

# Exercise and Movement



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**P2W**  
PILOTING 2  
WELLBEING

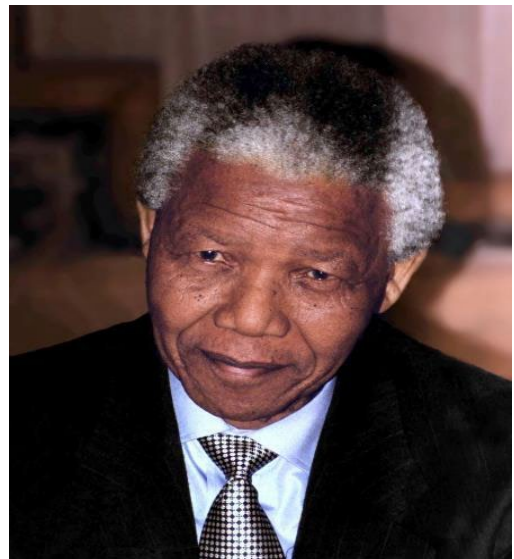
# Exercise and Movement

## Learning Objectives

- Understand the benefits of exercise and movement
- Identify six benefits of movement
- Explain how exercise benefits the brain
- Find easy ways to exercise on the road
- Follow time recommendations for exercise and movement

*“Exercise is the key not only to  
physical health but to  
peace of mind.”*

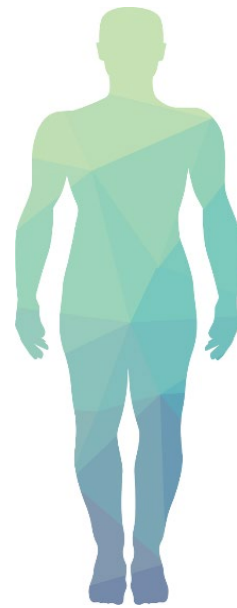
*Nelson Mandela*



## Six Overall Benefits of Movement

- Stronger muscles
- Denser bones
- Flexible joints
- Improve brain function
- Healthy heart
- Stronger lungs

Anschutz Health and Wellness Center, University of Colorado



## Physical Benefits of Movement

- Strengthens muscles, which improves stability, balance, and coordination
- Stretching maintains muscle health and helps the body perform optimally
- Movements helps build more durable, denser bones
- Keeping your heart rate up improves your cardiorespiratory endurance



## Psychological Benefits of Exercise

- Boosts mood
- Decreases stress
- Increases self-esteem
- Promotes better sleep

## 8 Cockpit Exercises

As I mentioned earlier, extended physical stagnation is not good for your body. When you are on a flight whether you are flying the plane or not prolonged sitting restricts blood flow and can lead to clots. These exercises can easily be performed while you're seated, but if you are in flight they require you to take your feet off the rudder pedals and your hands off the yoke, so make sure you have an autopilot or copilot who can keep the airplane under control while you get your blood flowing again.

