



GUIDE



EXERCISE FOR LONGEVITY

Brought to you by

NINA'S NOTES

&

VitaDAO 

written by

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INTRODUCTION

WHO AM I?

I'm Nina Patrick, a former healthtech founder & CEO with a decade working in biotech and a PhD in Pharmaceutical Science. I write the weekly newsletter, Nina's Notes on health, longevity and psychedelics. Subscribe to my newsletter: www.notes.ninapatrick.xyz

WHY IT'S FOR YOU

Longevity is not achieved through a one-size-fits-all solution. It's about understanding that our bodies are unique, and so are our health and fitness needs. This guidebook offers a comprehensive approach to longevity-boosting exercises that is adaptable to individual preferences and lifestyles.



WHY THIS GUIDE?


I've created this exercise guide to give you an overview of the best exercises for your healthspan and lifespan. With this information you can create a plan to bring all of these elements into your exercise plan for the new year.

IMPORTANCE OF EXERCISE

In order to maintain our peak health for as long as possible, we need exercise.

"Exercise is by far the most potent longevity 'drug,'" says Peter Attia in his book *Outlive*.

Exercise delays death and prevents cognitive and physical decline.



SET LONGEVITY FITNESS GOALS

*When you reach 100, what physical abilities
do you want to have?*

Goals For My
100-Year Old
Body

Lift a 10kg suitcase into an overhead
compartment

Hike a 5k hilly trail

Pick a young child off the floor

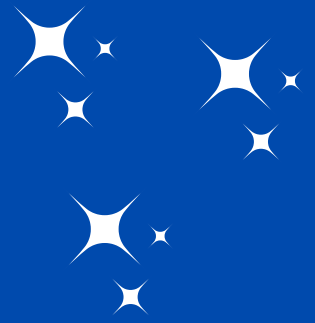
Climb the stairs daily

Balance on one foot for 30 seconds

Walk for 15 minutes carrying two
grocery bags

**Take a few minutes to write down your
personal goals**

TYPES OF EXERCISE



Strength Training

Aerobic Exercise

Anaerobic Exercise

Flexibility & Stability

NEAT



STRENGTH TRAINING



WHAT IS IT?

Also known as weight training or resistance training, strength training improves performance of physical exercises designed to improve strength and endurance.

HOW OFTEN SHOULD YOU STRENGTH TRAIN?

Several studies recommend a full-body strength training workout 2-3 times per week, for 45-60 minutes per session

EXERCISING ROUTINE

Find a program that you can stick to consistently with activities that you enjoy, that fit in to your schedule and challenge you enough but do not make you want to quit.

Have a balance between strength training (heavier weight, few reps) and muscular endurance training (lighter weights, more reps). This balance not only builds strength but also enhances your body's ability to perform activities of daily living over a prolonged period of time.

Bodyweight Exercises

Push-ups, squats, and lunges can be done without any equipment.

Weight Training

Use free weights or machines to build & maintain muscle mass

Resistance Band Exercises

Effective for building strength while also being low impact on your joints

Sourced from:

- Schoenfeld BJ, et.al: A Systematic Review and Meta-Analysis. Sports Med. 2016 Nov;46(11):1689-1697. doi: 10.1007/s40279-016-0543-8. PMID: 27102172

AEROBIC EXERCISE



WHAT IS IT?

Aerobic exercise is any type of cardiovascular activity or “cardio” that raises your heart rate, like brisk walking, swimming, running or cycling.

WHY IS IT IMPORTANT FOR LONGEVITY?

Aerobic exercise is crucial for preventing chronic disease. As we age, our metabolism and the function of our mitochondria (the powerhouse of our cells) declines. We can boost mitochondrial function and our metabolism with aerobic exercise.

AEROBIC EXERCISE TRAINING

You are aiming for low intensity, somewhere between 65–75% of your maximum heart rate, for about 45 minutes. A good indicator that you are in range is that after about 30 minutes of a brisk walking you start to break a sweat.

HOW OFTEN?

A total of three hours per week. The American Heart Association and Center for Disease control recommend 150 minutes per week. This is the absolute minimum to ward off disease. But, more is better.



Sourced from:

- *Outlive: The Science and Art of Longevity* by Peter Attia, MD with Bill Gifford
- *Physical Activity Guidelines for Americans, 2nd edition*, published by the U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion.



ANAEROBIC EXERCISE

WHAT IS IT?

Anaerobic exercise involves short, fast, high-intensity exercises. In anaerobic exercise, your body breaks down glucose without the use of oxygen to create energy.

