

PUBLIC SERVICE

HOW TO SURVIVE
BEING TOO BUSY AND
STILL ACCOMPLISH
GREAT THINGS.

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White Spruce Medical



THE PROBLEM

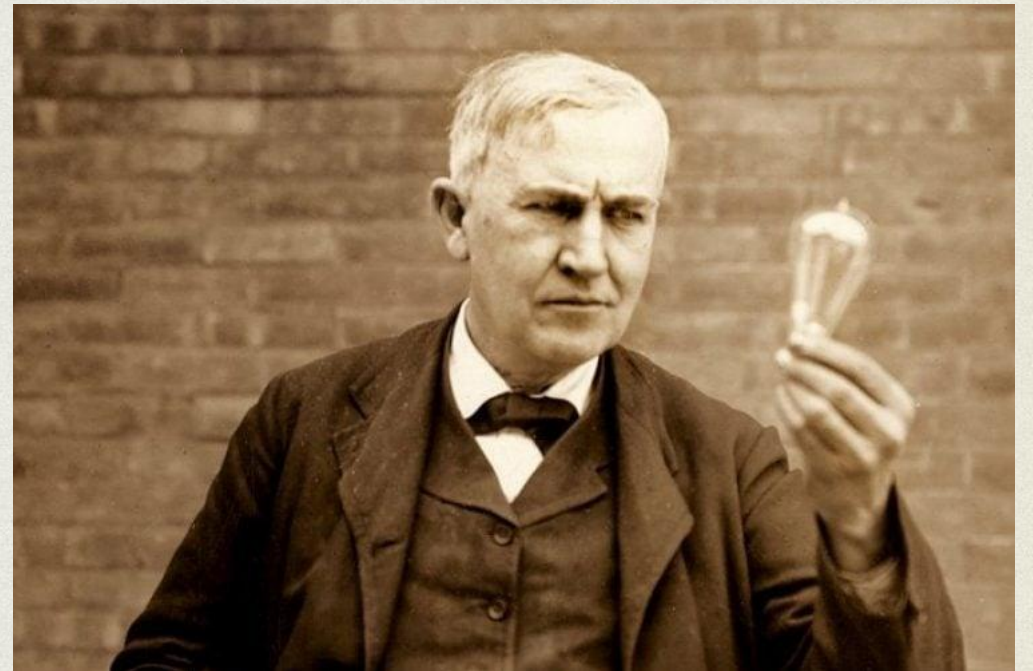
Doing public service well is difficult. Stressful even.

The formula for success is along the lines of :

2% inspiration

98% perspiration

It's not a sprint. It's a marathon.



HOW IT CAN ALL GO WRONG

Negative health outcomes of stress

- Fatigue
- Weight gain
- Diabetes
- Insomnia
- High blood pressure
- Heart attack
- Stroke
- Cancer
- Early death



STRESS IS A SUPER POWER

Stress response - A powerful tool to get things done.

Positive attributes:

- Better focus
- More energy
- More determination to succeed
- Less need for sleep
- Increased ability to fight bears.



PHYSIOLOGIC STRESS RESPONSE

The physiologic stress response is triggered by fear.

Stress response causes stress hormone blood level to increase.

Neurotransmitters dopamine and other catecholamines also increase.

Effects:

- Alertness increased.
- Heart rate increased.
- Blood pressure increase.
- Blood sugar increase.
- Blood shunted to brain, heart and muscles.
- Blood shunted away from GI tract.
- Sleep decreased.



PHYSIOLOGIC STRESS RESPONSE

The cumulative effect of a stress response is to prepare a person for action. To fight or run if need be.

No negative health outcomes become manifest if appropriate physical action is taken!

An examination of the anxiolytic effects of exercise for people with anxiety and stress-related disorders: A meta-analysis

[Brendon Stubbs](#) Psychiatry Res 2017 Mar;249:102-108. doi: 10.1016/j.psychres.2016.12.020. Epub 2017 Jan 6.

Exercise as medicine - evidence for prescribing exercise as therapy in 26 different chronic diseases

[B K Pedersen](#) Scand J Med Sci Sports . Dec;25 Suppl 3:1-72. doi: 10.1111/sms.12581. 2015

The Acute Relationships Between Affect, Physical Feeling States, and Physical Activity in Daily Life: A Review of Current Evidence

[Yue Liao](#) Front Psychol Dec 23;6:1975. doi: 10.3389/fpsyg.2015.01975. eCollection 2015.

HOW TO SURVIVE STRESS

Take physical action as soon as possible.

Examples:

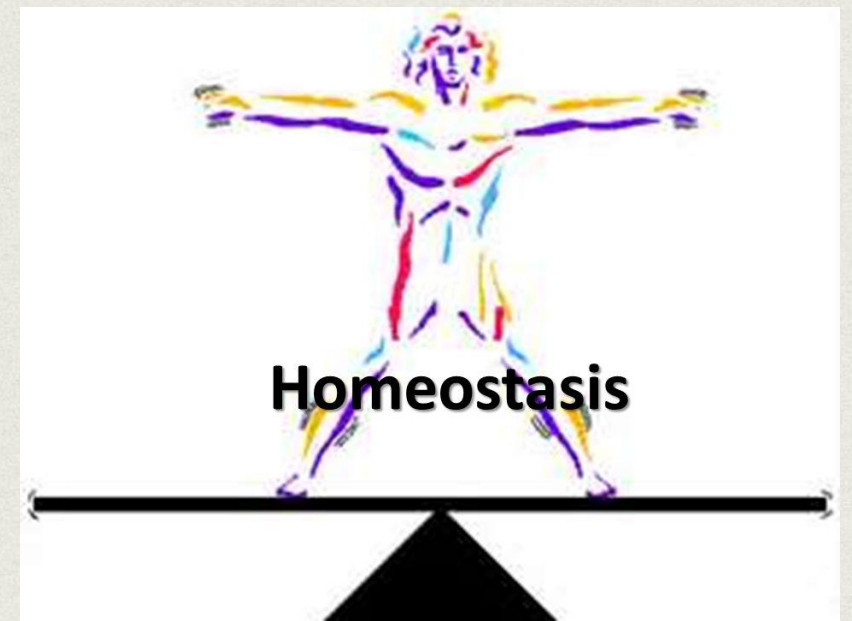
- Walking
- Running
- Skiing
- Martial arts
- Work the heavy bag.



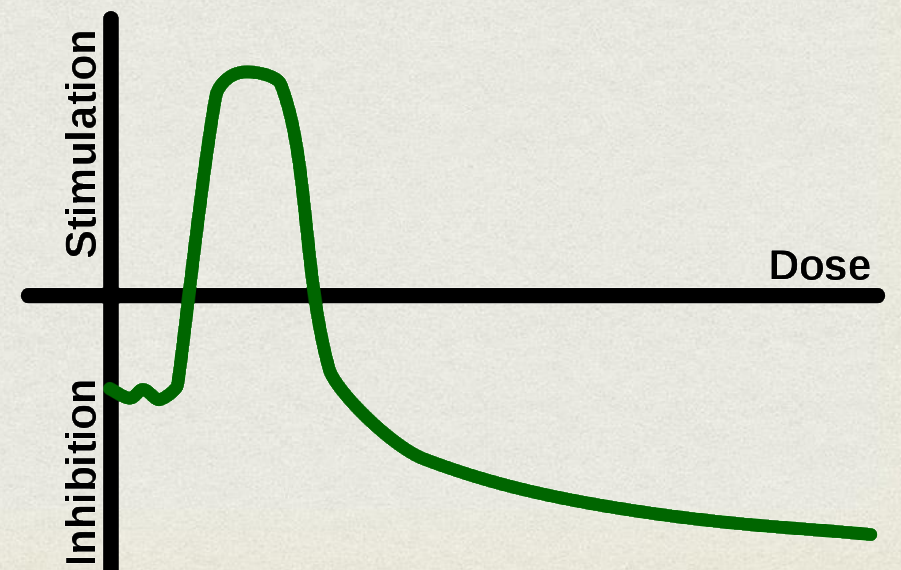
HOW TO LIVE LONG AND WELL

Definitions

Homeostasis is the process of maintaining a stable internal environment suitable for sustaining life.



Hormesis is a phenomenon in which a low dose of an agent, such as a toxic substance, drug, radiation, or stress, produces a beneficial effect, while a high dose produces a harmful effect.



THE WORLD'S OLDEST PERSON

Jeanne Calment passed away on August 4, 1997 at the age of 122 years and 164 days

Lived in The Arles, France.

Recalled witnessing the Eiffel Tower being built. Met Vincent van Gogh at age 13 when he visited her fathers shop.

She walked everywhere.

Smoked two cigarettes a day for almost 100 years.

Jeanne credited her long life to drinking Port wine every day, eating two pounds of chocolate every week, and keeping a sense of humor.

Her diet was balanced and rich in fruits and vegetables. She also thought her longevity was due in part to her abundant use of extra virgin olive oil which she put in everything but milk, and also rubbed on her skin.



LONGEST LIVED COMMUNITIES

- Okinawa, Japan



LONGEST LIVED COMMUNITIES

Okinawa, Japan

- The world's highest prevalence of proven centenarians: 740 out of a population of 1.3 million.
- Also the highest health expectancy: they remain vigorous and healthy into old age, suffering relatively few age-related ailments.
- Secrets of Longevity: Widespread gardening provides an opportunity for exercise, nutritious food and sunlight, and Okinawans follow an old adage that says "eat until you are 80% full". They also have a sense of purpose, a positive outlook on life and close social support groups.

LONGEST LIVED COMMUNITIES

Sardinia, Italy



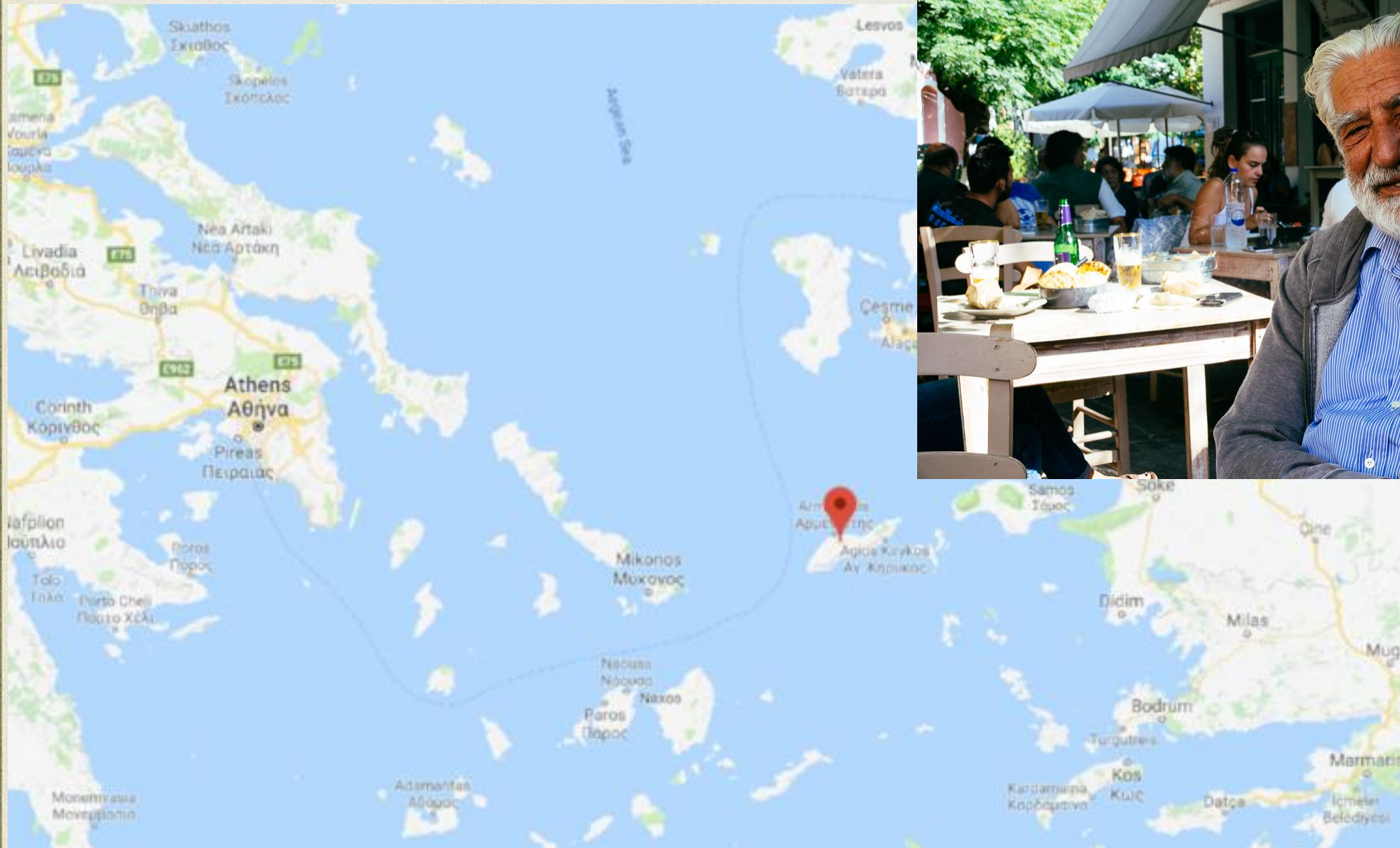
LONGEST LIVED COMMUNITIES

Sardinia, Italy

- Just one town of 1,700 people, Ovodda, boasts five centenarians.
- **Secrets of Longevity:** Although part of the reason for Sardinia's longevity may be genetic, they also have the opportunity to follow that healthy Mediterranean diet, as well as consuming lots of goats' cheese and milk. They walk a lot, but they also take time for leisure, and maintain a positive attitude and sense of humor about life.

