia**
- **Balance – Parkinson’s pts, vestibular disorders, peripheral neuropathy**
- **Effects on immune system**
- **Chronic low back pain**

<http://www.clinicaltrials.gov>

QI GONG

□ Qigong, Chi Kung

- Chi – vital energy within the body
- Gong – training & practice



QI GONG

- ❑ Root of Traditional Chinese Medicine
- ❑ Health (internal) & Medical (external)
- ❑ Various styles
 - ❑ Eight Section Brocades (Baduanjin)



QI GONG

PATHWAY:

Psychoneuroendoimmunology (PNI)

Interlinking of nervous, endocrine and immune systems

- **Reciprocal regulation between the CNS and the immune system via hormonal and neuronal pathways**
- **Down-regulation of the sympathetic nervous system**

- 
- <http://www.youtube.com/watch?v=r9QHP-h3cGg>

QI GONG EVIDENCE

Bobby, HP et al. Psychophysiological outcomes of health qigong for chronic conditions: a systematic review. *Psychophysiology*; 2009 (46): 257-269.

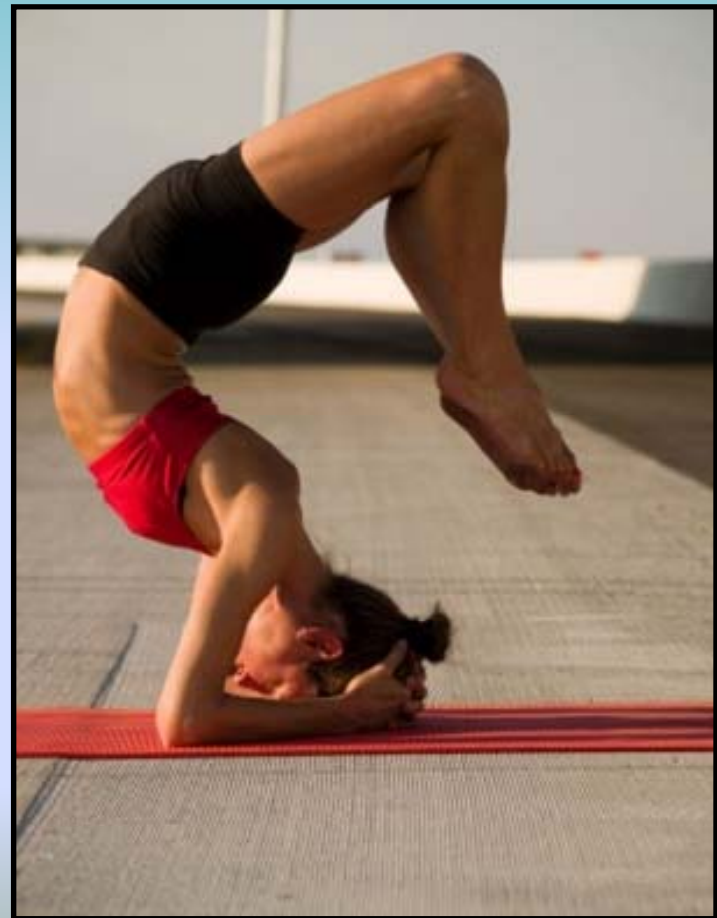
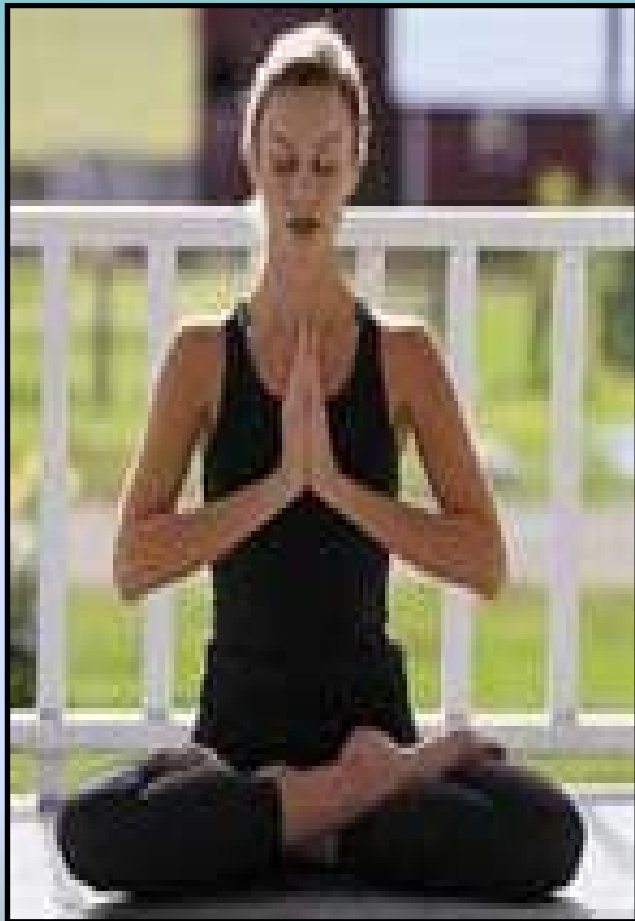
Meta-analysis of 26 RCTs (1996-2006)