HOW IS IT MEASURED?

Peak cardiorespiratory fitness is measured in terms of VO2 max. The primary way to measure VO2 max is with the volume of oxygen you inhale and exhale, and your heart rate while running on a treadmill or riding a bike.


WHY IS VO2 MAX IMPORTANT FOR LONGEVITY?

After age 25, your VO2 max drops by 10% a decade. After 50, you lose 15% per decade. VO2 max is the most powerful marker for longevity.

HOW TO INCREASE VO2 MAX

One to two 30-minute VO2 max sessions per week. Activities like rowing, running or intense cycling, that work a large number of muscles and quickly increase heart rate are ideal.

Sourced from:

- Kim CH, et.al. The Effect of Aging on Relationships between Lean Body Mass and VO2max in Rowers. *PLoS One*. 2016 Aug 1;11(8):e0160275. doi: 10.1371/journal.pone.0160275. PMID: 27479009; PMCID: PMC4968829.
 - *Outlive: The Science and Art of Longevity* by Peter Attia, MD with Bill Gifford
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FLEXIBILITY & STABILITY

Aging leads to a natural loss of muscle strength and flexibility, making it more challenging to maintain balance and stability. The loss of strength and poor balance are the two most common causes of falls.

FALLS & LONGEVITY

About 1 in 3 adults over 65 report falling each year, making falls the leading cause of fatal and nonfatal injuries among older adults. Maintaining stability to avoid falling, or being strong enough to brush it off when you do, is a key to healthy longevity.

BENEFITS

Increasing your stability teaches you how to control your body. Stability is the foundation for strength training and will reduce your risk of injury.

TYPES OF EXERCISE FOR STABILITY & FLEXIBILITY

Pilates

Strengthens the core and improves posture with low-impact, challenging exercises

Planks

Simple & effective to strengthen your core

Stretching

Regular stretching improves flexibility and reduces risk of injury

Yoga

Enhances flexibility & balance, with a lot of practice getting down on the floor and back up again

Sourced from:

- World Health Organization- [WHO Global Report on Falls Prevention in Older Age](#)



NEAT

Non-exercise activity thermogenesis

WHAT IS IT?

Everything we do that is not sleeping, eating or sports-like exercise.

WHY IS IT IMPORTANT FOR LONGEVITY?

In developed countries, a vast majority of the population gets zero to negligible amounts of NEAT. This lack of daily movement leads to weight gain, metabolic problems and poor health.

WAYS TO BOOST YOUR NEAT


Standing: Simply standing can increase your calorie expenditure. Added plus, once you're standing it's easy to walk around or take a brief stroll outside.

Daily steps: Setting a daily step goal can be a reminder about how much you are moving and boost your NEAT.

Walk or cycle for transportation: Commuting by walking or cycling can burn significant amounts of energy. Try to walk to your destination if it is less than a 25 minute walk.

Housework: Doing additional tasks around the house can increase your NEAT. If you work from home, try breaking up the day with household chores.

Sourced from:

- Levine JA. Nonexercise activity thermogenesis (NEAT): environment and biology. *Am J Physiol Endocrinol Metab.* 2004 May;286(5):E675-85. doi: 10.1152/ajpendo.00562.2003. Erratum in: *Am J Physiol Endocrinol Metab.* 2005 Jan;288(1):E285. PMID: 15102614.
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WEEKLY PLANNER

GET IN ALL 5 TYPES OF EXERCISE EACH WEEK

- **Strength Training:** Three 45–60 min full body workouts
- **Aerobic Exercise:** Three 50 minute brisk walks
- **Anaerobic Exercise:** One 30–45 minute high-intensity workout, like a HIIT or Cycling class
- **Stability & Flexibility:** Stretch before and after every workout, plus one 45–60 minute yoga or pilates class per week
- **NEAT:** Daily 30 minute walk

NINA'S WORKOUT SCHEDULE

- **Monday:** 30 min walk, 45-min Bootcamp class
 - **Tuesday:** 30 min walk, 60 min Yoga Class
 - **Wednesday:** 45 min walk, 45 min Cycling Class
 - **Thursday:** 30 min walk, 45 min Bootcamp Class
 - **Friday:** 30 min walk, 60 min Barre Class
 - **Saturday:** REST
 - **Sunday:** 45 min walk, 45 min Cycling Class
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Thank
You



GREETINGS FROM
NINA PATRICK, PHD

Want more tips to live a long and healthy life?
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