



AgeWell
COLLECTIVE



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Objectives

- Identify the 4 epidemics facing older adults
- Illustrate loss of function by way of Aging Curves
- Demonstrate the interconnected nature of the downward spiral of functional decline in older adults
- Discuss the shortcomings of the silo approach to training older clients
- Introduce the AgeWell Collective as an integrated solution for training older clients
- Relate the Functional Aging Model to the AgeWell Collective Model

Crisis



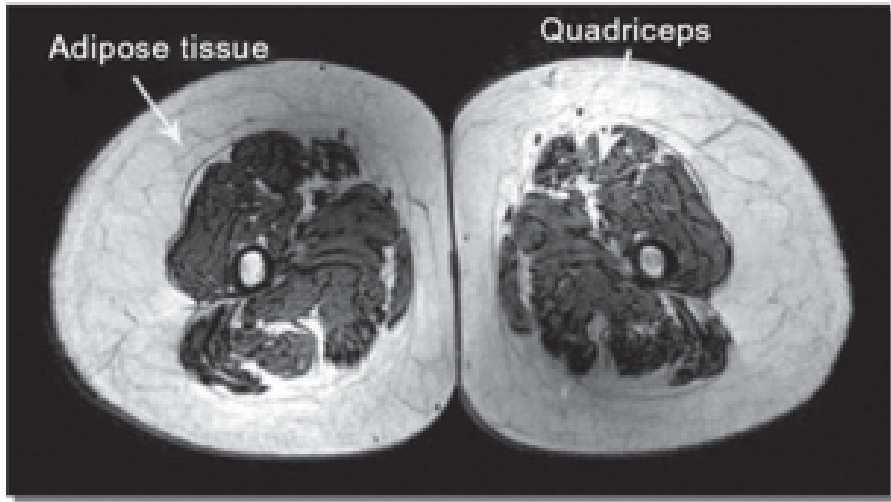
Epidemic #1: Osteoarthritis



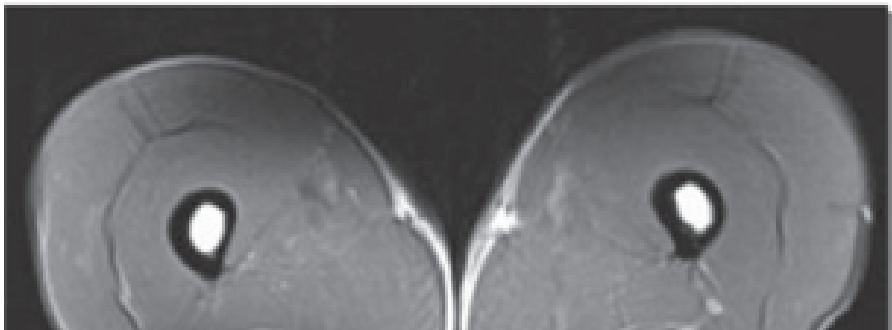
- Osteoarthritis is the most common form of arthritis
- Affects between 10-20% of older adults
- Most common cause for over 7.2 million hip and knee joint replacements
- Leading cause of musculoskeletal disability in older adults

Epidemic #2: Muscle Weakness & Sarcopenia

74-year-old sedentary man



70-year-old triathlete



- Aging results in a loss of over 50% of muscle mass between age 50 and 80 years
- Over 10% of older adults are diagnosed with sarcopenia which puts an older adult at increased risk for loss of independence
- Muscle strength decreases by ~10% per decade after the age of 50 & muscle power decreases at even a more rapid rate
- Loss of muscle power is even more concerning, putting an older adult at 2-3x greater risk for disability than loss of strength

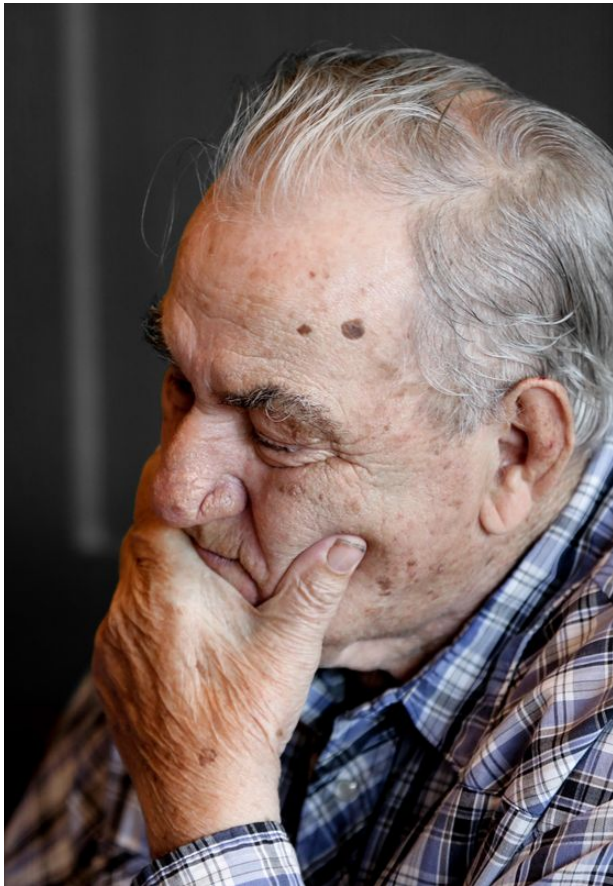
Epidemic #3: Falls



- Almost $\frac{1}{3}$ of people aged 65+ fall annually
- 3 million ER visits due to falls resulting in over 800,000 hospitalizations and \$31B in direct medical costs
- Approximately 500,000 fractured bones due to falls
- 20% of hip fractures are fatal within 1 year and 50% of survivors will never regain full function

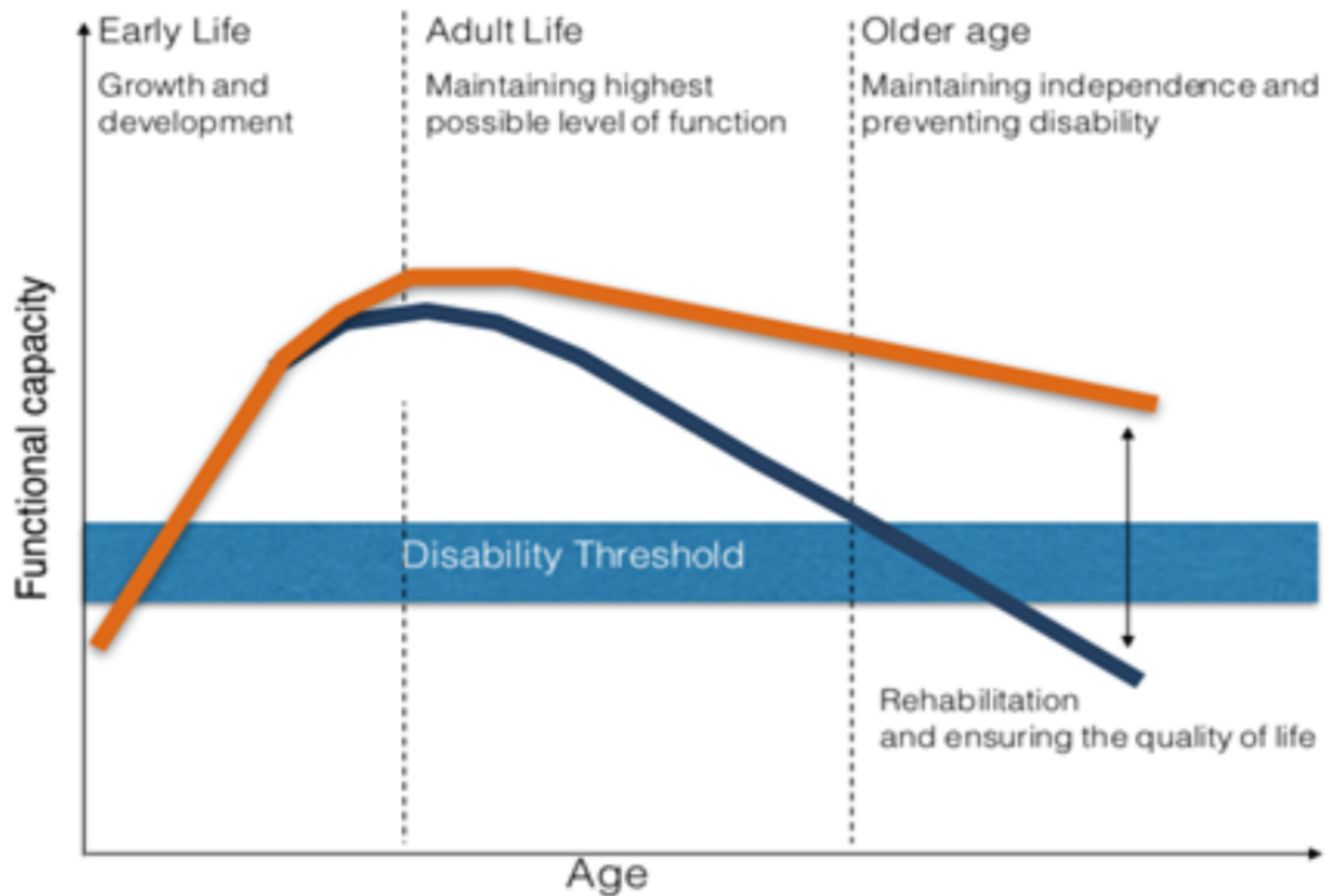
Epidemic #4: Cognitive Impairment

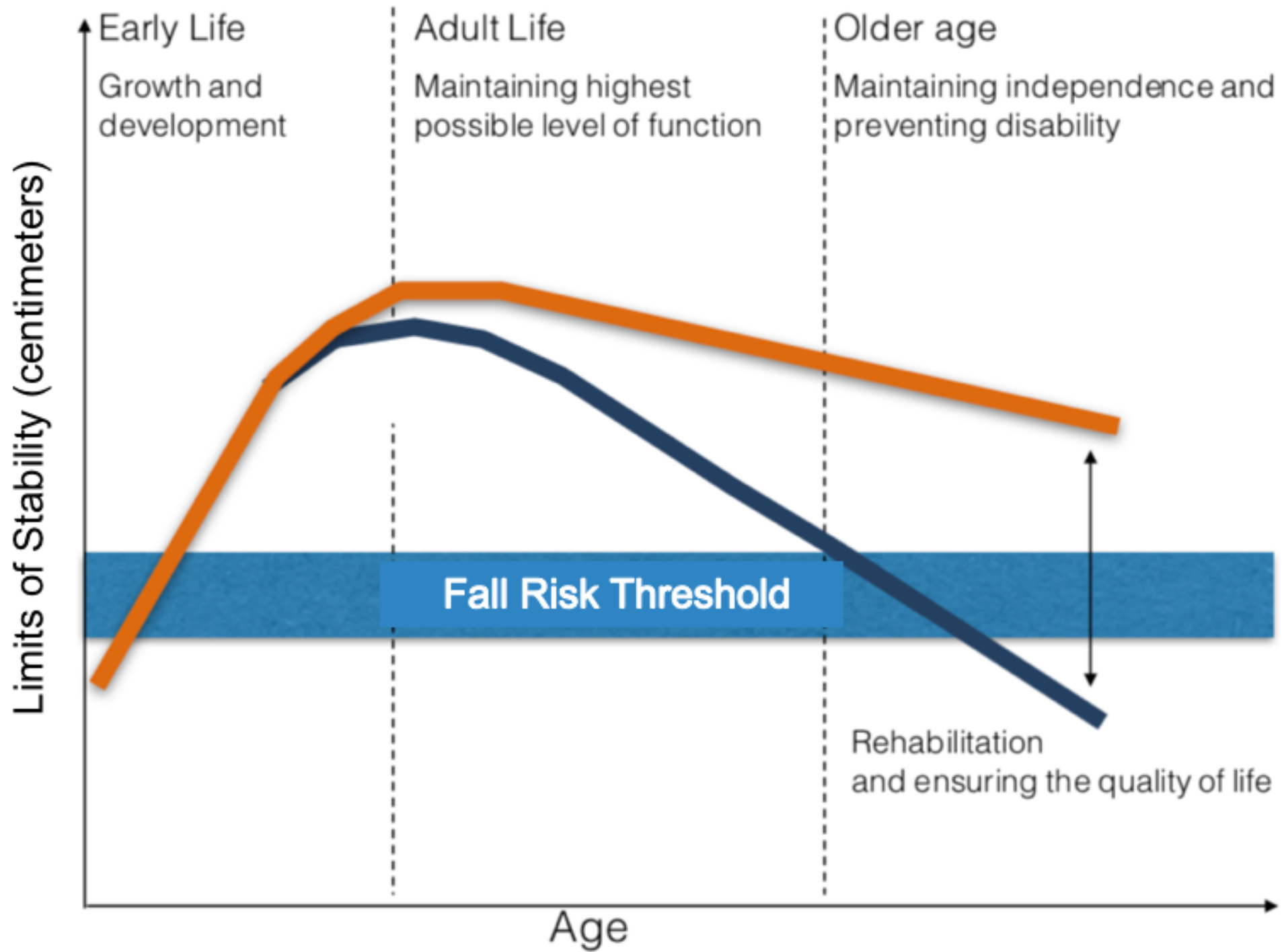
Statistics Courtesy of Alzheimer's Association - 2020 Statistics

