

Obesity Prevention and Treatment: A Lifecycle and Lifestyle Approach

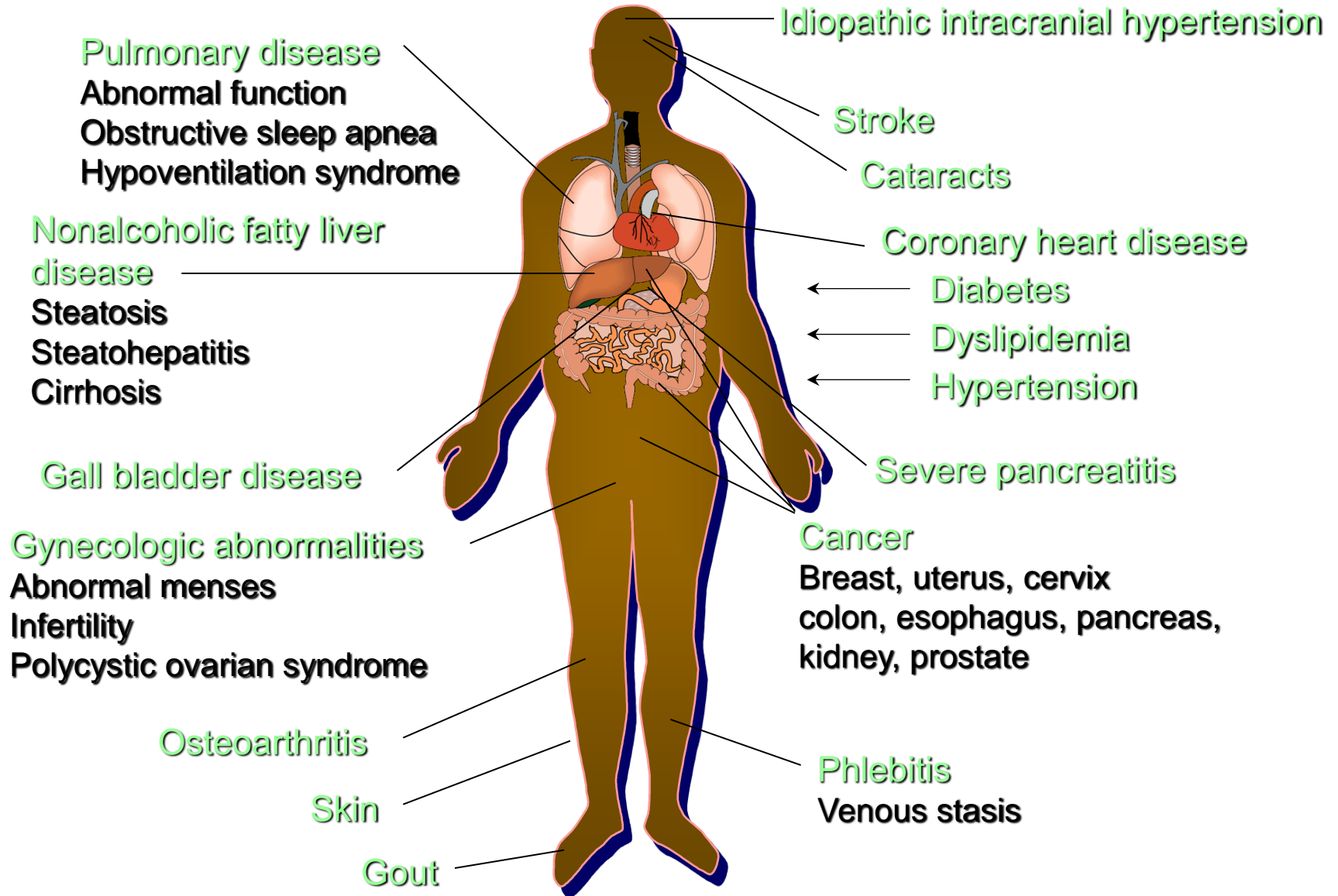
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Challenges of Changing to Healthful Food Choices

- Most nutrition related chronic diseases have silent symptoms
 - blood pressure
 - blood glucose
 - blood cholesterol
- Major determinants of food choice are
 - taste
 - cost
 - availability
 - convenience
- Food has multiple meanings (love, reward, cultural, social, joy, etc)
- Heritability of weight and differences in gene x environmental influences of eye color, weight and height

