

Get Selfish: The Relationship Between Selfish Principles and Exercise

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The Heart Patient Journey

James, a 58-year-old father and hardworking provider, ignored the warning signs—fatigue, chest pressure—until a massive heart attack stopped him in his tracks. Rushed to the hospital, he underwent emergency bypass surgery to save his life.





The Heart Patient Journey

Fear & Anxiety

Post-heart attack
vulnerability

Stress & Depression

Linked with diagnosis and
recovery

Lifestyle Changes

Medication adjustments,
new habits

Our Purpose Today

Illuminating how 7 pillars can transform the recovery path

Exercise is a Keystone Habit....But

Exercise hasn't always
been seen as an important
resource

Early 20th Century
Exercise After Heart Disease
Diagnosis Was *Taboo*

The Eisenhower Era

On September 24, 1955, President Dwight D. Eisenhower *suffered a major heart attack* while vacationing in Denver. At the time, *strict bed rest was the standard treatment*—exercise was discouraged for heart patients.

President Eisenhower's Heart Attack
At Fitzsimons Army Hospital for 7 Weeks





Research: Historical Outcomes

Persistent Functional Decline

6 months post-MI: ~25% of older adults lose daily function—especially if inactive.

Long-Term Independence Issues

1 year post-MI: >40% report reduced independence or physical function

Increased Mortality Risk

Sedentary time: >4 hrs/day after MI → 62% higher mortality risk

The Silent Threat of Sedentary Living

After just 2–3 hours of sitting, leg artery function (FMD) drops ~2% from reduced blood flow and shear stress—*signs of endothelial dysfunction* tied to higher future heart risk.





Vascular Damage from Inactivity

01

Reduced Blood Flow Velocity

Sitting slows leg circulation and causes pooling

02

Increased Thrombosis Risk

Stagnant blood makes clots more likely

03

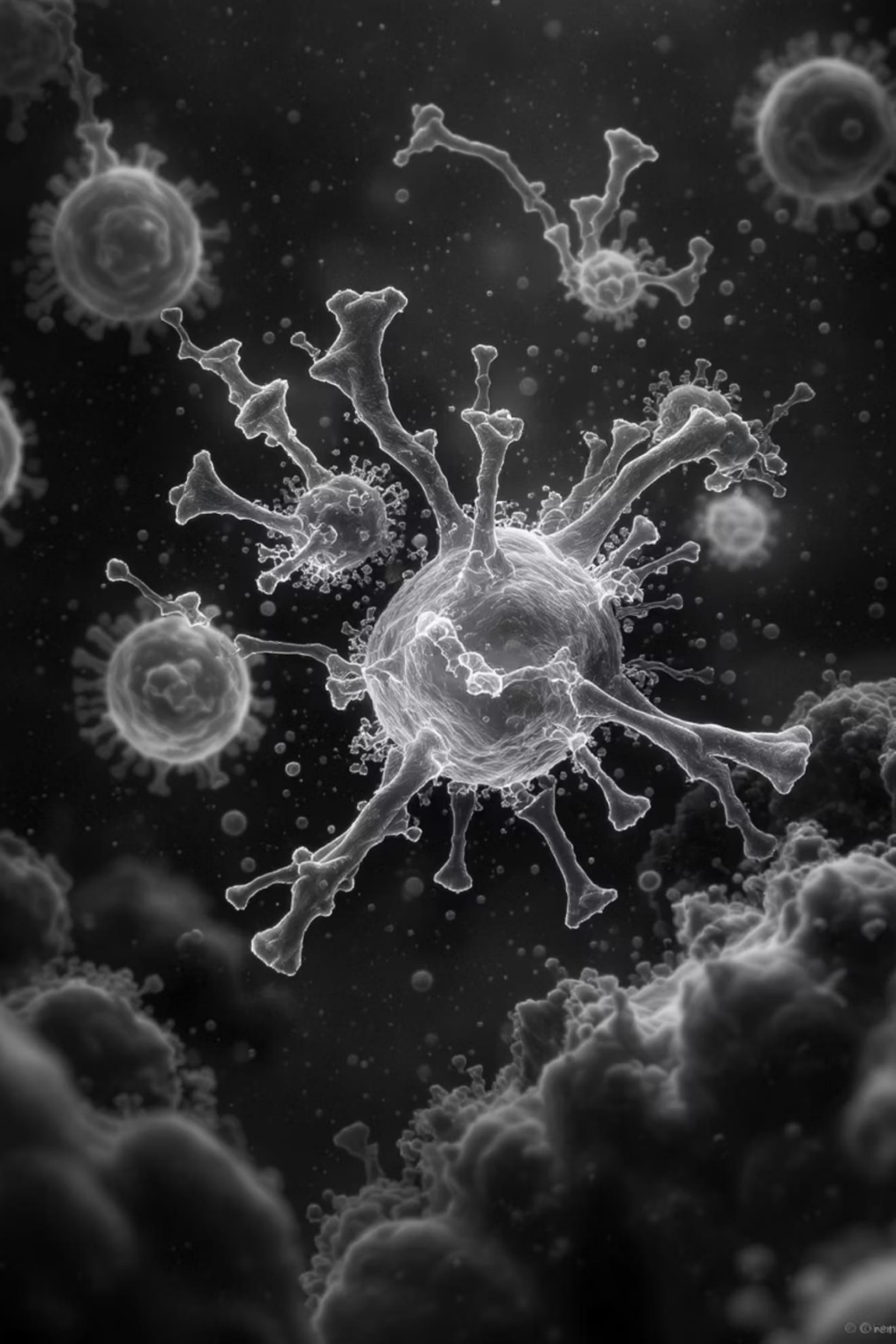
Arterial Stiffness

Even brief sitting raises pulse wave velocity—stiffer vessels.

04

Endothelial Dysfunction

Less nitric oxide and more inflammation harm artery lining.



Sedentary Living Fuels Inflammation

Sedentary time *raises pro-inflammatory markers* (CRP, IL-6, TNF- α) and *lowers the anti-inflammatory cytokine* IL-10, fueling chronic low-grade inflammation—a key driver of cardiovascular disease.

Sedentary Living Elevates Blood

01

Pressure Sympathetic Nervous System Activation

Inactivity triggers “fight-or-flight,” causing vasoconstriction and higher heart rate → higher BP.

