

Fitness Vs Weight: *What's More Important to Your Health?*



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***Every Body* WALK!**
The Campaign to Get America Walking

**Exercise
is Medicine™**

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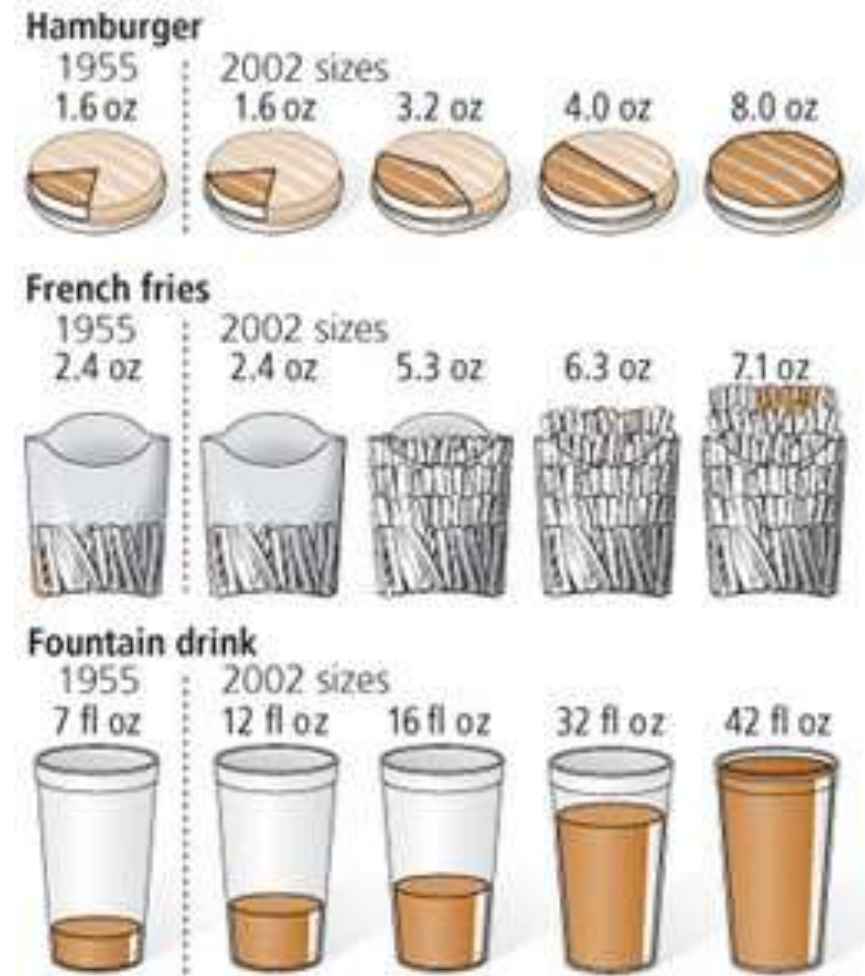
Past century has seen paradigm shift in our diet and activity level

- Over the same period of time.
 - Portion sizes have dramatically increased.
 - Activity levels have dramatically decreased
- Resulting in unintended but predictable consequences that are gravely affecting our health and longevity.



The Growth of Fast Food Portion Sizes Over 30 yrs

- Between 1971 and 2002:
 - Average man added 168 calories to his daily diet.
 - Average woman added 335 calories a day.



The Growth of Portion Sizes; 20 years & 210 calories later

- The Average Bagel:



**3-inch
diameter
140 calories**



**6-inch
diameter
350 calories**

The Growth of Portion Sizes; 20 years & 360 calories later

- The Average Large Size Theatre Popcorn:



5 cups
270 calories



11 cups
630 calories

The Growth of Portion Sizes; 20 years & 270 calories later

- The Average Hamburger:



**333
calories**



**590
calories**

Changes to the US Labor Force

- Over past century, shift from industries dominated by primary production
- 1900 Most Common Occupations:
 - Farm workers
 - Forrest workers
 - Mine workers
- 2000 Most Common Occupations:
 - Professional workers
 - Technical workers
 - Service workers



Then Exercise Didn't Matter: Unintended Consequences of Technology

**Lumberjack;
Then**



Now Exercise Matters: Unintended Consequences of Technology

**Lumberjack;
Now**



Then Exercise Didn't Matter: Unintended Consequences of Technology

**Farmer;
Then**



Now Exercise Matters: Unintended Consequences of Technology

**Farmer;
Now**



Then Exercise Didn't Matter: Unintended Consequences of Technology

**Play time;
Then**



Now Exercise Matters: Unintended Consequences of Technology

**Play time;
Now**



Everywhere We Look; Now Exercise Matters!

At home and at work; Now

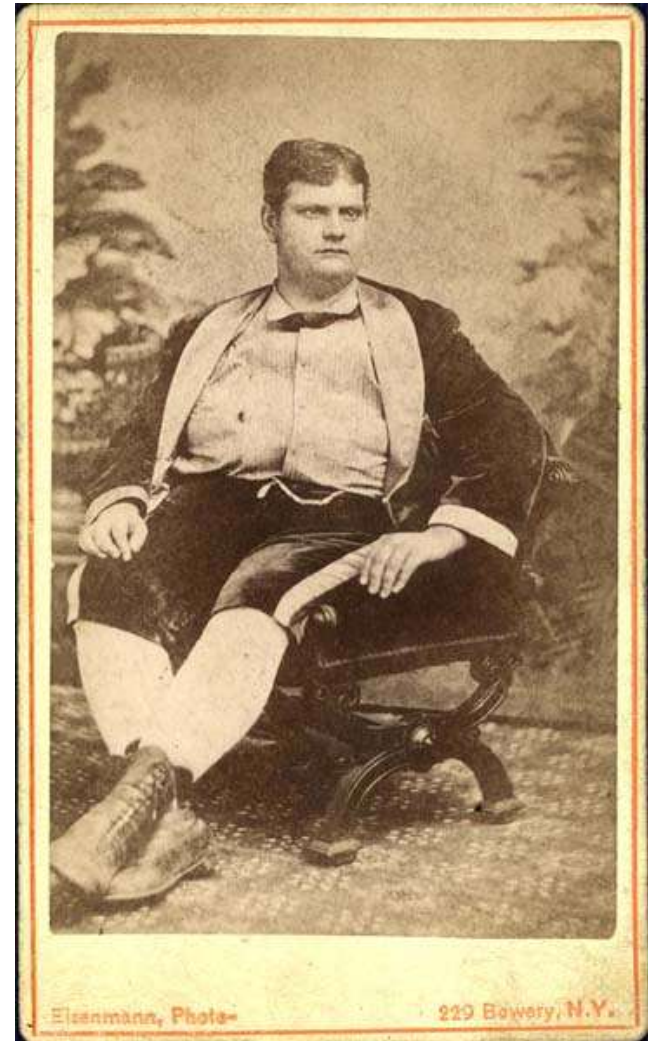


Bottom Line – We have systematically worked physical activity out of our daily routine



The results have been catastrophic

- Can you guess the early 1900's occupation of these people?
 - They are circus performers.
 - Often called “fat folks”, who were so unusually large that people actually paid to see them!



Are you kidding? Compare with today's standards



This is NOT a genetic problem

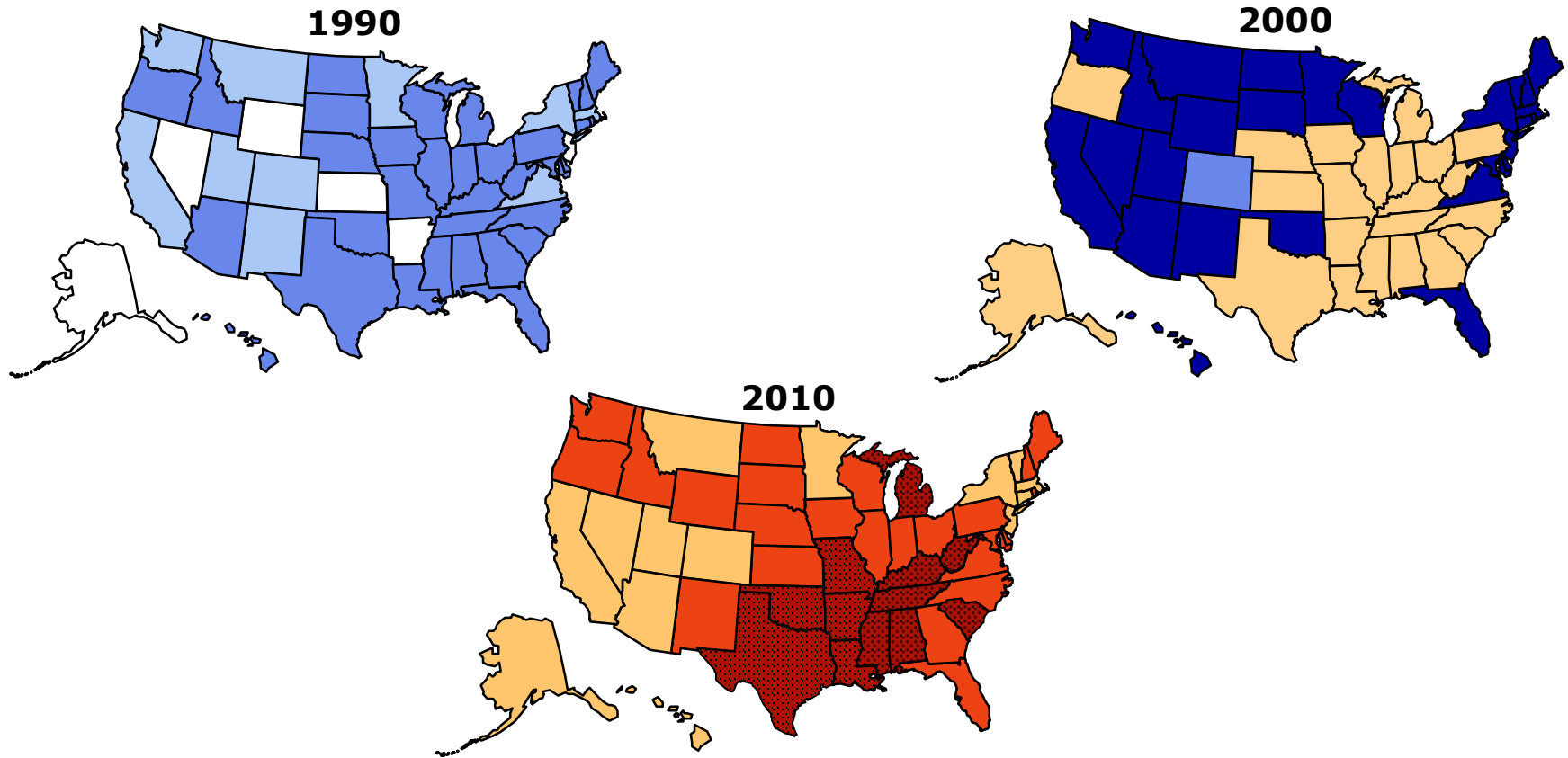
- Look at “old” pictures!
- Humans have not experienced significant genetic change in the past 50 years.
- Basic Law of Thermodynamics
 - To maintain metabolic balance:
 $\text{kcal in} = \text{kcal burned}$