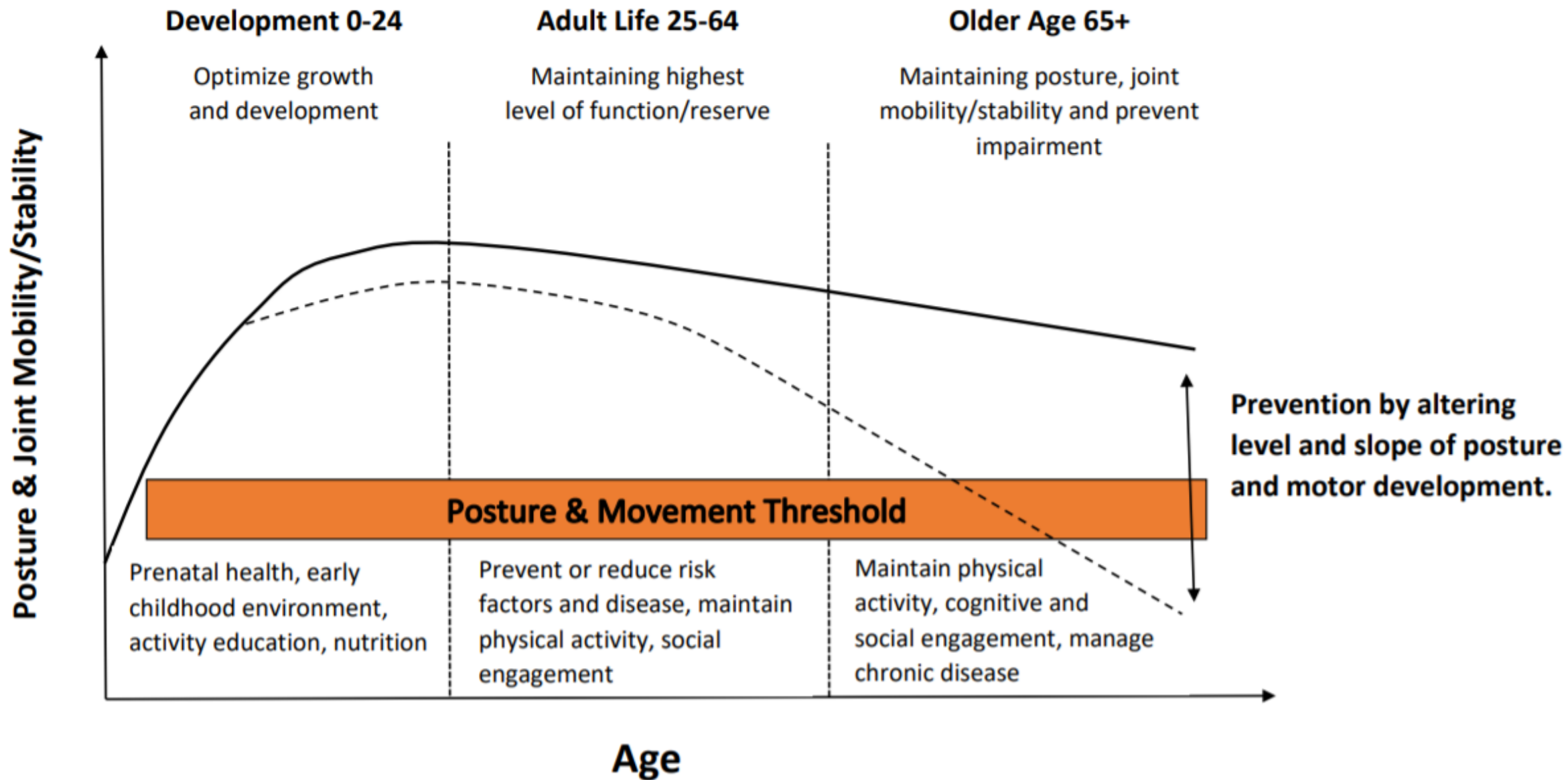


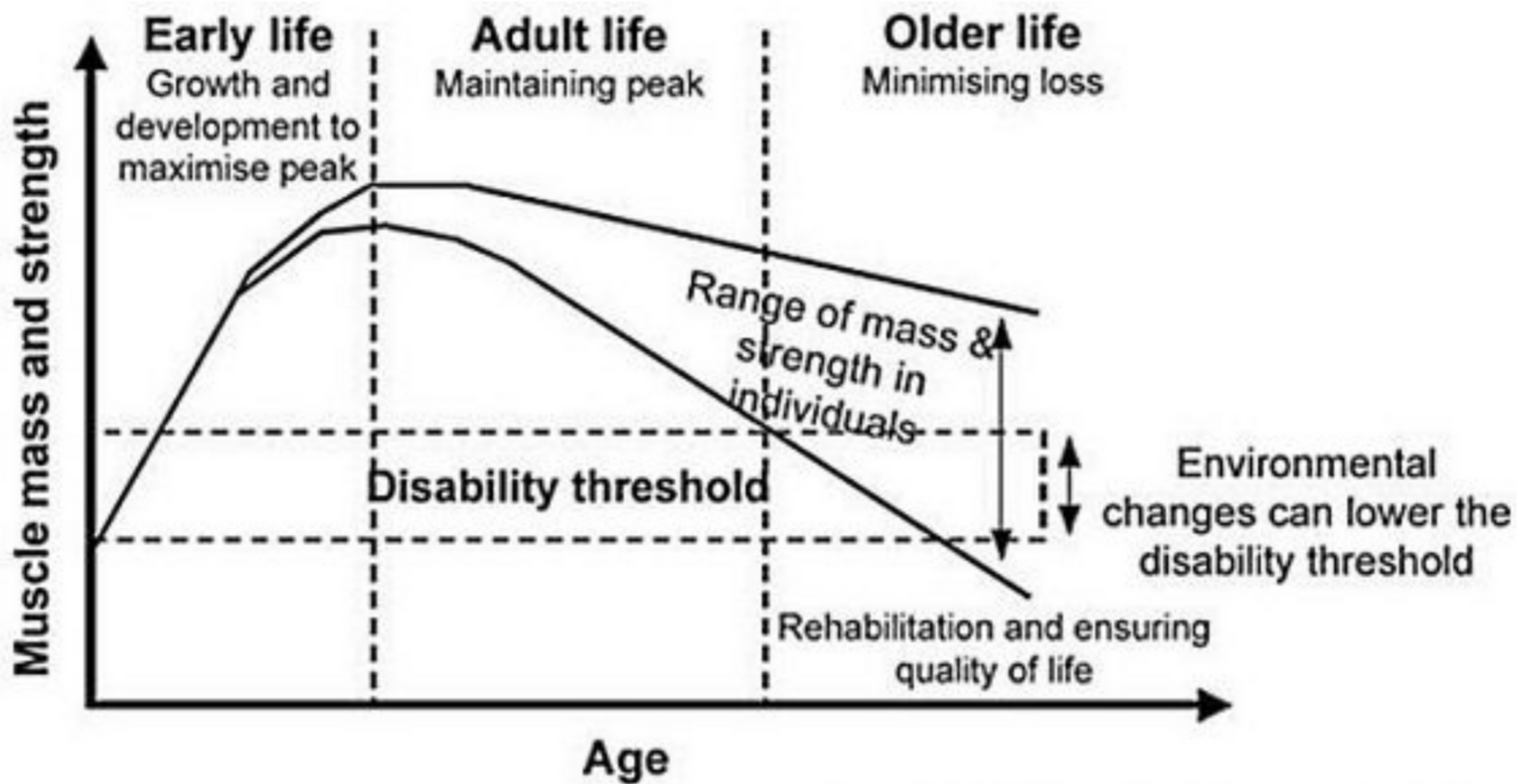
- An estimated **5.8 million Americans** (age 65 and older) are living with Alzheimer's dementia in 2020. **80% are age 75** or older. **2/3 are women.**
- By **2050**, the number of people age 65 and older with Alzheimer's dementia may grow to a projected **13.8 million**
- Alzheimer's disease is the **sixth-leading cause of death** in the United States. It is the **fifth-leading cause of death** among those age 65 and older and is also is a **leading cause of disability and poor health.**
- Unless a treatment to slow, stop or prevent the disease is developed, **in 2050**, Alzheimer's is projected to **cost more than \$1.1 trillion**

Comprehensive Views on Aging

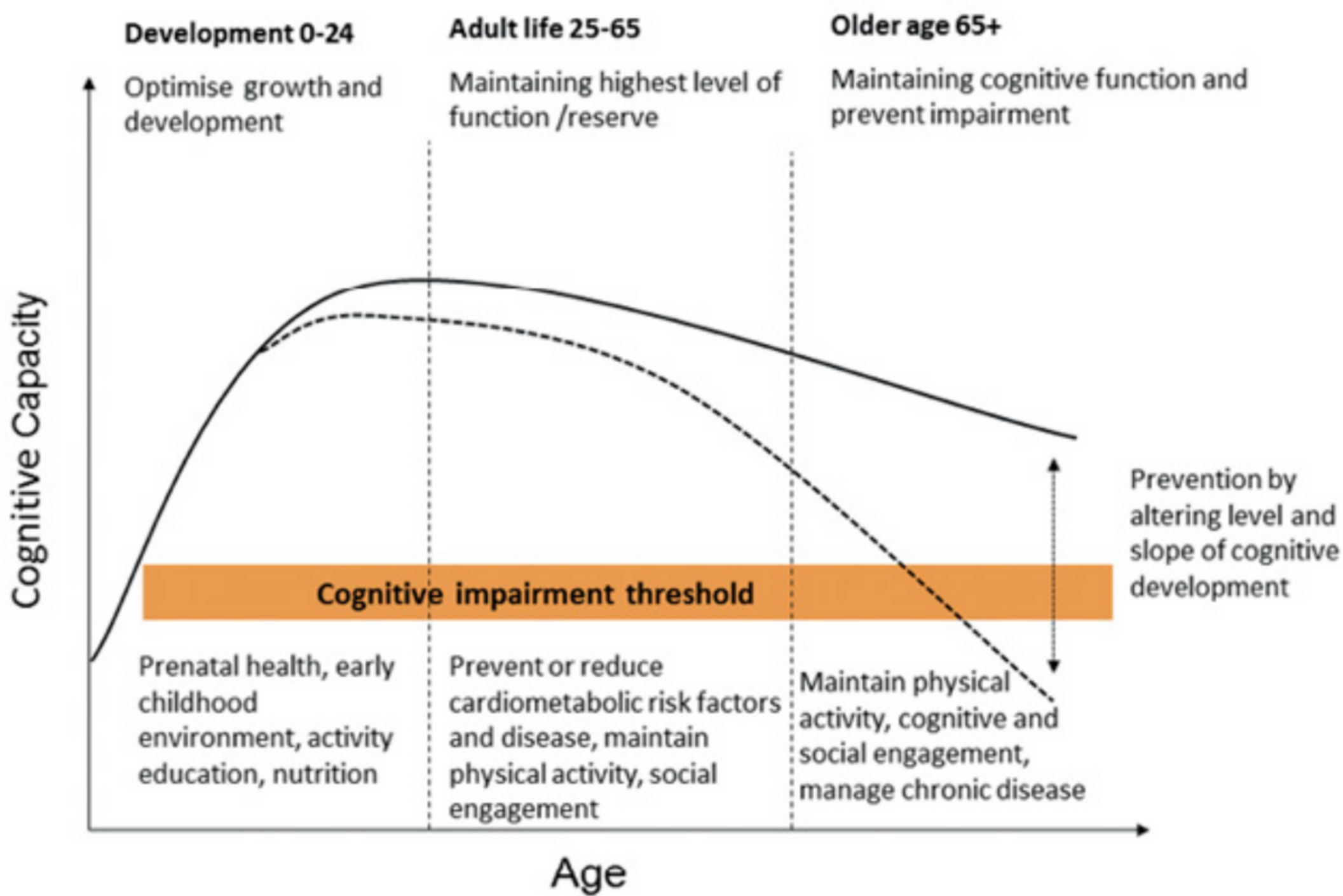








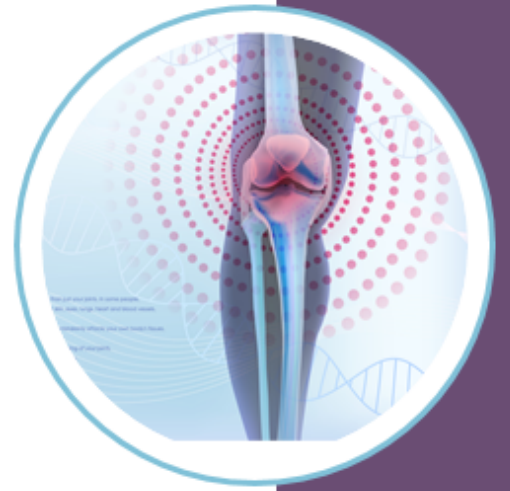
Modified WHO/HPS, Geneva 2000



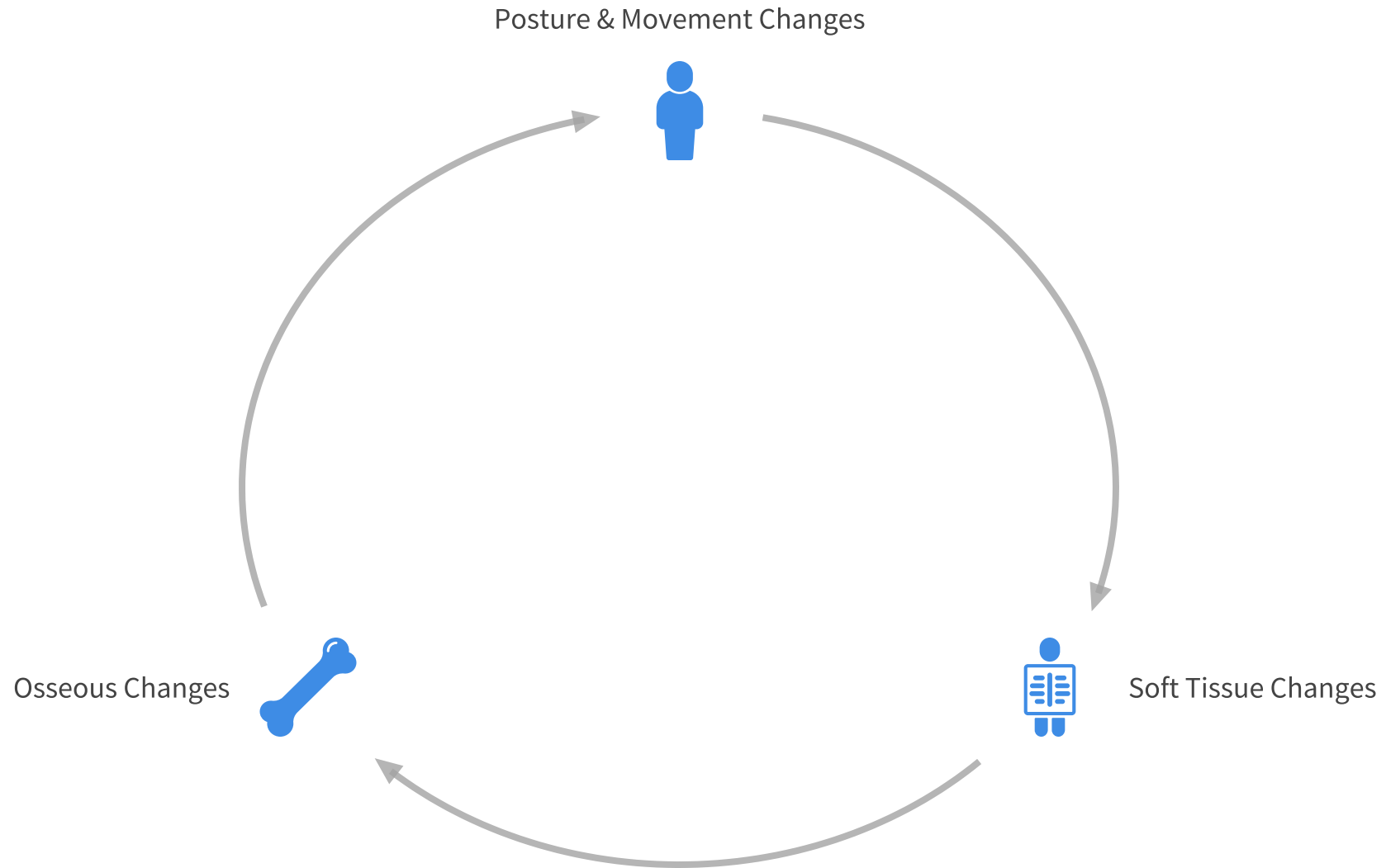
MOST COMMON CAUSE OF OSTEOARTHRITIS

➤ SUBOPTIMAL POSTURE AND MOVEMENT STRATEGIES

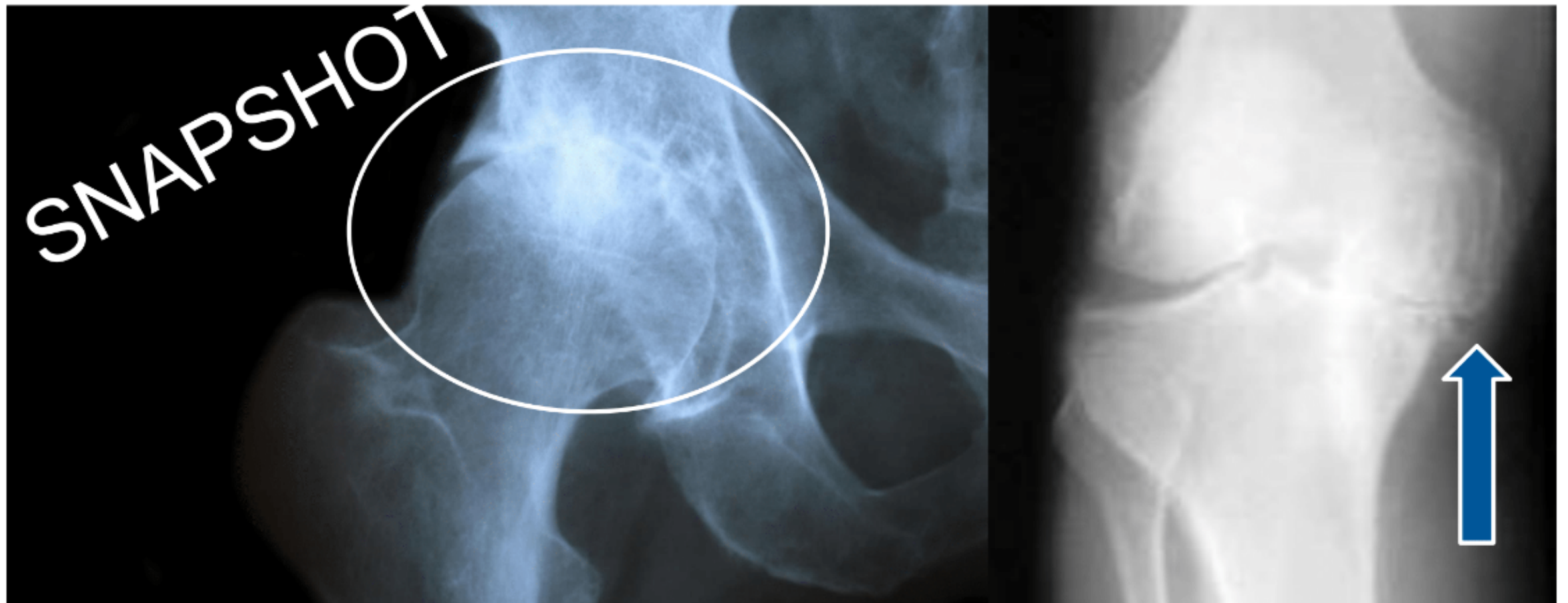
- Directly leads to soft tissue and bony changes
- Source (5): Osar, E. 2018. Certification Program. *Integrative Movement Specialist™* . Course Handouts; Chicago, IL.



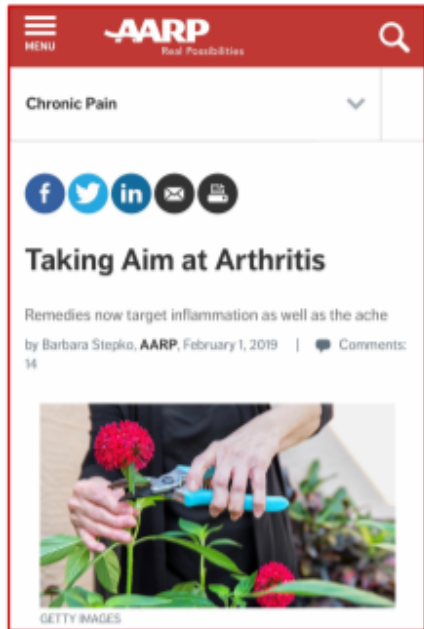
The Degenerative Joint Process



“TIME MAGNIFIES YOUR HABITS”



Arthritis & Rheumatoid Arthritis



Whip out the resistance bands

Working out may seem kind of counterintuitive when you're dealing with achy knees or a sore elbow. But **keeping muscles strong**, while maintaining flexibility and range of motion, is crucial. Otherwise, underutilized limbs become weak, making it even more painful when you try to move around. In fact, a study published in the *Journal of Aging Research* concluded that exercise improves overall function in those with rheumatoid arthritis. That same study found that the best exercise program for those with rheumatoid arthritis should include both aerobic and resistance training.

"Muscle strength is especially important because you need muscles to absorb the impact that may occur when you're walking around or doing other activities," says Jonathan Samuels, M.D., an associate professor of medicine in the division of rheumatology and the codirector of the Joint Preservation & Arthritis Center at New York University (NYU) Langone Health. "Think of it as maintaining a shock absorber around the joints." Strengthening exercises are also beneficial for keeping bones strong, since people with rheumatoid arthritis are more prone to getting osteoporosis.

Aerobic heart-pumpers are another important part of the keep-fit equation, since poor cardiovascular health is the main cause of death in rheumatoid arthritis patients. Physicians give high marks to peddling on a stationary bike (a great workout for your knees *and* your ticker) and pretty much anything water-related — in particular, swimming and water aerobics. The buoyancy of the water helps support body weight, which means these types of exercises don't impact heavily on the joints. "Plus, many water aerobics classes are done in warm water, which feels wonderful," Jeter notes.

