


A RESEARCH BRIEFING FOR MEN OVER 40

# The Cost of Doing Nothing

## What Happens to a Man After 40 When He Is Not Proactive — and What Reverses It

Nothing dramatic happens in your forties. That is precisely the problem.

Every system in the male body has a decline rate. Most of them are slow enough that you will not notice a single year of it, and steep enough that a decade is unmistakable. This briefing sets out what those rates actually are, what accelerates them, what the research shows can be slowed, stopped or reversed — and what the honest evidence says about the things men are currently being sold. It is written for the man who feels broadly fine and has therefore done nothing.

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### HOW TO READ THIS — AND WHAT IT IS NOT

Every figure here carries its population: how many people, which sex, what ages, what study design. Where the evidence is weak, contested or contradicted, that is stated in the same sentence as the finding rather than buried. Several widely repeated numbers in men's health are wrong, and this report says so and shows the better figure.

**This is not medical advice.** Dr. John Spencer Ellis is a performance and life optimization coach. He is not a physician, does not diagnose or treat disease, and does not prescribe. Nothing here replaces care from your own doctor. Several sections point you toward a clinician deliberately, because that is where those problems belong.

### WHO THIS REPORT IS FOR

| | |
|---|---|
| **40+** | Men who feel broadly fine, have no diagnosis, and have therefore done nothing. |
| **Busy** | Men who have run out of patience with contradictory advice and want to know which claims survive scrutiny. |
| **Honest** | Men who would rather hear that something does not work than be sold it. |

EXECUTIVE SUMMARY

# Ten findings that should change what you do

If you read nothing else, read these. Each is defended, sourced and qualified in the pages that follow.

| THE TEN NUMBERS | |
|---|---|
| **12.4 yrs** | The gap between how long an American lives and how long they live in good health — the national figure, and the largest of any WHO member state. For men specifically it is roughly 11 years. |
| **5.04** | All-cause mortality hazard for low cardiorespiratory fitness. Elite fitness carries 0.20. No other single variable in this report has a spread that wide. |
| **45–50** | The age at which absolute muscle mass actually begins to fall in men — not 30, as almost every article says. What falls from 30 is muscle as a *percentage* of body weight, because the denominator is growing. |
| **2.1%** | Of men aged 40 to 79 who meet strict criteria for symptomatic late-onset hypogonadism. Testosterone prescribing in American men over 40 rose 3.6-fold in a decade — different populations, so the comparison is directional, not exact. |
| **39 months** | Average lead time in one cohort between erectile symptoms and coronary symptoms. It is the earliest vascular warning most men are given, and the one they are least likely to report. |
| **+182%** | Increase in mortality risk associated with an extremely aged brain. Of eleven organs measured, brain age predicted death best. |
| **1.32** | Pooled mortality effect of social isolation across 2.2 million people. Being alone carries a larger effect than feeling alone. |
| **3.4%** | Share of coronary heart disease attributable to job strain. Real, and far smaller than the conversation about it implies. Any report telling you your job is killing you owes you this number. |
| **40 min** | Per *week* of resistance training, for the peak reduction in all-cause mortality. Not per day. |
| **12 yrs** | Difference in estimated life expectancy at 50 between men practising none of five ordinary habits and men practising all five. |

Three of those numbers correct figures you have probably seen quoted wrongly. That pattern repeats throughout this report, and it is the reason it exists.

PART 1

# What Declines, and How Fast

Every system has a rate. Most of the rates men are quoted are wrong, and the direction of the error is almost always the same: earlier and faster than the evidence supports.

CHAPTER 1

01

## The Two Curves

Decline is not the problem. The gap between two kinds of decline is the problem.

There are two different things happening to a man after 40, and almost every conversation about ageing confuses them.

The first is intrinsic ageing: the slow, universal, largely unavoidable drift of every biological system. It happens to men who do everything right. It is measurable, it is slow, and on its own it is not what puts a man in a cardiology waiting room at 58.

The second is accumulated damage: the compound effect of inactivity, excess visceral fat, poor sleep, alcohol, tobacco, chronic stress and chemical exposure. This one is steep, it is individual, and it is largely optional. When a man says he feels like he fell off a cliff at 50, he is almost never describing the first curve. He is describing the second.

### Healthspan versus lifespan

Lifespan is how long you live. Healthspan is how long you live in good health. The gap between them is the number of years you spend managing disease rather than living around it.

Across 183 WHO member states in 2019, that gap averaged 9.2 years and had widened roughly 13% since 2000. In the United States it is 12.4 years — the largest of any member state on earth, and still growing.

**ONE ASSUMPTION WORTH CORRECTING IMMEDIATELY**

The healthspan gap is not a male problem in the way it is usually framed. Women's healthspan gap averages 2.4 years wider than men's, and in the United States women's gap is 13.7 years against roughly 11 for men. Men die earlier; women spend longer unwell. Both facts are true and they are routinely used against each other.

### Why the second curve is invisible until it is not

Every decline in this report is silent at the stage where it is cheapest to reverse. Blood pressure produces no sensation. Rising HbA1c produces no sensation. Falling cardiorespiratory fitness is experienced as preferring the lift, which men attribute to being busy. Bone density produces nothing at all until a fracture. Brain volume loss produces nothing you would notice in a decade.

This is the core structural problem of men's health after 40. The body supplies no feedback loop on the timescale that matters, so the only way to see the second curve is to measure it deliberately. Most men do not. In a Cleveland

Clinic survey of 1,174 men, only 43% of men aged 35 to 54 reported getting an annual physical, against 74% of older men — and 35 to 54 is the band where the trajectory is set.

**WHAT TO TAKE FROM THIS**

- Intrinsic ageing is slow and largely unavoidable. Accumulated damage is steep and largely optional. Men experience the sum and blame the first.
- The United States has the widest healthspan–lifespan gap of any WHO member state, at 12.4 years.
- Everything that matters at this stage is silent. Measurement is not optional extra credit — it is the only way to see the curve you are actually on.

CHAPTER 2

02

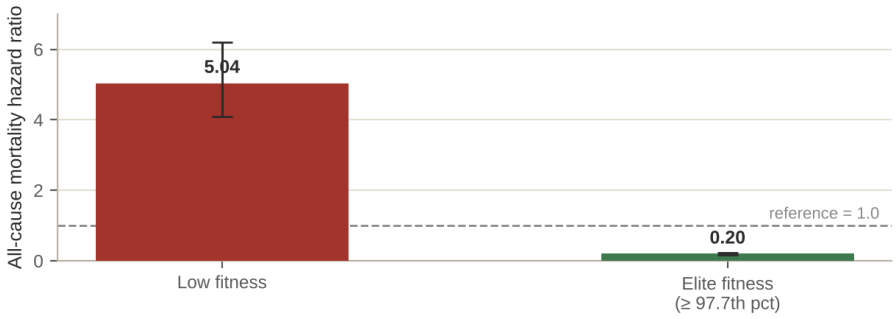
## Cardiorespiratory Fitness: The Master Variable

If you fix one thing, fix this. The effect size is not close.

Among 122,007 patients given treadmill testing, with 13,637 deaths over a median 8.4 years, the elite fitness group — at or above the 97.7th percentile for their age and sex — carried an adjusted all-cause mortality hazard ratio of 0.20 against the lowest group. Read the other way, low fitness carried a hazard ratio of 5.04.

**Fitness is the widest gap in the literature**

Adjusted all-cause mortality hazard ratios, with 95% confidence intervals




Mandsager et al., JAMA Network Open 2018. 122,007 patients undergoing exercise treadmill testing; 13,637 deaths; median follow-up 8.4 years. Stratified by age- and sex-matched percentile of peak estimated METs. Observational cohort.

Low fitness carried a 5.04 all-cause mortality hazard against 0.20 for elite fitness. 122,007 patients, 13,637 deaths, median 8.4 years of follow-up. Observational cohort.

Two things make this finding unusual. The first is the size: nothing else in this report comes close to a five-fold spread. The second is that there was **no observed upper limit of benefit**. In most of medicine, benefit plateaus. Here it did not.

**THE HONEST LIMITS**

This is an observational cohort drawn from a referred clinical population, so some of that gap is sick people performing badly on a treadmill rather than unfit people dying of unfitness. It shows association, not proof of cause. What it does not do is leave much room for fitness being unimportant.

## How fast it actually declines

You will see “10% per decade” quoted everywhere. The Baltimore Longitudinal Study of Aging, following 810 people including 435 men for seven to nine years, found that the rate of aerobic decline **quadruples across the lifespan** — which makes a flat 10% figure wrong at both ends. Men also declined faster than women from their forties onward.

One caution on that study: those figures could only be confirmed through professional-medical summaries of the abstract rather than the full text. Treat the shape as solid and the exact decade figures as second-hand.

## What training does, and what it does not do

In the same cohort, rates of decline were similar across levels of self-reported physical activity, while activity predicted better fitness at every age. In other words, training appears to **raise the whole curve rather than flatten it**.

That distinction matters and it is usually elided. Training does not visibly slow the rate at which you lose aerobic capacity. It starts you from a much higher place, so the same rate of loss takes far longer to carry you below the threshold where life gets small. Given a five-fold mortality spread, raising the curve is more than enough.

**WHAT TO TAKE FROM THIS**

- Low fitness carried a 5.04 mortality hazard against 0.20 for elite fitness, with no observed ceiling on benefit.
- The flat “10% per decade” figure is wrong: the rate of loss quadruples across the lifespan, and men lose faster than women after 40.
- Training raises the curve rather than flattening it — which is the outcome you want anyway.

CHAPTER 3

03

# Muscle, Strength and Power

Three different things, three different rates, and the popular figure is attached to the wrong one.

Almost every article aimed at men over 40 opens with some version of “you lose 3 to 8% of your muscle per decade after 30.” The rate is roughly right. The age and the emphasis are both wrong, and the error changes what you would do about it.

**WHAT MRI ACTUALLY FOUND**

Measured directly by MRI in 468 people, absolute muscle mass in men shows **no noticeable decrease until the end of the fifth decade** — roughly 45 to 50. What falls from 30 is muscle as a percentage of body weight, a ratio that drops largely because the denominator is growing. You are not primarily losing muscle in your thirties. You are gaining fat.

## Strength leaves faster than mass

The more useful finding is that strength and mass come apart. In the Health ABC study, leg strength fell 3.4% a year in white men and 4.1% in Black men while leg lean mass fell about 1% — and gaining or maintaining lean mass did not prevent the strength decline.