Obesity Trends* Among U.S. Adults

BRFSS, 1990, 2000, 2010

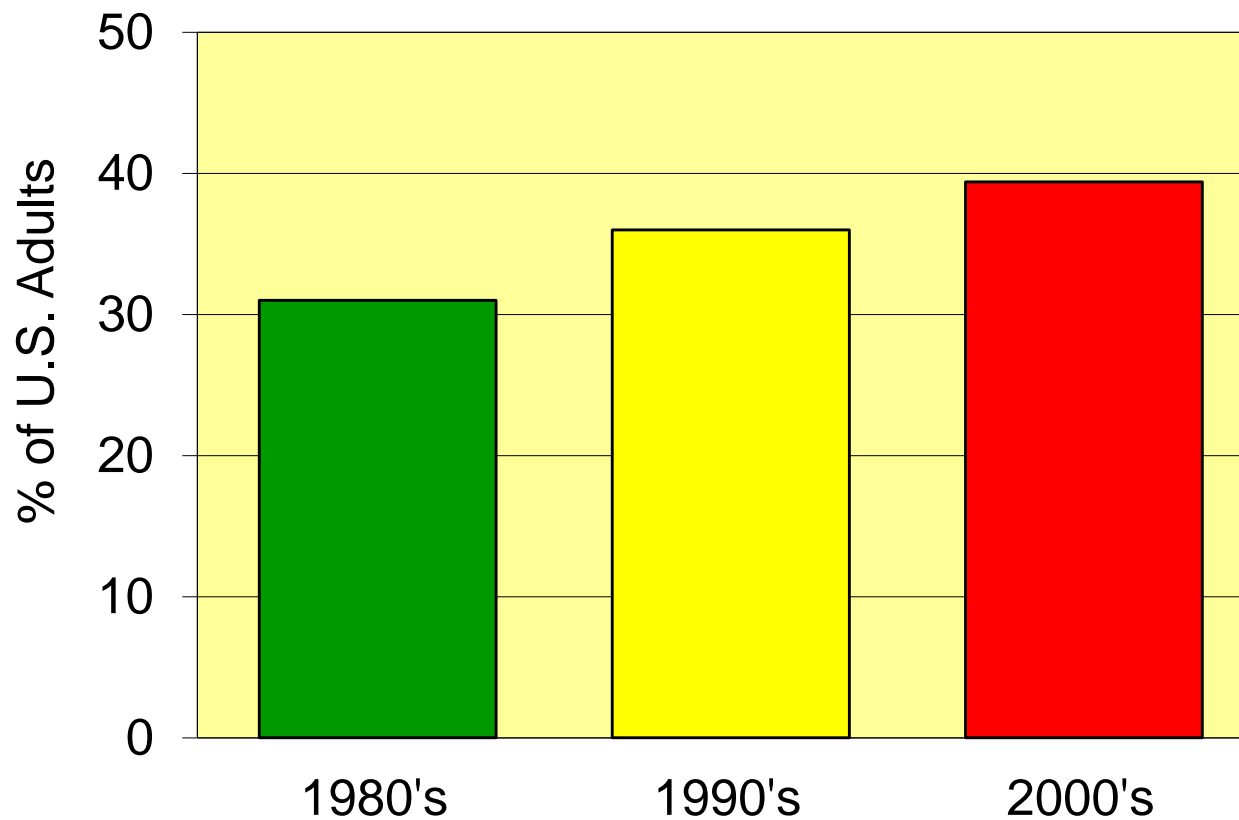
(*BMI ≥ 30 , or about 30 lbs. overweight for 5'4" person)



No Data <10% 10%–14% 15%–19% 20%–24% 25%–29% ≥30%



Prevalence of Weight Loss Attempts 1980's – 2000's



Yaesmiri et al, *Int J Obes* 2011; Bish et al, *Obes Res* 2005;
Serdula et al, *JAMA* 1999; Serdula et al, *Am J Publ Health* 1994



Comeback Kids:
Clinton Brings
Them Home

Why Health Care
Reform Is
A Hard Sell



The White House's
Race to Stop
A Flu Pandemic

TIME



The Myth About Exercise

Of course it's good for you,
but it won't make you
lose weight. Why it's
what you eat that
really counts.

BY JOHN CLOUD

Physical activity, obesity and health

BJSM

It is time to bust the myth of physical inactivity and obesity: you cannot outrun a bad diet

A Malhotra, T Noakes and S Phinney

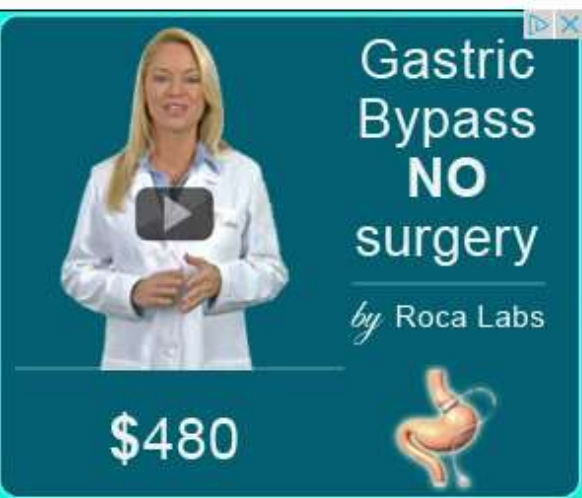
Br J Sports Med 2015 49: 967-968 originally published online April 22, 2015

doi: 10.1136/bjsports-2015-094911

- Written by folks trying to sell diet books about virtues of a low carb – high fat diet.
- We have heard this for years – obviously you can eat more calories in 10 minutes than you can burn off in 2 days.
- But can you diet away the risks of being sedentary?

AMA Votes that Obesity is a Disease

June 18, 2013

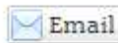


Gastric Bypass
NO surgery
by Roca Labs
\$480

AMA declares obesity a disease

The move by the American Medical Assn. board means that one-third of adults and 17% of children in the U.S. have a medical condition that requires treatment.

June 18, 2013 | By Melissa Healy and Anna Gorman, Los Angeles Times



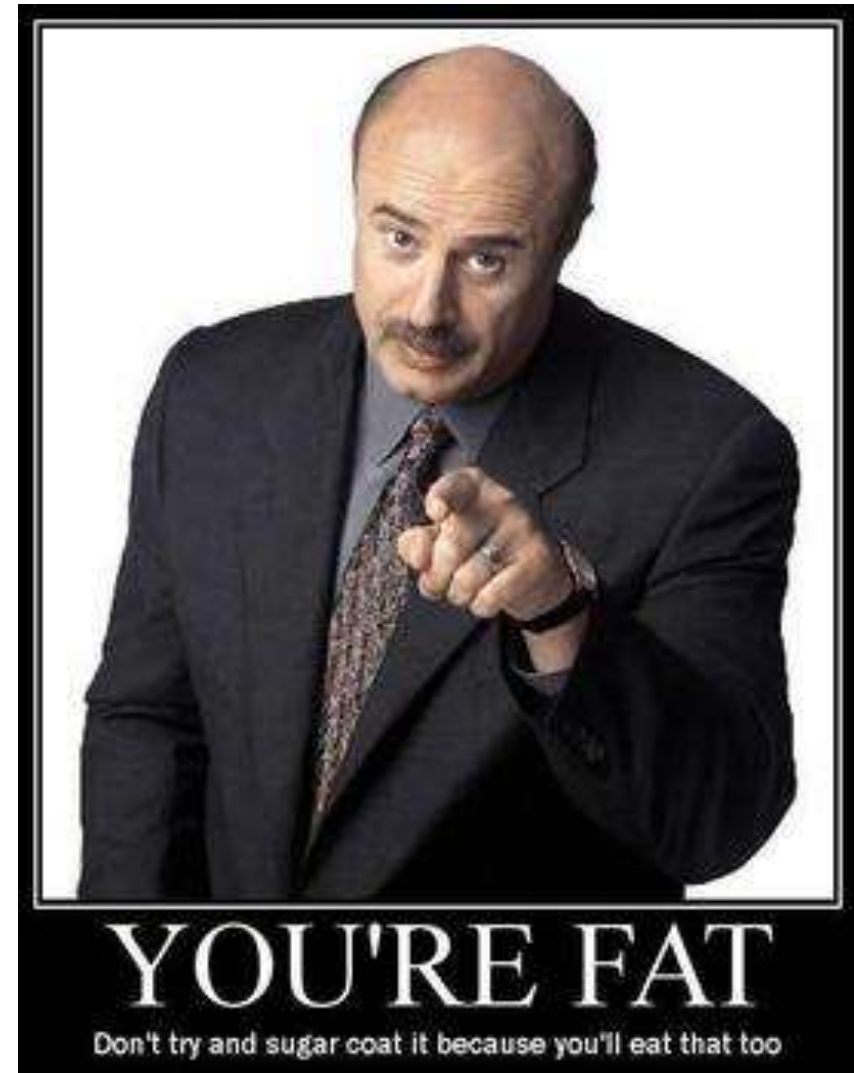
The American Medical Assn. voted Tuesday to declare obesity a disease, a move that effectively defines 78 million American adults and 12 million children as having a medical condition requiring treatment.