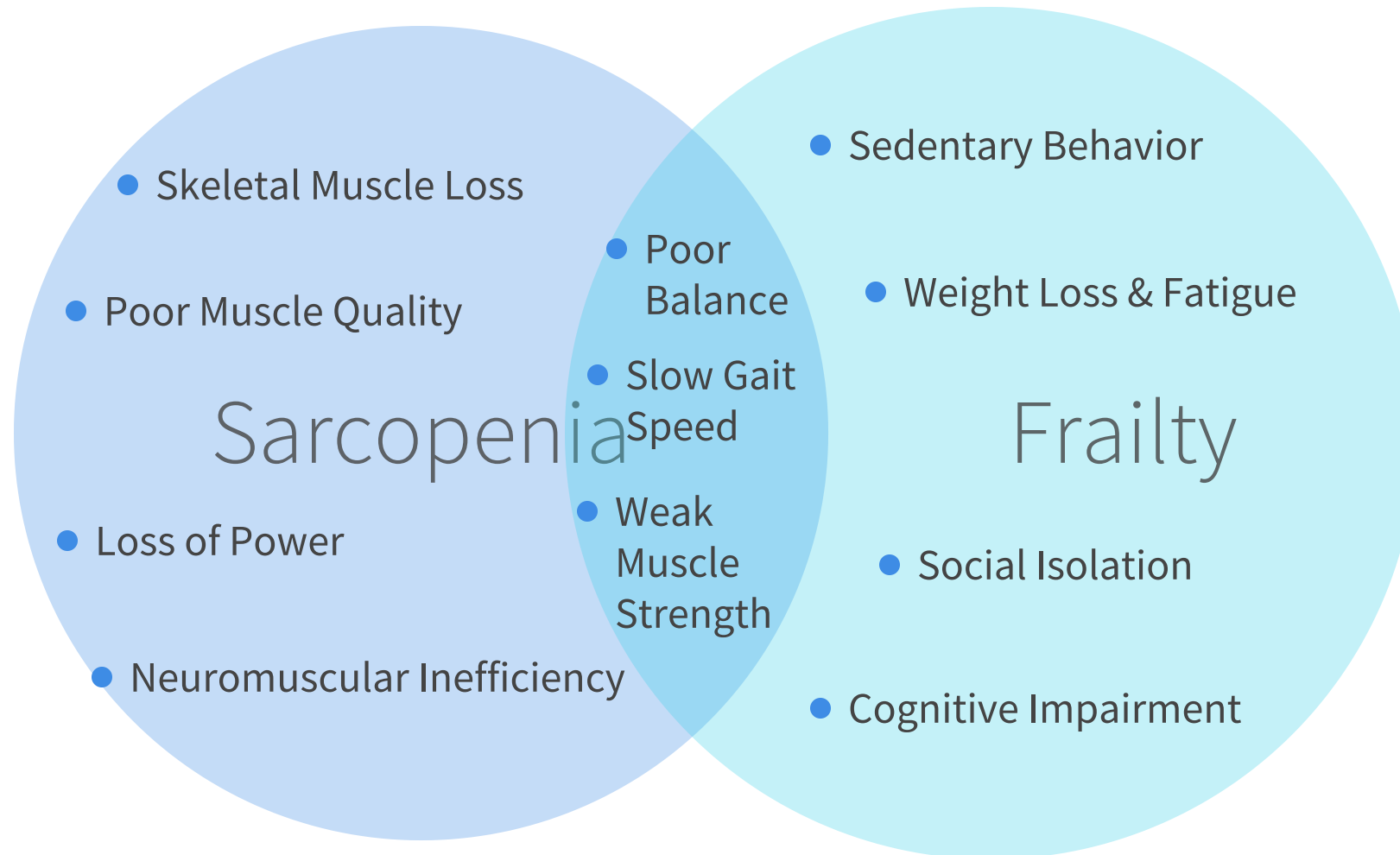
*"Working out may seem kind of **counterintuitive** when you are dealing with achy knees or a sore elbow (**pain**)*

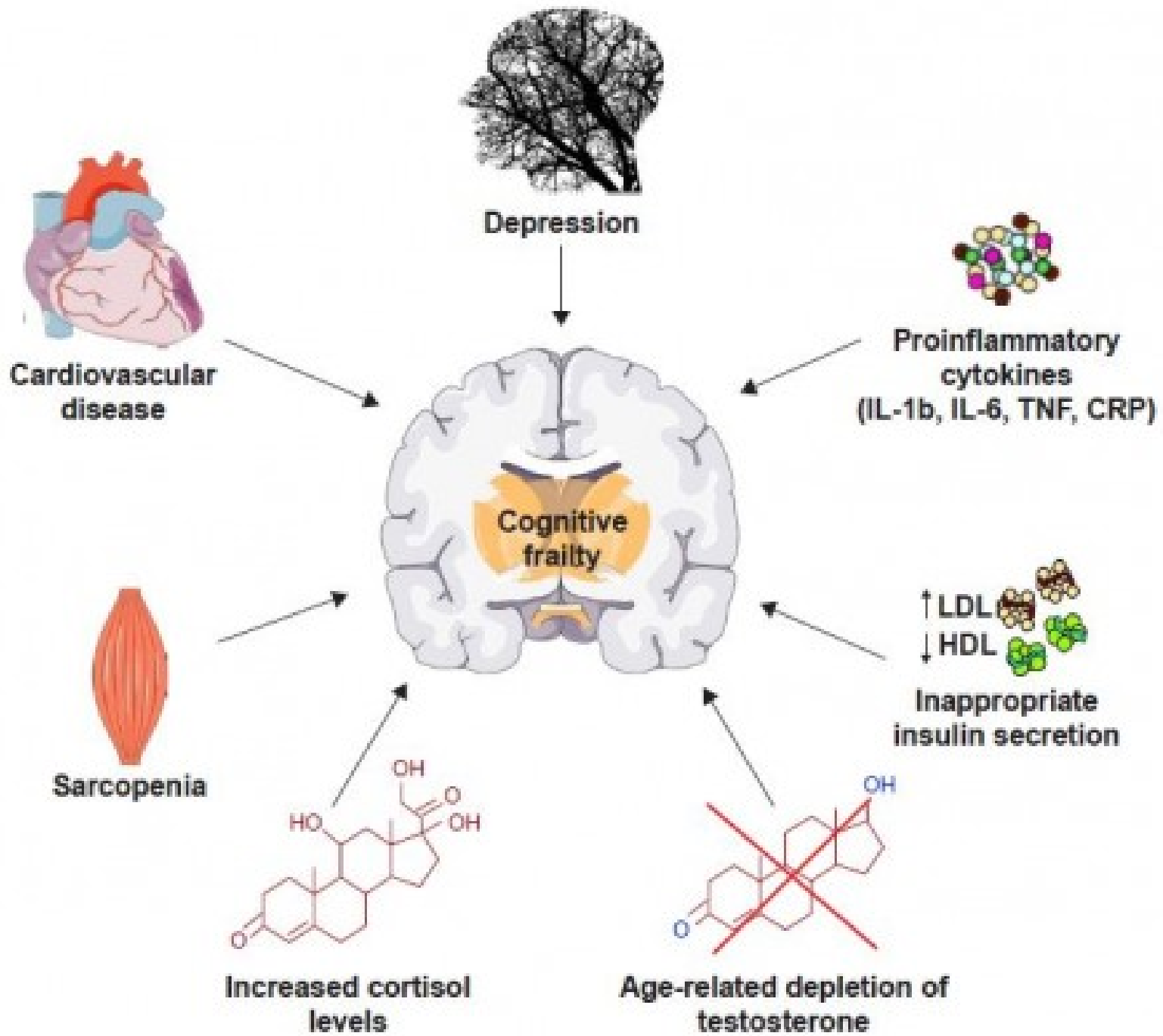
*But keeping **muscles strong**, while maintaining flexibility and range of motion, **is crucial**.*

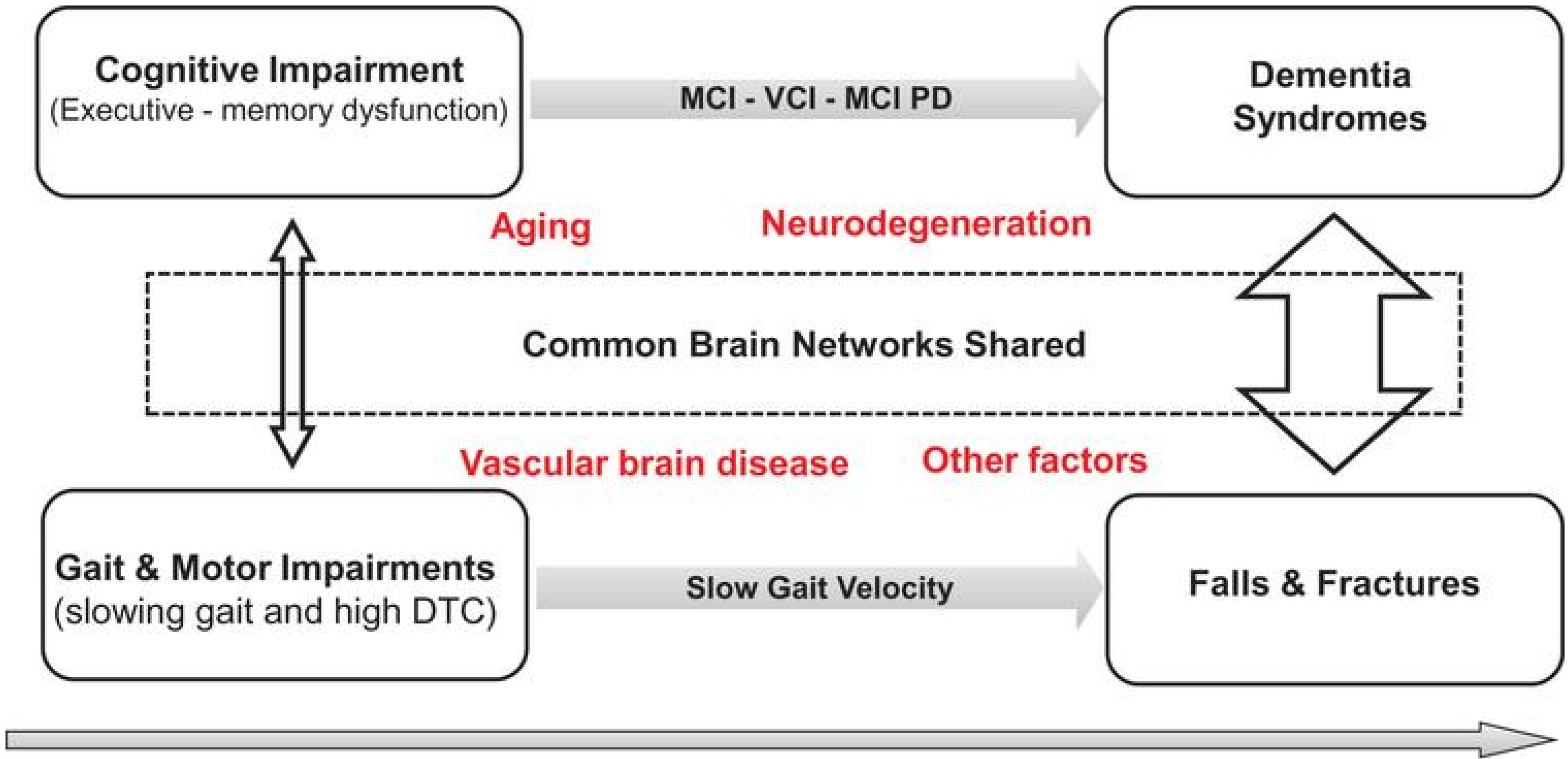
*Otherwise, **underutilized** limbs become **weak**, making it even **more painful** when you try to move around."*

When Crisis Collide

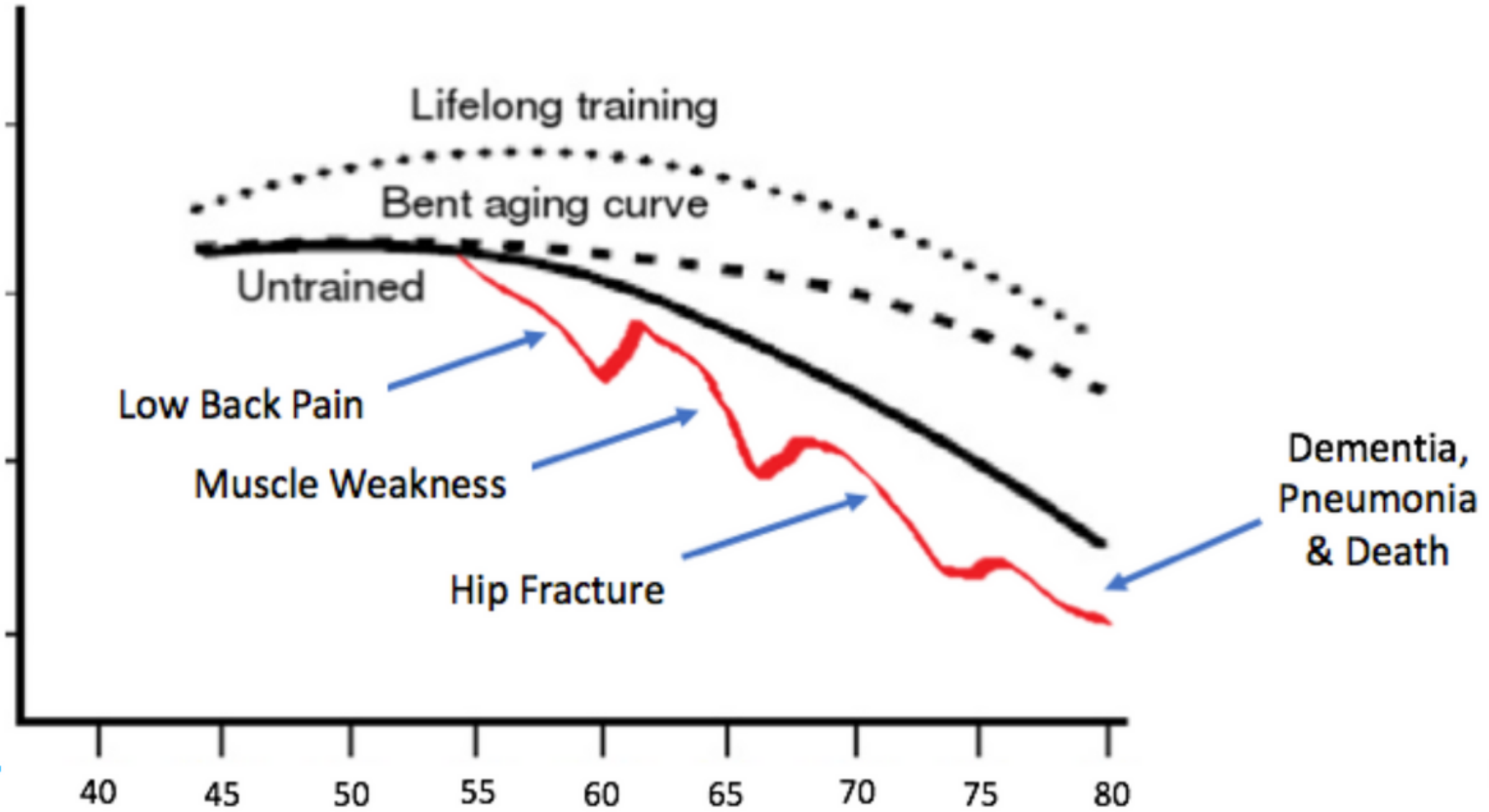
Cesari, et al (2014). **Sarcopenia and physical frailty: two sides of the same coin.** Frontiers in aging neuroscience.



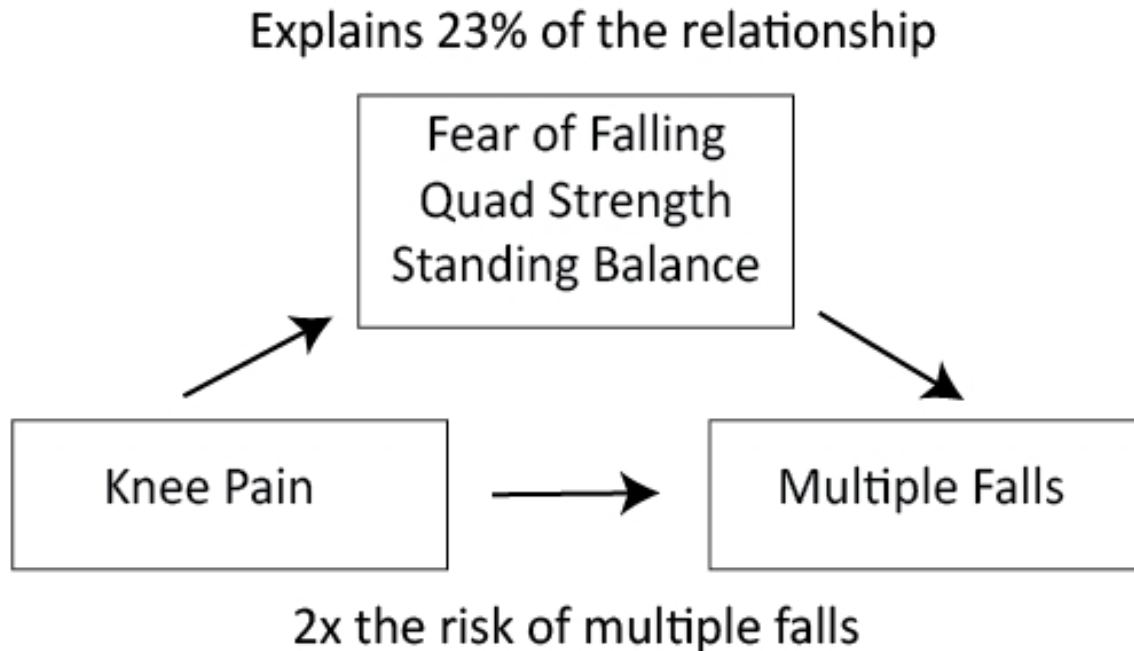




More Likely Story... A Series of Unfortunate Events!