02

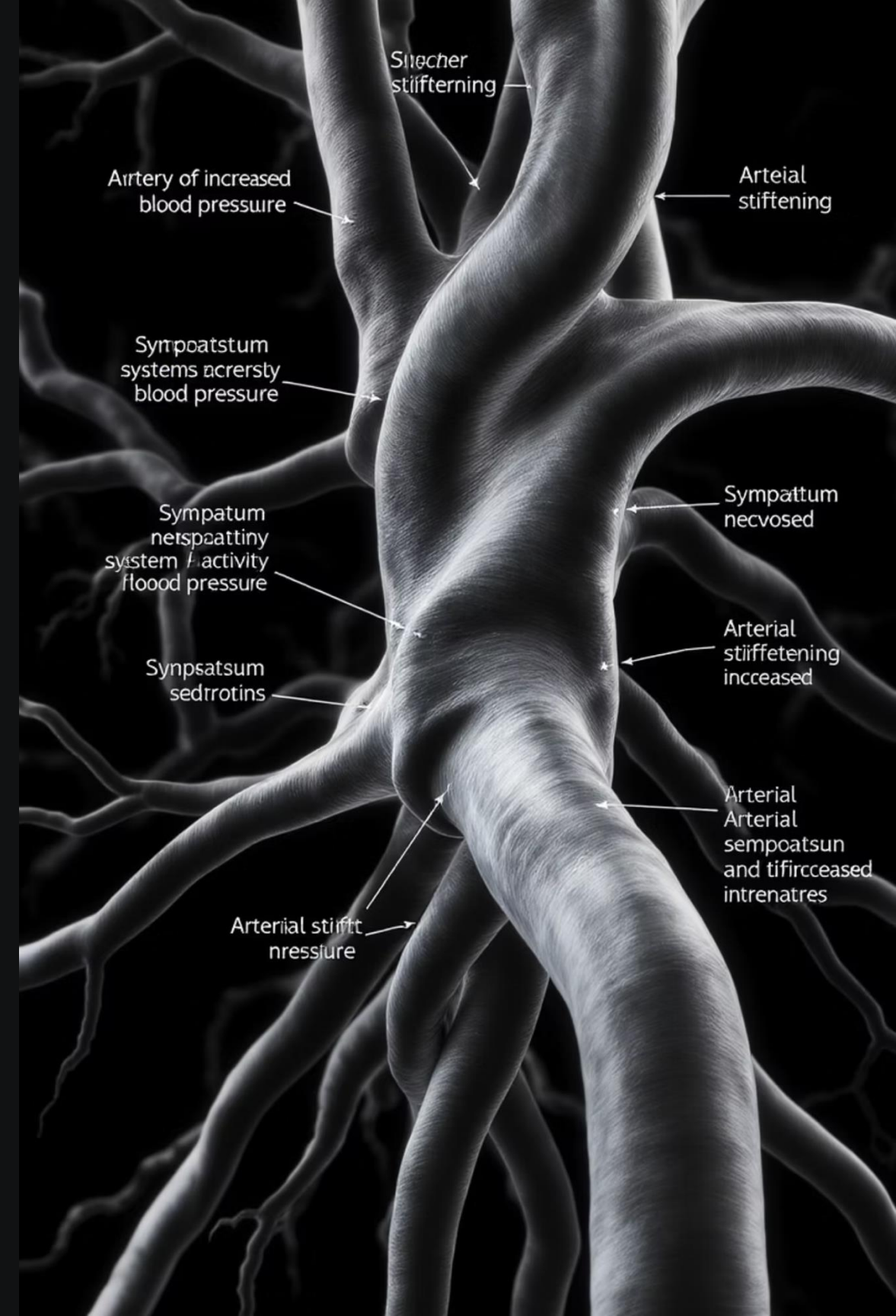
Arterial Stiffening

Less movement makes vessels less elastic and increases resistance → BP rises over time.

03

Increased Cardiovascular Risk

These changes drive hypertension, speed atherosclerosis, and raise cardiovascular events and mortality.





Sedentary Living Impairs Insulin Sensitivity

Physical inactivity rapidly induces insulin resistance through multiple mechanisms, profoundly impacting glucose metabolism.

01

Rapid Onset of Resistance

5 days of bed rest raises fasting insulin, glucose, and HOMA-IR.

02

Muscle Insulin Unresponsiveness

lower glucose uptake

03

Hyperglycemia Risk

higher blood sugar over time → greater risk of type 2 diabetes and heart disease

Sedentary Living and LPL Dysfunction

One of the most dramatic consequences of sedentary behavior can cause **lipoprotein lipase (LPL) dysfunction**. This crucial enzyme, responsible for metabolizing triglycerides and maintaining healthy cholesterol levels, sees its activity in skeletal muscle **decrease by 90-95% within mere hours of physical inactivity**. The profound suppression of LPL **leads directly to elevated triglycerides, reduced HDL cholesterol, and a significantly increased cardiovascular risk**.



Evolution of Exercise

Sedentary patients face the highest risk: those with more than 4 hours/day of sedentary time have a **62% increased risk of mortality and accelerated decline in physical function** compared to more active peers. Recognizing these profound risks, our understanding of exercise has dramatically evolved over time.