Medical Complications of Obesity

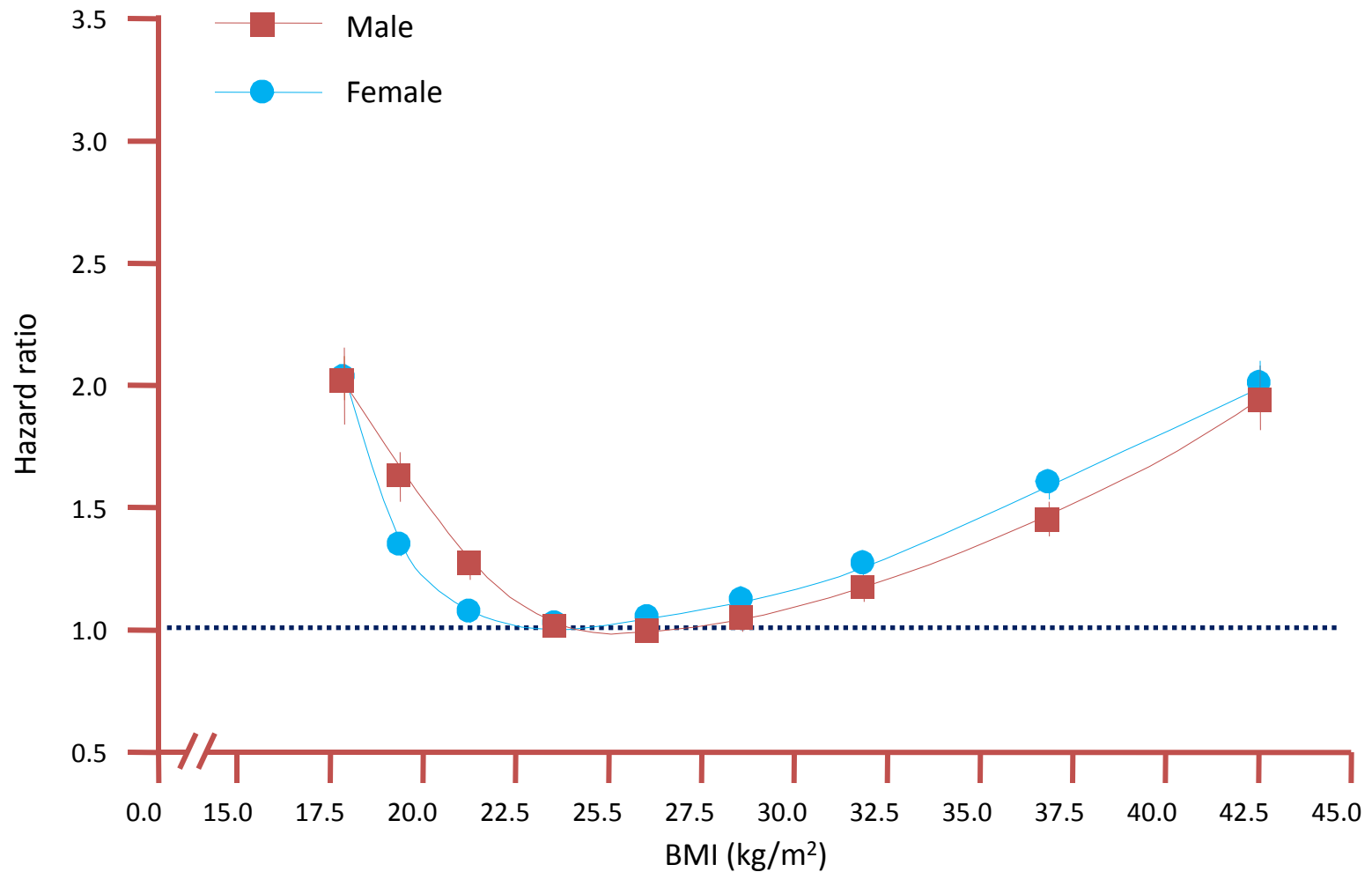


The Obesity Epidemic

An unintended consequence of economic, social and technological changes

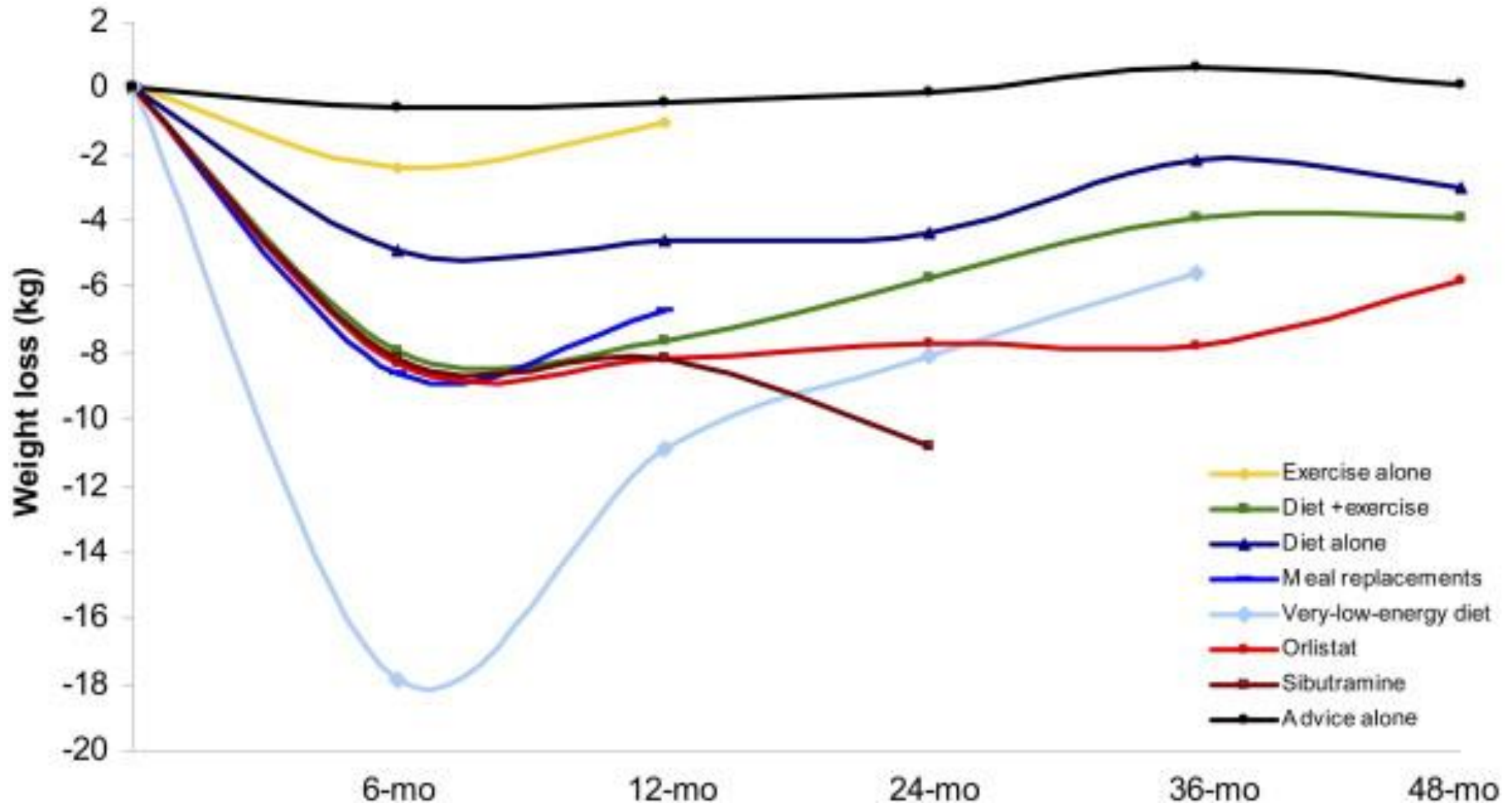
- Food supply is low in cost, abundant, palatable, and high in caloric density
- Labor saving technologies have virtually eliminated requirements for physical activity as a part of everyday life

Obesity is associated with increased risk of mortality



Data based on 19 prospective studies encompassing 1.46 million white adults, 19–84 years of age
Berrington de Gonzalez et al. *N Engl J Med* 2010;363:2211–9

Average weight loss of subjects completing a minimum 1-year weight-management intervention: based on review of 80 studies (N=26,455; 18,199 completers [69%])



