MEN'S HEALTH & LONGEVITY SUMMIT · UROLOGY RESEARCH & EDUCATION FOUNDATION

The Metabolic Connection: Fitness, Hormones, and Healthy Aging

How to Take Charge. Live Well. Finish Strong.

Pat Fox Fulgham, MD

September 12, 2026 · Texas Health Presbyterian Hospital, Fogelson Auditorium, Dallas, TX

Urology research & education foundation
www.urologyfoundation.org

“Make Ready…!”

A WORD BEFORE WE START

We are Not Immortal…

We all start with a different baseline of health.

Every man — no matter how strong, how disciplined, how accomplished — carries within him the biological reality of aging. Blood vessels harden. Cells accumulate damage. We age.

But we are resilient.

Aging is Inevitable…The Results are Negotiable

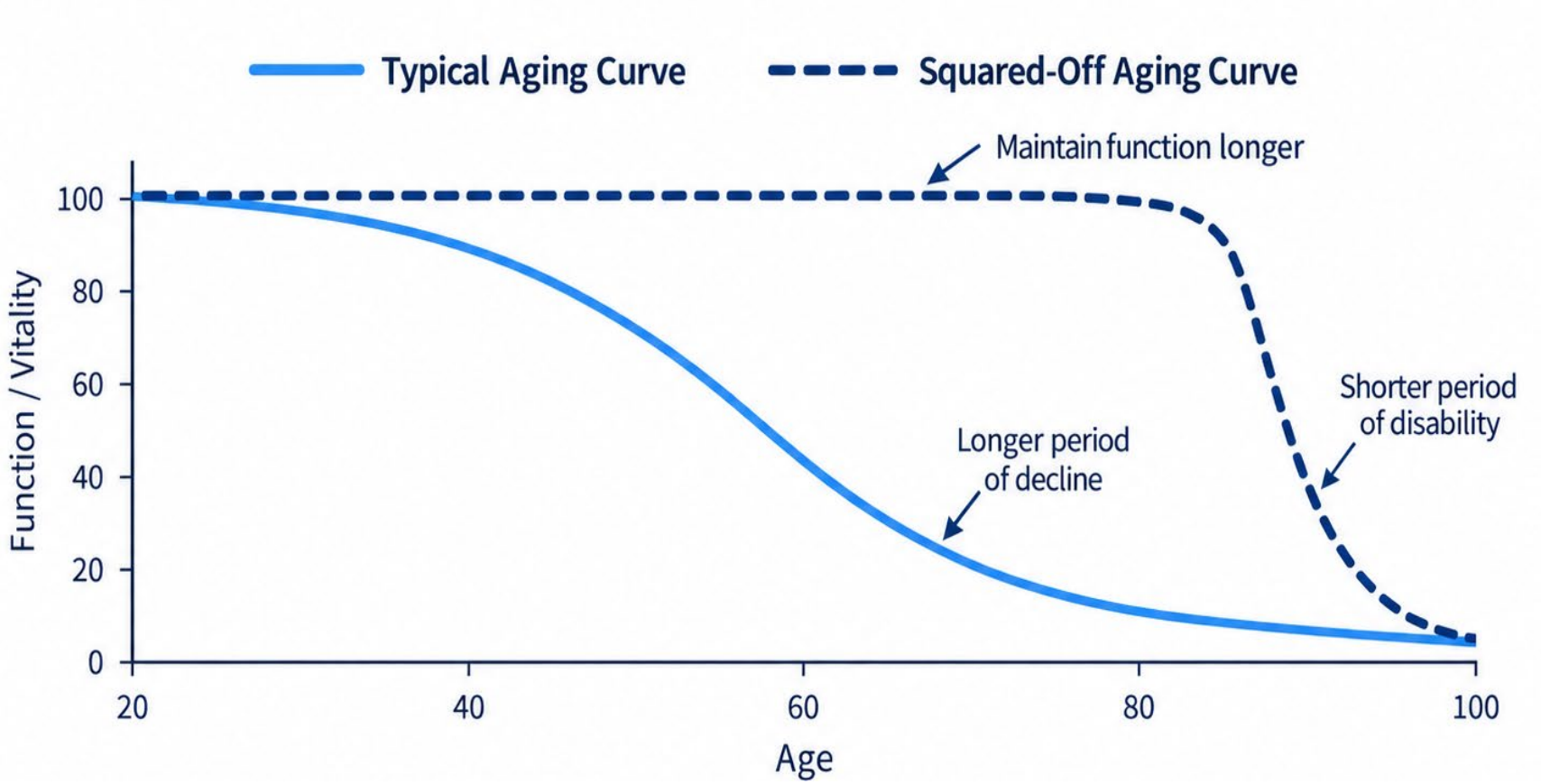
“Aging Well” Looks Different to All of Us

What We Can Agree On

- **Stay independent** — keep the strength, mobility, and mental sharpness to do what we want.
- **Stay connected** — maintain meaningful relationships, purpose, and engagement with life.
-
- **Stay healthy enough to enjoy it** — prevent or delay chronic disease so more years are active, not just longer.

THE CENTRAL IDEA

When it Comes to Aging Well, It's not the Years, it's the Shape of the Curve



James Fries, MD — Stanford*

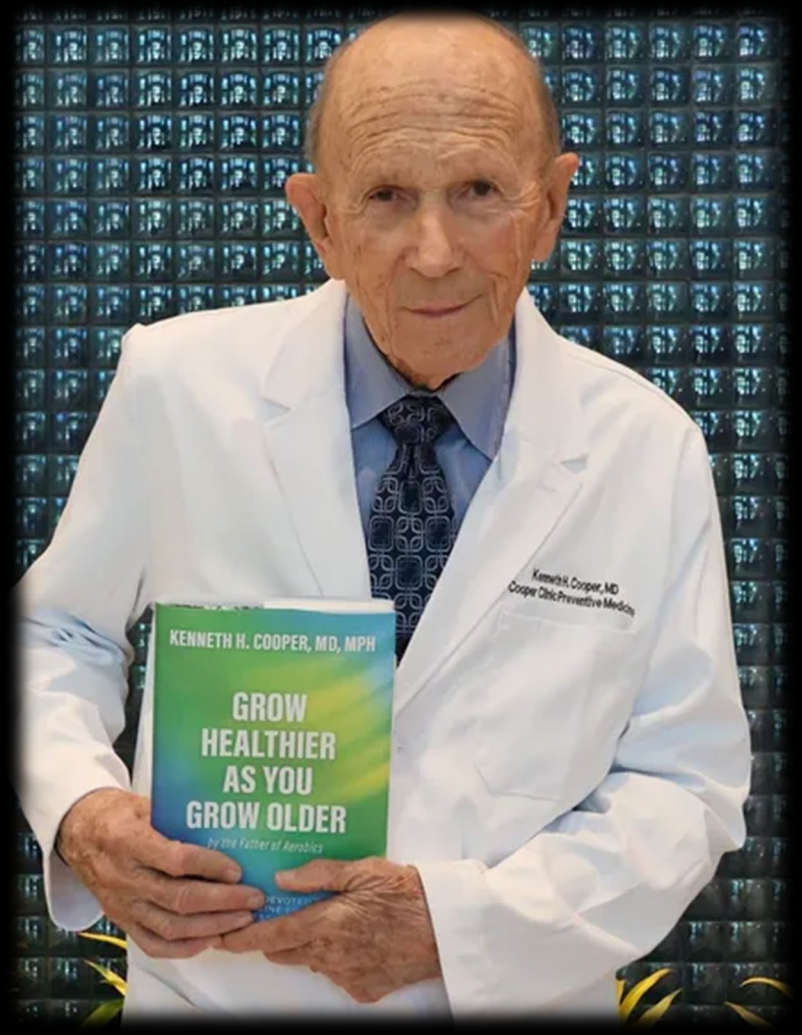
If chronic diseases can be delayed or prevented (compression of morbidity), then functionality and quality of life may be preserved.