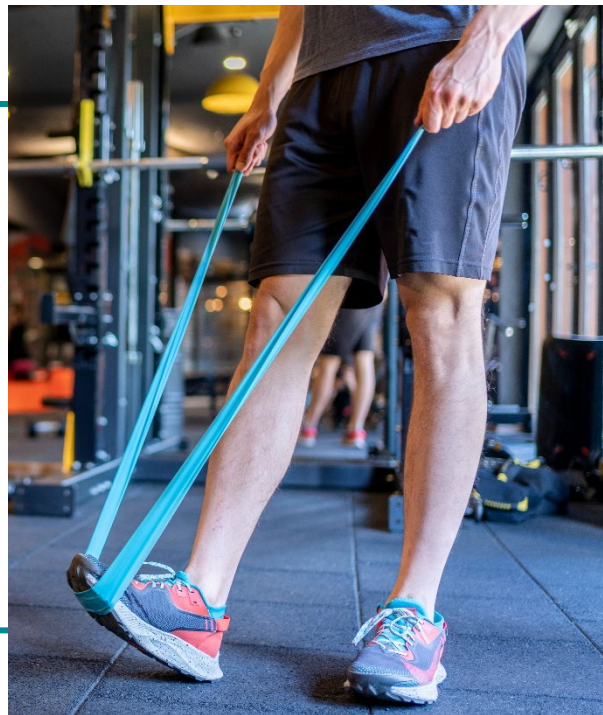
1. **Ankle Circles:** 10 circles in each direction. Repeat 7 times.
2. **Foot Pumps:** Place your feet on the floor, hip's distance apart. Pull the toes up towards the knees and hold for 5 seconds. Relax your toes. Then lift the heels off the floor for five seconds. Repeat 7 times
3. **Neck Roll:** Relax your shoulders and arms. Tilt your head to the left shoulder and hold for 5 seconds. Slowly roll the head toward your spine and hold. Keep rolling the head until it's tilted toward the right shoulder, then forward, tilting the chin down, holding each position for five seconds. Change direction and repeat. Repeat 5 times in each direction
4. **Knee Lift:** With your feet at hip's distance, lift each leg individually as high as you can and hold for 10 seconds. Repeat 5 times for each leg. Focus on keeping your back as straight as you can.
5. **Shoulder Roll:** With the arms relaxed and hands on your thighs, bring both shoulders toward your ears. Then roll the shoulders forward as far down as you can comfortably. Bring the shoulders back toward the ears, then roll the shoulders back toward the shoulder blades. Repeat 5 times.
6. **Shoulder Stretch:** Place your left hand on your right shoulder. Grab your left elbow and your right hand and pull the elbow toward your right. Hold for 10 seconds. Switch sides. Repeat five times.
7. **Abdominal Contractions:** Contract your core muscles as much as you can and hold for 10 seconds. Repeat 5 times.
8. **Arm Curl:** Put your arms by your sides with the palms facing up. Close the fists and curl the arms up. Contract the muscles of your hands and arms for 10 seconds. Repeat 5 times.

*Bergqvist, Pia, et al. "10 Cockpit Exercises." FLYING Magazine, 11 Nov. 2021, <https://www.flyingmag.com/pilots-places-pilots-adventures-more-10-cockpit-exercises>.*

# DID YOU KNOW

If you are looking for something more compact to take on your layover, check out resistance bands. They are super affordable and easy to transport. You can purchase them on [Amazon](#).

Check one of the many YouTube videos for resistance band instructions.



# Exercise History Questionnaire

Name \_\_\_\_\_ Date \_\_\_\_\_

Have you been cleared for exercise?  Yes  No

What are you doing on a regular basis that gets you moving and gets your heart rate up?

Cardio/Aerobic exercise: (e.g., walking, jogging, running, dancing)

Activity 1 x per week for \_\_\_\_\_ minutes  
 Activity 2 x per week for \_\_\_\_\_ minutes

Strength/Resistance exercise: (e.g., resistance machines, kettle bell, Pilates, weightlifting)

Activity 1 x per week for \_\_\_\_\_ minutes  
 Activity 2 x per week for \_\_\_\_\_ minutes

Flexibility/Stretching exercise: (e.g., yoga, Pilates, matwork, stretches)

Activity 1 x per week for \_\_\_\_\_ minutes  
 Activity 2 x per week for \_\_\_\_\_ minutes

Balance exercise: (e.g., tai chi, qi gong, bosu ball, dancing)

Activity 1 x per week for \_\_\_\_\_ minutes  
 Activity 2 x per week for \_\_\_\_\_ minutes

How do you monitor your exercise intensity?

General Intensity	Talk Test	Perceived Exertion	Heart Rate*
Light	Able to talk and/or sing	< 3 (10 point scale)	< 64% HRmax
Moderate	Able to talk but not sing	3–4 (10 point scale)	64–76% HRmax
Vigorous/hard	Difficulty talking	≥ 5 (10 point scale)	>76% HRmax

Are you satisfied with your current exercise program?  Yes  No

If no, explain

What are your motivators for exercise? (Check all that apply)

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Prevent cardiac disease and stroke | <input type="checkbox"/> Improve sleep             | <input type="checkbox"/> Increase self esteem |
| <input type="checkbox"/> Reduce blood pressure              | <input type="checkbox"/> Weight reduction          | <input type="checkbox"/> Improve mood         |
| <input type="checkbox"/> Control blood glucose              | <input type="checkbox"/> Increase mental alertness | <input type="checkbox"/> Decrease stress      |
| <input type="checkbox"/> Prevent bone loss                  | <input type="checkbox"/> Better endurance          | <input type="checkbox"/>                      |
| <input type="checkbox"/> Increase energy                    | <input type="checkbox"/> Increase interest in sex  | <input type="checkbox"/>                      |

