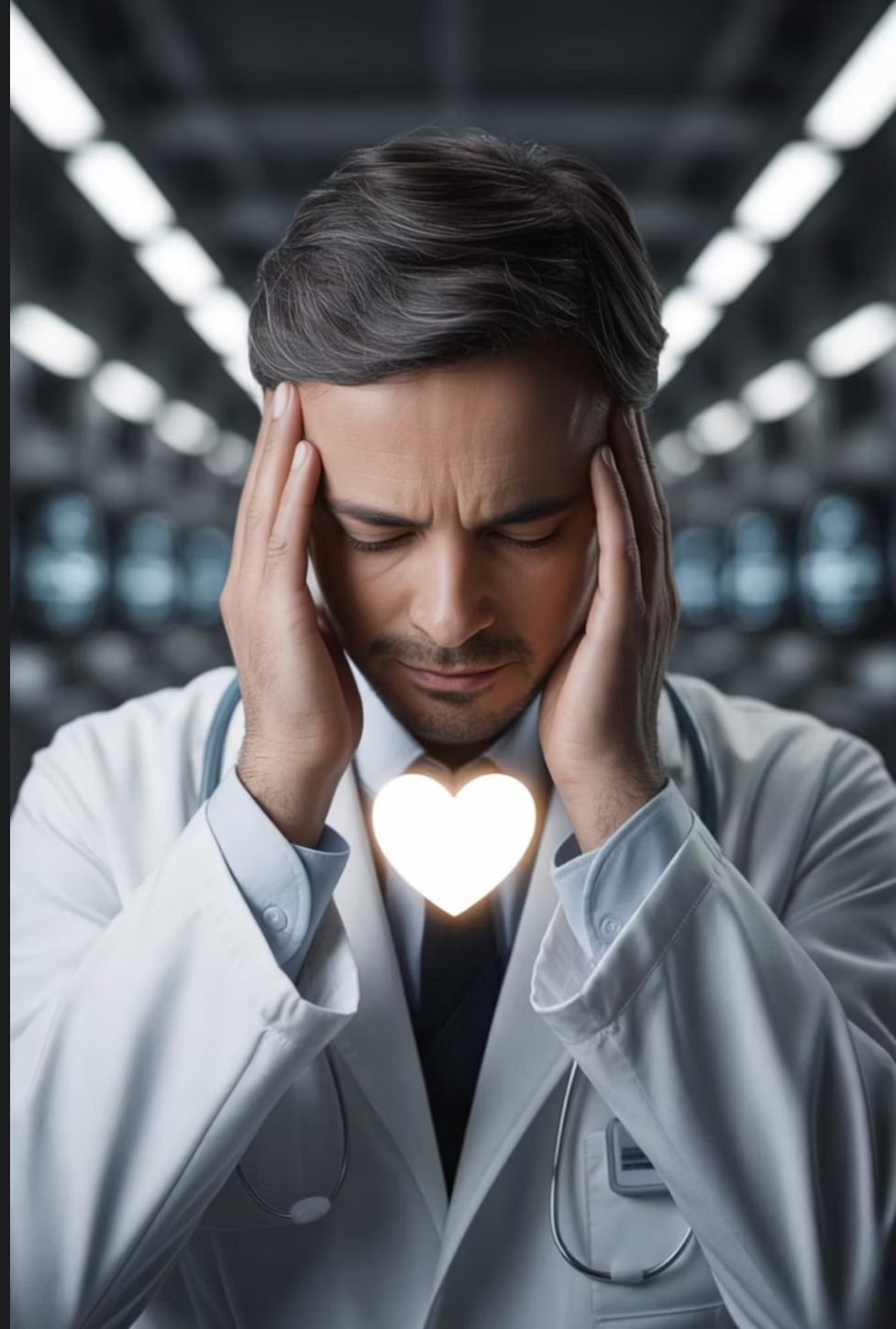
Healing Physician Burnout: A Cardiologist's Prescription Using the Self*ish* Framework

by Columbus Batiste, MD, FACC, FSCAI



Disclosures

Columbus Batiste, MD, FACC, FSCAI
No relationships to disclose

Burnout = Stress

The Healer's Dilemma

We enter medicine to heal others, but what happens when the healer is the one who's hurting?

45%

Physicians Reporting Burnout

In 2023, still at critically high levels

2x

Suicide Risk

Compared to general population

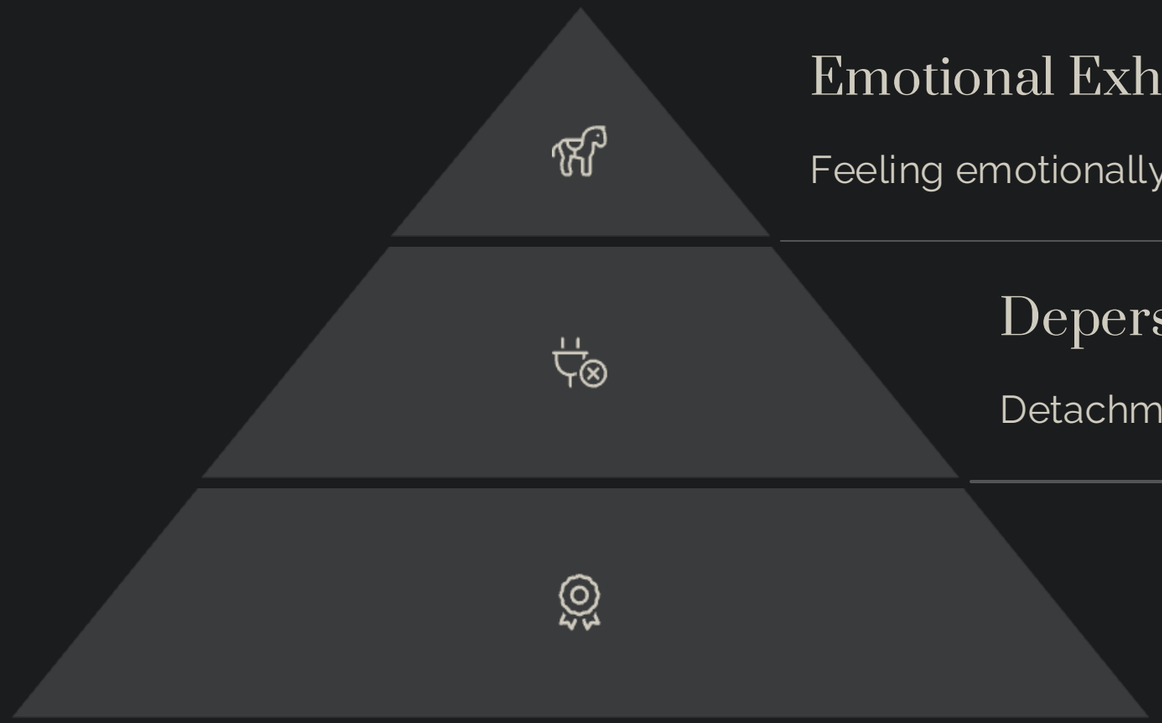
1 in 3

Consider Leaving Medicine

Due to work-related stress

Source: Medscape Physician Burnout & Depression Report 2023

The Burnout Triad



Emotional Exhaustion

Feeling emotionally drained and depleted

Depersonalization

Detachment from patients and colleagues

Reduced Personal Accomplishment

Diminished sense of competence and achievement

These three dimensions form the Maslach Burnout Inventory, the gold standard for burnout measurement.1

1 Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory Manual. 4th ed. Mind Garden, Inc; 2018.

Burnout: Beyond Mental Health

Burnout isn't just psychological distress—it's a physiological crisis.

Stress = Demands - Resources

When demands consistently outweigh resources, our bodies enter chronic stress states with tangible cardiovascular consequences.

Increasing Demands

Patient loads, documentation, metrics, and administrative burden continuously rise.

Insufficient Resources

Time, support staff, autonomy, and recovery periods diminish.

Physiological Burden

The resulting imbalance triggers measurable biological stress responses.

Cardiovascular Impact

Chronic activation damages heart and vascular function over time.

1 Salvagioni DAJ, et al. Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. PLoS One. 2017;12(10):e0185781.

Clinical Recognition

ICD-10 Recognition

Burnout is recognized as "vital exhaustion" in medical coding systems.

Classified under Z73.0: "Problems related to life-management difficulty"

Not in DSM-5

Burnout isn't classified as a mental disorder in psychiatric diagnosis manuals.

This creates challenges for treatment pathways and insurance coverage.

Stress Physiology: Acute vs. Chronic

Acute Stress

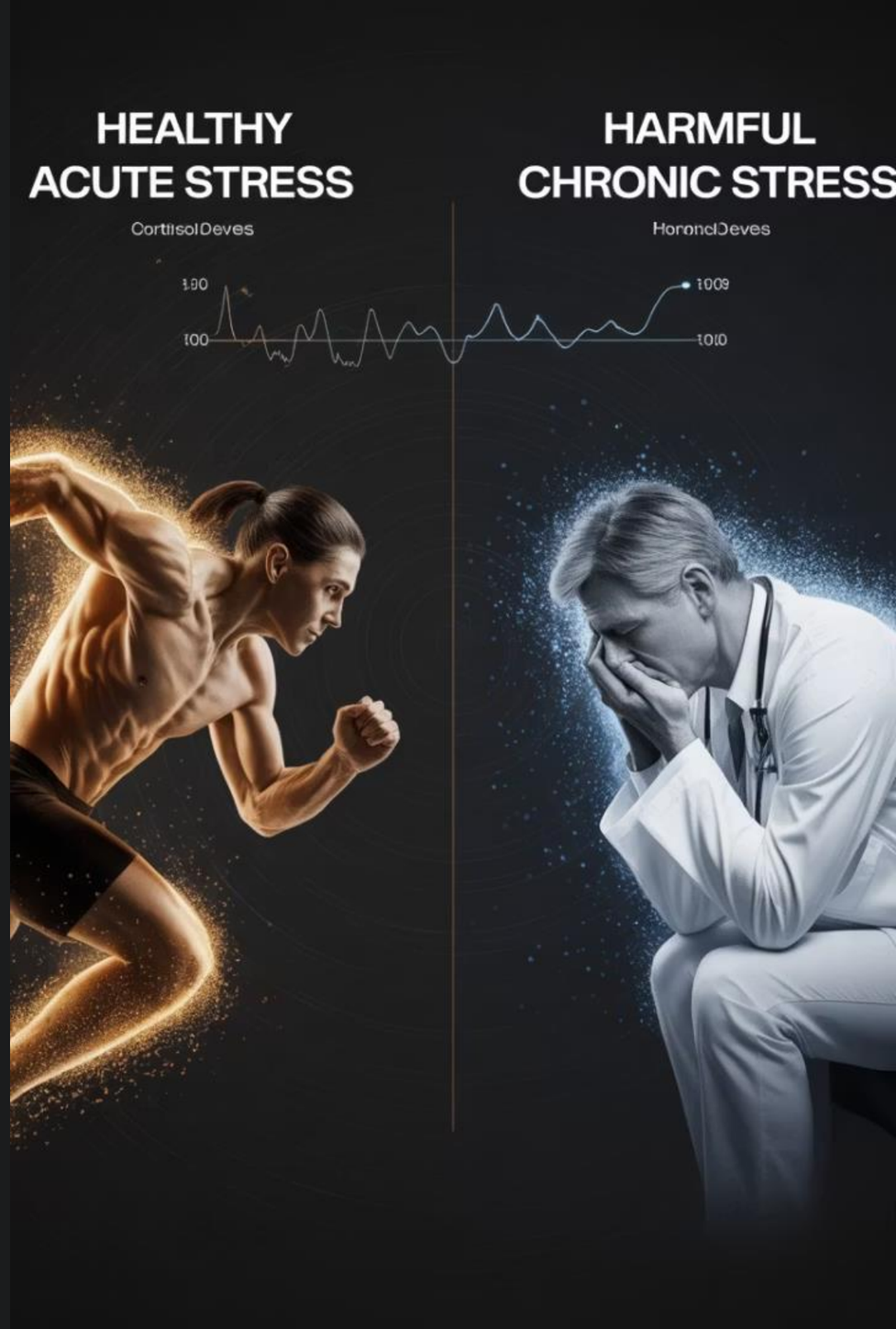
- Temporary physiological response
- Returns to baseline rapidly
- Adaptive for survival

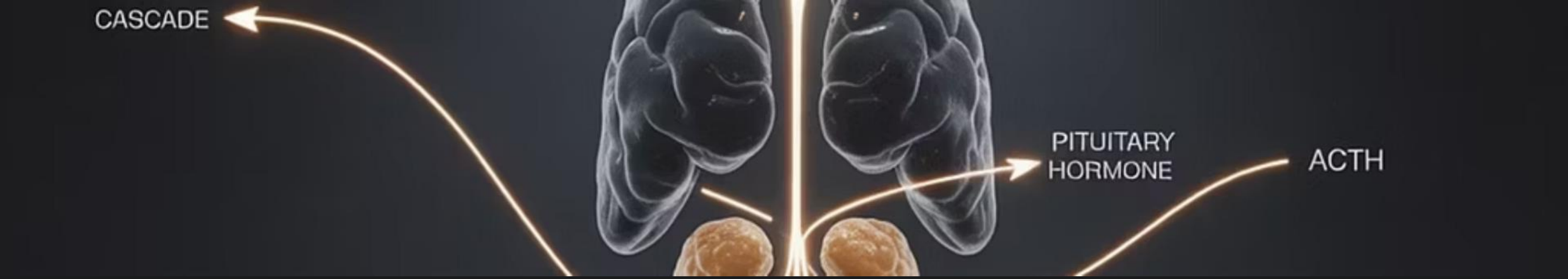
Chronic Stress

- Sustained physiological activation
- No return to baseline
- Maladaptive, causes damage