**THE CAVEAT THAT IS ALMOST ALWAYS DROPPED**

Those 3.4% and 4.1% figures describe men aged 70 to 79. They are routinely quoted in articles aimed at men in their forties, where they do not apply. **A 45-year-old is not losing 4% of his strength a year.**

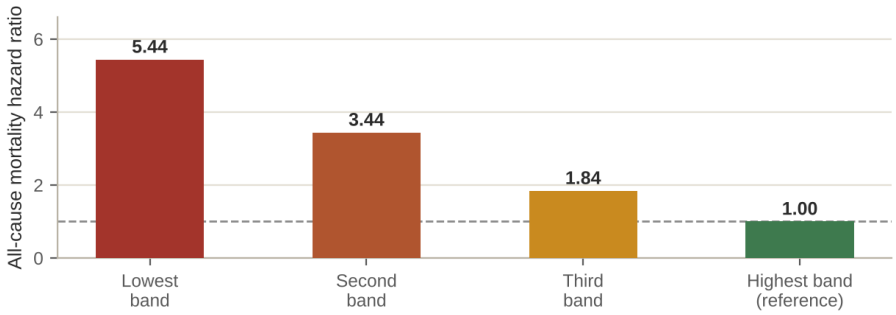
Across the broader literature, strength is lost roughly two to five times faster than mass, and power — force produced quickly — declines about 10% more than strength does, beginning around age 40. No primary study, population or design is attached to that power figure in the source material, so treat it as a synthesis rather than a measurement.

## Why power is the one to watch

In 3,889 people aged 46 to 75, nearly 68% of them men, followed a median 10.8 years, the hazard ratio for mortality **in the men** was 5.88, lowest relative muscle power against highest — on a wide interval of 2.28 to 15.17.

### A floor test that predicts mortality

Sitting-rising score and all-cause mortality, against the highest-scoring group




Brito et al.: 2,002 adults aged 51–80, 68% men, median 6.3 years of follow-up. Hazard ratios run from lower to higher score bands against the highest-scoring group as reference. Scored 0–5 in each direction with a point deducted for each support used. Each single point corresponded to a 21% improvement in survival. Fewer than 8% of people over 55 achieve a perfect score of 10.

Sitting-rising score and all-cause mortality: hazard ratios of 5.44, 3.44 and 1.84 for the three lower score bands, against the highest-scoring group as reference. 2,002 adults aged 51–80, 68% of them men.

The most useful expression of this is a test you can run on your floor in the next two minutes. Sit down, stand up, scoring five points each way and deducting one for every hand, knee or forearm used for support. In 2,002 adults aged 51 to 80, 68% of them men, each single point corresponded to a 21% improvement in survival. Fewer than 8% of people over 55 score a perfect 10.

**WHAT TO TAKE FROM THIS**

- Absolute muscle mass in men holds until roughly 45 to 50. The “from 30” figure describes a ratio, not a loss of tissue.
- Strength falls two to five times faster than mass, and power falls fastest of all — so train for strength and speed, not size.
- The sitting-rising test is free, takes two minutes, and each point is worth a 21% difference in survival.

CHAPTER 4

# 04 Bone, Falls and the Fracture That Ends It

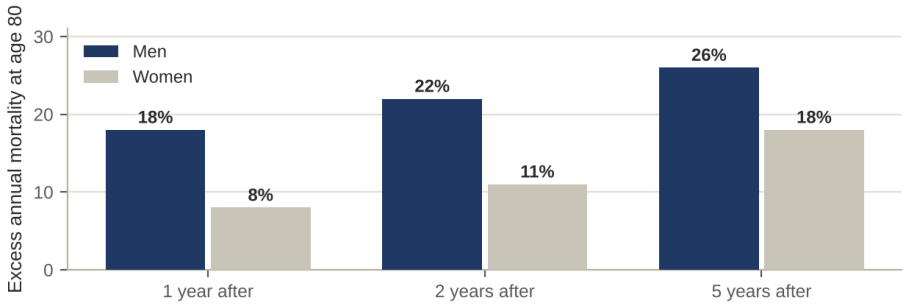
Men get fewer fractures than women and do far worse when they get one.

Male bone loss is slow and steady from about 35. The rate of hip loss increases after 65, and men over 65 lose roughly 0.35 to 0.6% of total hip bone density a year, measured longitudinally in 1,935 men and concentrated in the over-75s and the vitamin-D deficient.

A white man's lifetime risk of a clinical osteoporotic fracture is about 13%, against 40% in women. That reads as reassurance, and it is the reason osteoporosis is treated as a women's disease. Roughly 30% of all hip fractures worldwide occur in men.

### A hip fracture is far more dangerous in men

Excess mortality after hip fracture at age 80, by sex




Meta-analysis of prospective cohorts with the sexes analysed separately. A man's all-cause mortality hazard in the three months after a hip fracture was 7.95 times that of an unfractured peer, against 5.75 in women. Roughly 30% of all hip fractures worldwide occur in men, and fewer than half of survivors regain their prior function.

Excess mortality after hip fracture at age 80 — men 18%, 22% and 26% at one, two and five years; women 8%, 11% and 18%.

The consequences are considerably worse. Excess annual mortality at age 80 after hip fracture ran 18% at one year, 22% at two and 26% at five in men, against 8%, 11% and 18% in women. A man's all-cause mortality hazard in the three months after a hip fracture was 7.95 times that of an unfractured peer, against 5.75 in women.

**READ THE TWO FACTS TOGETHER**

Men are less likely to break a hip and far more likely to die when they do. Fewer than half of survivors regain their prior function, and falls caused 83% of hip fracture deaths. This is probably the most under-appreciated statistic in men's health after 50.

## One beam of genuinely good news

Most of this report has to hedge, because most of the evidence is observational. Fall prevention does not. Randomised trials show exercise reducing the number of people who fall by 12% and injurious falls by 26% — among the strongest randomised findings anywhere in this material.

**WHAT TO TAKE FROM THIS**

- Men over 65 lose 0.35–0.6% of hip bone density a year. Lifetime fracture risk is about 13% against 40% in women.
- Male post-fracture mortality is far higher: 26% excess at five years against 18%, and a three-month hazard of 7.95 against 5.75.
- Exercise for fall prevention is randomised, not observational: 12% fewer fallers and 26% fewer injurious falls.

CHAPTER 5

05

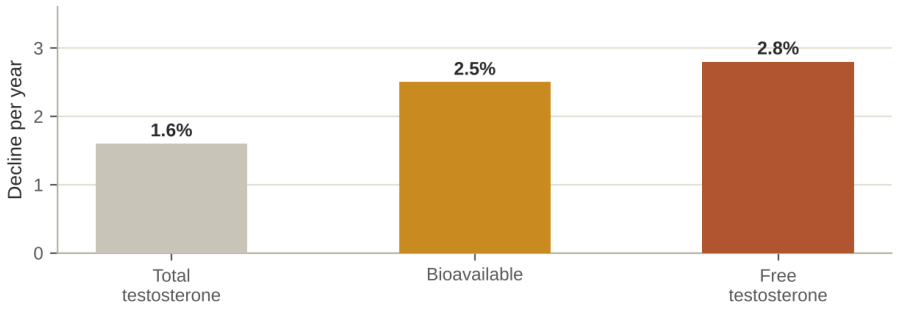
# Hormones, Honestly

The most misquoted number in men's health, and a treatment that is both legitimate and oversold.

You have been told testosterone falls about 1% a year from age 30. **No primary source reports that.** The study it is usually attributed to enrolled men aged 40 to 70 and therefore says nothing whatsoever about age 30.

**The usable fraction falls fastest**

Longitudinal rates of testosterone decline in the same men




Massachusetts Male Aging Study: 1,156 men aged 40–70 at baseline, followed a median 8.9 years. The widely quoted "1% a year from age 30" is reported by no primary source — this study enrolled men aged 40 to 70 and says nothing about age 30. In 890 men followed longitudinally the decline was linear and age-invariant: no cliff has ever been demonstrated.

Annual decline in 1,156 men aged 40–70: total testosterone 1.6%, bioavailable 2.5%, free 2.8%.

What the longitudinal data actually show, in 1,156 men aged 40 to 70 followed a median 8.9 years: total testosterone fell 1.6% a year, bioavailable 2.5% and free 2.8%. The usable fraction falls fastest, because the binding protein that takes testosterone out of circulation rises with age. A normal total with a high binding globulin can hide a meaningfully lower free fraction.

**THERE IS NO CLIFF**

In 890 men followed longitudinally, the decline was linear and the authors described the age effect as age-invariant — it did not accelerate. No inflection point for male testosterone has ever been demonstrated. The rising prevalence of "low T" with age is simply what a straight-line decline looks like when a population crosses a fixed diagnostic threshold at different times.

## How many men actually have the condition

Applying a rigorous symptomatic definition, the European Male Ageing Study found that **2.1% of 2,966 men aged 40 to 79** met criteria for symptomatic late-onset hypogonadism — 63 men, of whom 27 were severe.

Against that: by 2011, 2.91% of commercially insured American men over 40 were being prescribed androgen therapy, up 3.6-fold in a decade, and 25.3% of new prescriptions began with no testosterone measurement in the previous year. Those are different populations and the comparison is directional rather than exact. The direction is still worth sitting with.

## Where testosterone therapy genuinely stands

This report is not against testosterone replacement therapy. For a man with genuine, properly diagnosed hypogonadism it is legitimate and it works. TRAVERSE — 5,204 men aged 45 to 80 with diagnosed hypogonadism and elevated cardiovascular risk — found major adverse cardiac events at 7.0% on testosterone against 7.3% on placebo, meeting noninferiority.

**WHAT THAT TRIAL DID AND DID NOT SHOW**

It was designed to rule out harm, not to demonstrate benefit. There was no mortality benefit and no longevity benefit. Three safety signals are usually dropped from the headline: atrial fibrillation 3.5% against 2.4%, acute kidney injury 2.3% against 1.5%, and pulmonary embolism 0.9% against 0.5%. About 61% of men in both arms discontinued treatment, which the authors state may bias the result toward noninferiority, and the trial was funded by a consortium of testosterone manufacturers. It says nothing at all about men with normal testosterone using it for optimisation.

## Why sequence matters more than the prescription

Three things lower testosterone and all three are addressable. Genetically instrumented body mass causally lowers testosterone — a quarter of a standard deviation per standard deviation of BMI, verified in 7,446 men. Pooled across 24 studies, weight loss through diet raised total testosterone by about 2.87 units and bariatric surgery by 8.73, on a scale the accessible source did not state. And one week of five-hour nights lowered daytime testosterone 10 to 15% in healthy young men — though that study had ten participants and a separate controlled study of fourteen men found no significant change, so the effect is not robust across small trials.

If you suspect low testosterone: two morning draws, fasted, at least 48 hours apart, with symptoms documented, and ask specifically for LH and FSH — they distinguish a testicular problem from a pituitary one and are routinely left off direct-to-consumer panels. Then give sleep, alcohol and visceral fat ninety honest days. That tells you something no single blood draw can, and it does not close any door.