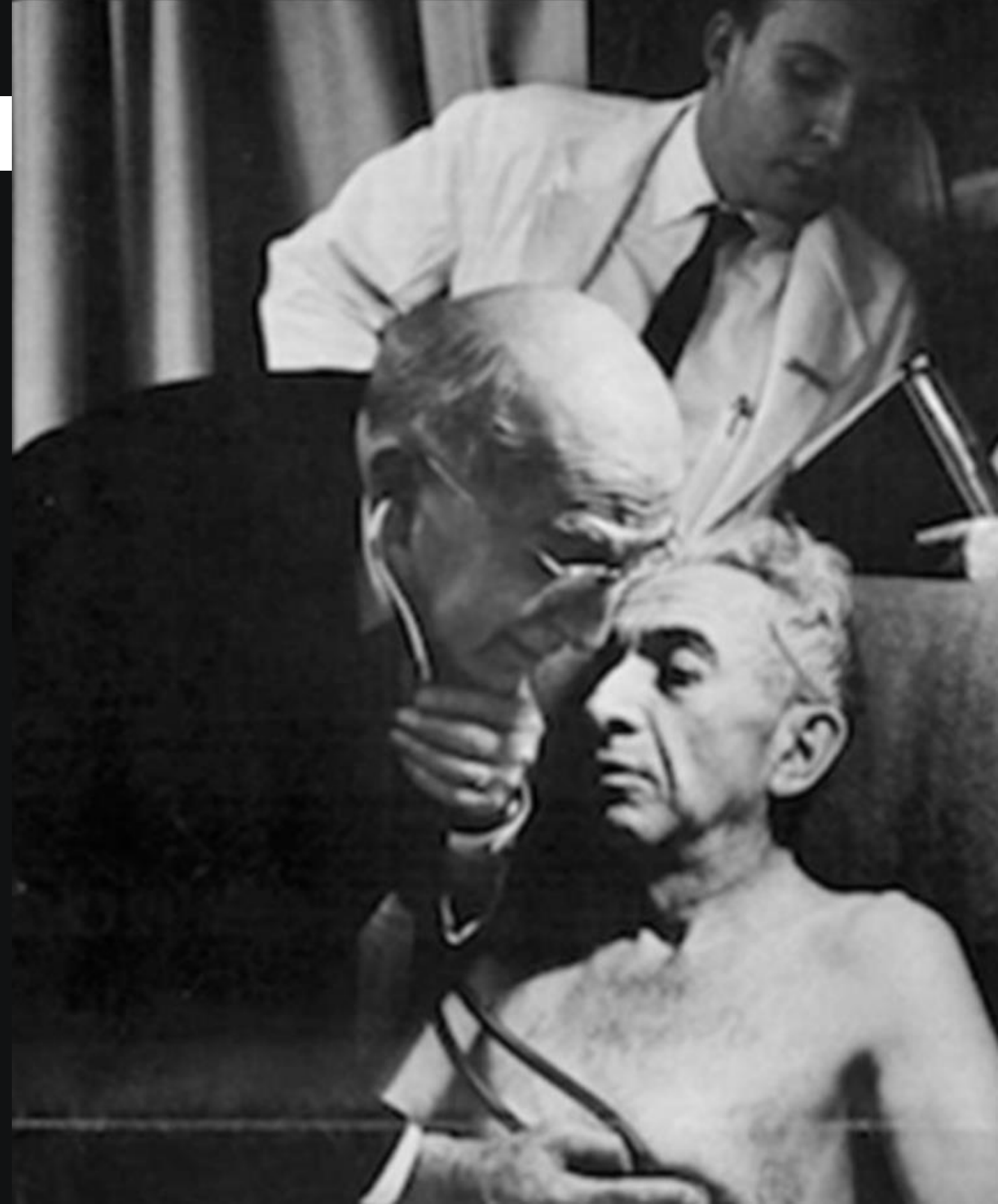




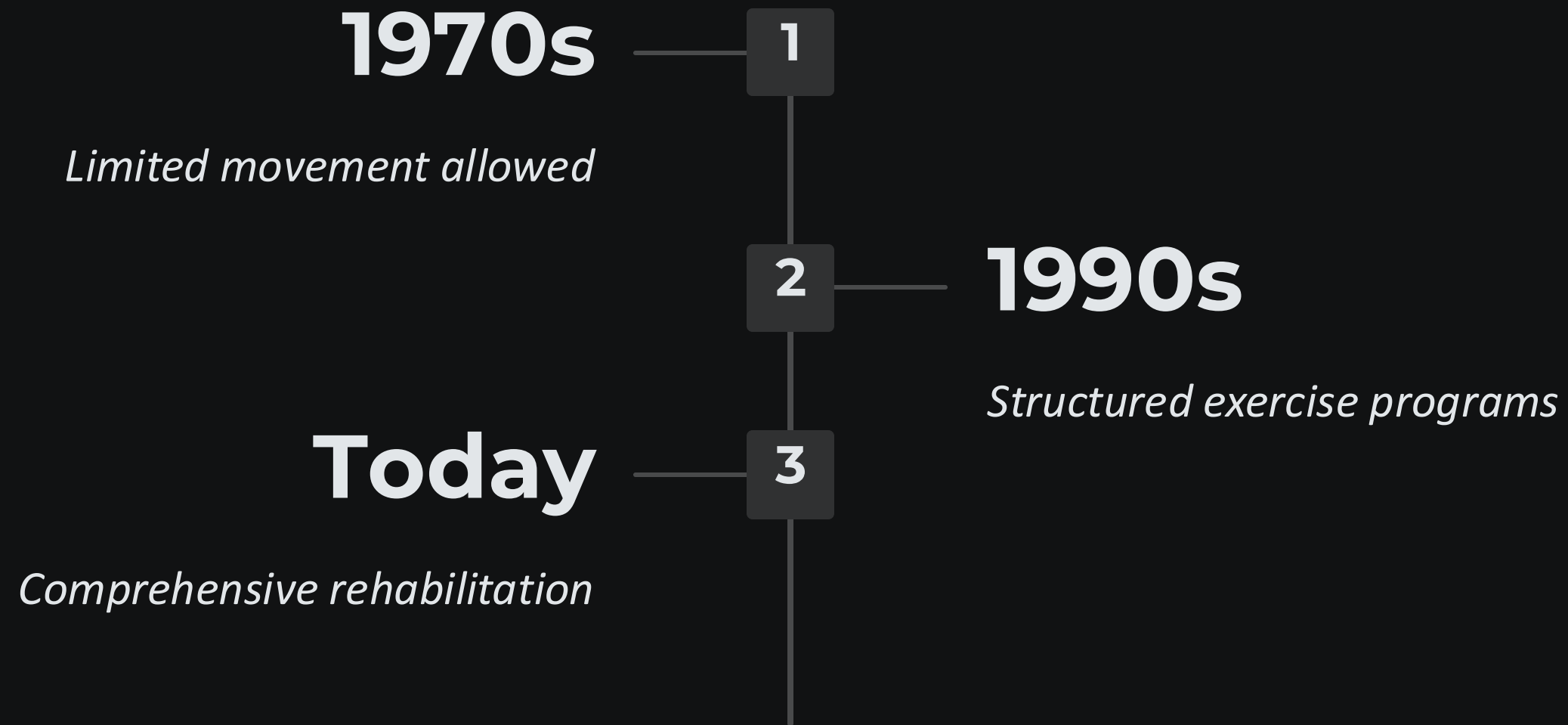
Research: Historical Outcomes

Bed Rest vs. Mobilization

In 1952, Levine & Lown found “armchair” activity was safe and beneficial for hospitalized MI patients. Before then, strict bed rest was standard over rupture and hypoxemia fears.



Evolution of Exercise





The Psychological



Fear Response: Amygdala Activation

^{18}F -FDG PET/CT shows recent MI patients have higher Amygdalar activity than controls. Elevated resting amygdala activity predicts more cardiovascular events, likely via stress-driven inflammation.



Chronic Stress Impact



Stress Hormones

Cortisol elevation



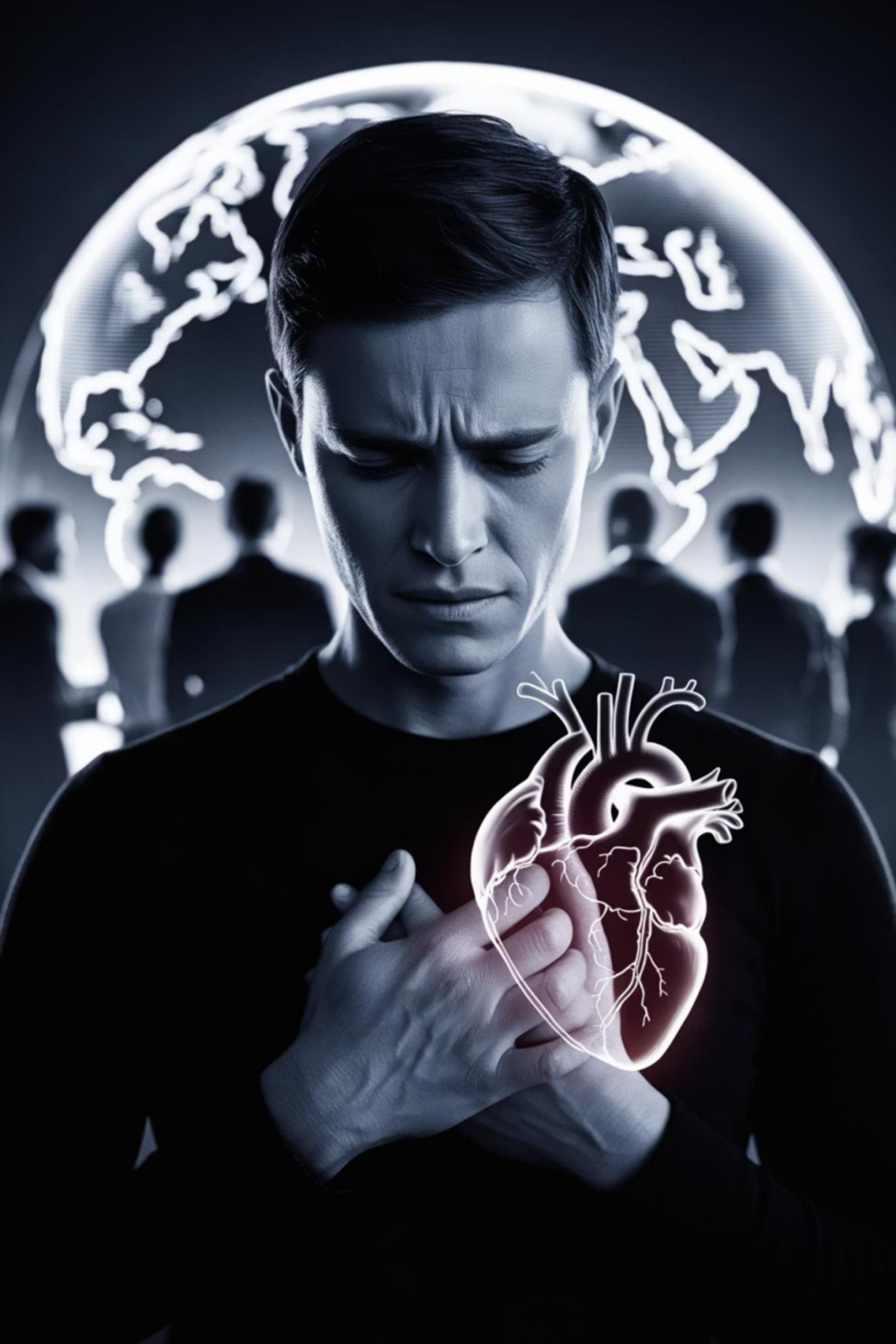
Cardiac Effects

Inflammation, hypertension



Feedback Loop

Worsening cardiac health



Research: Psychosocial Stress & MI Risk

The landmark **INTERHEART** study revealed a critical insight into cardiovascular health: **psychosocial stress is independently associated with an increased risk of acute myocardial infarction (MI) across diverse populations worldwide.**

Lancet (London, England). 2004 Sep 11-17;364(9438):953-62. doi:10.1016/S0140-6736(04)17019-0.