- **Immune system (white blood cells and lymphocytes)**
- **Cardiac system (stroke volume, peak transmitral filling capacity)**
- **Pulmonary system (forced vital capacity & expiratory volume)**
- **Lower total cholesterol**
- **Lowered blood pressure**
- **Improved depressive mood scores**

YOGA

- ❑ Sanskrit word meaning “to yoke” – union between mind and body with the energy of the universe
- ❑ Foundation in India, over 5,000 yrs ago
- ❑ To U.S. in 1800’s; popular in 1960’s
- ❑ Estimated 15-18 million adults practicing yoga in the U.S.

NOT ALL YOGA IS CREATED EQUAL



YOGA STYLES

- ❑ Hatha yoga most popular – combines physical postures (asanas), breathing techniques, and relaxation/meditation
- ❑ Ashtanga – power yoga. Physically demanding.
- ❑ Bikram – hot yoga. Practiced in room temperature ranging from 80-100 degrees. Requires certain amount of stamina and fitness
- ❑ **Iyengar* – utilized various props to develop greater symmetry and alignment in the postures
- ❑ **Viniyoga* – modifies each pose to the individual. Slower pace; more attention to breath and emphasis on biomechanics

YOGA EVIDENCE

Lipton L. Using yoga to treat disease: an evidence-based review. *JAAPA*. 2008; 21(2):34- 41.

- May improve muscular flexibility, strength, and balance**
- Some efficacy as adjunct therapy for LBP, knee OA and carpal tunnel syndrome**
- May add benefit to management of CV disease but also included lifestyle changes**

YOGA EVIDENCE

Lipton – evidence based review. JAAPA. Feb., 2008:

- May have some positive effects on
 - Obsessive-compulsive disorder
 - Anxiety and depression
 - Other conditions exacerbated by stress such as ADHD, menopausal vasomotor symptoms, irritable bowel syndrome

YOGA EVIDENCE

□ Other meta-analyses

- **Self-management strategies for pain and function in older adults – positive outcomes found in 96% of studies (yoga, Tai Chi, massage, music therapy)**
- **Chronic pain in older adults – mind/body interventions review**

YOGA EVIDENCE

- ❑ **Chronic LBP – 3 studies, fair evidence**
- ❑ **Asthma – insufficient evidence**
- ❑ **Carpal tunnel syndrome – short –term improvement in grip and pain in 1 study; no difference in other study**
- ❑ **Anxiety and depression in children & young people**
- ❑ **Hypertension**
- ❑ **Anxiety**

YOGA

- ❑ Purported to be safe and effective
- ❑ Injuries under –reported
- ❑ Several case studies:
 - ❑ Vertebral artery dissection
 - ❑ Basilar artery occlusion
 - ❑ Spontaneous pneumothorax
 - ❑ Conjunctival thrombosis
 - ❑ Peripheral Neuropathy
 - ❑ Bilateral sciatic nerve compression

CURRENT CLINICAL TRIALS

- Diabetes*
- Insomnia
- HIV
- Immune function
- COPD
- Breast Ca*
- Fatigue
- Metabolic syndrome*
- PTSD
- Stress management

<http://www.clinicaltrials.gov>

INFORMATION

- ❑ **Yogaalliance.org** – general information; registry for instructors who have met 200-500 hour instruction
- ❑ **YogaFit** – provides instructor training and referrals world-wide.
- ❑ **Yoga Research and Education Center**
www.yrec.org

PILATES



"Everything should be smooth, like a cat. The exercises are done lying, sitting, kneeling, etc, to avoid excessive strain on the heart and lungs."