*N Engl J Med. 1980 Jul 17;303(3):130-5. doi: 10.1056/NEJM198007173030304. Aging, natural death, and the compression of morbidity.

An Even Better Curve, if We Count Our Value to Others

Roman Aqueduct of the Gier, Rhône, France

Kenneth H. Cooper, MD, MPH



A STORY, NOT YET FINISHED

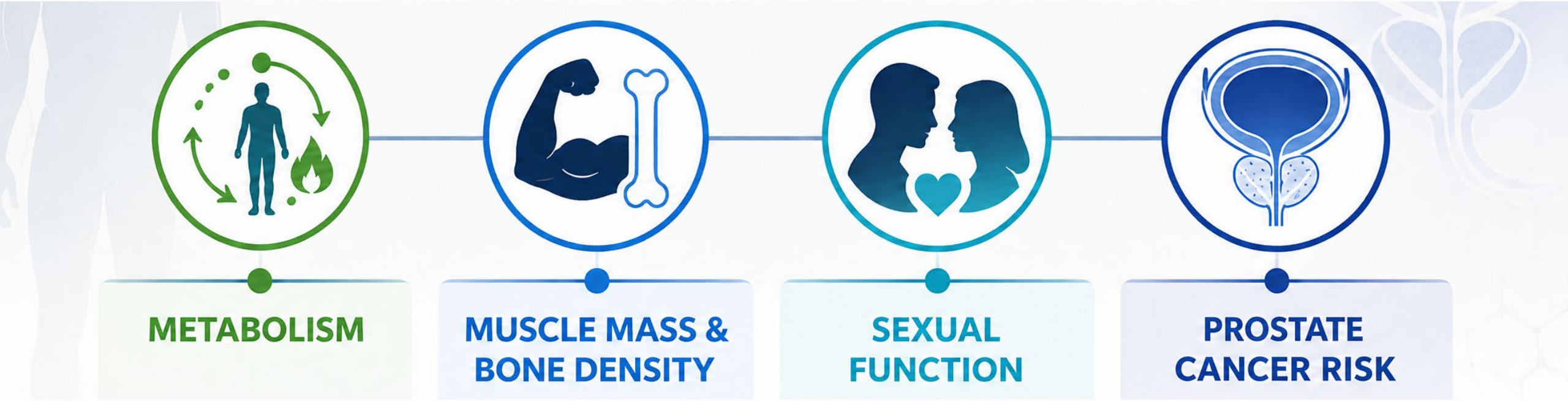
How is Aging Defined? Opinions Vary.

“Middle age is when your age starts to show around your middle.”
— Bob Hope

“Old age is always 15 years older than I am.”
— Bernard Baruch

It’s never too late to adapt and intervene but…what we do at 40 informs the outcome at 70.

