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BLOOMBERG
SCHOOL *of* PUBLIC HEALTH

Protecting Health, Saving Lives—*Millions at a Time*

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Reducing your risk of cancer

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at Johns Hopkins

Strategies

- For reducing cancer risk in people at average risk

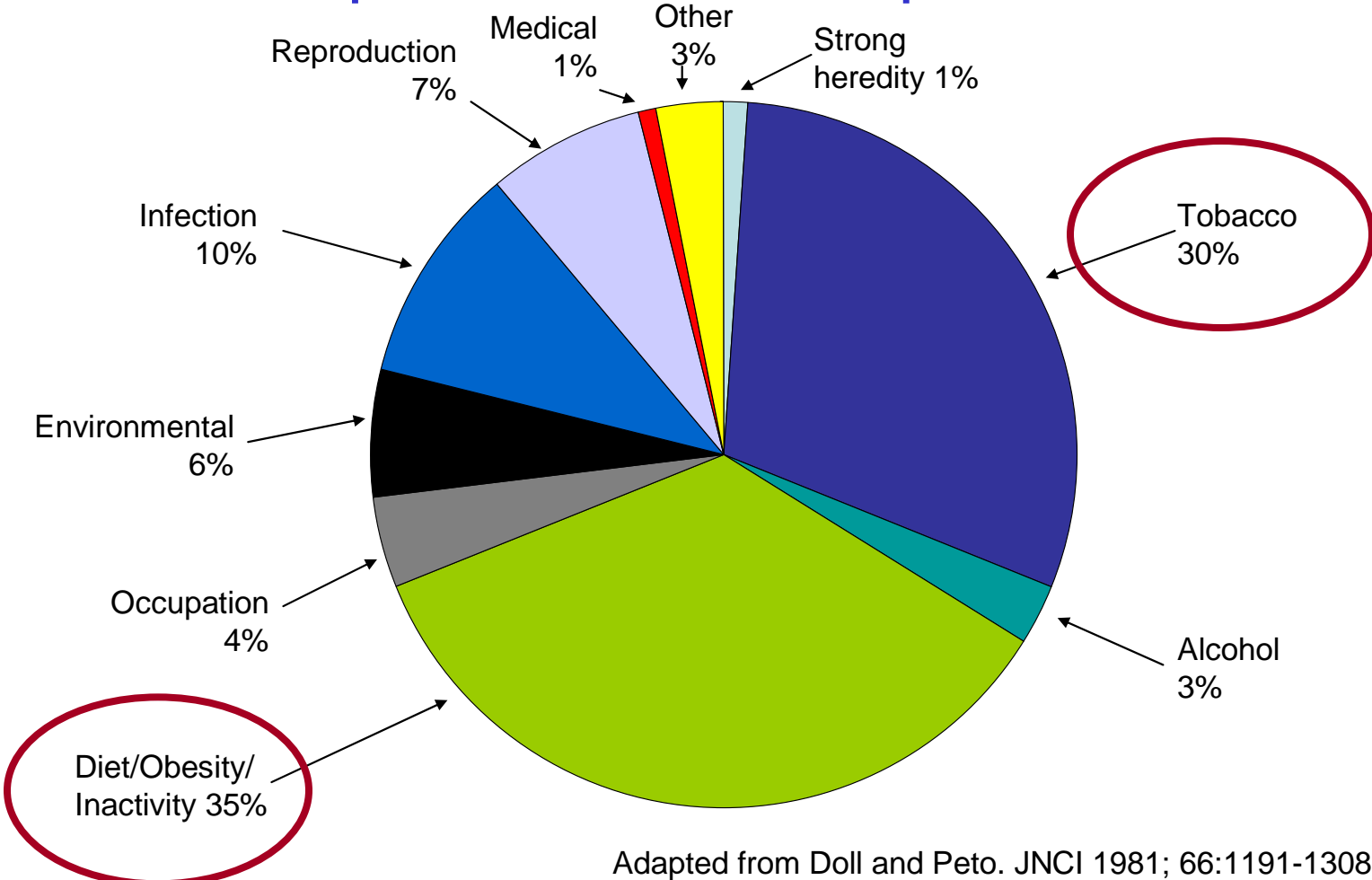
Overarching messages

Focus on cancer risk behaviors for which evidence is strong

- For example, lifestyle factors:
 - Cigarette smoking
 - Overweight and obesity
 - Physical inactivity
 - Suboptimal diet
- De-emphasize controversial factors
 - See “Hoax” on SKCCC website:
http://www.hopkinsmedicine.org/kimmel_cancer_center/news_events/featured/cancer_update_email_it_is_a_hoax.html
- De-emphasize quick fixes
 - e.g., “magic pills”