Allostatic Load

- Cumulative wear on body systems
- Measurable biomarkers
- Predicts disease risk





The HPA Axis Cascade

Hypothalamus

Releases Corticotropin-Releasing Hormone (CRH)

Pituitary

Releases Adrenocorticotropic Hormone (ACTH)

Adrenal Glands

Release cortisol and adrenaline

Systemic Effects

Blood pressure, glucose, immune changes

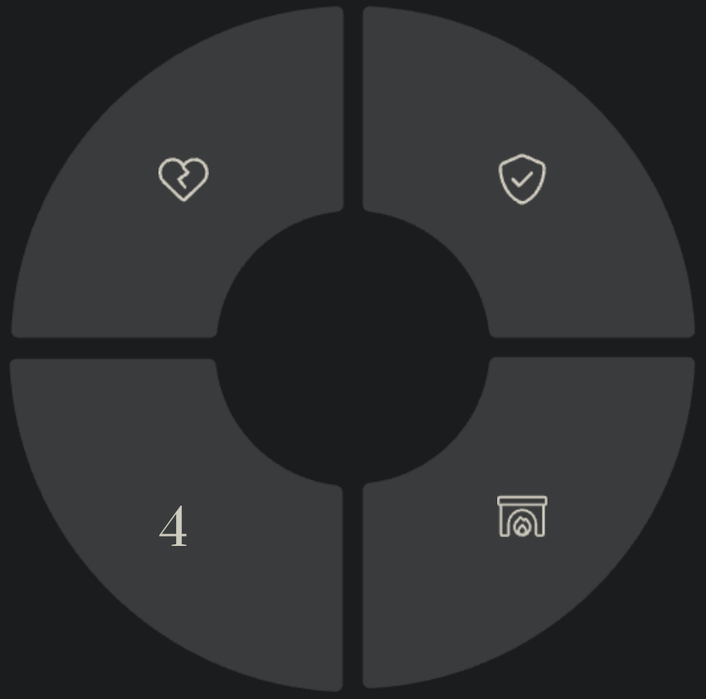
Chronic Stress Effects

Sustained Sympathetic Activation

Elevated heart rate and blood pressure1

Cortisol Resistance

Cells become less responsive to regulatory signals2



Epigenetic Changes

Altered gene expression patterns4

Inflammatory Priming

Increased baseline inflammation3

1 McEwen BS. Physiology and neurobiology of stress and adaptation: central role of the brain. Physiol Rev. 2007;87(3):873-904.

2 Cohen S, et al. Chronic stress, glucocorticoid receptor resistance, inflammation, and disease risk. PNAS. 2012;109(16):5995-5999.

3 Miller GE, et al. Chronic psychological stress and the regulation of pro-inflammatory cytokines. Health Psychol. 2002;21(6):531-541.

4 Zannas AS, et al. Epigenetic upregulation of FKBP5 by aging and stress contributes to NF-κB-driven inflammation. PNAS. 2019;116(23):11370-11379.

Burnout's Physiological Signature

Biomarker	Normal Range	Burnout Pattern
Morning Cortisol1	5-23 µg/dL	Blunted or elevated
C-Reactive Protein2	<3.0 mg/L	3.0-10.0 mg/L
IL-63	<5.0 pg/mL	5.0-15.0 pg/mL
Heart Rate Variability4	SDNN >50ms	SDNN <50ms

1 Marchand A, et al. Burnout symptom sub-types and cortisol profiles. Psychoneuroendocrinology. 2014;40:28-36.
2 Toker S, et al. Depression and the metabolic syndrome. Psychosom Med. 2012;74(1):23-32.
3 Grossi G, et al. The morning salivary cortisol response in burnout. J Psychosom Res. 2005;59(2):103-111.
4 Koenig J, et al. Heart rate variability and swimming. Sports Med. 2014;44(10):1377-1391.

Flow-Mediated Dilation (FMD)

Flow-mediated dilation measures vascular endothelial function. It's a key marker of cardiovascular health.

1

Job Stress

Higher effort-reward imbalance and overcommitment create chronic stress responses.

2

Microvascular Impact

Stress impairs endothelium-dependent coronary microvascular function.

3

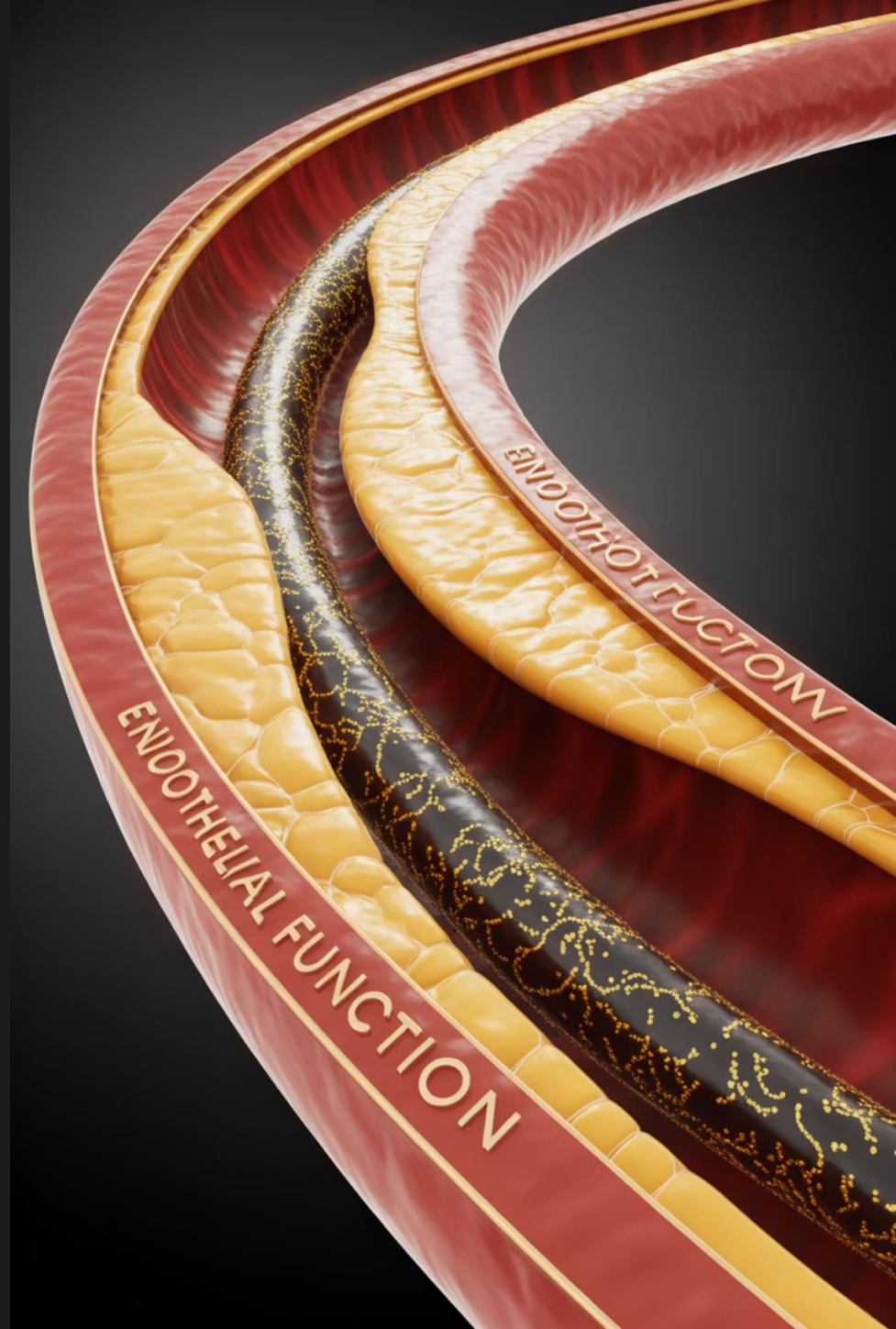
Cardiovascular Implications

Reduced vessel dilation signals early cardiovascular disease progression.

4

Physician Risk

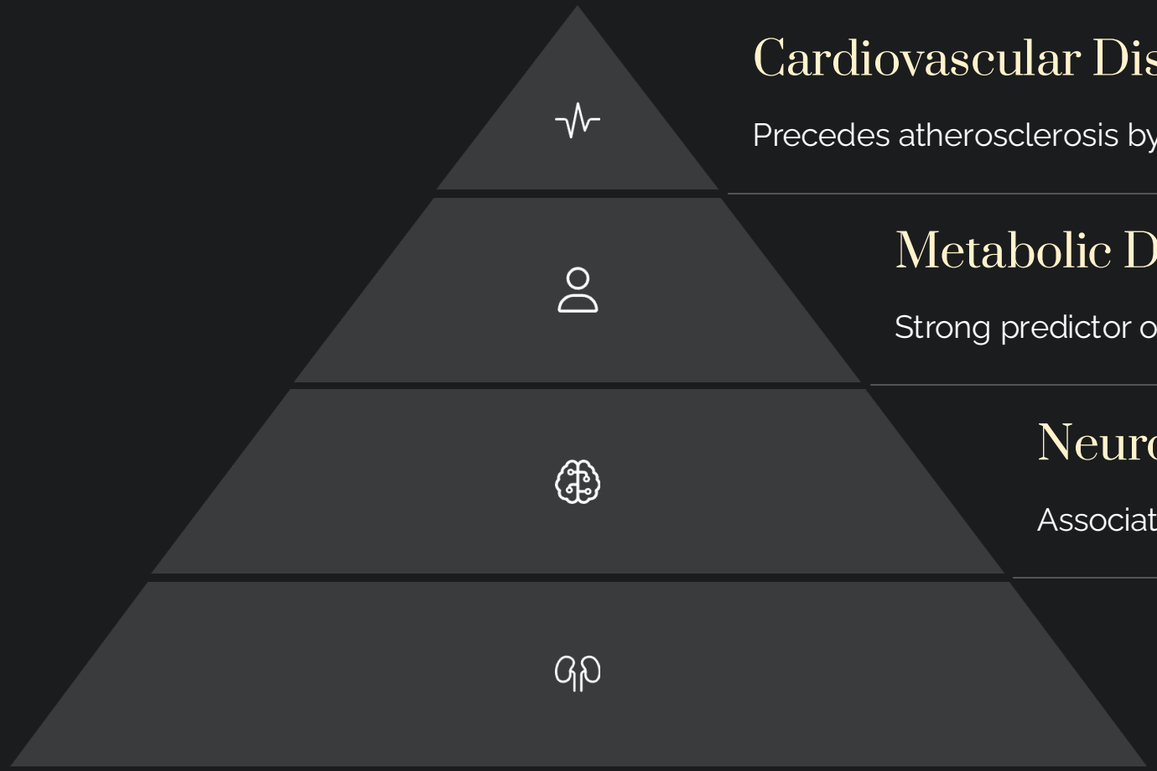
Physicians' chronic stress directly impacts vascular health at the cellular level.



1 von Känel et al. BMC Medicine (2023) 21:477

Endothelial Dysfunction as a Predictor of Chronic Disease

Endothelial damage serves as an early warning system for multiple serious conditions.1



Cardiovascular Disease

Precedes atherosclerosis by years. First detectable sign of vascular damage.2

Metabolic Disorders

Strong predictor of insulin resistance and Type 2 diabetes development.3

Neurological Impact

Associated with cognitive decline and cerebrovascular events.4

Renal Dysfunction

Precedes microalbuminuria and chronic kidney disease progression.5

Endothelial health serves as the canary in the coal mine for overall vascular integrity.6

Meet Dr. “Anyone”

Brilliant Clinician

Known for diagnostic acumen and patient relationships.

Compassionate Caregiver

Deeply committed to his patients' wellbeing.

Burning Out

Increasingly exhausted, detached, and frustrated.

Dr. Marcus's Daily Reality

80+ Hour Weeks

No time for personal recovery

EMR Burden

2 hours charting for every clinical hour

Administrative Load

Prior authorizations and insurance hurdles

Workplace Violence

Increasing patient aggression

Burnout and Cardiovascular Disease

Cortisol Effects

Promotes hypertension through sodium retention and vasoconstriction.

Metabolic Changes

Increases truncal obesity and insulin resistance.

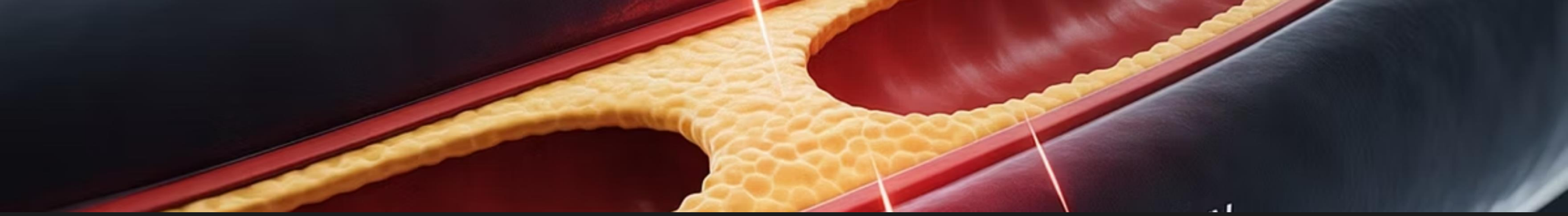
Endothelial Dysfunction

Impairs nitric oxide production and vascular repair.