LONGEST LIVED COMMUNITIES

Ikaria, Greece



LONGEST LIVED COMMUNITIES

Ikaria, Greece

- Inhabitants are three times more likely to reach 90 than Americans are. People living in this region have 20% less cancer, half the rate of cardiovascular disease and almost no dementia.
- Secrets of Longevity: Its residents stay active through walking, farming and fishing, but they also make sure to take time out to nap and socialize. In addition to their Mediterranean diet, they eat a lot of wild greens and drink an herbal tea that's full of nutrients. Their community lifestyle also encourages good health habits and regular social engagement.

LONGEST LIVED COMMUNITIES

Nicoya, Costa Rica



LONGEST LIVED COMMUNITIES

Nicoya, Costa Rica

- Middle-age mortality is surprisingly low: a man at age 60 has about twice the chance of reaching age 90 than a man living in the U.S. They also have the lowest rates of cancer in Costa Rica.
- Secrets of Longevity: Their plan de vida or sense of purpose in life encourages a lifestyle that is physically active, with plenty of time outdoors as well as time spent on family and spirituality. They sleep 8 hours and their diet includes not only nutrient-rich foods like beans, corn and rice, but also water that's naturally high in calcium and magnesium.

LONGEST LIVED COMMUNITIES

Loma Linda, California



LONGEST LIVED COMMUNITIES

Loma Linda, California

- Loma Linda is a community that includes about 9,000 Seventh-Day Adventists — a religious group that is significantly longer-lived than the average American.
- Adventist culture is focused on healthful habits such as vegetarianism, and warns against alcohol and smoking.
- Secrets of Longevity: Besides the healthful habits integral to their belief system, Adventists drink plenty of water, eat lots of nuts, exercise regularly and tend to maintain a healthy weight. They nurture emotional and spiritual health, value their family relationships, and prize volunteering.

LONGEVITY COMMONALITIES

Diet - mostly fruits and vegetables.

Eat nuts and berries.

Exercise - daily, as a way of life.

Sleep - well enough to heal and repair.

Support system - life retains or even increases in social connections.

Income/resources - high enough that life is not a struggle.



HEALTH=REPAIR

Repair and restoration are key to good health

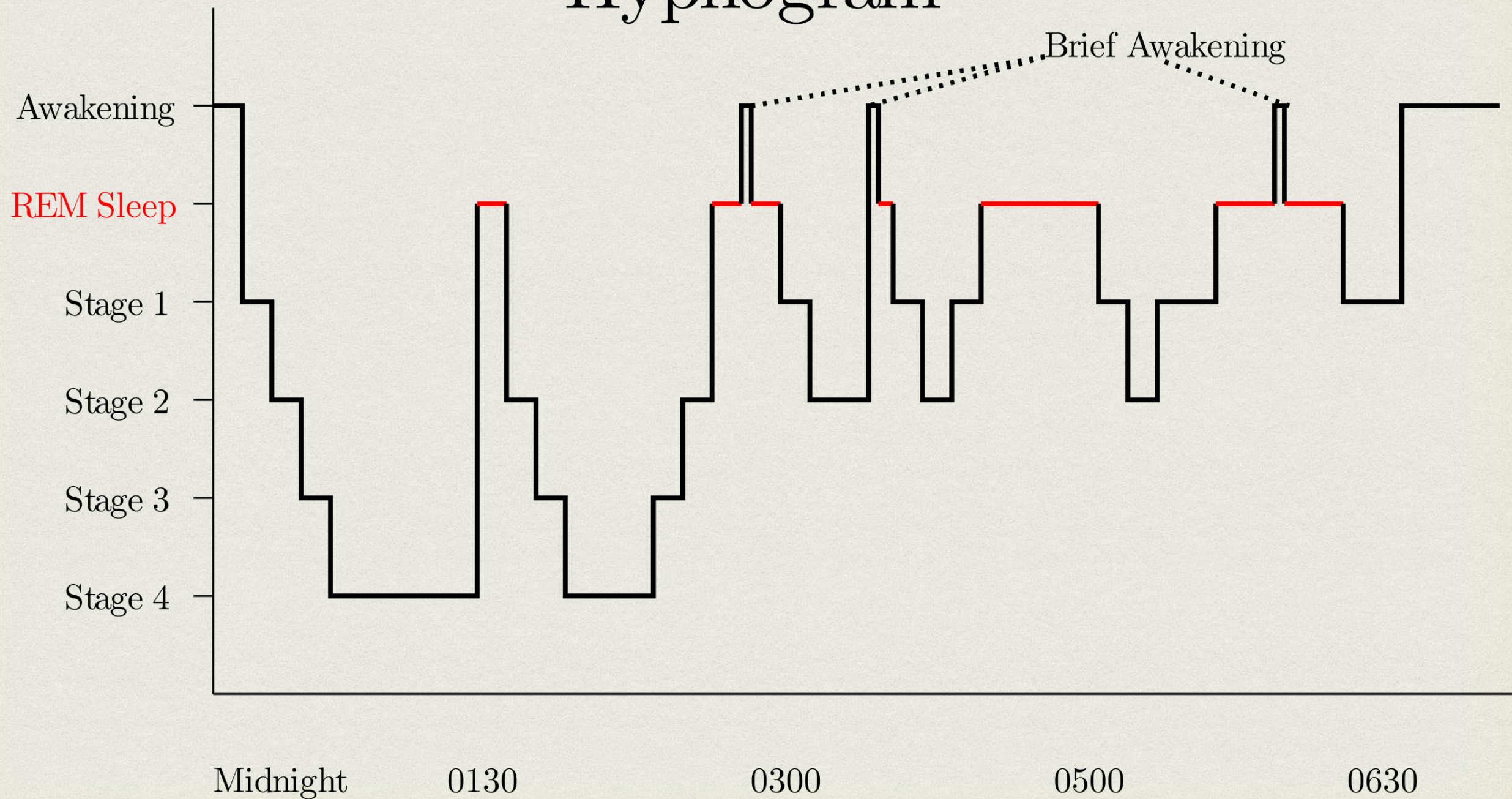
An optimal healthy lifestyle balances preponderance of good habits with small amounts of repair stimulating vices.

SLEEP IS KEY TO RESTORATION



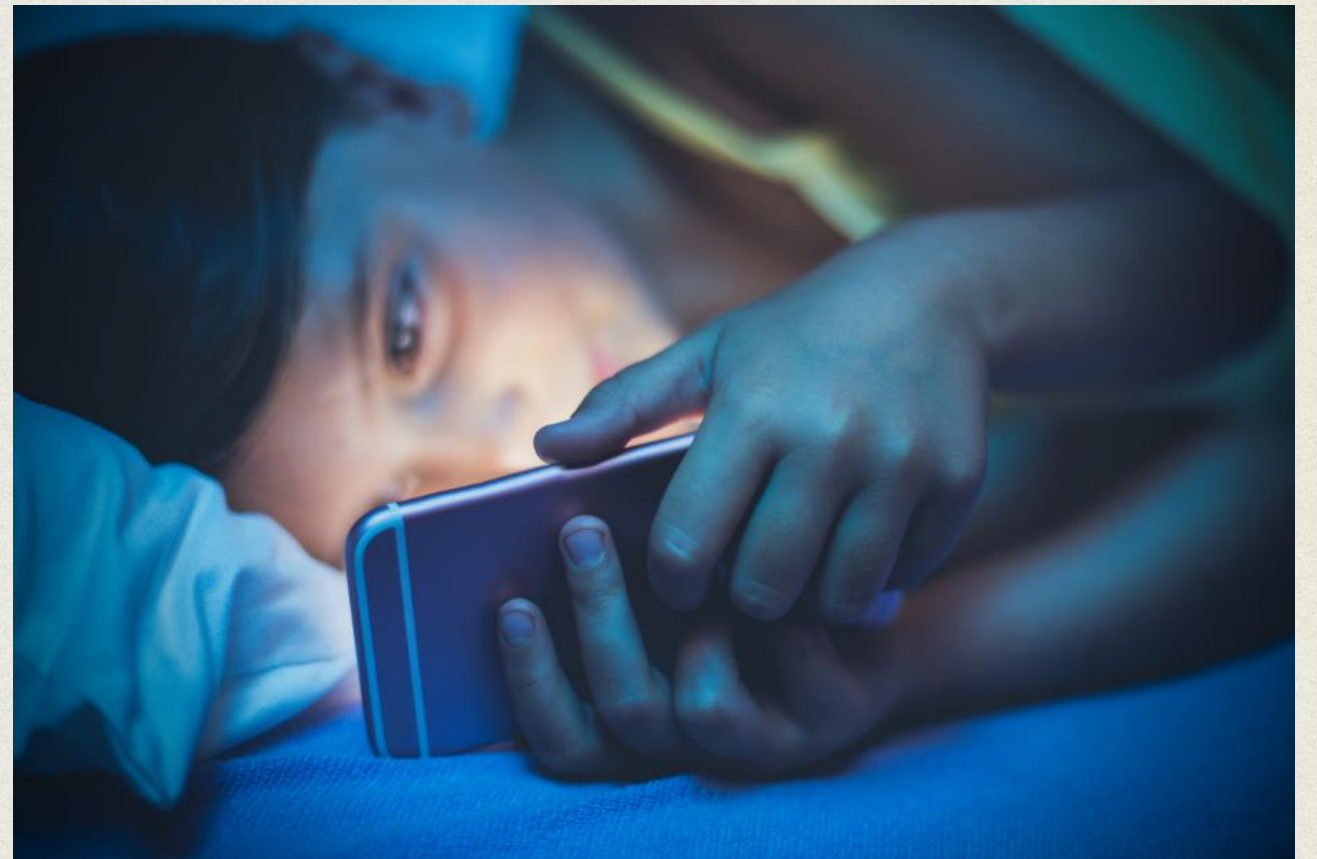
NORMAL SLEEP

Hypnogram



INSOMNIA

- **Difficulty Falling Asleep Initially:**
 - Increased arousal - catecholamines and cortisol.
 - Caffeine.
 - Bright blue light.
 - Exercise and activity before bed.
 - Worry.

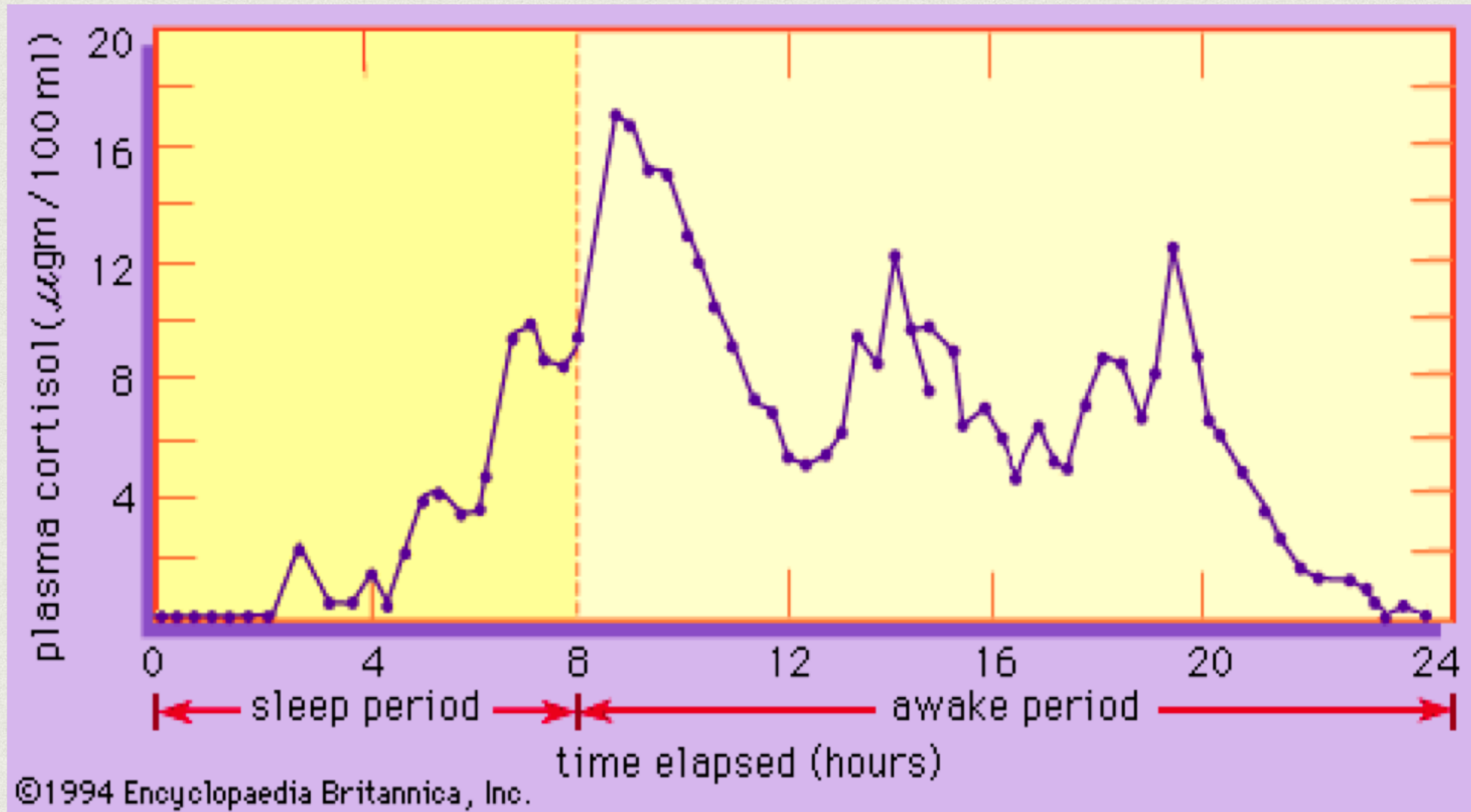


INSOMNIA

- **Difficulty Falling Back Asleep:**
 - Typically wakes a 2-3 am and awake for about an hour.
 - Caused by elevated blood cortisol levels.
 - Often caused by low blood sugars. Often accompanied with night time snacking.