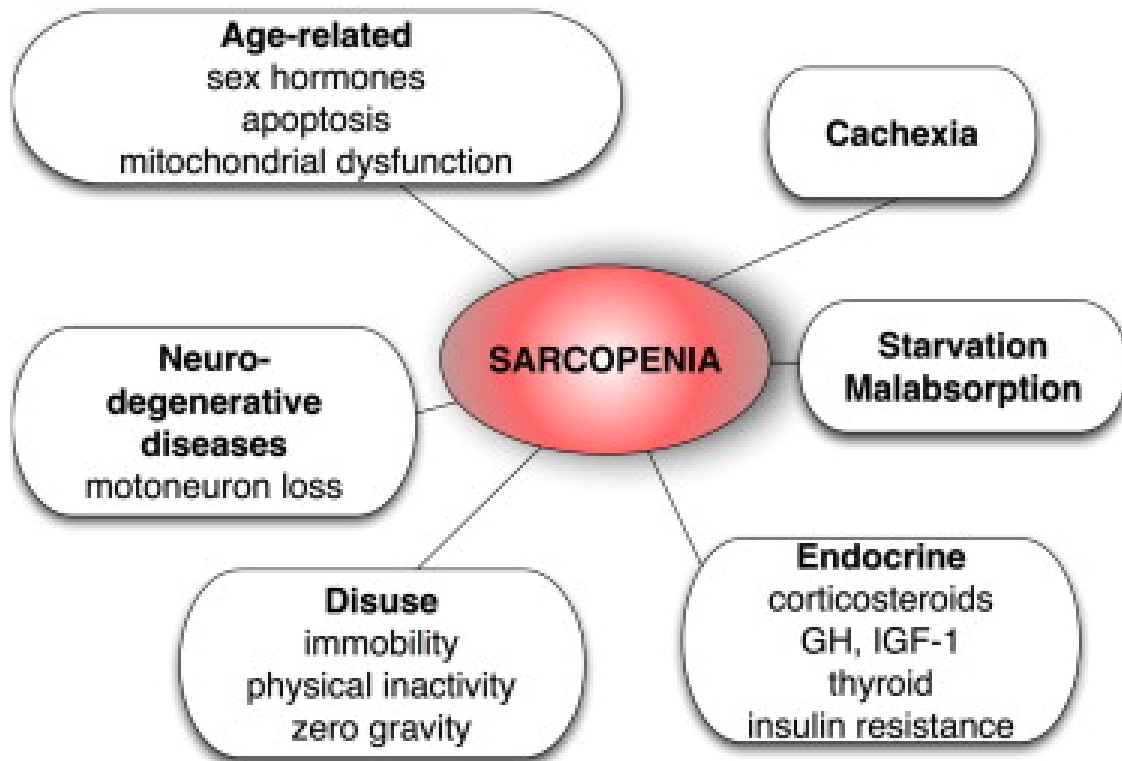
Interconnected Biology: Scenarios



Pain can lead to:

- Sub-optimal Movement Strategies
- A propensity to avoid physical activity
- Avoidance of resistance training
- Decrease executive functioning/cognition
- Lead to problems with mental health & sleep
- Increase risk of falls (see graphic)

Interconnected Biology: Scenarios



Sarcopenia / Power Loss

Comorbid with accelerated biological aging

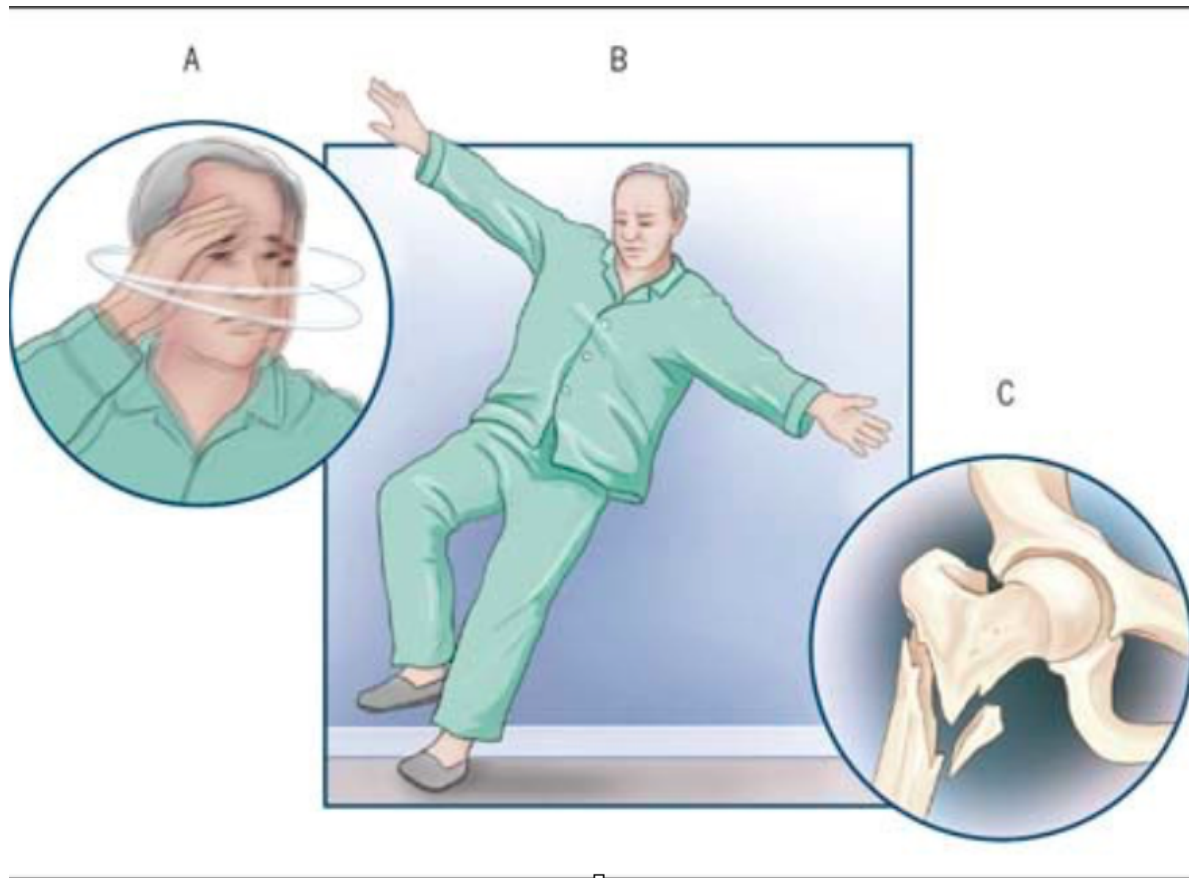
Can lead to neurodegeneration

Can lead to increased risk of falls, fractures & frailty

May lead to pain due to structural changes

Comorbid with skeletal conditions

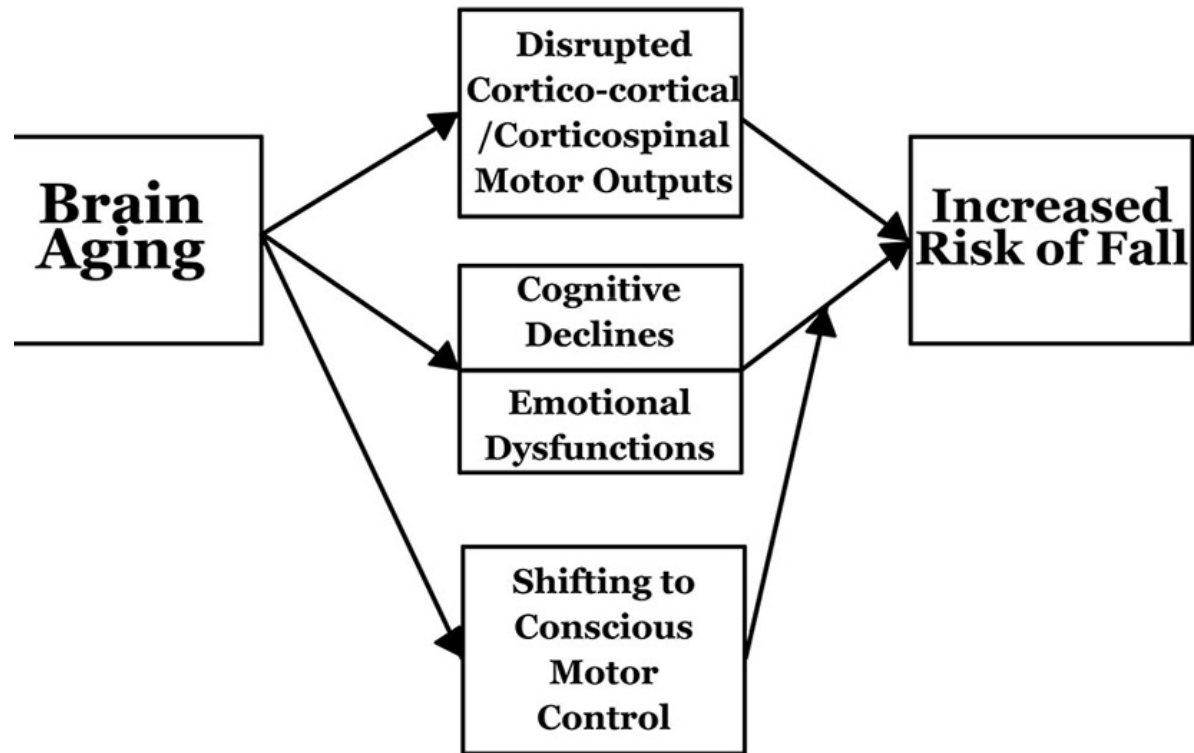
Interconnected Biology: Scenarios



Falls

- Can cause fractures and lead to frailty
- More falls associated with cognitive decline
- Higher perceived risk of functional training
- Can directly cause pain
- More falls = more social isolation

Interconnected Biology: Scenarios



Cognition

Can lead to higher risk of falls & sub-optimal movement strategies

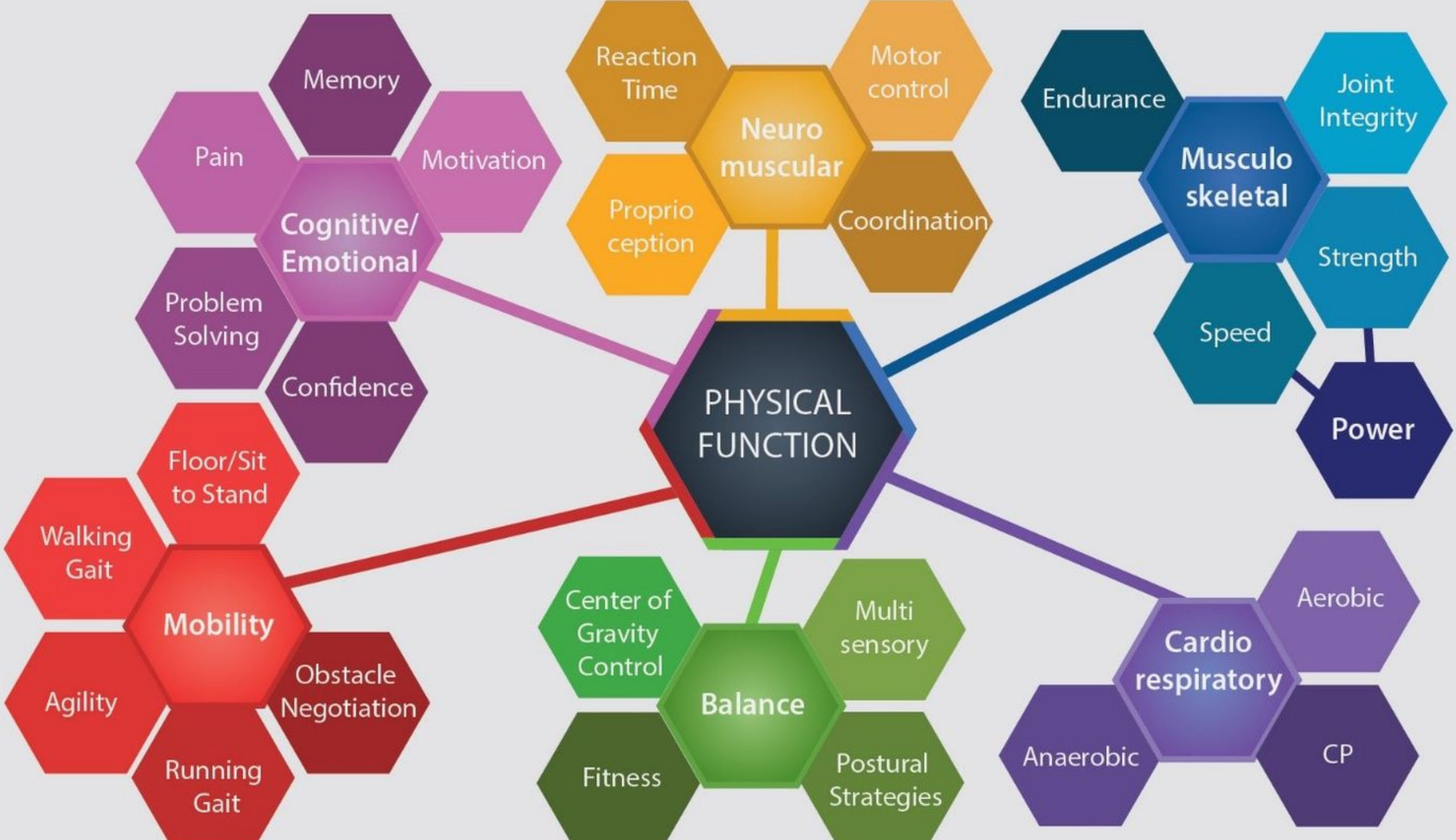
Less insight/awareness of posture & movement

Worsened dual-task ability

Steeper skill learning curve

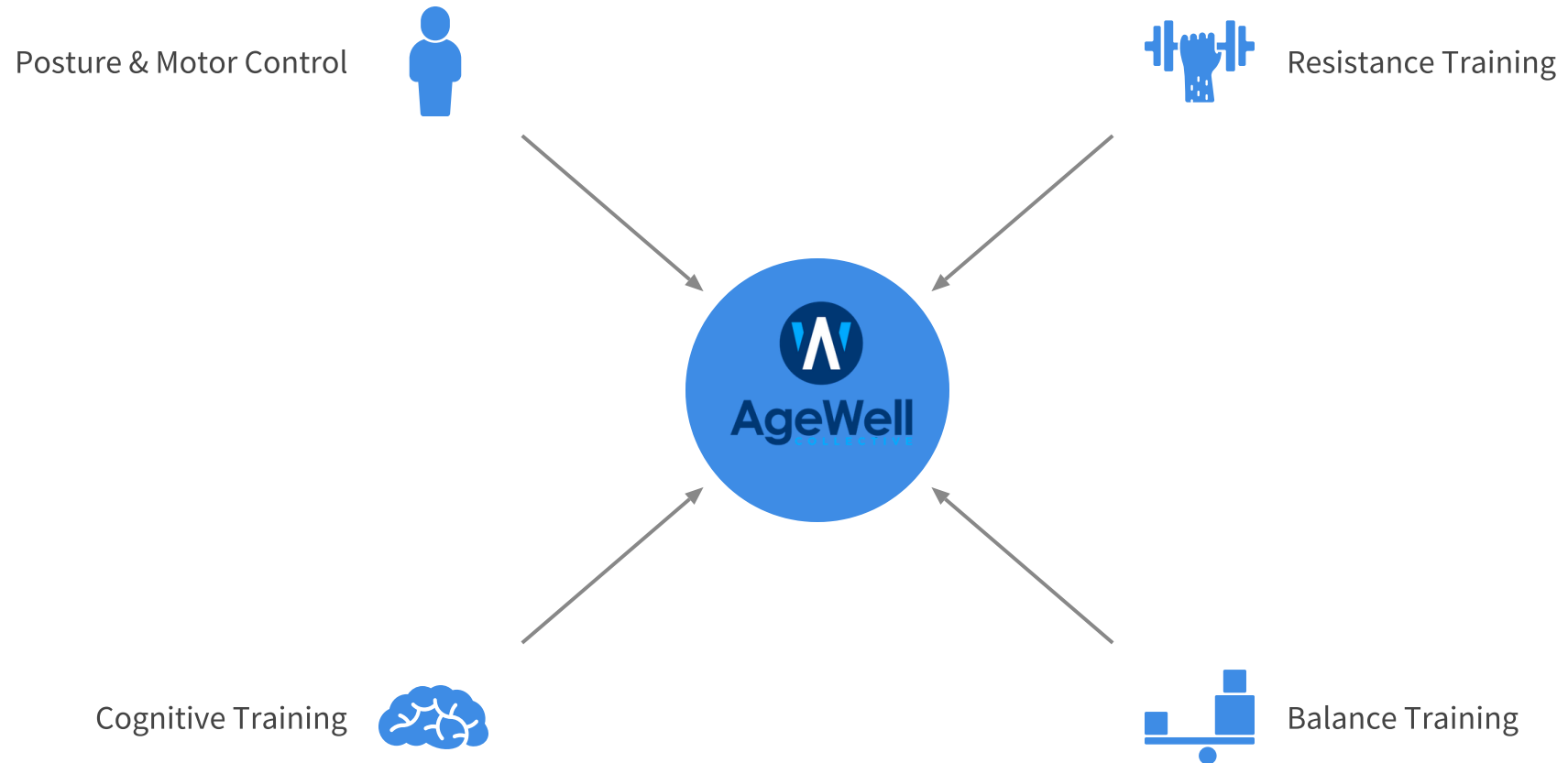
Associated with worse cardiovascular fitness levels, lower levels of strength, etc

