



LIVE YOUNGER LONGER

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LIVE
YOUNGER
LONGER



INSIGHTS FROM A MAYO CLINIC CARDIOLOGIST AND CANCER SURVIVOR
Stephen Kopecky, M.D.



Mayo Clinic Cardiovascular Health Clinic

Clinics: ~8000 pt/yr

- CV Health Clinic
- Familial Hypercholesterolemia
- Statin Intolerance
- Women's Heart
(SCAD & Cardio-Rheum)
- Cardio-oncology
- Sports Cardiology

Provider Staff:

Physicians – 8
Advanced Practice Nurse – 4.5
Registered Nurse – 5
Exercise Specialist – 18
Stress test technicians – 15

Stress tests : 10,402/yr

- VO2 – 4370
- VO2 sestis – 85
- VO2 echo – 571
- Stress test – 5376

Cardiac Rehab enrolled : 473



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6

Steps to Prevent Heart Disease, Cancer,
Alzheimer's, Diabetes and More

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JAK ŽÍT DÉLE A CÍTIT SE MLADŠÍ?

6

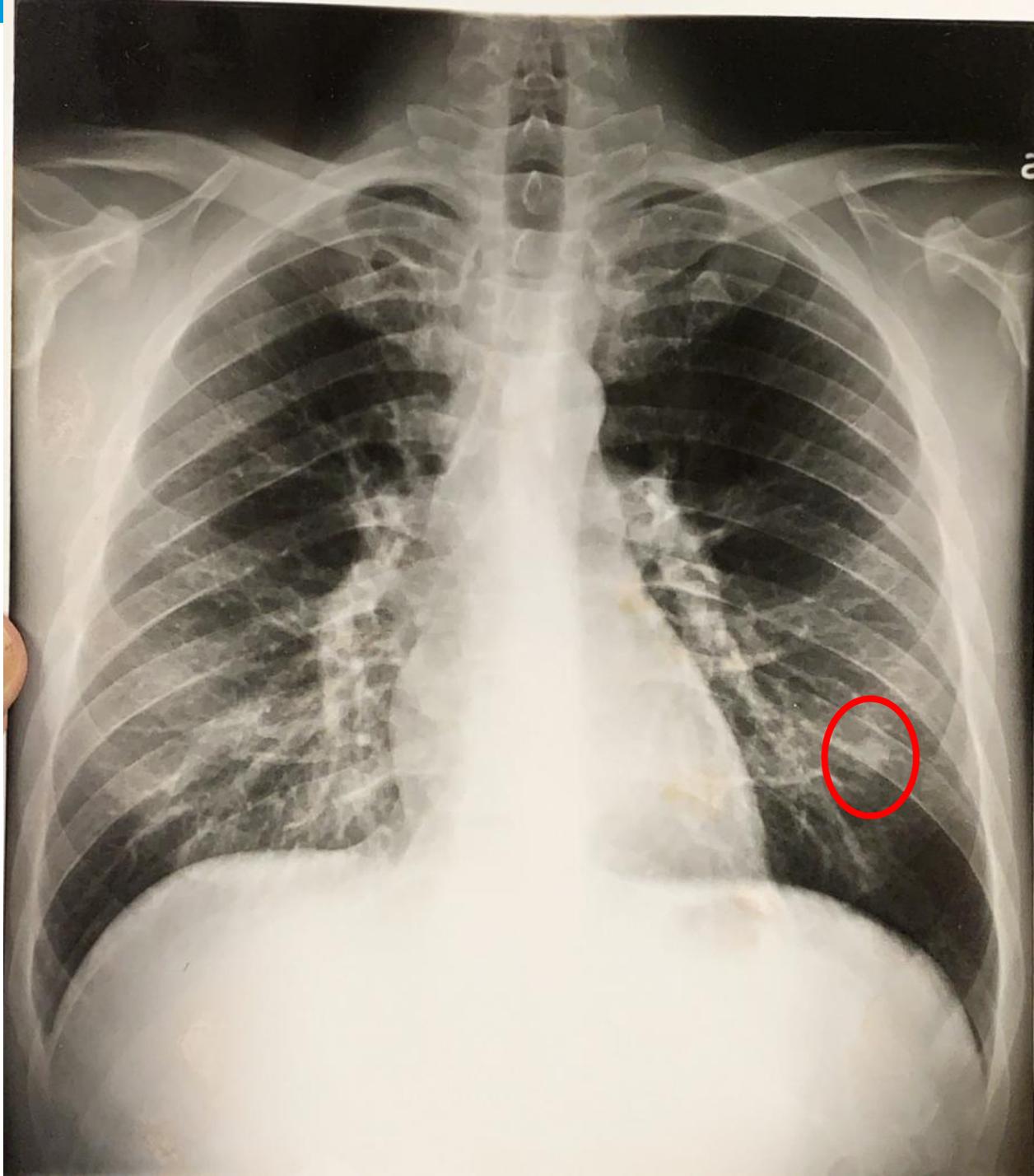
kroků pro prevenci kardiovaskulárních
onemocnění, rakoviny, Alzheimerovy
choroby, cukrovky a dalších onemocnění