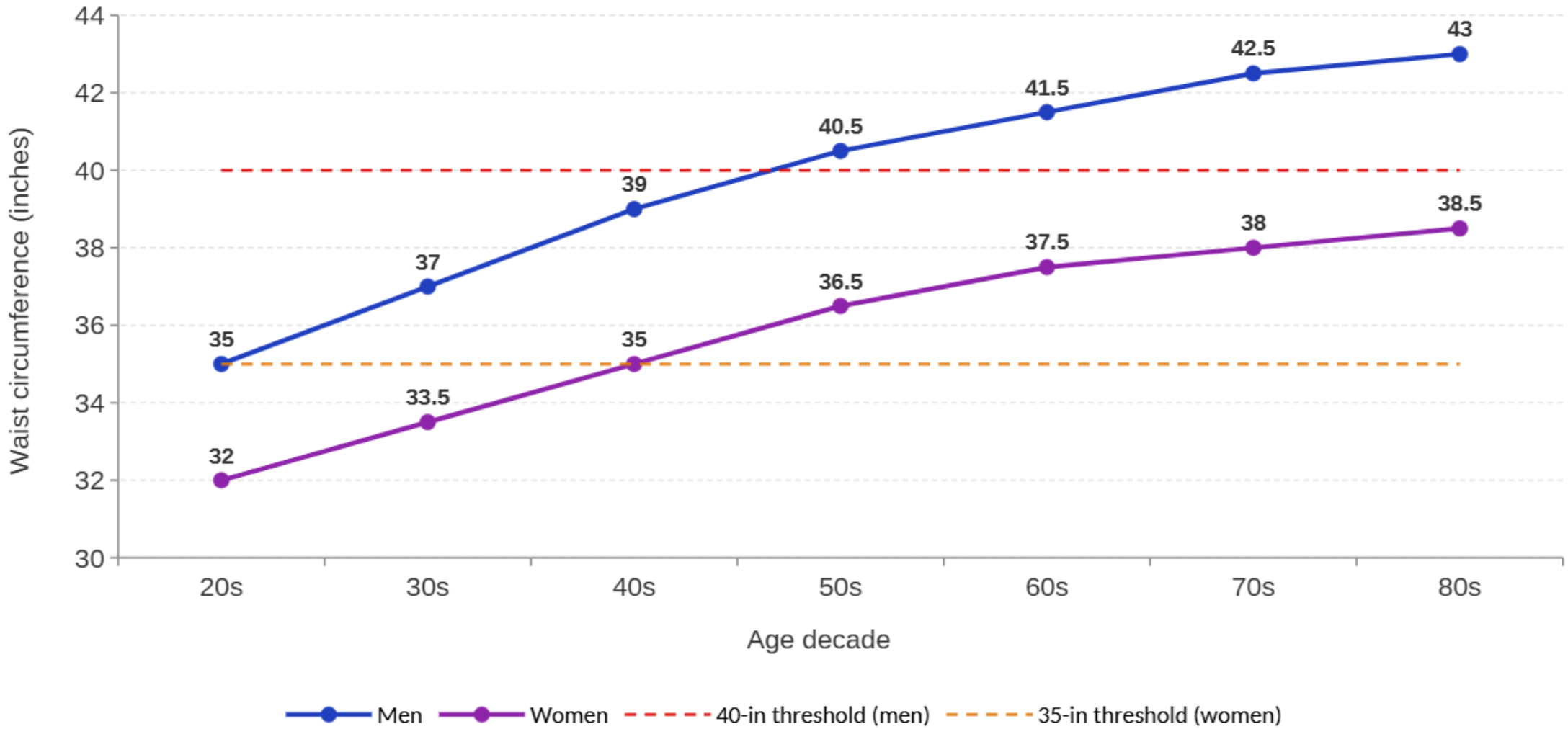
Changes Associated with Aging



(Hint: They are all closely related)

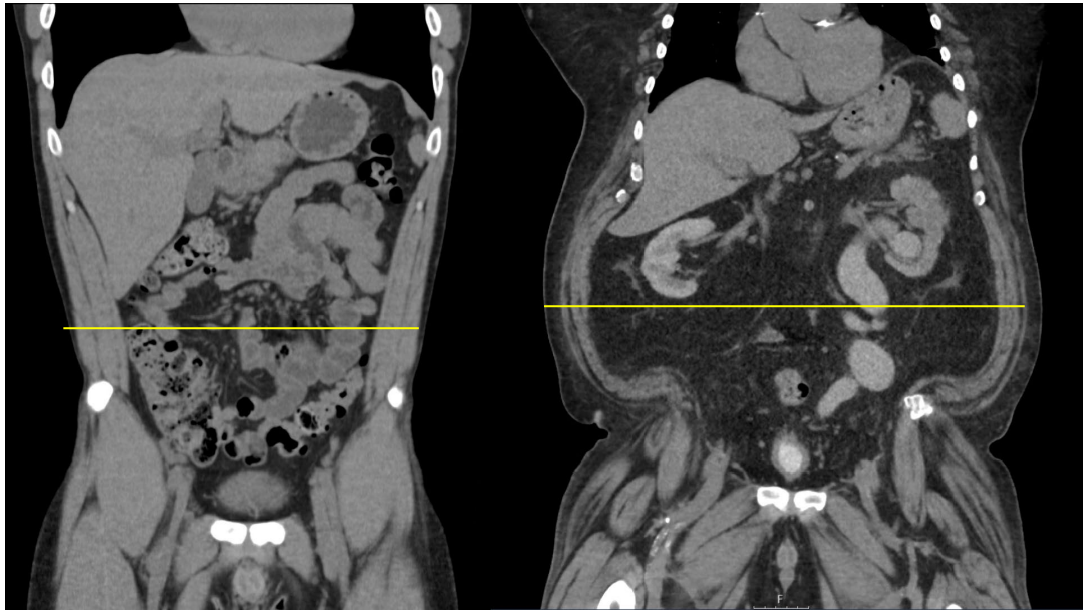
Increase in Waist Circumference by Decade of Life: Men vs. Women

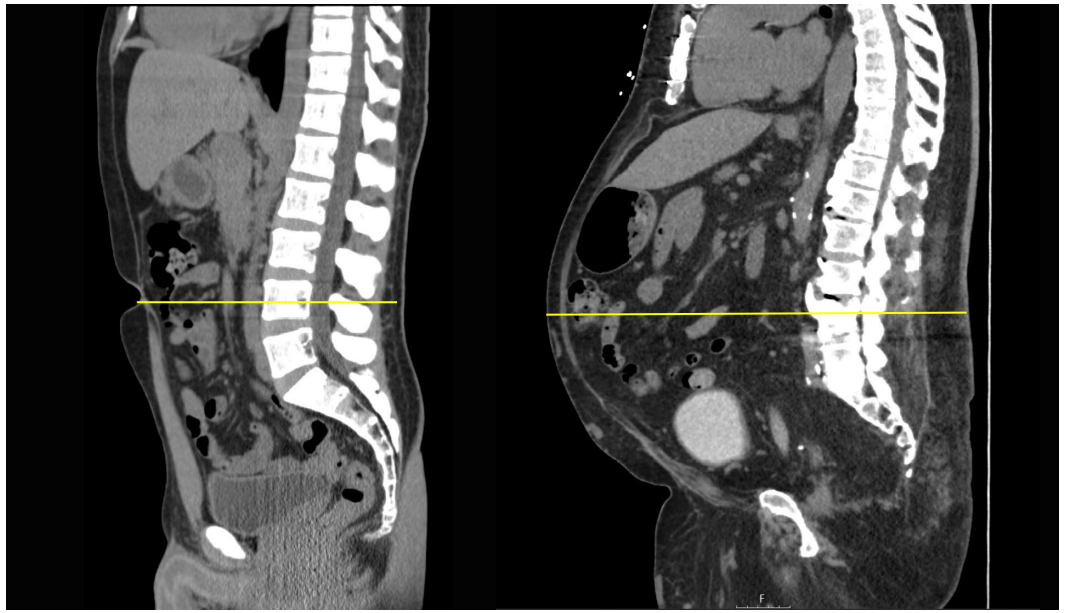
Illustrative average values. Dashed lines mark sex-specific abdominal obesity thresholds (ATP III).




60 YEARS OLD
2024
62 YEARS OLD
2026

Visceral Adipose Tissue (VAT)

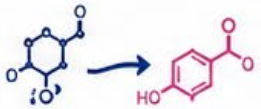




- Not a storage closet. Think of it as an “organ.
- Belly fat is living tissue that makes hormones, stokes inflammation, and raises your risk of nearly everything

Excess Visceral Adipose Tissue (VAT)

PRIMARY EFFECTS

1.  Raises inflammation
2.  Converts testosterone to estradiol
3.  Inhibits normal testosterone production
4.  Blunts insulin sensitivity

SECONDARY EFFECTS

1.  Encourages vascular damage
2.  Reduces libido
3.  Reduces muscle mass
4.  Increases weight gain
5.  Promotes the development of diabetes

THE BOTTOM LINE

One Cause. Four Consequences.

Diabetes

The same insulin resistance driving central obesity is what eventually tips into frank type 2 diabetes.

Low Testosterone

Visceral fat aromatizes testosterone to estrogen and blunts the pituitary signal that drives production.