Integrative Models of Healthy Aging

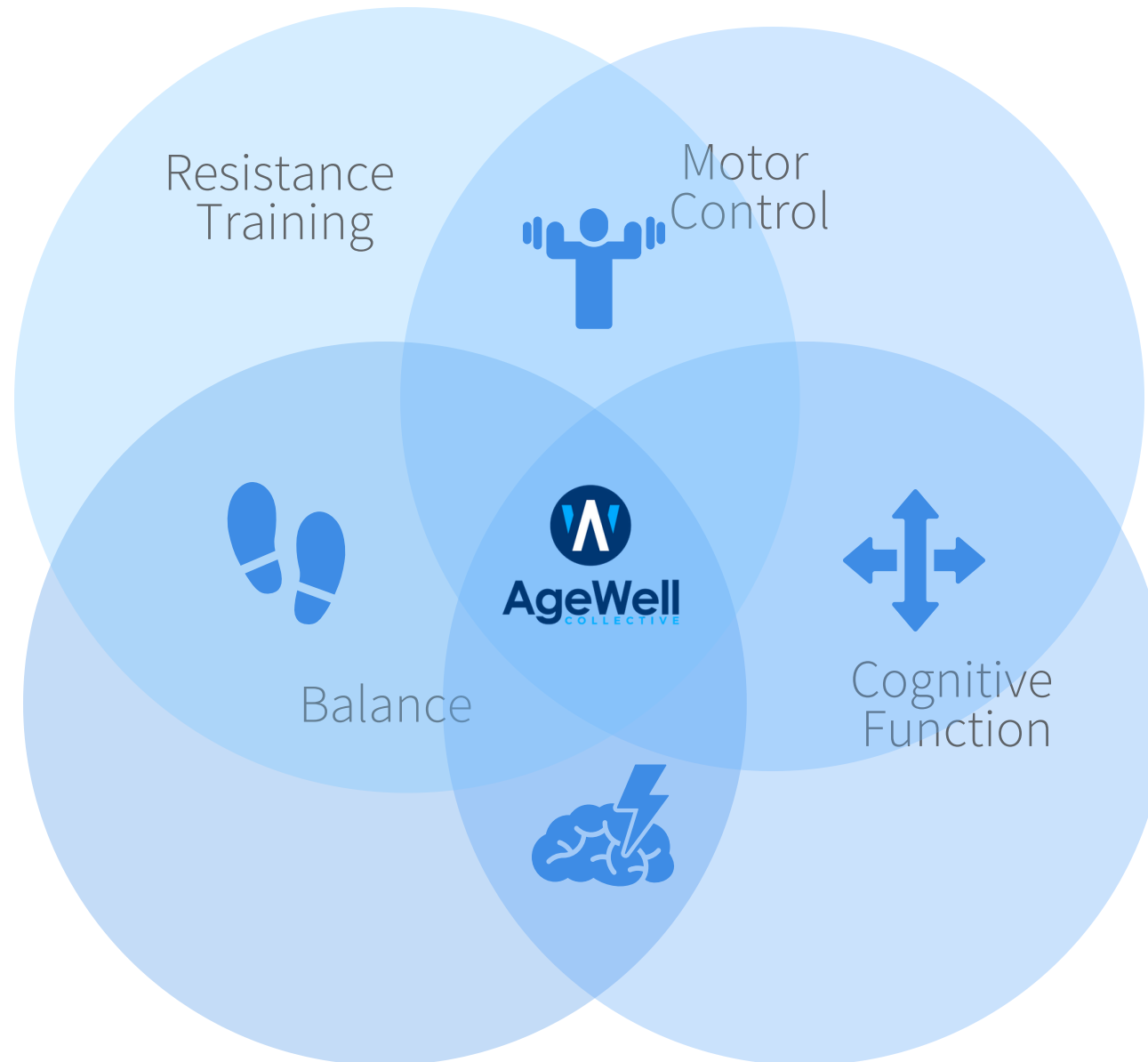




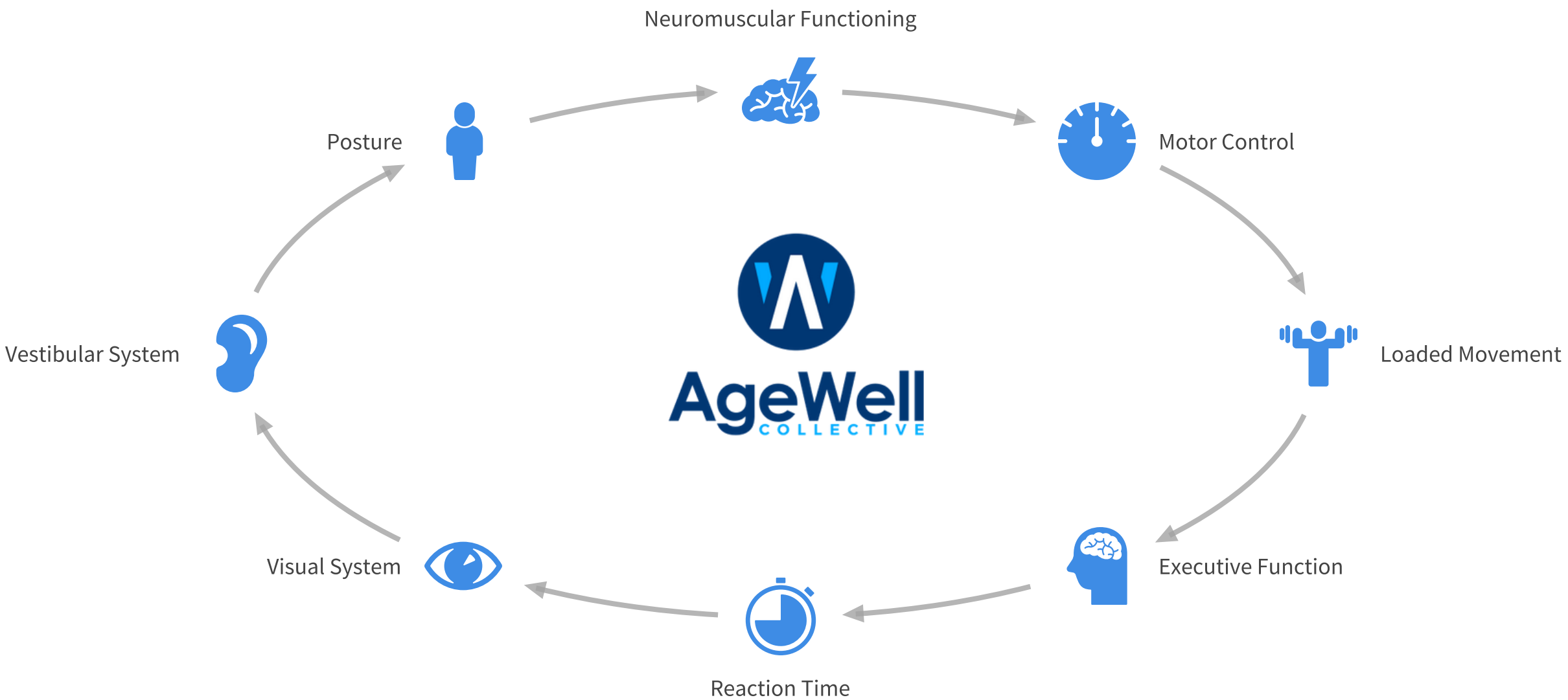
Age Well Model



AgeWell Model



The Interconnected Systems of Aging



Get the Most Out of the Aging Process



Stay Young & Enjoy Retirement

Image by Functional Aging Institute

Recovery After a Setback



Frameworks for Aging Well

A Multi-domain Approach

THE POSTURE & MOVEMENT SYSTEM



- PRIORITIES OF THE NERVOUS SYSTEM

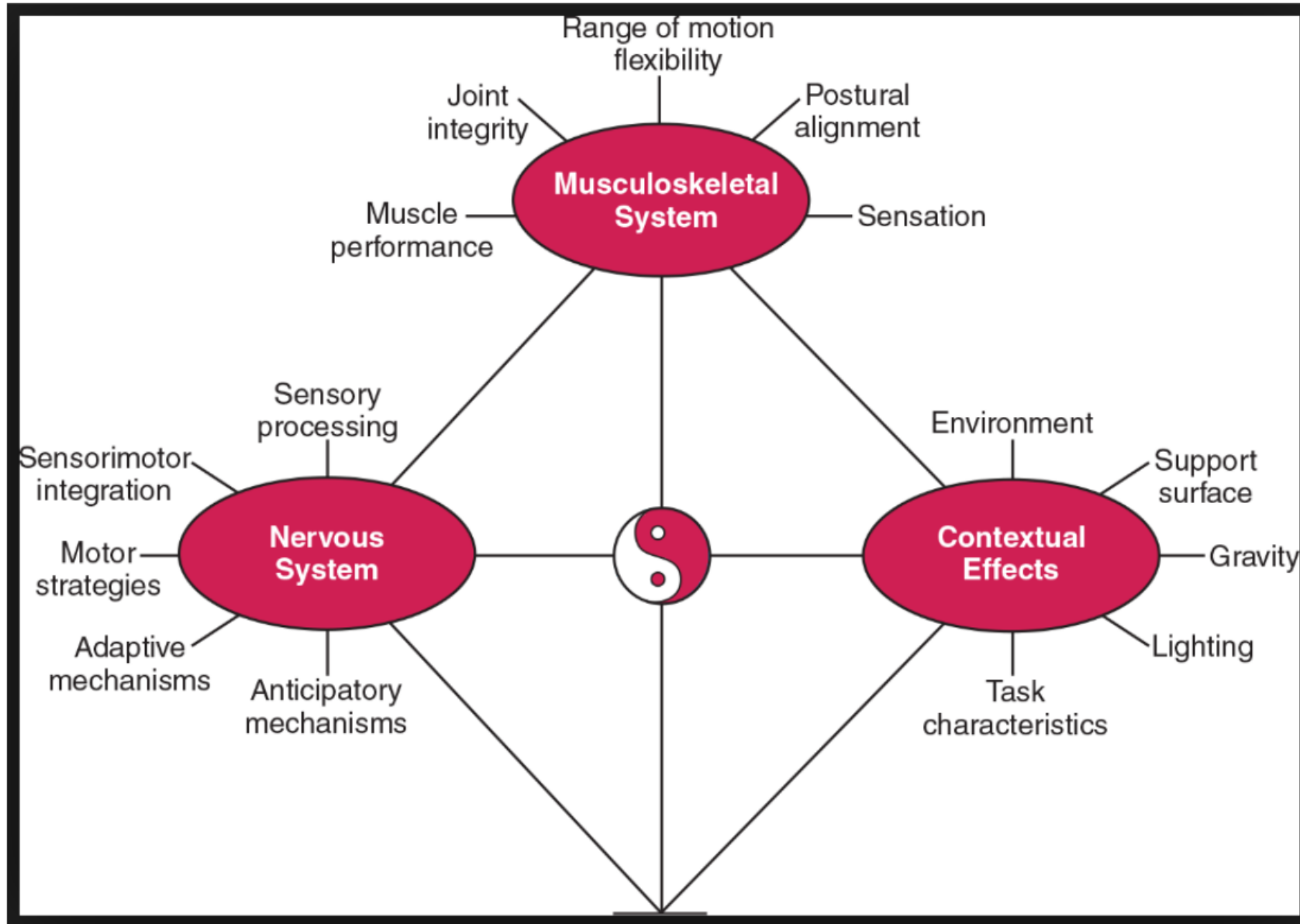
1. Breathing
 - physiology, stability, and mobility
2. Righting reflex
 - maintain eyes level to horizon (uprightness)
3. Control center of mass (just behind belly button) over base of support (feet)
 - balance, gait, carrying

SOLUTION

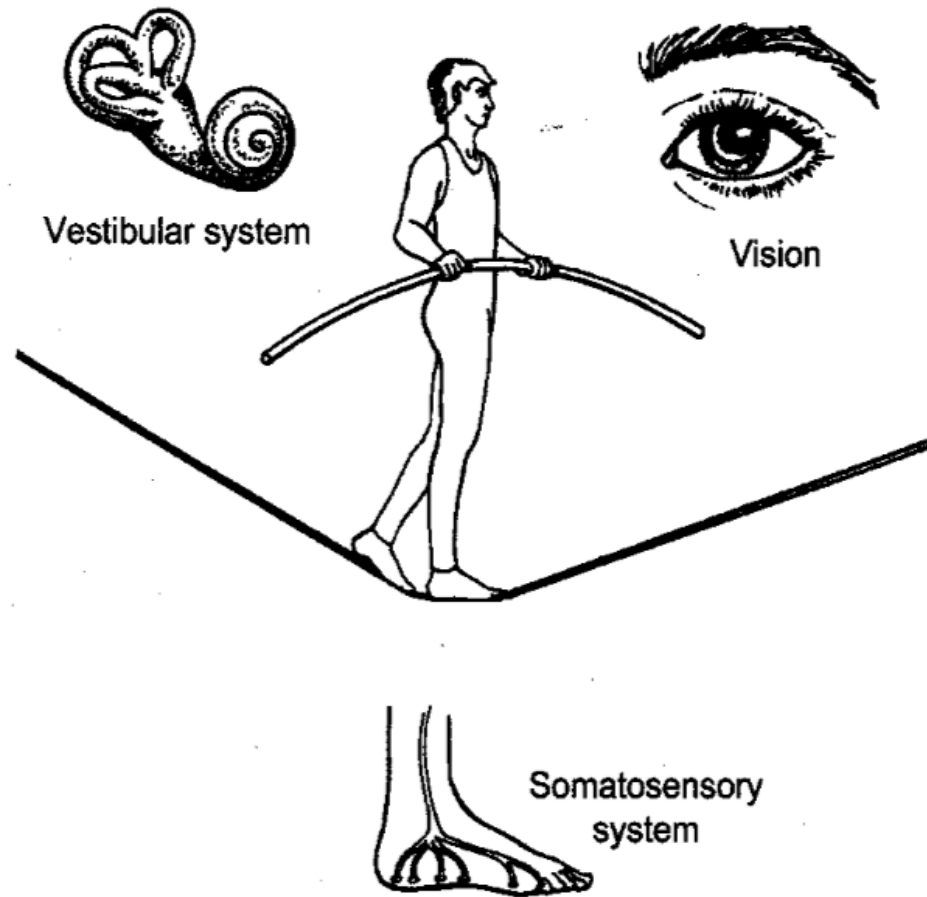
- **PROCESS**
 - Assess > Address > Progress
- **PRINCIPLES**
 - Alignment, Breathe, Control
- **BEST-PRACTICES**
 - Evidence-based



Balance: A Complex Phenomenon



Our Falls Defense Systems (Which Get Worse With Age...)



Walking Speed and Mortality



Common Misconceptions: Exercise/Resistance Training Inflames and/or Worsens Arthritic Responses

Resistance Training for Persons With Osteoarthritis and Rheumatoid Arthritis

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¹Alton Rehabilitation Centers of Bridgeport Hospital, Shelton, Connecticut; ²Southern Connecticut State University, New Haven, Connecticut; ³Hackensack University Medical Center, Hackensack, New Jersey; ⁴PREVENT Consulting Services, LLC, Missouri; ⁵University of Missouri-Columbia, Columbia, Missouri



Tom LaFontaine, PhD, CSCS, NSCA-CPT
Column Editor

SUMMARY

ARTHRITIC CONDITIONS AFFECT MORE THAN 40 MILLION AMERICANS AND ARE A MAJOR CAUSE OF PHYSICAL DISABILITY. RESISTANCE TRAINING HAS BEEN FOUND TO IMPROVE MUSCULAR PERFORMANCE IN PERSONS WITH OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS. THIS COLUMN DISCUSSES THE BENEFITS OF RESISTANCE TRAINING IN PERSONS WITH OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS AND PROVIDES GENERAL SUGGESTIONS FOR DEVELOPING SAFE, EFFECTIVE RESISTANCE TRAINING PROGRAMS.

INTRODUCTION

Osteoarthritis (OA) and rheumatoid arthritis (RA) are 2 common arthritic conditions (1-6). The U.S. Centers for Disease Control and Prevention project that the number of cases of OA and RA will increase to 46 million by 2039 (3). OA is a degenerative joint disease and RA is an autoimmune, inflammatory, systemic disease (4,5). Both diseases cause pain, stiffness, swelling of articular structures, muscle weakness, and atrophy. People with OA and RA also may experience physical activity intolerance, deconditioning, and an increased risk of other chronic diseases (3,4-6). Table 1 lists more common signs and symptoms associated with OA and RA. The next section will discuss some of the observed benefits of resistance training for persons with OA and RA.

BENEFITS OF RESISTANCE TRAINING IN PATIENTS WITH OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS

Resistance training (RT) has been shown to improve muscle strength, functional capacity, and pain tolerance in both OA and RA patients (2,4-6). It also increases muscle cross-sectional area (3) while not increasing disease activity (2,4).

RESISTANCE TRAINING PROGRAMMING FOR OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS

The development of an RT program should be based on individual needs (2,3,4-6). People with arthritis should discuss safe, effective exercise options with a physician or other health care provider before engaging in an RT program. Starting beginners with 2 to 3 repetitions might help initiate muscle adaptations while lowering the risks of increased joint pain and swelling (2,4). Patients should progress to 10 to 12 repetitions per exercise, as tolerated (4). Isometric exercises may be required initially if there is significant joint pain (4-6). One set per exercise will be sufficient for beginners. However, multiple set programs will generally be well tolerated and more effective in the long term (6). Progression should occur according to the person's response to training. A variety of RT equipment can be used. Table 2 summarizes resistance training recommendations for persons with arthritis.

SIGNS AND SYMPTOMS OF OVEREXERCITION

Exercise specialists should familiarize themselves with signs and symptoms of overexertion and exercise intolerance. They can include persistent fatigue,

Rheumatoid Arthritis: Exercise Programming for the Strength and Conditioning Professional

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ABSTRACT

RHEUMATOID ARTHRITIS (RA) IS A CHRONIC SYSTEMIC INFLAMMATORY DISEASE THAT AFFECTS THE JOINTS OF THE BODY CAUSING DEFORMITY AND FUNCTIONAL IMPAIRMENTS. RA AFFECTS APPROXIMATELY 1.3 MILLION AMERICANS WITH WOMEN BEING AFFECTED MORE THAN MEN. BECAUSE OF THE PREVALENCE OF THIS CONDITION, IT IS IMPORTANT FOR THE STRENGTH AND CONDITIONING PROFESSIONAL TO HAVE AN UNDERSTANDING OF THE DISEASE PROCESS AND GUIDELINES FOR EXERCISE PRESCRIPTION. THIS ARTICLE WILL DISCUSS THE ETIOLOGY, CLIENT PRESENTATION, MEDICAL MANAGEMENT, EXERCISE PROGRAMMING, TYPES OF EXERCISE, AND NUTRITIONAL CONSIDERATIONS FOR THE ADULT CLIENT WITH RA.

Rheumatoid arthritis (RA) has been described as a chronic, systemic, polyarticular inflammatory disease that affects the inner lining of the joint capsule (1). The inflammatory response is known to spread to tissues that surround the joint, which results in erosion and destruction of the bone and cartilage (2). This can cause joint deformity and functional

deficits. In severe cases, RA can spread systemically and eventually cause inflammation in the vital organs such as the heart and lungs (3,4). According to the National Arthritis Data Workgroup, RA has affected about 1.3 million Americans and is growing (5). The onset often begins in the second and third decade of life but is more prevalent in the fourth decade with women being affected 2.5 times more than men (2). The average age of individuals with RA is 64.8 years (1). With these individuals, the strength and conditioning (SC) professional needs to be proficient at safely prescribing exercise programs. This article will discuss the etiology, client presentation, medical management, exercise programming, types of exercise, and nutritional considerations for the adult client with RA.