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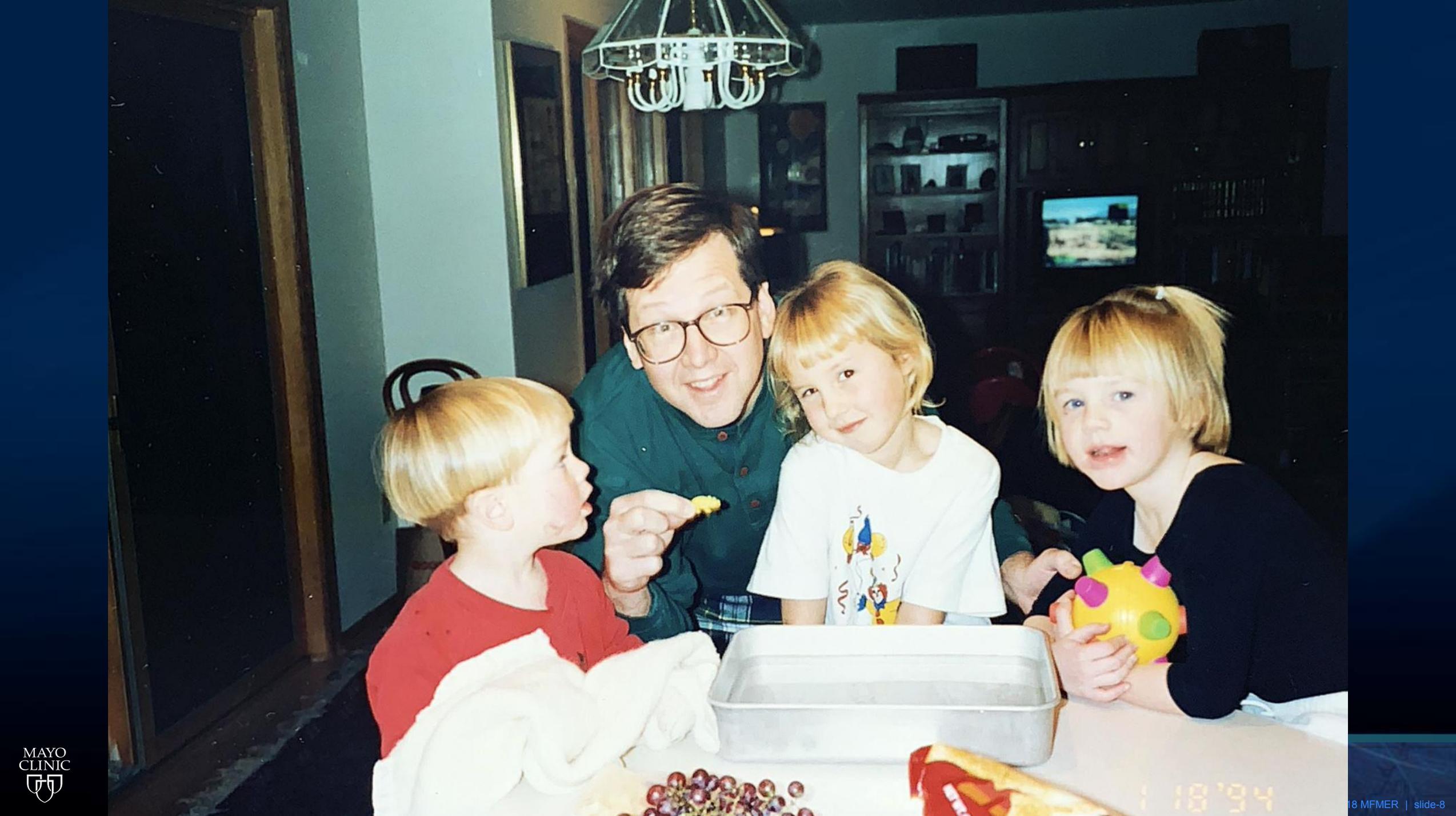
ODBORNÍ EDITOŘI ČESKÉHO VYDÁNÍ: assoc. prof. Tomáš Kára, prof. Aleš Linhart,