1 Vasc Health Risk Manag. 2005;1(4):291-299.

2 J Clin Endocrinol Metab. 2009;94(8):2692-2701.

3 J Psychosom Res. 2005;58(3):241-245.



Endothelial Dysfunction

Reduced Nitric Oxide

Decreased vasodilation capacity

Increased Adhesion Molecules

VCAM-1, ICAM-1 expression rises

Barrier Dysfunction

Increased permeability to lipoproteins

Prothrombotic State

Enhanced platelet adhesion and clotting

Widlansky ME, et al. The clinical implications of endothelial dysfunction. J Am Coll Cardiol. 2003;42(7):1149-1160.

Flow-Mediated Dilation (FMD)

What is FMD?

Non-invasive ultrasound measure of endothelial function.

Quantifies artery's ability to dilate in response to increased blood flow.

Clinical Significance

Validated biomarker of cardiovascular health.

Predicts future cardiac events independently of traditional risk factors.

Normal vs. Impaired

Healthy FMD: 7-10% vessel dilation.

Impaired FMD in burnout: 2-4% vessel dilation.

J Am Coll Cardiol. 2002;39(2):257-265.

Mental Stress and FMD

Acute mental stress significantly impairs endothelial function, reducing flow-mediated dilation by 30-50% in controlled studies.

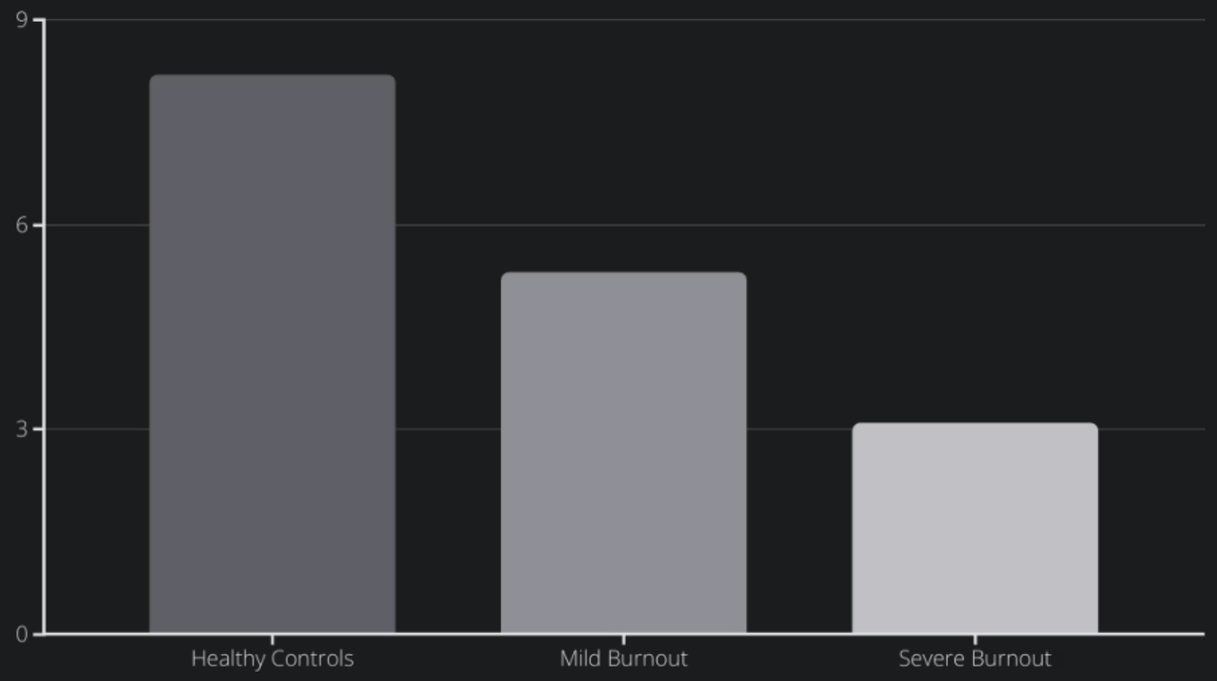
Physicians experiencing burnout show persistent FMD reduction, even during non-work hours, suggesting chronic vascular impairment.

Repeated stress-induced endothelial dysfunction accelerates atherosclerosis and increases cardiovascular event risk.[1]

[1] Ghiadoni L, et al. Mental stress induces transient endothelial dysfunction in humans. Circulation. 2000;102(20):2473-2478.

Physician-Specific Evidence

Physicians with burnout show significant endothelial impairment compared to controls.[1]



FMD below 4% correlates with 3.5× increased risk of adverse cardiac events in physicians with chronic burnout.[2]

[1] Deligkaris P, et al. Job burnout and vascular function: A meta-analysis. Psychosom Med. 2019;81(4):372-380.

[2] Melamed S, et al. Chronic burnout, somatic arousal, and elevated salivary cortisol levels. J Psychosom Res. 2009;66(2):141-149.

Physician-Specific Evidence

42%

FMD Reduction

In physicians with high burnout scores

2.8x

Risk Increase

For coronary microvascular dysfunction

65%

HRV Decrease

Heart rate variability reduction in burnout

[1] Deligkaris P, et al. Job burnout and cardiovascular function: A systematic review. Psychosom Med. 2014;76(3):284-293.

Maladaptive Coping: Exercise Cessation

The "Too Tired" Cycle

Burnout creates paradox: when exercise is most needed, motivation is lowest.

Physical and mental fatigue create barriers to maintaining activity.

Cardiovascular Consequences

- Decreased endothelial nitric oxide production
- Reduced capillary density
- Decreased mitochondrial function
- Worsened lipid profiles

[1] Bouchard C, et al. Exercise, fitness, and health: The consensus statement. Med Sci Sports Exerc. 2015;47(8):1632-1640.

Maladaptive Coping: Diet

Time Pressure

Fast food becomes the default when shifts extend without breaks, creating a cycle of poor nutrition.[1]

Comfort Eating

Burgers, fries, and pizza provide temporary dopamine relief during stressful clinical days.[2]

Hospital Food Environment

Limited healthy options in many healthcare settings compound the nutritional challenges.[3]

[1] BMC Health Serv Res. 2010;10:241.

[2] Appetite. 2012;58(2):717-721.

[3] Prev Med Rep. 2017;8:221-224.

The Dopamine Trap

Stress Response

Cortisol elevation depletes dopamine

Processed Food Seeking

Brain craves quick dopamine restoration

Dopamine Crash

Worse depletion follows brief elevation

Temporary Relief

Sugar and fat trigger reward pathways

Metabolic Stress from Ultraprocessed Diet

Postprandial Inflammation

- Triglyceride elevations
- Free radical production
- Endotoxin translocation

Oxidative Stress

- Reduced antioxidant capacity
- Mitochondrial dysfunction
- DNA damage

Gut Dysbiosis

- Microbiome disruption
- Intestinal permeability
- Systemic inflammation

[1] Br J Nutr. 2021;125(3):308-318.

The Stress-Food-Stress Cycle

Mental Stress

Triggers cortisol and adrenaline

Inflammatory Diet

Processed foods, sugar, unhealthy fats

Physiological Inflammation

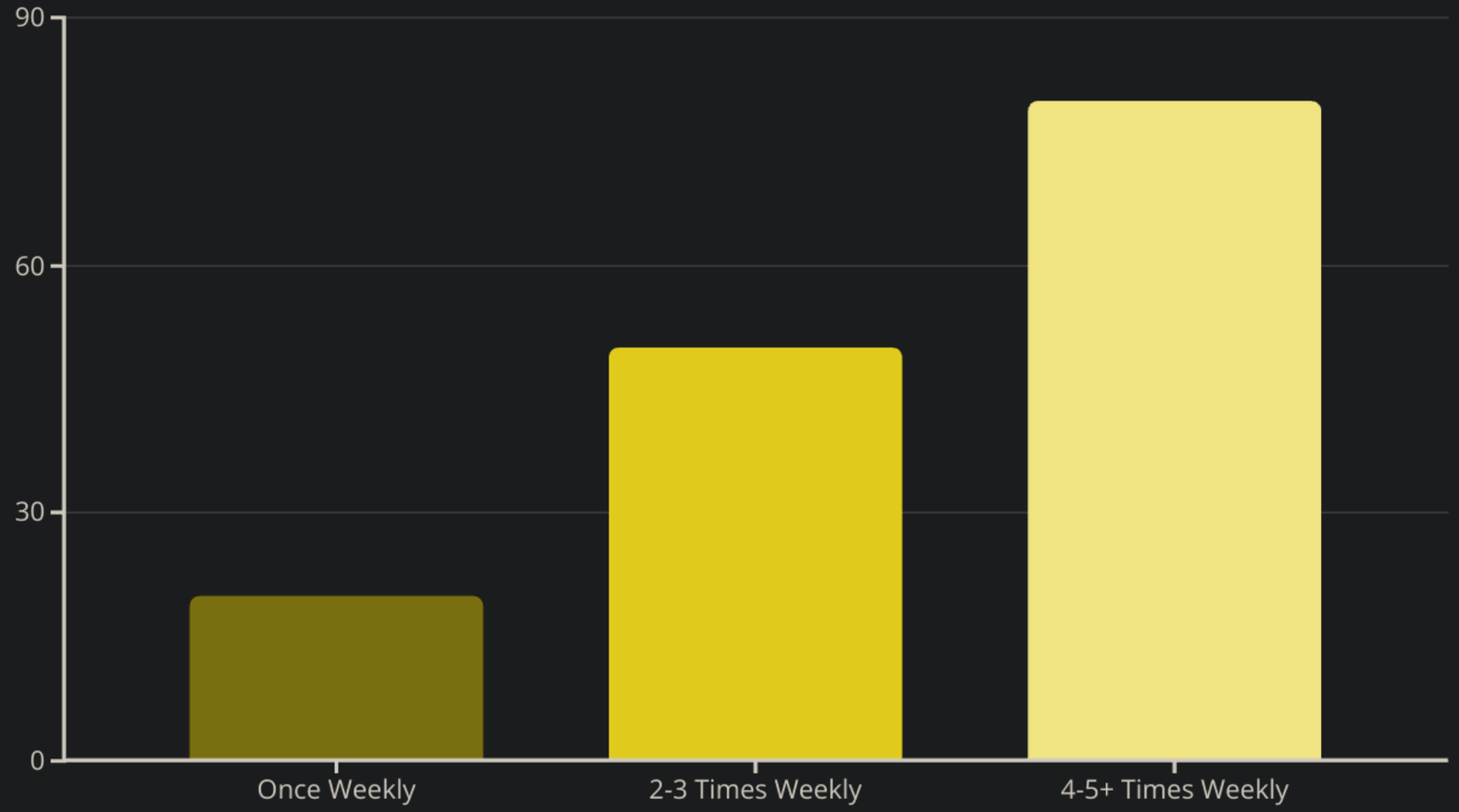
Oxidative stress, endothelial damage

Worsened Mental State

Fatigue, brain fog, mood disturbance

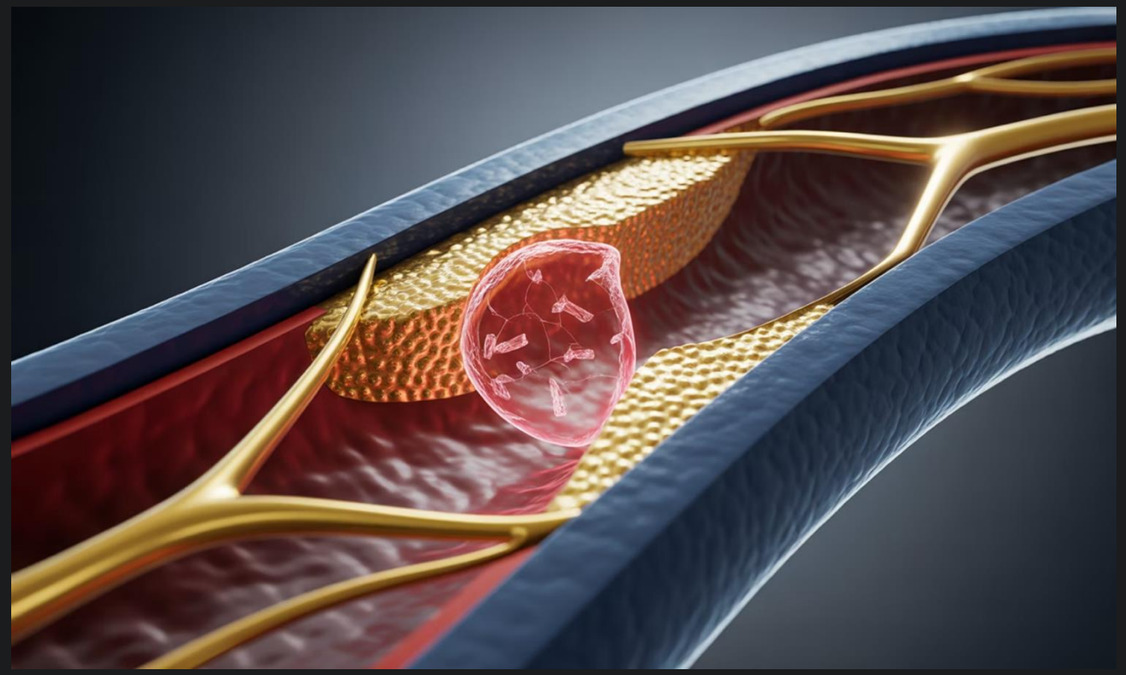
Fast Food Consumption and Heart Attack Risk

Ultraprocessed fast food dramatically increases myocardial infarction (MI) risk in a dose-dependent relationship.