ETIOLOGY

RA is a chronic disease that causes pain, stiffness, swelling, and limited motion in the joints of the body (6). The etiology or cause of RA is still unknown. RA has been classified as an autoimmune disease with an idiopathic (i.e., unknown) onset and systemic effects on the body (2,6). The disease process is triggered by an autoimmune response from a faulty immune system, which leads to the body attacking its own healthy tissues (6). Current theory points to some

type of triggering event such as an infection in a genetically susceptible person, which initiates an immune response that attacks the joints of the body (6,7). This response may directly or indirectly destroy the synovial capsules, tendons, and connective tissues (Figure 1).

CLIENT PRESENTATION

The SC professional must be aware that the client with RA may have multiple joints affected. Often the wrists and hands are affected first (Figure 2) (2). These clients are typically under the care of a rheumatologist and should have clearance before beginning or returning to physical activity. Clients with RA often suffer from a chronic disease process marked by exacerbations and remissions of symptomatic (latent) joint pain and swelling. The client may complain of the following symptoms: (a) pain, redness, warmth, swelling, and/or stiffness of multiple joints, (b) increased joint pain with movement, (c) joint stiffness in the morning and after inactivity, (d) general feeling of fatigue and overall malaise, flu-like symptoms, (e) sleep disturbances, (f) loss of appetite, (g) firm, painless growths under the skin near the joints called nodules,

KEY WORDS

rheumatoid arthritis, arthritis, exercise

Resistance Training for Older Adults: Position Statement From the National Strength and Conditioning Association

Maren S. Fragala,¹ Eduardo L. Cadore,² Sander Dorgo,² Mikel Izquierdo,⁴ William J. Kraemer,³ Mark D. Peterson,⁵ and Eric D. Ryan⁶

¹Quest Diagnostics, Secaucus, New Jersey; ²School of Physical Education, Physiotherapy and Dance, Exercise Research Laboratory, Federal University of Rio Grande do Sul, Porto Alegre, Brazil; ³Department of Kinesiology, University of Texas at El Paso, El Paso, Texas; ⁴Department of Health Sciences, Public University of Navarre, CIDER of Healthy and Healthy Aging (CIDEPES), Navarre, Pamplona, Navarre, Spain; ⁵Department of Human Sciences, The Ohio State University, Columbus, Ohio; ⁶Department of Physical Medicine and Rehabilitation, University of Michigan-Medicine, Ann Arbor, Michigan, and ⁷Department of Exercise and Sport Science, University of North Carolina-Chapel Hill, Chapel Hill, North Carolina

Abstract

Fragala, MS, Cadore, EL, Dorgo, S, Izquierdo, M, Kraemer, WJ, Peterson, MD, and Ryan, ED. Resistance training for older adults: position statement from the national strength and conditioning association. *J Strength Cond Res* 33(8): 2019-2052, 2019—Aging, even in the absence of chronic disease, is associated with a variety of biological changes that can contribute to decreases in skeletal muscle mass, strength, and function. Such losses decrease physiologic resilience and increase vulnerability to catastrophic events. As such, strategies for both prevention and treatment are necessary for the health and well-being of older adults. The purpose of this Position Statement is to provide an overview of the current and relevant literature and provide evidence-based recommendations for resistance training for older adults. As presented in this Position Statement, current research has demonstrated that countering muscle disease through resistance training is a powerful intervention to combat the loss of muscle strength and muscle mass, physiological vulnerability, and their debilitating consequences on physical functioning, mobility, independence, chronic disease management, psychological well-being, quality of life, and healthy life expectancy. This Position Statement provides evidence to support recommendations for successful resistance training in older adults related to 4 parts: (a) program design variables, (b) physiological adaptations, (c) functional benefits, and (d) considerations for frailty, sarcopenia, and other chronic conditions. The goal of this Position Statement is to a) help foster a more unified and holistic approach to resistance training for older adults, b) promote the health and functional benefits of resistance training for older adults, and c) prevent or minimize fears and other barriers to implementation of resistance training programs for older adults.

Key Words: strength training, elderly, frail, seniors, exercise, resistance exercise

Summary Statements

The purpose of this Position Statement is to provide an overview of the current and relevant literature, evaluate exercise program variables, and provide evidence-based recommendations for exercise training for older adults. Current research has demonstrated that countering muscle disease through resistance training is a powerful intervention to combat muscle strength loss, muscle mass loss (sarcopenia), physiological vulnerability (frailty), and their debilitating consequences on

Part 1: Resistance Training Program Variables

1. A properly designed resistance training program with appropriate interactions for exercise technique and proper spotting is safe for healthy, older adults.
2. A properly designed resistance training program for older adults should include an individualized, periodized approach working toward 2-3 sets of 1-2 multi-joint exercises per major muscle group, achieving intensities of 70-85% of 1

“Common Practice” Training Rules for the Older Adult:

Rule #1: Don't Lift Heavy

Anything Over 30lbs...Why? Apparently Because 30 Pounds of Pressure is When Weak Lower Backs Snap in Half

Rule #2: Don't Press Weights Over Head

You Can't Put on a Shirt, Put Away Your Dishes or Place Your Nice Tumi Carry-On in the Over Head Compartment ... Sorry

Rule #3: Perform Most Movements Seated

Standing Up with Load = Danger!!

Seated & Guided Movements Replicate Real Life Movements

Rule #4: No Power Training

You Could Get Hurt Moving Quickly So the Next Time You Fall Down Do It REALLY Slowly!!

Rule #5: Older Adults

Require Constant Supervision

Birddogs, Monster Walks & No Money are VERY Dangerous & Must be Supervised by a Trained Professional at ALL Times

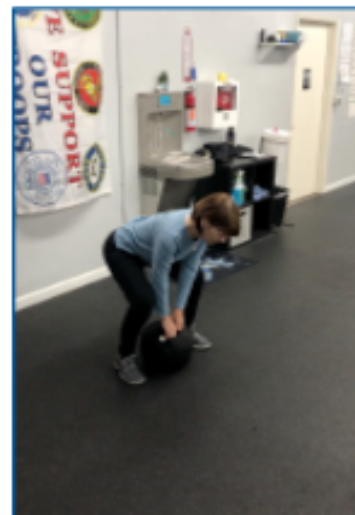
NEW!! Two Recently Added Rules for the Older Adult:

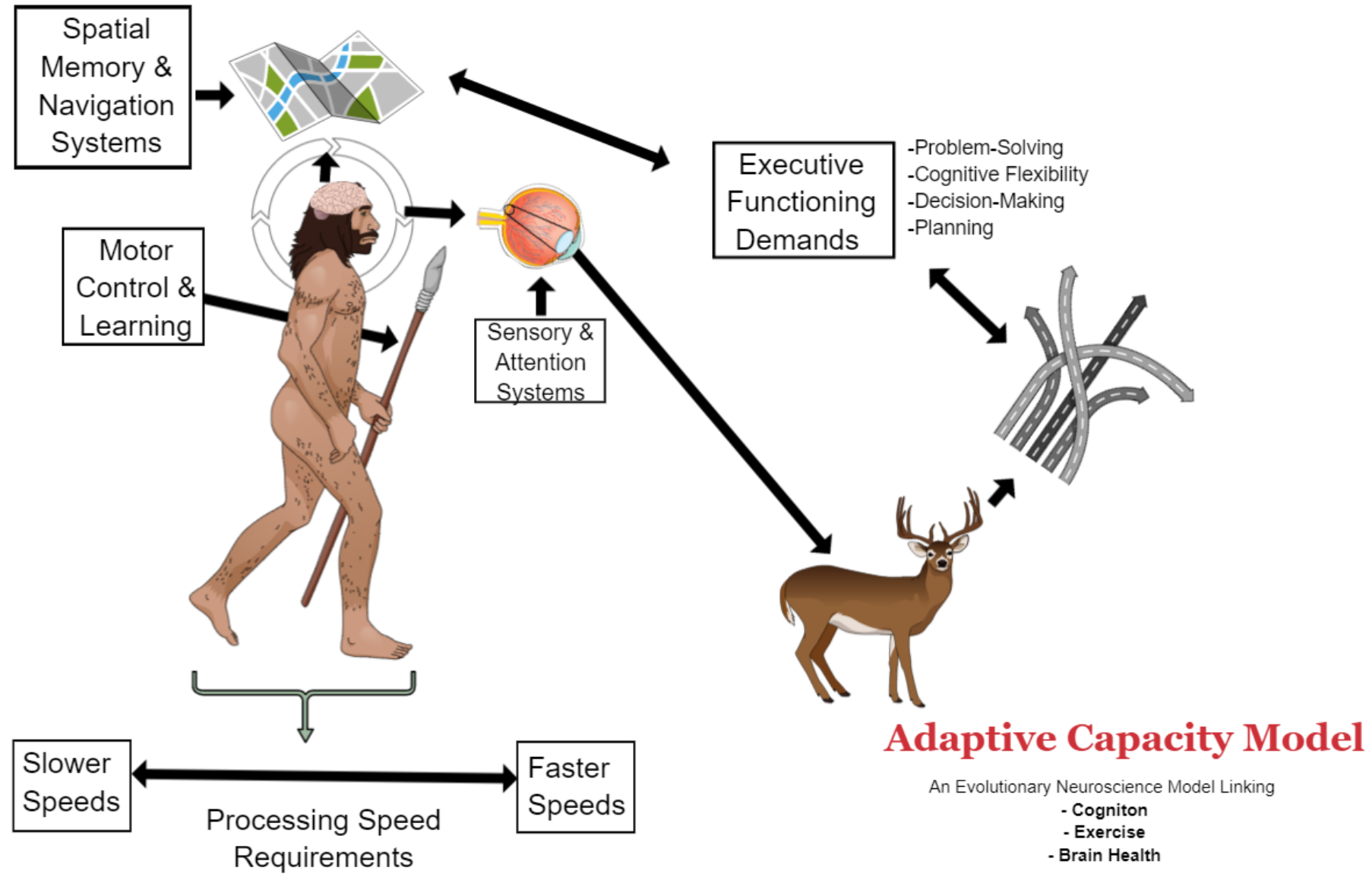
Rule #6: Resistance Training is Harmful to Those with Arthritis

Gripping, pulling, pushing, pressing, rowing & carrying weights or pulling on resistance bands and pulleys will accelerate the affects of arthritis resulting in paralysis and extreme discomfort or intolerable pain.

Rule #7: Body Weight Training is Enough to Fight Osteoporosis and Develop Bone Density

Yoga, Tai-Chi, Stretching, Walking, Aerobics, LSD (Long Slow Distance) Cardio, Golf, Tennis and Gardening is Enough “Resistance” to Keep You and Your Bones, Ligaments, Tendons Strong Forever





Raichlen et al., 2017, Trends in Neuroscience

FRONTAL LOBE

Cognitively-Demanding Activities
Open Skill Activities
Resistance Training
Mind-Body Exercise

- Increased Gray Matter
- Improved Executive Functions
- More Efficient Brain Activity

PARIETAL LOBE

Sensory-Rich Activities
Visuo-spatial Demands
Object-Based Activities

- Increased white matter & volume
- Improved sensory network activity
- Improved task-switching abilities

OCCIPITAL LOBE

Visuo-spatial Demands
Visual Attention Demands
Motor Control & Stimulation

- Increased white & gray matter
- Improved visual skills & attention
- Increased volume & function

TEMPORAL LOBES

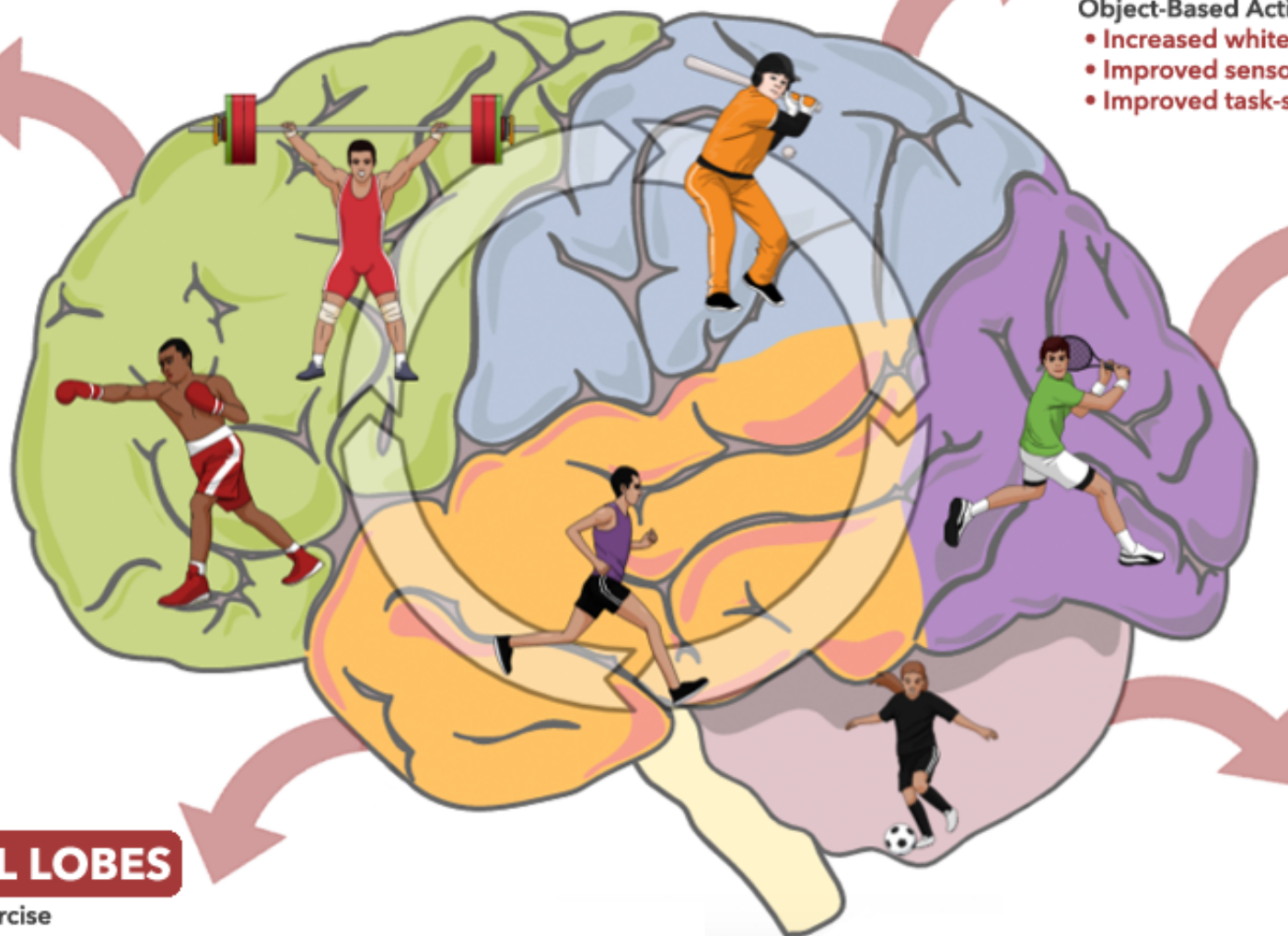
Cardiovascular Exercise
Closed Skill Activities
Generalized Physical Activity

- Improved Learning & Memory
- Increased Neurogenesis
- Increased Hippocampal Volumes

CEREBELLUM

Coordinative Exercise
Skill & Motor Learning
Open Skills Activities

- Increased cerebellar volume & function
- Improved coordination & attention
- Higher nerve cell & blood vessel volume



Comprehensive Assessments

Main Areas of Assessment



Posture



Strength



Mobility



Dual-Task Ability



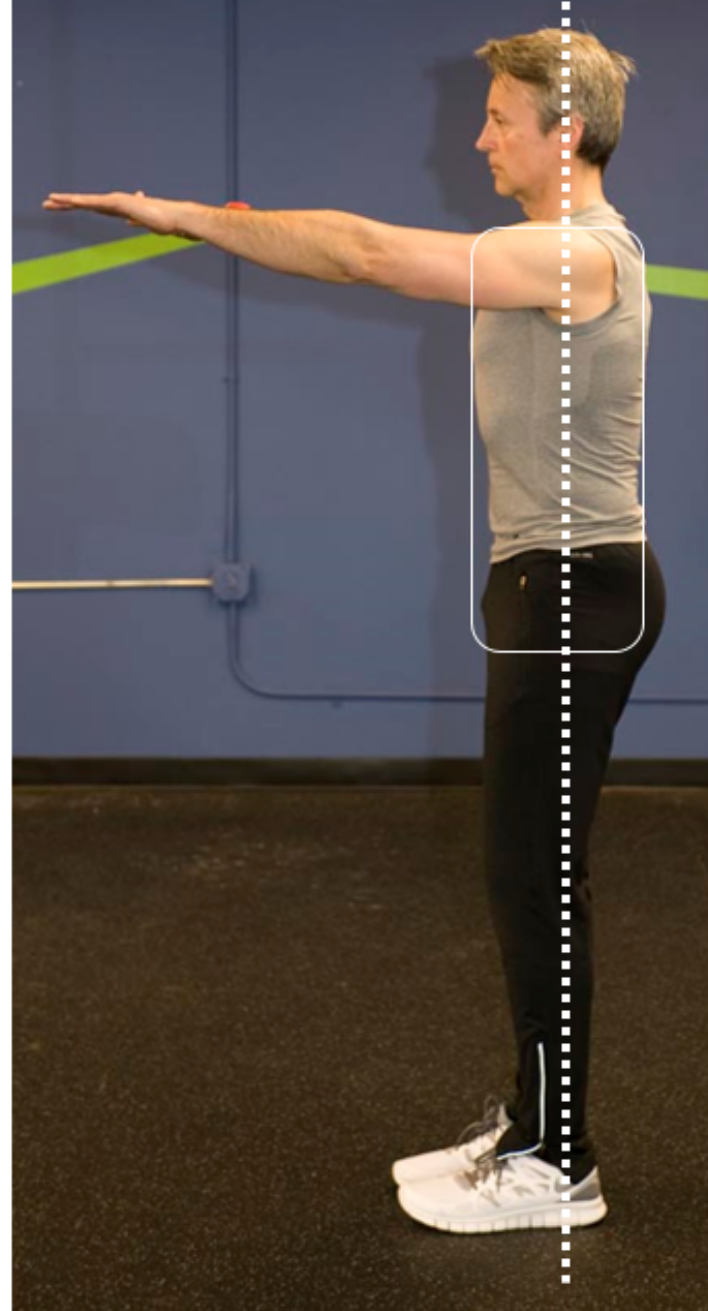
Gait



Breathing

POSTURE

- Optimal
 - Head and neck
 - Thoracopelvic Cylinder (trunk, spine, & pelvis)
 - Center of mass positioned over base of support (feet)



Balance/Fall Prevention Assessment Strategy

- Functional Reach Test (Reach Test)
 - Quantifies Static Balance and Joint Mobility



- Timed Up-and-Go Test (Walk Test)
 - Quantifies Dynamic Balance and Gait Enhancement



Comprehensive Assessment Process

Tune in for how to get the full assessment battery with never-before-seen variations!