Depression in Heart Patients

20-30%

Prevalence

Of post-MI patients experience depression

2-3x

Increased Risk

Higher mortality with depression

$$\text{Health} = \frac{\text{Resiliency}}{\text{Stress}}$$

What if we



Focused on Resiliency



A New Path: Embracing 'Selfish'

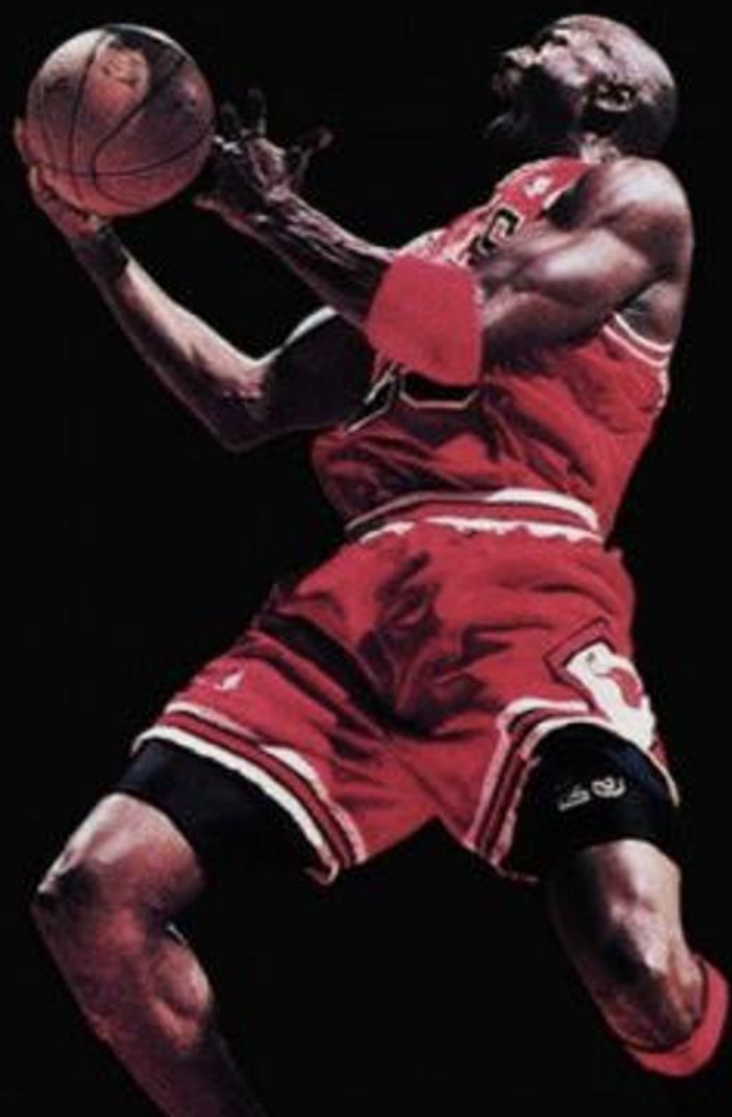
Recognizing James's struggle with fear and anxiety, his wife gifted him an audiobook titled, "**Selfish: A Cardiologist's Guide to Healing A Stressed and Broken Heart.**" Initially skeptical, James began listening, driven by a renewed commitment to his recovery.



get selfish

MR

*To be successful you have to
be selfish, or else you never
achieve.*



The *Selfish* Pillars



S - Spirituality



E - Exercise



L - Love



F - Food



I - Intimacy



S - Sleep



H - Humor

S - Spirituality

Spirituality is the *search for meaning and purpose*, often involving a sense of connection to something greater than oneself.

Stephen Curry: “There’s more to me than just this jersey I wear and that’s Christ living inside me”



Russell Wilson: “I want to be remembered for who I am not what I do”.



Tom Brady: “Why do I have three Super Bowl rings and still think there’s something greater out there for me”



Meaning & Purpose

An increase in sense of purpose in life was associated with higher physical activity four years later, above and beyond past activity levels. Physical activity was positively associated with future levels of sense of purpose in life, controlling for prior levels of purpose in life.

Journal of Behavioral Medicine. 2021;44(5):715-725. doi:10.1007/s10865-021-00220-2.



Spirituality Practices



Meditation

Enhances exercise outcomes



Breathing

Improves performance



Mindfulness

Boosts recovery

Research: Exercise & Spiritual Practices

Evidence from 2012 National Health Interview Survey suggest that *mindfulness meditation specifically*, beyond meditation in general, *is associated with physical activity in U.S adults*

Health Psychology. 2018;37(10):924-928





Research: Breathing & Exercise Performance

Multiple randomized trials and meta-analyses show that **respiratory muscle training (RMT)**, including inspiratory muscle training and yoga-based breathing interventions, can improve measures such as time-trial performance, exercise endurance, and VO_2max in both recreational and elite athletes.

Journal of Strength and Conditioning Research. 2013;27(6):1643-63.