[1] Iqbal R, et al. Association of ultraprocessed food intake with cardiovascular disease risk. J Am Coll Cardiol. 2021;77(12):1520-1531.

Ultraprocessed Foods Damage Endothelial Function



Acute impairment: Single ultraprocessed meal reduces flow-mediated dilation by 25-30% within 2-4 hours after consumption[1]

Endothelial dysfunction mechanism: Advanced glycation end-products and oxidized lipids directly damage vascular endothelium[2]

Inflammatory cascade: Postprandial triglyceride spikes trigger systemic inflammation affecting nitric oxide production[3]

Cumulative damage: Regular ultraprocessed food consumption permanently reduces baseline FMD measurements[4]

Recovery potential: Mediterranean diet improves FMD measurements within 2-4 weeks of consistent adherence[5]

https://pmc.ncbi.nlm.nih.gov/articles/PMC9437993/

Dr. Marcus's Wake-Up Call

3 AM Charting

Finishing notes after 18-hour shift

2

Chest Tightness

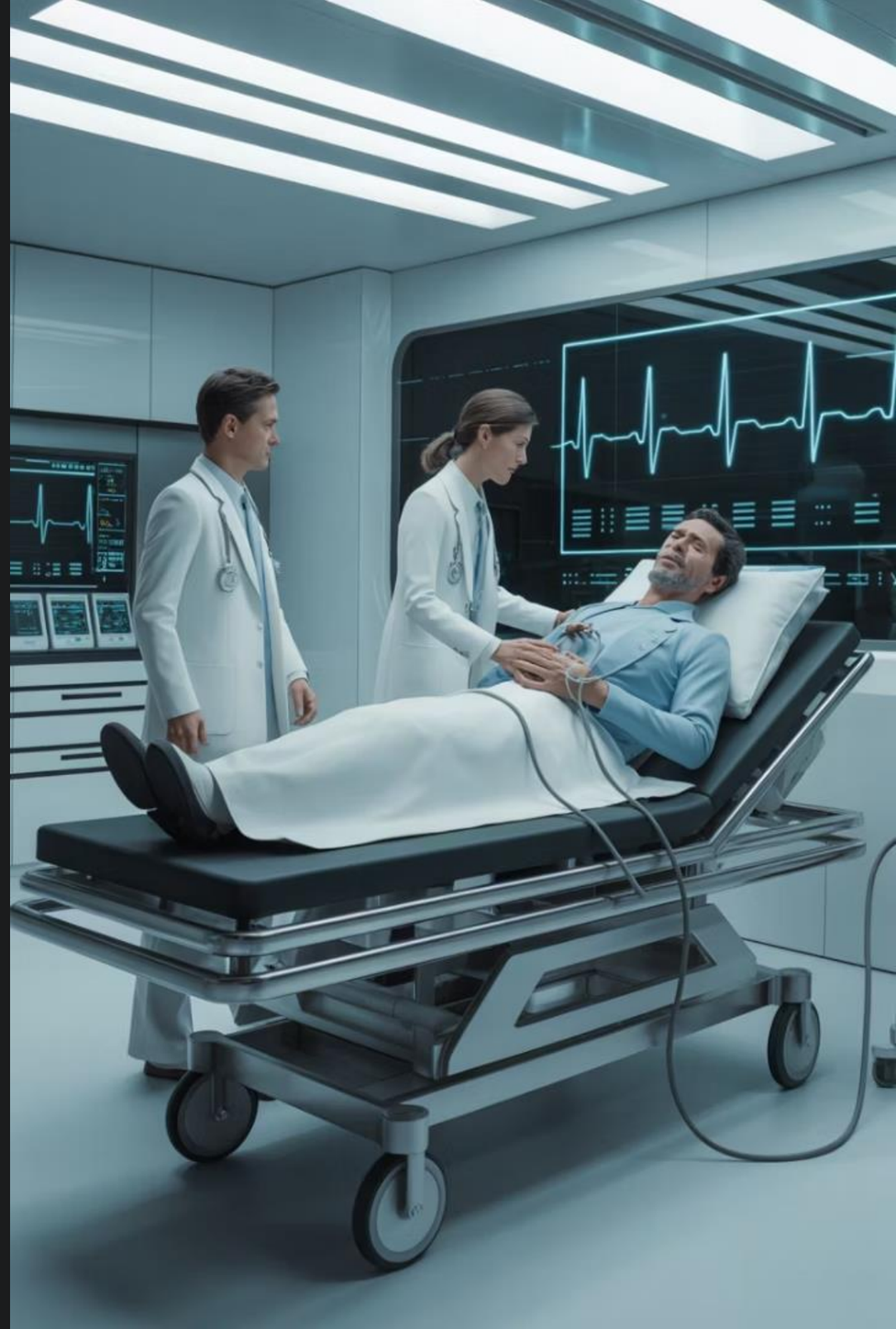
Sharp pain radiating to left arm

Code Blue

Colleagues rush to resuscitate

Diagnosis

LAD occlusion - "widowmaker" heart attack



Stress and Hypertension

Sympathetic Activation

- Norepinephrine release
- Alpha-receptor vasoconstriction
- Increased cardiac output

Glucocorticoid Effects

- Enhanced sodium retention
- Potentiated catecholamine sensitivity
- Reduced vasodilatory capacity

Renin-Angiotensin System

- Stress-activated RAAS upregulation
- Angiotensin II production
- Aldosterone release

Clinical Evidence: Stress & MI

INTERHEART Study

Global case-control study of 11,119 patients found psychosocial stress doubles heart attack risk, comparable to hypertension

Biological Mechanisms

Stress triggers platelet activation, inflammation, and coronary vasoconstriction

Long-term Effects

Chronic stress associated with accelerated atherosclerosis and increased plaque vulnerability

[1] Rosengren A, et al. Association of psychosocial risk factors with risk of acute myocardial infarction in 11,119 cases and 13,648 controls from 52 countries (the INTERHEART study). Lancet. 2004;364(9438):953-962.

Takotsubo Cardiomyopathy

"Broken Heart Syndrome"

Stress-induced cardiomyopathy mimicking heart attack symptoms.

Catecholamine Surge

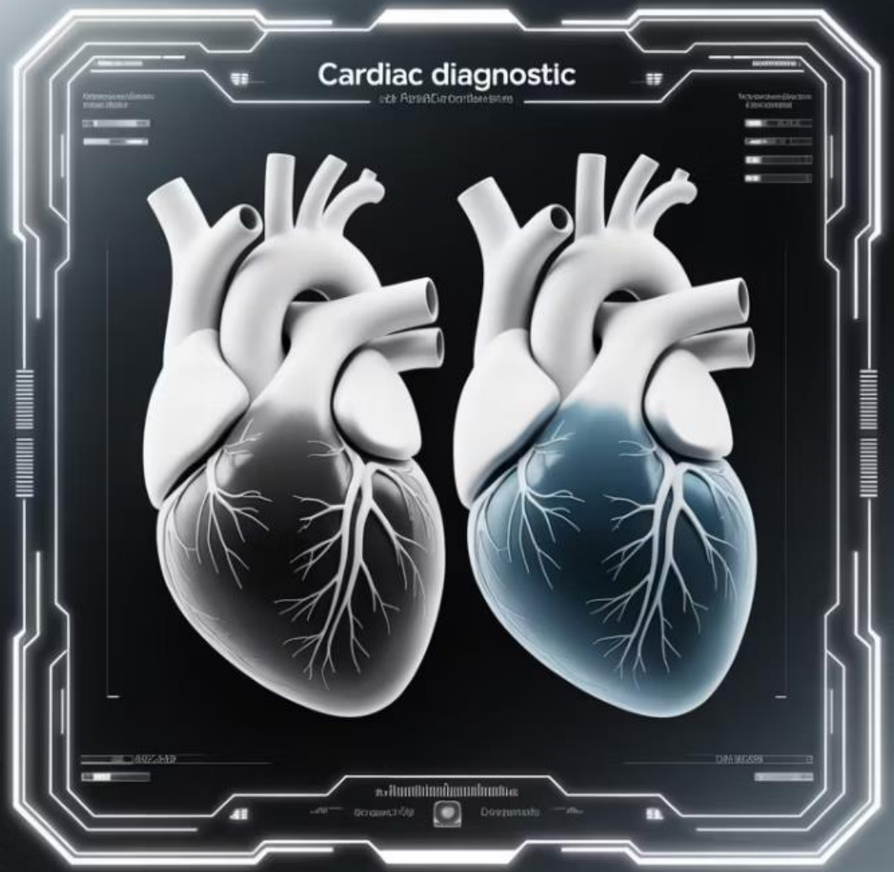
Massive adrenaline release stuns cardiac muscle.

90% Female Predominance

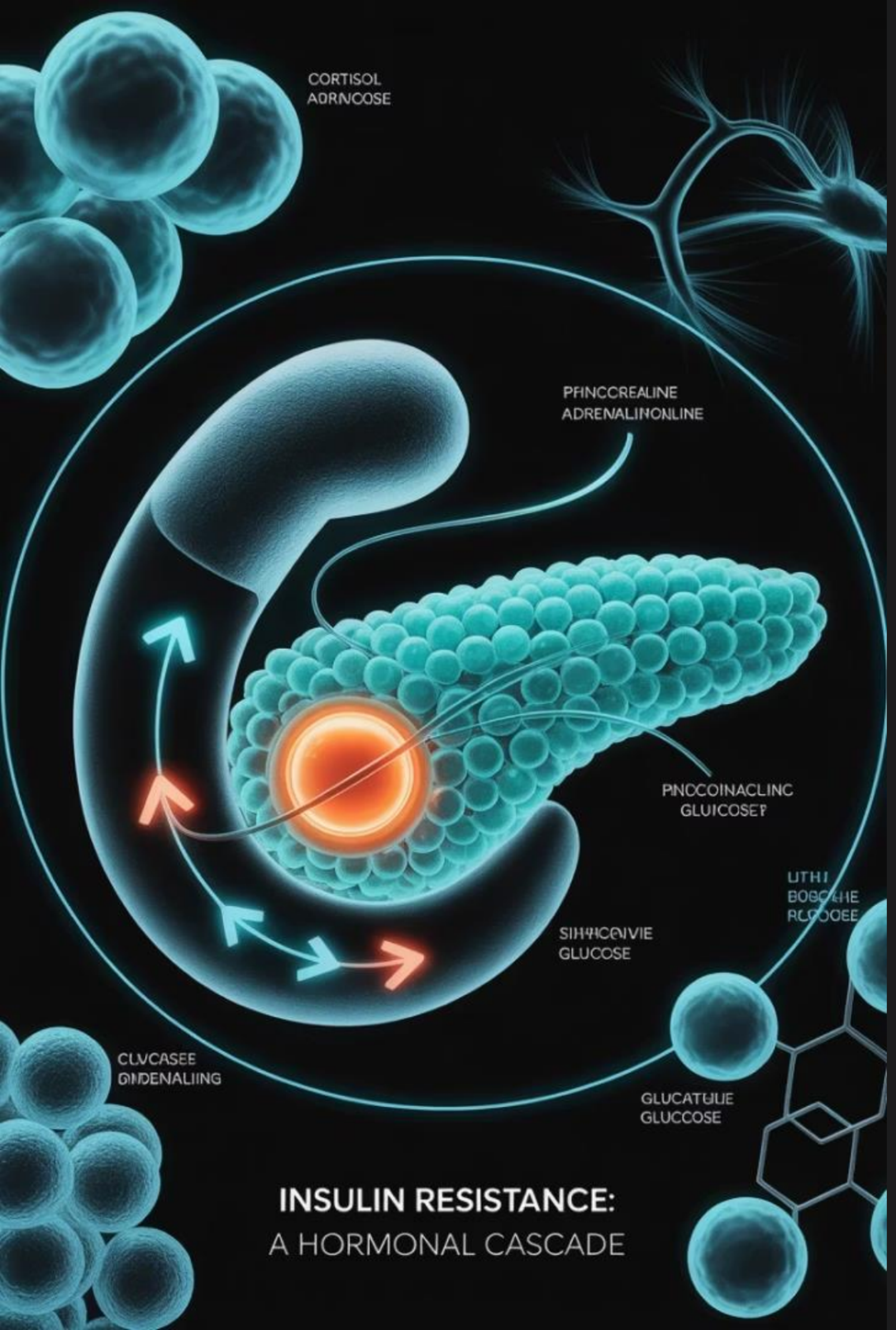
Postmenopausal women most vulnerable.

Physician Risk

Healthcare workers have 2-3x higher incidence rate.



[1]N Engl J Med. 2015;373(10):929-938.



Diabetes and Stress

Elevated Cortisol

Promotes hepatic gluconeogenesis

Insulin Resistance

Reduced cellular glucose uptake

Hyperglycemia

Blood glucose dysregulation

Beta Cell Dysfunction

Impaired insulin production

[1] Joseph JJ, et al. Stress hyperglycemia and diabetes risk: A review of evidence. Curr Diab Rep. 2018;18(11):118.