What types of aerobic exercise do you prefer? (Check all that apply)

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Walking        | <input type="checkbox"/> Bicycling indoors/outdoors | <input type="checkbox"/> Cross country skiing |
| <input type="checkbox"/> Hiking         | <input type="checkbox"/> Stair climbing             | <input type="checkbox"/> Downhill skiing      |
| <input type="checkbox"/> Blading        | <input type="checkbox"/> Swimming                   | <input type="checkbox"/> Snowboarding         |
| <input type="checkbox"/> Jogging        | <input type="checkbox"/> Rowing                     | <input type="checkbox"/> Snowshoeing          |
| <input type="checkbox"/> Treadmill      | <input type="checkbox"/> Water aerobics             | <input type="checkbox"/>                      |
| <input type="checkbox"/> EFX elliptical | <input type="checkbox"/> Aerobics classes           | <input type="checkbox"/>                      |

\*Not an appropriate measure of intensity if taking a Beta Blocker

What do you like most about exercising?

Do you have an exercise partner?  Yes  No

Do you enjoy group exercise or classes?  Yes  No

Are you a member of a gym or fitness center?  Yes  No

Are there any obstacles you have for engaging in movement and physical activity?  Yes  No

If yes, what are they?

If yes, do you have control over the circumstances surrounding your obstacles? How can you overcome them?

Are any of your obstacles out of your control? If yes, which ones?

What are some possible solutions around these obstacles? What has worked before?

What is the best time of day for you to exercise?

When do you have the most energy and time?

Are you ready to take action to make your exercise program work for you and your goals?

Yes  No

Do you have any goals related to your strength, tone, body composition, or fitness level?

Yes  No

If yes, explain:

Do you experience any pain or breathing problems while exercising?  Yes  No

If yes, explain:

Do you have any joint or musculoskeletal problems that might flare up during exercise?  Yes  No

If yes, explain:

Have you had any injuries while exercising?  Yes  No

If yes, explain:

Have you experienced a loss of muscle tissue or decline in strength over the last few years?

Yes  No

Have you fallen in the past few months?  Yes  No

Do you notice any balance problems?  Yes  No

If yes, explain:

Do you have any of the following exercise contraindications? (Check all that apply)

- Acute systemic infection (i.e., fever, body aches, swollen lymph nodes, etc.)
- Arrhythmias
- Recent heart attack
- Severe congestive heart failure
- Uncontrolled angina/chest pain
- Other



## Tips to Incorporate Mindful Movement Every Day

Why? Mindfulness brings a new dimension to movement. Rather than moving for the sake of moving, or to accomplish a goal, mindful movement is practiced to anchor the body in the present moment. Many people feel more harmonious, relaxed, and calm after practicing mindful movement.

Classes? If you would like a structured mindful movement program, many forms of yoga, qi gong, and tai chi are wonderful ways to learn a series of movements that are connected to breathing and mental practices. Many health benefits are associated with this kind of mindful movement, ranging from improved lung function to better mental health.

On Your Own? Mindful movement can also be done in just a few minutes—just set a reminder on your phone so you remember to do it.



## Known Health Conditions that Benefit From Mindful Movement

- Anxiety
- Asthma
- Cardiometabolic diseases
- Carpal Tunnel
- Chronic Pain
- Depression
- Multiple sclerosis

## Standing Exercise:

- Stand with your feet planted, shoulder length apart, knees slightly bent.
- Relax your shoulders and tuck your chin slightly.
- Breathe in and out, then inhale as you bring your arms out to the side, raising them slowly up over your head as you inhale.
- Exhale as you let your arms lower, then bring your hands in to rest on your abdomen.
- Repeat, raising and lowering your arms, at least five times.