CORTISOL CYCLE



SLEEP SOLUTIONS



Create a sleep plan.

- 1) Vacation - take the last hour of the day off from all work. Put it down.
- 2) Create and use a wind down pattern. Do the same three things in the same order every night.
- 3) Take melatonin 20 minutes before falling asleep.
- 4) Count breaths to fall asleep.

MORE SLEEP SOLUTIONS

Manage cortisol to sleep the night through.

- 1) Balance blood sugars.
- 2) Exercise daily
- 3) Take “Cortisol manager” 1-5 caps at bed time.



HOW TO BALANCE BLOOD SUGARS

Balanced blood sugars are between 70-150 mg/dl.

- 1) Measure blood sugars with a continuous blood glucose monitor.
- 2) Keep a diet diary.
- 3) Note any spikes or patterns of high or low blood sugars. Correlate with diet to discover the cause.
- 4) Adjust diet appropriately to keep blood sugars in the balanced range.



EFFECTS OF ELEVATED BLOOD SUGARS



Glucose sticks to proteins = glycosylation

Proteins become altered and don't work right = **Advanced Glycosylated End products = AGEs**

AGEs accumulate and stuff breaks.

“AGE” RELATED DISEASES

Eyes - blindness

Blood vessel lining - atherosclerosis, amputations

Kidneys - kidney failure

Nerves - peripheral neuropathy

Heart - heart failure, heart attack



HOW TO SURVIVE WELL

Set up patterns of living

Diet - follow blue zone example.

Eat mostly vegetables and fruit - 6 handfuls daily.

Eat protein, fish, eggs, beans, nuts and seeds.

Learn to cook and enjoy life more.



SYSTEMATICALLY TEAR YOUR BODY DOWN

So that it can be rebuilt
better - in other words -
exercise.

Best exercise there is:

- 1) Aerobic - move briskly
daily - 30 minutes.
- 2) Intervals - sprints - 4
in a row 2 days a week.
- 3) Stretch - 5-10 minutes
daily.



POISON YOUR BODY

Very slightly - so it can rebuild better

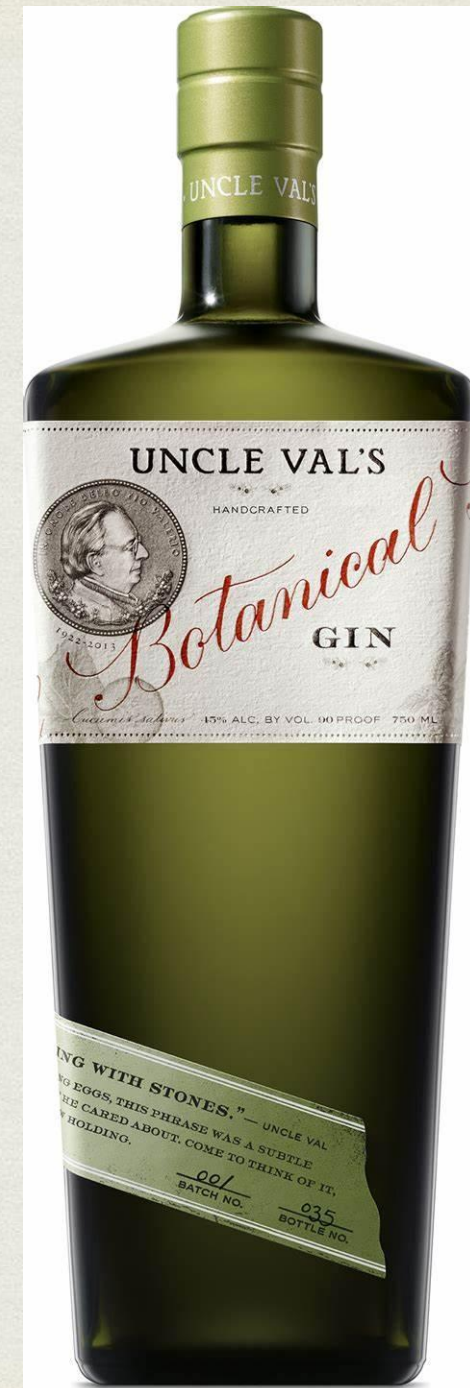
Pick your poison - select 0-2.

Alcohol - 1 drink 3-5 days a week

Coffee - 1-2 cups daily

Bacon - 1 slice weekly

Tobacco - 2 cigarettes daily



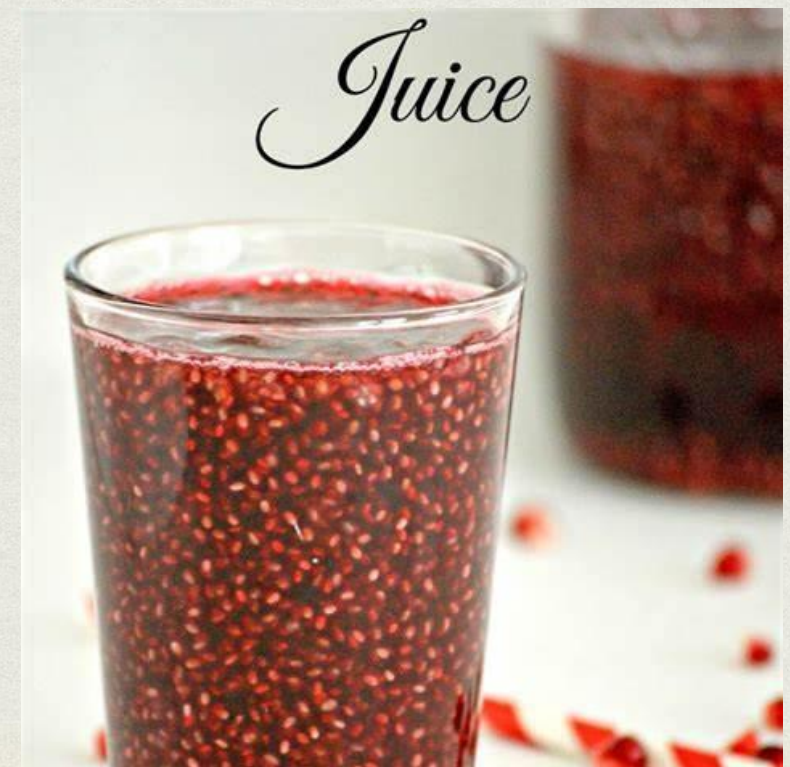
KEY SUPPLEMENTS

Vitamin D3 - 4,000-10,000 ius daily

Fish oil - 1 tablespoon daily

Chia seeds - mix 2 tablespoons with 4 oz purple juice (not grape) and 12 oz water in a lined jar.

Shake well and refrigerate overnight. Drink the next day.



THANK YOU!



WHITE SPRUCE
MEDICAL

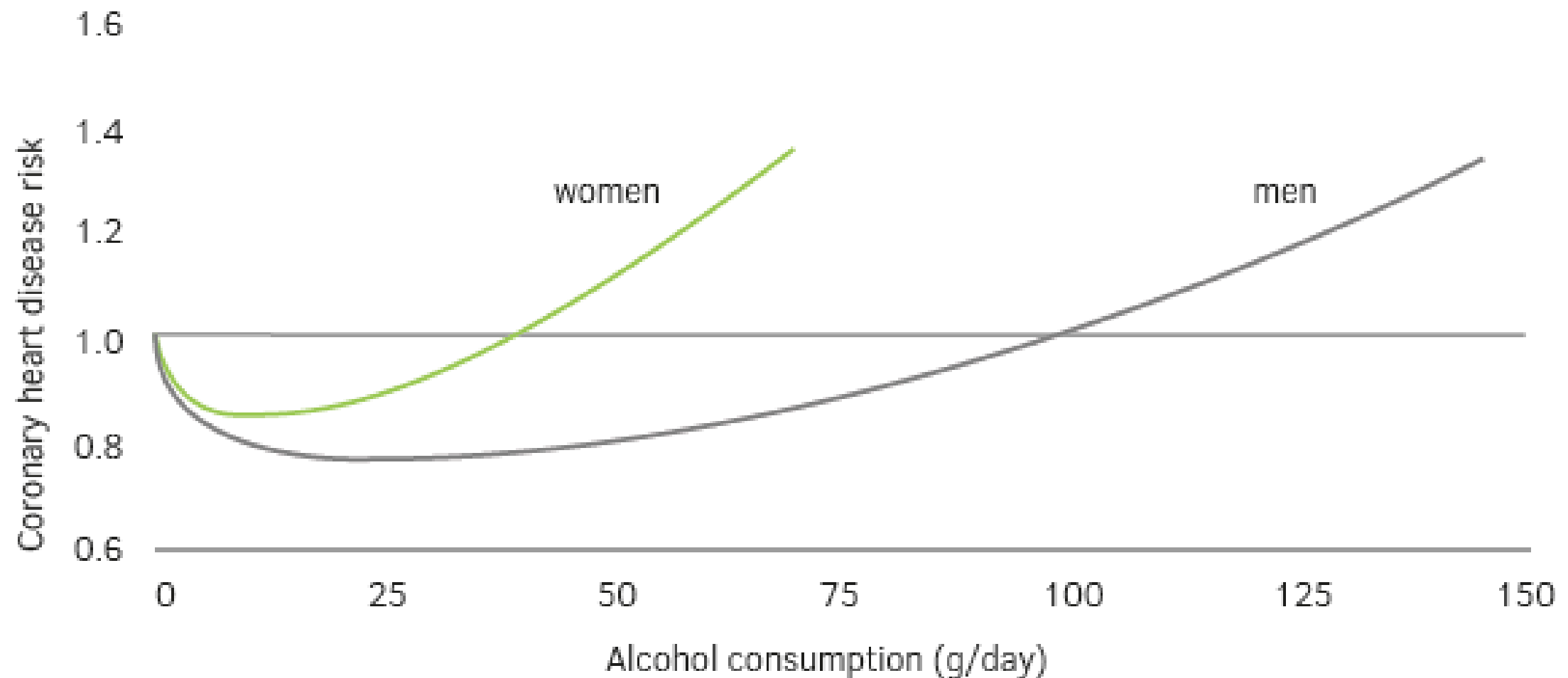
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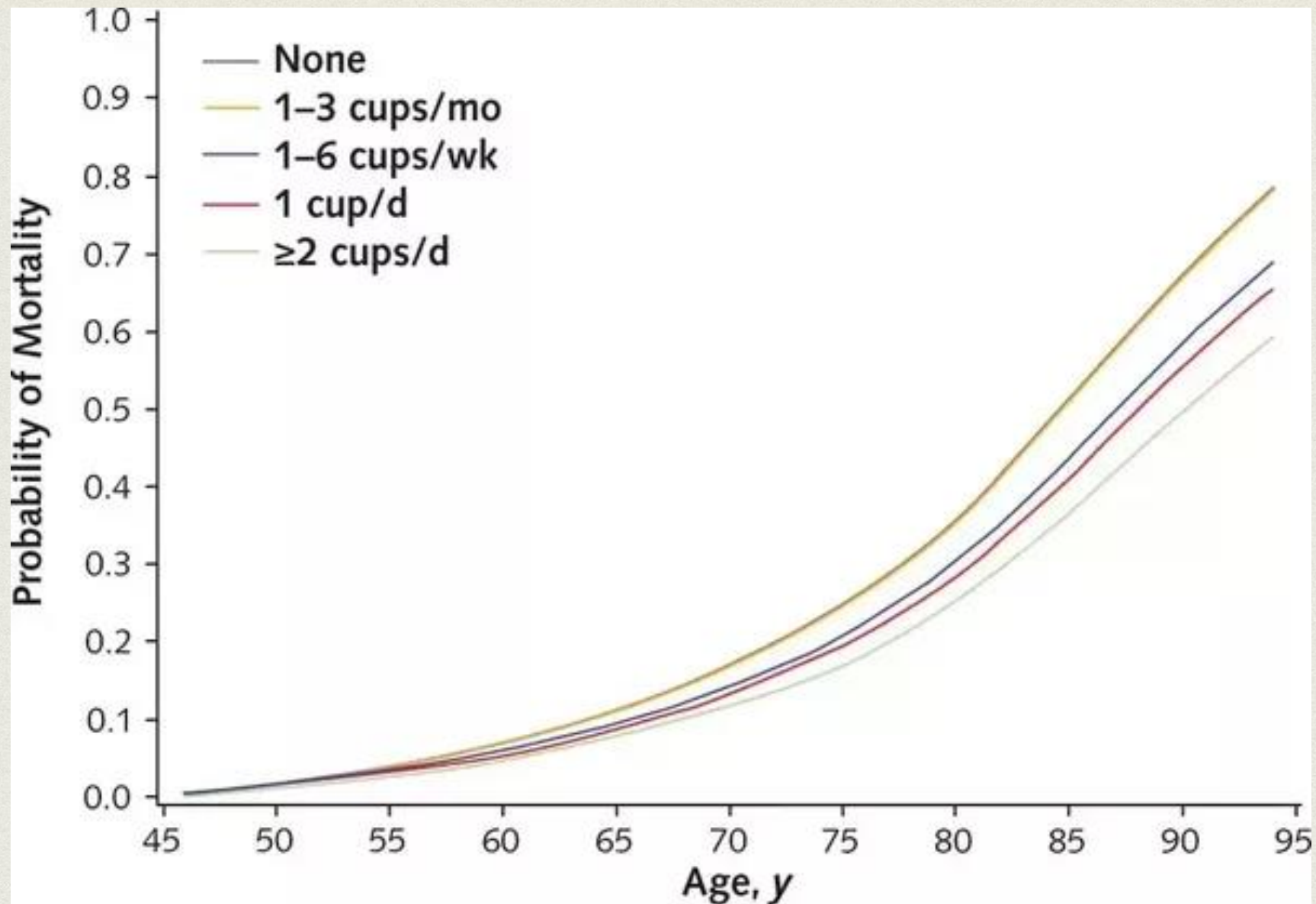
Alcohol and Coronary Heart Disease