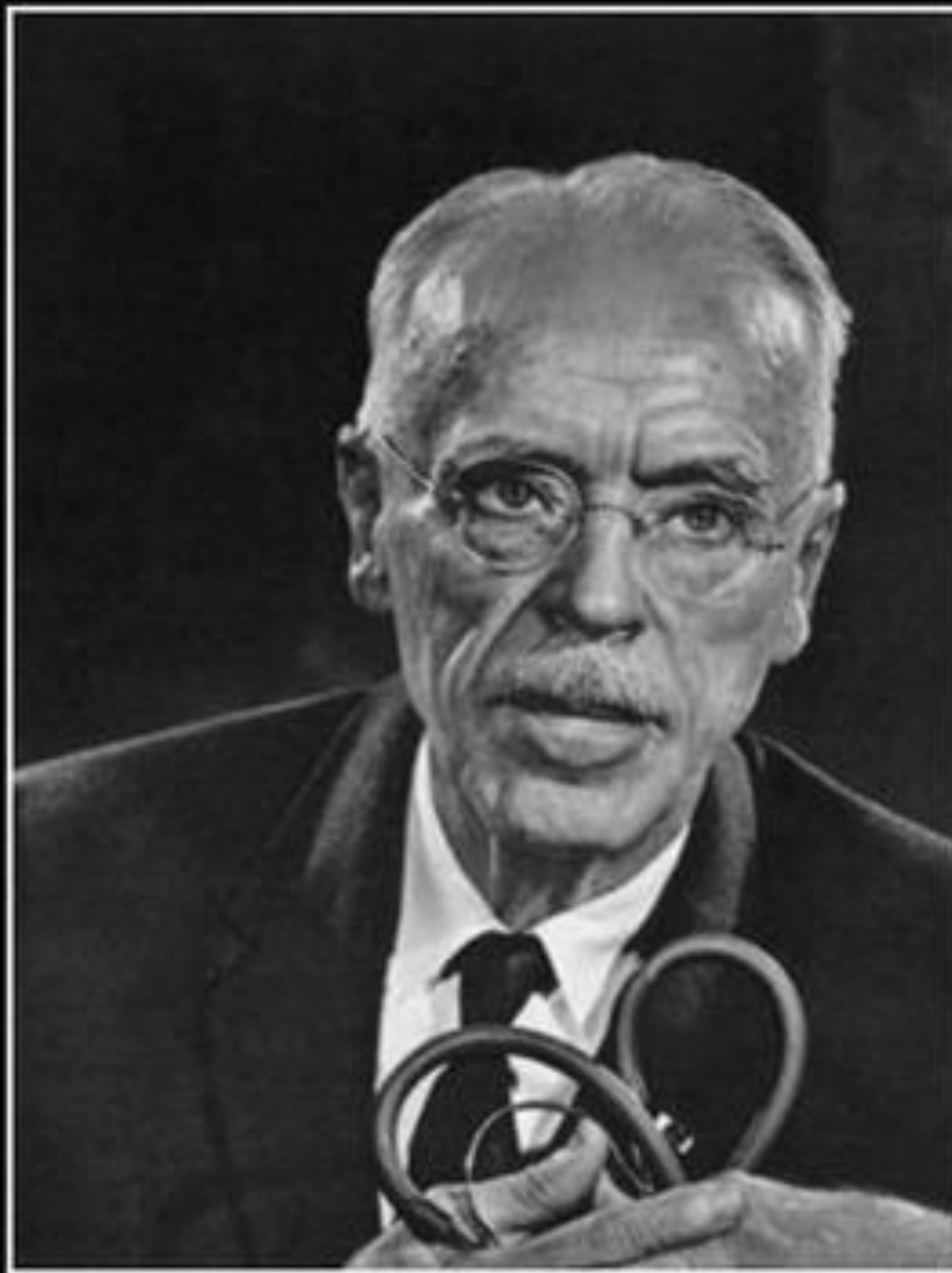
Research: Mindfulness & Performance

Meta-analyses demonstrate that ***mindfulness and meditation significantly improve sports performance***, with outcomes typically in the moderate to large range.

These positive effects are mediated by enhancements in mental resilience, executive function, and attentional capacity, benefiting both endurance and precision sports.



E-Exercise



A vigorous five-mile walk will do more good for an unhappy but otherwise healthy adult than all the medicine and psychology in the world.

— Paul Dudley White —

AZ QUOTES

Exercise as Intervention



Lowers Anxiety

Exercise helps calm the brain's fear center, reducing feelings of worry and unease.



Reduces Stress

Physical activity lowers stress hormones like cortisol, promoting a sense of calm and balance.



Improves Mood

Exercise boosts feel-good endorphins and supports brain health, enhancing overall happiness and well-being.

Research: Exercise & Anxiety

Exercise mediates ***acute exercise-induced anxiolytic effects*** in regards to amygdala reactivity, and help establish exercise training as a form of anxiolytic therapy towards clinical applications.





Exercise & Post-MI Depression

Metanalysis found for patients with MI, ***exercise-based CR has been demonstrated to alleviate anxiety and depressive symptoms.*** These findings highlight CR as essential and beneficial for minimizing MI patient anxiety and depression during recovery.

Heart & Lung. 2019;48(1):1-7

Exercise and Stress Reduction

Vigorous and moderate exercise both reduce the body's stress response, with vigorous activity having the strongest effect. ***The more cortisol your body releases during exercise, the less it tends to release in response to stress later***—suggesting that exercise helps train your system to stay calmer under pressure.

Psychoneuroendocrinology. 2021;131:105336



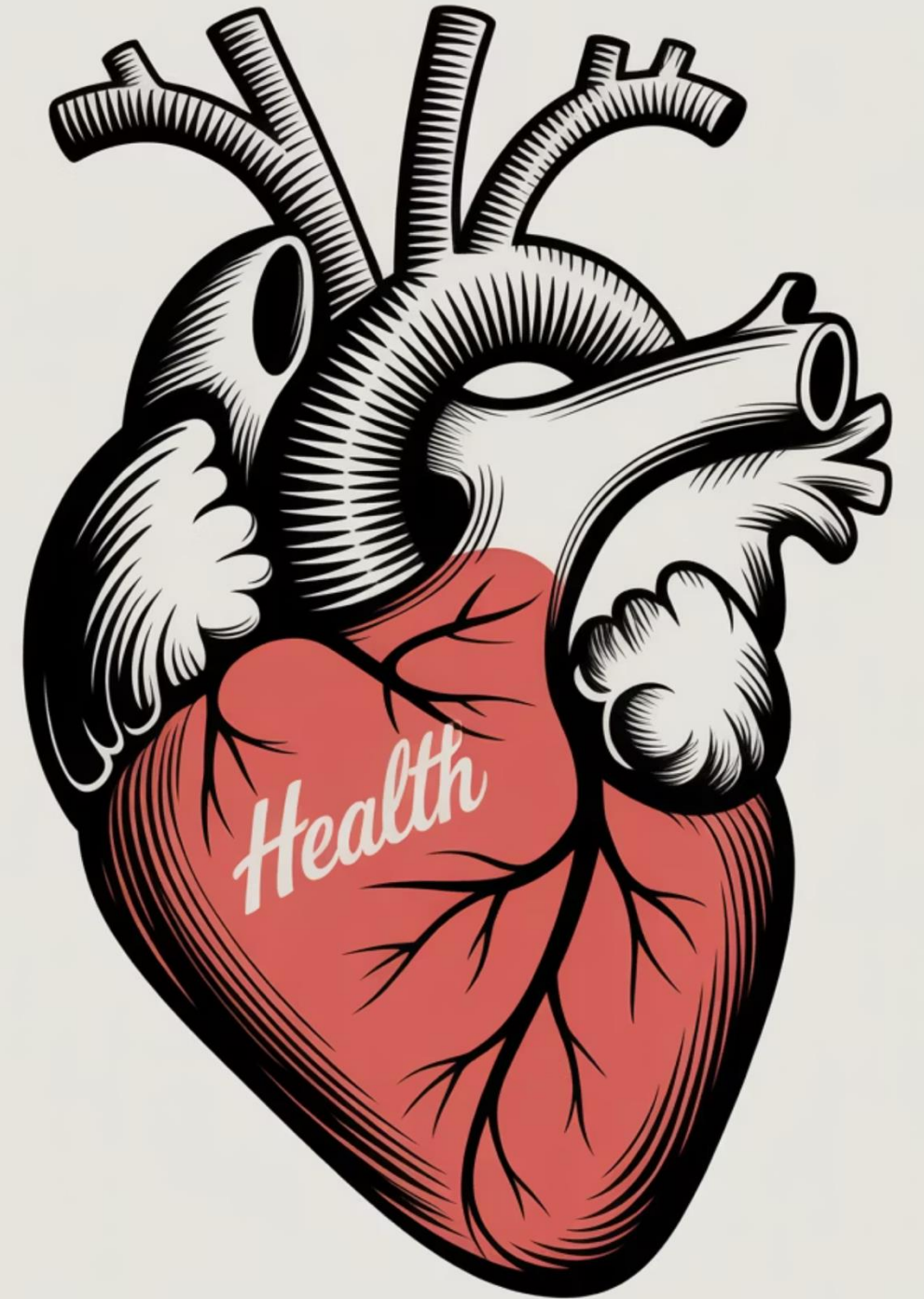


Exercise: Calming the Brain's Stress Center

Chronic physical exercise significantly reduces stress-associated amygdalar metabolic activity, directly impacting the brain's fear response. This vital intervention also disrupts the amygdala's association with systemic inflammation, offering profound benefits for both mental and cardiovascular health.

Frontiers in Endocrinology. 2022;13:1046838.