	What	Measure	Variation
Posture	Structural	Qual/Angles	Dual-Task
Sit Stand	LE Endurance	Reps/Time	Reactive
Step Up	LE ROM	Qual/Reps	Reactive
Shoulder Flexion	ROM	Qual/ROM	Ext. Cue
Band Chest Pull	Strength/ROM	Qual/Lbs	Equipment
Timed Up and Go	Gait Speed	Seconds	Dual-Task
Four Square Step Test	Dynamic Balance	Seconds	Dual-Task
Functional Reach Test	Mobility/COP	Distance	Dual-Task

Assessment Process for Balance, Gait & Dual-Tasking

In addition to selected questionnaires (I.e. Activities Balance Confidence Scale and Dual Task Questionnaire)

	Measure	Assesses...
Functional Reach Test	Distance	Mobility, Postural Control
Timed Up and Go	Time	Gait Speed
Timed Up and Go - Cognitive	Time	Dual-Task Gait
Four Square Step Test	Time	Dynamic Balance & Agility
Four Square Step Test - Cognitive	Time	Dual-Task Dynamic Balance
Star Excursion Balance Test	Various	Dynamic Balance
Tandem Gait - Dual Task	Various	Dual-Task Postural Control

Essential Exercise Elements For Fall Prevention

- Accumulation of 50 hours of exercise to reduce OCCURRENCE but only 2 weeks to reduce RISK
Sherrington, 2011 *NSWPHB*

Must choose correct exercise components!!

NO/MINIMAL EVIDENCE

- Cardiovascular
- Yoga/Pilates
- Static Stretching

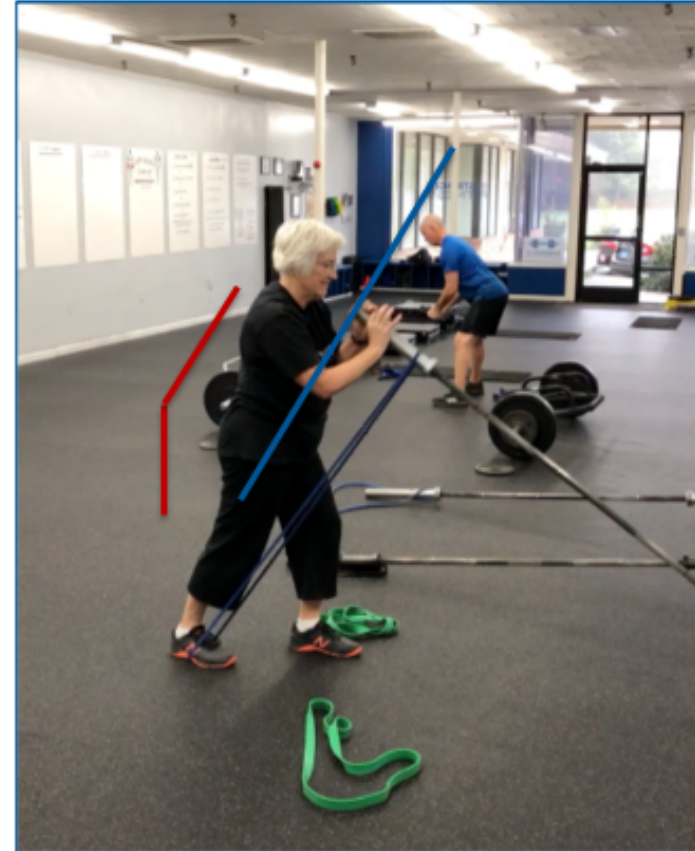
GOOD EVIDENCE

- Joint Mobility
- Sensory Stimulation
- Muscle Strength/Power
- Static/Dynamic Balance
- Gait Enhancement
- Tai Chi (combination)



How to Train Clients with Pain

- **Progressive Resistance**
 - Reducing the Opportunity for Exposure (Injury)
 - The Most Exposed Position the Lighter the Load
 - The More Secure Position the Heavier the Load
- **Adaptation Grace Period**
 - Typically Two to Twelve Weeks on Average
 - Consistent Participation in Strength Training is Vital
 - Up to 50%+ Decreases in Pain Have Been Recorded



Resistance Training with Arthritis & Rheumatoid Arthritis

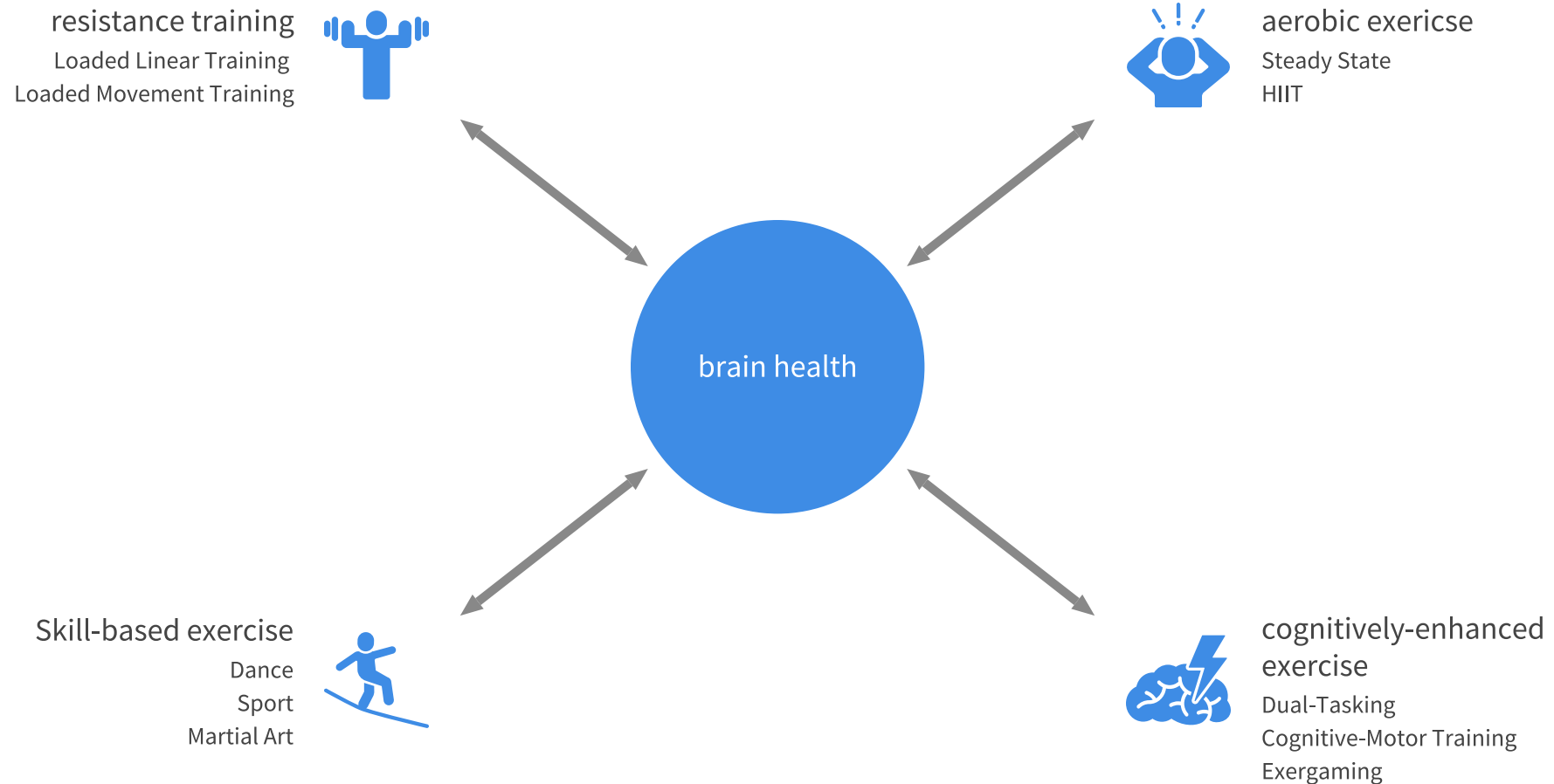
“The Grace Period” = 2 to 12 Weeks

Training Purpose for Client with Arthritis

- Increased Articulation of Joint Under Load
- Increase Oxygenated Blood Flow
- Increased Oxygenated Blood Exchange
- Maximize Capillary Exchange Rate
 - Allows White Blood Cells to Repair Damaged Tissue & Bone
- Increased Lubrication of Joints
- Reduction of Swelling in Joint
 - With Proper Progression
 - Do NOT Over Train = Opposite
- Key Areas of Concern:
 - Teaching the Difference Between **Pain vs. Discomfort**
 - Progressions, Volume & Tempos **MUST be Progressed SLOWLY**
 - “Always” Slightly Under Train **vs Over Training “Once”**



“brain health” ingredients



Sample Exercise Program for Brain Health Outcomes - Specific to Improving Attention

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Multi-component (AT +RT + Balance)	Tai Chi (group)	Multi-component (AT +RT + Balance)	Dance (skill-based)	Multi-component (AT +RT + Balance)	Tai Chi (home)	Dance (skill-based)
- 60 min (20 min/type)	-30 min	- 60 min (20 min/type)	- 60 min	- 60 min (20 min/type)	-30 min	- 60 min
- Moderate intensity	-Low Intensity	- Moderate intensity	-Low to Moderate Intensity	- Moderate intensity	-Low Intensity	-Low to Moderate Intensity

LOW BACK AND HIP COMPLEX

CORRECTIVE EXERCISE	AREA OF FOCUS MUSCLES TARGETED	PROGRESSIONS	NOTES & CUES
MYOFASCIAL RELEASE	POSTERIOR HIPS (GLUTES MAX, MEDIUS, MINIMUS) EXTERNAL HP ROTATORS HAMSTRING QUADRATUS LABORUM ERECTOR SPINAE AVOID ROLLING OVER SPINE OR PHS WITH MYOFASCIAL TOOLS	INCREASE INTENSITY ADD MOVEMENT DURING RELEASE ADD ADDITIONAL REGIONS INCLUDING LATTISSIMUS DORSI, CALVES, QUADRICEPS, ADDUCTORS	RELEASE AREAS OF GREATEST RESTRICTION AND BREATHE THROUGH RELEASE. AVOID EXCESSIVE DISCOMFORT, FOCUS ON WHERE CLIENT IS REALLY TIGHT AND NOT WHERE THEY FEEL THEY ARE TIGHT
THREE DIMENSIONAL BREATHING	DEEP MYOFASCIAL SYSTEM OF THORACOPELVIC CYLINDER (CORE) DEEP MYOFASCIAL SYSTEM = DIAPHRAGM, PSOAS, PELVIC FLOOR, INTERCOSTALS, MULTIFIDI, DEEP ERECTOR SPINAE	SUPINE - WITH LOAD UPRIGHT (SEATED OR STANDING) - WITH LOAD MOVEMENT - WITH LOAD	BREATHE INTO ENTIRE THORACOPELVIC CYLINDER (THORAX, ABDOMEN, AND PELVIS) BREATHE IN AND OUT THROUGH NOSE EXHALATION TWICE AS LONG AS INHALATION
HIP HINGE	DISSOCIATION OF PELVIS FROM FEMORAL HEADS ECCENTRIC LENGTHENING OF POSTERIOR HIP COMPLEX (GLUTES, HAMSTRINGS, AND EXTERNAL HP ROTATORS) CONTROL OF THORACOPELVIC CYLINDER AND LOWER EXTREMITY	SUPPORTED HANDS OR HIPS UPON WALL HANDS ON PELVIS (FOCUS ON ROTATING PELVIS) SPLIT STANCE (FOCUS ON MORE RESTRICTED SIDE)	WIDEN SITZ BONES LET GO OF BUTT AND POSTERIOR HIPS POUR WATER OUT OF THE FRONT OF PELVIC BOWL
HAPPY BABY PROGRESSION	DEEP AND SUPERFICIAL SYSTEM OF THORACOPELVIC CYLINDER (CORE) SUPERFICIAL SYSTEM = SUPERFICIAL ABDOMINALS AND ERECTOR SPINAE	HAPPY BABY W/ ALTERNATE LEG MARCH (SUPPORTED) HAPPY BABY W/ ISO HOLD AND BREATHE (UNSUPPORTED) HAPPY BABY W/ ALTERNATE LEG MARCH (UNSUPPORTED)	CONTINUE TO BREATHE MAINTAIN NEUTRAL ALIGNMENT AVOID FACE TURNING PED OR ABDOMINAL DISTENSION

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SHOULDER, ELBOW AND HAND COMPLEX

RESISTANCE EXERCISE	AREA OF FOCUS MUSCLES TARGETED	PROGRESSIONS & CUES	NOTES
BAND FACE PULL SERIES	RHOMBOD, TRAPEZUS, DELTOIDS (MOSTLY POSTERIOR), BICEPS BRACHIA, BRACHIORADIALIS, PRONATOR TERES AND OTHER EXTENSORS OF THE WRIST/FORE ARM	SUPINATED CHEST PULL PRONATED CHEST PULL NEUTRAL ST. ARM PULL DOWN STEP IN ANTERIOR ST. ARM PULL UP (FRONT RAISE)	ALIGNMENT IS KEY TO MAXIMIZE ANTI-ARTHRITIC COMPONENTS
DB CURL SERIES	BICEPS BRACHII, BRACHIALIS, BRACHIORADIALIS, STABILIZERS OR THE WRIST AND SHOULDER GIRDLE	REVERSE CURL HAMMER CURLS 90 DEGREE DRILLS	ELBOW ALIGNMENT IS KEY ALONG WITH SHOULDER RETRACTION STABILIZATION TO ALLOW THE ELBOW FLEXORS TO WORK WITHOUT "CHEAT" MOMENTUM WHEN FATIGUED.
BAND RETRACTION SERIES	RHOMBOD, TRAPEZUS, DELTOIDS (MOSTLY POSTERIOR), LONG HEAD OF THE TRICEPS, BICEPS BRACHIA, BRACHIORADIALIS, PRONATOR TERES AND OTHER EXTENSORS OF THE WRIST/FORE ARM	-PULL APARTS AND ANCHOR -MINI-BAND OR BAND HIGH ANCHOR REVERSE PUSH UPS -MINI-BAND NEUTRAL GRIP TRIANGLE PULL BACKS PULL TO BELT LINE (HOUR GLASS)	CONTROLLED AND SLOW RHYTHMIC REPETITIONS TO DEVELOP "DEEP" ROOTED STRENGTH DUE TO "TIME UNDER TENSION" STYLE VOLUME. ANTI-ARTHRITIC GRIP IS A BIG "MUST" HAVE IN ANY OLDER ADULT RESISTANCE TRAINING PROGRAM.
GRIP STRENGTH SERIES	ALL MUSCLES OF THE HAND, WRIST AND FOREARM. SPECIFIC FOCUS ON INCREASE STRENGTH, STABILITY AND MOBILITY OF THE WRIST (ANTI-CARPAL TUNNEL)	RICE BUCKET SERIES (BOOS, OPENS, GRIPPERS) FINGER TIP RUBBER BAND EXTENSIONS SANDBELL PINCH GRIP LIFTS BAND DISTAL HAND ISOMETRIC EXTENSION HOLDS	LESS FOCUS OF FLEXION STRENGTH AS FLEXION IS GREATLY OVERDEVELOPED DUE TO DAILY USE.