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Figure 4. Relationship between alcohol consumption and coronary heart disease risk¹⁰⁶



COFFEE AND LONGEVITY



Ann Intern Med. 2017;167(4):236-247.DOI: 10.7326/M16-2945

COFFEE AND LONGEVITY

Coffee consumption is associated with:

Low rates of Alzheimers disease.

Lower diabetes risk 9% for each cup of coffee per day.

18% reduction in all cause mortality with 3 + cups a day.

26% reduction in colon cancer.

20% reduction in depression in women.

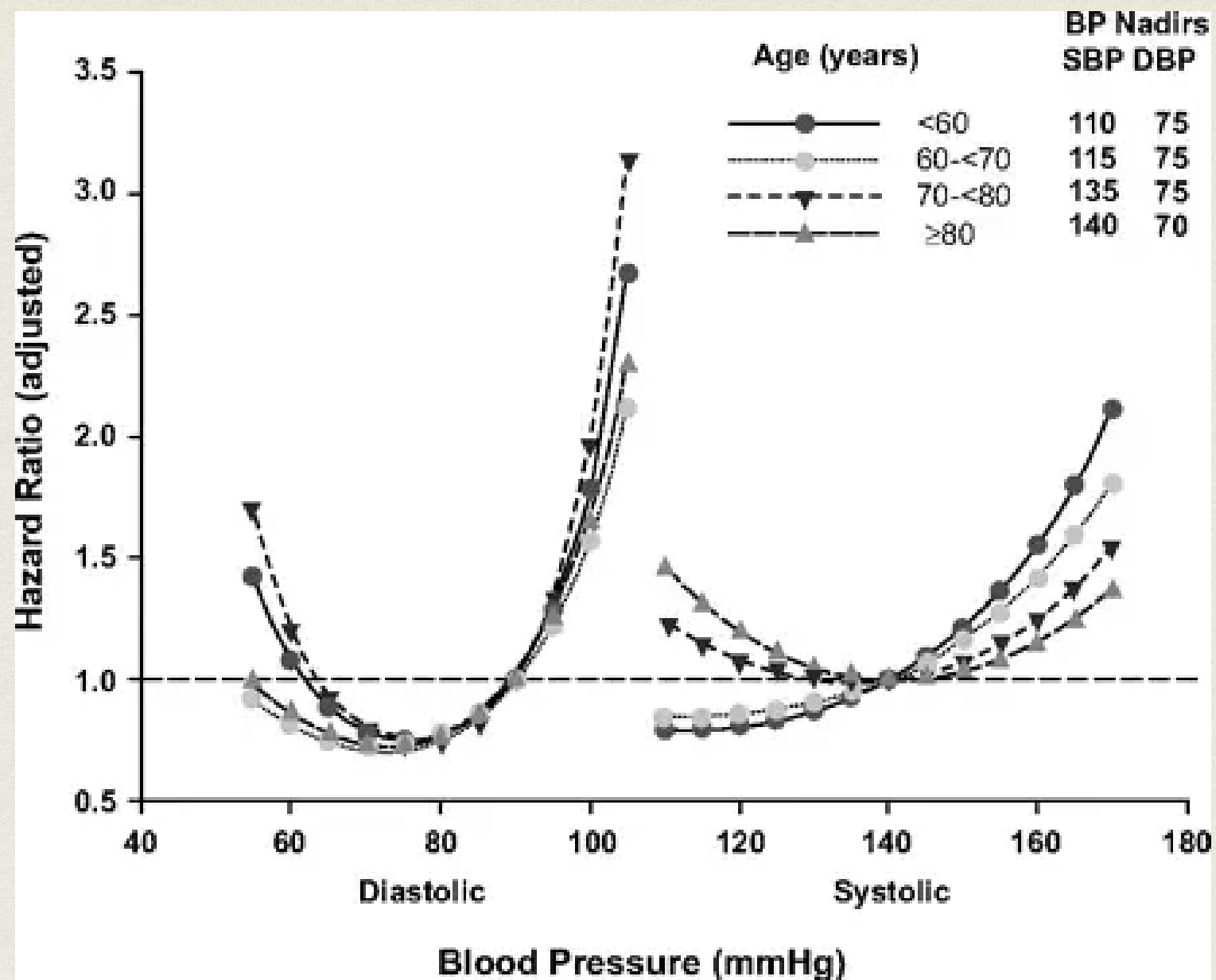


N Engl J Med 2012; 366:1891-1904 DOI: 10.1056/NEJMoa1112010

Ann Intern Med. 2017;167(4):236-247. DOI: 10.7326/M16-2945

Ann Intern Med. 2017;167(4):228-235. DOI: 10.7326/M16-2472

OPTIMAL BLOOD PRESSURE



Denardo SJ, Gong Y, Nichols WW, et al. Blood pressure and outcomes in very old hypertensive coronary artery disease patients: an INVEST substudy. *Am J Med* 2010;123:719–26

CHOLESTEROL AND LONGEVITY

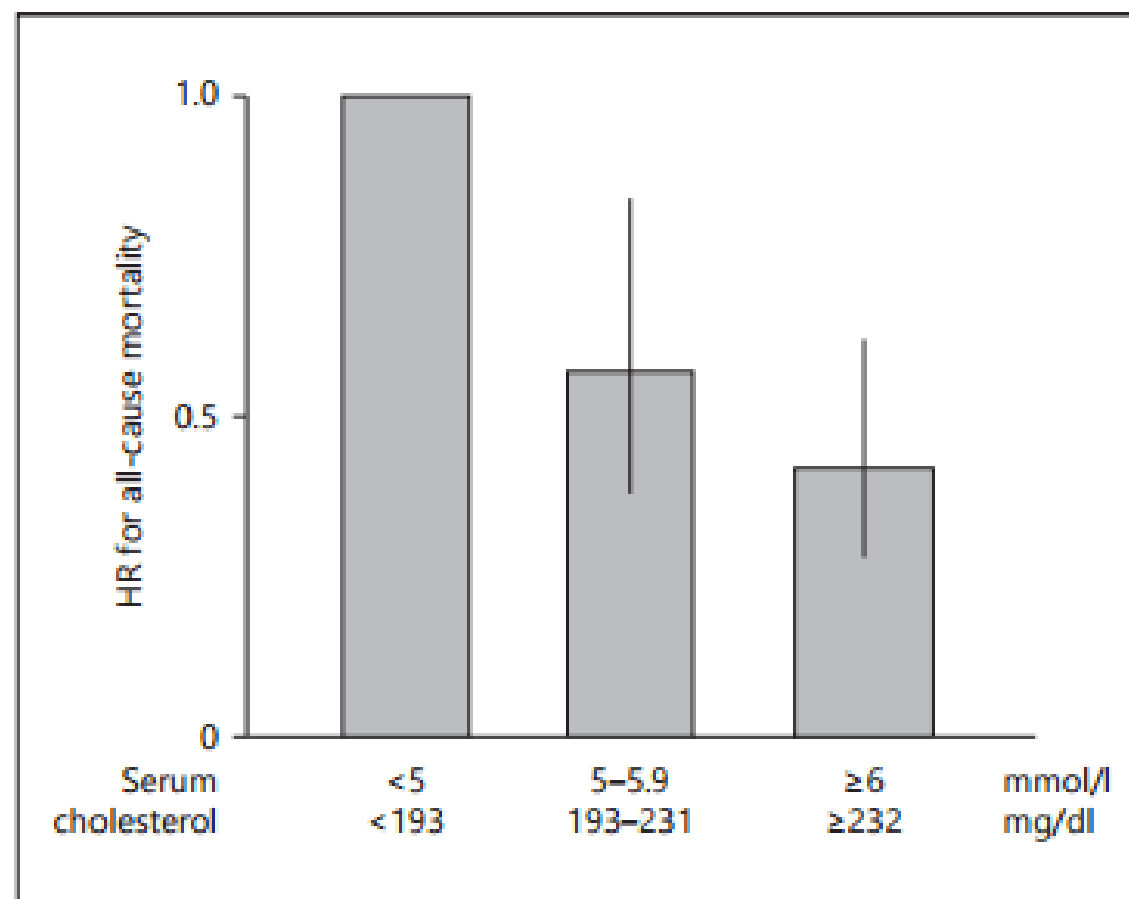


Fig. 1-10. Hazard ratio for all-cause mortality according to total cholesterol tertile among participants in a home-dwelling elderly population: study in Kuopio, Finland [14]. A total of 490 home-dwelling residents were followed for 6 years, and cumulative survival was calculated in a propensity score adjusted model. HR = Hazard ratio.

