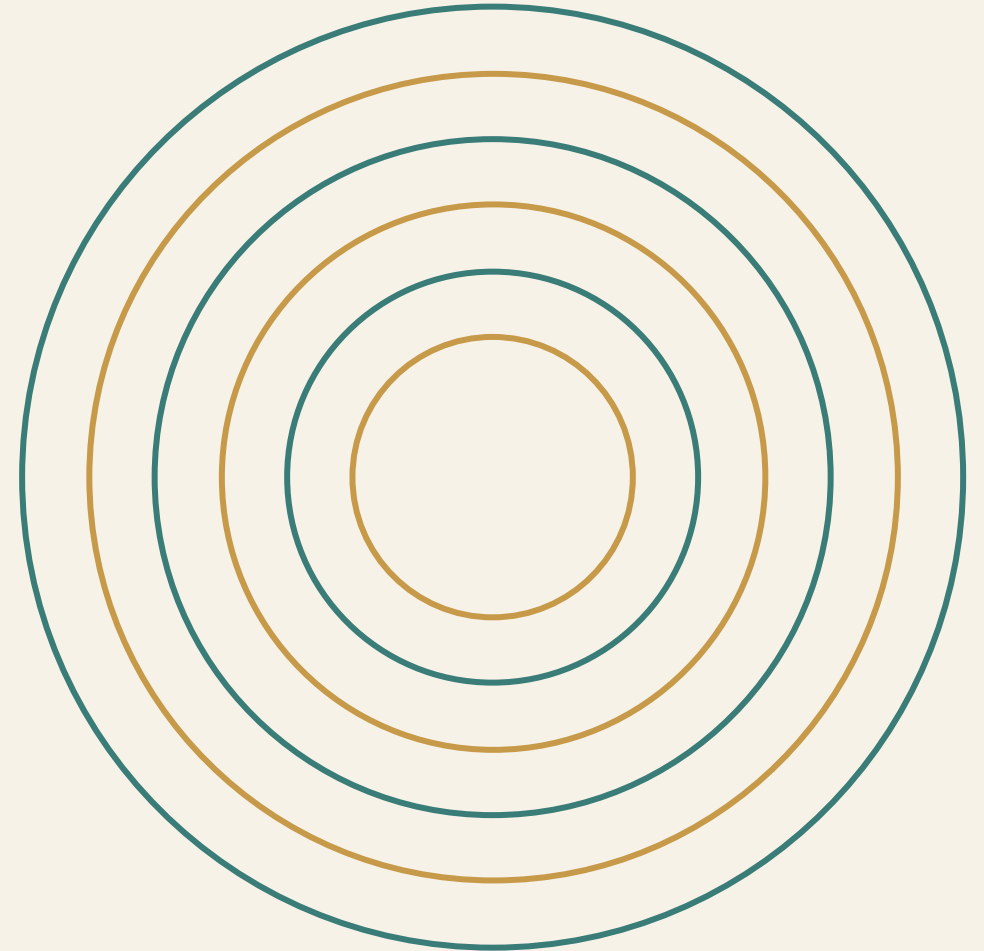


Longevity: The Foundations

Risk, reserve, time, and the six pillars of Lifestyle Medicine

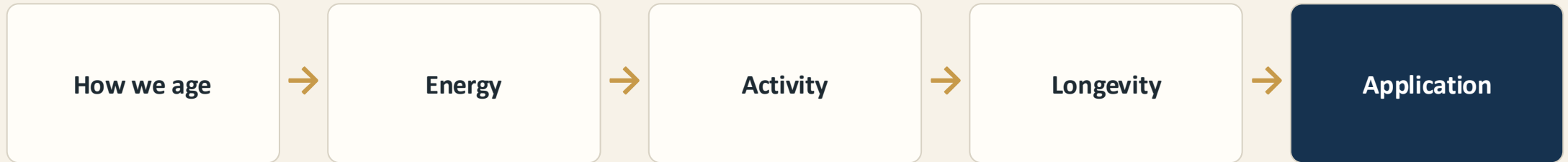


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Week 5



The HEALTH Framework so far



Today's learning goals

Distinguish healthspan from anti-aging culture

Describe the six pillars of Lifestyle Medicine

Connect cardiometabolic health, cognitive reserve, and hormonal transitions to longevity

Recognize how risk and reserve accumulate across time



“

Longevity means living well within time.

The goal is capacity, dignity, and engagement.



The six pillars

Daily patterns influence the biological terrain in which aging unfolds



The six pillars

Nutrition

A whole-food eating pattern

Physical activity

Movement, strength, balance, and endurance

Restorative sleep

Time and conditions for repair

Stress management

Skills that support recovery

Social connection

Relationships, belonging, and support

Avoidance of risky substances

Reducing tobacco, excess alcohol, and other harmful exposure



“

The pillars work as a system.

