

Exercise and Aging Well

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The logo for Lifetime Concierge Internal Medicine features the word "Lifetime" in a large, elegant, black cursive script. Below it, the words "Concierge Internal Medicine" are written in a smaller, grey, sans-serif font. The logo is positioned on the left side of the slide, partially enclosed by a large, blue, hand-painted circular brushstroke that frames the left and top portions of the page.

Lifetime
Concierge Internal Medicine

Strongest predictors of healthy aging



Attitude toward
aging



Mobility during
middle age

Physical Activity Improves Many Domains of Life



EMOTIONAL AND
COGNITIVE



GENERAL HEALTH



MUSCULOSKELETAL

Why is This Topic Important Right Now?

- Since the lockdown, many people have been working from home, are less active because they are not going to the gym, have not been running errands or seeing friends/family.
- [**Risk of Increased Physical Inactivity During COVID -19 Outbreak in Older People: A Call for Actions**](#) Hamilton Roschel PhD, Guilherme G. Artioli PhD, Bruno Gualano PhD. First published:11 May 2020
- Takeaways below:
 - There was a 12% decrease in steps across the US in March of 2020 vs March 2019 based on wearable data
 - This abrupt reduction in activity levels, as would likely happen with social isolation, is of concern in older individuals

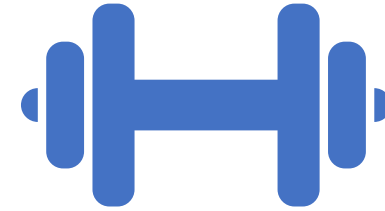
More From This Article...

- The annual number of deaths attributed to physical inactivity is estimated to be over **5 million globally**
- Reducing daily steps (to 1,500 steps/day) has been shown to reduce leg fat-free mass by approximately 4% over 14 days in older individuals
- Two weeks of inactivity (75% daily step reduction) has been shown to decrease muscle strength in approximately 8%
- 2 weeks of rehabilitation were ineffective in recovering muscle function, emphasizing the impact of abrupt reductions in physical activity in an already vulnerable population.
- Reducing steps to under 1500/day has also been shown to worsen body/skeletal muscle's handling of glucose, which leads to increased blood sugar and inflammation

Physical Activity vs Structured Exercise



Physical activity - movement created by skeletal muscle contraction resulting in energy expenditure



Exercise- activity that is planned, repetitive, and designed to improve or maintain physical fitness
(cardiovascular/pulmonary endurance; muscle strength, power, endurance and flexibility, relaxation and body composition)



Health Benefits of Physical Activity and Exercise

Short Term Benefits

- Improve quality of life
- Reduce anxiety
- Improve focus and attention
- Reduce blood pressure
- Improve insulin sensitivity
- Improve sleep outcomes

Long Term Benefits

- Improve cognition
- Prevent many types of cancer
- Reduce risk of dementia
- For older adults, lowers risk of injuries from falls
- Help to manage weight

Disease Management

- Decrease pain of osteoarthritis
- Reduce disease progression for hypertension
- Reduce disease progression for type 2 diabetes
- Reduce symptoms of anxiety and depression
- Improve cognition for those with dementia, multiple sclerosis, ADHD, and Parkinson's disease

Emotional & Cognitive Benefits



Improved cognitive function, lower risk of dementia



Improved sleep



Improved energy level



Improved mood and less anxiety



Improved perception of quality of life

General Health Benefits of Exercise



Improves weight management



Lowers risk for heart disease and stroke (**2 of the leading causes of death in the US**)



Reduces risk for developing type 2 diabetes and metabolic syndrome



Lowers risk of certain types of cancer

Musculoskeletal Benefits of Exercise



Slows the loss of bone density- **Lowers risk of hip fracture**



Reduces risk of falling and the risk of fall-related injuries



Improves balance confidence



Helps manage arthritis and other rheumatic conditions



Builds or maintains muscle mass

Sarcopenia: the loss of muscle with aging

Starting in our 30s, every decade we lose:

Up to 8 percent of our muscle mass



Up to 30 percent of our strength and power



This leaves us weaker, less mobile and — especially after we cross age 50 — more vulnerable to injury from falls.