The move by the American Medical Assn. board means that one-third of adults and 17% of children in the U.S. have a medical condition that requires treatment.

Obesity Hysteria

- The world has now been sufficiently alerted to the global problem of obesity.
- Patients have been labeled and stigmatized.
- Assigned lots of blame.
- Spent lots of *money*.
- ...and gotten nowhere.



Are patients and their physicians giving up?

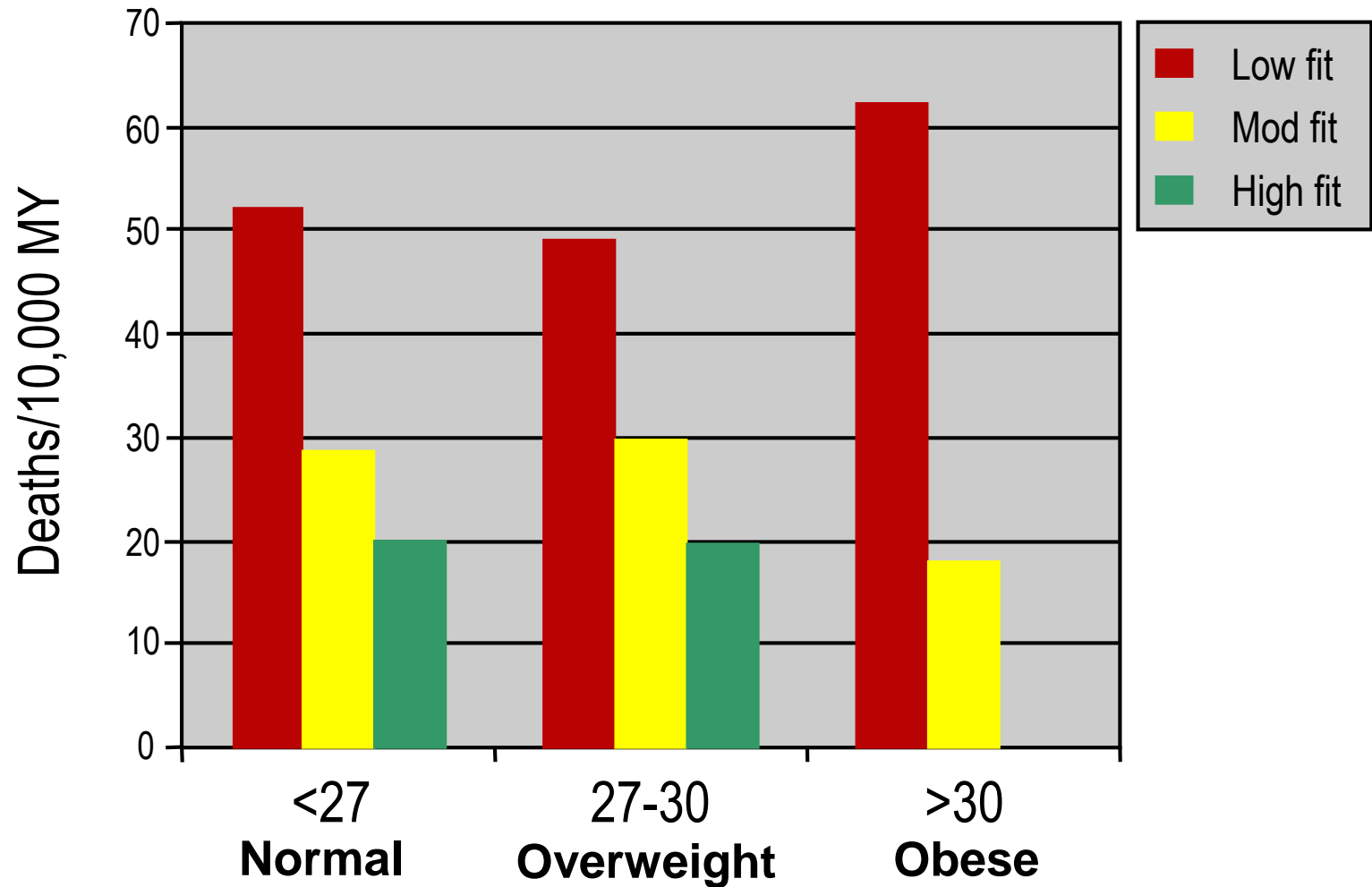
- Data from National Ambulatory Medical Care Survey for 1995-96' and 2007-08' showed:
 - During this period, adults who were overweight or obese increased from 52.1% in 95' to 63.3% in 08".
 - Patients seen in 2007-08; had 46% lower odds of receiving weight counseling than 95-96'.
 - Patients with hypertension 46% less likely and diabetics 59% less likely to receive counseling.
- The campaign on obesity is not *working!*
- What's the definition of insanity?

We need a new (and fresh) approach!

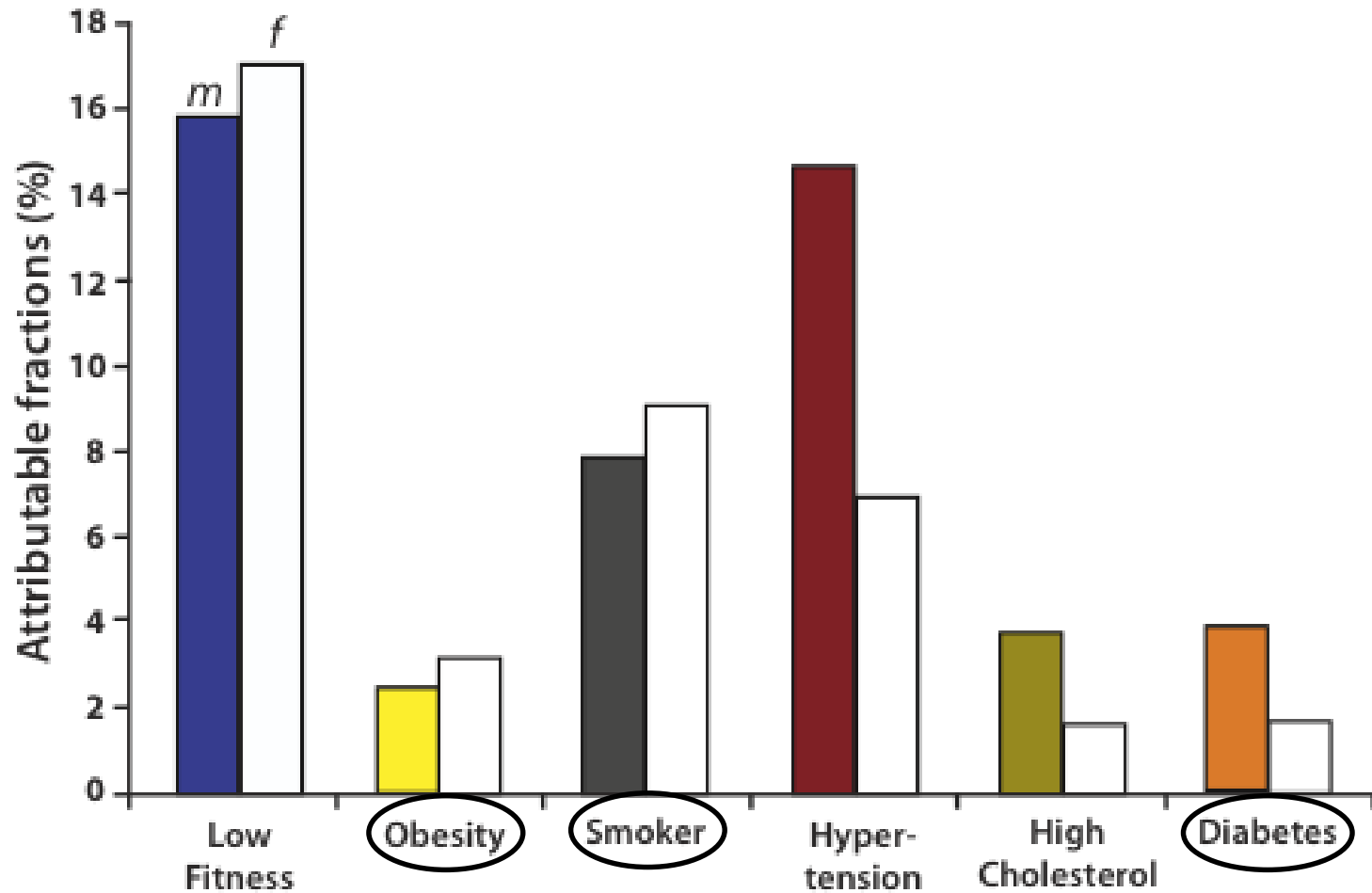
- We need to give patients permission to be fat; And still be healthy!
- Shift focus off of BMI and onto physical activity.
- Health At Every Size (HAES)
 - Focus on broader health.
 - 95% regain lost wt. in 3-5 yrs.
 - Change in BMI is not a success measure for an exercise program.