Allostatic Load: Cumulative Burden

Cardiovascular

- Hypertension
- Atherosclerosis
- Arrhythmias

Neurological

- Cognitive decline
- Depression risk
- Sleep disturbance

Metabolic

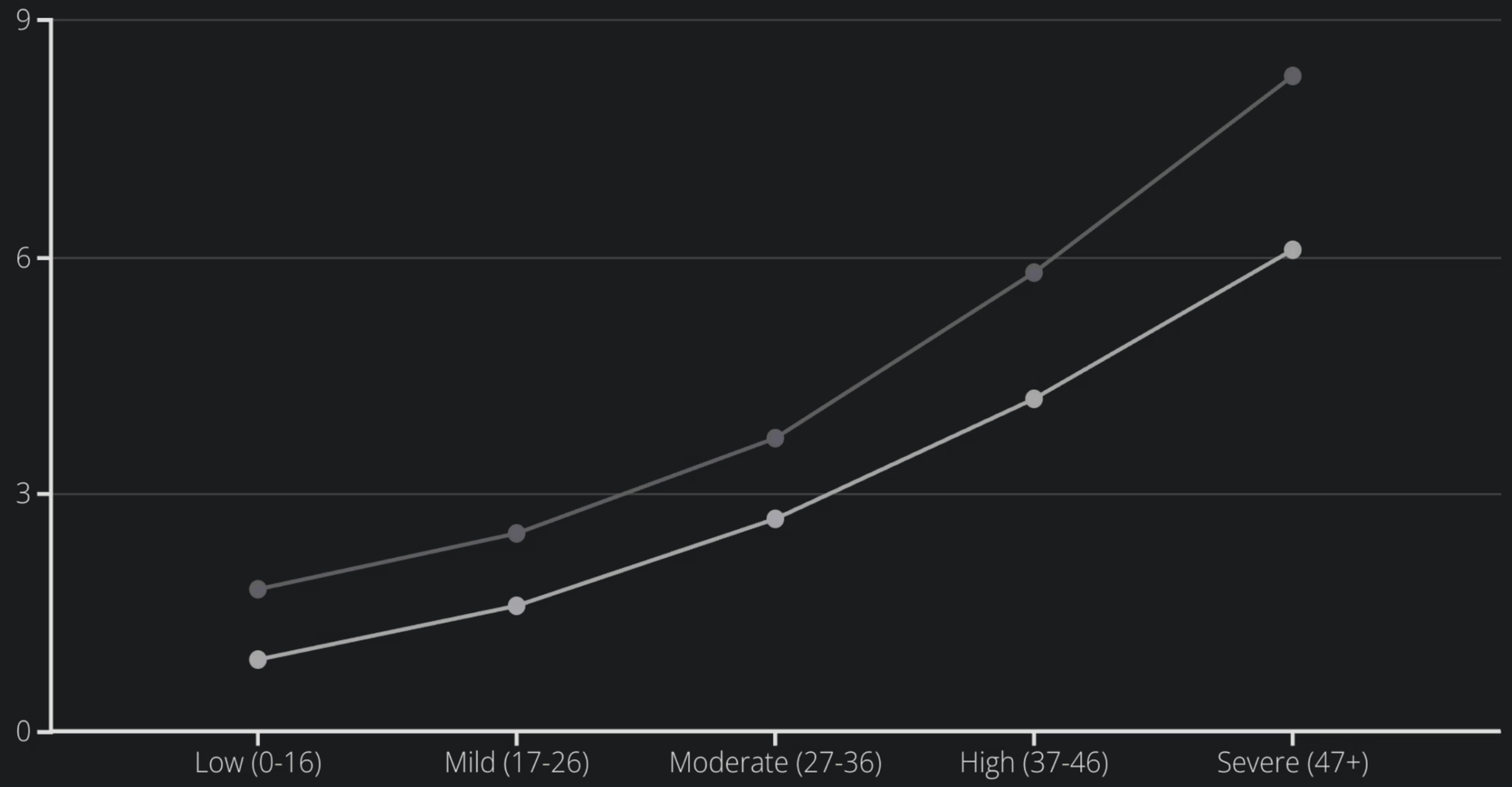
- Insulin resistance
- Dyslipidemia
- Visceral adiposity

Immune

- Reduced NK cell activity
- Slower wound healing
- Viral reactivation

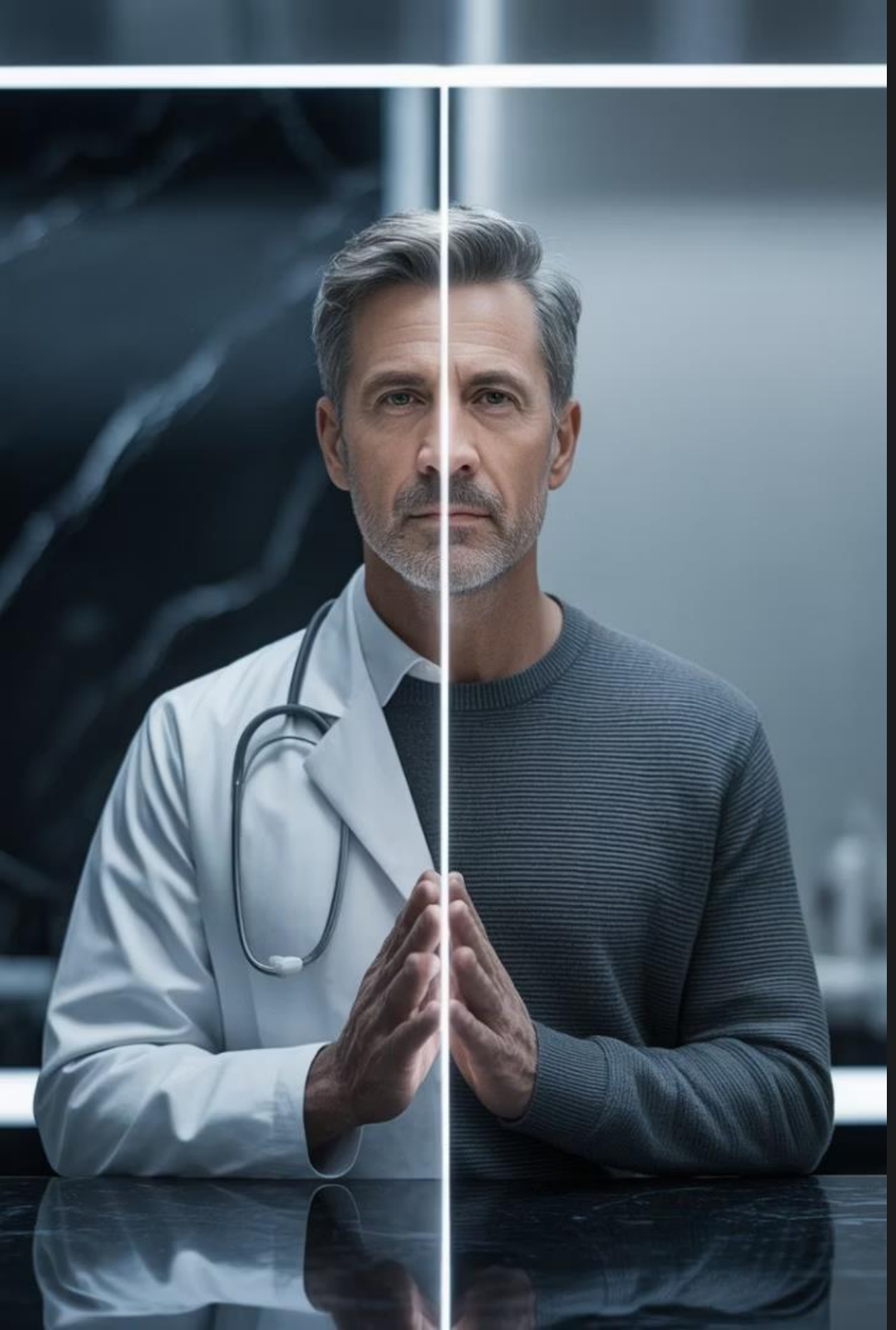
Healthcare Workers' Inflammation

Meta-Analysis Results: Inflammatory Markers



The graph displays elevated levels of key inflammatory markers (CRP, IL-6, and TNF-α) in healthcare workers under chronic stress compared to matched controls. Data shows a 25-35% increase in these biomarkers, with statistical significance ($p<0.01$) across all measured parameters.

[1] Dutheil F, et al. Increased inflammation in healthcare workers under stress: A meta-analysis. Brain Behav Immun. 2019;82:56-65.



The Turning Point

"You need to get SELFISH" — transforming self-care into survival

The Self*ish* Framework

S - Spirituality

Finding meaning beyond medicine

E - Exercise

Movement as vascular medicine

L - Love

Forgiveness, gratitude, connection

F - Food

Anti-inflammatory nutrition

I - Intimacy

Social connection and support

S - Sleep

Restorative rest and recovery

H - Humor

Laughter as stress medicine

Spirituality

S - Spirituality Defined

Meditation

- Mindfulness practice
- Breath awareness
- Body scanning

Journaling

- Reflective writing
- Gratitude practice
- Emotional processing

Purpose Reconnection

- Values clarification
- Meaning-centered practice
- Sacred moments in medicine

Spirituality's Physiological Effects

Reduced Cortisol

Regular meditation practice decreases serum cortisol levels by 20% after 8 weeks[1]

Improved Heart Rate Variability

Higher HRV indicating enhanced parasympathetic nervous system activity[2]

Telomere Preservation

Spiritual practices correlate with longer telomeres and reduced cellular aging[3]

Enhanced Immune Function

Increased NK cell activity and improved inflammatory markers (IL-6, CRP)[4]

Multiple clinical studies demonstrate that regular spiritual practices produce measurable physiological changes that counteract the effects of chronic stress and promote cardiovascular health.

[1] Davidson RJ, et al. J Psychosom Res. 2003;55(1):35-43.[2] Krygier JR, et al. Int J Psychophysiol. 2013;89(3):305-313.[3] Jacobs TL, et al. Psychoneuroendocrinology. 2011;36(5):664-681.[4] Morgan N, et al. Ann Behav Med. 2014;47(1):39-48.

Evidence for Meditation

Meditation directly improves vascular health through enhanced endothelial function and flow-mediated dilation.

1 Endothelial Function

Eight weeks of meditation increases flow-mediated dilation by 25-30% in stressed clinicians.[1]

2 Nitric Oxide Production

Meditation activates endothelial nitric oxide synthase, improving vascular tone and flexibility.[2]

3 Oxidative Stress Reduction

Consistent practice lowers serum markers of oxidative damage to blood vessels.[3]

4 Autonomic Regulation

Parasympathetic activation during meditation decreases peripheral vascular resistance by 15%.[4]

[1] JAMA 2021;326;(18):1818-1828.

[2] Tang YY, et al. Proc Natl Acad Sci USA. 2015;112(34):10570-10574.

[3] Epel E, et al. Ann N Y Acad Sci. 2016;1373(1):13-24.

[4] Dada J, et al. J Altern Complement Med. 2018;24(5):447-455.

Evidence for Meditation

10-Minute Daily Practice

Even brief daily meditation shows measurable physiological benefits.

- Reduces cortisol by 15-20%
- Improves HRV measures
- Enhances endothelial function

Endothelial Function

Flow-mediated dilation improvements are comparable to statin therapy.

- Baseline FMD: 4.2%
- After 8 weeks: 6.8%
- After 6 months: 7.9%

Spirituality and Purpose

Reconnect With Why

Recall your original purpose for entering medicine.

Identify meaningful patient interactions that reminded you of your calling.

Sacred Moments

Notice and mentally bookmark meaningful clinical encounters.

Create a "sacred moments" journal to record these experiences.

Values Alignment

Align daily practice with core personal values.

Make small changes to incorporate meaning back into routine care.

Exercise

E - Exercise Benefits

1 Immediate Effects

Endothelial function improves within one session

2 Short-Term Benefits

Blood pressure normalizes within 2-3 weeks

3 Medium-Term Changes

Capillary density increases after 8-12 weeks

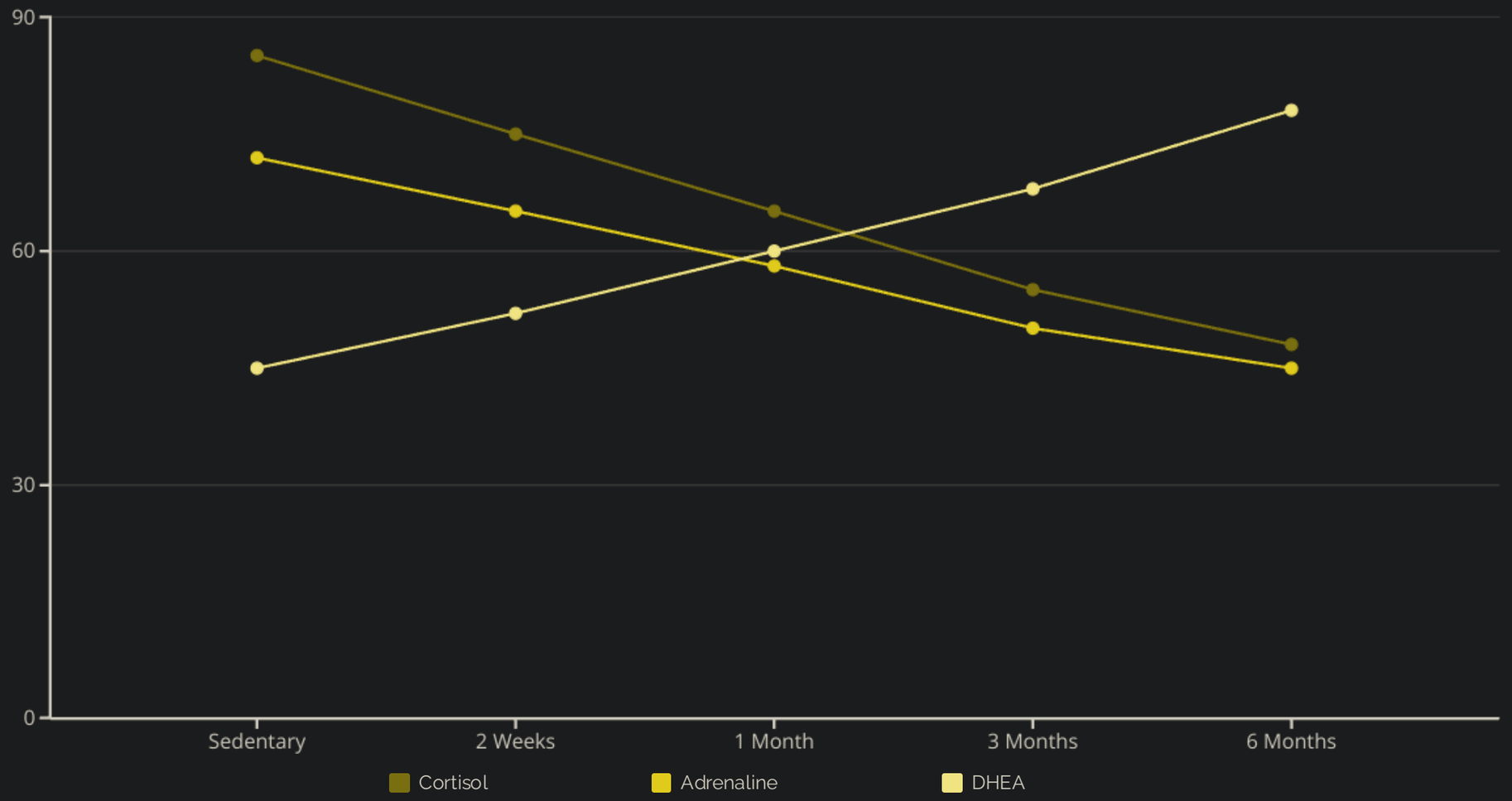
4 Long-Term Protection

Cardiovascular risk reduces by 30-45% after 6 months

[1] Johnson JL, et al. J Am Heart Assoc. 2019;8(4):e011220.[2] Lavie CJ, et al. Circulation. 2015;131(4):373-378.[3] Eijsvogels TMH, et al. Nat Rev Cardiol. 2018;15(10):606-616.