Focus on common cancer risk behaviors

Proportion of cancer risk attributable to certain exposures in developed countries



Adapted from Doll and Peto. JNCI 1981; 66:1191-1308

Target cancer risk behaviors that are risk behaviors for major chronic diseases

- Risk factors for cardiovascular disease and diabetes
 - Cigarette smoking
 - Overweight and obesity
 - Inactivity
 - Suboptimal diet
- Choose healthy aging as the goal

Identify your cancer risk behaviors and thus, your cancer risk

- Use a risk calculator
 - <http://www.yourdiseaserisk.wustl.edu/>
- Risk calculators
 - walk you through your cancer risk behaviors and family and medical histories, and
 - generate an estimate of your cancer risk relative to the typical risk in the general population.

Cancer—Breast cancer

Results: Breast cancer

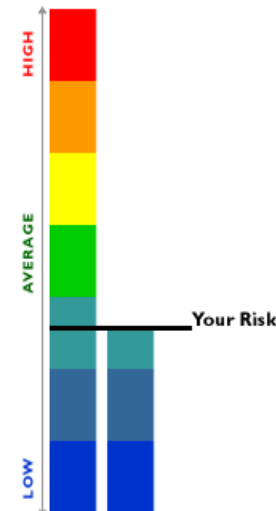
Compared to a typical woman your age, your risk is **below average**

Screening Tip

Beginning at age 20, get screened regularly. [More >>](#)

Below average risk means you don't have many risk factors. But it's just an estimate, and it doesn't mean you'll never get cancer. If you have any concerns, talk to a doctor.

Your risk is
below average



Based on how you answered the questionnaire and what we know about breast cancer, you're doing what you can to lower your risk.

But watch your weight. While your weight gain doesn't increase your risk right now, it's still important to keep your weight in check. [\[Tips\]](#)

Breast cancer has few controllable risk factors. But it's still important to know your risk and how these factors relate to it. Choose a healthy lifestyle to protect against breast cancer as well as other diseases. And don't forget to follow the screening recommendations.

Keep up the good work!

You're already doing these things to lower your risk

Identify your cancer risk behaviors and thus, your cancer risk

Cancer—Uterine cancer

Results: Uterine cancer

Compared to a typical woman your age, your risk is **above average**

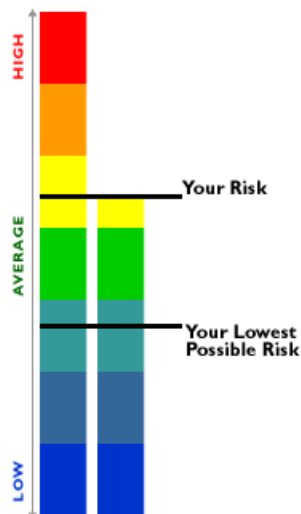
Screening Tip

There is no good screening test for uterine cancer.

Above average risk doesn't mean you'll definitely get cancer. It's just an estimate based on your risk factors, some of which you may not be able to change. If you have any concerns, talk to a doctor.

See slide 9

Your risk is **above average**



What makes up my risk?

Watch Your Risk Drop

You have **1** thing you can do to lower your risk. To see what your risk could be, click on a box and watch your risk drop:

- Achieve and maintain a healthy weight. [\[Tips\]](#)

Uterine cancer has few controllable risk factors. But it's still important to know your risk and how these factors relate to it. Choose a healthy lifestyle to protect against uterine cancer as well as other diseases.

Keep up the good work!

You're already doing these things to lower your risk:

- You haven't taken postmenopausal estrogen alone (without progesterone). [\[More\]](#)

See slide 10

Identify your cancer risk behaviors and thus, your cancer risk

Tips

Close window

Weight

Try to achieve and maintain a healthy weight. It's one of the best things you can do for your health.