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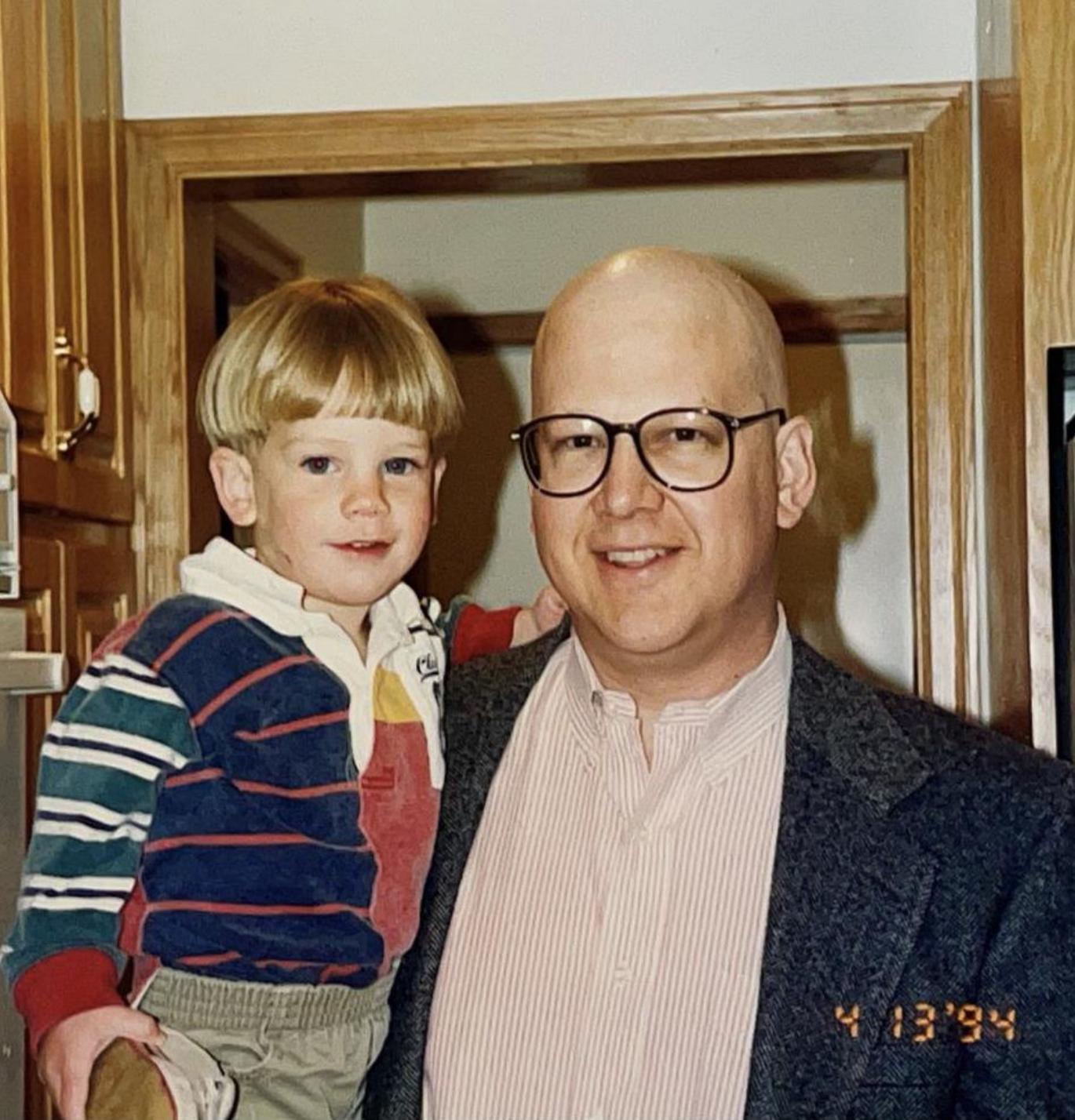
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Death is inevitable,
but premature death is not