## Walking Exercise:

- Stand still and take a deep breath. Be aware of your body and how it feels. Where is your weight settled? Feel your heels pushing into the ground and be aware of the muscles holding you upright.
- Bend your knees and feel your weight shift. Take deep breaths and pay attention to your muscles, your skin, the air, and the sounds around you.
- Begin to walk, very slowly, keeping your knees slightly bent. Be aware of how your heel lands, and pay attention to the sensation of your weight shifting across your foot.
- Continue to walk slowly, breathing, and keeping your awareness on the kinetic motion of your body. You can practice this for a set distance or a set time, whatever feels more comfortable for you.



## Strengthen Your Core

- Walk on the curb instead of the sidewalk.
- When you drop an object, keep one elevated behind you.
- When watching TV, sit on an exercise ball.
- When you are eating, sit close to the table
- When you are brushing your teeth, stand on one leg.



## Why are Exercise and Movement Important for Wellbeing?

- Better circulation of toxins, nutrients, oxygen
- Promote perspiration to facilitate toxin release
- Improves mood
- Enhances various body systems (cognitive, nervous, immune, gastrointestinal, etc.)
- Prolongs life
- Improves mood
- Improves overall energy

*Neuropsychobiology. 2013 June 15;68(1): 1-14.*

*Am J Prev Med. 2013 Jan; 44(1): 76-84. Doi: 10.1016/j.amepre.2012.09.043*

## Actions You Can Take

- Set a regular time each day to exercise
- Find a form of activity you enjoy
- Involve others (e.g. family members, friends)
- Take exercise outdoors if possible
- Consider online resources

## Benefits of Walking **move to after walking exercise**

- Increases blood flow to brain
- Improves memory
- Improves cholesterol level
- Regulates blood pressure
- Increases energy levels
- Lowers blood sugar levels
- Increases emotional wellbeing

## Tailor the movement to YOU

- QUIET/yin activity for those who are stressed and tired
- ACTIVE/yang activity for those who feel energized with more movement



## Exercise and Brain Health

To manage stress exercise for at least 150 minutes a week (20-30 minutes a day)

- Aerobic exercise
- Stretching
- Yoga
- Deep breathing



# The Vagus Nerve System

REALLY? What's the Deal?

Let's all take a deep breath, giving a little extra help to the largest cranial nerve in our body. The vagus nerve works to control the parasympathetic nervous system or rest and digest system and can greatly influence our immune system while sending signals from our brain to our organs (think emotional well-being, digestion stress regulation and sleep too!!)

## Here are some ways to help support your vagal tone

- Guided yoga meditation on YouTube can find someone who resonates with you
  - Melissa Wood Health - she offers a free trial that has several low impact, guided yoga flows and the issue of feeling calm and ready to let go of whatever you may be gripping!
- App that resonates with you calm app is a good start
  - Reading material interesting: *Stress Less, Accomplish More: Meditation for Extraordinary Performance* by Emily Fletcher
- Journaling-sometimes we don't even realize what our subconscious and bodies are holding
- Deep breathing (4-7-8... Additional supportive sheets as well)
- Tapping for stress release.
  - Check out this intro video:
  - <https://www.thetappingsolution.com/tapping-101>
- Vagus nerve stimulators:
  - cold therapy dash can be cold tub or ending your shower on a cold experiment and see how it makes you feel
- Singing or humming-the Vagus nerve is attached to our vocal cords, and this can have a calming effect
- Acupuncture
- Exercise
- Being social, laughing
- Massage-reflexology on the feet
- DNRS program-a more advanced but highly successful practice
- calming oils will be different for each person
- Vibrant oils parasympathetic blend is a good one to start with
- Additional reading
- *Accessing them healing powers of the Vagus Nerve* by Stanley Rosenberg-