**WHAT TO TAKE FROM THIS**

- “1% a year from 30” has no primary source. The longitudinal figures are 1.6% total, 2.5% bioavailable and 2.8% free, in men aged 40 to 70.
- Only 2.1% of men aged 40 to 79 meet strict criteria for symptomatic late-onset hypogonadism.
- TRT is legitimate and effective for diagnosed hypogonadism. TRAVERSE established safety, not benefit — and the inputs upstream of testosterone are worth ninety days first.

CHAPTER 6

06

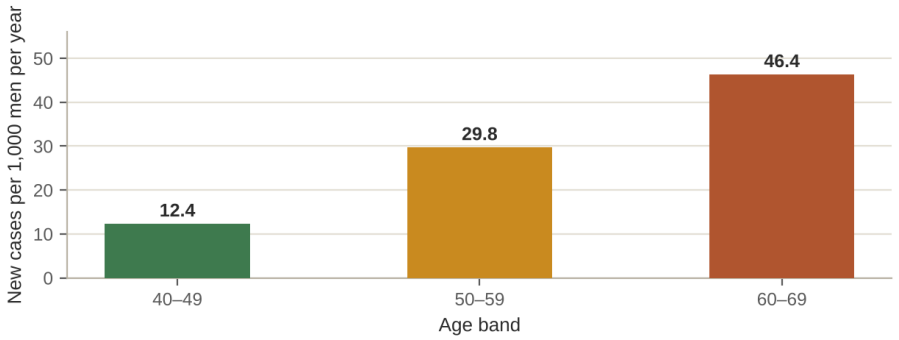
# Sexual Function as an Early Warning

The symptom men are most embarrassed by is the one that arrives earliest.

In a community-based sample of men aged 40 to 70, the combined prevalence of minimal, moderate and complete erectile dysfunction was 52%, with complete dysfunction tripling from 5% at 40 to 15% at 70. The incidence data are cleaner still.

**The earliest vascular warning men get**

Incidence of erectile dysfunction by decade




Massachusetts Male Aging Study, longitudinal arm: community-based sample of men aged 40 to 70; roughly 26 new cases per 1,000 men per year overall. The study's adjusted analysis showed the condition tracked with heart disease, hypertension, diabetes, anger and depression — not with age alone. Common is not the same as normal ageing.

New cases of erectile dysfunction per 1,000 men per year: 12.4 at ages 40–49, 29.8 at 50–59 and 46.4 at 60–69.

**COMMON IS NOT THE SAME AS NORMAL**

The study's adjusted analysis showed the condition tracked with heart disease, hypertension, diabetes, anger and depression — not with age alone. A rising prevalence with age reflects the accumulation of vascular, metabolic and hormonal disease over time, not an inevitable feature of getting older.

## Why it arrives before the cardiac event

The penile arteries run 1 to 2 mm across; the coronary arteries run 3 to 4 mm. The same endothelial disease narrows the smaller vessels first, so the smaller vessels report first.

In one cohort, erectile symptoms preceded coronary symptoms by an average of 39 months. In a prospective study, symptomatic dysfunction preceded the discovery of silent coronary disease by 25 months. And 19% of men presenting with vascular erectile dysfunction and no cardiac symptoms were found to have documented but clinically asymptomatic coronary disease. A 2024 systematic review of 39 studies and more than 450,000 participants put the pooled association with cardiovascular disease at an odds ratio of 1.42.

### And it responds to the ordinary things

In a randomised trial, 110 obese men aged 35 to 55 — with no diabetes, hypertension or hyperlipidaemia — were assigned to a two-year diet and exercise programme or to control. Seventeen men in the intervention group reached the clinical threshold for normal function against three in the control group. Physical activity predicted improvement regardless of change in body mass index.

Take erectile changes to a physician who will check blood pressure, lipids and glucose — not to a service that will simply send a prescription. The prescription treats the symptom and leaves the warning unread.

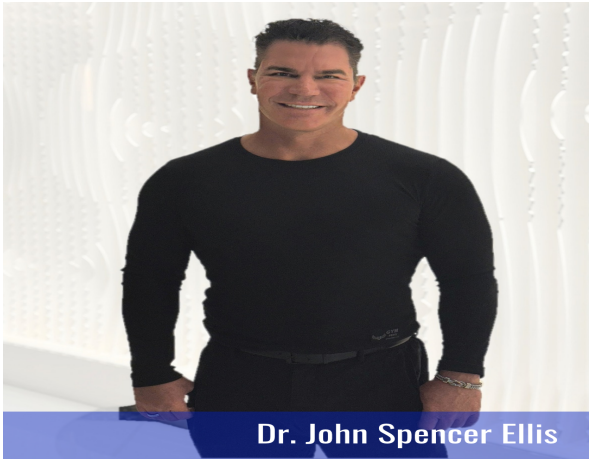
**WHAT TO TAKE FROM THIS**

- ED incidence rises from 12.4 to 46.4 new cases per 1,000 men per year between the forties and the sixties.
- Average lead time before coronary symptoms is 39 months; 19% of men with vascular ED and no cardiac symptoms already have documented coronary disease.
- In a two-year randomised trial, roughly one in three men restored normal function on diet and exercise alone.

PART 2

## The Declines Nobody Measures

Everything in Part One shows up on a test. Everything in Part Two carries a comparable mortality signal and appears on no panel your physician will order.




The second half of the problem is not physiological, and it is not softer.

CHAPTER 7

07

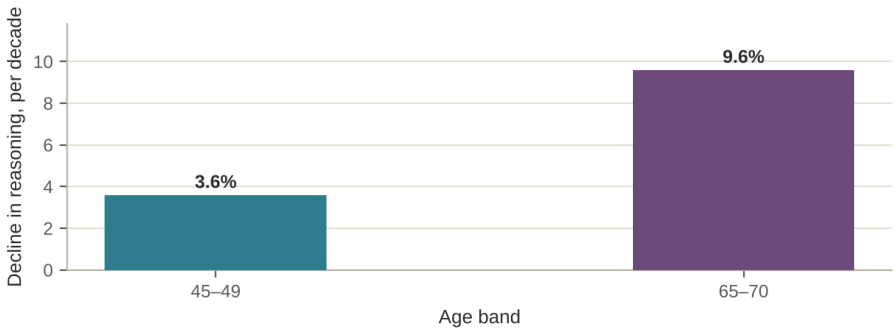
# The Brain

The organ that predicts death best is the one nobody tests.

Brain volume begins a steady decline around age 35 at roughly 0.2% a year, reaching about 0.5% a year by 60 and continuing to rise from there — pooled across 56 longitudinal MRI studies. Function follows.

**Cognitive decline starts before you notice it**

Reasoning scores in men, measured repeatedly over ten years




Whitehall II: 5,198 men followed for ten years with repeated testing. Every cognitive score except vocabulary declined in all five age bands. Longitudinal designs are deflated by practice and retest effects and cross-sectional ones inflated by cohort effects; Whitehall II is also an occupationally selected British civil-service cohort.

Reasoning decline per decade in 5,198 men: 3.6% at ages 45–49, rising to 9.6% at 65–70.

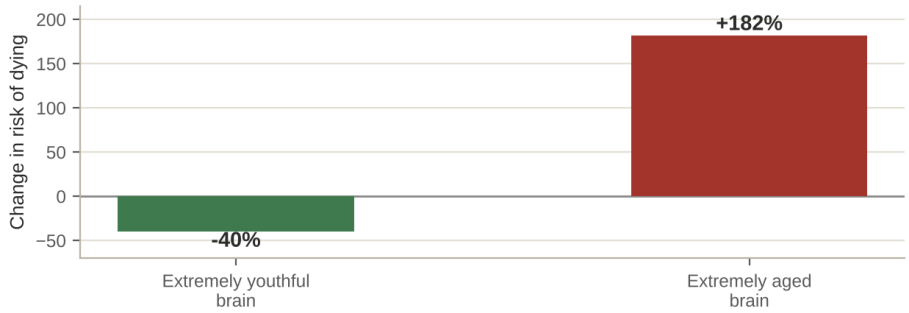
In 5,198 men followed ten years with repeated testing, reasoning declined 3.6% per decade at ages 45 to 49, rising to 9.6% at 65 to 70 — about 2.7 times the rate. Every cognitive score except vocabulary declined in all five age bands.

## Organ age, and why you should not buy the test

Using plasma proteomics across 2,916 proteins in 44,498 UK Biobank adults aged 40 to 70, researchers estimated the biological age of eleven separate organs from a single blood sample. Of all eleven, brain age was the best single predictor of overall mortality.

**Of eleven organs, the brain predicted death best**

Mortality risk by estimated brain age, over up to seventeen years




Plasma proteomics of 2,916 proteins across eleven organs in 44,498 UK Biobank adults aged 40–70, monitored up to 17 years. Brain age was the best single predictor of mortality among the eleven. Association, not demonstrated causation. Organ-age testing is not commercially available, and the clocks are unreliable for individuals: in UK Biobank, 68% of people flagged as extreme organ agers were no longer extreme at their next visit.

An extremely aged brain raised the risk of dying by 182%; an extremely youthful brain carried roughly 40% lower risk. 44,498 UK Biobank adults aged 40–70.

An especially aged brain carried an Alzheimer's hazard ratio of 3.1 — similar to carrying one copy of APOE4 — while a youthful brain carried 0.26, and both effects were independent of APOE genotype. Your genotype is not the end of the conversation.

**WHY THIS IS NOT YET A PERSONAL DASHBOARD**

Technical noise alone produced deviations of up to nine years between replicates of the same sample, and in UK Biobank 68% of people flagged as extreme organ agers were no longer extreme at their next visit. These clocks were designed for epidemiological studies, not for individuals. The finding is real; the consumer product is not ready, and you do not need it to act.

## Forty-five percent is modifiable

The 2024 Lancet Commission concluded that around 45% of dementia cases are potentially preventable by addressing fourteen modifiable risk factors across the life course — up from 40% and twelve factors in 2020. Between those two reports, four factors moved from late-life to midlife: smoking, depression, physical inactivity and diabetes.

Midlife means your forties and fifties. The Commission's blood pressure recommendation is unusually specific: maintain systolic pressure of 130 mmHg or less **from age 40**, not 60. Eight of the fourteen factors are more prevalent in men — traumatic brain injury at 16.7% against 8.5%, hearing loss at 12.2% against 9.8% — though that sex analysis comes from a separate 2025 paper rather than the Commission itself.

**WHAT TO TAKE FROM THIS**

- Brain volume falls 0.2% a year from 35 and 0.5% by 60; reasoning decline nearly triples between the late forties and late sixties.
- Brain age predicted mortality better than any of eleven organs measured — but the clocks are unreliable for individuals.
- Around 45% of dementia is potentially preventable, and the Lancet Commission's blood pressure target starts at 40.

CHAPTER 8

08

# Mood, and How It Shows Up in Men

A real gap in treatment, and a popular theory that does not survive its own evidence.