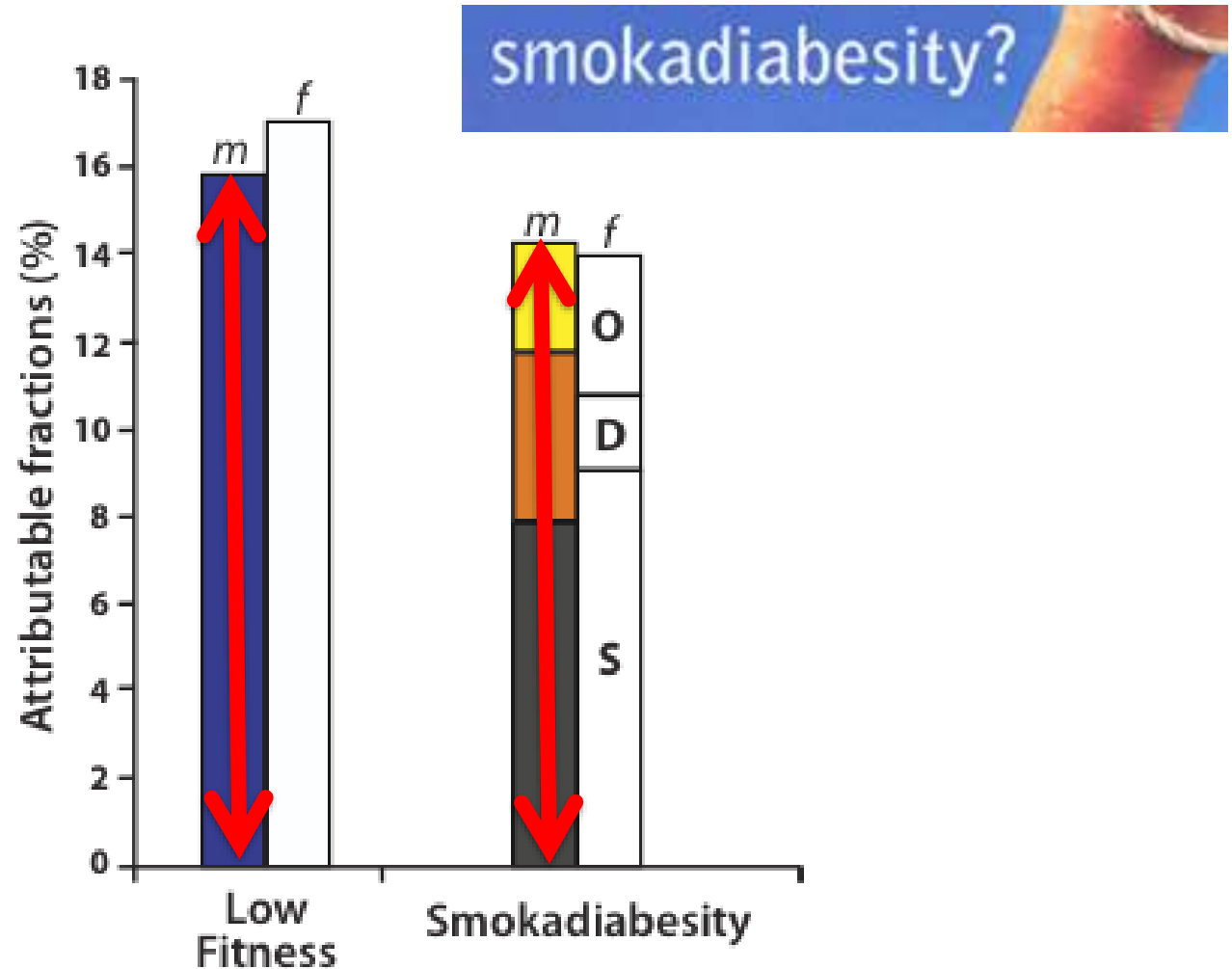
Death Rates by Fitness & BMI Categories



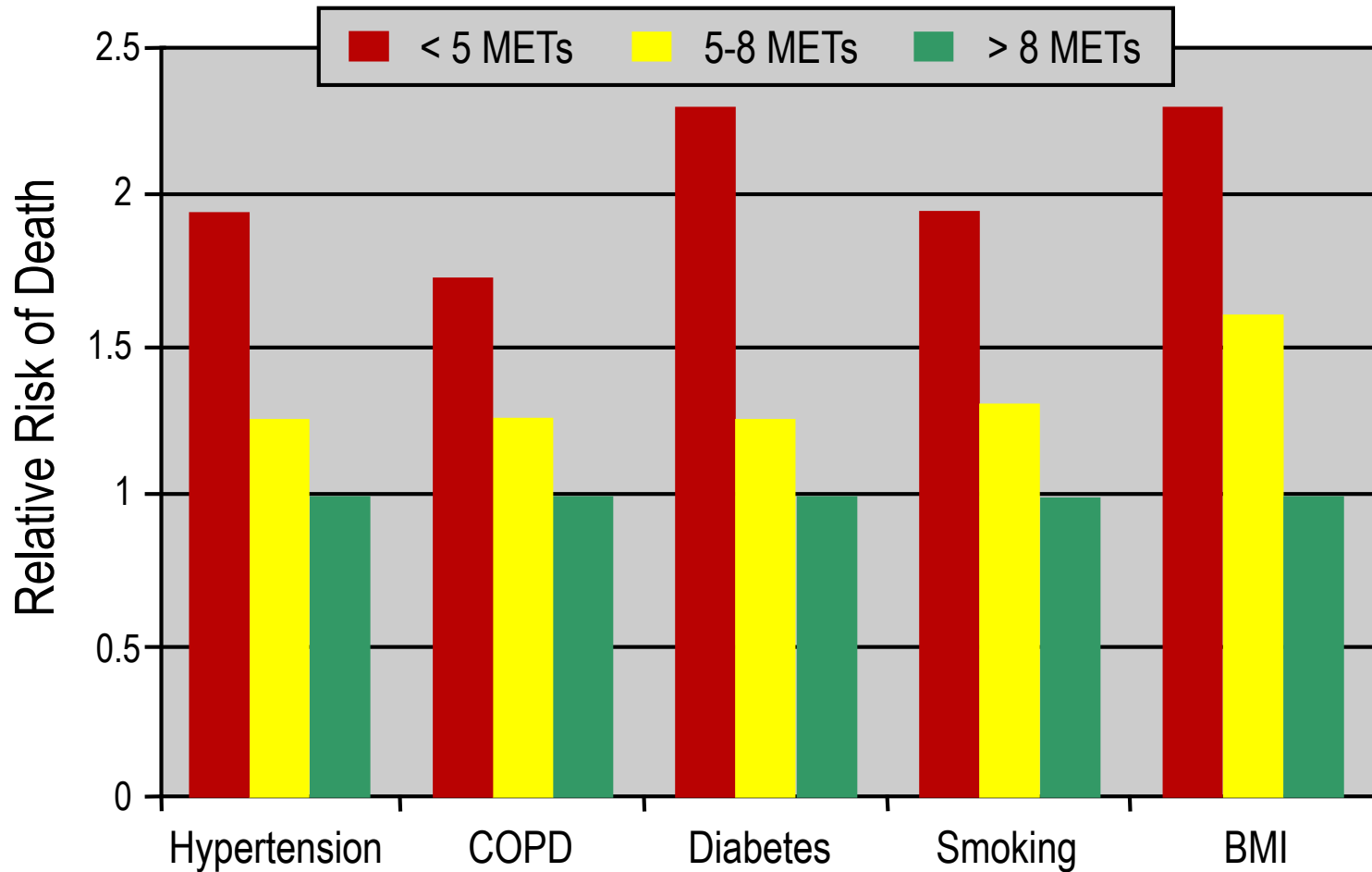
Which kills more *people*?



Low Fitness Kills More *People than Smokadiabesity!*



Exercise & Chronic Disease Mortality



The Classification of Risk Factors for Cardiovascular Disease

- Surrogate outcomes of poor lifestyle choices and stress (high blood pressure, cholesterol, diabetes and obesity), along with smoking are defined as “causal” risk factors for Cardiovascular disease.
- Physical inactivity is generally referred to as a “predisposing” risk factor.
 - Suggesting its influence on disease is entirely due to intensification of the causal factors.
 - Result has been disproportionate focus on drugs (mainly lipid and BP) to treat disease.
 - Research has proven this is incorrect.