## Resources for Wearable Devices and Tracking Tools

Device	Location	Cost	App Integration	Activities Tracked	Battery Charge	Display	Additional Features
Apple Watch	Wrist	\$300–\$750	Yes	Exercise Sleep Stationary time Steps	18–48 hours	Interactive face Phone	Alarms Apple Music & Apple Pay integration Email Magnetic Charger Maps Photos Voice control
Bellabeat LEAF	Body Wrist	\$120–\$250	Yes	Exercise Sleep Stationary time Steps	None; 6-month battery	Phone	14-day memory Inactivity alert Pill reminder Smart alarm Sustainable materials Wireless sync
FitBit	Body Wrist	\$60–\$250	Yes	Exercise Floors climbed Sleep Stationary time Steps	5–7 days	Interactive face Phone	Auto sleep detection Clock Caller ID Music control Silent alarm
Garmin	Wrist	\$25–\$700	Yes	Exercise Floors climbed Sleep Stationary time Steps	40 hours—5 days	Interactive face Phone	Auto sync Accelerometer Find my phone GPS Music control Smart notifications
InBody Band	Wrist	\$180	Yes	Exercise Sleep Steps	7–10 days	Phone	Body composition analyzer Heart rate monitoring Smart notifications
Jawbone Up	Wrist	\$50–\$200	Yes	Exercise Sleep Steps	7–10 days	Phone	Auto sleep detection Silent alarm Wireless sync

Device	Location	Cost	App Integration	Activities Tracked	Battery Charge	Display	Additional Features
Microsoft Band	Wrist	\$180–\$250	Yes	Exercise Floors climbed Sleep Steps	2 days	Interactive display Phone	Email and text alerts GPS Heart rate monitoring Music control
Misfit	Body Wrist	\$20–\$170	Yes	Exercise Sleep Steps	None; 6-month battery	Phone	Water resistant (50 m) Wireless sync
Moov Now	Ankle Wrist	\$80	Yes	Exercise Sleep	None; 6-month battery	Phone	Audio coaching (in-app) Waterproof
Withings	Body Wrist	\$80–\$170	Yes	Exercise Sleep	None; 8-month battery	Phone	Analog watch Auto sync Silent alarm Waterproof



## Smartphone and Tablet Applications

Application	Platform	Heart Rate	Exercise & Movement	Nutrition	Sleep	Breathing & Meditation
Apple Health	iOS	■	■	■	■	
Calm	Android iOS					■
CBT-I Coach	Android iOS				■	
Fitbit	Yes	■	■	■	■	
Headspace	Android iOS					■
iHealth	Android iOS	■	■		■	
LEAF app (with device)	Android iOS		■		■	■
MyCalmBeat	Android iOS					■
MyFitnessPal	Android iOS Windows		■	■		
Nudge	Android iOS		■	■	■	
Olumia Life	Android iOS		■	■	■	
Pzizz	Android iOS				■	
S Health	Android	■	■	■	■	
Sleep++	iOS				■	
Sleepio	iOS				■	
SnoreLab	Android iOS				■	

# My Health Choice

Circle your choice below.



Be Involved in Your Health Care



Be Safe



Eat Wisely



Be Physically Active



Strive for a Healthy Weight -



Limit Alcohol



Be Tobacco Free



Get Recommended Screening Tests & Immunizations -



Manage Stress -



Your Choice

**My goal for the next week is:** *(Set a SMART goal — Specific, Measurable, Action-oriented, Realistic, Timetable to complete. Example: I will walk at least 3 times this week for 15 minutes each, after I get home) from work.)*

**Things that might get in my way:** *(Examples: weather, pain, time)*

**What I can do to overcome these things:** *(Examples: exercise indoors, walk with a friend)*

**I believe that I can reach my goal:** *(Rate how confident you feel.)*

1      2      3      4      5      6      7      8      9      10  
 Not at All      Somewhat      Very  
 Confident      Confident      Confident

Complete and update your plan every week. Use the charts below to track your progress.

<b>My Progress Report</b>		For week beginning:	
		Goal:	
Day of Week	Action Taken	Comments (how I felt, challenges, success)	
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

<b>My Progress Report</b>		For week beginning:	
		Goal:	
Day of Week	Action Taken	Comments (how I felt, challenges, success)	
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

## Citations

Fernandez-Rodriguez, Ruben, et. al. "Effectiveness of Pilates and Yoga to improve bone density in adult women: A systematic review and meta-analysis." *PloS one* 16.5 (2021): e0251391.

Bergqvist, Pia, et al. "10 Cockpit Exercises." *FLYING Magazine*, 11 Nov. 2021, <https://www.flyingmag.com/pilots-places-pilots-adventures-more-10-cockpit-exercises>.

*Neuropsychobiology*. 2013 June 15; 68(1): 1-14. *Am J Prev Med*. 2013 Jan, 44(1): 76-84. Doi:10.1016/j.amepre.2012.09.043.