Sir Richard Doll

British physician, research pioneer
linking smoking to health problems

What prevents more deaths ?

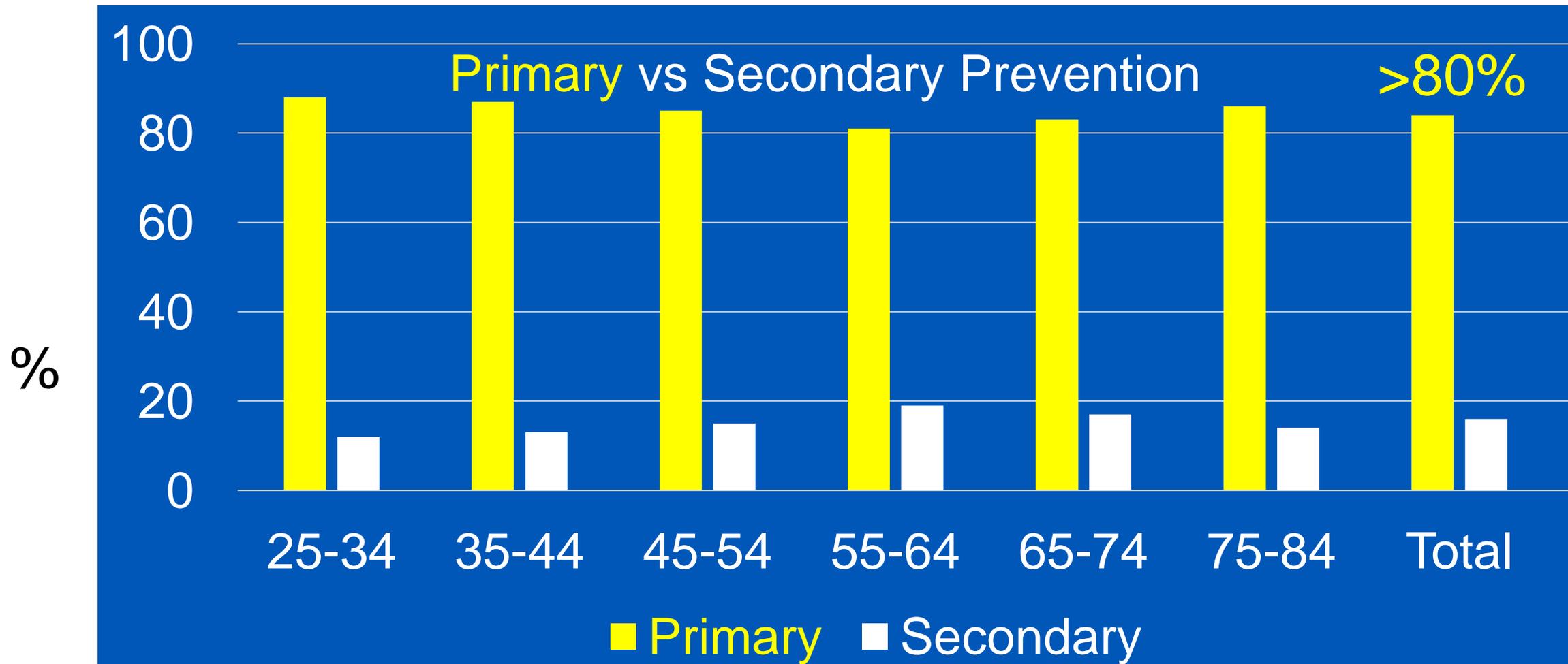
Primary : Before disease occurs

e.g. prevent coronary disease, high blood pressure & cholesterol

Secondary : After disease occurs

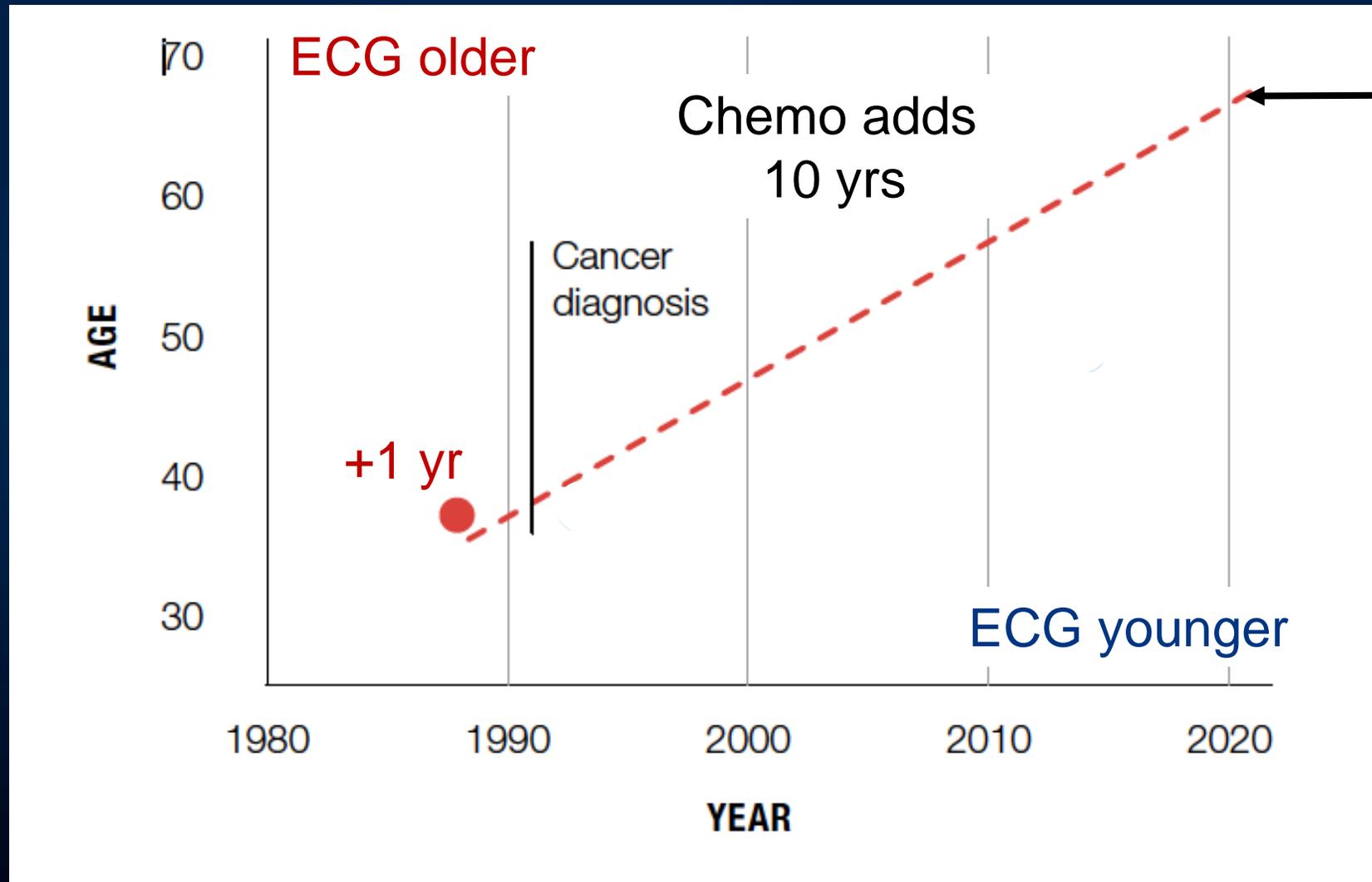
e.g. put in a stent, treat high blood pressure & cholesterol

What prevents more CV deaths ?



The best way to save lives is to prevent the disease,
not treat the disease once there

Mayo Clinic Heart age vs Chronologic age



ECG=Chronologic

Health is determined by factors in five domains :

- Behavior = 'Habits' 40%
- Genetics 30%
- Social circumstances 15%
- Health care 10%
- Environmental exposures 5%

**>80% of our health
depends on our lifestyle**

US : Deaths Related to the 17 Leading Risk Factors

Daily Lifestyle

- 1 Dietary
- 2 Tobacco
- 3 Hi Blood pressure
- 4 BMI
- 5 Physical inactivity
- 6 Hi fasting glucose
- 7 Ambient pollution
- 8 Alcohol use
- 9 Drug use
- 10 Lead exposure
- 11 Occupational risks
- 12 Low bone mineral density
- 13 Radon
- 14 Ozone pollution
- 15 Partner violence
- 16 Childhood sexual abuse

