Twelve things the aging research says that nobody selling you something will

Findings from 80+ peer-reviewed studies, checked and cross-referenced for PrimeSpan: Reverse Aging. Eight minutes to read, each ending with what to do. It may save you several hundred dollars a year.

1. **Eleven "longevity" compounds were retested by the US government. None worked.** The National Institute on Aging's Interventions Testing Program reruns published compounds at three independent laboratories. A recent round tested astaxanthin, pioglitazone, methotrexate, alpha-ketoglutarate and seven others. None extended lifespan; several *shortened* it in females *(mouse, multi-site)*. Fisetin, sold widely as a senolytic supplement, had already failed the same test. IN THE BOOK *the full failed list, and the two products with evidence of harm.*

2. **Biological-age tests are not reliable for individuals — and the insurance industry proved it.** Life insurers, who have every incentive to price mortality accurately, evaluated epigenetic clocks and declined: they do not outperform age, sex, smoking status, blood pressure, BMI and medical history. A four-week dietary change shifted one clock's output by roughly two years; the clock was partly measuring recent meals. *Do:* if you use one, track *one* clock over *years*.

3. **The "Blue Zone" record is substantially corrupted.** In Greece, investigation found at least 72% of centenarian records were pension fraud. Roughly 5–10% of US census respondents misstate their age, and inflated ages "survive" longer, so the share of false records rises with every recorded year. Discount any claim of the form "people in this region live to 100 because they do this thing."

4. **A drug can improve every biomarker and change nothing for the patient.** Two Phase 3 trials gave semaglutide to 3,808 adults aged 55–85 for two years. Alzheimer's-related biomarkers improved. Clinical progression did not slow *(human RCT, n=3,808)*. Amyloid-clearing antibodies remove plaque; a large meta-analysis calls the cognitive effect *trivial*. When a company reports that its product "improved biomarkers," that is a statement about chemistry, not about you.

5. **The standard exercise guideline delivers less than you think. The brain needs less than you think.** 150 minutes a week of moderate activity buys roughly an 8–9% reduction in cardiovascular risk. A reduction above 30% required about 9–10 hours a week — and people with lower baseline fitness needed *more*, not less. But the measured brain benefit plateaued at 5,001–7,500 steps per day *(human cohort)*. Two doses, two purposes. And 17 randomized trials, pooled, found resistance training improved overall cognition and working memory *(meta-analysis, n=739)*.

6. **A shingles vaccine prevented or delayed dementia, in the cleanest natural experiment in the field.** When Wales launched zoster vaccination, eligibility was set by a birthday cutoff: people born days apart were vaccinated or not, for life. The vaccinated group had fewer dementia diagnoses; the finding replicated in Australia *(human, natural experiment)*. In 3,800+ vaccinated US adults over 70, epigenetic aging was slower. And after confirmed influenza, excess heart-attack and stroke risk was 4.7× in unvaccinated episodes versus 2.4× in vaccinated ones. Raise both with your clinician.

7. **Blood pressure damage starts before the number rises.** In mice made hypertensive, blood-vessel cells had entered senescence and the blood–brain barrier had begun weakening by day 3, *before* pressure measurably increased. In two human cohorts followed 16 years, cumulative exposure — magnitude multiplied by duration — carried up to 2.64× the risk of cognitive impairment *(human cohorts, n=4,062)*. A decade of "slightly high" has a quantifiable cost. *Do:* measure at home, repeatedly; you are tracking a total, not a reading.

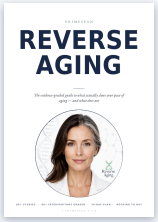
Evidence tags follow the book's convention: *human RCT* is the strongest tier; *human cohort* is observational; *mouse* is a hypothesis about humans, not a finding. **Page 2:** the number that predicts brain age better than weight, the free test that carried 5.79× mortality risk, and what the full book adds.

8. **The fat you can pinch does not predict brain age. The fat you cannot does.** In 1,164 adults given whole-body MRI, higher muscle volume with a lower visceral-fat-to-muscle ratio predicted *younger* measured brain age. Subcutaneous fat showed no association *(human imaging, n=1,164)*. *Do:* track waist circumference and strength, not the scale.
9. **The problem is not that you make more "zombie" cells. It is that your immune system stops removing them.** They cost you directly: IGFBP7, a protein they secrete, inversely predicted how much fitness people gained from a full year of training *(human cohort)*. Exercise reduces senescent burden, clears damaged mitochondria, reshapes gut bacteria, restores brain drainage and preserves immune output — six nodes, one behavior. No pharmaceutical currently does that.
10. **A weak daily rhythm carried nearly 2.5× the dementia risk.** Among 2,183 adults (average age 79) on continuous heart monitors, 31 of 728 in the strongest-rhythm group developed dementia over three years, versus 106 of 727 in the weakest *(human cohort, n=2,183)*. Causation is unproven, but regularity costs nothing. *Do:* morning daylight, a consistent schedule, weekends included.
11. **The most predictive test costs nothing and takes twenty minutes.** Grip strength, gait speed, 30-second chair stands, waist circumference. In 936 adults over 60, moderate-to-severe frailty carried **5.79× the mortality risk** over just two years *(human cohort, n=936)*. These respond to training, and a dynamometer costs less than a month of most supplement regimens. *Do:* measure two to four times a year.
12. **Lifestyle mattered roughly three times as much as genetics — even past 80.** In 1,545 adults aged 80+, a favorable modifiable profile was associated with 40.7% lower mortality; genetic predisposition accounted for 13.0% *(human cohort, n=1,545)*. Favorable genes did not permit coasting; they *increased* the return on effort. And in a nationally representative US sample, 45.15% of adults over 65 *improved* in cognitive or physical function over up to 12 years. The strongest predictor was what they believed aging meant for someone like them.

The six-question filter the book applies to every claim: species and study type · independent replication · outcome or proxy · age at testing (of 42 compounds re-analyzed, 15 *harmed* at some ages) · does the source sell it · the cost of being wrong.

WHAT THE FULL BOOK ADDS — AND THIS EXCERPT CANNOT

- **The Priority List:** eleven interventions ranked by human evidence. Number one: roughly 50% lower all-cause mortality over 15 years. Number two is a number most people over 40 already have and ignore. Nothing on the list is for sale.
- **Evidence grades for 40+ interventions** — the two with evidence of harm (one is a "longevity" procedure that *accelerated* epigenetic aging), the nine that failed rigorous testing, the few supplements with a real human signal, and every chapter's list of what to stop paying for.
- **The measurement tiers:** what to test at home, the two blood markers to request (one of them once in a lifetime), the ignored value on a standard panel linked to frailty, the three silent conditions carried for a decade unnoticed, and the blood test that estimates cognitive risk five years out — and why you may not want it.
- **The honest status of every therapy in development,** from senolytics to the epigenetic reprogramming trial whose first patient was dosed in June 2026, and **a 30-day plan** sequenced week by week. Week one takes about twenty minutes.



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