CHOLESTEROL AND LONGEVITY

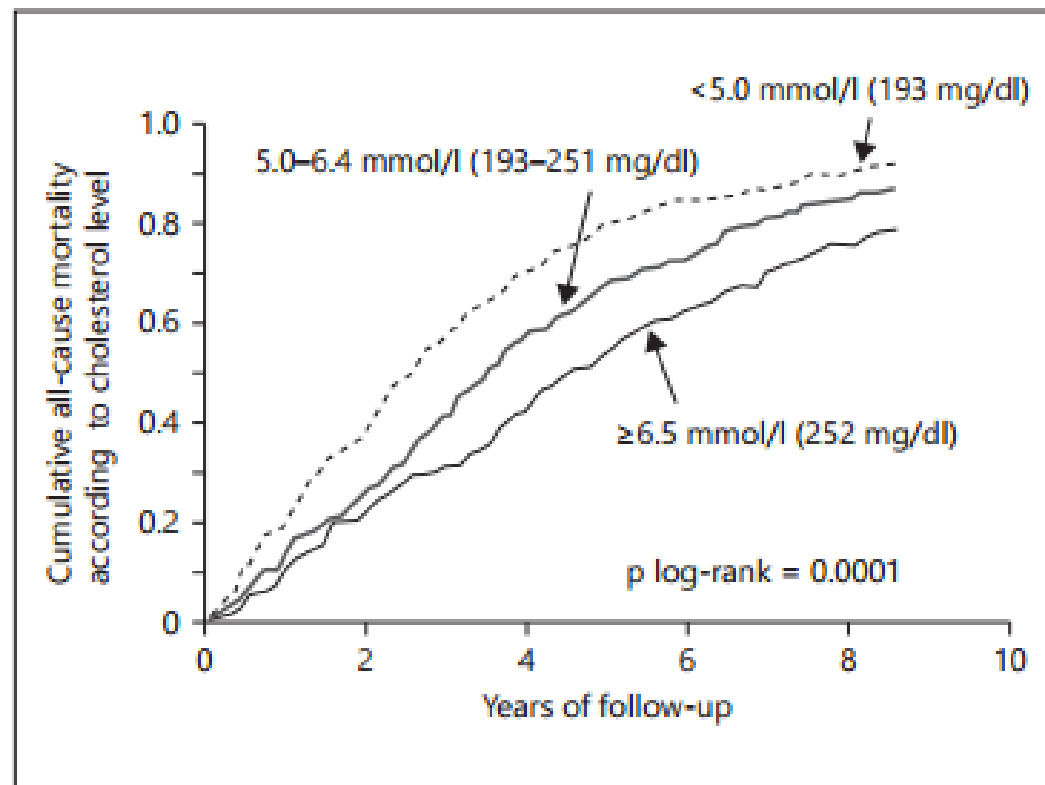
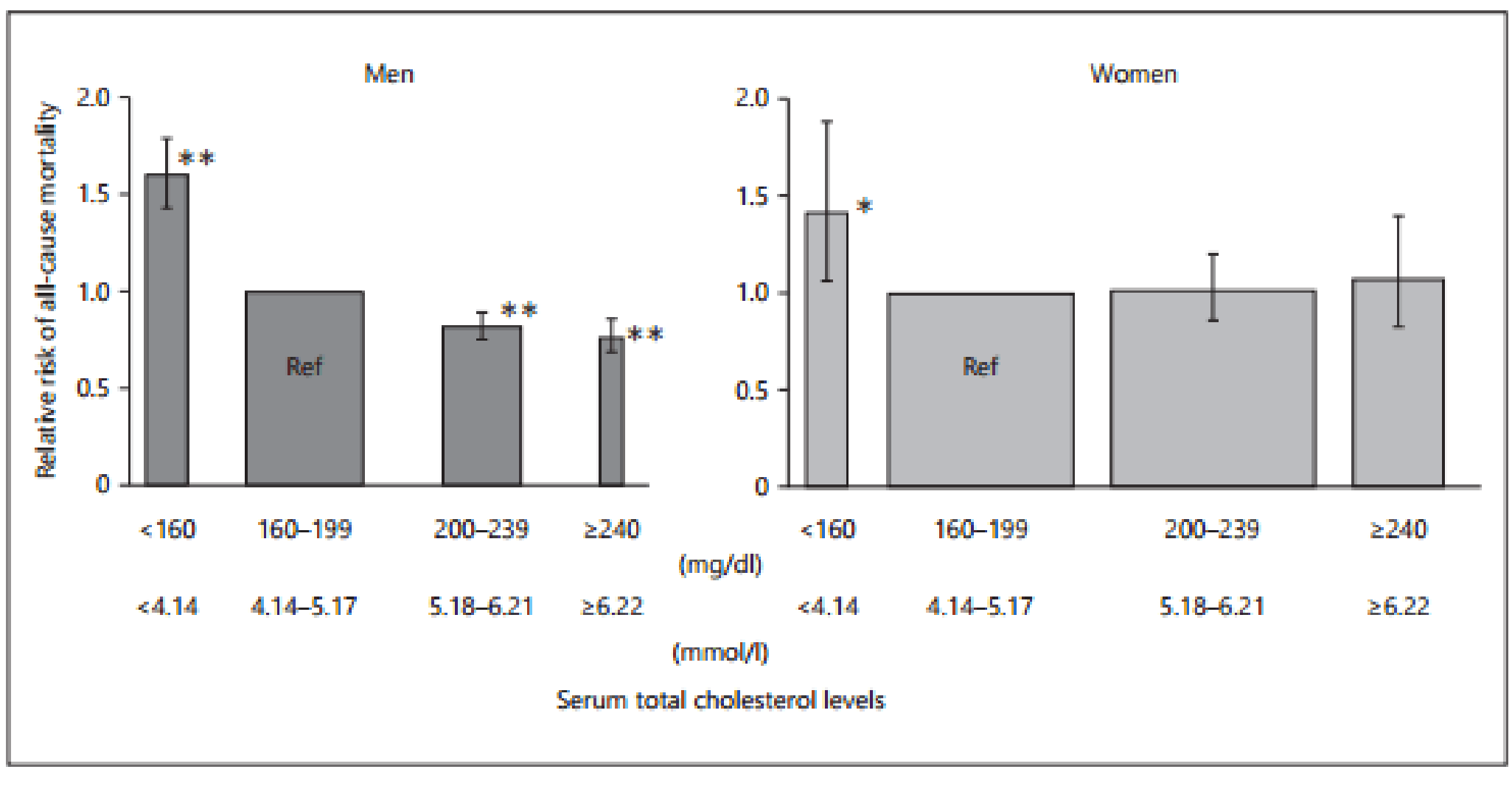


Fig. 1-6. All-cause mortality of residents aged ≥ 85 years according to total cholesterol level: Leiden 85-Plus Study [10]. A total of 724 residents in Leiden, the Netherlands, were followed for nearly 10 years. There were 203, 350, and 171 participants in the low, middle, and high cholesterol groups, respectively. Mortality risks were adjusted for age, sex, and cardiovascular risk factors (history of diabetes mellitus, myocardial infarction, cerebrovascular accident, smoking, and hypertension) with Cox's multivariate proportional hazards model. (Remade with permission from the publisher.)

CHOLESTEROL AND LONGEVITY



All cause mortality, age-standardized per 100,000 (2002).

Source: WHO-MORTALITY

<http://www.who.int/entity/healthinfo/statistics/bodgbddeathtdalyestimates.xls>

Blood Cholesterol and Mortality

- I.E. Digestive diseases (r=-0.42)
- II.K. Skin diseases (r=-0.5)
- II.L. Musculoskeletal diseases (r=0.23)
- II.M. Congenital anomalies (r=0.17)
- II.N. Oral conditions (r=0.13)
- III. Injuries (r=-0.5)
- III.A. Unintentional injuries (r=-0.56)
- III.B. Intentional injuries (r=-0.26)

I. Communicable, maternal, perinatal and nutritional conditions

I.A. Infectious and parasitic diseases

II.G. Cardiovascular diseases

Other mortality causes

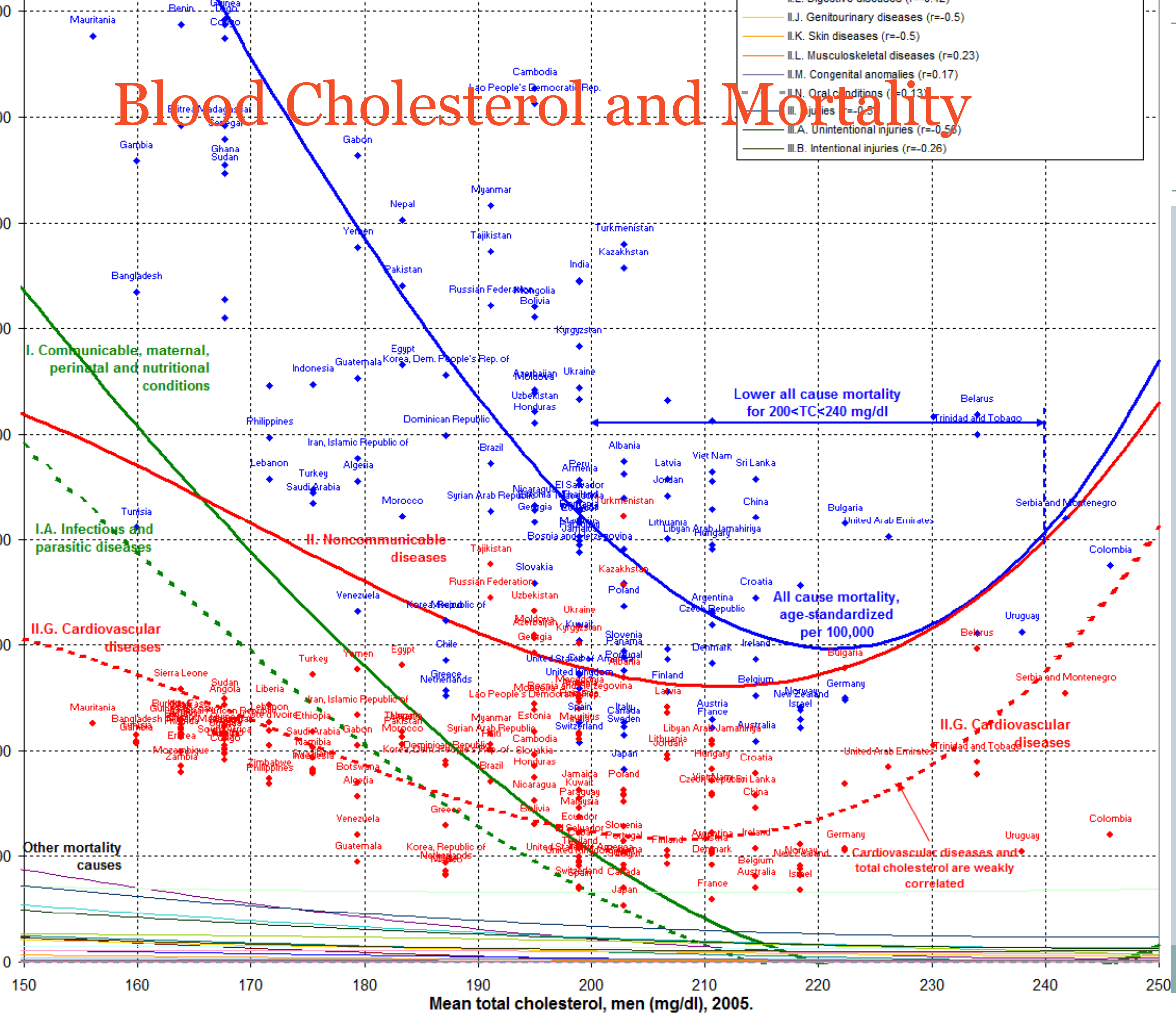
II. Noncommunicable diseases

Lower all cause mortality for 200<TC<240 mg/dl

All cause mortality, age-standardized per 100,000

II.G. Cardiovascular diseases

Cardiovascular diseases and total cholesterol are weakly correlated



Mean total cholesterol, men (mg/dl), 2005.

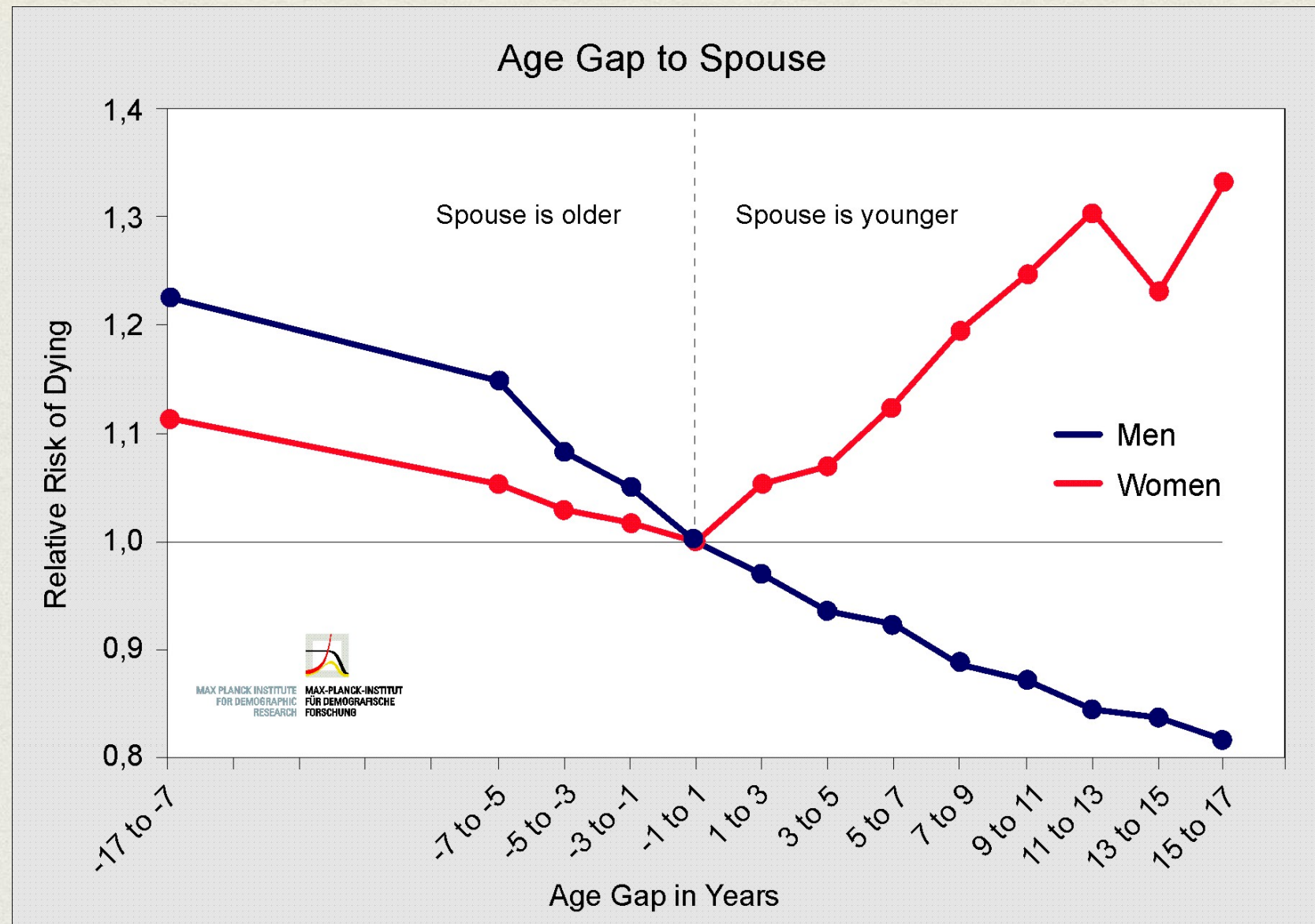
CHOLESTEROL AND LONGEVITY

Ways to increase healthy cholesterol.