The Effect of Exercise on CVD Risk

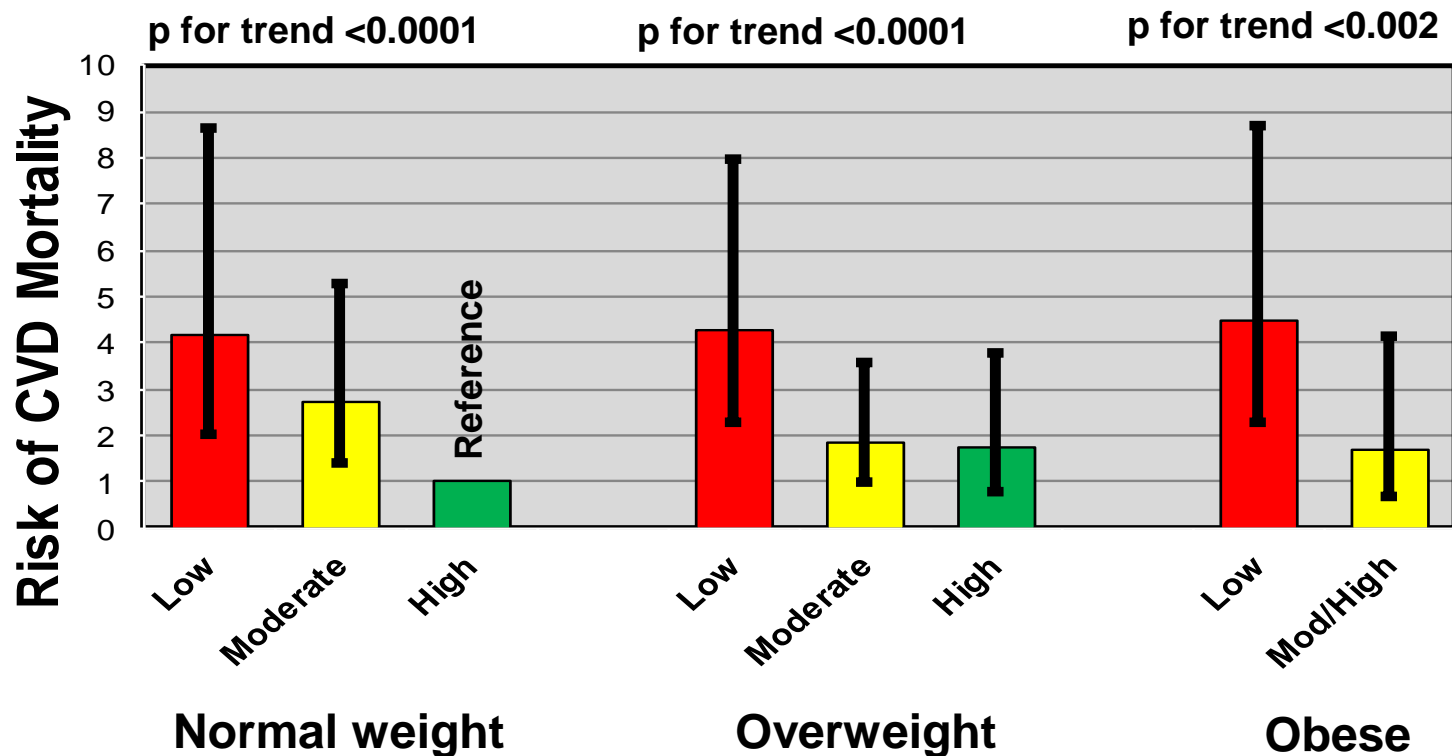
- Even after accounting for traditional CVD risk factors (BP, DM, lipids, weight), the inverse relationship between PA & CVD risk persists.
 - ~59% of the reduction in CVD risk with exercise is due to reducing Inflammation & Clotting (32.6%), BP (27.1%), lipids (19.1%), BMI (10.1%), A1C (8.9%).
 - *41% of risk reduction due to other unknown mechanisms (perhaps endothelium function and remodeling or LV structure and function).*
 - Effect of *weight loss* is only on traditional risk factors.

The Effect of Exercise on CVD Risk

- Even after accounting for traditional CVD risk factors (BP, DM, lipids, weight), the inverse relationship between PA & CVD risk persists.
 - ~59% of the reduction in CVD risk with exercise is due to reducing Inflammation & Clotting (32.6%), BP (27.1%), lipids (19.1%), BMI (10.1%), A1C (8.9%).
 - 41% of risk reduction due to other unknown mechanisms (perhaps endothelium function and remodeling or LV structure and function).
 - Effect of *weight loss* is only on traditional risk factors.

Fitness Correlates with CVD Mortality Risk* Regardless of BMI

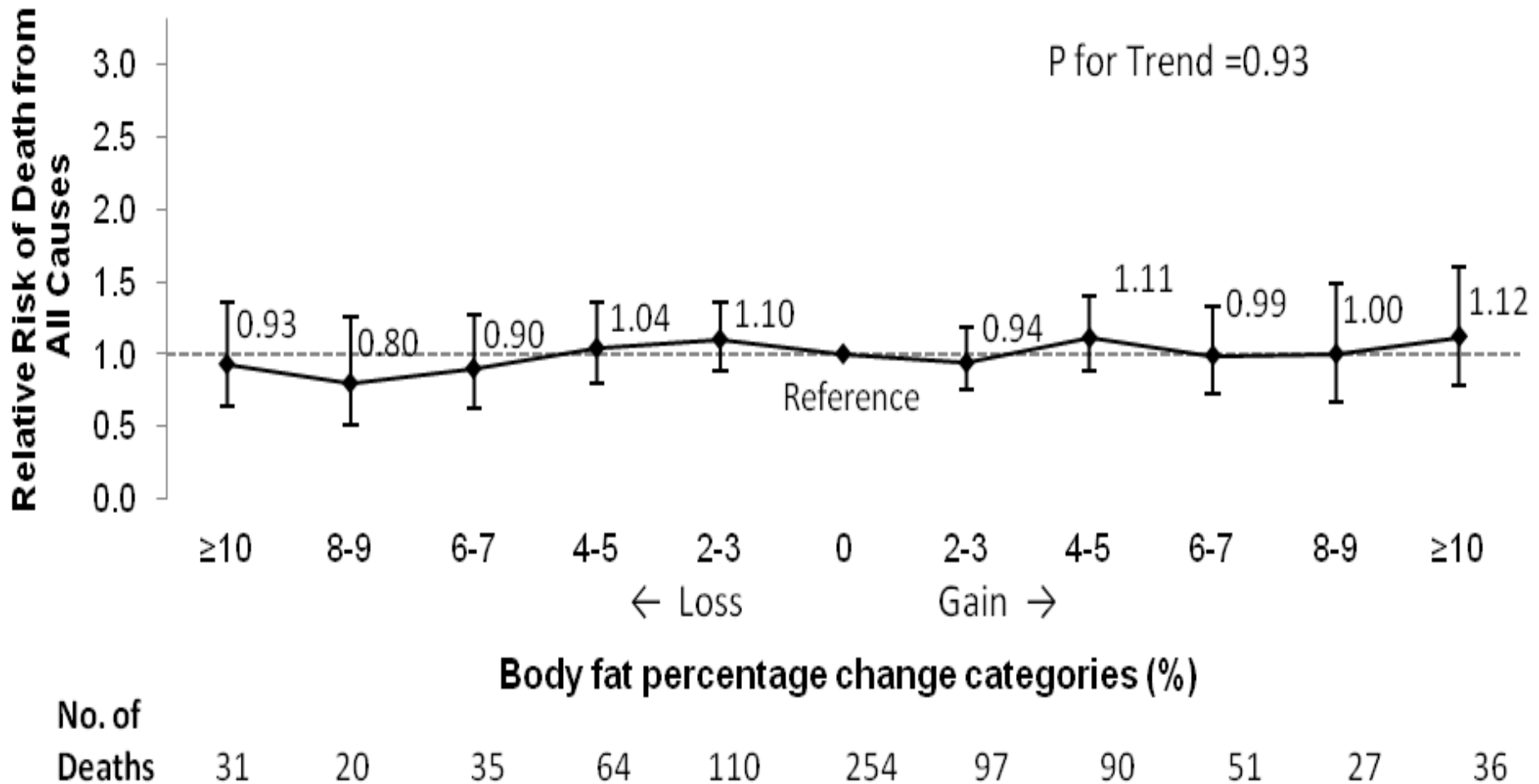
***2316 Men with Diabetes; 179 CVD Deaths
Adjusted for age and examination year**



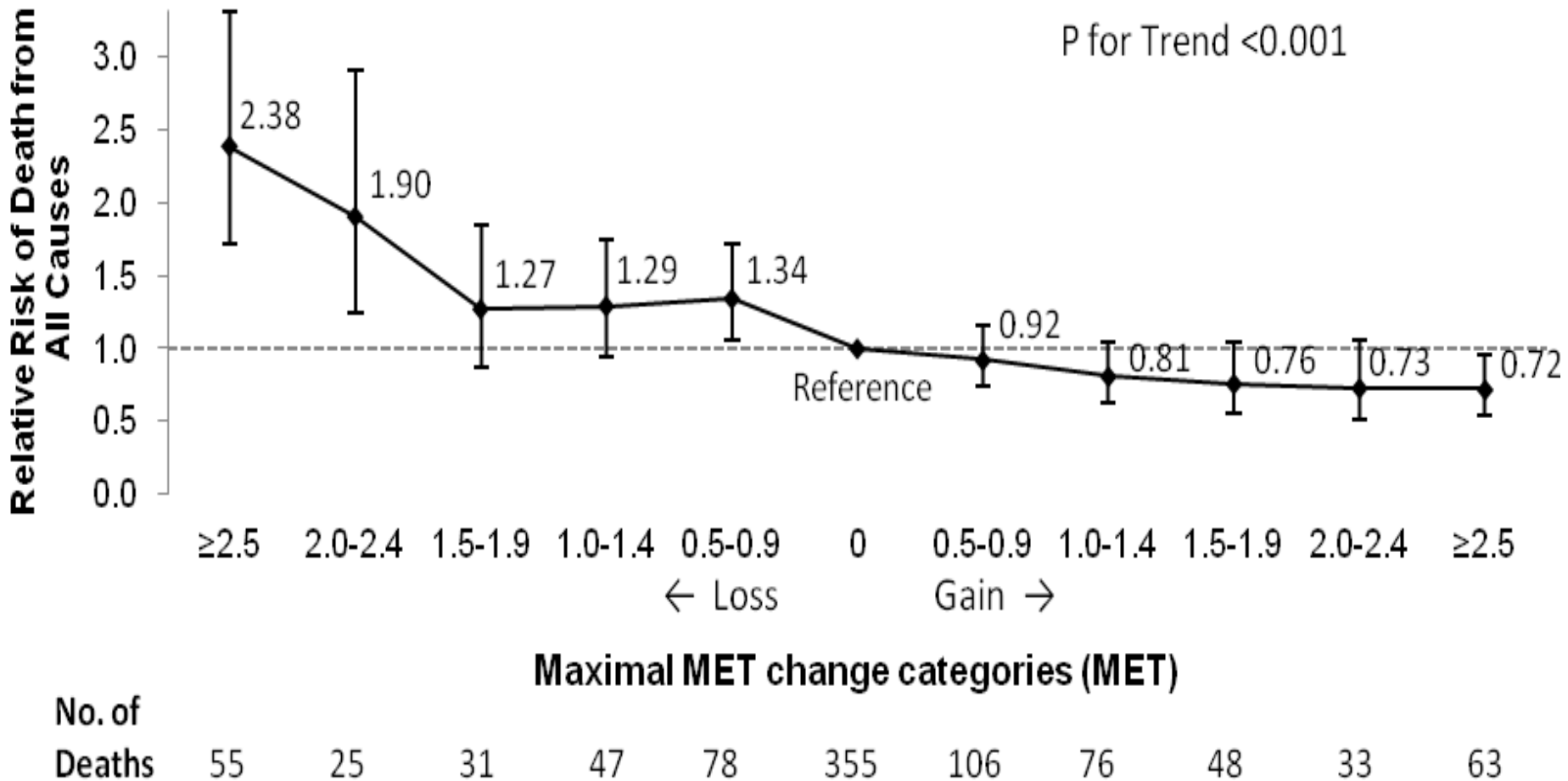
Is Mortality Risk Reduced More by Weight Loss or Increasing Fitness?