THE UNIFYING DIAGNOSIS

Metabolic Syndrome*

1. Waist over 40 inches
2. Triglycerides ≥ 150 mg/dL (or rx)
3. HDL cholesterol < 40 mg/dL (or rx)
4. BP ≥ 130/85 mmHg (or rx)
5. Fasting glucose ≥ 100 mg/dL (or rx)

Any 3 of 5 — that's the diagnosis.

Cardiovascular Disease

Hypertension, dyslipidemia, and endothelial injury compound directly into atherosclerotic risk.

Erectile Dysfunction

The same small-vessel endothelial injury shows up here first — often years before cardiovascular symptoms.

Four complaints. One shared, modifiable cause: *metabolic syndrome.* (It also predicts more aggressive prostate cancer.)

*Joint Guideline National Heart, Lung, and Blood Institute; American Heart Association. Circulation 2009 Oct 20;120(16):1640-5. doi: 10.1161/CIRCULATIONAHA.109.192644

Diet & Exercise Recommendations

Both Have Independent Value

DIET

Protein target

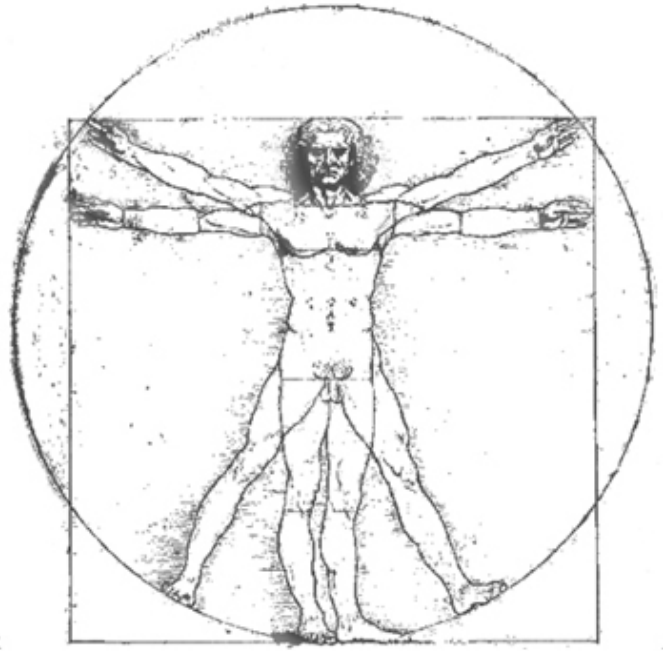
1.2-1.6 grams/kg weight per day
https://www.dietaryguidelines.gov/

Calories

Depends on age, gender, height, weight and level of physical activity
(Dietary Reference Intake Calculator)
https://www.nal.usda.gov/human-nutrition-and-food-safety/dri-calculator

Supplements

For most older adults, supplements are best targeted to **specific nutritional gaps or risks** rather than taken routinely across the board.



EXERCISE

150 minutes of moderate intensity physical activity a week, such as 30 minutes a day 5 days a week

250–300 minutes/week is often recommended when weight loss is the goal.

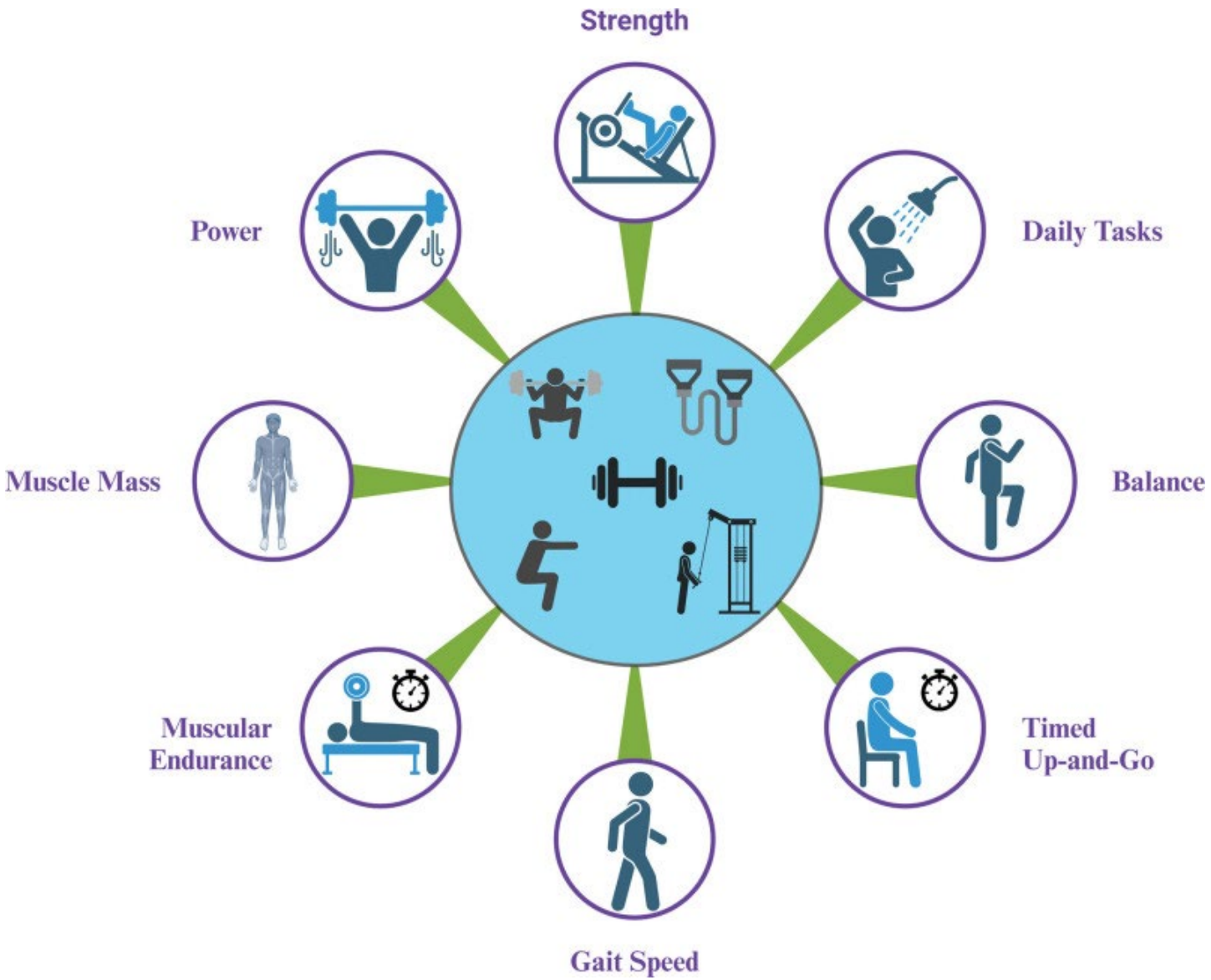
2 days of muscle-strengthening activity each week

American College of Sports Medicine Position Stand. Appropriate Physical Activity Intervention Strategies for Weight Loss and Prevention of Weight Regain for Adults.

https://www.ovid.com/10.1249/TJX.0000000000000266

Check with your physician before starting diet, supplement and exercise routine

Exercise is a Key to <u>Maintaining Functionality</u>



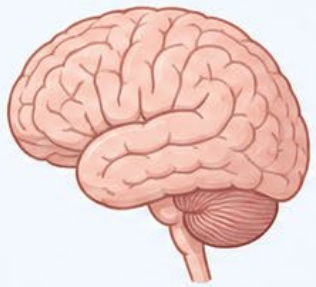
What if Diet And Exercise Aren’t Adequate?