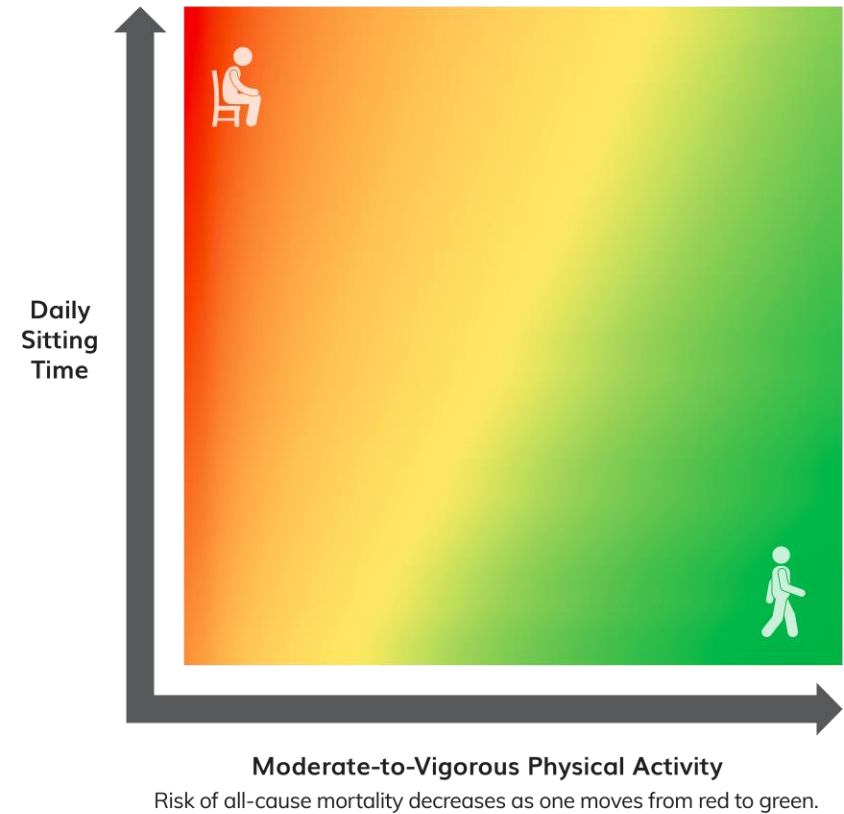


Move More and Sit Less

Sedentary behavior increases risk of:

- All-cause mortality
- Cardiovascular disease mortality
- Cardiovascular disease
- Type 2 diabetes
- Colon, endometrial, and lung cancers

Relationship Among Moderate-to-Vigorous Physical Activity, Sitting Time, and Risk of All-Cause Mortality in Adults





Key Guidelines for Adults



- ✓ Adults should move **more and sit less** throughout the day. **Some physical activity is better than none.**
- ✓ For substantial health benefits, adults should do at least **150 minutes** (2 hours and 30 minutes) a week of **moderate-intensity**, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be **spread throughout the week.**
- ✓ Additional health benefits are gained by engaging in physical activity beyond the equivalent of 300 minutes (5 hours) of moderate-intensity physical activity a week.
- ✓ Adults should also **do muscle-strengthening activities of moderate or greater intensity and that involve all major muscle groups on 2 or more days a week**, as these activities provide additional health benefits.



Key Guidelines for Older Adults



The key guidelines for adults also apply to **older adults**. In addition, the following key guidelines are just for **older adults**:

- ✓ As part of their weekly physical activity, older adults should do multicomponent physical activity that includes balance training as well as aerobic and muscle-strengthening activities.
- ✓ Older adults should determine their level of effort for physical activity **relative to their level of fitness**.
- ✓ Older adults with chronic conditions should understand whether and how their conditions affect their ability to do regular physical activity safely.
- ✓ When older adults cannot do 150 minutes of moderate-intensity aerobic activity a week because of chronic conditions, **they should be as physically active as their abilities and conditions allow**.