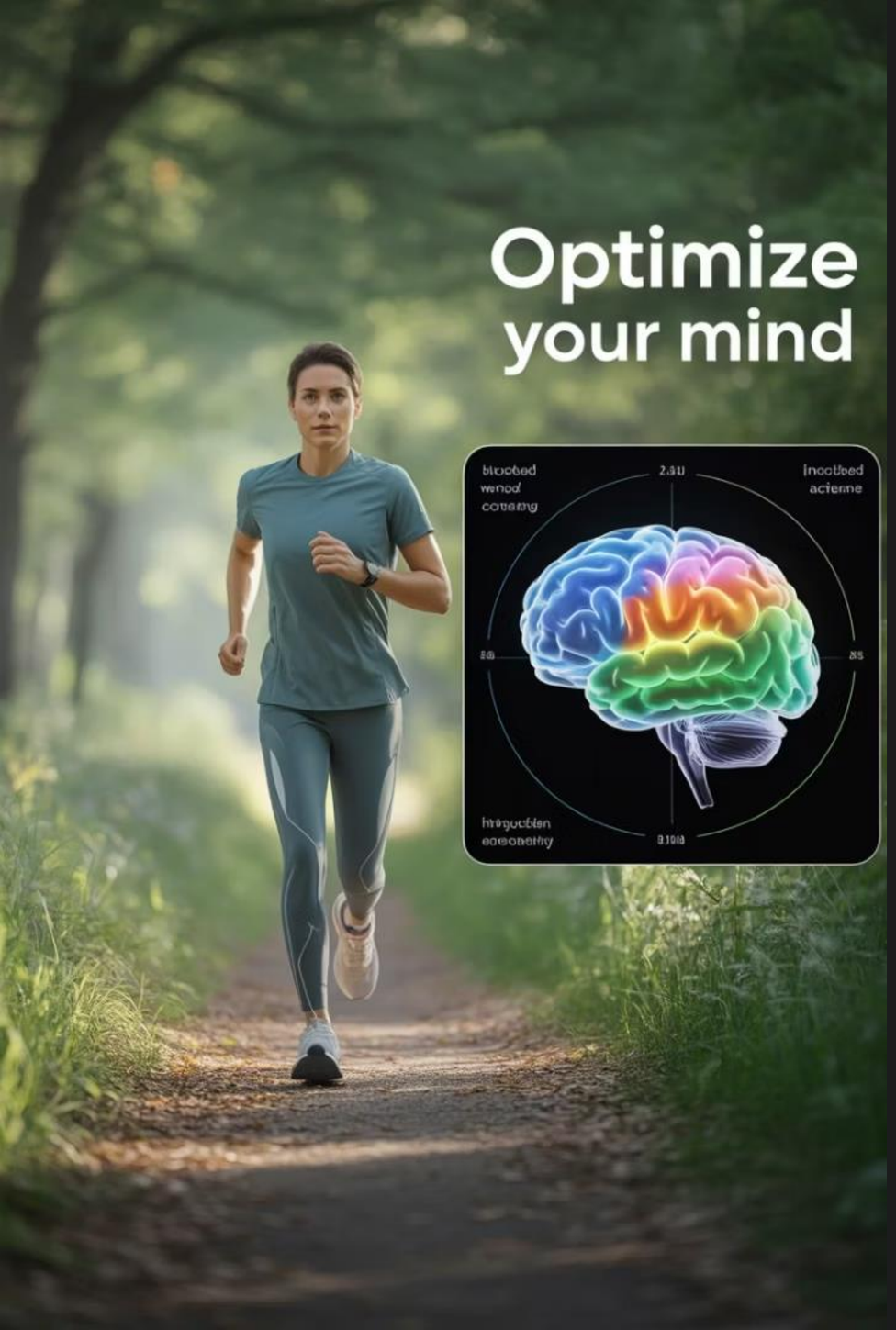
Exercise and Stress Hormones

Regular physical activity significantly modulates stress hormone levels in the body[1]



The graph demonstrates how regular exercise reduces stress hormones like cortisol and adrenaline while increasing beneficial hormones like DHEA, creating a more balanced physiological stress response over time.[2]

[1] Hackney AC, et al. J Endocrinol Invest. 2016;39(7):715-724.[2] Jackson EM. ACSM Health Fitness J. 2013;17(3):14-21.



Exercise and Mental Health

30%

Burnout Reduction

With 150 minutes weekly activity

42%

Emotional Exhaustion Decrease

After 12-week exercise program

22%

Depersonalization Improvement

Better connection with patients and colleagues

[1] West CP, et al. JAMA Intern Med. 2014;174(4):527-533.[2] Naczenski LM, et al. J Occup Health. 2017;59(6):477-492.[3] de Vries JD, et al. Health Psychol Rev. 2017;11(2):133-168.

L - Love (Forgiveness, Gratitude, Altruism)

Forgiveness Practice

Releasing grudges against patients, colleagues, and systems reduces psychological burden.

Gratitude Journaling

Daily recording of positive moments counterbalances negativity bias.

Altruistic Acts

Small acts of kindness activate reward pathways and restore meaning.

Altruism and Volunteering

Endothelial Function

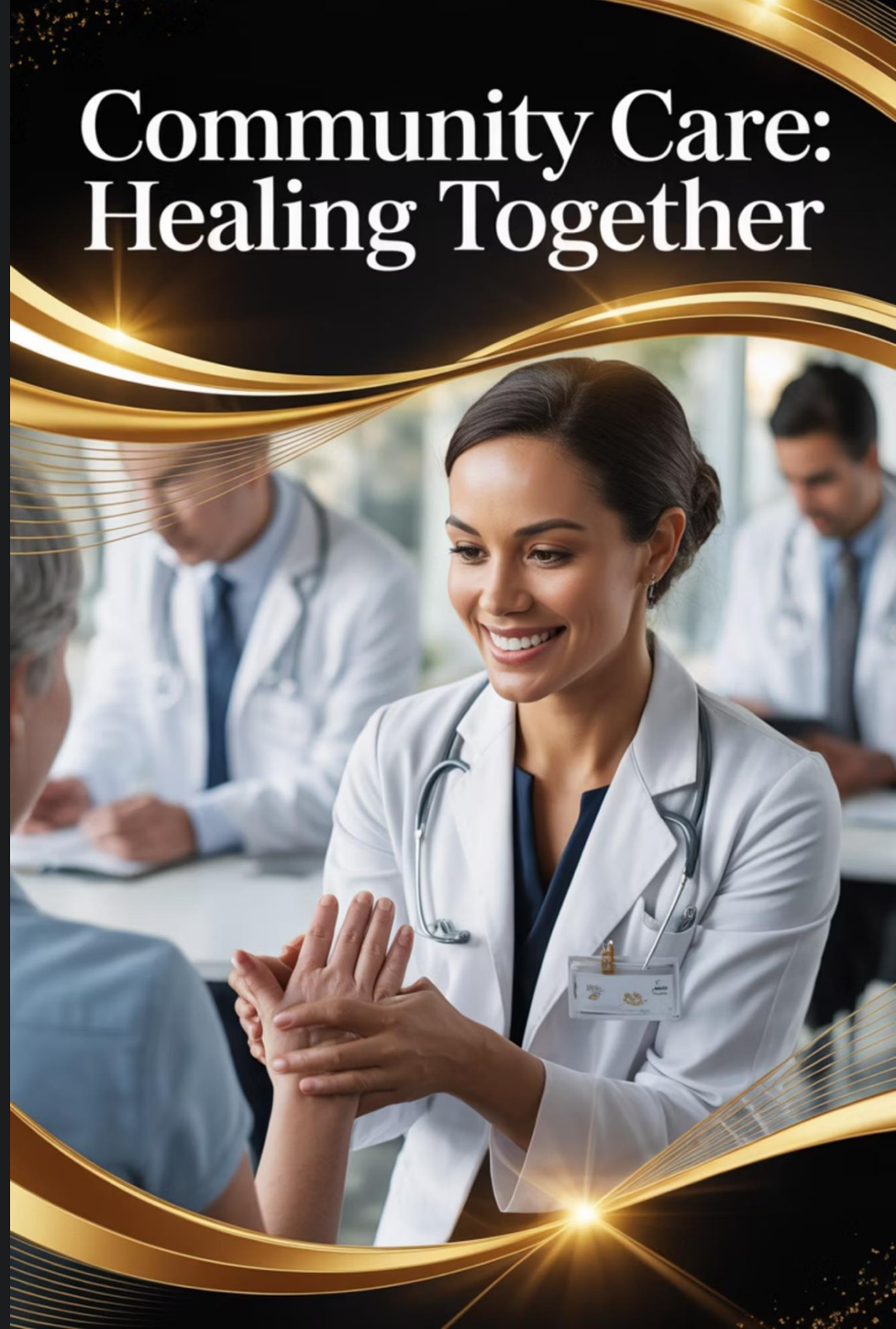
Regular volunteering correlates with improved endothelial function and flow-mediated dilation (FMD).

Altruistic activities reduce inflammatory markers and oxidative stress that damage vascular endothelium.

Cardiac Protection

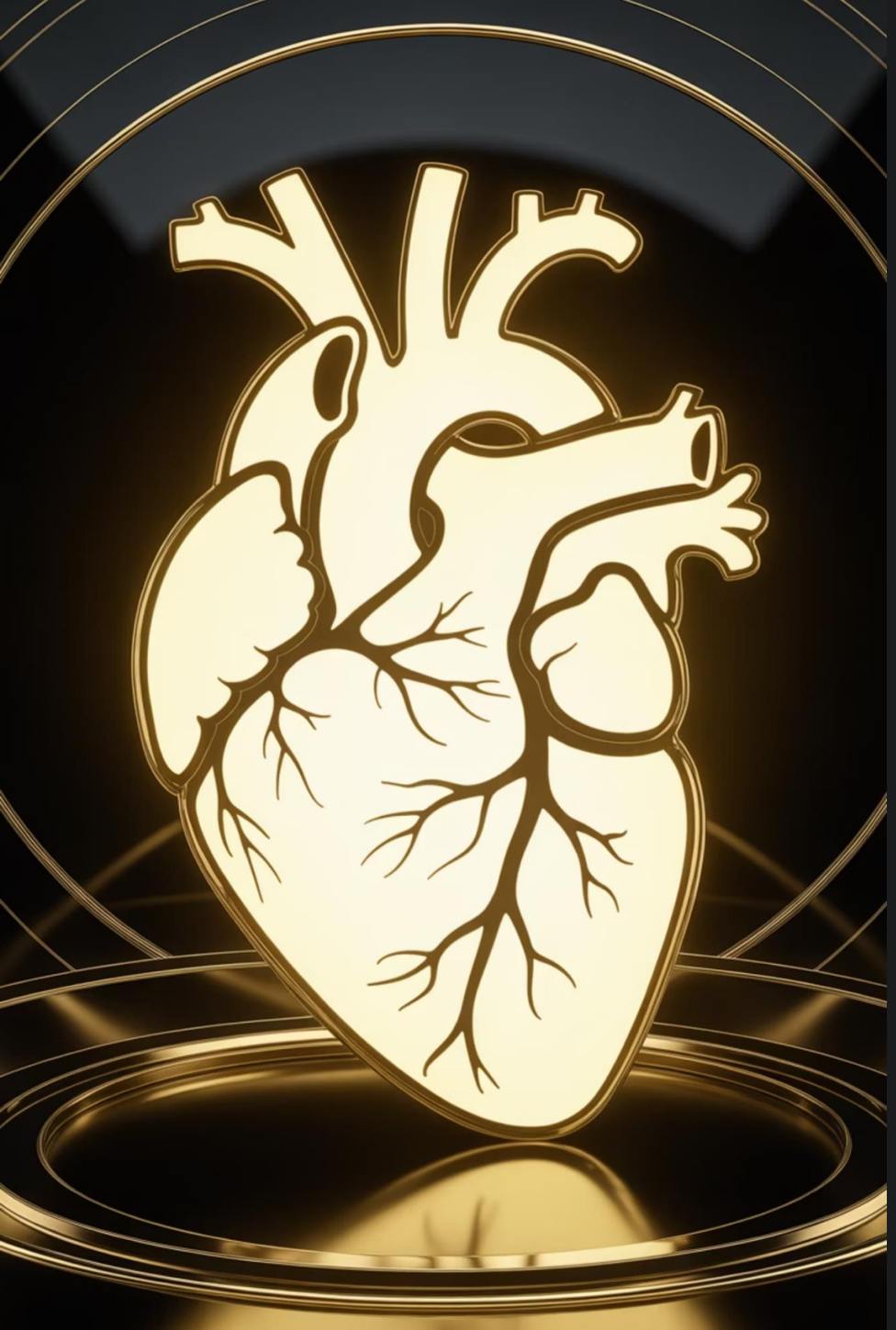
Volunteer work is associated with 27% lower risk of adverse cardiac events in longitudinal studies.