Environment

Key Factors in Prevention of Heart Disease (& NCD's*)



Diet is now the #1
cause of early death
& disease in the US
and world

Murray et al. JAMA. 2013;310:591-608.

* Non-Communicable Diseases

'It is unfortunate that
people do not understand
from what small things
diseases come'
Charles Mayo



What if you replace 3% of red meat protein w/ plant protein

All-cause mortality :

Processed red meat : HR 0.66 (95%CI, 0.59-0.75)

Unprocessed red meat : HR 0.88 (95%CI, 0.84-0.92)

Egg : HR 0.81 (95%CI, 0.75-0.88)

Benefit if ≥ 1 of :

- smoking
- heavy alcohol intake
- overweight/obesity
- physical inactivity

**Even small healthy change
can yield big results**

n=131,342; F/U ~ 30 Yrs

Accelerometer studies of Vigorous Physical Activity effect on heart disease & cancer

VPA (≥ 6 METs)

Goal: 3 Stairs/second (stairs)

2 bouts/day ≤ 2 minutes each are
associated with 35% lower CVD mortality

- 1 Bull et al. WHO 2020 guidelines on PA Br J Sports Med 2020;54:1451–1462.
2. Piercy et al. PA guidelines for Americans. JAMA 2018;320:2020–2028.
3. Stamatakis et al. Vigorous Intermittent Lifestyle PA . Sport Med 2021;51:1–10.