When biology resists change, treatment can move beyond willpower.

Diet + Exercise

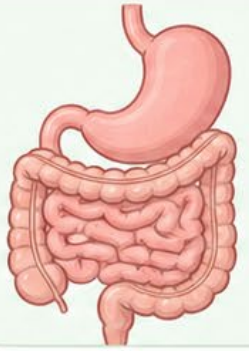
Progress Stalls

How GLP-1 Medications Work



1. Brain

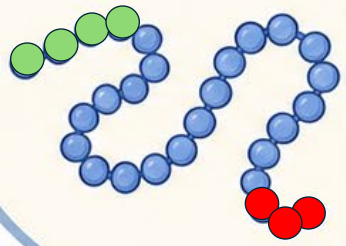
- ↓ appetite
- ↓ weight

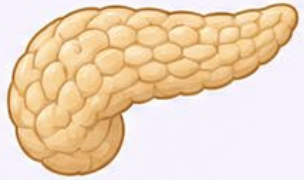


2. Stomach & intestine

- ↓ slower gastric emptying
- ↓ lower post-meal lipids

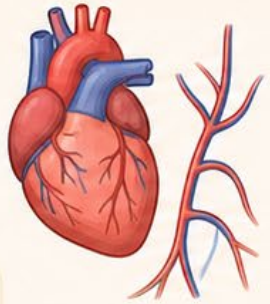
GLP-1





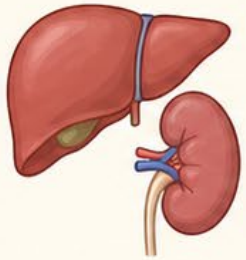
3. Pancreas

- ↑ insulin
- ↓ glucagon
- ↓ glucose



4. Heart & blood vessels

- cardiovascular protection
- ↓ blood pressure



5. Liver & kidney

- ↓ liver fat/inflammation
- kidney protection

GLP-1, GIP, GLUCAGON AND THE AGING MAN

These drugs have significant benefits, but also some side effects*.

20%

fewer heart attacks, strokes, and cardiac deaths

73%

fewer people going on to develop diabetes

10%

of body weight lost

From a four-year study (SELECT trial) of more than 17,000 people (Semaglutide Effects on Cardiovascular Outcomes in People With Overweight or Obesity).

- *Side effects: Loss of lean muscle, nausea, bloating, constipation, decreased appetite
- Social consequences: stigma, financial toxicity

What the Future Holds

Today's drugs use one or two hormones. The next generation uses three, each doing a different job.

1 GLP-1

Slows the stomach and tells the brain you are full.

2 GIP

Amplifies the fullness signal and decreases inflammation from fat.

3 GLUCAGON*

Promotes burning the fat stored in the liver and prevents metabolic slow down caused by dieting.

TOGETHER

Appetite falls, fat is pulled from storage and burned, and the metabolism refuses to slow down in protest — the three things that usually have to be fought for separately.

Retatrutide still experimental, not yet FDA approved, and not the same as anything sold under that name online.*

When You Lose Weight, You Lose Tissue

The scale doesn't tell you what left — and some of it you needed

The fat you wanted gone

INFLAMMATION DECREASES

The low simmer that damages arteries slows down — measurably, within a month.

THE HEART BENEFITS

Fewer heart attacks and strokes, and far fewer people crossing into diabetes.

IT STAYS OFF WHILE ON THE DRUG

Stop it and part the weight comes back.

The muscle and bone you didn't

ABOUT A THIRD IS MUSCLE

This is common with rapid weight loss from any cause.

BONE THINS TOO

Loss of VAT reduces estradiol production which in turn reduces bone density.

The Drug Is Half the Prescription

Four things that turn a good drug into a good outcome

- LIFT SOMETHING HEAVY
- ADEQUATE PROTEIN AT EVERY MEAL
- BE ACTIVE, MAKE IT A HABIT
- ASK ABOUT A BONE DENSITY SCAN (DEXA)

The men who do badly on these drugs will not be the ones who took them.
They will be the ones who "ONLY" took them.

What Does Testosterone Do in a Healthy Man?

The body's master metabolic signal — far more than a "sex hormone"

Builds & Preserves Muscle

Signals the body to make muscle protein — maintaining strength, mobility, and the "metabolic engine" that burns calories even at rest.

Keeps Fat in Check

Steers calories away from deep belly fat and helps the body use blood sugar properly — protecting against diabetes and heart disease.

Powers Energy & Mood

Supports drive, motivation, concentration, and a stable mood — low levels often show up first as fatigue and "brain fog."

Improves Sexual Health

Supports libido (sex drive).

THE TESTOSTERONE MISCONCEPTION

Testosterone Reads Your Waistline, Not Your Birth Certificate

THE MYTH

Testosterone decline is an inevitable consequence of aging — nothing to be done, just part of getting older.

