**Stride**

KEEP ON MOVING | WELLNESS GUIDE | RESEARCH-BACKED

# Four Pillars of Health

Your ultimate resource hub: movement, nutrition, mindset and style, and how they work together to build habits that last.

Stop starting over. Learn how the four pillars reinforce one another, what leading researchers have found about each, and how to build a rhythm that lasts.

CHAPTER 1

# The Year Elena Stopped Starting Over

> Elena, 52, had started over more times than she could count. January: a strict diet. March: a gym membership. June: a meditation app. Each one lasted a few weeks, then collapsed, because each one tried to fix a single piece of her life while the others pulled in the opposite direction.
>
> The diet failed when she was too tired to cook. The gym failed when she slept five hours. The meditation app failed when she had nobody to tell. Her problem was never effort. It was that she was treating four connected systems as four separate projects.

This is your resource hub for the four pillars of health: **movement, nutrition, mindset and style**. We will show you what the research says about each, how they feed one another, and where to learn more from trusted experts.

CHAPTER 2

# Why Pillars Beat Projects

**5 habits**

Harvard researchers found that never smoking, a healthy weight, regular exercise, a healthy diet and moderate alcohol, together, were linked with about 14 more years of life for women and 12 for men at age 50. Each added habit was associated with more years [1].

The American College of Lifestyle Medicine, a professional society of clinicians, describes six pillars of evidence-based lifestyle medicine: whole-food, plant-predominant eating, physical activity, restorative sleep, stress management, social connection and avoidance of risky substances [2]. The American Heart Association's Life's Essential 8 points the same way, adding sleep to its earlier list of diet, activity, nicotine, weight, cholesterol, blood sugar and blood pressure [3]. Different organisations, same message: health is a system.

CHAPTER 3

# The Four Pillars, One by One

## Pillar 1: Movement

The WHO recommends 150–300 minutes of moderate activity weekly plus muscle strengthening twice a week, and says every minute counts [4]. Even short, vigorous bursts in daily life (about three one-minute bouts a day) were linked with a 38–40% lower risk of death in a large UK Biobank analysis [5]. **Starter move:** a 10-minute walk after your largest meal.

### Pillar 2: Nutrition

In a randomised NIH trial, people ate about 508 more calories a day on an ultra-processed diet than on an unprocessed one, and gained weight [6]. A Mediterranean-style diet supplemented with olive oil or nuts was linked with roughly 30% fewer cardiovascular events in the republished PREDIMED trial [7]. **Starter move:** add one vegetable or legume to dinner tonight.

### Pillar 3: Mindset

Optimism was associated with an 11–15% longer lifespan in two large Harvard and Boston University cohorts [8], and research on growth mindset suggests that reading setbacks as information, not verdicts, helps people persist [9]. **Starter move:** replace "I can't" with "I haven't yet."

### Pillar 4: Style (the way you live: sleep, connection, stress and substances)

**Sleep:** A joint statement from the American Academy of Sleep Medicine and Sleep Research Society recommends at least seven hours for healthy adults [10]. A meta-analysis by Francesco Cappuccio and colleagues found short sleep was associated with about a 12% higher risk of death [11].

**Connection:** The Harvard Study of Adult Development has followed participants since 1938. Its current director, psychiatrist Robert Waldinger, reports that people most satisfied with their relationships at 50 were the healthiest at 80, and that good relationships protect our health [12]. Across 148 studies, strong social relationships were linked with a 50% greater likelihood of survival [13].

**Substances:** Never smoking was one of the five habits linked with added years of life [1]. **Starter move for this pillar:** set a consistent bedtime alarm and text one friend this week.

#### What about the "Blue Zones"?

Author Dan Buettner popularised regions such as Okinawa, Sardinia, Ikaria, Nicoya and Loma Linda, where he reports unusually long lives, and he summarised shared habits such as natural daily movement, plant-heavy eating, strong social ties and a sense of purpose [14]. Some demographers have questioned how reliable extreme-age records in these regions are, so we treat the Blue Zones as a source of ideas, not as proof. The habits themselves line up with the cohort evidence above.

CHAPTER 4

## How the Pillars Lift Each Other

| When you improve... | ...you tend to help | Why |
|---|---|---|
| **Sleep** | Mood, food choices, energy for movement | Seven or more hours is linked with better health outcomes [10,11]. |
| **Movement** | Mood, sleep, confidence | Optimists were also more physically active in the Harvard analysis [8]. |

| When you improve... | ...you tend to help | Why |
|---|---|---|
| **Connection** | Consistency across every pillar | Exercising and changing habits with friends improved completion and maintenance [15]. |
| **Mindset** | Willingness to restart after a lapse | A missed day does not derail habit formation [16]. |

CHAPTER 5

# Your 12-Week Pillar Rotation

Elena's breakthrough was a rotation: one pillar in focus for three weeks, the other three on "maintenance mode" (just keep what you have). Habit research suggests it can take about two months, on average, for a behaviour to feel automatic, with huge individual variation [16]. Choosing one focus at a time gives each habit room to settle.

| Weeks | Focus pillar | One thing to do |
|---|---|---|
| **1–3** | Style (sleep and connection) | Fixed bedtime alarm. One real conversation with a friend each week. |
| **4–6** | Movement | A daily 15–20 minute walk; two short strength sessions weekly. |
| **7–9** | Nutrition | One whole-food swap per day; add beans, nuts or vegetables to two meals. |
| **10–12** | Mindset | Weekly "best possible self" writing and an if-then plan for bad days. |

> A year later, Elena could not tell you what day she had "started." There was no start. There was a rhythm: sleep, a walk, a real meal, a call with a friend, and a kinder voice when the day went sideways. She had stopped starting over because she had stopped treating her health like a project with an end date.