Among American adults, past-year major depressive episode runs at roughly 6.2% in men against 10.3% in women. The largest meta-analysis ever assembled on the sex difference — more than 1.7 million people across more than ninety nations — put the odds ratio at 1.95.

**A GAP IN THE DATA WORTH KNOWING ABOUT**

No major American survey publishes depression prevalence for men crossed by age band. Any figure you have seen quoted for the depression rate in men aged 40 to 64 does not exist in the source data — it has been interpolated by somebody. The same is true of alcohol use disorder. This report will not invent one.

## The male-presentation theory, tested properly

The popular claim is that men get depressed differently and standard instruments miss it. There is something there, and it is narrower than the version you have heard.

Scored using only alternative symptoms — anger attacks, aggression, substance abuse, risk taking — the direction of the sex gap reversed: 26.3% of men against 21.9% of women, statistically significant. Scored using both symptom sets together, the gap vanished entirely. That is a finding about which symptoms a scale chooses to count.

It is not evidence that standard instruments are biased against men, and those are different claims. A 2022 study of 6,054 adults across four European countries found the PHQ-9 largely free of differential item functioning by sex. In the largest symptom-level meta-analysis — 32 studies, 108,260 participants, all with diagnosed depression — two symptoms came out meaningfully higher in men: risk taking and poor impulse control at an effect size of 0.58, and alcohol and drug misuse at 0.26. Three came out higher in women, including depressed mood itself.

## The gap that is unambiguous

Among American adults with any mental illness, 42.1% of men received treatment in the past year against 59.2% of women. Just 7.2% of men engage in talk therapy against 11.7% of women — a figure that reaches this report through secondary citation, so hold the decimals loosely. The direction is not in dispute.

The most important finding in this chapter concerns contact rather than diagnosis. In linked records of 5,894 people who died by suicide, four of the men in five had seen a clinician in the prior year and nearly half within four weeks

— yet only two in five carried any mental health diagnosis in the record, and 64% of all prior-year primary care visits had no mental health diagnosis attached.

**ONE CORRECTION, BECAUSE IT IS USED TO FRIGHTEN MEN**

Midlife is not where men are most likely to die by suicide. The age-adjusted rate for American men in 2024 was 22.3 per 100,000 against 5.6 for women. By band, men 45 to 64 ran 29.6, men 25 to 44 ran 28.5, and men 75 and over ran 40.1. A man told his age group is in a unique emergency is being told something the data do not quite support. The treatment gap is the real finding.

If you are struggling, say so at an appointment you are already attending. Your own doctor counts, and you do not need the right words. If someone you know seems off, ask directly — support is available, and asking does not plant the idea.

CHAPTER 9

09

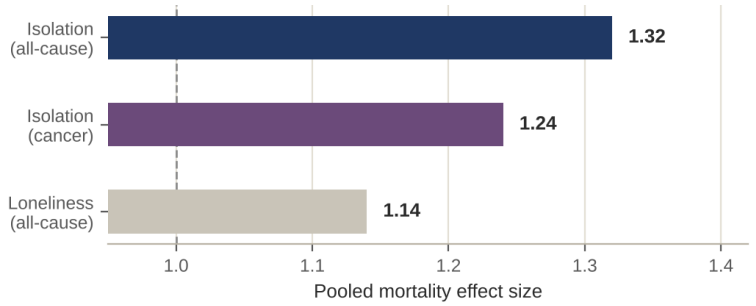
# Isolation, Friendship and Purpose

A mortality signal comparable to the physical ones, and no test for it.

Across 90 prospective cohort studies and 2,205,199 individuals, social isolation was associated with all-cause mortality at 1.32. Loneliness came in at 1.14.

**Being alone outranks feeling alone**

Social isolation carries a larger mortality effect than loneliness does




2023 systematic review and meta-analysis: 90 prospective cohort studies, 2,205,199 individuals. Isolation all-cause 1.32 (95% CI 1.26–1.39); loneliness 1.14 (1.08–1.20); isolation and cancer mortality 1.24. Observational.

Pooled mortality effects across 90 cohorts and 2,205,199 people: social isolation 1.32, isolation and cancer mortality 1.24, loneliness 1.14.

Isolation and loneliness are not the same variable. Isolation is how few people you actually see; loneliness is how it feels. The objective one carries the larger number — which is inconvenient, because men are generally better at managing the feeling than the fact.

The effect is also multiplicative rather than additive. In 497,544 UK Biobank participants, those who were low-active and isolated carried a hazard ratio of 1.58, against 1.26 for those who were low-active but not isolated. Same activity level, materially different outcome — though that analysis was not sex-stratified.

**TWO CLAIMS IN THIS AREA THAT DO NOT HOLD UP**

First: “loneliness equals fifteen cigarettes a day” appears in neither of the major meta-analyses it is attributed to. It traces to an effect-size comparison, later popularised by a Surgeon General's advisory, not to any head-to-head measurement. Second: the much-quoted collapse in male friendship compares a 2021 online panel against a 1990 Gallup poll — different instruments, different modes. Pew in 2023 found 9% of men and 8% of women with no close friends. The subjective male loneliness gap is close to zero.

What survives is the objective finding, and it is enough: measured social isolation carries a mortality effect in the same range as several things men take far more seriously.



Connection is a scheduled input, not something that happens by itself after 40.

### Purpose, with the confounding shown

Across ten prospective studies and 136,265 people, a higher sense of purpose in life was associated with an adjusted relative risk for all-cause mortality of 0.83.

The unadjusted figure was 0.67, which tells you how much of the raw association was confounding. Only six of the ten studies adjusted for depression, which is a serious problem given that low purpose is partly a symptom of depression. And no trial has shown that increasing a person's sense of purpose extends his life. It is an association between a self-reported construct and an outcome, not a demonstrated intervention.

**WHAT TO TAKE FROM THIS**

- Social isolation carries a pooled mortality effect of 1.32 across 2.2 million people — larger than loneliness at 1.14.
- Isolation amplifies inactivity: 1.58 against 1.26 at the same activity level.
- Purpose is associated with lower mortality at 0.83 adjusted, 0.67 unadjusted — and no trial has shown that raising it extends life.

CHAPTER 10

10

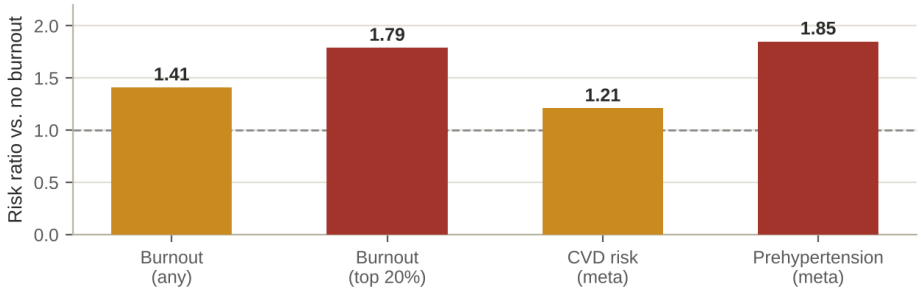
## Burnout and the Cost of the Job

Real, measurable, and smaller than the conversation about it implies.

Researchers followed 8,838 apparently healthy employed adults aged 19 to 67 for an average of 3.4 years. Ninety-three new cases of coronary heart disease appeared. After adjustment, baseline burnout carried a hazard ratio of 1.41 — and 1.79 in the top 20% of burnout scores.

### Burnout is a cardiac risk factor, not a mood

Hazard and risk ratios from two separate bodies of evidence




Left two bars: Toker et al., Psychosomatic Medicine 2012 — 8,838 apparently healthy employed men and women aged 19–67, mean 3.4 years follow-up, 93 new coronary heart disease cases. Right two bars: 2024 systematic review and meta-analysis, 25 studies, 26,916 participants. Both observational; both mixed-sex.

Burnout and coronary heart disease: 1.41 overall and 1.79 in the top 20% of scores, in 8,838 adults. A separate 25-study meta-analysis gives 1.21 for cardiovascular disease and 1.85 for prehypertension.

A 2024 systematic review of 25 studies and 26,916 participants found a smaller overall effect: 21% higher cardiovascular risk, and 85% higher risk of prehypertension. Prehypertension is the stage where nothing hurts and nothing shows, and the stage where it is cheapest to reverse.

## It is not the hours. It is the authority.

This is the most useful finding in the chapter. Decomposing the effort-reward model across pooled European cohorts, **high effort alone carried no effect whatsoever** — a hazard ratio of 0.99 — while low reward alone carried the signal at 1.18. Separately, in Whitehall II's 10,308 civil servants, men reporting low control over their work at both measurement waves had nearly double the odds of a coronary event, at 1.93.

Hours do matter at the extreme. The WHO and ILO estimated 745,000 deaths in a single year from ischaemic heart disease and stroke attributable to working 55 or more hours per week — 398,000 from stroke and 347,000 from heart disease, a 29% rise since 2000.

**THE NUMBER THAT DEFLATES THE CONVERSATION**

Before 2012, published estimates put job strain and coronary disease at around 1.34. When the unpublished datasets were included, the three previously published studies gave 1.43 and the ten unpublished gave 1.16. The honest pooled estimate across 197,473 people was 1.23 — with a population attributable risk of **3.4% of coronary disease**, a fraction of what smoking contributes. Any document telling a man his job is killing him owes him this number.

Two related findings are worth having. Unemployment is a larger exposure than job strain and markedly worse in men — a hazard ratio of 1.78 against 1.37 for women, across more than 20 million people, concentrated in men under fifty. And across 275 estimates, 58.5% found no effect of retirement on health in either direction; early retirement does not raise mortality. Involuntary or mandatory retirement was the strongest negative predictor in the entire analysis. Again: control, not work.

**WHAT TO TAKE FROM THIS**

- Burnout carries a coronary hazard of 1.41, rising to 1.79 in the top quintile, and an 85% higher prehypertension risk.
- Effort alone was a null result. Low reward and low control carry the signal — it is effort without authority that does the damage.
- Job strain accounts for about 3.4% of coronary disease. Real, and far smaller than the discourse suggests.

CHAPTER 11

11

# Toxic Load

Genuine exposures, genuine uncertainty, and an industry selling solutions to both.

This is the area where honest reporting is hardest, because the exposure data are real and the harm data are thinner than either the alarmists or the sceptics admit.

## What is well established

Occupational exposure is the clearest case. In June 2022 the International Agency for Research on Cancer classified occupational exposure as a firefighter a Group 1 carcinogen — its highest hazard category. NIOSH data indicate firefighters carry a 9% higher risk of a cancer diagnosis and 14% higher risk of dying from it than the general US adult population, and cancer caused 66% of career firefighter line-of-duty deaths in North America between 2002 and 2019. A NIOSH study of more than 19,000 firefighters found total time at fires associated with lung cancer and total fire responses associated with leukaemia mortality — a dose-response relationship rather than a categorical one.