- 14,345 mostly middle-aged men (>19 years of age); All had 2 or more exams and Cooper Clinic
- Over 11.4 years of follow-up (165,186 man-years) 914 all cause deaths (300 CV deaths)
- Excluded those with chronic disease, <1 year of follow-up, or BMI <18.5 BMI
- Evaluated changes in fitness and body composition in relation to all-cause mortality

Change in Percent Body Fat



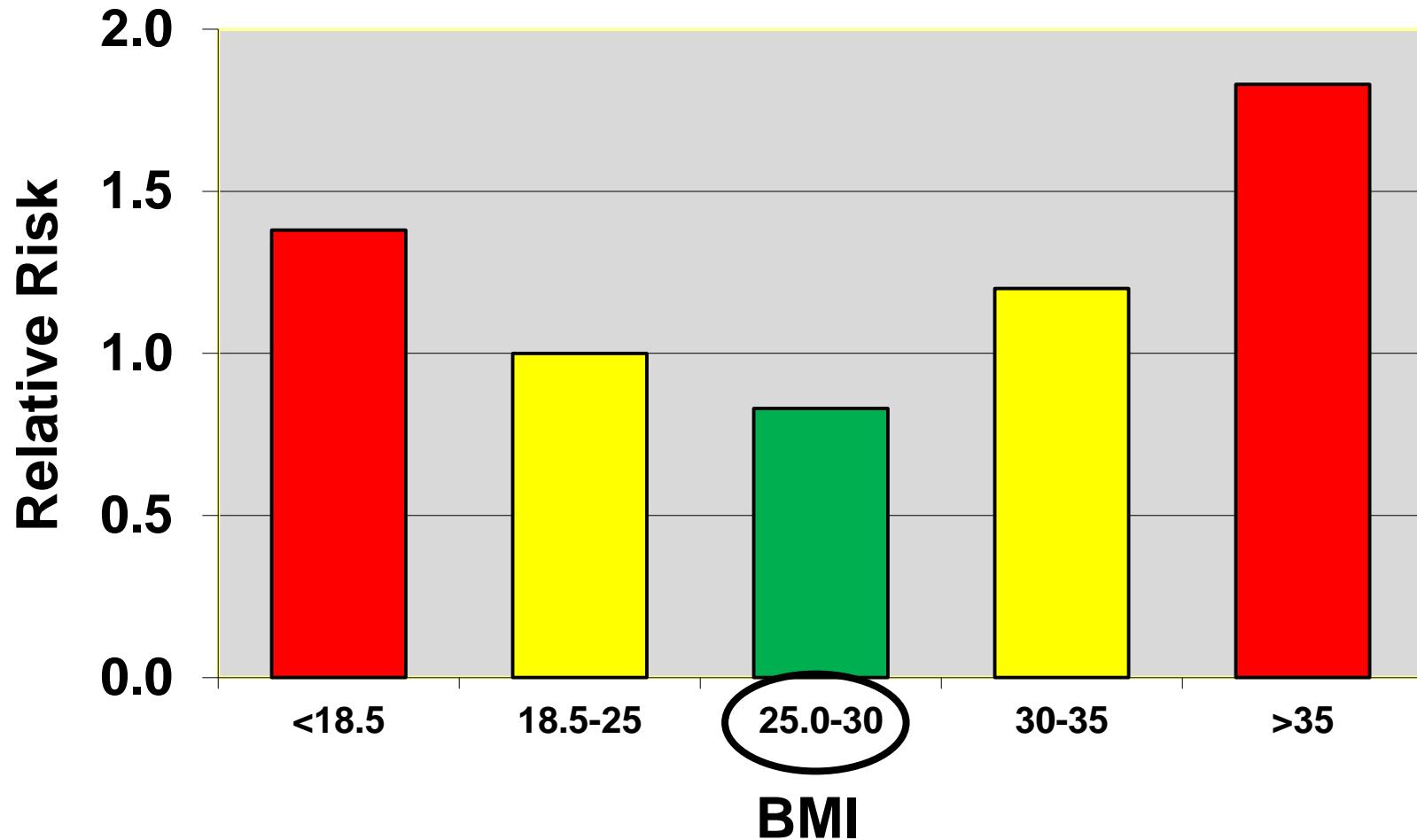
Change in Fitness Level (Maximal METs)



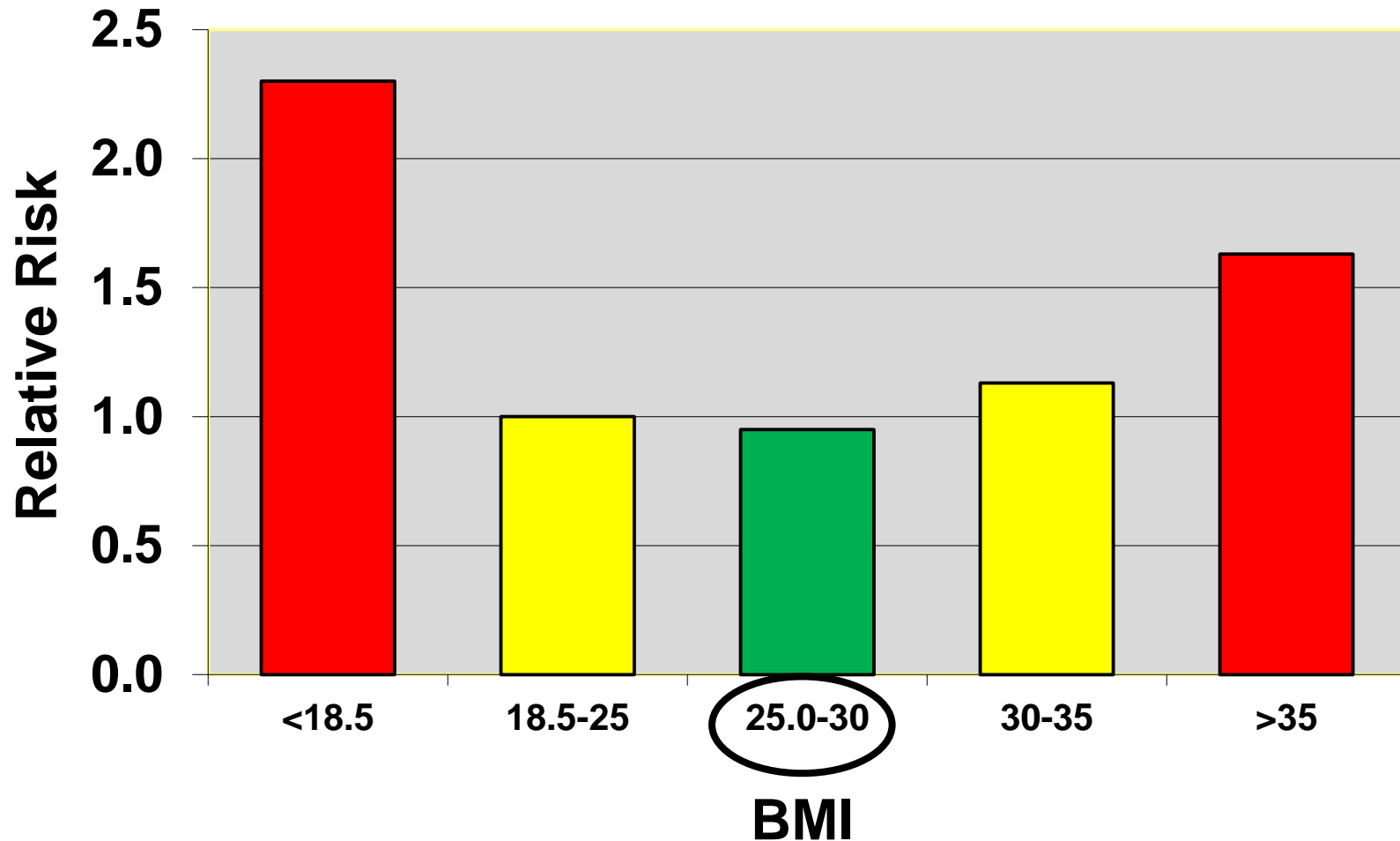
Where should our Focus be to Lower Mortality? Fitness vs Fatness vs Smoking

- Fit and normal BMI (non-smoker)
- Fit and elevated BMI (non-smoker)
- Fit, normal BMI, & smoker.
- Unfit and normal BMI (non-smoker)
- Unfit and abnormal BMI (non-smoker)
- Unfit, abnormal BMI, & smoker.