- ❑ **History of Pilates**
 - ❑ **Joseph Pilates – German –born; sickly as child**
 - ❑ **Sought health and fitness through Zen meditation, yoga, boxing, gymnastics, martial arts**
 - ❑ **Worked in British internment camp during WW I**
 - ❑ **Devised exercises using various equipment**
 - ❑ **Came to NY in 1920s**

PILATES



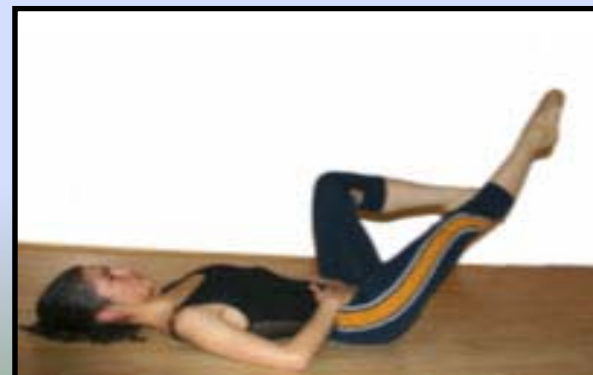
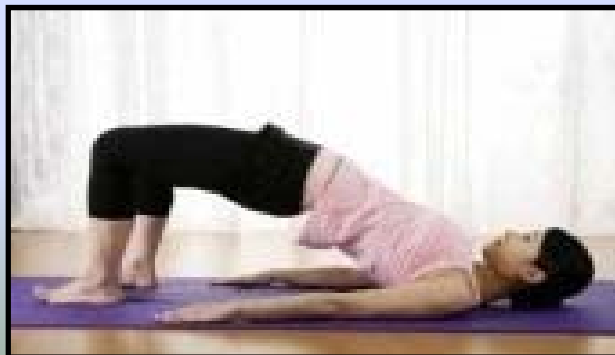
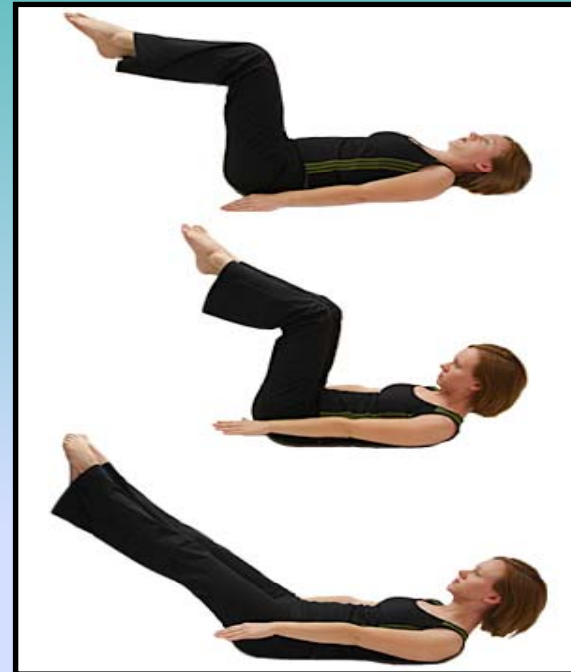
"Everything should be smooth, like a cat. The exercises are done lying, sitting, kneeling, etc, to avoid excessive strain on the heart and lungs."

- ❑ ***Contrology and "the powerhouse"***
 - Mind-body system designed to enhance flexibility, strength, and coordination
 - Strong emphasis on awareness and control, stability

- ❑ **Different schools, methods**

- ❑ **1.7 million in 2000 to 10.5 million in 2004**

PILATES MAT EXERCISE



PILATES MAT EXERCISE



PILATES EXERCISE



PILATES EQUIPMENT



PILATES EVIDENCE

Bernardo L. The effectiveness of Pilates training in healthy adults: an appraisal of the research literature. *Journal of Bodywork and Movement Therapy*. 2007; 11: 106-110.