On endocrine disruptors, a study measuring urinary phthalate metabolites in 74 men manufacturing PVC flooring alongside 63 construction workers found all participants but one had detectable levels. The study is titled, plainly, *Occupational Phthalate Exposure Reduces Testosterone*. A separate firefighter cohort detected phthalate metabolites in every single urine sample, with associations to specific habits including heating food in plastic and consuming fats packaged in plastic.

**THE LIMIT THAT GOVERNS THIS ENTIRE CHAPTER**

Biomonitoring demonstrates exposure, not harm. Detecting a metabolite in urine tells you the compound entered the body, not what it did there. Dose matters enormously, and a great deal of consumer-facing content on this subject ignores that completely. The PFAS and human fertility literature is genuinely mixed.

## Two everyday exposures with much harder data

Before the bathroom shelf, two things matter more. Using inherited variants in alcohol metabolism as a natural experiment across 371,463 people, coronary artery disease risk rose 38% per standard deviation of genetically predicted intake and hypertension 28% — rising from the first drink, with no protective threshold anywhere on the curve. The apparent benefit of light drinking was an artifact of putting sick former drinkers in the abstainer group.

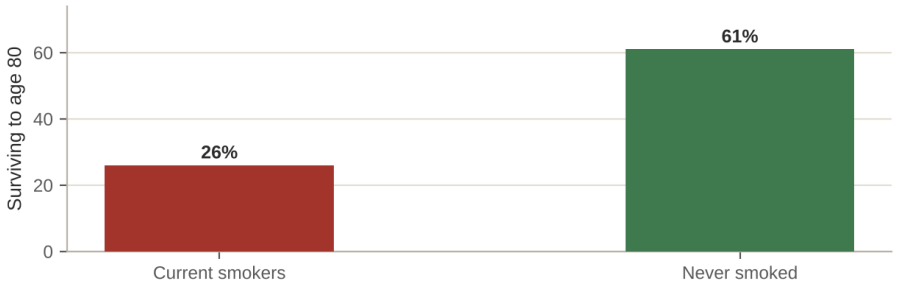
Precision matters here, because overstating it costs you the reader who checks. All-cause mortality risk in men is statistically indistinguishable from abstainers up to roughly 24 grams a day — about two standard drinks — and

rises significantly from 45 grams. Moderate drinking is a tolerable risk, not a benefit.

And smoking remains the largest modifiable exposure in this entire report.

**The single largest modifiable exposure**

Proportion of men surviving to 80, by smoking status




88,496 men. Current smoking carried a mortality hazard of 2.8. Smokers lose about twelve years of life, and quitting between 45 and 54 gives back roughly six of them — which is the number that matters if you are reading this in your forties.

Survival to age 80: 26% of current smokers against 61% of men who never smoked, across 88,496 men.

**WHAT DOES NOT WORK**

“Detox” supplements, teas and cleanses have no credible evidence that they enhance elimination of environmental compounds, and the category is essentially unregulated. Chelation without a diagnosed indication carries genuine risk and no established benefit. The claim that infrared sauna meaningfully excretes environmental toxins through sweat is far weaker than the marketing suggests. Hair mineral analysis and most consumer toxin panels have widely varying analytical reliability.

**WHAT TO TAKE FROM THIS**

- Occupational exposure is the best-established case — firefighting is a Group 1 carcinogen with a measured dose-response.
- Phthalate exposure is pervasive and anti-androgenic in occupational settings; biomonitoring shows exposure, not harm.
- Alcohol and tobacco are the two exposures with hard causal data, and they are the two the detox industry never mentions.

PART 3

# What Actually Reverses It

The interventions with the strongest human evidence are, almost without exception, the cheapest and least glamorous. This part also says plainly which popular ones do not work.

12

CHAPTER 12

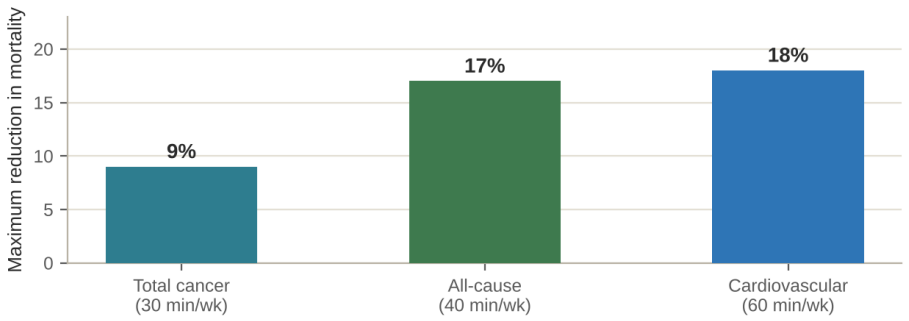
## Training: The Prescription

Smaller doses than you think, and one honest qualification the industry never makes.

Across 16 pooled prospective cohorts, with 42,133 deaths among 263,058 people, any muscle-strengthening activity against none carried a relative risk for all-cause mortality of 0.85. The dose-response peaked at a 17% reduction at 40 minutes per week.

**The dose is per week, not per day**

Peak mortality benefit from resistance training, by outcome




Momma et al., Br J Sports Med 2022: 16 pooled prospective cohorts, 42,133 deaths among 263,058 adults, mixed-sex. Heterogeneity across the main outcomes runs at I² = 73–83%, which is severe, and exposure was self-reported sessions per week — load and intensity were never measured. The apparent downturn above 60 minutes weekly rests on four studies.

Peak mortality reduction from resistance training across 16 cohorts and 263,058 adults: 9% for total cancer at 30 minutes a week, 17% all-cause at 40 minutes, 18% cardiovascular at 60 minutes.

The same analysis found 0.83 for cardiovascular disease, 0.88 for total cancer and 0.83 for type 2 diabetes. Diabetes was the exception to the J-shape: an L-shaped curve with large benefit up to 60 minutes weekly and gradual gains beyond, rather than a reversal.

**DO NOT OVER-READ THE DOWNTURN**

The apparent rise in risk above 60 minutes weekly is drawn from only four studies. Heterogeneity across the main outcomes runs at I² = 73–83%, which is severe, and exposure was self-reported sessions per week — nobody measured load or intensity. The honest reading is that benefit arrives early and plateaus, not that training more is harmful.

## The qualification nobody makes

Chapter 2 reported a five-fold mortality spread by fitness. That is observational. When exercise has been randomised with mortality as the endpoint, it has not delivered. The only long-term randomised trial designed with all-cause mortality as its primary outcome — 1,567 older adults in Norway, five years of supervised training — found no significant difference in any comparison. A pooled analysis of 29 randomised exercise trials covering 11,441 participants found no mortality effect, with a heterogeneity statistic of zero: the trials unanimously agree there is nothing there.

**WHAT THAT DOES AND DOES NOT MEAN**

It does not mean stop exercising. The same randomised literature shows exercise reducing fallers by 12% and injurious falls by 26%, and in men who already have coronary disease, 85 trials (about 83% male) showed a 42% reduction in cardiovascular death beyond three years — though in that same analysis the all-cause mortality confidence intervals cross no effect. Exercise is **proven** for capability, independence and not breaking your hip at 75, and **unproven** for lifespan. Those are both worth having, and only one of them is usually sold to you.

## The prescription

1. **Resistance training, three to four sessions weekly, 40 to 60 minutes in total across the week.** That is the measured sweet spot and it is considerably less than most men assume. Two sessions a week is enough to reverse the direction of decline.
2. **An aerobic base of 150 to 200 minutes weekly at a genuinely conversational pace**, across two to four sessions of thirty to sixty minutes.
3. **One interval session weekly** — four to six repetitions of three to four minutes hard with equal recovery. This is the component that raises the ceiling rather than the floor.
4. **Explicit power work.** Same weight, driven fast on the concentric, plus scaled ballistic work and single-leg balance. Power predicts mortality better than strength alone and almost no man over 40 trains it deliberately.
5. **Progress at connective-tissue speed.** Tendons and ligaments adapt more slowly than muscle after 45, which is the single most common reason a good programme ends in an injury.

**WHAT TO TAKE FROM THIS**

- Any resistance training beats none at RR 0.85; peak benefit lands at 40 minutes a week, not forty a day.
- Randomised trials show exercise prevents falls and reduces cardiac death in existing coronary disease. They have not shown a lifespan effect, and this report will not claim one.
- Train power and balance deliberately. They decline fastest and almost nobody programmes them.

CHAPTER 13

13

# Food: The Pattern, Not the Diet

One randomised dietary trial changed outcomes. It changed a pattern, not a nutrient.

PREDIMED randomised 7,447 people at high cardiovascular risk to a Mediterranean pattern with supplied olive oil or nuts, and found major cardiovascular events at hazard ratios of 0.69 and 0.72. The trial was retracted and republished in 2018 after randomisation irregularities at some sites; the corrected analysis held.

**WHY YOU CANNOT SUPPLEMENT YOUR WAY INTO IT**

Within the trial, participants who also ate nuts more than three times weekly had a hazard ratio for total mortality of 0.37. That figure gets quoted as though nuts produce a 63% mortality reduction. They do not. It is a within-trial subgroup of men already allocated to the nut arm who also ate nuts more than three times weekly, and what produced it was an entire pattern running together for years. Adding one food to an otherwise unchanged diet is a different intervention.

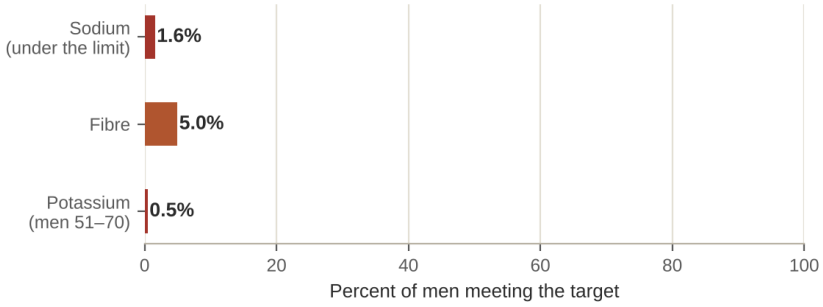
## The strongest single case: fibre

All-cause mortality is **associated with** a roughly 7% reduction for every additional 8 grams of fibre per day, across 185 prospective (observational) studies covering roughly 135 million person-years, with optimal intake at 25 to 29 grams. Each additional 8 grams was also associated with 19% lower coronary heart disease incidence, 15% lower type 2 diabetes and 8% lower colorectal cancer.

Men average 8.7 grams per 1,000 calories against a 14 gram target — about 62% of where they should be, for decades. Only 5% meet the recommendation.