Sleep changes food choices. Movement changes metabolism. Connection changes stress.



Longevity without anti-aging

Aging deserves understanding, not a promise of escape



Lifespan and healthspan

Lifespan

How long a person lives

Healthspan

How long function, cognition, independence, and engagement remain

The clinical goal

Add life to years while respecting the limits of medicine



“

Aging is evidence of survival.

It also brings cumulative change, vulnerability, and adaptation.



Reserve exists in several domains

Cardiovascular

Increase oxygen delivery under demand

Metabolic

Use and shift fuel efficiently

Musculoskeletal

Maintain strength, power, and balance

Cognitive

Compensate for brain change

Emotional

Recover from stress, grief, and transition

Social

Draw on relationships and practical support



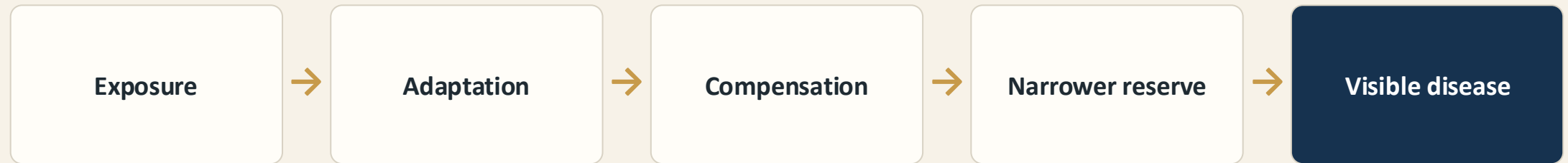
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Longevity protects the margin before crisis.

Reserve allows a stressor to remain an interruption rather than a turning point.



Risk accumulates quietly



“

Effective prevention often looks uneventful.

When it works, the crisis never arrives.



What longevity cannot be reduced to

A supplement stack

A perfect laboratory panel

One diet or exercise program

Continuous optimization

A promise to prevent every disease



A life-course view

Earlier life

Exposure, opportunity, and habits
establish the terrain

Midlife

Risk may rise while reserve still hides
symptoms

Later life

Function, recovery, and what matters
most guide decisions



“

Time changes the meaning of risk and benefit.

The same intervention may make sense at one stage and become burdensome at another.



Cardiometabolic longevity

Vascular and metabolic injury often develops long before symptoms



“

Cardiometabolic risk shapes more than the heart.

Brain, kidneys, circulation, mobility, and recovery share the same terrain.



The cardiometabolic terrain

Insulin resistance

The body needs more insulin to manage fuel

Vascular injury

Endothelial function and flexibility decline

Lipid exposure

Atherogenic particles enter and remain in artery walls

Blood pressure

Mechanical stress accumulates over years

Visceral fat

Inflammatory signaling increases

Autonomic strain

Chronic activation impairs recovery



“

Atherosclerosis develops over time before it becomes an event.

A heart attack or stroke may be the first visible consequence.



The endothelium

Healthy lining

Regulates dilation, flow, clotting, and inflammation

Dysfunction

Vessels stiffen and respond less effectively

Clinical meaning

The vascular system loses flexibility before symptoms appear



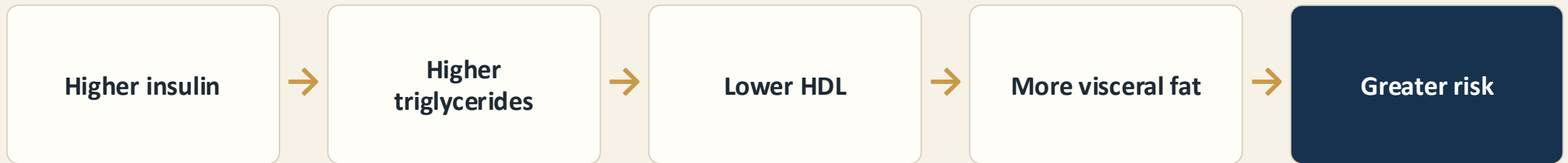
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Normal glucose can coexist with early insulin resistance.

Compensation may keep glucose controlled while insulin rises.



A common metabolic pattern



Blood pressure is cumulative exposure

One reading

A snapshot influenced by context

Years of pressure

Repeated vascular and cardiac stress

Home measurements

Reveal patterns that office readings may miss



Lipids carry different information

LDL cholesterol

Cholesterol mass carried in LDL particles

ApoB

Approximate number of atherogenic particles

Triglycerides and HDL

Often reflect insulin resistance and metabolic context

Lipoprotein(a)

A largely inherited risk factor measured at least once in many adults



“

Risk markers need context, not worship.

Family history, age, function, competing risk, and personal priorities matter.