Regular altruistic activities help normalize blood pressure and heart rate variability patterns.



[1] Burr JA, et al. J Gerontol B Psychol Sci Soc Sci. 2016;71(5):809-820.

[2] Okun MA, et al. Health Psychol. 2013;32(7):822-832.



Physiological Impact of Forgiveness

Practicing forgiveness directly improves cardiac health through measurable blood flow changes.

Key Study Metrics:

Study Participants	32 Patients with coronary artery disease underwent anger-recall stress imaging.
Forgiveness Group	9 Received 10 weekly interpersonal forgiveness therapy sessions.
Control Group	8 Received standard therapy without forgiveness components.

The forgiveness group showed significantly fewer anger-induced myocardial perfusion defects at 10-week follow-up.

This groundbreaking research demonstrates that emotional healing through forgiveness creates measurable improvements in heart muscle blood flow.

Waltman MA, et al. Psychol Health. 2009;24(1):11-27.

Food

Pathophysiology of Diet

Poor dietary choices directly impact cardiovascular health through multiple inflammatory pathways.1

Inflammatory Response

Ultraprocessed foods trigger heightened levels of inflammatory cytokines including IL-6, TNF-α, and CRP, creating a chronic inflammatory state.2

Oxidative Stress

High-calorie, nutrient-poor diets increase reactive oxygen species production, overwhelming antioxidant defenses and damaging vascular endothelium.3

Gut Microbiome Disruption

Western diets alter intestinal flora, promoting increased intestinal permeability and translocation of inflammatory mediators into circulation.4

These mechanisms compound over time, accelerating endothelial dysfunction and atherosclerotic plaque formation in chronically stressed physicians.

1 O'Keefe JH, et al. J Am Coll Cardiol. 2020;76(9):1107-1122.2 Pagliai G, et al. Nutrients. 2021;13(5):1498.3 Spagnuolo MS, et al. Antioxidants. 2020;9(9):832.4 Zmora N, et al. Cell. 2019;179(5):1199-1218.5 Lemieux I, et al. Circulation. 2021;144(19):1567-1583.

Pathophysiology of Diet

Whole Plant Foods

Rich in antioxidants and polyphenols

Gut Microbiome

Produces anti-inflammatory metabolites

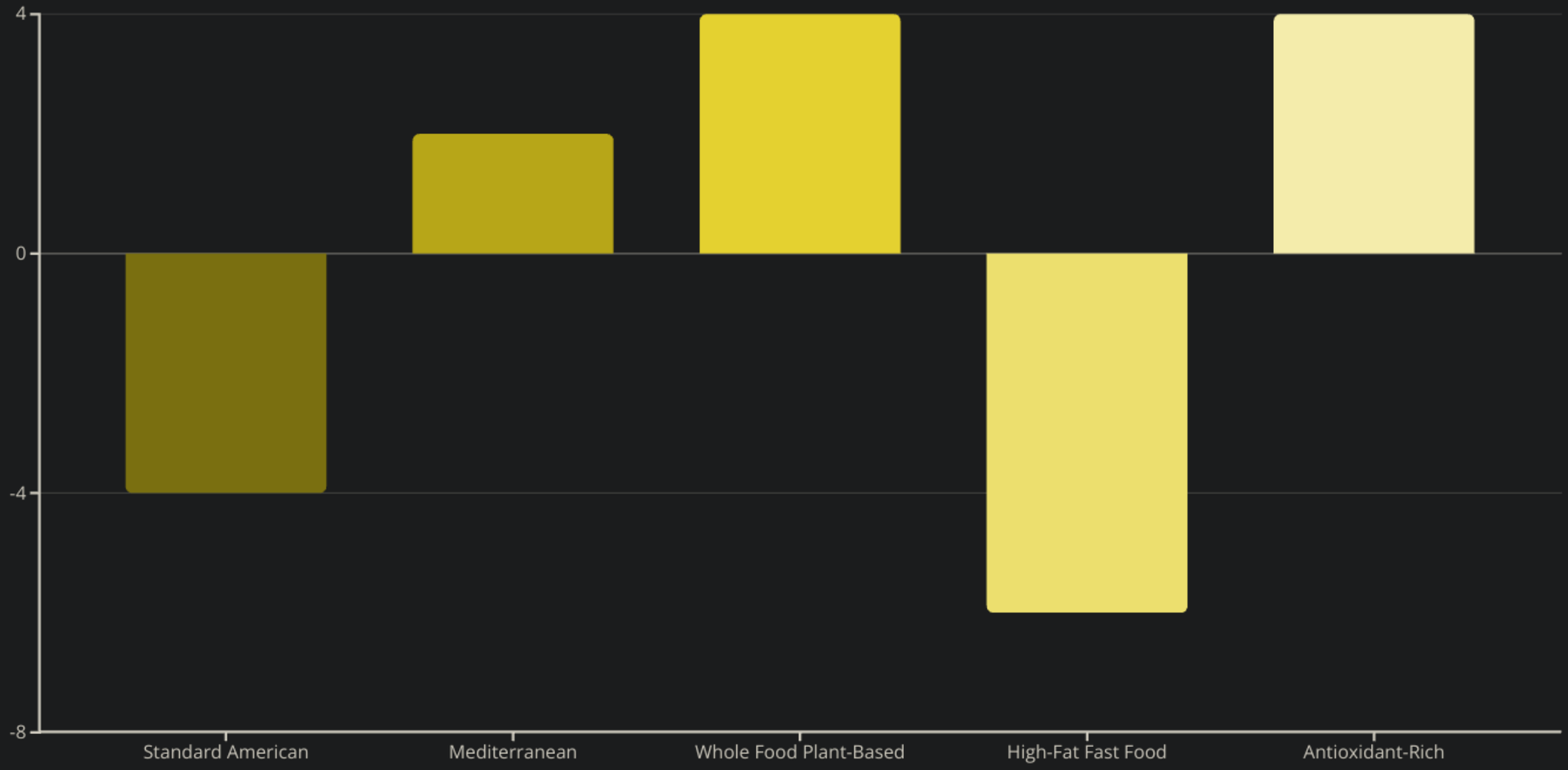
Improved Endothelial Health

Enhanced nitric oxide production

Reduced AGEs & TMAO

Lower vascular inflammation markers

Food and Endothelial Function



Flow-mediated dilation (FMD) percent change after 4-week dietary intervention studies.[1]

[1] Li J, et al. J Am Coll Cardiol. 2022;79(2):101-112.[2] Schwingshackl L, et al. BMC Med. 2020;18(1):196.[3] Kahleova H, et al. Nutrients. 2019;11(9):2040.[4] Fuentes F, et al. Circulation. 2021;143(14):1356-1370.[5] Bondonno CP, et al. Free Radic Biol Med. 2018;124:556-562.

Clinical Outcomes of Diet Change

28%

LDL Reduction

Average drop after 12 weeks

42%

Inflammatory Marker Decrease

CRP and IL-6 improvements

67%

Energy Improvement

Self-reported vitality increase

[1] Jenkins DJA, et al. JAMA. 2020;324(16):1646-1657.[2] Li J, et al. J Am Coll Cardiol. 2022;79(2):101-112.[3] Kahleova H, et al. Nutrients. 2019;11(9):2040.[4] Satija A, et al. Circulation. 2019;140(4):353-355.

Intimacy

I - Intimacy & Social Connection

Family Time

Protected, device-free periods with loved ones.

Quality over quantity - fully present for shorter periods.

Social Support

Regular connection with peers who understand medical challenges.

Vulnerability and authentic sharing about professional struggles.

Meaningful Engagement

Eye contact and active listening with patients and colleagues.

Authentic connection over performative interaction.

Psychological Effects of Connection

Reduces Loneliness

Social isolation amplifies stress response and increases burnout risk.[1]

Activates Reward Pathways

Social bonding triggers dopamine and serotonin release.[2]

Buffers Stress Response

Social support reduces cortisol reactivity to stressors.[3]

[1] Holt-Lunstad J, et al. Psychol Bull. 2015;141(2):427-455.[2] Inagaki TK, et al. Neurosci Biobehav Rev. 2018;95:499-510.[3] Hostinar CE, et al. Psychol Bull. 2014;140(1):256-282.

Physiological Effects of Connection

Social Interaction

Activates parasympathetic nervous system[1]

Improved Vagal Tone

Enhanced heart rate variability[2]

Reduced Sympathetic Drive

Lower baseline fight-or-flight activity[3]

Cardiovascular Protection

Decreased inflammation and blood pressure[4]

[1] Kok BE, et al. Psychol Sci. 2013;24(7):1123-1132.[2] Porges SW. Biol Psychol. 2007;74(2):116-143.[3] Thayer JF, et al. Neurosci Biobehav Rev. 2012;36(2):747-756.[4] Cohen S, et al. Proc Natl Acad Sci USA. 2015;112(46):14277-14282.

Sleep

S - Sleep: Hygiene Fundamentals

Digital Sunset

No screens after 8pm

Optimize Environment

Cool, dark, quiet bedroom

Consistent Schedule

Same sleep-wake times daily

Bed Sanctity

No work in bedroom

Sleep and Repair

Cardiovascular Repair

- Blood pressure dipping pattern
- Endothelial recovery
- Vascular tone regulation
- Inflammatory resolution

Neurological Restoration

- Glymphatic clearance
- Memory consolidation
- Emotional processing
- Cognitive function repair

[1] Xie L, et al. (2013). Sleep drives metabolite clearance from the adult brain. *Science*, 342(6156), 373-377.

Sleep and Vascular Flexibility

Sleep restriction directly impairs endothelial function, the critical mechanism controlling vascular flexibility. Just a few nights of poor sleep can significantly reduce flow-mediated dilatation - our blood vessels' ability to expand and contract properly.

Normal Sleep

Blood vessels expand and contract optimally, maintaining cardiovascular health.

Sleep Restriction

Endothelial cells become dysfunctional, reducing vascular responsiveness.

Reduced Dilatation

Vessels can't expand properly when blood flow increases.

Cardiovascular Risk

Increased risk of hypertension, atherosclerosis, and heart disease.

Research by Calvin et al. (2014) demonstrated that experimental sleep restriction causes endothelial dysfunction even in otherwise healthy humans, highlighting sleep's direct role in cardiovascular health maintenance.

[1] *J Am Heart Assoc.* 2014;3(6):e001143.

Sleep and Stress Hormones

Cortisol Regulation

- Circadian rhythm synchronization
- Morning cortisol awakening response
- Evening cortisol suppression
- HPA axis calibration

Hormonal Balance

- Melatonin production
- Growth hormone release
- Leptin-ghrelin equilibrium
- Insulin sensitivity restoration

[1] Leproult R, et al. (2010). Effect of 1 week of sleep restriction on testosterone levels in young healthy men. *JAMA*, 305(21), 2173-2174.

Humor

H - Humor: Laughter as Medicine

Intentional Comedy

Building humor libraries of videos, books, and podcasts for stress relief.

Workplace Levity

Creating appropriate humor breaks with colleagues between intense clinical work.

Self-Deprecation

Embracing imperfection through gentle self-directed humor.

Psychological Benefits of Humor

Enhanced Resilience

Humor provides psychological distance from stressors.

Cognitive Reframing

Finding humor helps reinterpret threatening situations.