**Three targets, almost nobody meets any of them**

One eating pattern producing three measurable deficits




US national intake data. Only 5% of men meet the fibre recommendation; 0.5% of men aged 51–70 reach the adequate intake for potassium (NHANES 2007–2010); and 98.4% of men exceed the sodium limit, leaving 1.6% under it.

Percent of men meeting each target: fibre 5%, potassium 0.5% (men aged 51–70), and only 1.6% under the sodium limit.

## The one randomised nutrient win

Most nutrient supplementation fails. One did not. In SSaSS, 20,995 people across 600 Chinese villages were randomised to a salt substitute — 75% sodium chloride, 25% potassium chloride — and stroke fell at a relative risk of 0.86 over 4.74 years, with no significant excess of high blood potassium. It was delivered at the dinner table rather than in a capsule. Note that potassium is considerably more protective in women than men, so for men the actionable metric is the sodium-to-potassium ratio rather than potassium alone.

## Protein, with the marketing removed

Men and women eating 1.2 g/kg or more had 41% lower odds of becoming functionally dependent over twelve years than those eating under 0.8 g/kg. The consensus target for healthy older adults is 1.0 to 1.2 g/kg a day.

| POPULAR CLAIM | WHAT THE EVIDENCE ACTUALLY SHOWS |
|---|---|
| Protein powder builds muscle after 45 | Across 49 trials and 1,863 people, supplementation added 0.55 kg of fat-free mass in the under-45s and **0.06 kg in the over-45s, on an interval crossing zero**. The training delivered about 1.1 kg. The training is doing the work. The senior author reports National Dairy Council support. |
| You need 30 g per meal, evenly spread | The original figure comes from a crossover study in eight people aged 25 to 55, funded by the Beef Checkoff, measuring acute muscle protein synthesis over a single day with no confidence intervals. Tested properly in adults aged 65 to 80, distribution gave **p = 0.647**. |
| 1.6 g/kg is the proven target | That breakpoint was **not statistically significant** (p = 0.079), and it describes hypertrophy in resistance-trained adults rather than health in men over 40. |
| Older muscle needs more per sitting | This one holds. Anabolic resistance means roughly 0.40 g/kg per meal against 0.24 for younger men — about 30 to 35 g for an average-sized older man, three to four times a day. |

## Two things with randomised evidence, one without

Replacing saturated fat with polyunsaturated fat carried a relative risk of 0.81 for coronary events across eight randomised trials and 13,614 participants — roughly 10% per 5% of calories exchanged. Cutting about 4.4 grams of salt a day lowered systolic pressure by 5.39 mmHg in people with hypertension.

Against that, intermittent fasting. A 2025 network meta-analysis of 99 randomised trials and 6,582 adults found **time-restricted eating showed no advantage at all** over continuous energy restriction, and no strategy reached the authors' 2 kg threshold for clinical importance. In the cleanest single trial — 139 adults, twelve months — the between-group difference was 1.8 kg, p = 0.11. Autophagy and metabolic-switching claims are mechanistic and mouse-derived. In humans, time-restricted eating's measured value equals the calorie reduction it happens to cause.

## The one that is not a nutrient at all

Twenty adults lived inside a research facility and ate either an ultra-processed or an unprocessed diet for two weeks each, matched for calories, sugar, fibre, fat and carbohydrate on offer, eating as much as they liked. On the ultra-processed arm they ate roughly 500 more calories a day and gained 0.9 kg. On the unprocessed arm they lost 0.9 kg. Same nutrients available; processing itself changed how much they ate.

**WHAT TO TAKE FROM THIS**

- The randomised dietary win was a whole pattern, not a nutrient. PREDIMED gave 0.69 and 0.72 for major cardiovascular events.
- Fibre is the strongest observational case: 7% lower mortality associated with each extra 8 g, and 95% of men miss the target.
- Protein supplementation adds essentially nothing after 45 without training, and protein timing has been tested and found null.

CHAPTER 14

14

# Sleep, Stress and Connection

Upstream of nearly everything in Parts One and Two.

Against a seven to eight hour reference, short sleep carried a relative risk of 1.12 for mortality and long sleep 1.30, across 16 studies and 1,382,999 participants. Long sleep carries the larger estimate almost certainly through reverse causation — occult illness causes sleep rather than the other way round — so do not treat it as a risk factor to act on. The target is seven to nine hours *in bed*, counted as time in bed rather than time asleep.

## Where sleep stops being a lifestyle question

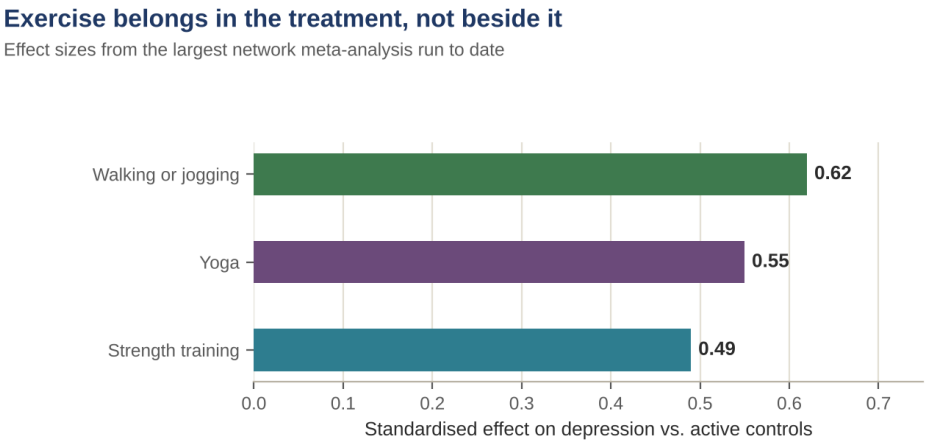
Nearly half of men aged 40 to 85 have moderate-to-severe sleep-disordered breathing on full polysomnography, and most do not know. Sleep apnoea is independently associated with reduced testosterone and with erectile dysfunction — one study found a 64.5% prevalence of erectile dysfunction among men with sleep apnoea and 73% among those with severe disease.

If you snore, wake unrefreshed, or anyone has ever told you that you stop breathing, ask for a sleep study. This is a medical problem with a treatment, and it sits upstream of three other chapters in this report.

For insomnia rather than apnoea, cognitive behavioural therapy is the first-line treatment and it also moves mood: across 19 randomised trials and 4,808 participants with major depression and comorbid insomnia, CBT-I gave odds of depression response of 2.28, and the result held when sleep items were removed from the depression scales. Two honest limits: only three of eighteen trials were at low risk of bias, and outcomes were measured at a median of eight weeks with no long-term data.

## Stress: what has an effect size, and what does not

Exercise is the most reliable intervention here, and it is the same prescription as Chapter 12.




Standardised effects on depression against active controls: walking or jogging 0.62, yoga 0.55, strength training 0.49. 218 studies, 14,170 participants.

Slow-paced breathing has a measured effect on heart rate variability — a standardised mean difference of 0.77 for SDNN following breathing, and a large increase during it. The protocol is inhale four seconds, exhale six to eight, five to ten cycles, roughly sixty to ninety seconds, twice daily and again after any acute stressor. The carryover afterwards is more modest and more variable than the effect during, so treat it as a daily practice rather than a one-off treatment.

**MINDFULNESS, GRADED HONESTLY**

Against time- and attention-matched controls, mindfulness programmes produced 0.38 on anxiety at eight weeks, falling to 0.22 at three to six months, 0.30 on depression and 0.33 on pain. Everything beyond those three outcomes was graded low certainty or insufficient, and the reviewers wrote: “We found no evidence that meditation programs were better than any active treatment.” It works. It does not out-perform the other things that work.

Two further notes on the measurement culture around stress. Lower heart rate variability does predict mortality across 38,008 participants — but it is a readout, not a demonstrated lever, and single-day HRV moves with alcohol, illness, poor sleep, late meals and training load. Track the seven-day rolling average and do not let the number become the stressor. And direct-to-consumer cortisol testing is of limited practical value: in the two key studies linking stress to immune outcomes, measured cortisol predicted nothing on its own.

## Connection, as a prescription

Chapter 9 established the mortality signal. The practical form is narrow: two men contacted weekly *by voice*, plus one recurring in-person activity. The research distinguishes voice and in-person contact from asynchronous messaging — texting does not count — recurring beats spontaneous, and activity beats conversation. The target is a circle rather than a best friend, because people with one close friend report loneliness at almost the same rate as those with none.

**WHAT TO TAKE FROM THIS**

- Seven to nine hours in bed. Long sleep is mostly reverse causation, not a target.
- Nearly half of men 40 to 85 have sleep-disordered breathing. If you snore, that is a clinic visit, not a lifestyle tweak.
- Exercise, slow breathing and scheduled voice contact all have measured effects. Devices and cortisol panels mostly do not.

CHAPTER 15

15

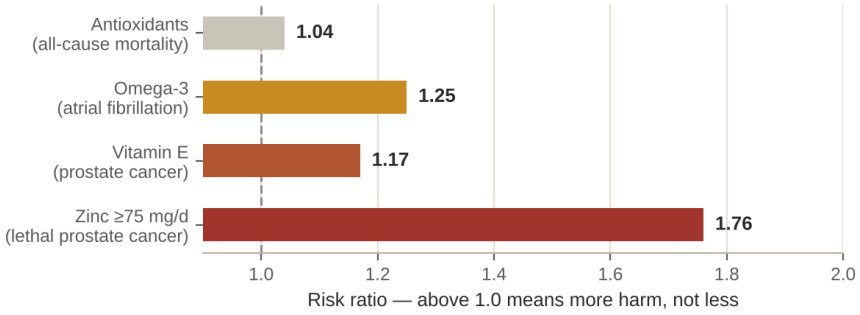
# Supplements, Screening and the Sequence

What is worth taking, what is worth measuring, and the order that prevents most failures.

Start with the sentence that organises this chapter: **no supplement, peptide or drug has ever extended human lifespan in a randomised controlled trial.** Not one.

### Four supplement findings that point the wrong way

Every bar sits to the right of 1.0




Antioxidants: 1.04 (1.01–1.07) in the low-risk-of-bias trials within a Cochrane review of 78 trials and 296,707 randomised participants. Omega-3 and atrial fibrillation: 7 randomised trials, 81,210 participants, 2,905 cases; dose-dependent (1.12 at ≤1 g/day, 1.49 above). Vitamin E: SELECT, 35,533 men randomised, 17% higher prostate cancer. Zinc: 47,240 men, median 28.3 years — observational.

Risk ratios all above 1.0: antioxidants and mortality 1.04 in the low-risk-of-bias trials, omega-3 and atrial fibrillation 1.25, vitamin E and prostate cancer 1.17, zinc at 75 mg or more 1.76.