Focusing on Childbearing Women is Key

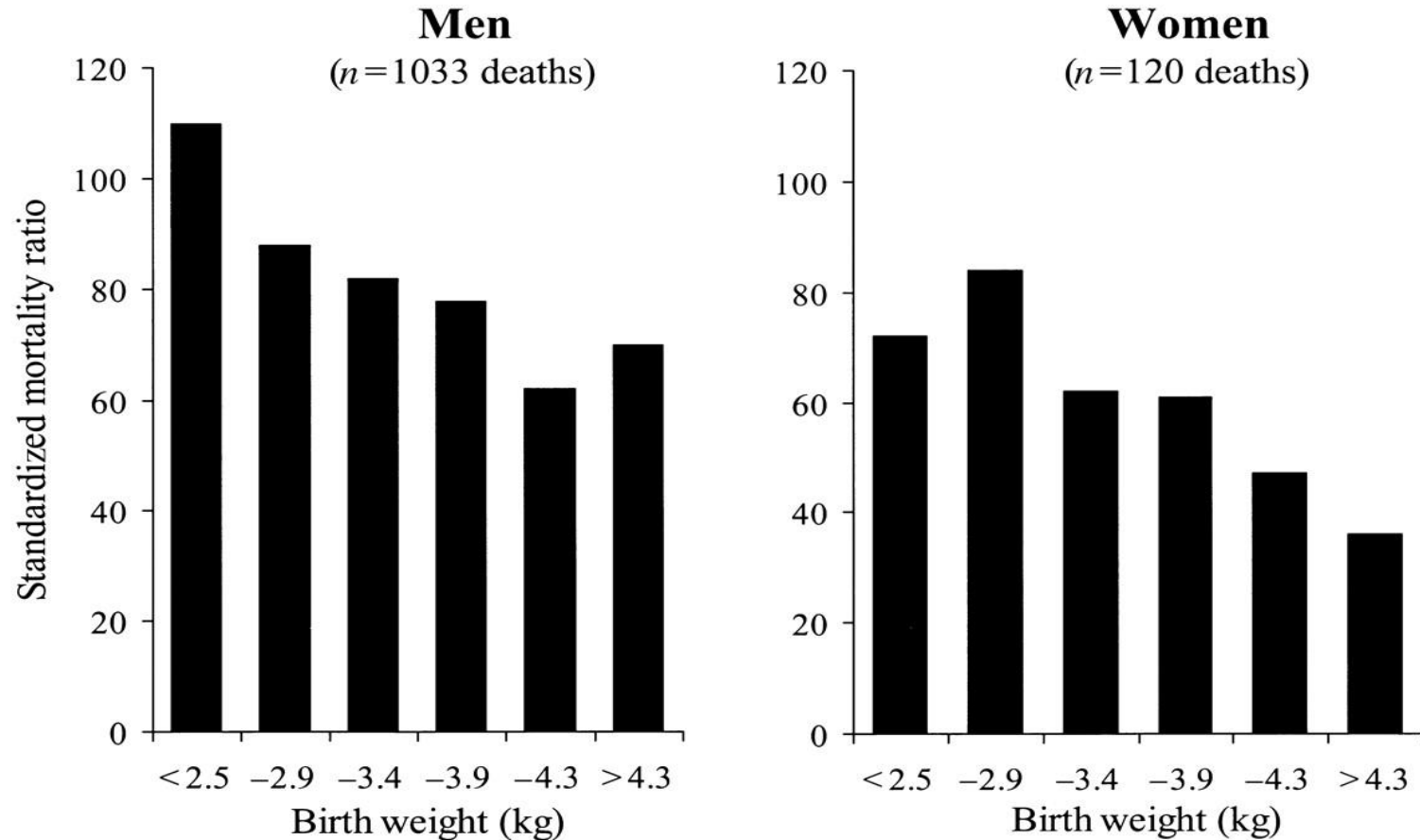
- Pre-Pregnancy + Pregnancy Weight Gain Influence Birthweight, Morbidity and Mortality
- Infants at highest risk for CVD later in life are SGA
- Ideal birthweight is 3500-4500 gms
- Risks associated with very high birthweights are usually related to gestational diabetes
- At any age and size, physical activity is beneficial to all obesity associated co-morbidities

Weight Gain Recommendations by BMI

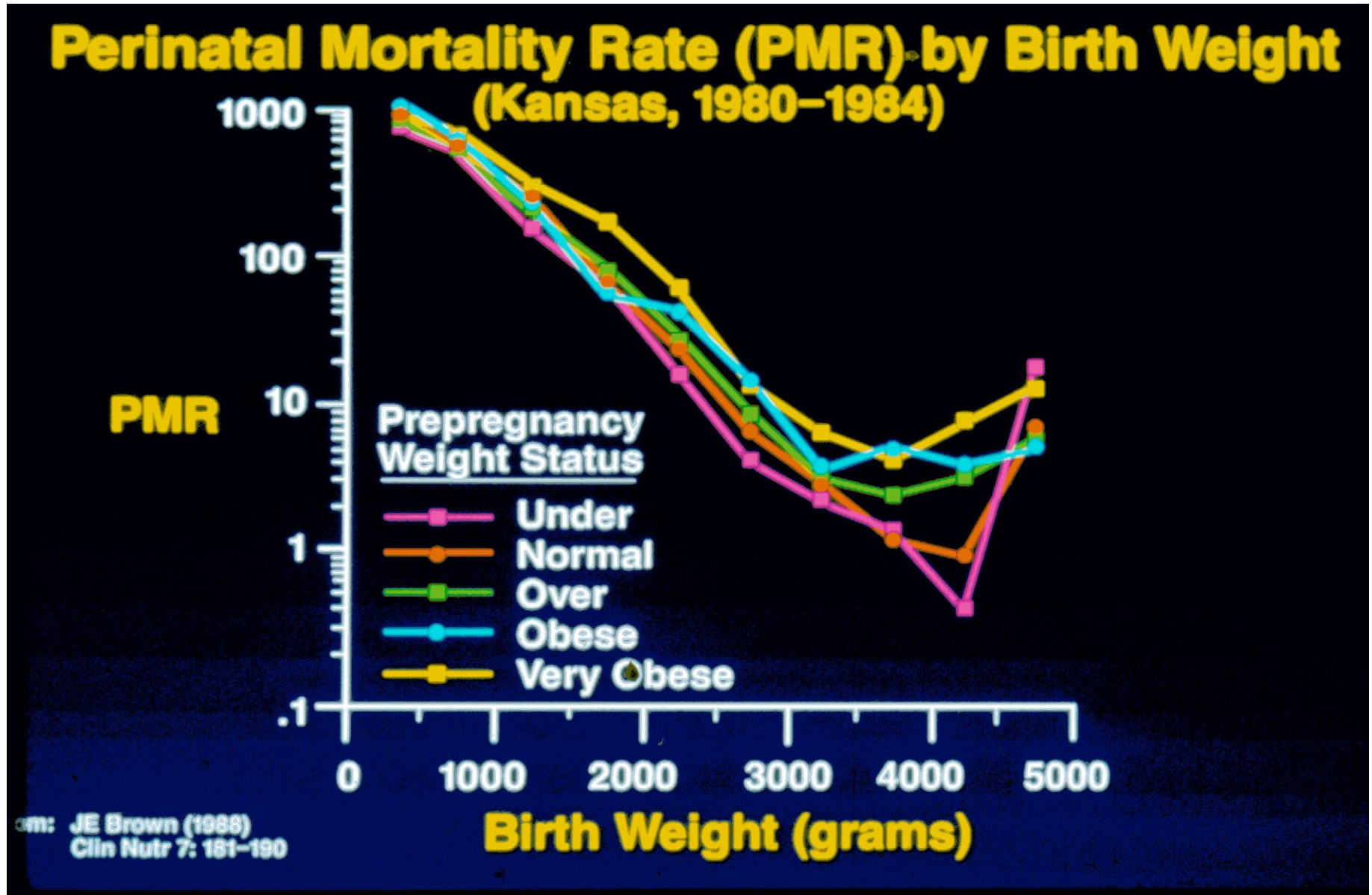
Pre-preg BMI	BMI Groups 2009	Rec. Weight Gain, 2009	BMI Groups 1990	Rec. Weight Gain, 1990
Underwt	<18.5	28–40 lb	<19.8	28–40 lb
Normal weight	18.5 to 24.9	25–35	19.8 to 26.0	25–35
Overwt	25.0 to 29.9	15–25	26.1 to 29.0	15–25
Obese	≥30.0	11–20	>29.0	At least 15 lb