Cardiac Physiology Benefits



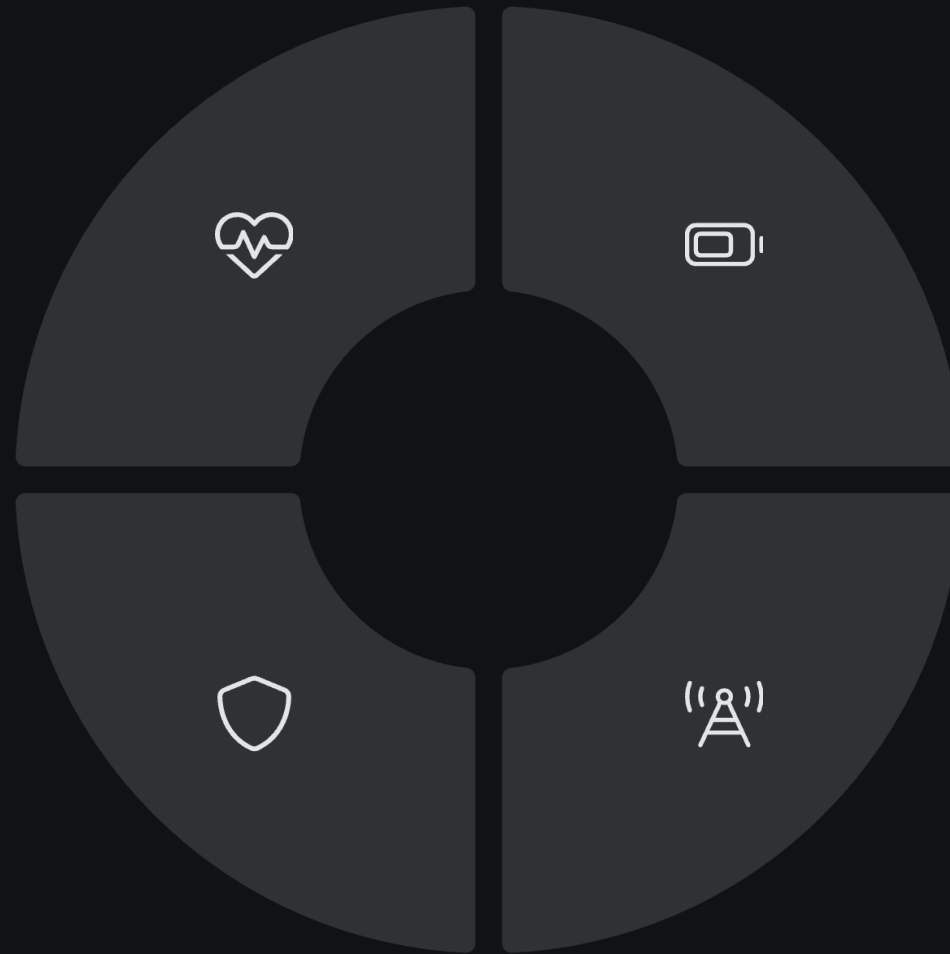
Enhanced Cardiac Function

Cardiac Output
Improved stroke volume

Atherosclerosis
Reduced plaque buildup

Vascular Health
Better elasticity

Endothelial Function
Enhanced blood flow



Prognostic Benefits

20-30%

Mortality Reduction

With regular physical activity

25%

Rehospitalization

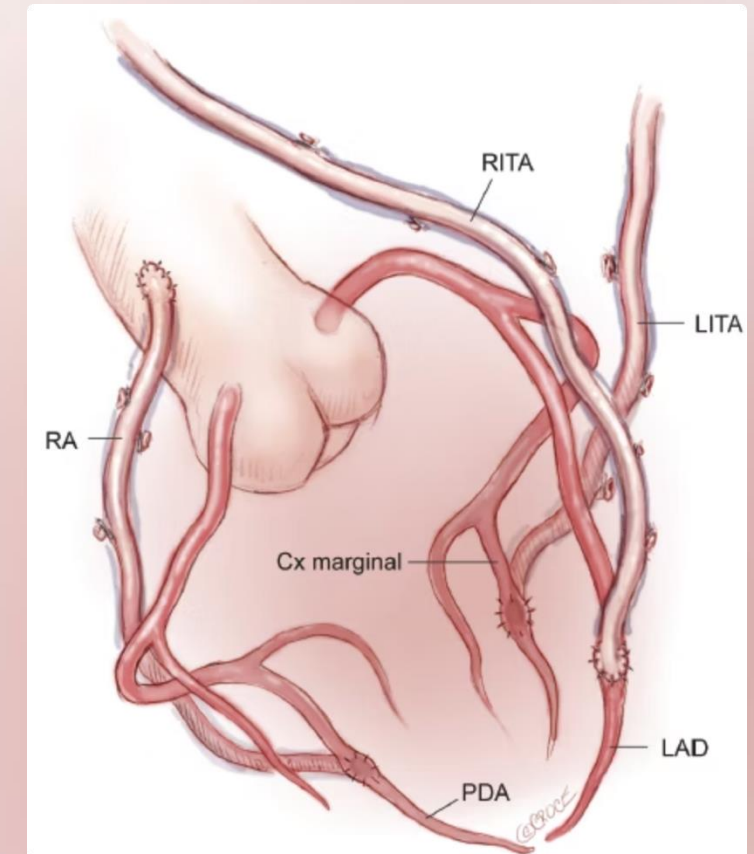
Fewer hospital readmissions



Exercise After CABG

Studies demonstrate that structured exercise after CABG significantly enhances myocardial work indices—such as global work index and global constructive work—even in patients with preserved left ventricular ejection fraction, indicating improved cardiac performance.

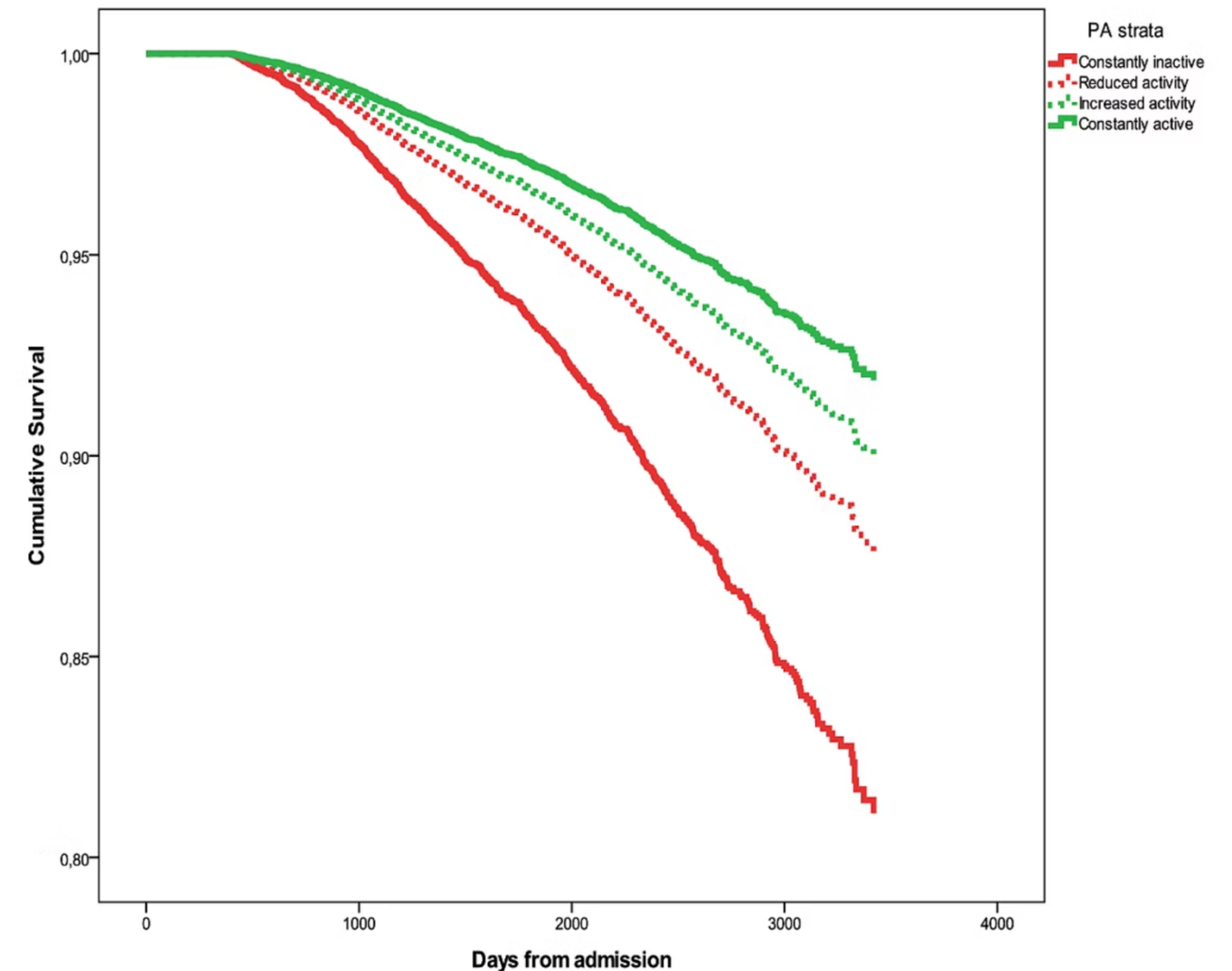
Journal of Clinical Medicine. 2023;12(24):7540. doi:10.3390/jcm12247540.