## The short list with real evidence

| COMPOUND | WHAT THE EVIDENCE SUPPORTS |
|---|---|
| **Creatine monohydrate** | Creatine plus training against training alone produced +1.37 kg lean tissue across 22 RCTs and 721 adults, study mean ages 57 to 70; a more conservative three-level meta-analysis gives strength g = 0.31 and physical function g = 0.47. 3 to 5 g daily, no loading phase, timing irrelevant, monohydrate only. Note: every trial compared creatine *plus lifting* against lifting — without the training there is nothing to amplify. |
| **Glycine, for sleep** | Multiple placebo-controlled trials converge on 3 g taken 30 to 60 minutes before bed lowering core temperature and improving subjective sleep quality, with shortened sleep onset on polysomnography. Still a small and methodologically limited literature, and not an established treatment for chronic insomnia. |
| **Magnesium, for blood pressure** | At a median 368 mg daily for three months, systolic fell 2.0 mmHg and diastolic 1.78, across 34 trials and 2,028 adults. Real, replicated, and roughly a quarter of what one low-dose antihypertensive delivers. The sleep and anxiety claims are not supported, and the form hierarchy on the label does not exist in the human literature. |
| **Vitamin D, if deficient** | One genuine positive: incident autoimmune disease at 0.78, on a p-value of exactly 0.05. Across roughly 49,000 people in the three largest trials, vitamin D failed to change cancer, cardiovascular events, fractures, falls, blood pressure, cognition, physical function or death. In 2024 the Endocrine Society withdrew the 30 ng/mL target entirely and suggests against routine screening in healthy adults. |

**MORE IS ACTIVELY WORSE FOR VITAMIN D**

In a three-year randomised trial of 300 adults aged 55 to 70, bone mineral density *fell* in a dose-dependent fashion — 1.4%, 2.6% and 3.6% at 400, 4,000 and 10,000 IU daily — with hypercalciuria in 17%, 22% and 31%. The authors concluded 400 IU is reasonable and 4,000 or more is not recommended for most people.

## The list that does not survive contact with evidence

— **Multivitamins.** In the only men-only trial — 14,641 male physicians over 11.2 years — all-cause mortality came in at 0.94 and was not significant. Across 390,124 adults over a median 23.5 years, no mortality benefit. Total cancer came in at 0.92 with an upper bound of exactly 1.00 — significant by a hair, and the only signal in the trial.

— **Antioxidants.** 1.04 (1.01–1.07) in the low-risk-of-bias trials within a Cochrane review of 78 trials and 296,707 randomised participants. Higher, not lower.

— **High-dose zinc.** At 75 mg a day or more, a hazard ratio of 1.76 for lethal prostate cancer across 47,240 men followed a median 28.3 years, with clean dose- and duration-response.

— **Vitamin E.** A dedicated 35,533-man trial built to confirm an earlier promising result found 17% *more* prostate cancer.

— **NAD+ precursors.** Blood NAD+ rises consistently; muscle NAD+ often does not, and mitochondrial function, grip strength, walking speed and cognition repeatedly fail. The category sells a biomarker as an outcome.

— **Taurine.** The premise was backwards. NIH tested it across five cohorts and found taurine concentrations *rose* with age in every group except male mice.

— **Rapamycin.** The PEARL trial's primary endpoint failed outright (p = 0.942), with an adverse bone-density signal, and all authors were employees or shareholders of the sponsor.

— **Metformin.** Three randomised trials show it blunts exercise adaptation in exactly the population taking it. Its flagship longevity trial has enrolled nobody in eleven years.

— **Injectable peptides.** No adequately powered, published, randomised placebo-controlled human trial exists for any of the major compounds.

— **Unapproved stem cell and exosome therapy.** 360 documented harms between 2004 and 2020, including 20 deaths.

## What is worth measuring

The single best-evidenced intervention in this entire report is not a supplement. Intensive blood pressure control to under 120 systolic cut all-cause mortality by 27% and cardiovascular death by 43% in a randomised trial of 9,361 people, 64% of them men. It also carried real harms — more acute kidney injury and more hypotension — which is exactly why it is a conversation with a physician and not a decision from a PDF.

One male-specific screening win most men have never heard of: across four randomised trials and 127,891 men, a single ultrasound scan for abdominal aortic aneurysm at 65 cut aneurysm mortality by 40%, with no equivalent benefit in women.

| THE PANEL TO ASK FOR | |
|---|---|
| **Blood** | Blood pressure, a full lipid panel or ApoB, fasting glucose and HbA1c, hs-CRP, thyroid, morning testosterone with LH and FSH, and vitamin D. |
| **Function** | Grip strength, sit-to-stand, gait speed and single-leg balance — free, repeatable at home, and re-tested at ninety days. |
| **Once at 65** | A single abdominal aortic aneurysm ultrasound. |

## The sequence that prevents most failures

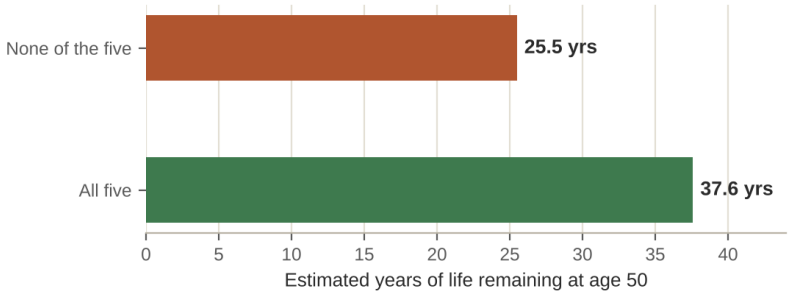
Sleep and alcohol sit upstream of testosterone, cortisol, glucose handling, blood pressure and every training session. Six broken hours of sleep and four drinks a night will produce a low testosterone number in a man whose endocrine system is entirely intact. So the order is not arbitrary.

1. **Days 1–14 — measure.** Bloods, the four functional tests, and an honest week of sleep and alcohol recorded rather than estimated.
2. **Days 10–45 — sleep and alcohol.** Nothing else changes. These two move more downstream numbers than anything else you could do in the same window.
3. **Days 30–75 — training and protein.** The resistance and aerobic prescription from Chapter 12, plus 1.0 to 1.2 g/kg of protein.
4. **Days 45–90 — structure and retest.** Connection, purpose and work-control changes, then repeat the measurements.

The rule that prevents most failures: change one phase at a time and hold it for two weeks before adding the next. A man running phase one at ninety percent consistency is in a far better position than one running all four at thirty percent.

### Five habits, twelve years

Men at age 50, by how many of five habits they practise




Five-habit model: healthy weight, 30+ minutes daily activity, no tobacco, healthy diet, limited alcohol. Figures for men; women in the same analysis gained approximately 14 years. Nurses' Health Study cohort analysis, five-habit model — observational cohort modelling, not a trial.

Estimated years of life remaining at age 50: 25.5 for men practising none of the five habits, 37.6 for men practising all five.

**WHAT TO TAKE FROM THIS**

- No supplement, peptide or drug has extended human lifespan in a randomised trial. Creatine, glycine, magnesium and vitamin D repletion are the short list that does anything measurable.
- Blood pressure control is the best-evidenced single intervention here: 27% lower all-cause mortality, 43% lower cardiovascular death.
- Sequence beats enthusiasm. Sleep and alcohol first, because they sit upstream of everything you would otherwise measure.

PART 4

# Working With Dr. John Spencer Ellis

Everything in Parts One to Three is public knowledge. The gap between knowing it and doing it is where most men stay for a decade. This part is about closing that gap.

CHAPTER 16

16

## Why Men Who Know Better Still Do Nothing

The barrier is almost never information.

You have just read roughly twenty pages of evidence. If information were the binding constraint, every man who reads it would act on it, and almost none will. That is not a character failure and it is worth understanding properly, because the wrong diagnosis leads to the wrong fix.

### Four reasons the knowing-doing gap persists

1. **Nothing hurts yet.** Every decline in Part One is silent at the stage where it is cheapest to reverse. Blood pressure, HbA1c, lipids, bone density, cardiorespiratory fitness and brain age all drift without a symptom. Men are wired to respond to pain, and this problem does not supply any until the window has narrowed.
2. **The advice is contradictory.** You have been told to fast and to eat protein every three hours; to lift heavy and to avoid joint load; to plunge cold and that cold blunts adaptation. Some of those conflicts are real disagreements in the literature and some are marketing. Sorting them takes time most men do not have.
3. **There is no feedback loop.** A business gives you weekly numbers. Your body gives you almost nothing until something breaks. Without measurement there is no way to tell a working protocol from a wasted year.
4. **Nobody is expecting you.** The single largest active ingredient found in the insomnia-treatment component analysis was not a technique at all — it was delivery by a human being rather than an app, which outscored every individual method tested. The presence of another person is not a soft extra. In that analysis it was the strongest thing measured.

THE HONEST VERSION

Coaching does not give you information you could not find. It gives you sequence, measurement and a person who notices when you stop. On the evidence above, the third of those may be the most valuable, and it is the one you cannot provide for yourself.

### What Dr. John Spencer Ellis actually does

John Spencer Ellis is a performance and life optimization coach, not a physician. He does not diagnose, treat or prescribe, and nothing in this report is medical advice. What he does is build the structure around the medicine: the training prescription, the nutrition pattern, the sleep architecture, the stress and connection work, and the measurement schedule that tells you whether any of it is working — coordinated with, not instead of, your physician.

His own background is unusually broad for this work: two bachelor's degrees, an MBA and a doctorate in education, alongside fourteen months of doctoral-level study in naturopathic health education. He holds fifteen professional certifications spanning nutrition coaching, exercise rehabilitation, personal training, flexibility, Pilates, clinical hypnotherapy and sports hypnosis, and he is both a Certified Mental Health Coach and AI SEO Certified. He trained in radiological technology and medical assisting with phlebotomy, and in McKenzie rehabilitation. For thirty-three years he was founder and chief executive of NESTA, the Spencer Institute, the International Triathlon Coaching Association and the MMA Conditioning Association, and he was one of twelve subject matter experts who wrote the first board certification for the fitness industry.




Dr. John Spencer Ellis — Performance and Life Optimization Coach for men over 40.

Programs he created have been used by Cirque du Soleil, the Army, Navy, Air Force, Marines, Coast Guard and the U.S. Secret Service, and he has consulted for the UFC. At peak, over a million people a week engaged with a program he built. He is a Personal Trainer Hall of Fame inductee, named among the Top 100 Most Influential Personal Trainers of All Time, and a Quilly Award winner.

The relevant part for you is narrower than any of that. He has spent three decades watching which structures men actually keep, and which ones look excellent on paper and get abandoned in week three.

CHAPTER 17

17

## How the Coaching Maps to Each Decline

Decline by decline, what the work actually looks like.