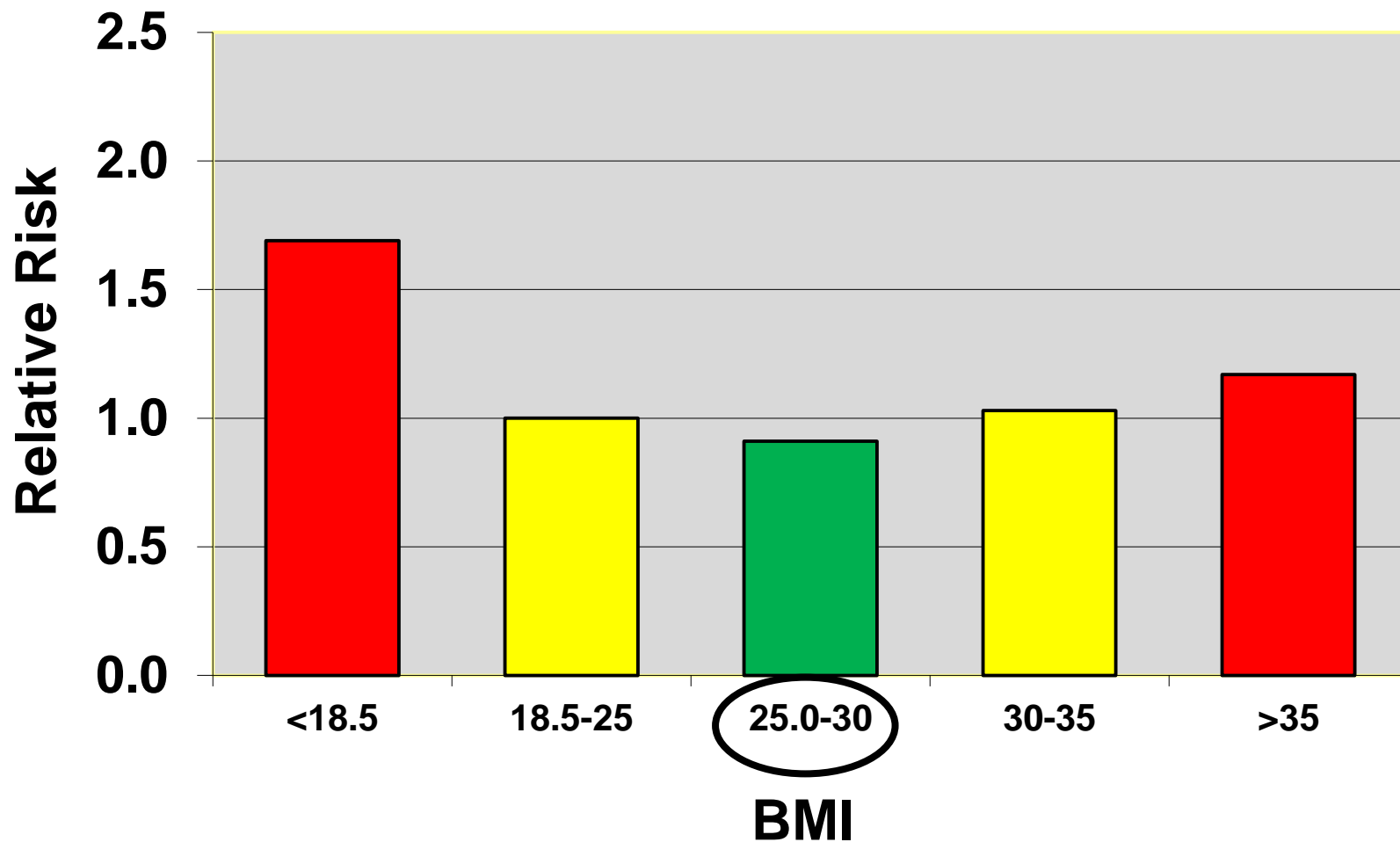
All-Cause Mortality, Relative Risk, Age 25-59 NHANES Data



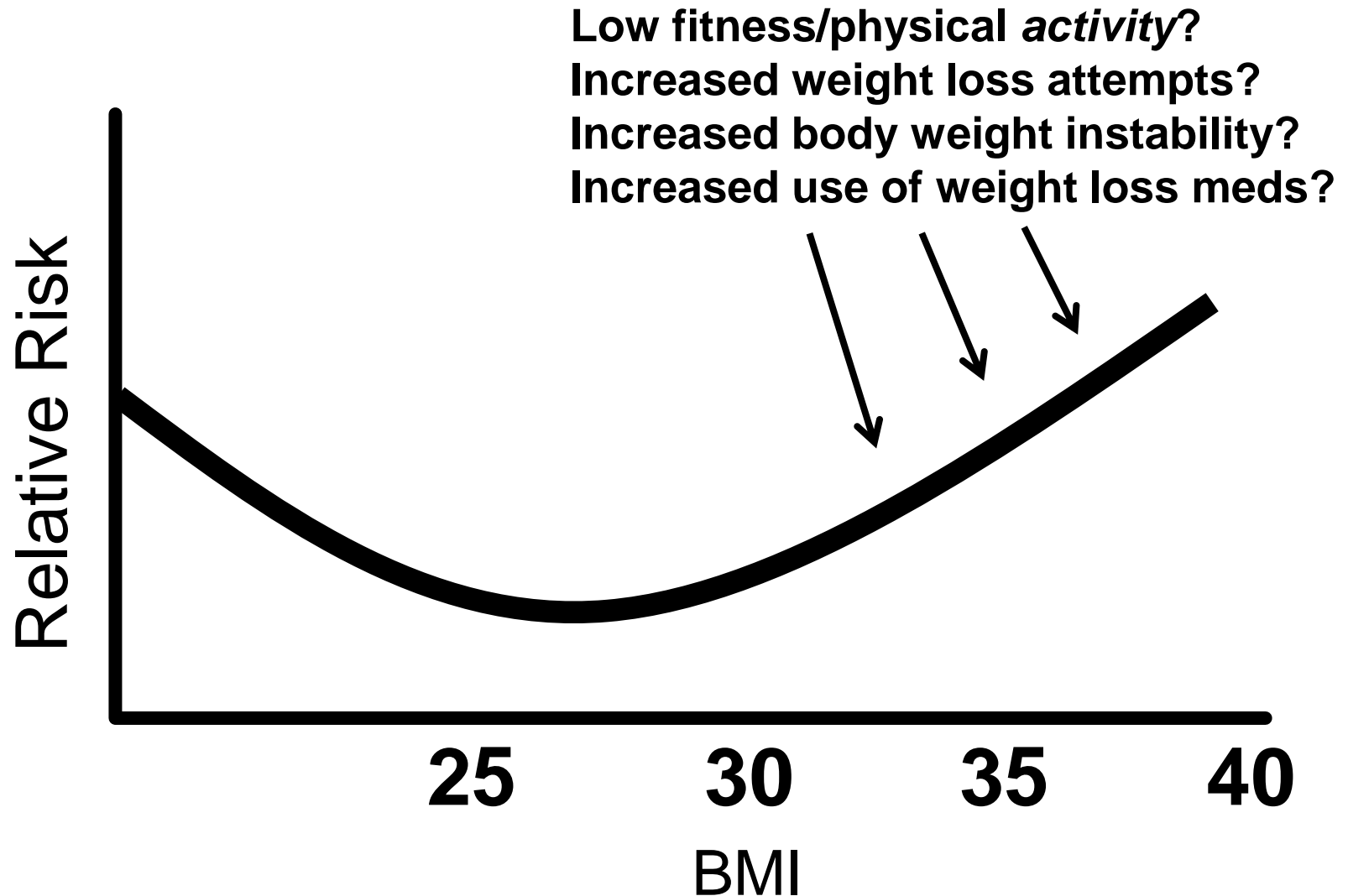
All-Cause Mortality, Relative Risk, Age 60-69 NHANES Data



All-Cause Mortality, Relative Risk, Age ≥ 70 NHANES Data

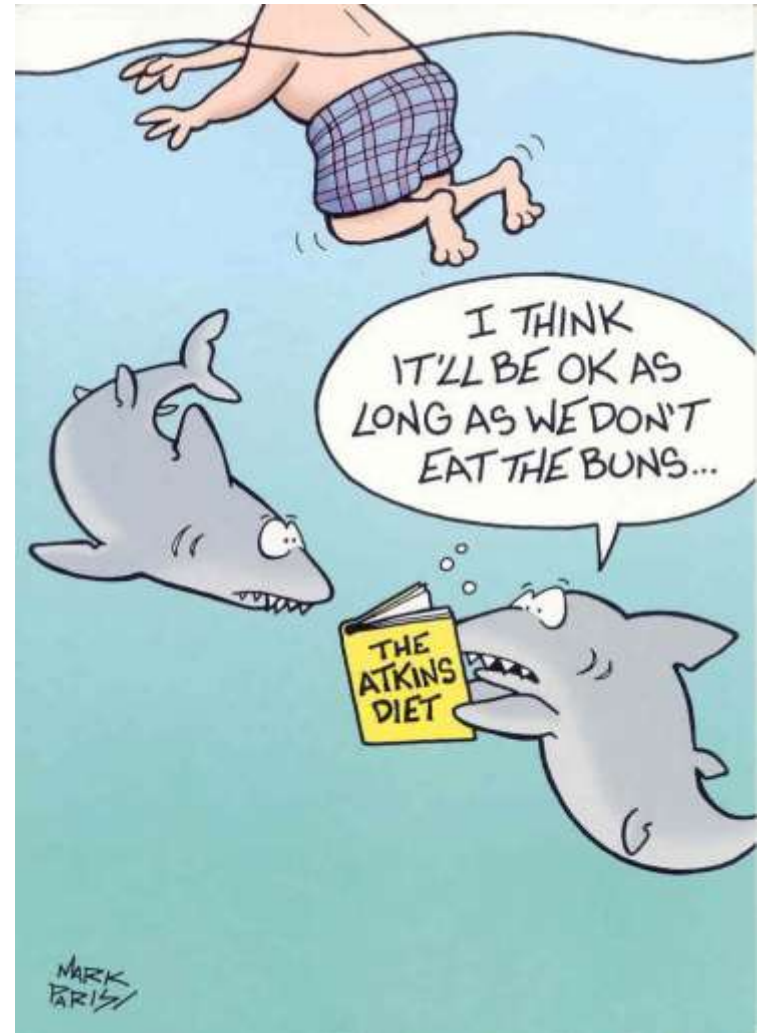


BMI and Mortality; *The U-shaped Curve*



Fitness vs. Fatness

- Better to be fat and fit, than skinny and un-fit.
- Low level of fitness is a bigger risk factor for mortality, than mild to moderate obesity.
- Benefits of physical activity are the same, regardless of how much you weigh.