- Coconut oil
- Fish oil and fish
- Eggs
- Moderate alcohol
- Exercise
- Low carb diet

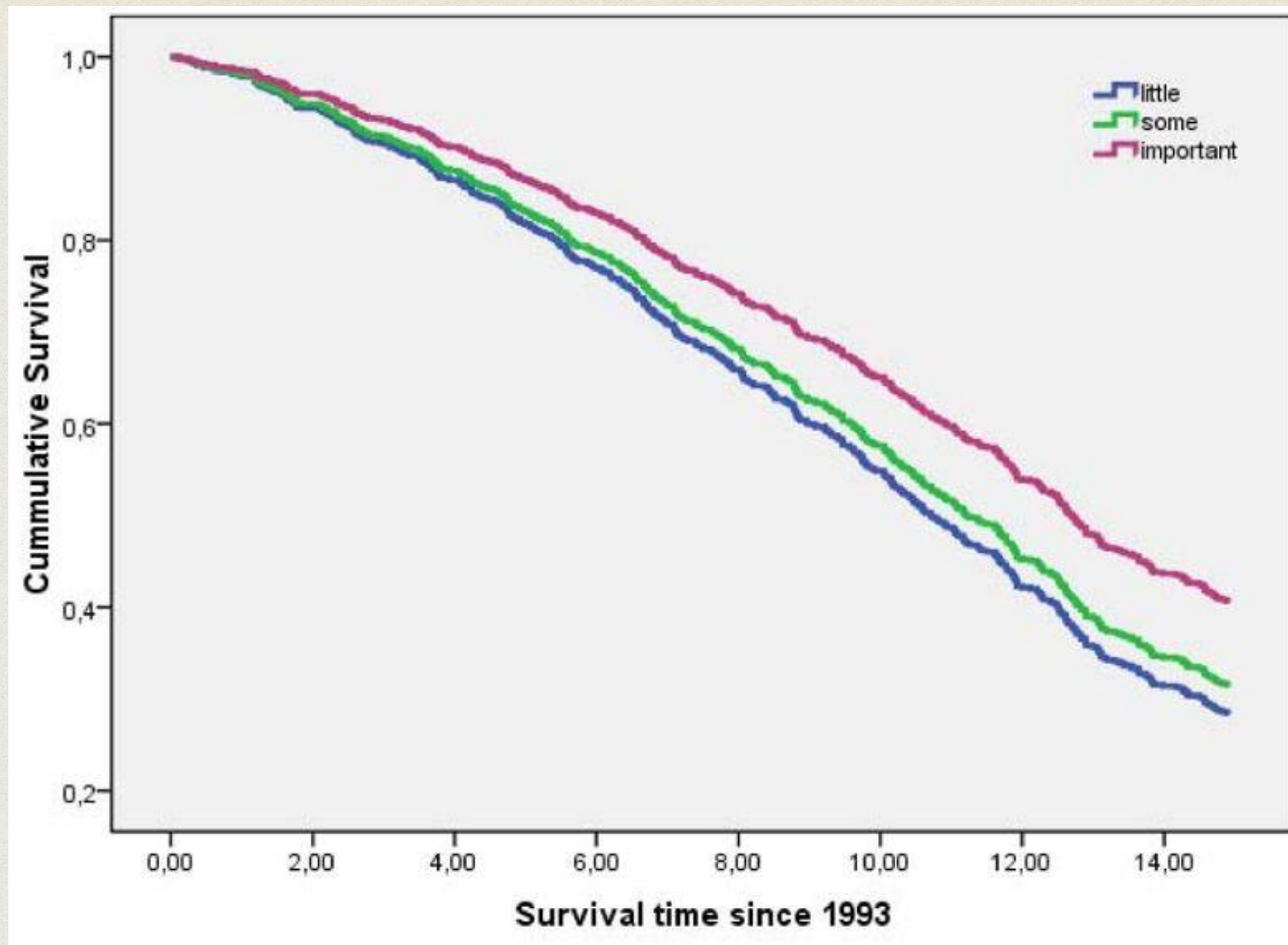


MARRIAGE AND LONGEVITY



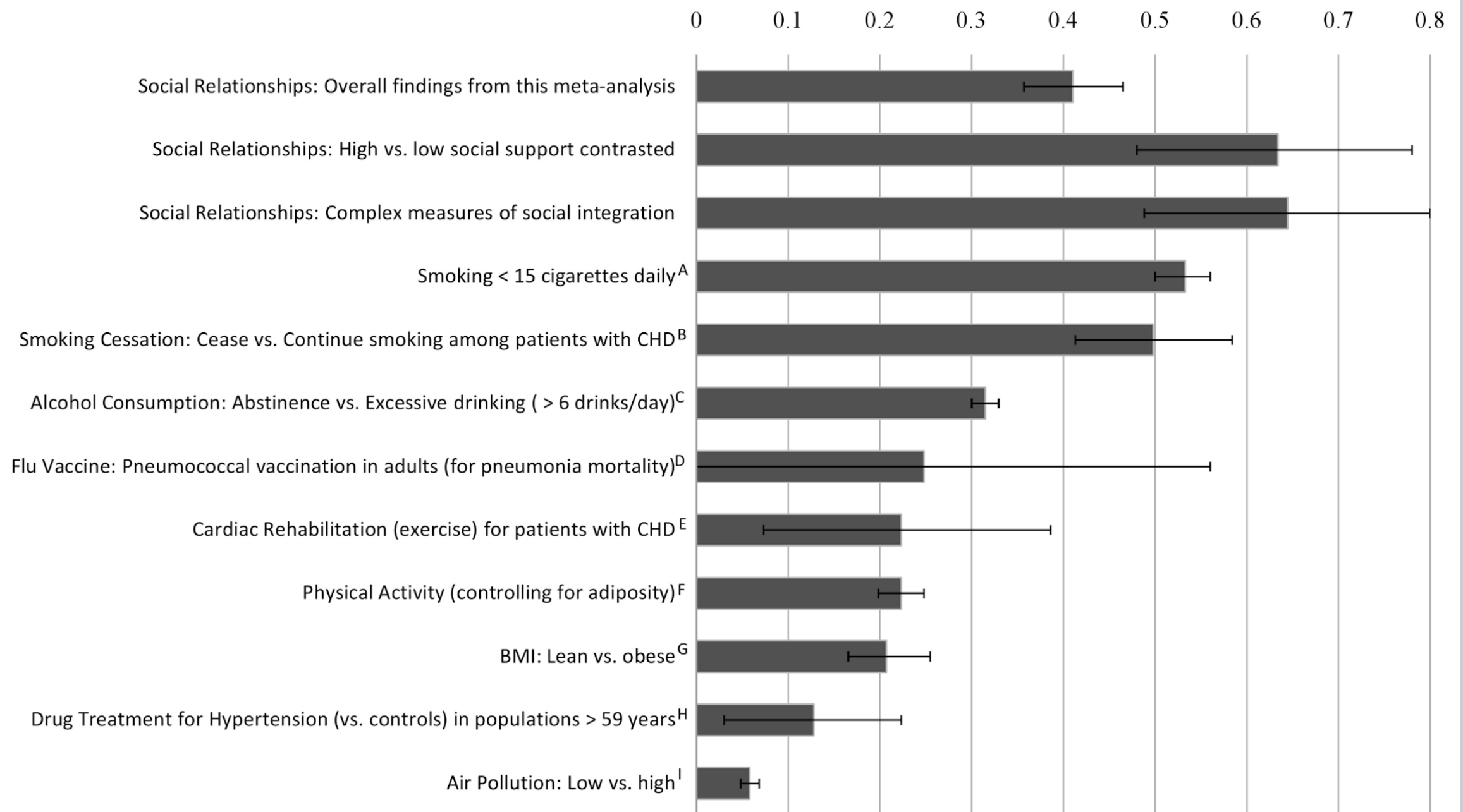
https://www.demogr.mpg.de/en/news_press/news/press/marriage_and_life_expectancy_1813.htm

PARENTAL RELATIONSHIP AND LONGEVITY

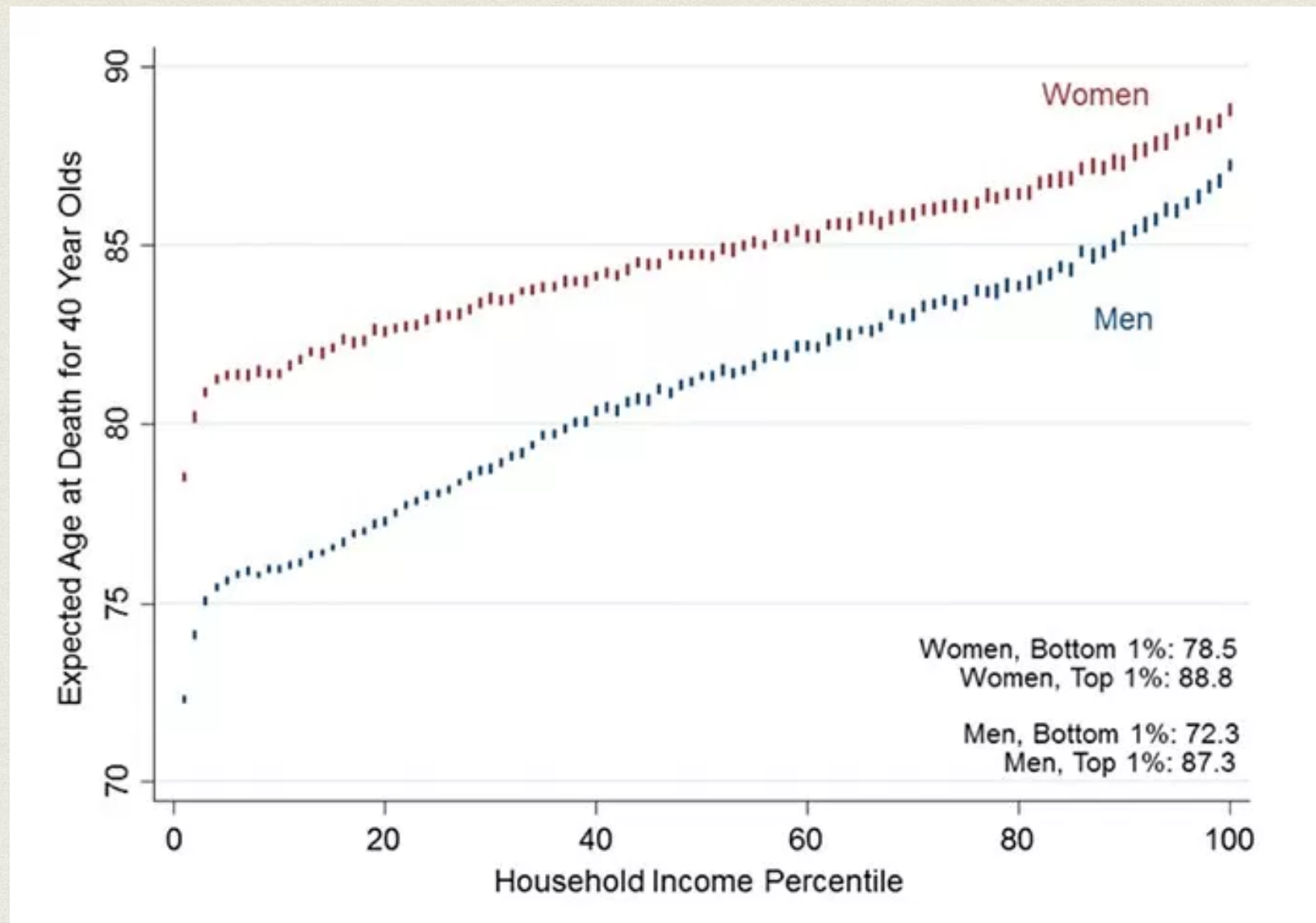


Social Relationships and Longevity

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INCOME AND LONGEVITY



<https://news.harvard.edu/gazette/story/2016/04/for-life-expectancy-money-matters/>

LONGEVITY FOODS

- Berries
- Tomatoes
- Avocados
- Olive oil
- Nuts
- Green tea
- Mushrooms
- Whole grains
- Walnuts
- Fish
- Coffee
- Sprouts