A practical cardiometabolic review

Blood pressure pattern

Glucose and A1c interpreted with metabolic context

Lipid profile and ApoB when useful

Body composition, waist pattern, and muscle

Sleep apnea, tobacco exposure, and activity

Family history and established vascular disease



“

The goal is lower cumulative risk with preserved function.

Treatment and lifestyle support each other.



Pause and reset

Stand, hydrate, or step out as needed



Cognitive longevity

Reserve and risk shape how the brain functions across time



“

Brain aging starts before memory loss becomes obvious.

Vascular, metabolic, sensory, and social factors accumulate across decades.



Pathology and reserve answer different questions

Pathology

What disease-related changes are present?

Reserve

How well can the brain compensate?

Function

How are thinking changes affecting daily life?



“

Similar brain pathology can produce different levels of function.

Cognitive reserve helps explain the difference.



Factors that shape cognitive reserve

Education and learning

Build and reinforce networks

Movement

Supports blood flow and metabolic health

Hearing and vision

Reduce cognitive load and isolation

Sleep

Supports attention, memory, and repair

Connection

Maintains stimulation and belonging

Purpose

Keeps the brain engaged with future-oriented activity



Vascular health is brain health

Blood pressure

Chronic exposure damages large and small vessels

Diabetes

Metabolic and microvascular injury affects cognition

Lipids and smoking

Increase vascular burden

Movement

Improves vascular function and reserve



“

Dementia risk is partly modifiable, never fully controllable.

Lifestyle changes improve probability. They do not guarantee prevention.



Brain-protective foundations

Control vascular and metabolic risk

Move regularly and preserve muscle

Treat hearing loss and sleep disorders

Address depression, anxiety, and isolation

Continue learning and participating

Review medications that impair cognition



“

Prevention includes preparing for uncertainty.

Cognitive health also requires planning, support, and honest conversation.



A cognitive longevity case

The concern

A 66-year-old reports word-finding trouble during a stressful year

The context

Poor sleep, hearing loss, hypertension, caregiving strain, and sedating medication

The approach

Evaluate cognition while reducing avoidable load and protecting reserve



Hormones and life transitions

Hormones influence reserve, but they do not define longevity



“

Hormonal change occurs inside a larger life transition.

Sleep, identity, caregiving, work, mood, and physiology may shift together.



Menopause changes several systems

Vasomotor symptoms

Hot flashes and night sweats can disrupt sleep

Body composition

Muscle and fat distribution may change

Bone

Estrogen loss accelerates bone turnover

Cardiometabolic risk

Lipids, insulin sensitivity, and vascular function may shift



Hormone therapy requires individualized judgment

Potential benefit

Most effective treatment for vasomotor symptoms and prevents bone loss while used

Risk context

Age, time since menopause, uterus status, clotting, cancer, and cardiovascular history matter

Shared decision

Symptoms, goals, formulation, dose, and duration shape the choice



Hormonal changes in men

Testosterone

Levels may decline gradually and symptoms remain nonspecific

Evaluation

Symptoms plus appropriately timed testing guide diagnosis

Treatment

Benefits and risks require individualized discussion and monitoring



Thyroid and longevity claims

True disease

Hypothyroidism or hyperthyroidism
requires evidence-based treatment

Nonspecific symptoms

Fatigue and weight change have many
causes

Caution

Treating normal tests with thyroid
hormone can cause harm



“

Hormones can support health. They cannot replace the foundations.

Sleep, movement, nutrition, connection, and risk reduction still determine the terrain.



The longevity gap

Biology

Sex-specific risks and transitions affect trajectories

Care patterns

Symptoms may be dismissed or undertreated

Social context

Caregiving, income, safety, and access alter reserve

Life expectancy

Living longer can also mean more years with disability



A foundation, not six separate projects

Each pillar changes the effectiveness of the others



Nutrition

Primary role

Supply nutrients while supporting metabolic health

Long-term pattern

Whole foods, plants, fiber, and appropriate protein

Clinical context

Culture, access, appetite, disease, and preference matter



Physical activity

Daily movement

Reduce long sedentary periods

Training

Build strength, balance, and endurance

Meaning

Protect the activities that support independence



Restorative sleep

Opportunity

Enough scheduled time for sleep

Timing

Consistent circadian cues

Quality

Identify apnea, pain, medications, and other disruptors



Stress management

Goal

Improve recovery rather than eliminate stress

Skills

Breathing, reflection, meditation, therapy, movement

Context

Chronic adversity may require practical and professional support



Social connection

Belonging

Feeling known and valued

Scaffolding

People who notice change and provide support

Participation

Shared activity, learning, service, and community



Avoidance of risky substances

Tobacco

No safe level of combustible tobacco exposure

Alcohol

Lower exposure generally lowers health risk

Other substances

Review cannabis, sedatives, opioids, and other use in clinical context



“

The strongest pillar may help stabilize the weakest one.