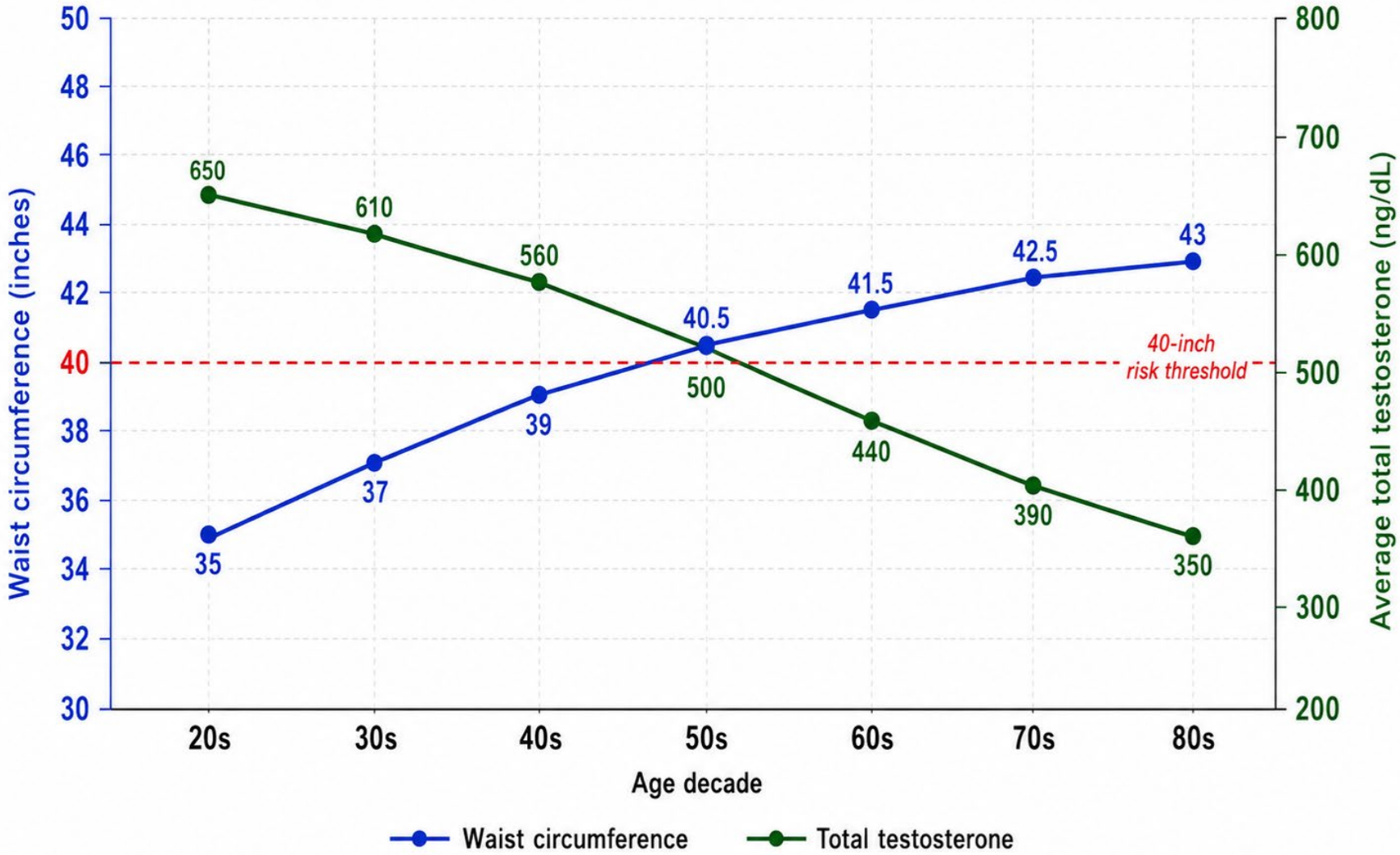
THE REALITY

Testosterone does diminish with age, but the decline can be influenced by behavior.

Low T is common. But when weight, activity, alcohol, and smoking are controlled for, the independent effect of age on testosterone is substantially attenuated.

Waist Circumference and Testosterone by Decade of Life in Men

Illustrative average values showing a common age-related pattern.



WHEN “LOW-T” BECOMES A DIAGNOSIS

Hypogonadism: A Lab Value Plus a Person
(it can be effectively treated)

The AUA Criteria

- Total testosterone < 300 ng/dL, confirmed on two separate early-morning draws
- AND symptoms or signs — a number alone is not a diagnosis
- Symptoms: low libido, fatigue, depressed mood, loss of muscle mass, reduced morning erections, poor concentration

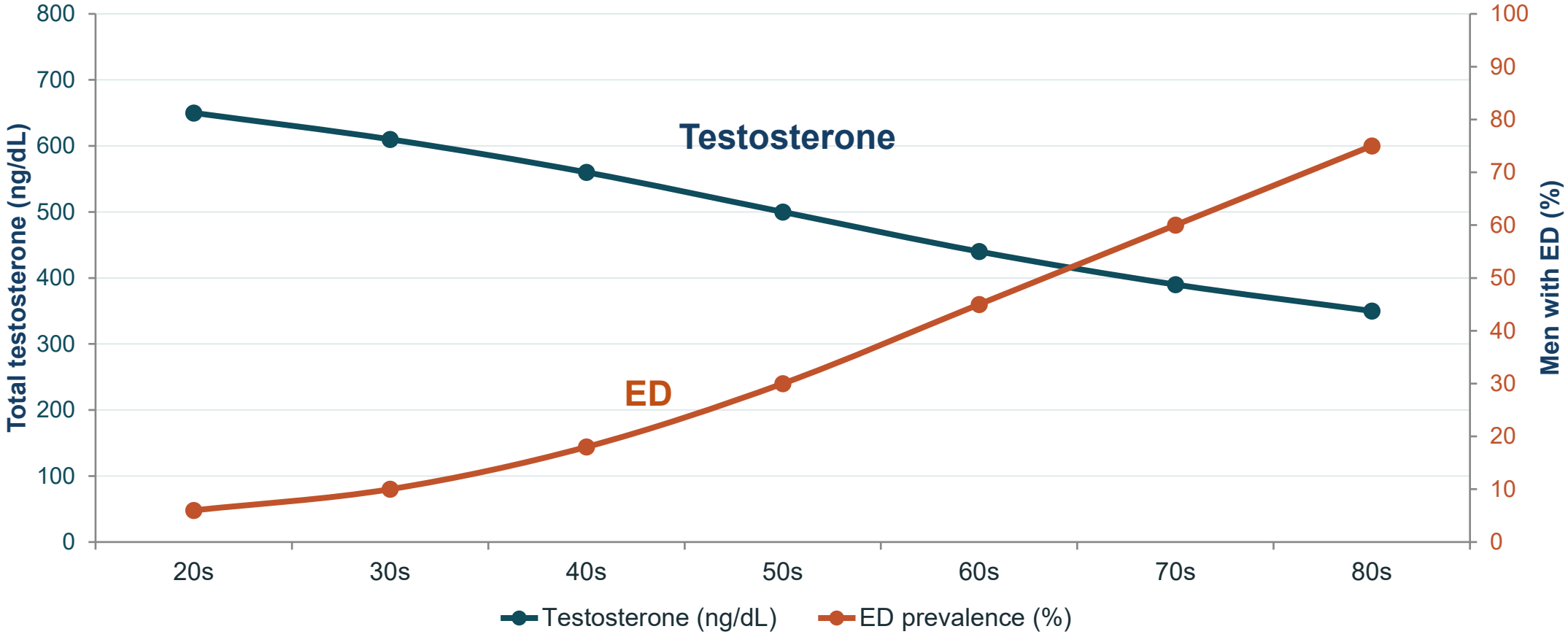
The Response

- This is one of the most common and most treatable conditions in a man's 50s and 60s.
- Fatigue and low libido have many possible causes—they're a lab test and a conversation away from an answer.
- Not necessary to wait until testosterone falls below physiologic levels to start treatment (either weight loss and exercise or replacement).*

*Potential risk begins when testosterone is pushed to supraphysiologic levels. Routine labs to check for elevated hemoglobin, etc.