LOW BACK AND HIP COMPLEX

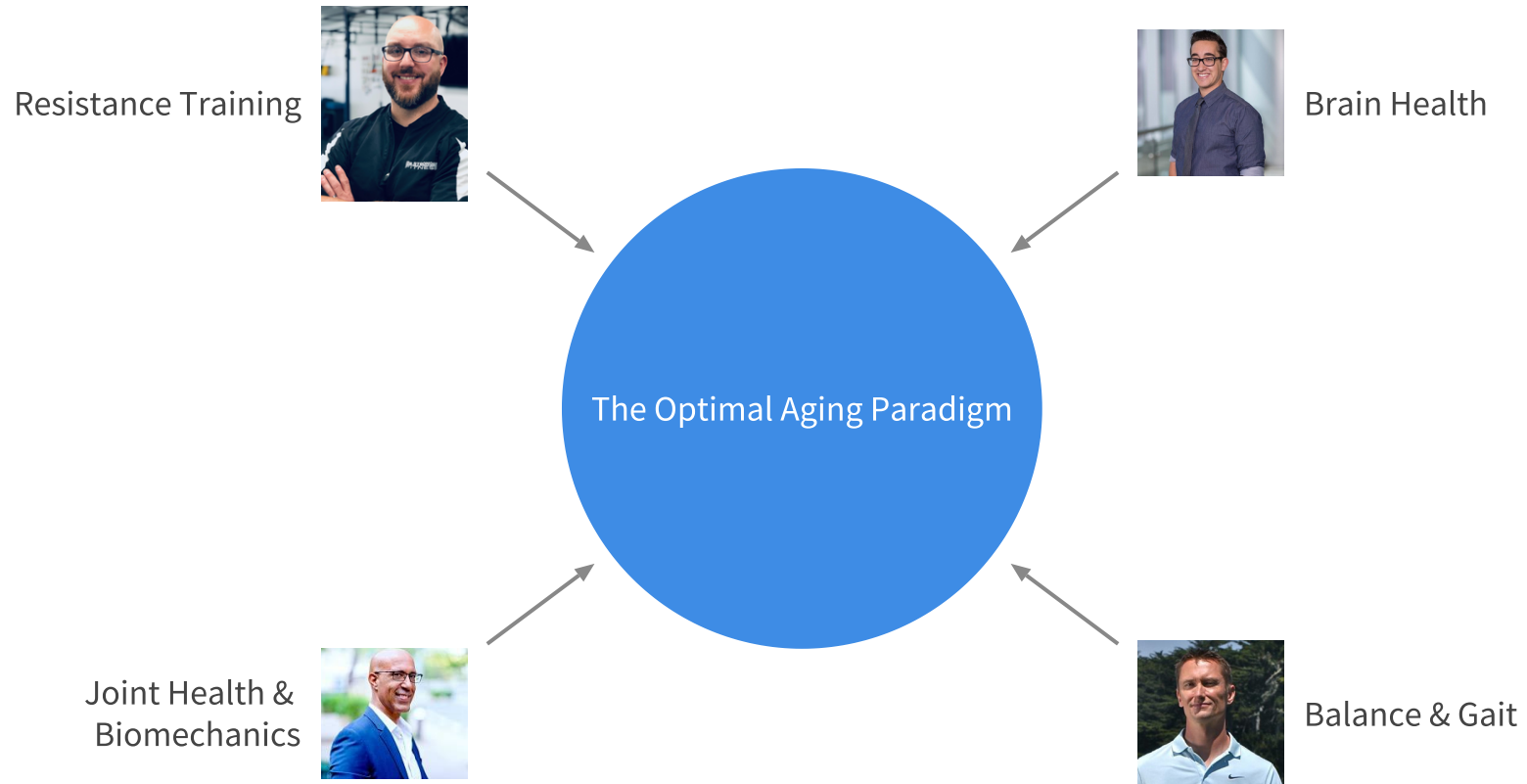
RESISTANCE EXERCISE	AREA OF FOCUS MUSCLES TARGETED	PROGRESSIONS & CUES	NOTES
TWO BAND FEET ELEVATED BRIDGE	GLUTES (MAXIMUS, MEDIUS, MINIMUS), HAMSTRINGS & GASTROCNEMIUS	SHOULDER BLADES RETRACTED (TUCKED) DORS-FLEXED AT ANKLE (PULL DOWN) HAMSTRING & GLUTE ACTIVATION "PULL UP" INTO BRIDGE POSITION	COMMON MISTAKES INCLUDE: FLATTENING OF THE SHOULDER GIRDLE "PUSHING" WITH THE QUADRICEPS ROLLING (FOUNDING) OF THE SPINE
TWO BAND SKIER SQUAT	HAMSTRINGS (ECCENTRIC) QUADRICEPS (CONCENTRIC) ERECTORS (ISOMETRIC)	SET TRIANGLE PLATFORM (ELBOWS, THIGHS, CHIN), MID-FOOT HEEL DOMINANT GLUTE ACTIVATION TO INITIATE "TILT" FORWARD. LEVER PELVIS UPWARD ALLOWING BIG ECCENTRIC STRETCH OF HAMSTRING RETRACT RHOMBOIDS & ACTIVATE RETRACTORS TO FLATTEN BACK (HOLD THROUGHOUT)	THIS IS A TECHNICAL LIFT BUT VERY BENEFICIAL ONCE MASTERED. THE TIME INVESTED TO LEARN TO PERFORM PROPERLY IS WELL WORTH IT. THINK OF THIS AS A "LEVERED" ACTION AS OPPOSED TO A "LIFT"
BAND STEP UP PULL START (PROPER STEP DOWN)	GLUTES, QUADRICEPS HP & KNEE STABILIZERS RHOMBOIDS, BICEPS	HEEL DOMINANT (MID-FOOT) DRIVE ON BOX GLUTE ACTIVATION FOR TOP-HALF EXTENSION EMPHASIZE "PUSH-DOWN" TO MAXIMIZE GLUTE DRIVE (MINIMIZE QUAD ACTIVATION)	EMPHASIS SHOULD BE ON THE BOX LEG DRIVING DOWN INTO THE PLATFORM (NOT THE FLOOR LEG "JUMPING" OFF THE GROUND. PAY ATTENTION TO "ANTI-ROTATION" FORCE BEING APPLIED BY THE PULL START.
BAND HIP SERIES MONSTER WALK SINGLE LEG POSTERIOR RAISE SINGLE LEG SELF-ANCHOR HIP FLEXION SEATED ABDUCTION SERIES	HP ABDUCTORS HIP FLEXORS LOW BACK & HP STABILIZERS	MONSTER WALKS ALMOST ALWAYS IN REVERSE SINGLE LEG POSTERIOR RAISE HAS SLIGHT FLEXION IN BOTH KNEES AND ACTIVATION ONLY FROM THE HIP. SINGLE LEG SELF-ANCHOR HIP FLEXION REQUIRES DORS FLEXION OF FLEXING LEG. SEATED ABDUCTION SERIES IS ALWAYS PERFORMED IN THIS ORDER TILTED TWO-INCHES FORWARD OF NEUTRAL, NEUTRAL AND TWO-INCHES BACK OF NEUTRAL.	HP WORK SHOULD BE GRADUALLY PROGRESSED INTO PROGRAM DESIGNS AND PERFORMED LITE AND WITH LOW VOLUME TO START. RESIDUAL DISCOMFORT CAN OCCUR IF TOO MUCH/TOO SOON IS PROGRAMMED. SPECIFICALLY, FOR THOSE "POST" HP REPLACEMENT/ARTHROSCOPY.

SHOULDER, ELBOW AND HAND COMPLEX

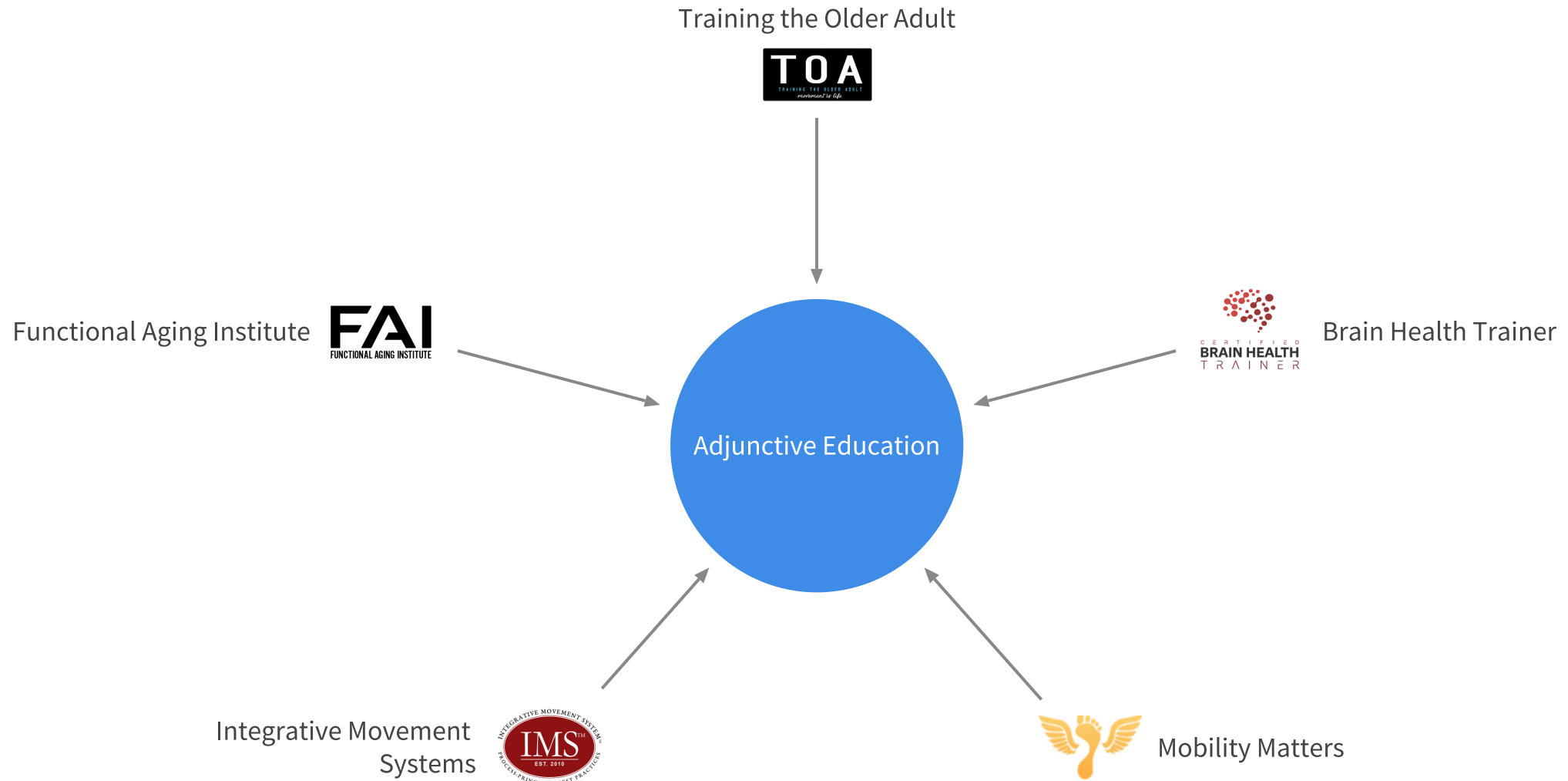
CORRECTIVE EXERCISE	AREA OF FOCUS MUSCLES TARGETED	PROGRESSIONS	NOTES & CUES
MYOFASCIAL RELEASE	LATTISSIMUS DORSI, PECTORALIS MINOR, EXTERNAL ROTATORS (INFRASPINATUS, TERES MINOR), TERES MAJOR	ADD MORE INTENSITY ADD MOVEMENT ADD ADDITIONAL MUSCLE GROUPS (EX. SUBSCAPULARIS, LEVATOR SCAPULA, INTERCOSTALS, THORACIC ERECTOR SPINAE)	RELEASE AREAS OF GREATEST RESTRICTION AND BREATHE THROUGH RELEASE. AVOID EXCESSIVE DISCOMFORT, FOCUS ON WHERE CLIENT IS REALLY TIGHT AND NOT WHERE THEY FEEL THEY ARE TIGHT
THREE DIMENSIONAL BREATHING	DEEP MYOFASCIAL SYSTEM OF THORACOPELVIC CYLINDER (CORE) DEEP MYOFASCIAL SYSTEM = DIAPHRAGM, PSOAS, PELVIC FLOOR, INTERCOSTALS, MULTIFIDI, DEEP ERECTOR SPINAE	SUPINE - WITH LOAD UPRIGHT - WITH LOAD WITH MOVEMENT - WITH LOAD	BREATHE INTO ENTIRE THORACOPELVIC CYLINDER (THORAX, ABDOMEN, AND PELVIS) BREATHE IN AND OUT THROUGH NOSE EXHALATION TWICE AS LONG AS INHALATION
BAND PULL APART WITH PULLOVERS	INTRINSIC FOOT MUSCLES (ABDUCTOR HALLUCIS, ABDUCTOR DIGITI MINIMI, FLEXOR HALLUCIS BREVIS, ADDUCTOR HALLUCIS, INTEROSSEAL QUADRATUS PLANTAE)	SUPINE WITH TOWEL - WITH RESISTANCE BAND SEATED - WITH TOWEL - WITH RESISTANCE BAND HIP HINGE WITH CABLE OR RESISTANCE BAND	BREATHE IN AS ARMS ARE OVER THE CHEST AND OUT WITH MOVEMENT OF THE ARMS "KEEP OPEN, LONG, OR WIDE" ACROSS COLLAR BONES/CLAVICLES "KEEP BACK OF SHOULDER BLADES IN CONTACT WITH THE TABLE/FLOOR"
SUPORTED HIP HINGE / MODIFIED QUADRUPED	INTRINSIC AND EXTRINSIC ANKLE/FOOT MUSCLES	AT WALL - ARMS AT SHOULDER HEIGHT ON TABLE OR BENCH ON FLOOR	BREATHE IN AS ARMS ARE IN LINE WITH THE CHEST AND OUT WITH MOVEMENT "FEEL AS IF YOU'RE SPREADING THE WALL/FLOOR BETWEEN YOUR HANDS" "KEEP A LONG SPINE POSITION AND SIT BONES WIDE"

The Optimal Aging Paradigm

Saturday **June 6th** at **12 pm PDT/3pm EST!!!**

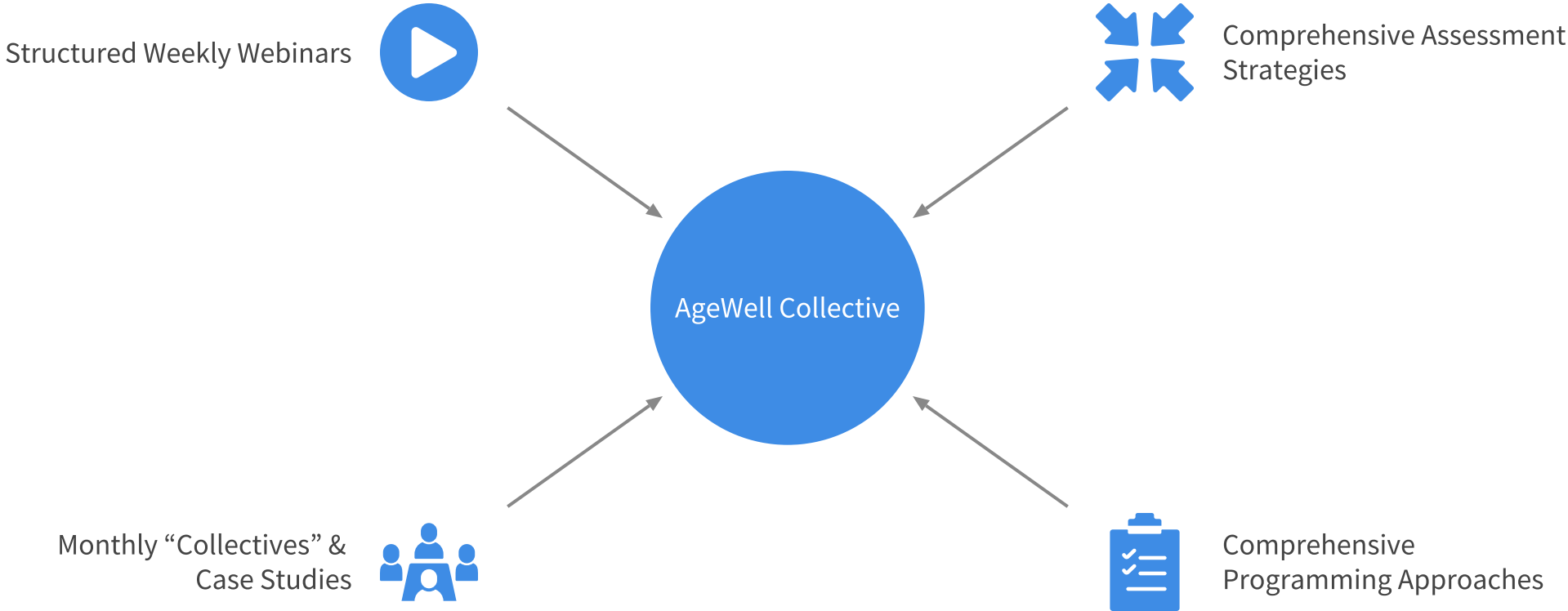


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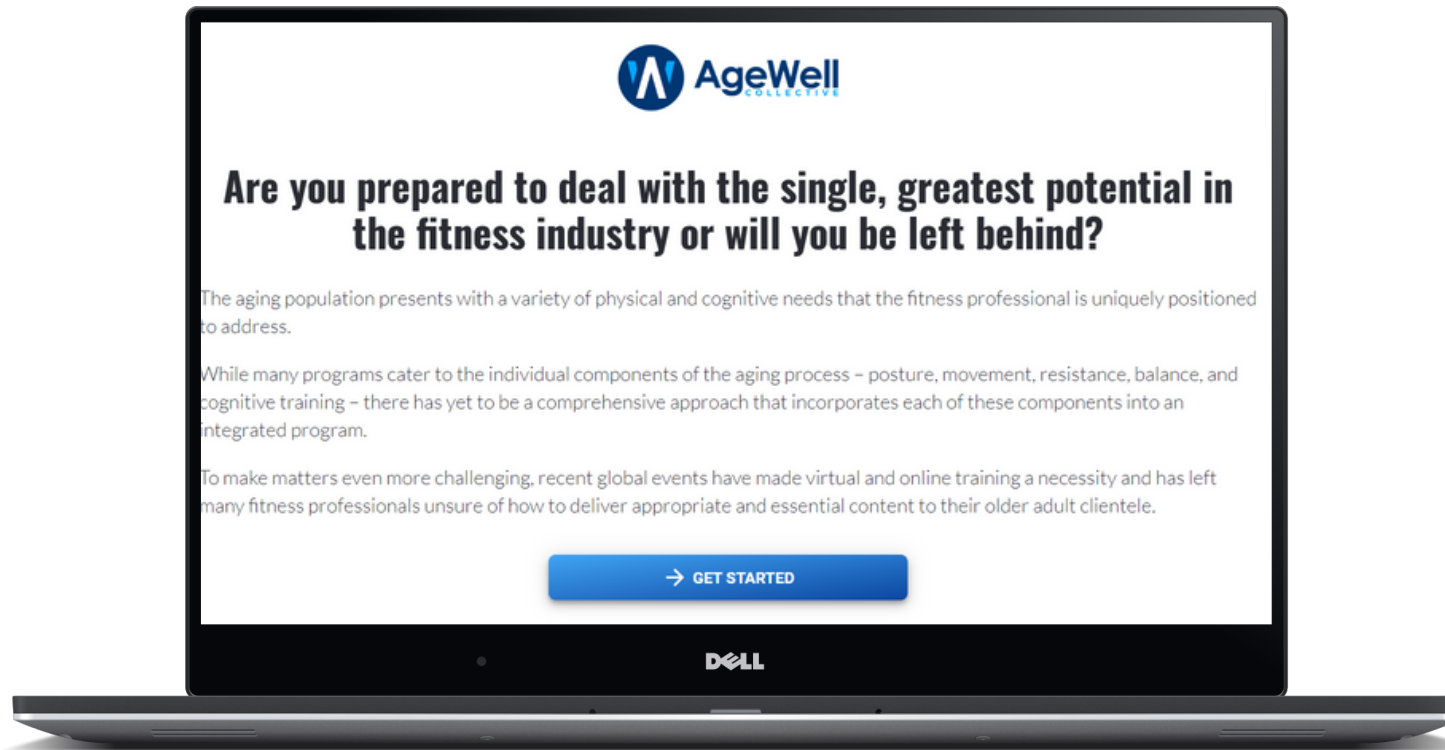


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