Adults need a mix of physical activity to stay healthy.

Moderate-intensity aerobic activity*

Anything that gets your heart beating faster counts.



AND

Muscle-strengthening activity

Do activities that make your muscles work harder than usual.



* If you prefer vigorous-intensity aerobic activity (like running), aim for at least 75 minutes a week.

If that's more than you can do right now, **do what you can.** Even 5 minutes of physical activity has real health benefits.

Walk. Run. Dance. Play. **What's your move?**

Examples of Physical Activities for Older Adults

Aerobic

- Walking or hiking • Dancing • Swimming • Water aerobics • Jogging or running • Aerobic exercise classes • yoga • Bicycle riding (stationary or outdoors) • yard work, such as raking and pushing a lawn mower • Sports like tennis or basketball • Walking as part of golf

Muscle-strengthening

- Strengthening exercises using exercise bands, weight machines, or hand-held weights • Body-weight exercises (push-ups, pull-ups, planks, squats, lunges) • Digging, lifting, and carrying as part of gardening • Carrying groceries • Some yoga postures • Some forms of tai chi

To maximize the health benefits of physical activity, do a combination of aerobic and muscle-strengthening activities.



Aerobic activities make you breathe harder and cause your heart to beat faster. Walking fast is an example of aerobic activity.



Muscle-strengthening activities make your muscles stronger. Examples include lifting weights, using resistance bands, and doing push-ups.



Bone-strengthening activities require weight-bearing, such as running, jumping rope, or lifting weights. These activities can also be aerobic and muscle strengthening.

Ways To Get and Stay Active Everyday

- Wearables can be helpful for adherence and motivation
- Introduce light activity in your daily routine, focusing on sitting less and moving more, which is particularly relevant for patients
- Do active things together (with a family member or friend)
- Breaking up prolonged sitting time with light strolling or standing (e.g., during commercial breaks while watching television), household chores (e.g., cleaning and gardening), and physical leisure activities (e.g., dancing and short-distance walking) also count as physical activity and could prevent excessive sedentary behavior

What you should be able to do

- Rise from a chair without using your hands
- Get up from the floor
- Take a walk for 15-30 minutes at a time
- Stand on one leg for 5-10 seconds
- Pick up your grandkids
- Turn your head without pain or limitation in order to be able to check your blind spots as you drive or be able to visually scan while walking
- Reach overhead without pain and good strength to carry your groceries

And If You Cannot Do These Things.....

- Talk with your doctor!
- You may benefit from a physical therapy assessment, treatment and development of a home exercise program
- It is like having a personal trainer, but better-> a PT is trained to help you safely perform exercise for the purpose of gaining strength, balance, mobility, or cardiovascular endurance.

Types of Rehabilitation Therapy



Physical Therapy



Occupational Therapy



Speech Therapy



Together
interdisciplinary team

What is Osteoarthritis?

Definition: wearing down of supporting structures in the joints, which tends to lead to stiffness, swelling, decreased range of motion and can have resulting pain

Osteoarthritis affects somewhere between 27 million and 30 million Americans

Most common joints: hips, knees, back, hands (typically affects load bearing joints)