Falling Testosterone, Rising ED: Two Sides of Male Aging

Average testosterone level and prevalence of erectile dysfunction, by decade of life



Association, not sole causation — <u>vascular health is the dominant driver.</u>

The Good News About Low Testosterone

- **Lifestyle can restore levels in some men.** Weight loss and regular exercise can often help testosterone return toward the normal range.

- **Treatment is available for men with persistent, documented hypogonadism.** If testosterone remains persistently low, replacement options may include FDA-approved oral medication, topical gels or creams, and injections.

- **Supplements:** There is no good evidence that currently available supplements will raise serum testosterone levels.

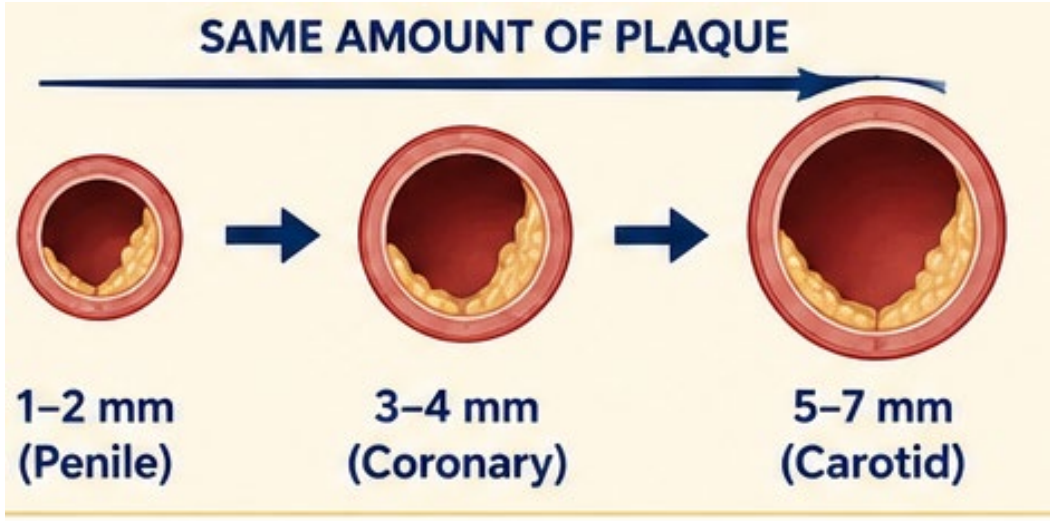
Persistent symptoms or low testosterone levels should be evaluated in consultation with your physician.

SEXUAL FUNCTION

Onset of Erectile Dysfunction-a Useful Warning Sign

The Sentinel Organ

- Penile arteries run 1–2 mm across. Coronary arteries run 3–4 mm. Same atherosclerotic disease shows up in the narrower pipe first.
- New erectile dysfunction can precede a diagnosis of coronary artery disease by two to five years.
- This makes the urologist an early-warning system for the cardiologist.



Effective treatments are available.
Discuss with your urologist.

KNOW YOUR RISK

Risk Factors for Prostate Cancer: What You Can Change vs. What You Can't

FIXED — SET BY NATURE

- Age — risk rises sharply after 50, and after 40 for high-risk groups
- Race — Black men have the highest incidence and mortality of any group in the U.S.
- Family history — a father or brother with prostate cancer roughly doubles your risk; BRCA mutations raise it further

MODIFIABLE — IN YOUR HANDS

- Obesity — linked to more aggressive prostate cancer and worse survival
- Physical inactivity — exercise reduces systemic inflammation, a driver of cancer progression
- Earlier diagnosis

Testosterone does not cause prostate cancer, but it does stimulate the growth of prostate cells.

BY THE NUMBERS

The Numbers Every Man in This Room Should Know

1 in 8
men will develop prostate cancer (1 in 6 for black men)

2×
The death rate for black men vs. white men in the U.S.

60%
Higher incidence in Black men vs. white men

>95%
5-year survival if caught early

Your PSA may change with weight loss and/or testosterone replacement

- PSA is reported as ng/mL, so the same amount of PSA will produce a lower reading in a heavy individual and higher reading in a lighter individual.
- Testosterone stimulates the production of PSA in both healthy prostate cells and prostate cancer cells.

SCREENING, BY RISK

Prostate Cancer Screening Recommendations: When to Start the Conversation

Age 40	African-American men with a first-degree relative with prostate cancer
Age 45	All men with an elevated risk — baseline PSA strongly recommended
Age 50	Average-risk men — discussion with physician; annual PSA with or without digital rectal exam
Age 55–?	Primary screening window; shared decision-making based on PSA trend and risk factors

The PSA test is a blood test. It takes 5 minutes. It can save your life.

Putting Prostate Cancer in Perspective
Cause of Death in U.S. Men Per Year (2022) 1.7 million

Cause of death among U.S. men	Approximate annual deaths	Approximate share of male deaths
Heart disease	**380,000–390,000**	**23–24%**
All cancers combined	320,000–325,000	19–20%
Unintentional injuries	85,000–90,000	5–6%
Stroke	75,000–80,000	4–5%
Diabetes	50,000–55,000	About 3%
Alzheimer’s disease	35,000–40,000	About 2%
Suicide	**Approximately 39,000**	**About 2%**
Prostate cancer	**Approximately 35,000**	**About 2%**

Source: CDC/National Center for Health Statistics, *Deaths: Leading Causes for 2022*.

Your Action List

Annual physical

Blood pressure, labs, weight, and a real conversation

Know your numbers

A1c/fasting glucose, lipids, testosterone and PSA

Exercise and resistance training

The highest-leverage, lowest-risk intervention discussed today

Have the prostate cancer screening conversation

Starting at 50, or earlier with family history or Black ethnicity

Health Screenings Today: 8:30-12:30

Texas Health
Community Hope

Wellness for Life – Mobile Health

Services Available

A1c – Men and women ages 18 and over
(or 16 and over with parental consent)
Lipid Panel – Men and women ages 18 and over
(or 16 and over with parental consent)
Glucose – Men and women ages 18 and over
(or 16 and over with parental consent)
PSA (Prostate-Specific Antigen / Prostate Cancer Screening)
Men ages 40 and over

A1c, Lipid Panel, and Glucose results will be available the same day, typically within 5–7 minutes.
PSA results will be available 5–7 days after the screening date and can be accessed through a QR code.

The Low-Tech Approach to Monitoring your Progress

Two measurements you can track at home.