Adults at Highest Risk for Cardiovascular Disease Had the LOWEST Birthweight

(adults born in 1911 to 1930, Hertfordshire, UK)



Minimum Perinatal Mortality is at 3500-4500 g *



PMR= 28 wks gestation to 7 days postpartum

(* 7 lb 11 oz to 10 lb)

3,500 to 4,500 grams

(7 lb 12 oz to 9 lb 15 oz)

is the ideal birth weight range

for minimum

fetal, neonatal, perinatal and infant

mortality

Obesity risk is an increasing focus

Are heavier babies likely to
be fatter in later life?

Weight at 6 Months affects BMI at Age 3 yr more than Birth Weight Does

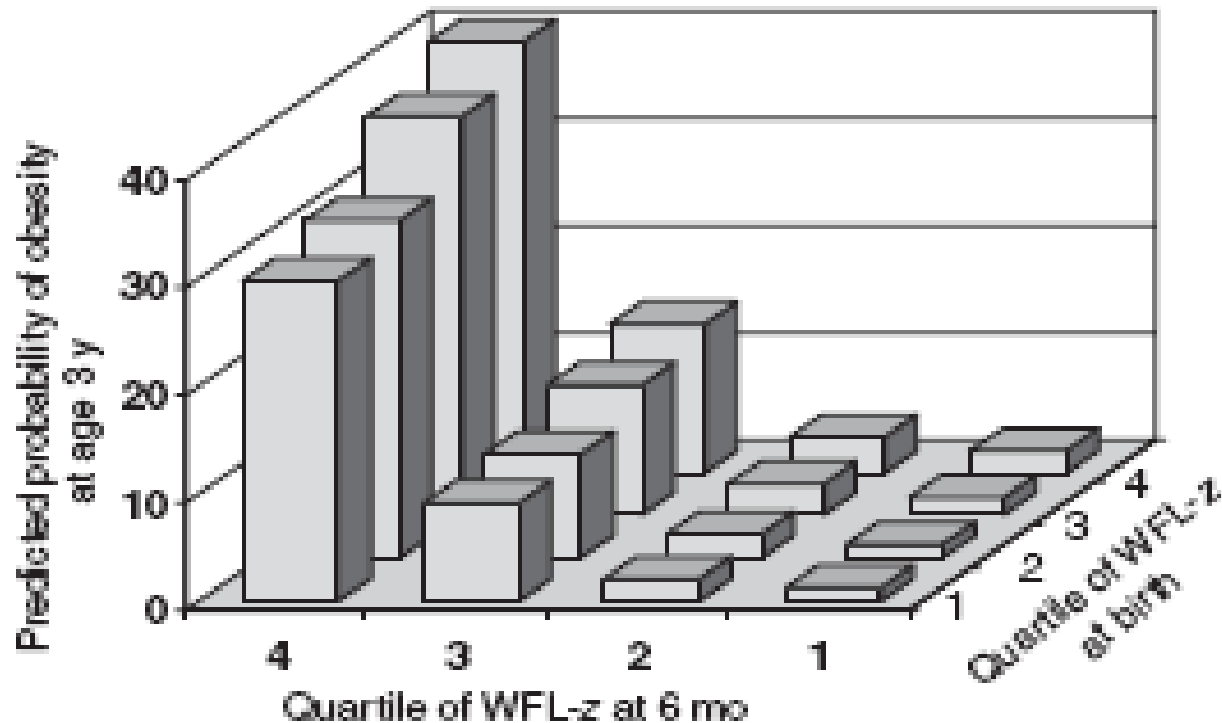
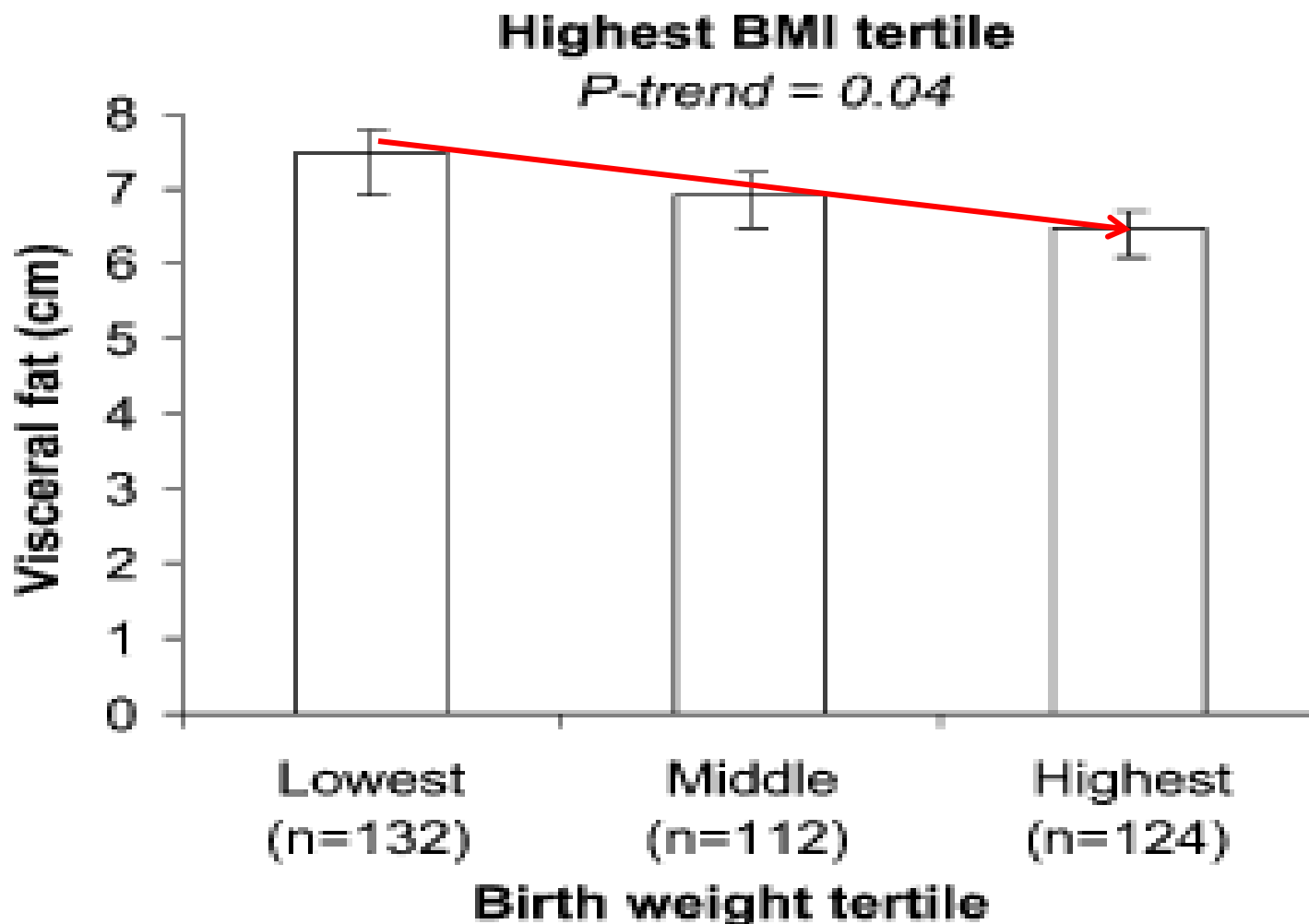