### A quick word on the evidence

Most of the longevity figures here come from observational studies, which show consistent associations but cannot prove cause [1,5,8,13]. The Harvard cohorts are large but largely made up of health professionals [1], and Blue Zone claims are debated [14]. Nutrition and mindset findings include randomised trials, but some are short or small [6,7]. Use this as a map, and let your clinician help you personalise it.

This guide is for general education and inspiration. It is not medical advice and does not replace care from a licensed clinician or registered dietitian. Talk with your healthcare provider before making significant changes to your diet, activity or routines, especially if you are pregnant, managing a health condition, or taking medication. Characters in the opening stories are composites created for illustration; all research findings are real and cited.

RESOURCE HUB

# Where to Go Next

| Pillar | Trusted places to learn more |
|---|---|
| **Movement** | World Health Organization physical activity guidelines (who.int); CDC Physical Activity Basics (cdc.gov/physicalactivity). |
| **Nutrition** | Harvard T.H. Chan School of Public Health, The Nutrition Source (nutritionsource.hsph.harvard.edu); Academy of Nutrition and Dietetics (eatright.org). |
| **Mindset** | Stanford Mind & Body Lab; Harvard Lee Kum Sheung Center for Health and Happiness; talks by Carol Dweck and Kelly McGonigal. |
| **Style** | American College of Lifestyle Medicine (lifestylemedicine.org); American Heart Association Life's Essential 8 (heart.org); American Academy of Sleep Medicine (sleepeducation.org). |

SOURCES

# References & Further Reading

Every number in this guide traces back to the sources below. Superscript numbers in the text match the numbered entries. Where a finding comes from observational research (which shows association, not proof of cause), we say so.


1. Li Y, Pan A, Wang DD, et al. Impact of healthy lifestyle factors on life expectancies in the US population. *Circulation*. 2018;138(4):345–355. doi:10.1161/CIRCULATIONAHA.117.032047
2. American College of Lifestyle Medicine. What is lifestyle medicine? (six pillars). lifestylemedicine.org
3. Lloyd-Jones DM, Allen NB, Anderson CAM, et al. Life's Essential 8: Updating and enhancing the American Heart Association's construct of cardiovascular health. *Circulation*. 2022;146(5):e18–e43.
4. Bull FC, Al-Ansari SS, Biddle S, et al. World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine*. 2020;54(24):1451–1462.
5. Stamatakis E, Ahmadi MN, Gill JMR, et al. Association of wearable device-measured vigorous intermittent lifestyle physical activity with mortality. *Nature Medicine*. 2022;28(12):2521–2529. doi:10.1038/s41591-022-02100-x
6. Hall KD, Ayuketah A, Brychta R, et al. Ultra-processed diets cause excess calorie intake and weight gain: An inpatient randomized controlled trial of ad libitum food intake. *Cell Metabolism*. 2019;30(1):67–77. doi:10.1016/j.cmet.2019.05.008
7. Estruch R, Ros E, Salas-Salvadó J, et al. Primary prevention of cardiovascular disease with a Mediterranean diet supplemented with extra-virgin olive oil or nuts. *New England Journal of Medicine*. 2018;378(25):e34.
8. Lee LO, James P, Zevon ES, et al. Optimism is associated with exceptional longevity in 2 epidemiologic cohorts of men and women. *Proceedings of the National Academy of Sciences*. 2019;116(37):18357–18362. doi:10.1073/pnas.1900712116
9. Yeager DS, Hanselman P, Walton GM, et al. A national experiment reveals where a growth mindset improves achievement. *Nature*. 2019;573:364–369.
10. Watson NF, Badr MS, Belenky G, et al. Recommended amount of sleep for a healthy adult: A joint consensus statement of the American Academy of Sleep Medicine and Sleep Research Society. *Sleep*. 2015;38(6):843–844.
11. Cappuccio FP, D'Elia L, Strazzullo P, Miller MA. Sleep duration and all-cause mortality: A systematic review and meta-analysis of prospective studies. *Sleep*. 2010;33(5):585–592.
12. Waldinger R, Schulz M. *The Good Life: Lessons from the World's Longest Scientific Study of Happiness*. Simon & Schuster; 2023. See also Waldinger R. TED talk, *What makes a good life?* (2015).
13. Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine*. 2010;7(7):e1000316. doi:10.1371/journal.pmed.1000316
14. Buettner D. *The Blue Zones: 9 Lessons for Living Longer From the People Who've Lived the Longest*. 2nd ed. National Geographic; 2012.
15. Wing RR, Jeffery RW. Benefits of recruiting participants with friends and increasing social support for weight loss and maintenance. *Journal of Consulting and Clinical Psychology*. 1999;67(1):132–138.
16. Lally P, van Jaarsveld CHM, Potts HWW, Wardle J. How are habits formed: Modelling habit formation in the real world. *European Journal of Social Psychology*. 2010;40(6):998–1009. doi:10.1002/ejsp.674


## Watch, Listen & Learn From the Experts

- **Robert Waldinger, MD**. TED talk: *What makes a good life? Lessons from the longest study on happiness* (2015).
- **Frank Hu, MD, PhD** and **Walter Willett, MD, DrPH** (Harvard T.H. Chan School of Public Health). Lectures and Nutrition Source articles on lifestyle and longevity.
- **Dan Buettner**. TED talk: *How to live to be 100+* (2009). Read with the caveat noted above.
- **Dr. Mike Evans** (University of Toronto). *23 and 1/2 hours* (2011).