The Bathroom Scale

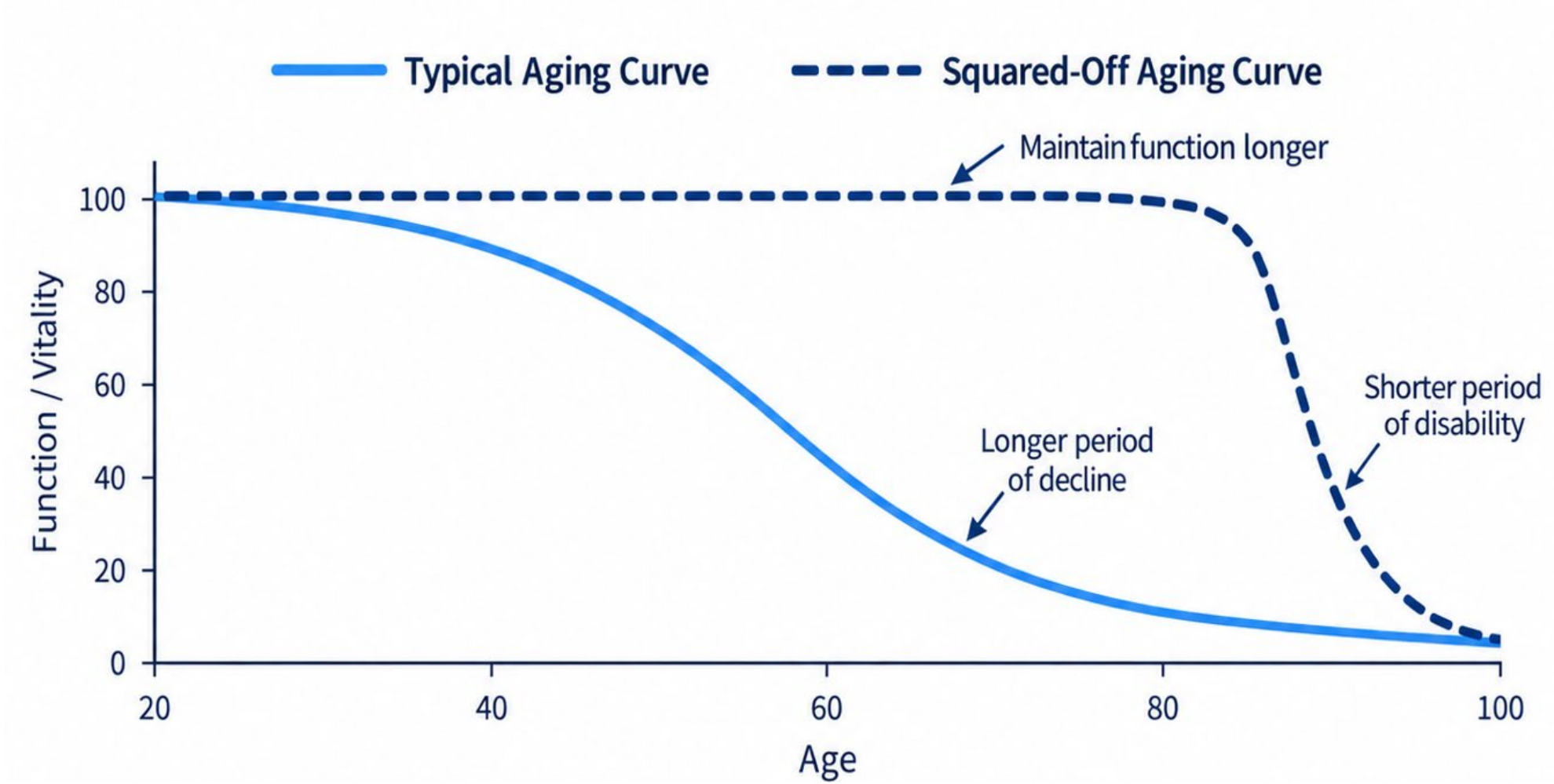
Same time, same conditions, once a week. Watch the trend, not the reading — a 5–10% reduction measurably improves testosterone, ED, and urinary symptoms.

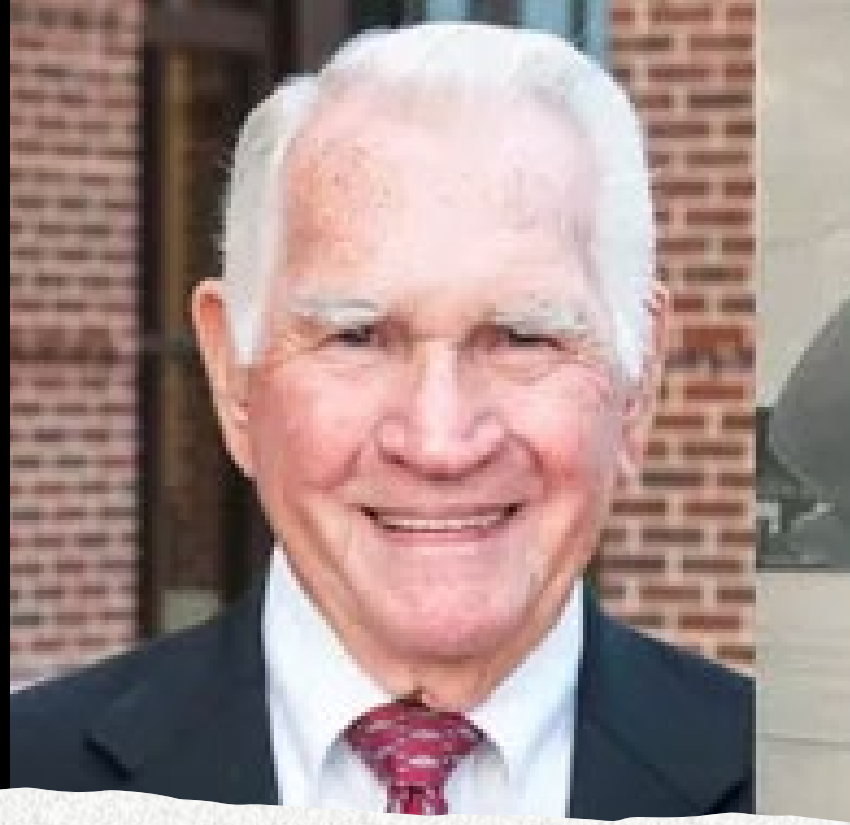
The Cloth Tape Measure

Waist at the navel, standing, after a normal breath out. Over 40 inches is a metabolic syndrome criterion — and it finds the visceral fat a scale alone will miss.

What's Actually on the Table?

10-15 Years of Additional High Function, Independent Living!





A Paradigmatic Life

Col. Dan Fulgham, PhD, USAF
1927-2015

https://urologyfoundation.org/col-danfulgham