FIGURE 1

Predicted probability of obesity (BMI of \geq 95th percentile) at 3 years of age according to quartile of WFL z score at birth and at 6 months of age, with adjustment for maternal smoking status, gestational weight gain, education, household income, parity, age, and prepregnancy BMI, paternal BMI, and child age, gender, and race/ethnicity.

Birth Weight and Adult Visceral Fat by Adult BMI Tertile



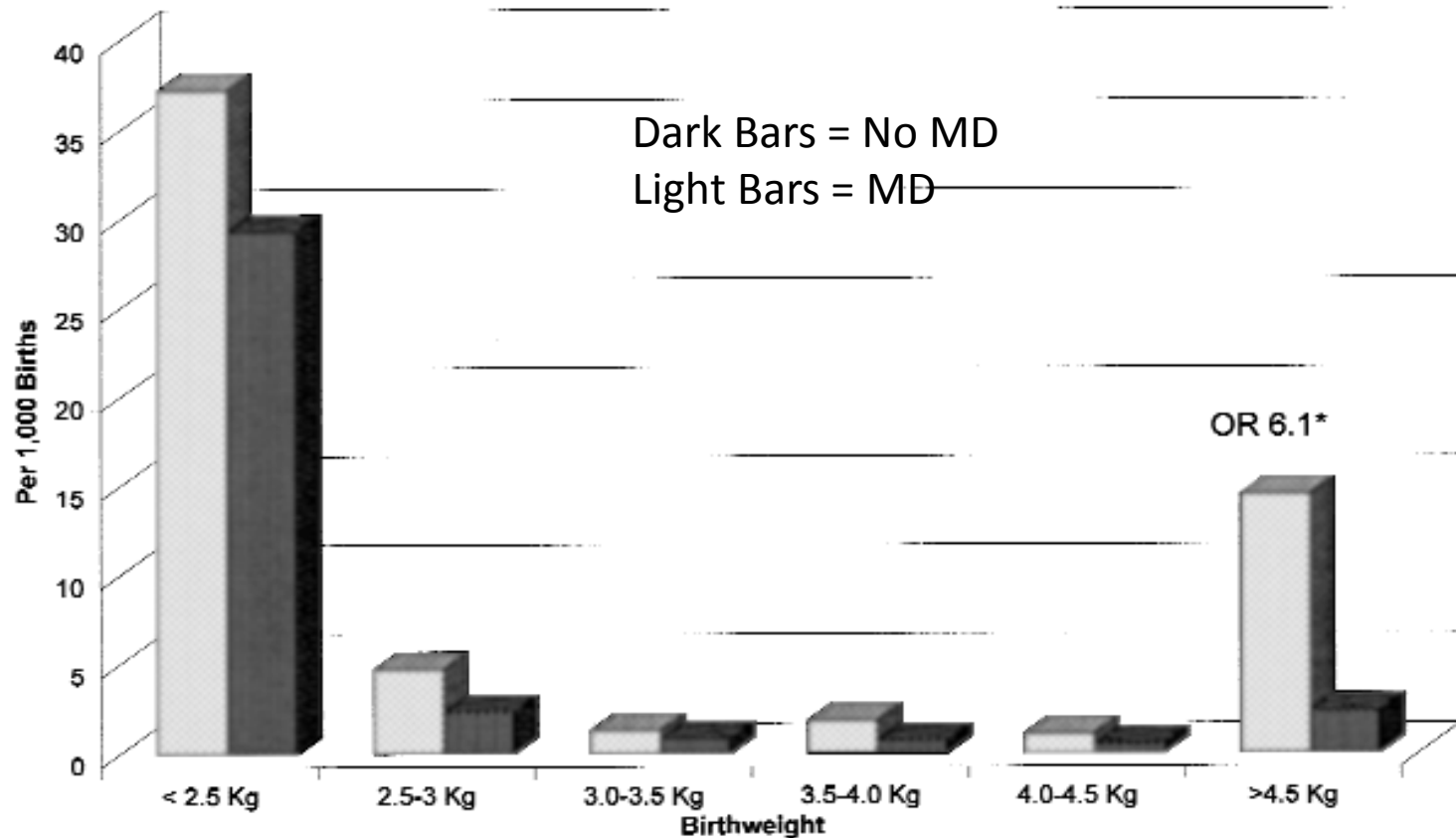
DEXA +
ultrasound
determined
visceral fat

These benefits accrue even though not all big babies are equally healthy.

It depends on how they got to be big.

What factors contribute to infant size?

Maternal Diabetes (MD) Increases Risk of Fetal Death in Large Infants



Fetal mortality per 1000 live births with or without maternal diabetes

Seeds & Peng, AJOG 2000;183:316.