Research: Survival Rates

Large studies show that post-MI patients who stay active or increase activity have a 27–71% lower risk of death compared to those who remain sedentary.

Journal of the American Heart Association. 2018;7(24):e010108.
doi:10.1161/JAHA.118.010108.





E - Exercise as Belief



Self-Efficacy

Belief in exercise as a healing tool drives adherence

The Journal of Cardiovascular Nursing. 2021 Jul-Aug 01;36(4):E11-E19.



Exercise As Belief

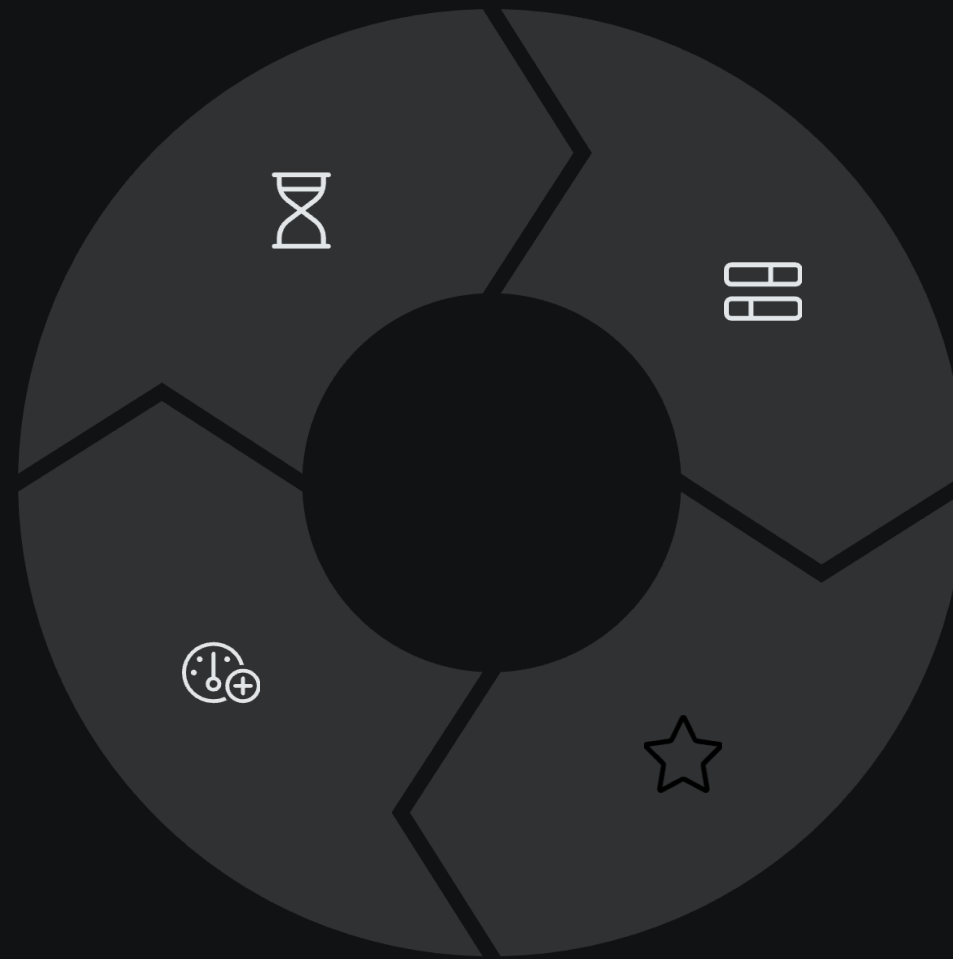
In adults with knee osteoarthritis, greater confidence in exercising and more positive beliefs about its benefits were linked to higher physical activity levels at baseline and over six months.

Arthritis Care & Research. 2017;69(8):1192-1200

Positive Feedback Loop

Begin Moving
Small steps

Increase Activity
Do more, feel better



See Progress
Physical improvements

Gain Motivation
Confidence builds

L - Love



Research: Exercise & Forgiveness

A study in **Frontiers in Psychology** found that aerobic and flexible exercises compared to anaerobic or no exercise can increase the likelihood of participants forgiving others for their actions and overcoming grudges.

Frontiers in Psychology. 2017;8:538. doi:10.3389/fpsyg.2017.00538.





Research: Gratitude Effects

Individuals with *higher gratitude tend to engage more in physical activity*, report fewer physical symptoms, and are more likely to adhere to self-care and medical recommendations, including follow-up with physicians.

Personality and Individual Differences. 2013;54(1):92-96. doi:10.1016/j.paid.2012.08.011.

Research: Exercise & Volunteering

Starting to volunteer was linked to increased physical activity in older adults overall, with a significant effect seen in men.

BMC Public Health. 2022;22(1):578. doi:10.1186/s12889-022-12982-8.



F - Food



Bidirectional Influence

Nutrition Powers Exercise

Proper fuel enhances performance

Exercise Regulates Appetite

Improves hunger cues and metabolism

Research: Exercise & Appetite

A 12-week study found that *moderate-intensity aerobic exercise* significantly ***reduced food cravings and increased cognitive restraint*** in inactive men, highlighting exercise's role in regulating eating behavior.

Applied Physiology, Nutrition, and Metabolism. 2016;41(11):1129-1136.





HIIE & Food Choices

High-intensity interval exercise (HIIE) improved cognitive functions and *reduced preference for high-calorie foods in young, low-active women*. This effect was mediated by enhanced attentional inhibition, linking exercise to healthier eating decisions.

Appetite. 2024;200:107499

Research: Anti-Inflammatory Effects

Red and green spinach are rich in dietary nitrates and have been shown to *enhance exercise performance and speed recovery in athletes*, making them effective alternatives to beetroot.

International Journal of Molecular Sciences. 2024;25(7):3650



NATURABOOST
FUEL YOUR PERFORMANCE

Research: Plant-Based Protein

A study explored how whey hydrolysate, casein, and soy protein isolate affect muscle protein synthesis in young men. Findings indicated that all three protein types significantly stimulated muscle protein synthesis at rest and following resistance exercise.

Journal of Applied Physiology. 2009;107(3):987-995. doi:10.1152/jappphysiol.00076.2009.



Research: Fava Bean Protein

Fava bean supplementation resulted in *significantly higher muscle protein synthesis* rates during the remobilization period when compared with milk protein supplementation.

Journal of Nutritional Biochemistry. 2024;113:109287. doi:10.1016/j.jnutbio.2023.109287.