Very limited quality research

- Total of 277 articles or abstracts found from 1990-2005
- No meta-analysis or systematic reviews
 - Only 10 were published in refereed, professional journals
 - Of these 5 were conducted in gymnasts and dancers
 - 2 were in special populations (urinary incontinence in women and in acutely ill hospitalized older adults)
 - 3 were in healthy adults
- Conclusions – lack of defined method, small sample sizes and lack of randomization

PILATES EVIDENCE

□ 4 RCTs

- 2 included LBP patients
- 1 on body composition in young girls
- 1 using acutely ill hospital patients – PROM vs. resistance exercises

PILATES EVIDENCE – Low Back Pain

- ❑ **Rydeard** (Rydeard R, Leger A, Smith D. Pilates-based therapeutic exercise: effect on subjects with nonspecific chronic low back pain and functional disability: a randomized controlled trial. *JOSPT*. 2006; 36: 472-84)

- **Pilates vs usual care**

- ❑ **Donzelli** (Donzelli S et al. Two different techniques in the rehabilitation treatment of low back pain: a randomized control trial. *Euro Medicophys*. 2006; 42: 205-210.

- **Pilates vs Back School Method**

- **Results were comparable**

PILATES EVIDENCE – What's New?

☐ **Levine et al.** (Levine MS, Kaplanek RN, Jaffe L. Pilates training for use in rehab after total hip and total knee arthroplasty – a preliminary report. Clin Orthop Relat Res. 2009; 46: 1468-1475.)

- **Total hip and total knee arthroplasty**
- **Patient driven interest in post-op rehab**

☐ **Kuo YL et al.** Sagittal spinal posture after Pilates-based exercise in healthy older adults. Spine. 2009 May 1;34(10):1046-51.

- **Posture**
 - **Small improvement in thoracic kyphosis**
 - **High compliance**
 - **Suitable for older healthy adults**

PILATES EVIDENCE - Summary



- ❑ Inconclusive due to small sample sizes, limited quality research, and lack of defined method of Pilates
- ❑ Is showing some promise in chronic LBP but no indication that it is more effective than other forms of exercise
- ❑ Good compliance
- ❑ Growing evidence

CURRENT CLINICAL TRIALS

- ❑ **Comparison of Massage and Exercise (Pilates) in Fibromyalgia**
- ❑ **Comparing Traditional Pelvic Floor Rehabilitation to Pilates for Increasing Pelvic Muscle Strength**

<http://www.clinicaltrials.gov>



INFORMATION

Pilates Method Alliance (PMA)

<http://pilatesmethodalliance.org/w>



COMMON KEY ELEMENTS of MIND-BODY EXERCISE

- Awareness, focus, conscious intention**
- Body and postural control**
- Movement and/or energy from the center**
- Precision of movement**
- Breath**

SUMMARY

TAI CHI

Evidence for:

- Balance & fall prevention
- Reduce blood pressure
- Improve cardiovascular health
- Older patients
- Chronic illness

- Gentle, slow moving
- Safe
- Possible benefit for OA
- Overweight individuals due to low impact and safety
- Stress reduction

QI GONG

Evidence for:

Improvement in

- Metabolism of blood lipids
- Blood pressure
- Enhanced immune response
- Depressive mood scores

- Gentle, slow moving
- Safe
- Stress reduction

SUMMARY

YOGA

Evidence for:

- Increase flexibility, strength , balance
- As adjunct for knee OA
- As adjunct for chronic LBP
- As adjunct for CV disease
- Carpal tunnel syndrome?
- Disorders exacerbated by stress

Can be modified for special populations (ex. osteoporosis)

Stress reduction

Recommend small group or private instruction

PILATES

Evidence:

- Limited quality research
- May be beneficial as adjunct in the management of chronic LBP

- Recommend small group or private instruction



WHERE DO I FIND MIND-BODY EXERCISE?