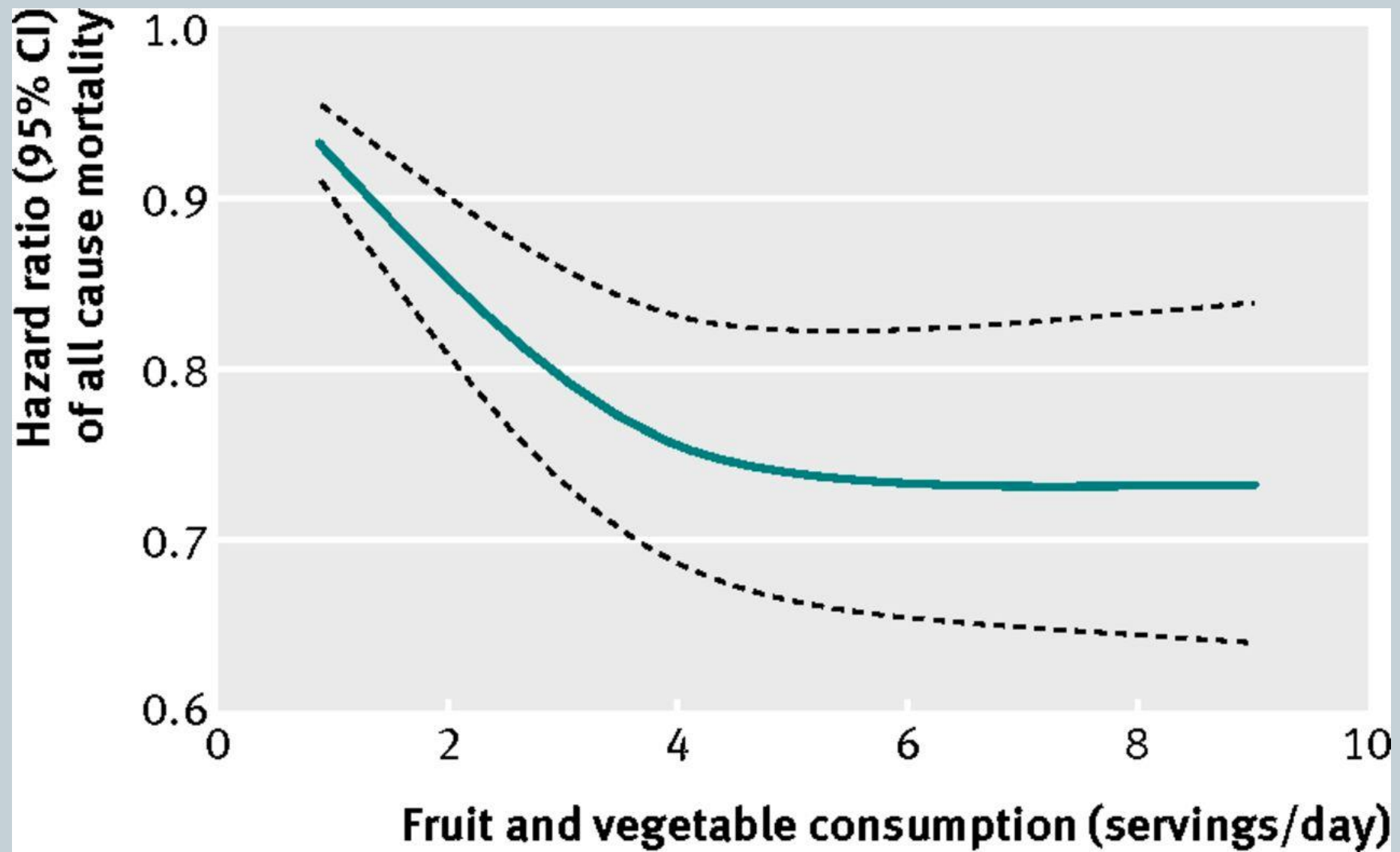


- Beans
- Cabbage
- Sweet potatoes
- Garlic
- Onions
- Salmon
- Chocolate
- Water
- Broccoli
- Pomegranates
- Coconut oil
- Sauerkraut



Fruits and Vegetables

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MEDITERRANEAN DIET

- Big NIH study published in 2007.
- Looked at 14,284 men and 166,012 women.
- Assessed where people followed a mediterranean diet based of 9 components (components included vegetables, legumes, fruits, nuts, whole grains, fish, monounsaturated fat-saturated fat ratio, alcohol, and meat).
- 21% reduction in all cause mortality in men.
- 20% reduction in all cause mortality in women.
- 22% decrease in heart disease in men.
- 21% decrease in heart disease in women.
- 17% decrease in cancer in men.
- 12% decrease in cancer in women.
- Same reduction in disease seen in smokers on mediterranean diet.

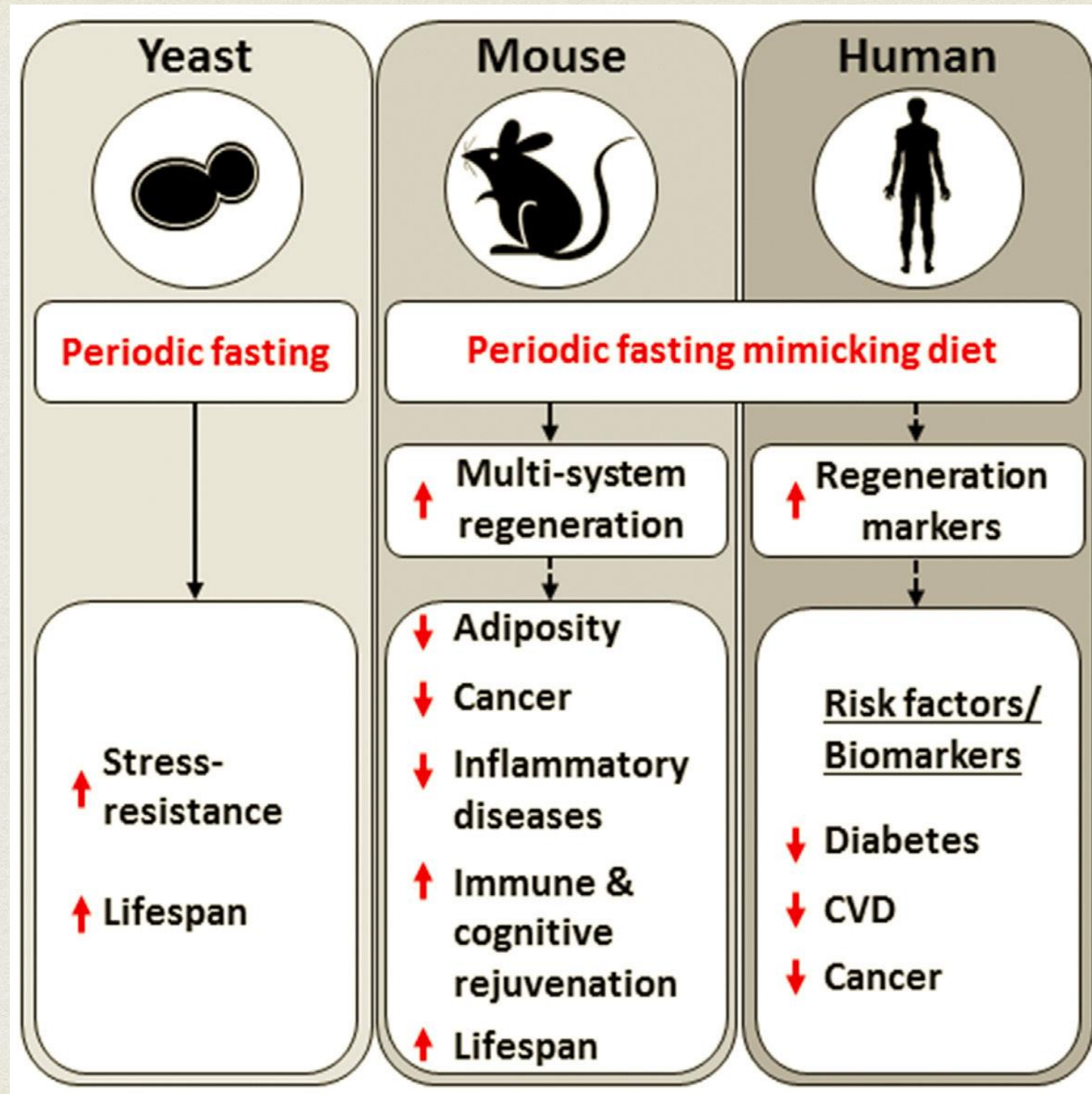


Arch Intern Med. 2007 Dec 10;167(22):2461-8.

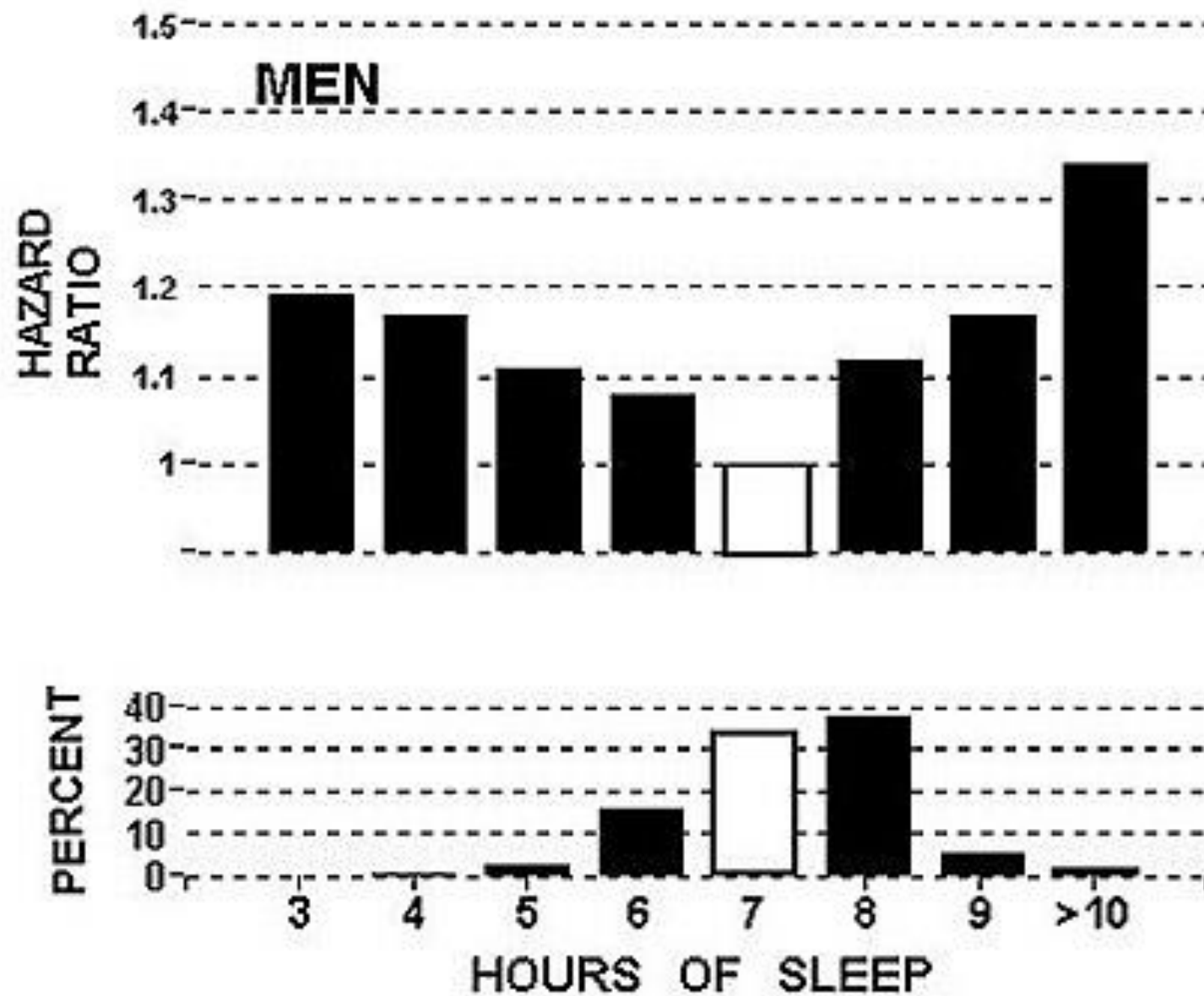
Mediterranean dietary pattern and prediction of all-cause mortality in a US population: results from the NIH-AARP Diet and Health Study.