BENEFITS OF INTERVAL ACTIVITY

With appropriate interval activity, multiple signals are sent out to ensure survival

1st

Heart

Pumps more blood which the muscles need to function optimally

2nd

Blood vessels

Enlarge so the muscles can get the increased blood flow

3rd

Abdominal fat *Reduces abdominal fat*

Replenishes muscle energy stores for future intervals

4th

'Clean-up crew' *Reduces cancer & Alzheimers*

Clears up waste, fix folded proteins, correct genetic mutations



What is the effect of 1 hour of sleep on incidence of MI ?

Spring : Lose 1 Hr

Monday

24% ↑ AMI (p=0.011)

Fall : Gain 1 Hr

Tuesday

21% ↓ AMI (p=0.044)

Western world : Average sleep duration decreased
from 9.0 to 7.5 hours during the 20th century ²

The single largest psychological cause of CHD Mortality ?

Pessimism OR 2.17 (1.21-3.89)

- Tendency to expect negative outcomes or to routinely explain events in a negative way

WHO : "Linked to a sense of hopelessness."
"There is no health without mental health."

CHD indicates coronary heart disease

PROSPECTIVE STUDY : PRACTICE POSITIVE THINKING

- 7,942 middle-aged men/women w/o CV disease
- 5 yr follow-up - Incident CHD (F MI, NF MI, Angina)

Results:

Emotional vitality :

Adjusted hazard ratios 0.74, [95% CI, 0.55-0.98]

Optimism :

Adjusted hazard ratios 0.73, [95% CI, 0.54-0.99]