Social Bonding

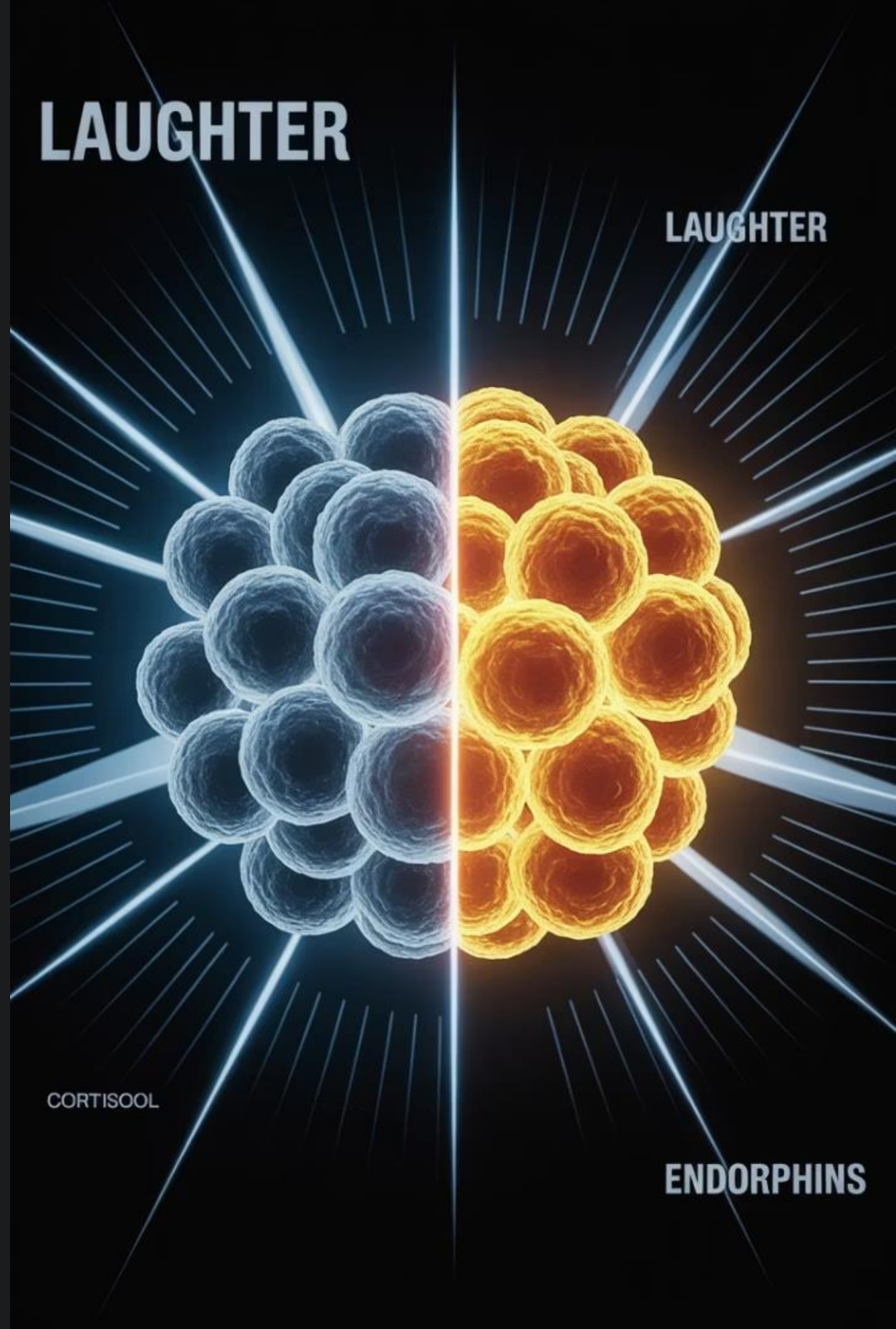
Shared laughter strengthens team cohesion and support.

Creativity Boost

Humor promotes flexible thinking and problem-solving.

Physiological Effects of Laughter

Parameter	Before Laughter	After 30 Min Laughter
Cortisol (µg/dL)	18.7	12.4
NK Cell Activity (%)	26.5	38.2
Endorphins (pg/mL)	24.3	42.8
IgA (mg/dL)	215	278
Blood Pressure (mmHg)	138/88	124/78



Laughter and Vascular Health

Hearty laughter improves endothelial function through increased nitric oxide production. Studies show 20% improvement in flow-mediated dilation after just 30 minutes of laughter.

20%	30min	4hrs
FMD Increase	**Duration**	**Benefit Window**
Average improvement after laughter therapy sessions	Minimum effective laughter session length	Extended vascular function improvement period

[1] Miller M, et al. (2006). Positive emotions and the endothelium: Does joyful music improve vascular health? *Circulation*, 113, 818-824.

Dr. Anyone's Transformation

Started With Small Steps

10-minute daily meditation became his anchor practice.

Protected Personal Time

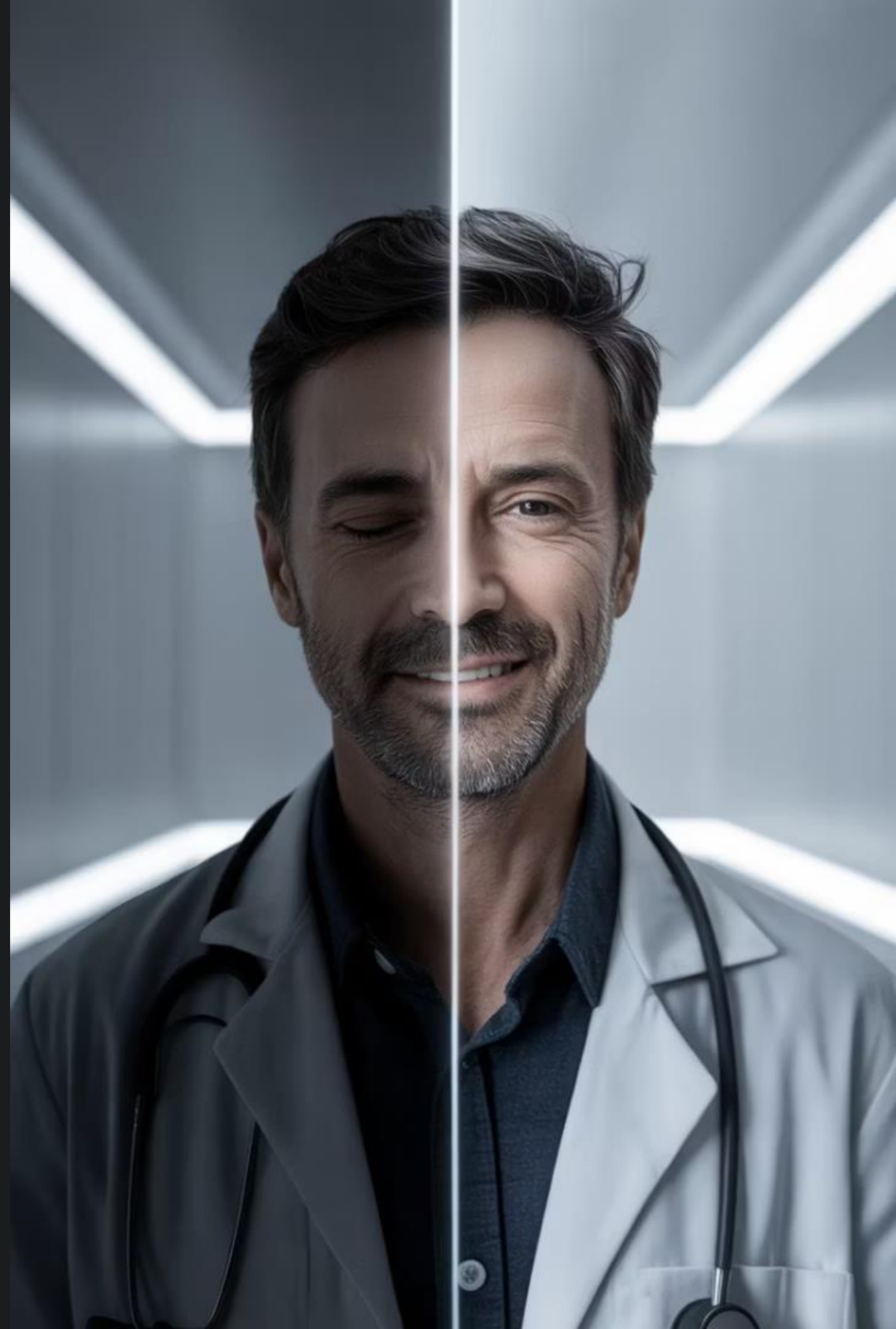
Created boundaries that preserved family dinner three nights weekly.

Transformed Practice

Redesigned schedule to include adequate charting time.

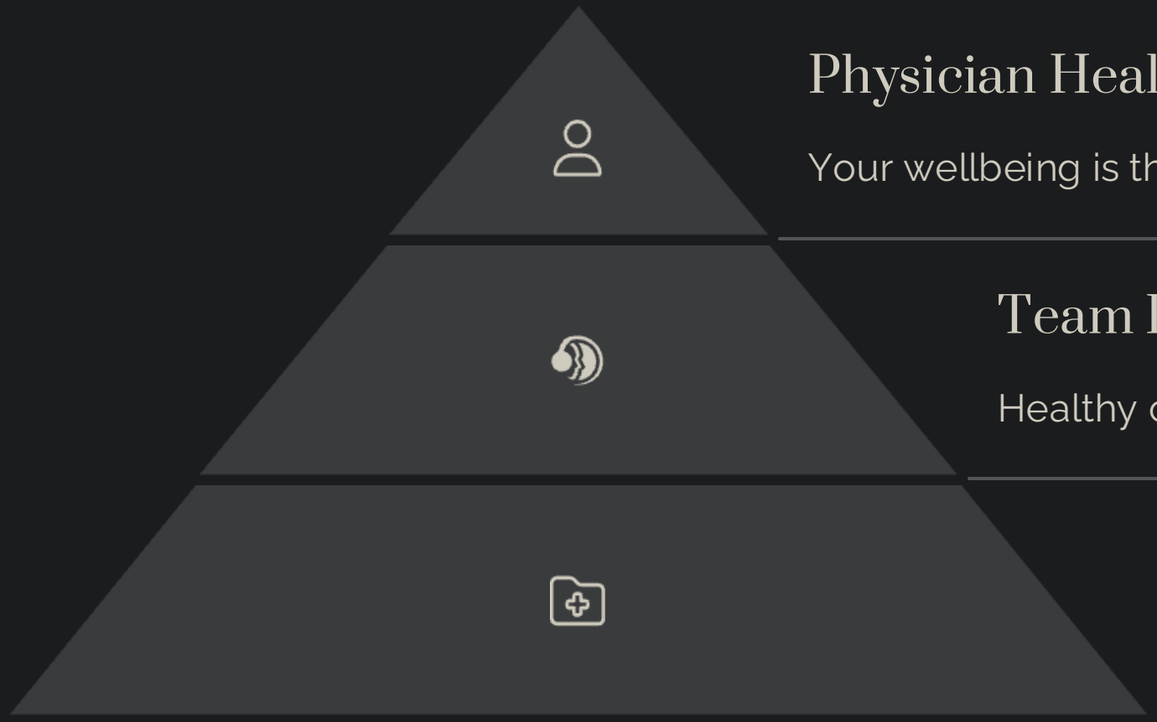
Clinical Results

BP normalized, inflammatory markers resolved, FMD improved to 8.3%.



Heal Yourself to Heal Others

Self-care isn't selfish. It's the foundation of sustainable healing practice.



Physician Health

Your wellbeing is the foundation

Team Function

Healthy clinicians create healthier teams

Patient Care

Better care flows from recovered caregivers

Get SELFISH: Spiritual Today

Micro-Meditations

Take 60-second breath breaks between patients. Three deep breaths can reset your nervous system.

Purpose Reminders

Keep a "why I heal" note visible at your workstation. Reconnect with your calling during challenging moments.

Sacred Transitions

Create a brief ritual when entering exam rooms. This mindful pause honors each healing encounter.

Get SELFISH: Exercise Today

Movement Microbreaks

Schedule 3-minute stretching sessions between patients. Simple desk yoga relieves tension and restores energy.

Active Commuting

Park farther from hospital entrances. Take stairs instead of elevators. Small choices create daily fitness opportunities.

Walking Meetings

Convert one-on-one discussions into walking sessions. Movement enhances creativity and problem-solving while burning calories.

Get SELFISH: Love Today

Self-Forgiveness Practice

End each day by releasing one clinical decision you're questioning. Write it down, then let it go.

Gratitude Moments

Keep a small journal to note one meaningful patient interaction daily. Review weekly to reconnect with purpose.

Micro-Altruism

Schedule quarterly half-days for community service. Even brief volunteer work boosts oxytocin and reduces burnout.

Get SELFISH: Food Today

Strategic Snack Stations

Create mini plant-based fuel stations in workspaces. Stock with ready-to-eat vegetables, fruits, and nuts.

Batch Preparation Sundays

Dedicate 90 minutes weekly to prepare nutrient-dense meals. Mason jar salads and overnight oats save precious weekday time.

Community Meal Sharing

Organize rotating lunch contributions among colleagues. Each physician brings one plant-based dish weekly to share.

Get SELFISH: Intimacy Today

Colleague Connection Rituals

Schedule weekly 15-minute coffee chats with different team members. These brief connections build psychological safety and reduce isolation.

Family Presence Practices

Create sacred "no-phone zones" during family meals. Quality trumps quantity when nurturing your most vital relationships.

Friendship Maintenance System

Use calendar reminders for quarterly friend check-ins. Even brief, meaningful exchanges sustain important social bonds.

Get SELFISH: Sleep Today

Strategic Power Naps

Schedule 20-minute rejuvenation breaks between clinical sessions. Even brief sleep cycles restore cognitive function.

Protected Vacation Blocking

Reserve quarterly getaways one year in advance. Non-negotiable time boundaries preserve mental health.

Sleep Hygiene Boundaries

Establish clinical communication blackout hours (10pm-6am). Quality sleep improves diagnostic accuracy and patient outcomes.

Get SELFISH: Humor Today

Humor Rounds

Start team meetings with a 2-minute joke or funny story exchange. Brief levity improves team cohesion and cognitive flexibility.

Laughter Prescription Pad

Keep a notepad of humorous quotes or comics to share with patients. Appropriate humor builds rapport and reduces anxiety.

Joy Scheduling

Block 5-minute "humor breaks" between difficult cases. These micro-recoveries prevent compassion fatigue and emotional exhaustion.

Get SELFISH Today

Get Selfish, reduce your stress, heal your heart, and find your purpose.