This is the practical answer to the question this report raises. Each row below pairs a decline from Parts One and Two with the specific work that addresses it.

| THE DECLINE | WHAT THE COACHING DOES ABOUT IT |
|---|---|
| **Cardiorespiratory fitness** The widest mortality gap in the literature. | Establishes a current baseline, then builds an aerobic base with a weekly structure you will actually repeat. Progress is tracked against your own starting point, not a population average. |
| **Muscle, strength and power** Power declines earliest and predicts hardest. | A resistance prescription built around the minimum effective dose, with explicit power work — the element most men over 40 omit entirely — and loading that respects existing joint history. |

| THE DECLINE | WHAT THE COACHING DOES ABOUT IT |
|---|---|
| **Mobility and falls**<br>Floor transfer, balance, gait. | Simple repeatable self-tests you can run at home, retested on a schedule, so a decline is caught as a trend rather than as an incident. |
| **Metabolic and cardiovascular**<br>Silent until it is not. | Builds the eating pattern rather than the diet, and sets the measurement schedule so that drift is visible early and attributable to something you changed. |
| **Hormones**<br>Including testosterone. | Works the nutritional, sleep, body-composition and environmental inputs first, then supports a properly supervised medical conversation. Sequence, not opposition. |
| **Sleep**<br>Upstream of nearly everything else. | Separates a genuine sleep disorder, which belongs with a clinician, from a schedule problem, which belongs in the coaching — and fixes the second. |
| **Cognition and brain age** | Trains the levers with actual evidence behind them: aerobic fitness, blood pressure, hearing, sleep and social contact, rather than nootropics. |
| **Mood and motivation** | Uses exercise at the intensity and modality the trial evidence supports, and holds the line on professional care being professional care. |
| **Isolation and purpose** | Treats connection as a scheduled, measurable input with a mortality number attached — not as something that will happen by itself. |
| **Burnout and chronic stress** | Attacks demand and control together, because the evidence is about effort without authority rather than effort alone. |
| **Toxic load** | Prioritises the exposures with real human data and the swaps that cost nothing, instead of the detox industry. |
| **Supplements** | Starts by removing what is not earning its place, then adds only what the evidence supports for your measured gaps. |

The sequence matters as much as the content. Men who try to change eleven things in January are reliably doing zero of them by March. The work is ordered so that each change makes the next one easier.

CHAPTER 18

# 18 The Programs, and How to Start

Two routes in, depending on what is actually in your way.

## Health, Longevity and Aesthetic Optimization for Men 40+

The core program, and the one this report points toward. It covers training, nutrition, sleep, stress, recovery, body composition and the measurement schedule that makes the rest legible. It is built for the man who is broadly functional, quietly declining, and has run out of patience with contradictory advice.

https://johnspencerellis.com/health-longevity-aesthetic-optimization-for-men-40/

## Escape the Rat Race

For a significant number of men over 40, the health problem is downstream of the work problem. If you are inside the combination the evidence identifies as most damaging — high demand, low control, long hours, no recovery — then optimising your protein intake is not the intervention. This program addresses the structure of the work itself, including building location-independent income.

https://johnspencerellis.com/pick-my-brain-2/

Start with a conversation, not a purchase. Bring your most recent bloodwork, your current training week, and an honest account of your sleep. That is enough to build the first ninety days.

| THREE THINGS TO DO THIS WEEK, WHATEVER YOU DECIDE | |
|---|---|
| 1 | **Book the physical.** Blood pressure, a full lipid panel or ApoB, HbA1c and a discussion of anything you have been putting off. If you are a man between 35 and 54, you are in the band least likely to have done this. |
| 2 | **Run the two self-tests.** The sitting-rising test and an honest look at your weekly resistance-training minutes. Both are free and both predict more than you would expect. |
| 3 | **Write three if-then plans.** Time, place, action. It is one of the best-replicated findings in behavioural psychology — d = 0.65 across 94 studies — and it takes about ninety seconds. |

FAQ

# Questions men ask about this material

Short answers. Each is defended at length in the chapter named.

### At what age does a man actually start losing muscle?

Later than you have been told. Measured directly by MRI in 468 people, absolute muscle mass in men shows no noticeable decrease until the end of the fifth decade — roughly 45 to 50. What falls from 30 is muscle as a percentage of body weight, because the denominator is growing. (Chapter 3)

### Does testosterone really drop 1% a year after 30?

No primary source reports that. The study it is usually attributed to enrolled men aged 40 to 70. Longitudinally, total testosterone fell 1.6% a year, bioavailable 2.5% and free 2.8% — and the decline is linear, with no cliff ever demonstrated. (Chapter 5)

### Is testosterone replacement therapy safe?

For properly diagnosed hypogonadism, TRAVERSE — 5,204 men aged 45 to 80 — found major adverse cardiac events at 7.0% against 7.3% on placebo, meeting noninferiority. It was designed to rule out harm, not show benefit, and there were signals for atrial fibrillation, acute kidney injury and pulmonary embolism. Two things the headline drops: about 61% of men in both arms discontinued treatment, which the authors say may bias the result toward noninferiority, and the trial was funded by a consortium of testosterone manufacturers. It says nothing about men with normal testosterone using it for optimisation. (Chapter 5)

### What is the single most valuable thing I could measure?

Blood pressure. Intensive control to under 120 systolic cut all-cause mortality by 27% and cardiovascular death by 43% in a randomised trial of 9,361 people — the best-evidenced single intervention in this report. It also carried real harms, more acute kidney injury and more hypotension, so this is a conversation with a physician rather than a decision from a PDF. (Chapter 15)

### How much training do I actually need?

Less than you think. Peak mortality benefit from resistance training lands at 40 minutes *per week*, with an aerobic base of 150 to 200 minutes at conversational pace and one weekly interval session. (Chapter 12)

### Does exercise make you live longer?

The observational evidence is overwhelming and the randomised evidence is not. Across 29 randomised exercise trials and 11,441 participants there was no mortality effect. The same randomised literature does show 12% fewer fallers, 26% fewer injurious falls, and a 42% reduction in cardiovascular death in men who already have coronary disease — though in that analysis the all-cause mortality intervals cross no effect. Proven for capability; unproven for lifespan. (Chapter 12)

### Is erectile dysfunction just part of getting older?

No. It tracked with heart disease, hypertension, diabetes, anger and depression rather than with age alone, and in one cohort it preceded coronary symptoms by an average of 39 months. In a two-year randomised trial, roughly one in three men restored normal function on diet and exercise alone. (Chapter 6)

### Which supplements are actually worth taking?

A short list: creatine monohydrate alongside training, glycine for sleep, magnesium for blood pressure, and vitamin D if you are genuinely deficient. No supplement, peptide or drug has ever extended human lifespan in a randomised controlled trial. (Chapter 15)

### Does intermittent fasting work?

Not beyond the calories it happens to cut. A 2025 network meta-analysis of 99 randomised trials and 6,582 adults found time-restricted eating showed no advantage over continuous energy restriction. (Chapter 13)

### Is my job really killing me?

Partly, and less than you have been told. Job strain accounts for about 3.4% of coronary disease. The more useful finding is that high effort alone carried no effect at all — it is low control and low reward that carry the signal. (Chapter 10)

### How much does loneliness matter?

Measured isolation carried a pooled mortality effect of 1.32 across 2.2 million people, larger than subjective loneliness at 1.14. The popular “fifteen cigarettes a day” line is not from the studies it is attributed to. (Chapter 9)

### Can I buy a test for my biological age?

Not usefully. Brain age predicted mortality better than any of eleven organs measured, but technical noise alone produced deviations of up to nine years between replicates of the same sample, and 68% of people flagged as extreme organ agers were no longer extreme at the next visit. (Chapter 7)

### Where should a man over 40 start?

Sleep and alcohol, for two weeks, before anything else — because they sit upstream of testosterone, cortisol, glucose handling and blood pressure. Then training and protein. Then structure and a retest. (Chapter 15)

METHOD

# How this report was built, and its limits

Every figure here was taken from a primary study or a published systematic review and carries its population in the text or in the chart caption. Where a widely repeated claim could not be traced to a primary source, that is stated rather than quietly dropped. Where two bodies of evidence disagree, both are shown.

**A FINAL NOTE ON SCOPE**

Dr. John Spencer Ellis is a performance and life optimization coach. He is not a physician, does not diagnose or treat disease, and does not prescribe. This report is education, not medical advice. Take the measurements in Chapter 15 to your own doctor — that is what they are for.

## The limits you should hold on to

— **Most of this is observational.** Hazard ratios and relative risks are population-level associations, not predictions about any individual man. Where randomised evidence exists it is flagged, because it is rarer and it matters more.

— **Several populations do not match you.** Health ABC studied men aged 70 to 79. Whitehall II is an occupationally selected British civil-service cohort. UK Biobank volunteers are healthier than the general population. Those limits are named where the figures appear.

— **Reverse causation is live throughout.** Illness reduces activity, social contact and sleep quality well before it kills anyone, which inflates the apparent effect of all three.

— **This report has a commercial interest.** It is published by a coach who sells coaching. It is worth noting that the health-coaching evidence base itself is mixed: in the best meta-analysis of coaching in type 2 diabetes, improvements in HbA1c and weight did not persist at long-term follow-up and only systolic blood pressure held. The clearest evidence for coaching is in strength, adherence and psychological outcomes rather than in biomarkers.

**WHAT IS DELIBERATELY NOT HERE**

No supplement protocols to buy, no proprietary testing panel, no biological-age product and no peptide stack. Those categories were examined and are reported in Chapter 15 as the evidence found them.

## Further reading and coverage

Selected published work and coverage featuring Dr. John Spencer Ellis:

— Men's health and longevity coaching program launch — USA Today — https://www.usatoday.com/press-release/story/35880/

— Blue Zones evidence review — USA Today — https://www.usatoday.com/press-release/story/44914/

— Longevity program launch — Yahoo Finance — https://finance.yahoo.com/healthcare/articles/dr-john-spencer-ellis-launches-115500727.html

— Men's longevity program launch — Yahoo Finance — https://finance.yahoo.com/healthcare/articles/dr-john-spencer-ellis-launches-123000647.html




NEXT STEP

## Start the ninety days

Nothing here requires a product. It requires a sequence, a measurement schedule, and somebody who notices when you stop.

Bring your most recent bloodwork, your current training week, and an honest account of your sleep. That is enough to build the first ninety days.

| PROGRAM | WHERE TO START |
|---|---|
| **Health, Longevity and Aesthetic Optimization for Men 40+**<br>Training, nutrition, sleep, stress, recovery and the measurement schedule that makes the rest legible. | johnspencerellis.com/health-longevity-aesthetic-optimization-for-men-40/ |
| **Escape the Rat Race**<br>For men whose health problem is downstream of a high-demand, low-control job. | johnspencerellis.com/pick-my-brain-2/ |

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