Positive psychological well-being is associated with 25% reduction in CHD risk

The 5 Senses

Sight

Touch

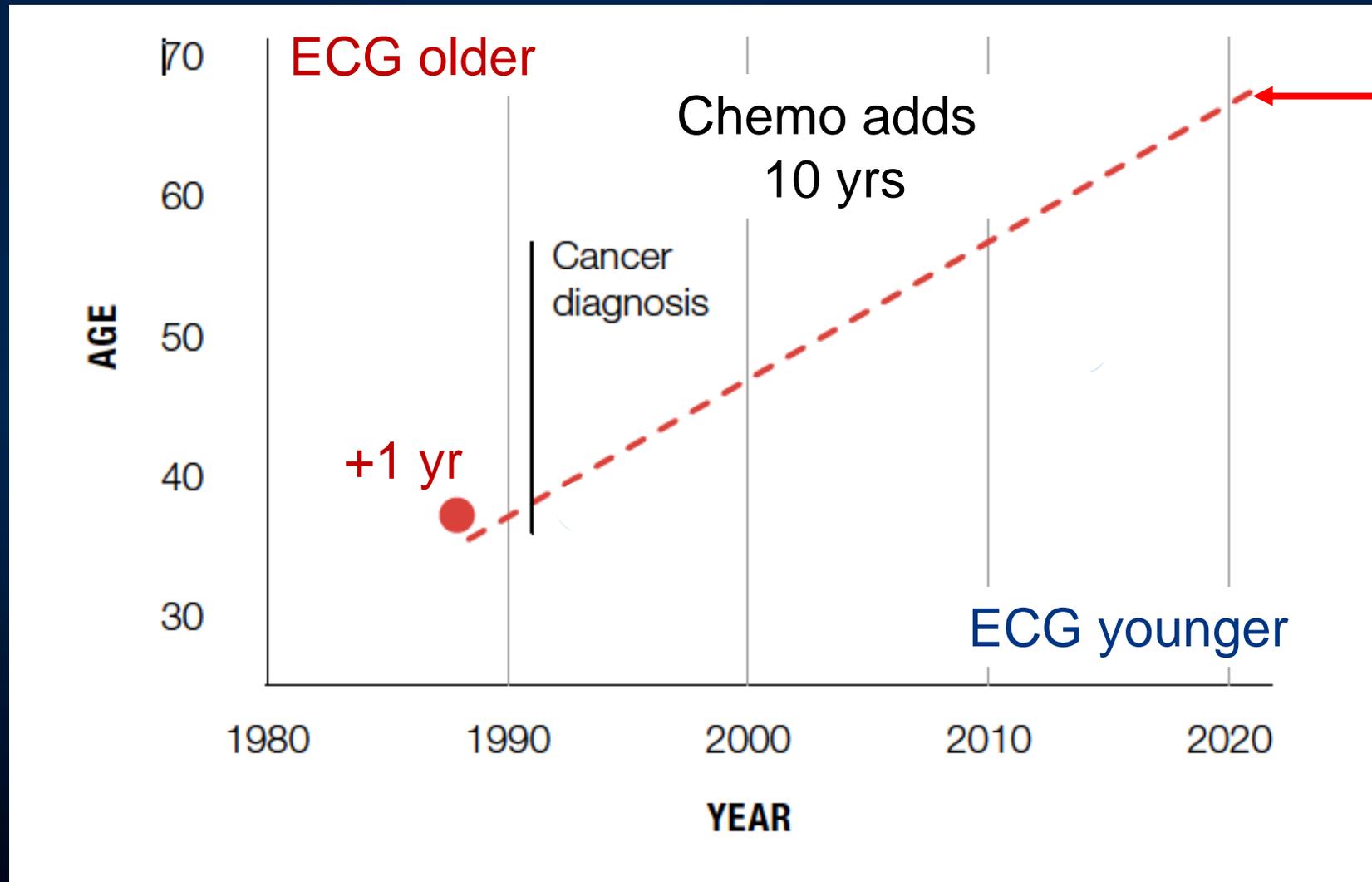
Taste

Hearing

Smell

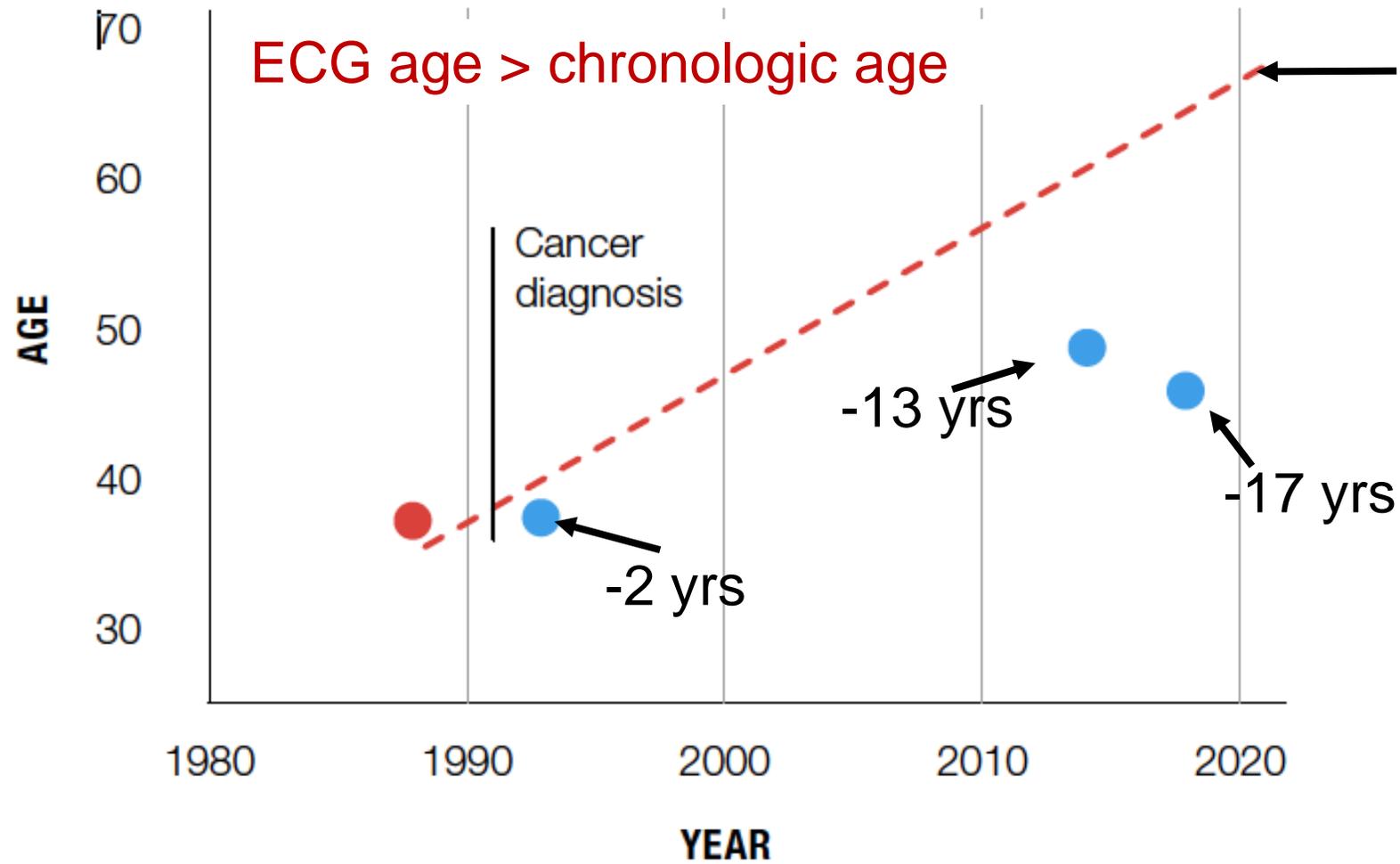


Mayo Clinic Heart age vs Chronologic age



ECG Age =
Chronologic Age

Mayo Clinic Heart age vs Chronologic age



ECG = Chronologic

ECG age 17 yrs
Younger than
Chronologic age

Just 1 Bite

Just 1 Pound



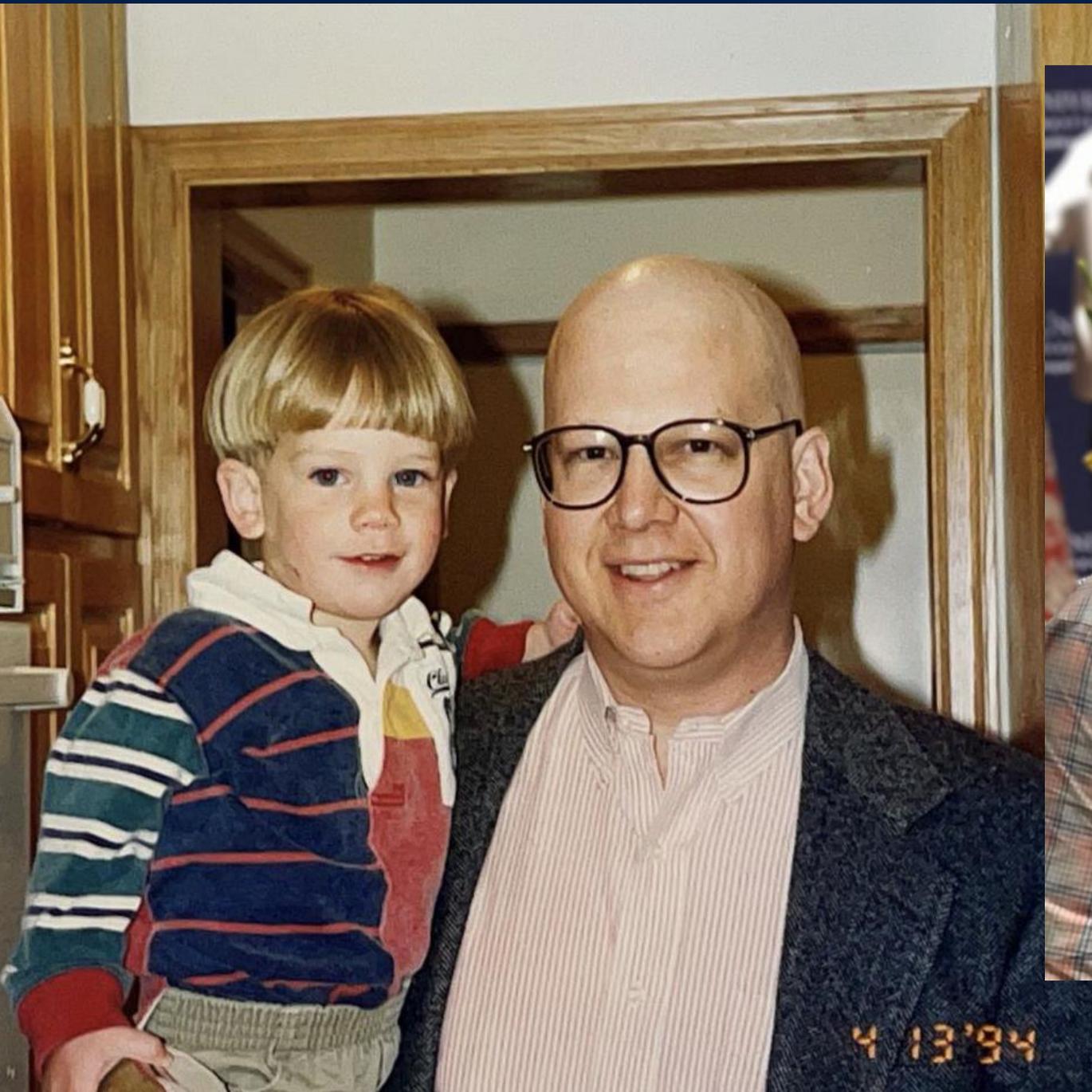
Just 1 Minute

Just 1 Hour of Sleep

Just 1 Minute of Relaxation

Just 1 Binge

Just 1 Smoke









Question or comments ?

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🐦 [@DrSteveKopecky](https://twitter.com/DrSteveKopecky)

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6 kroků pro prevenci kardiovaskulárních onemocnění, rakoviny, Alzheimerovy choroby, cukrovky a dalších onemocnění

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