Attention is Rightly Placed on a Subset of Women – Not on Preventing High Birthweight

- Diabetic women – they need support to control glucose and avoid excessive gain
- Obese women - they should be supported to lose weight before pregnancy and to lose weight gained once pregnancy is over
- Excessive weight gain - should be an early concern, and support provided to prevent it, especially in diabetic or obese women

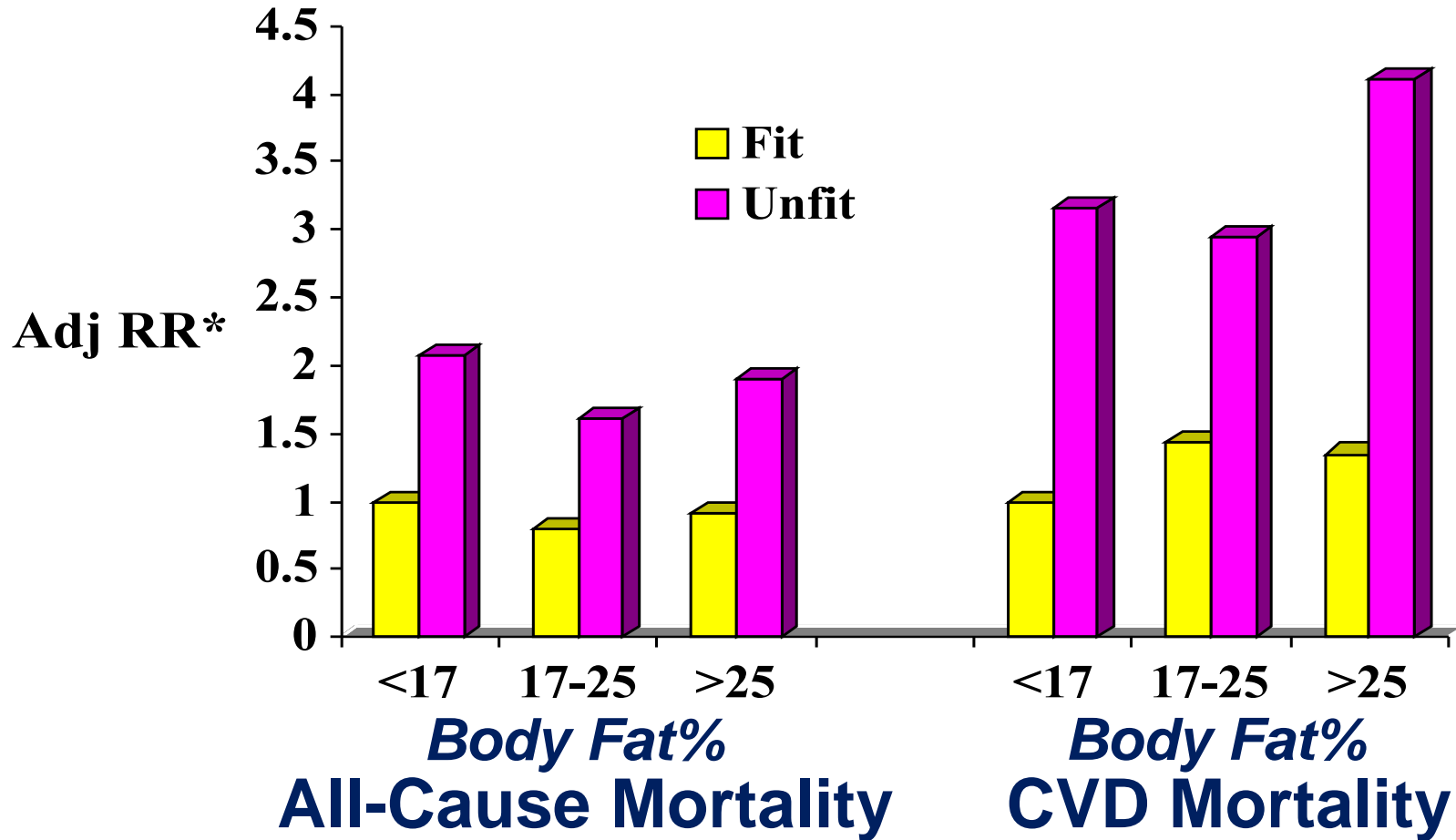
Prevention is Critical!

- Dr. Dinkevich showed you the yesterday that the earlier intervention in children, the greater likelihood of prevention.
- The earlier the obesity develops and the longer it persists, the more difficult to reverse.
- In the US, overweight children and adolescents suffer psychosocial stress from bias and stigmatism.

How Does Physical Activity Factor In to Obesity and Its Co-Morbidities?

Note – numerous other lifestyle factors including dietary pattern, stress, sleep, are key too but time does not permit their inclusion. Many public health approaches in the US and elsewhere are focusing on environmental factors to
‘MAKE THE HEALTHY CHOICE, THE EASY CHOICE’

RR for All-cause and CVD Mortality in Fit and Unfit ACLS Men by Body Fat Categories



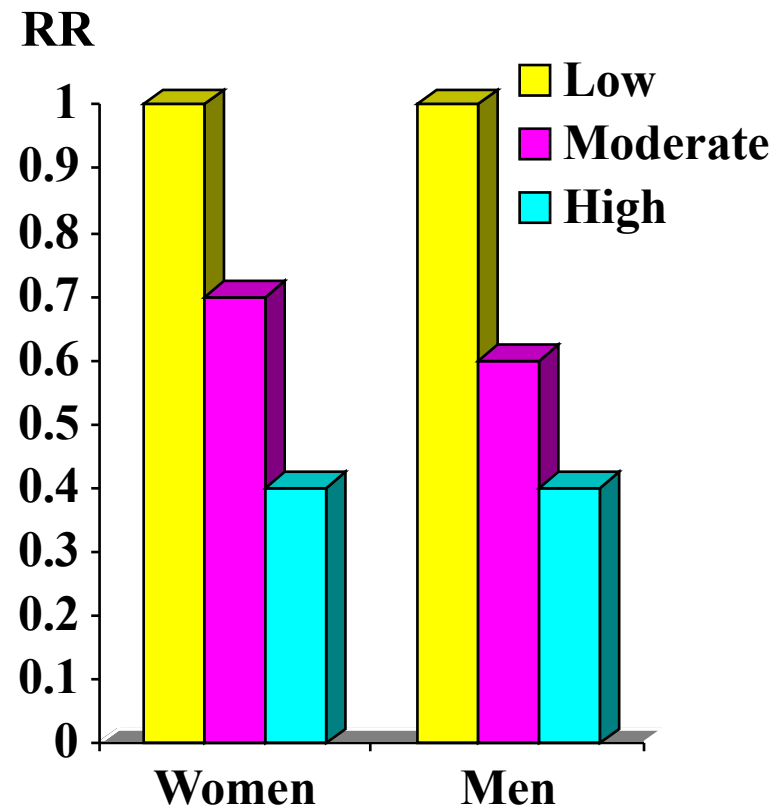
***adjusted for age, exam year, smoking, alcohol, & parental history**