Mitrou PN1,

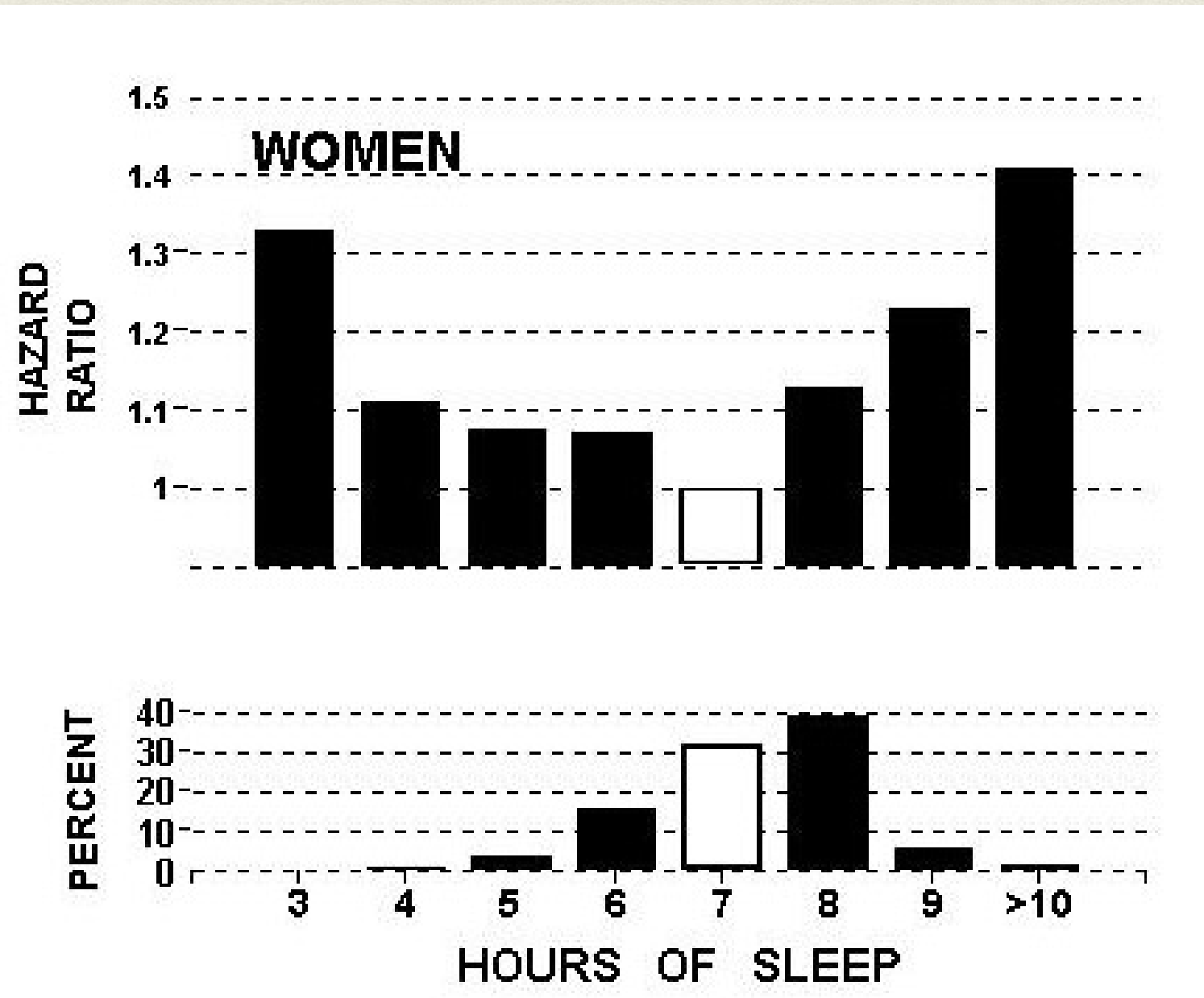
FASTING AND LONGEVITY



SLEEP AND LONGEVITY



SLEEP AND LONGEVITY



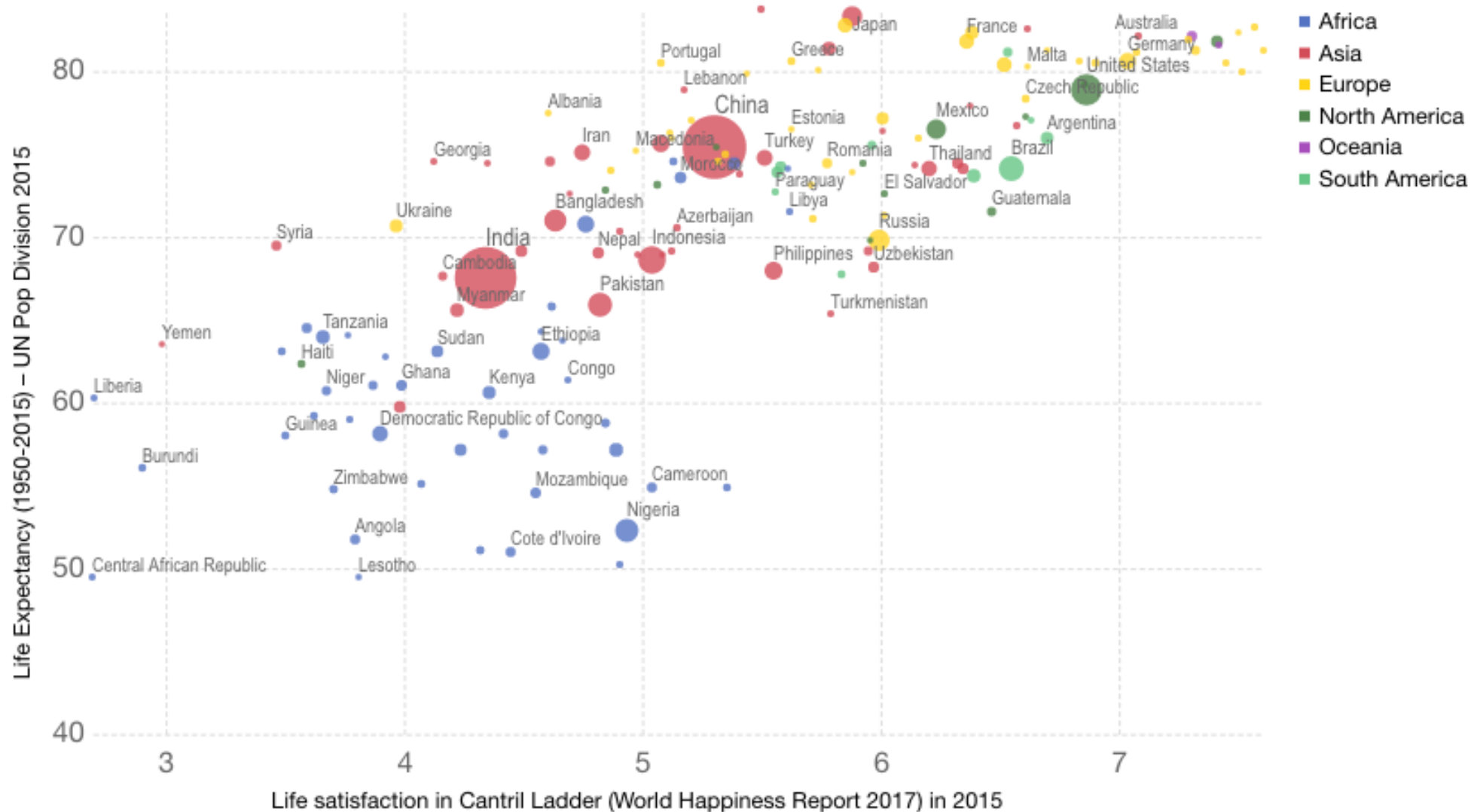
Life Satisfaction and Longevity

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Life satisfaction vs Life expectancy, 2015

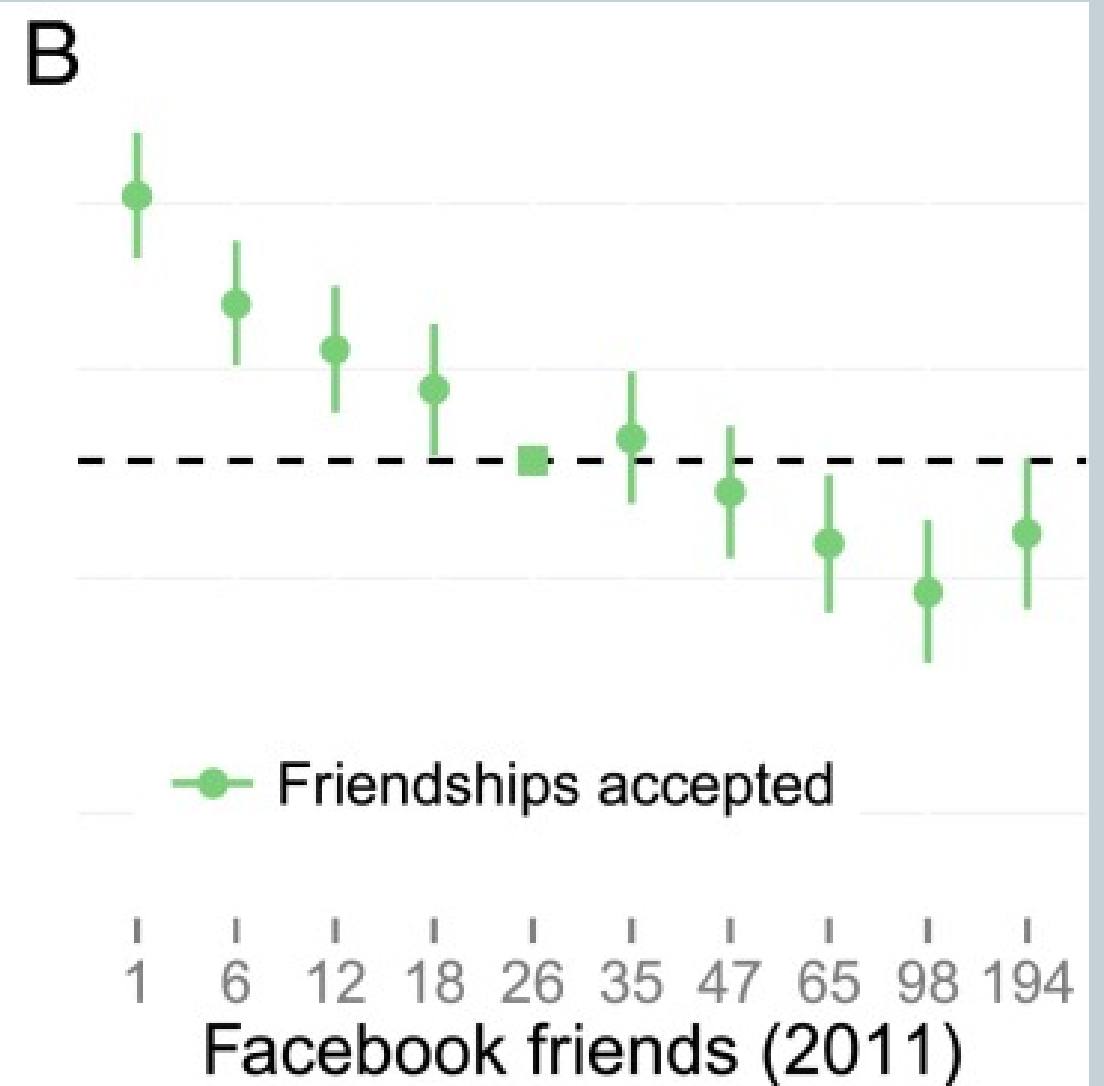
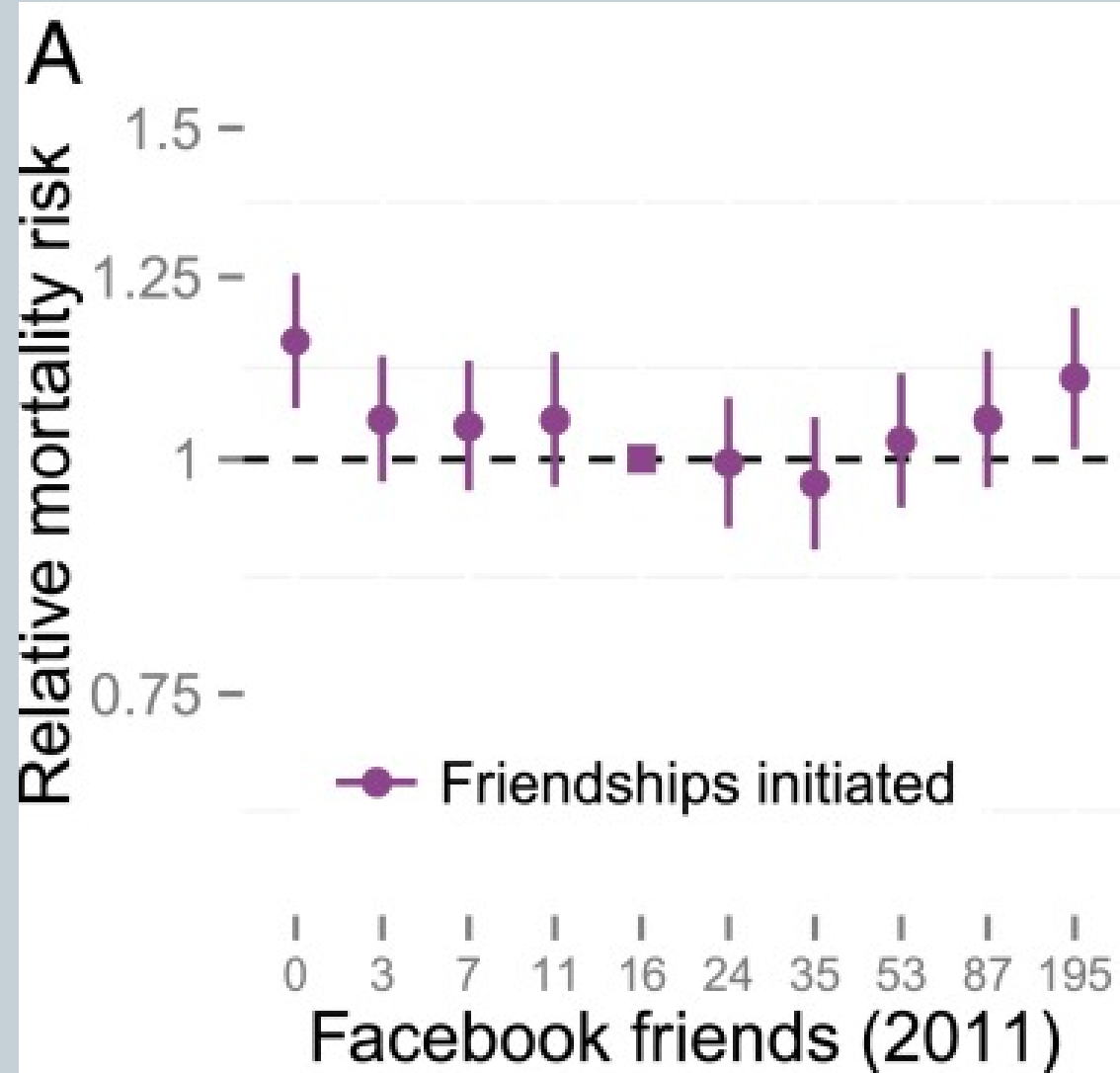
Our World
in Data

The vertical axis shows life expectancy at birth. The horizontal axis shows self-reported life satisfaction in the Cantril Ladder (0-10 point scale with higher values representing higher life satisfaction).



Facebook Friends and Longevity

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Aging Well Review

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- Exercise/active lifestyle - Good blood flow.
- Healthy diet - Building blocks of health.
- Adequate sleep - repair and maintenance.
- High social status/Strong social ties - purpose to be.
- Culture of moderation.