A walking group can support movement, connection, mood, and sleep at once.



A foundation case

The story

A 62-year-old wants a longevity plan after a parent develops dementia

The temptation

Expensive testing, supplements, and aggressive targets

The better foundation

Clarify risk, reserve, values, and the six daily-life pillars



Your longevity foundation

Notice the system before choosing a target



Your Week 5 reflection

Meaning

What does a longer, healthier life allow you to do?

Risk

Which cardiometabolic or cognitive risk deserves attention?

Reserve

Which domain feels strongest and which feels least supported?

Pillars

Which pillar already works well enough to support another?



What to carry forward

Longevity focuses on healthspan, not escape from aging

Risk and reserve accumulate across the life course

Cardiometabolic health influences the brain and the rest of the body

Hormonal decisions require symptom, timing, and risk context

The six pillars work as an interconnected foundation

Next: applying the pillars in an imperfect life



Longevity Is About More Than Living Longer



Lifestyle Medicine Self-Reflection

Pillar	Strength	Doing	Well Needs Attention
Nutrition	☐	☐	☐
Physical Activity	☐	☐	☐
Sleep	☐	☐	☐
Stress Management	☐	☐	☐
Social Connection	☐	☐	☐
Avoidance of Harmful Substances	☐	☐	☐



Nutrition Reflection

Healthy nutrition is not about perfection. It is about creating sustainable patterns that support:

- Energy
- Muscle health
- Metabolism
- Cognition
- Inflammation
- Overall function

How would you describe your current eating habits?

Do you feel your nutrition supports your energy and health goals?

- ☐ Usually
- ☐ Sometimes
- ☐ Rarely



Do you feel your nutrition supports your energy and health goals?

- ☐ Usually
- ☐ Sometimes
- ☐ Rarely

Which areas feel most challenging?

- ☐ Meal planning
- ☐ Eating enough protein
- ☐ Emotional eating
- ☐ Eating consistently
- ☐ Sugar cravings
- ☐ Busy schedule
- ☐ Eating out frequently
- ☐ Low appetite
- ☐ Lack of time to cook
- ☐ Other: _____



— ★ ★ ★ ★ —

WHICH SLEEP CHALLENGES APPLY TO YOU?

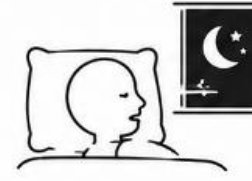
Check all that apply.



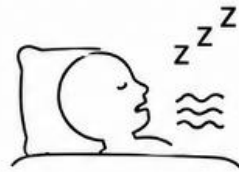
☐ Difficulty
falling asleep



☐ Waking
frequently



☐ Early
awakening



☐ Snoring or
breathing concerns



☐ Racing
thoughts



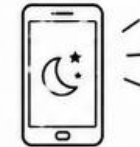
☐ Stress or
anxiety



☐ Nighttime
pain



☐ Frequent
urination



☐ Screen use
before bed



Better sleep starts with awareness.
Identifying your challenges is the first step toward better rest.





What is one realistic sleep goal
you could focus on this month?





Small changes tonight can lead to better rest tomorrow.



Stress & Emotional Health Reflection

Stress is a normal part of life. However, chronic unmanaged stress may affect:

- Sleep
- Inflammation
- Metabolism
- Energy
- Mood
- Cognition
- Physical health

What currently causes the most stress in your life?



Social Connection Reflection

Human connection is deeply connected to health and well-being.

Meaningful relationships may support:

- Emotional health
- Resilience
- Cognition
- Recovery
- Overall quality of life

Do you currently feel socially connected and supported?

- ☐ Usually
- ☐ Sometimes
- ☐ Rarely

Who are the people you feel most connected to?



What activities keep your mind engaged?

- ☐ Reading
- ☐ Learning new skills
- ☐ Conversations
- ☐ Creative hobbies
- ☐ Music
- ☐ Volunteering
- ☐ Teaching
- ☐ Faith or spiritual practices
- ☐ Time in nature
- ☐ Puzzles or games
- ☐ Other: _____



Small Habits, Long-Term Impact

Healthy aging is rarely shaped by one single decision. More often, healthspan is influenced by small daily habits practiced consistently over time. The goal is not perfection. The goal is creating sustainable patterns that support:

- Resilience
- Recovery
- Function
- Cognition
- Emotional well-being
- Quality of life



Which of the six pillars feels strongest for you right now?

Which pillar would benefit most from additional attention?



If you could improve one area of your health over the next year, which would have the greatest impact on your overall well-being?

What is one small change you are willing to begin this month?