- Privately owned business
- Local gyms
- Churches
- Corporate wellness programs
- Hospital-based wellness programs
- Local health stores
- Senior citizen centers
- Private instruction
- DVD/video



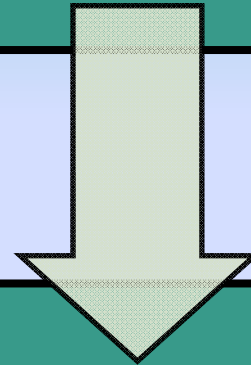
HOW CAN WE IMPLEMENT MIND-BODY EXERCISE?

WELLNESS

“ A HEALTHY STATE OF WELL-BEING
FREE FROM DISEASE

**PHYSICIANS SHOULD BE HELD
RESPONSIBLE FOR THE HEALTH OF THEIR
PATIENTS”**

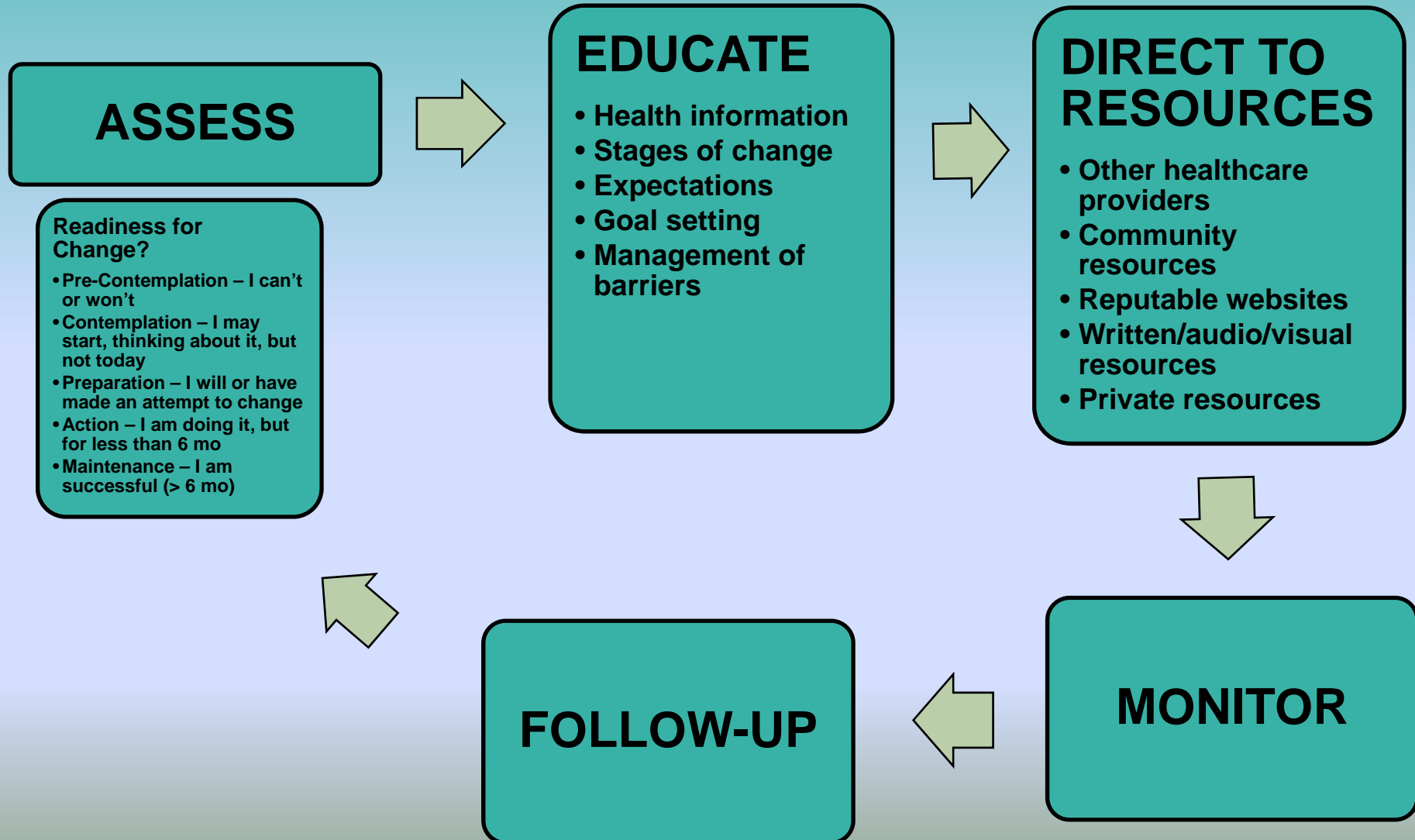
The Visual Thesaurus



“THE QUALITY OR STATE OF BEING IN
GOOD HEALTH, ESPECIALLY AS AN
ACTIVELY SOUGHT GOAL”