The Walking Prescription



Name: John W. Smith Age: 30

Walking **R_x** Date: _____

Recommended activity level: Moderate

Minutes per day: 30 minutes

Number of days per week: 5 or more

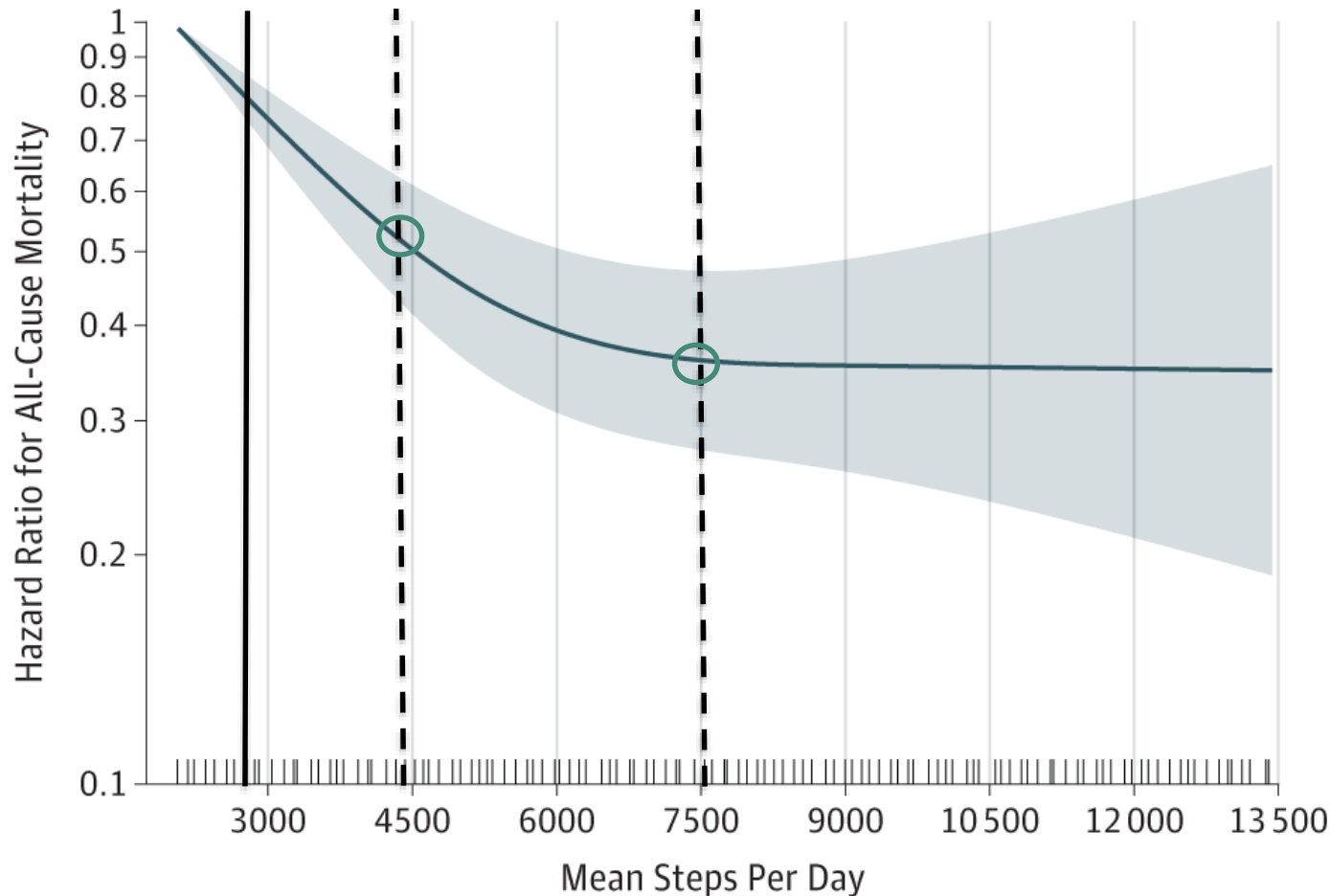
Intensity: Hard enough that you can't sing,
but not so hard you can't talk during exercise.

Stop: If you experience chest pain,
excessive shortness of breath or feel ill.

Signature: Robert Sallis, MD



It Doesn't Take a lot of Steps!



- 16,741 women
- Mean age of 72 yrs followed 4.3 yrs.
- Those averaging **~4400 steps/d** had significantly lower mortality compared with those who took **~2700 steps/d**
- Mortality rates progressively decreased before leveling at approx **7500 steps/d**.
- Step Intensity not related to mortality

A Tale of 2 Male Patients; *Pick the Heart Patient*

- **5'8" Tall**
- **158 lbs.**
- **Never drank alcohol**
- **Low Fat/High Fiber Diet**
- **Marathon Runner**
- **Former smoker**

- **5'8" Tall**
- **270 lbs.**
- **Heavy drinker**
- **High Fat/Low Fiber Diet**
- **Sedentary**
- **Heavy cigarette and cigar smoker**

Jim Fixx; died age 52 while jogging

- **5'8" Tall**
- **158 lbs.**
- **Never drank alcohol**
- **Low Fat/High Fiber Diet**
- **Marathon Runner**
- **Former smoker**

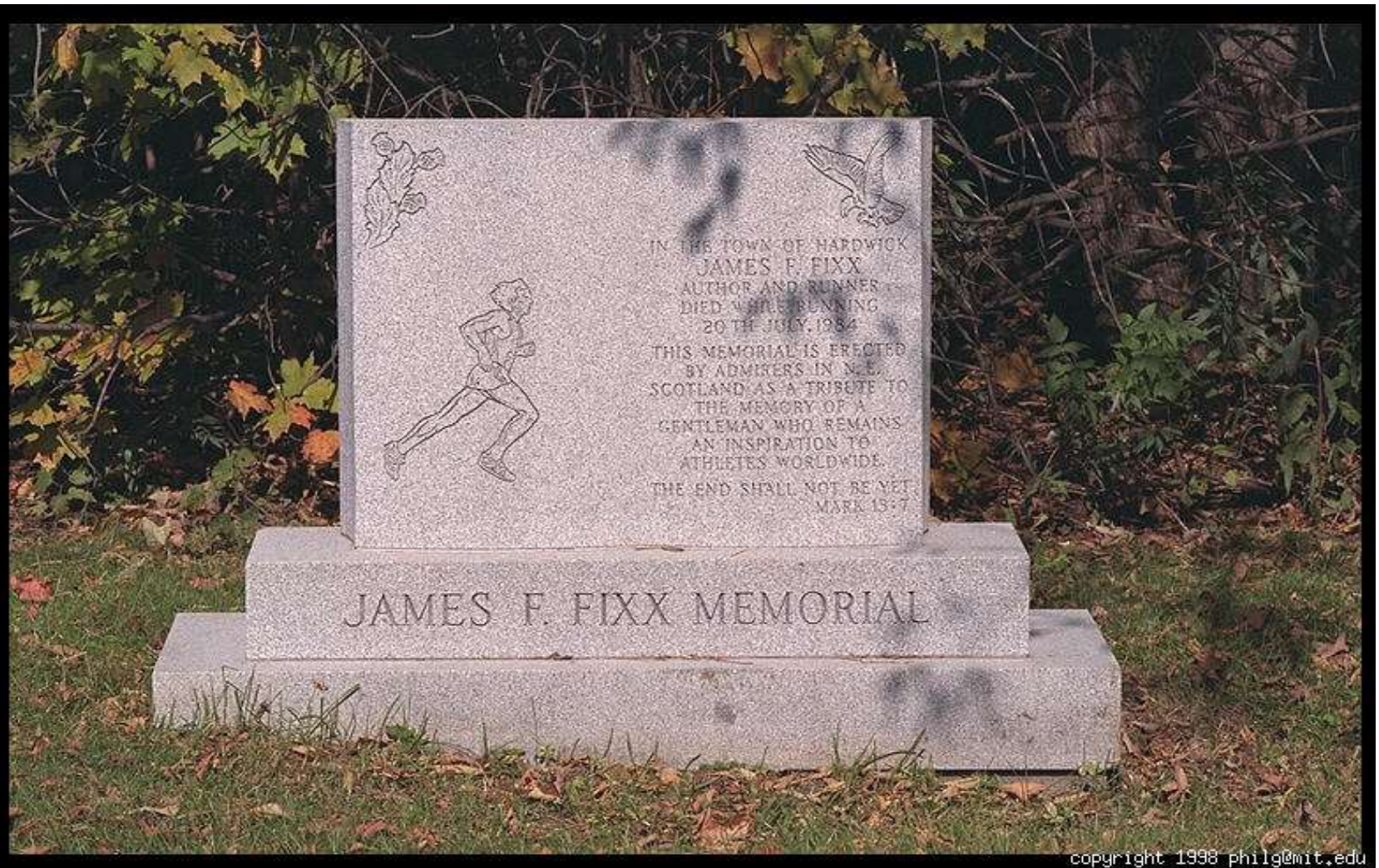


Winton Churchill; died age 90 at home



- **5'8" Tall**
- **270 lbs.**
- **Heavy drinker**
- **High Fat/Low Fiber Diet**
- **Sedentary**
- **Heavy cigarette and cigar smoker**

Sometimes you cannot outrun (or out-diet) your genes!



Summary

- Strong evidence suggests that you CAN outrun a bad diet.
- Multiple studies have proven that you are better off being Fat & Fit than Skinny & Unfit
- For this reason, the promotion of PA should be placed on at least equal footing with weight mgmt.
- In the clinical setting, Exercise should be assessed and prescribed at every visit using a PA Vital Sign.

It's time to get off the couch...



Final Exercise is Medicine
Presentation
Robert Sallis, MD

- **Wednesday @ 8 PM;** *“Managing Chronic Pain: What Are the Best Non-Drug Options?”*

Thank You!



RANCHO LA PUERTA

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Questions?