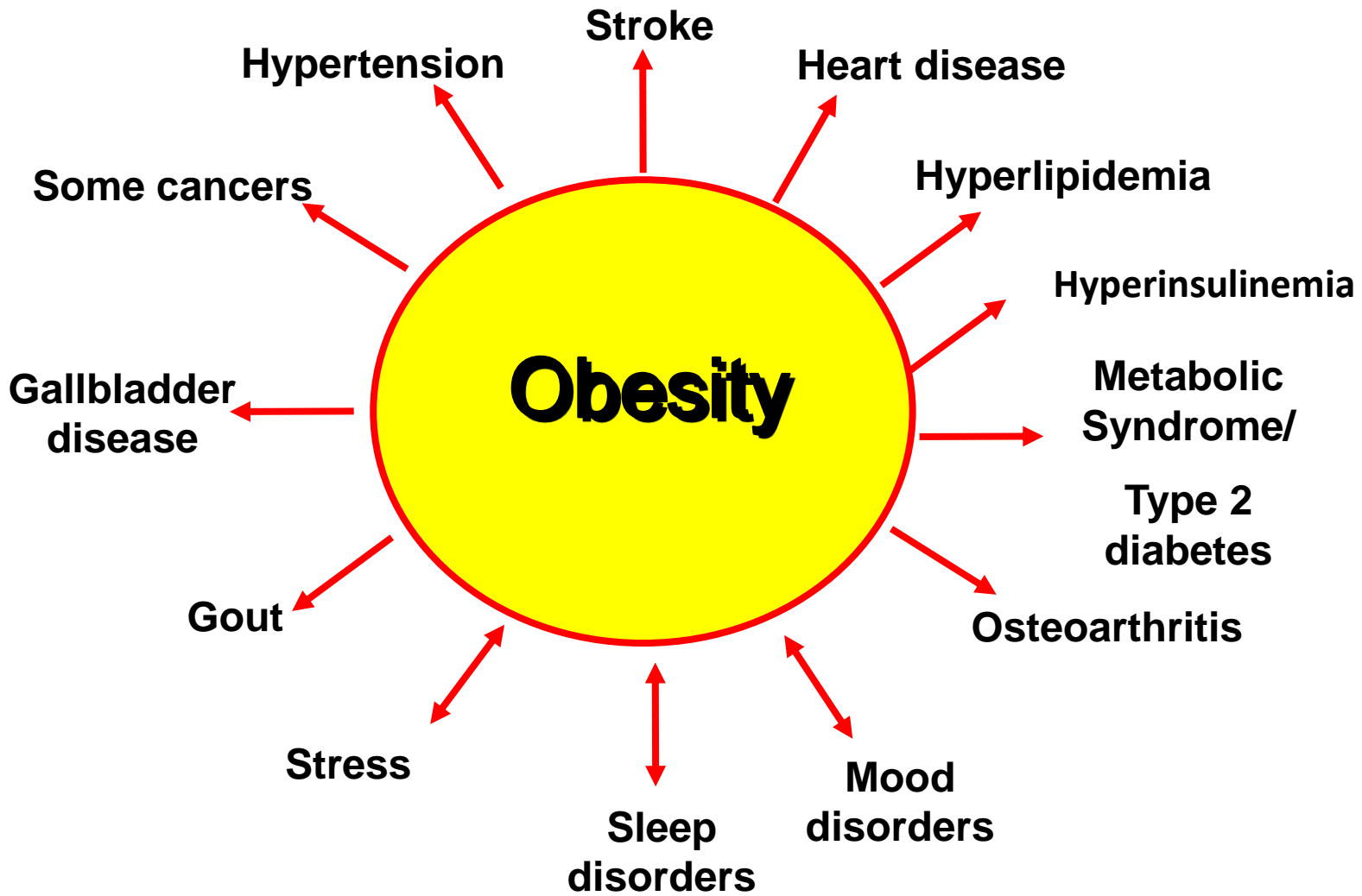
Never Too Old

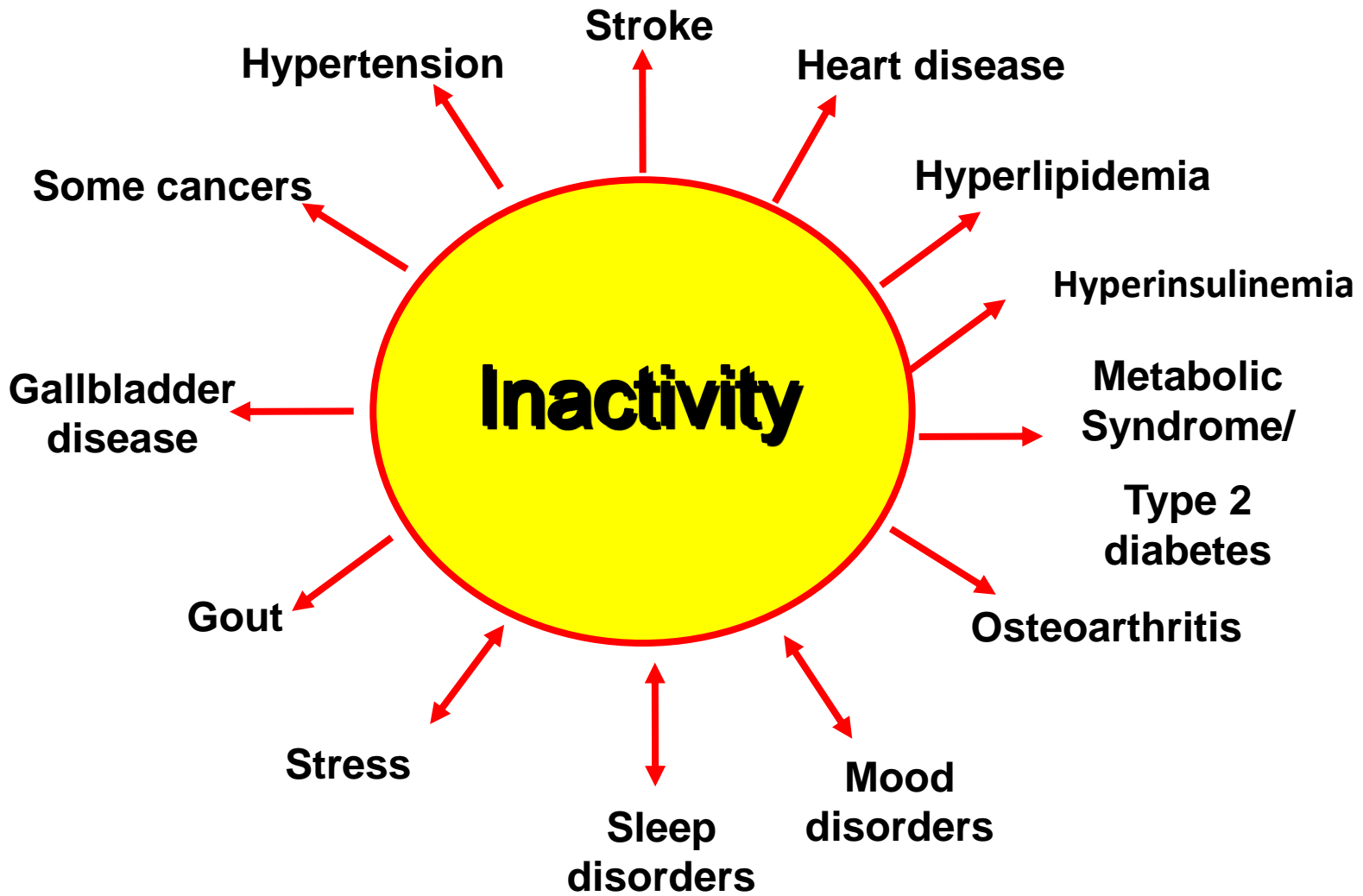


Risk of Death by Fitness Groups, 749 Women and 1758 Men 60 and Older, ACLS

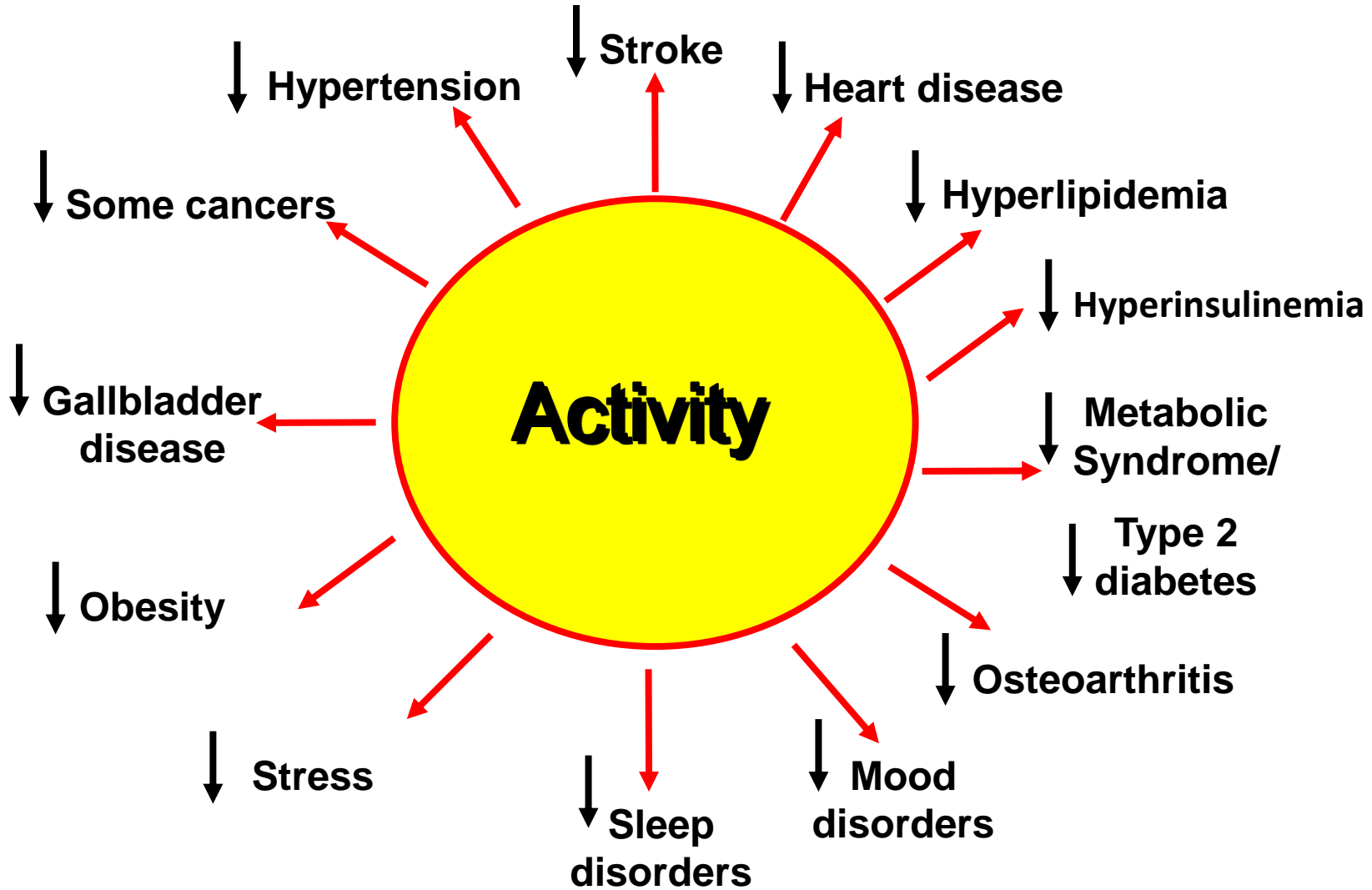
- Age, exam-year, BMI, cholesterol, high blood pressure, diabetes, smoking, CVD, parental CVD adjusted RR for all-cause mortality
- Fitness group corresponded with activity level







Powerful Prescription



Adapted from Bray: Contemporary diagnosis and management of obesity 1998

Preserve Safe and Sacred Spaces



Start Your Day With Friends and Fresh Air



One Step at a Time



Conclusions

- Obesity and its comorbidities are a serious public health risk in nearly every country in the world
- The earlier obesity develops, the longer it tends to persist
- The longer it tends to persist, the more difficult it is to reverse
- Risks for developing obesity are associated with pre-pregnancy and intrauterine factors
- Ideal birth weight is related to pregnancy weight gain and efforts to reach the ideal weight will reduce both stunting and obesity
- Dietary guidance that would result in ideal birthweight is also likely to benefit everyone in the family – general messages are common ones with some nuancing for life stage
- At all ages and sizes, physical activity is beneficial for virtually every aspect of health

Thank You

- Especially to Sally Ann Lederman, PhD for use of her slides on birthweight and morbidity and mortality