Merriam Webster's Online Dictionary

IMPLEMENTATION





SUMMARY

✓ EVIDENCE AND BENEFITS OF:

- Tai chi
- Qi Gong
- Yoga
- Pilates

✓ WHERE TO FIND MIND-BODY EXERCISE



SUMMARY

- ✓ **Importance of finding qualified instructors – no standard training program**
 - **Inquire about training and experience**
 - **Get to know who is in your area**

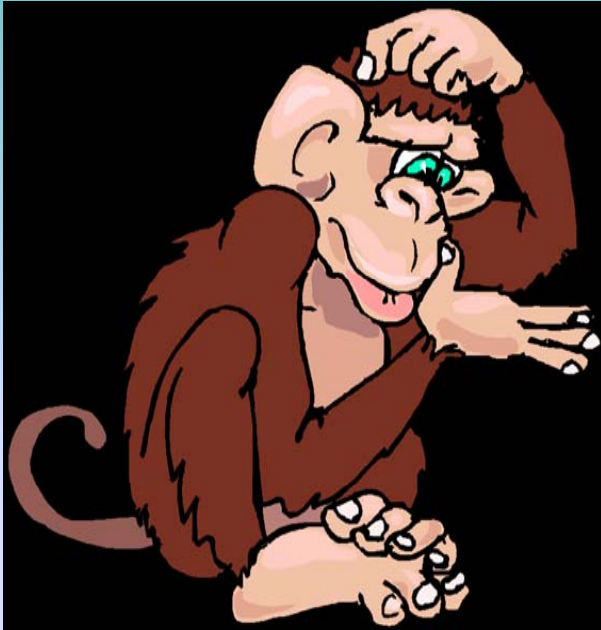


SUMMARY

✓ IMPLEMENTATION

□ Keys to being successful

- **Appropriate Assessment**
- **Educate & Engage**
- **Accountability**
- **Follow-up**

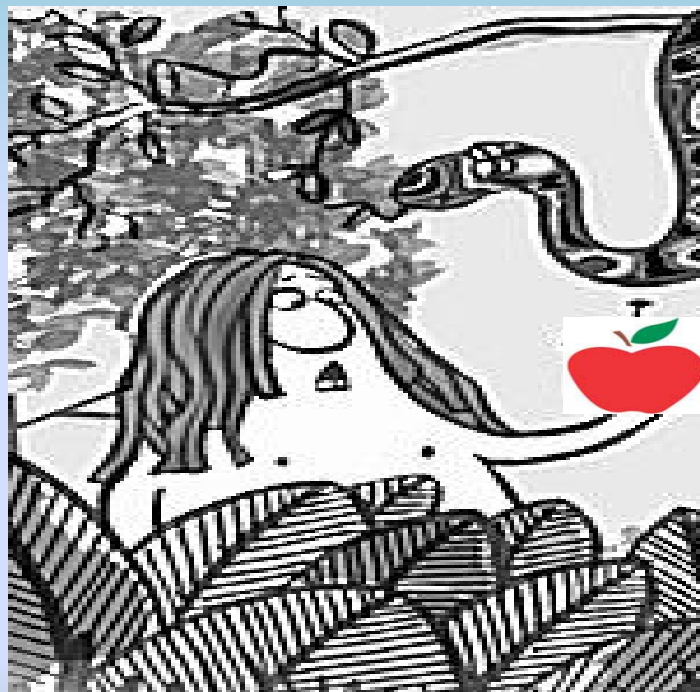


QUESTIONS???

THANK YOU!

PARTING WORDS:

DON'T FORGET YOUR OWN HEALTH!



“now, who did you say this keeps away?”

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