FAVA BEANS AND MUSCLE PROTEIN SYNTHESIS





THREE
FOUR
TWO





Before going plant based

- Houston Rockers 2018-2019
- 15.6 PPG
- 42/36/86%
- 17.0 PPG in playoffs
- 45/27/84%

After going plant based

- 17.0 PPG
- 49/38/92%
- 18.0 PPG in playoffs
- 50/39/90% in playoffs
- Led OKC to playoffs after Russ/PG left
- Led Suns to NBA Finals



1 - Intimacy

Research: Influence of Partner on Exercise

Research suggests that exercising with a romantic partner can improve mood and increase relationship satisfaction, making exercise more enjoyable and easier to maintain long-term.

Journal of Social Psychology. 2019;159(3):321-334.





Research: Pet Influence on Exercise

Studies show *dog ownership significantly boosts exercise adherence and physical activity*, especially through walking. The sense of obligation to walk the dog and the human-animal bond are key factors, with stronger attachment leading to greater exercise frequency.

Support Systems

Family

Encouragement and participation

Friends

Accountability partners

Community

Group activities and belonging



Research: Social Support

Actively finding an exercise companion enhances emotional and instrumental social support, which boosts self-efficacy and improves exercise adherence through better self-regulation.

British Journal of Health Psychology. 2015;20(4):763-76





Research: Group Exercise

Exercising with others, especially in sync, can strengthen social connections and *boost performance*. This helps explain why group physical activities like dance, sports, and rituals are common across cultures.

PloS One. 2015;10(8):e0136705.

S - Sleep

The Exercise-Sleep Cycle

Exercise Promotes Sleep

Regular physical activity synchronizes the body's clock and expends energy, preparing the body for restorative sleep.



Quality Sleep Restores

Results in faster sleep onset, fewer awakenings, and deeper, more restorative sleep, vital for recovery and energy.

Sleep Boosts Performance

Improved sleep directly enhances physical performance, boosts cognitive function, and strengthens motivation for consistent exercise.

Research: Sleep- Exercise Feedback

Sleep extension significantly enhances recovery and athletic performance, enabling athletes to achieve better results and reduce injury risk.

Sports Medicine. 2018;48(3):683-703.





Research: Sleep Quality

A meta-analysis of 27 trials found that exercise improves sleep quality in adults, with Pilates, yoga, and traditional Chinese exercises showing the most benefit—Pilates ranked highest. Tailoring exercise to individual preferences may further enhance sleep outcomes.

Preventive Medicine. 2024;183:107955

H - Humor

Research: Joy in Rehabilitation

A 12-week laughter-based exercise program significantly improved aerobic endurance in older adults, as measured by the 2-minute step test. Participants showed an average increase of 6.7 repetitions, highlighting the positive impact of joy and humor on physical rehabilitation outcomes.

The Gerontologist. 2017;57(6):1051-1061. doi:10.1093/geront/gnw105.





Research: Joy in Performance

Studies show that *pleasant emotional stimuli can transiently enhance neuromuscular performance during high-intensity exercise*. In young adults, exposure to joyful images significantly improved power output in cycling sprints, demonstrating the immediate positive impact of joy on athletic exertion.

PloS One. 2015;10(8):e0136330. doi:10.1371/journal.pone.0136330.

Research: Laughter Mechanisms

Research suggests *laughter and smiling enhance exercise performance through various mechanisms*. These include the *release of beta-endorphins, promoting vasodilation and improved blood flow to muscles*. Laughter also improves pulmonary function, modulates stress, enhances positive mood, and increases pain tolerance, collectively boosting physical exertion.

Journal of Sport and Exercise Psychology. 2023;45(3):289-301.



Research: Joy in Rehabilitation

A study on post-MI diabetic patients found that daily humor viewing (30 mins) significantly reduced arrhythmias, lowered blood pressure and stress hormones, and dramatically decreased recurrent MI incidence (2/24 vs. 10/24) compared to a control group. Humor appears to be an effective adjunct in cardiac rehabilitation.

Adv Mind Body Med. 2007 Winter;22(3-4):8-12.





Playful Movement

Sustains long-term exercise engagement



Case Study: Before

Post-CABG Patient

Fearful, immobile, depressed

Limited Belief

Doubtful about recovery

Isolated

Minimal support system

Integrating *Selfish* Pillars

Spirituality

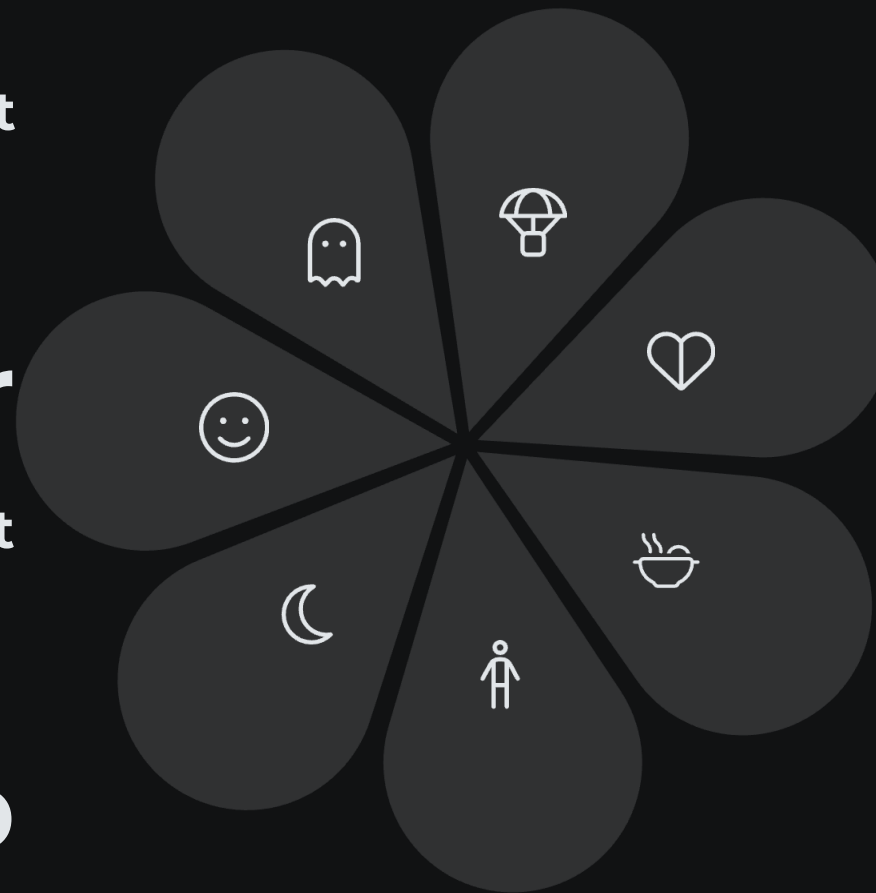
Purpose-driven movement

Humor

Joyful movement

Sleep

Restorative rest



Exercise Belief

Confidence in healing

Love

Self-compassion practice

Food

Anti-inflammatory nutrition

Intimacy

Supportive relationships



Case Study: After

5x

Weekly Exercise

Increased from once to five times weekly

70%

Depression Score

Reduction in symptoms

3

Social Connections

New supportive relationships formed

From Fear to Freedom

Patient transformed from fearful and immobile to active,
purposeful living



Lessons Learned

1

Holistic Approach

All SELFISH pillars work together

2

Quality of Life

Not just longer life, but better life

3

Sustainable Change

Joy and connection maintain habits

MR

*To be successful you have to
be selfish, or else you never
achieve. And once you get to
your highest level, then you
have to be unselfish. Stay
reachable. Stay in touch.
Don't isolate.*

”



Get SELFISH

To Live a Life of Purpose