Arthritis in one joint can lead to general inactivity

Modifiable risk factors: overweight, low muscle strength, diet

Non-modifiable risk factors: age, previous injuries

2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee

Strongly recommended

Conditionally recommended

	HAND	KNEE	HIP
PHYSICAL, PSYCHOSOCIAL, and MIND-BODY APPROACHES	Exercise*		
	Self-Efficacy and Self-Management Programs		
		Weight Loss	
		Tai Chi	
		Cane	
	1 st CMC Orthosis	TF Knee Brace**	
	Heat, Therapeutic Cooling		
	Cognitive Behavioral Therapy		
	Acupuncture		
	Kinesiotaping		
			Balance Training
	Other Hand Orthoses***	PF Knee Brace**	
	Paraffin	Yoga	
		RFA	
	PHARMACOLOGIC APPROACHES	Oral NSAIDs	
Topical NSAIDs		Topical NSAIDs	
I-A Steroids		I-A Steroids (Imaging-Guidance for Hip)	
Acetaminophen			
Tramadol			
Duloxetine			
Chondroitin		Topical Capsaicin	

Secret Weapons



Maintain a healthy weight



Support joints with strong muscles and correct dosage of exercise



Reduce inflammation
(especially with diet!)

How Does Exercise Help Arthritis?



It improves range of motion



It improves pain and stiffness

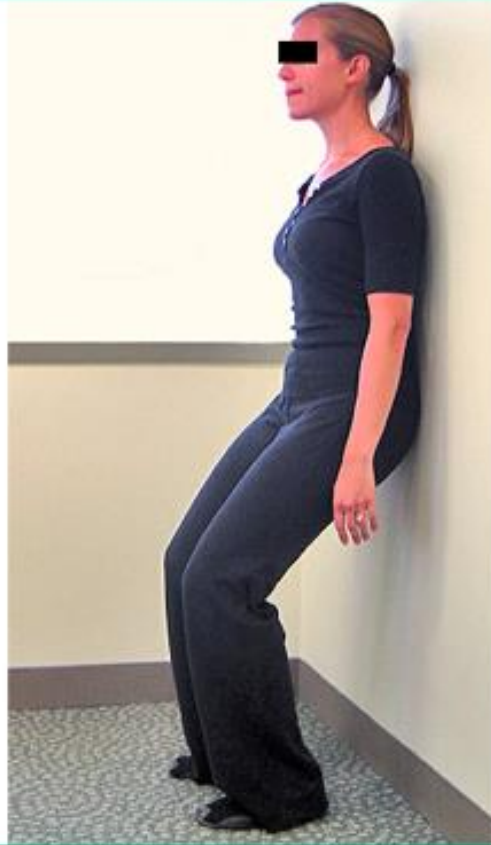


It does **not** worsen pain!



Good choices are: swimming,
walking, and biking

Quarter squat



Stand 12 to 18 inches away from a wall (facing away from the wall). Place feet shoulder-width apart. Lean back against the wall and slide the back down the wall while bending the knees. Do not bend the knees more than 30 to 45° (this should not hurt the knees). Hold for a count of 5. Stand up. Repeat 10 times.

Forward step up



Place left foot onto a step, then step up with right foot. Move left foot back down to floor then step down with right. Repeat this sequence 10 times then change order of feet (step first with the left, followed by the right); this is one set. Perform three sets.

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Trunk lift



Lie face down on a towel or blanket on the floor. Extend hands in front of the body. Lift the arms and upper body away from the floor. Hips should stay in contact with the floor. Hold for 3 to 5 seconds. Rest. Repeat 10 times.



Lie on the back on a bed or on a towel on the floor. Bring knees up to chest. Place the hands behind the knees and pull toward the chest until you feel a stretch in the lower back and

Falls



More than 25% of people aged 65 years and older will fall each year.



Account for 1/3 of all injury related Emergency Room visits



Falls are the most common cause of both traumatic brain injury and fractures in older adults.



Your doctor can review your meds to see if any of them increase risk of falls



Eliminate trip hazards such as cords, loose rug corners, etc.

Preventing Injury From Falls

- [Physical Therapists](#) can be helpful in assessing your weaknesses and prescribing do-at-home exercises to improve your strength, balance, and agility (for example, jumping from side to side and on and off platforms or steps) so that you will be better able to execute a fall as well as lessen the risk that you will fall in the first place.

Fall Prevention