The best way to lose weight is to be physically active. A lot of things count as physical activity, like walking, jogging, or dancing – whatever you enjoy! Try to get at least 30 minutes a day. Make it a fun part of your normal routine.

To see where you fall on the weight range, [click here](#)

Don't feel like you have to tackle losing weight alone. Losing weight and maintaining a healthy weight can be difficult. Talk to a doctor or other health care provider for advice. And remember: small changes can make a big difference over time.

Maintaining a healthy weight lowers your risk of several cancers like colon, breast, kidney, uterine, pancreatic, and esophageal cancer. It also lowers your risk of heart disease, diabetes, and stroke.

To learn more about eating well and exercising visit these web sites:

Fitness Center
[American Heart Association](#)

Fit Forever
[American Heart Association](#)

Healthy Eating Tips
[Centers for Disease Control and Prevention](#)

Identify your cancer risk behaviors and thus, your cancer risk

Good Work

Close window

Post-Menopausal Hormones

Avoiding post-menopausal hormones lowers your risk.

Post-menopausal hormones can contain different hormones that are similar to the female reproductive hormones, estrogen and progesterone. After menopause, a woman's body stops making these hormones in large quantities. For women who are going through (or have already gone through) menopause, post-menopausal hormones can help decrease symptoms, like hot flashes and vaginal dryness, and also protect against osteoporosis and colon cancer. The hormone estrogen is especially important in osteoporosis prevention because it can reduce bone loss and increase bone density. It has also been proven to reduce the risk of fractures in women after menopause.

However, post-menopausal hormones aren't right for everyone because they also have some significant risks, like increasing the risk of breast cancer and cancer of the uterus. And, although post-menopausal hormones were once thought to lower the risk of heart disease, it is now unclear exactly how they affect the risk of the disease. Talk to a doctor to see how post-menopausal hormones might affect you.

To find out more about menopause and post-menopausal hormones:

Hormones After Menopause
National Institute on Aging

Menopausal Hormone Replacement Therapy
National Cancer Institute

Engage family and friends

- In efforts to reduce cancer risk and enhance healthy aging
 - Support and team effort
 - Benefits you and them

What are the major
cancer risk behaviors?

1. Cigarette smoking and use of other tobacco products

- If you smoke, quit.
- Cigarette smoking causes many cancers
 - US Surgeon General's Report – *The Health Consequences of Smoking*
<http://www.surgeongeneral.gov/library/smokingconsequences/>
 - Lung
 - Bladder
 - Esophageal
 - Laryngeal
 - Oral
 - Kidney
 - Pancreas
 - Stomach
 - Leukemia
 - Cervix



Cigarette smoking and use of other tobacco products

- Cigarette smoking causes many health problems beyond cancer
 - Cardiovascular disease
 - Respiratory disease
 - Cataract
 - Reduced fertility
 - Pregnancy complications
 - Increase fetal death and stillbirth
 - Hip fracture
 - Low bone density in post-menopausal women

Why repeat the 'don't smoke' message?

- Despite overwhelming evidence that smoking causes innumerable diseases:
 - **20.6%** of US adults currently smoke
 - **17.2%** of high school students currently smoke
 - **5.2%** of middle schoolers currently smoke

“Required Warnings for Cigarette Packages and Advertisements”

<http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm260181.htm>

Family Smoking Prevention and Tobacco Control Act of 2009

Implementation of warning labels: Sept 2012



What are the benefits of quitting smoking?

- Immediate and long term benefits
 - For example,
 - Risk of lung and other smoking-associated cancers decreases
 - 10 years after quitting risk of lung cancer is half that of someone who keeps smoking

How to quit smoking

- Information:
 - <http://www.smokefree.gov/>
 - <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm198176.htm>
 - <http://www.cancer.org/Healthy/StayAwayfromTobacco/GuidetoQuittingSmoking/guide-to-quitting-smoking-how-to-quit>

Exposure to other people's cigarette smoke is a risk factor for cancer

- **40.1%** of US nonsmokers are exposed to second hand smoke.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5935a4.htm?s_cid=mm935a4_w

- Nonsmoking spouses of smokers have a **20-50%** higher lung cancer risk than nonsmoking spouses of nonsmokers

- **3,400** nonsmokers die of lung cancer each year because of second hand smoke

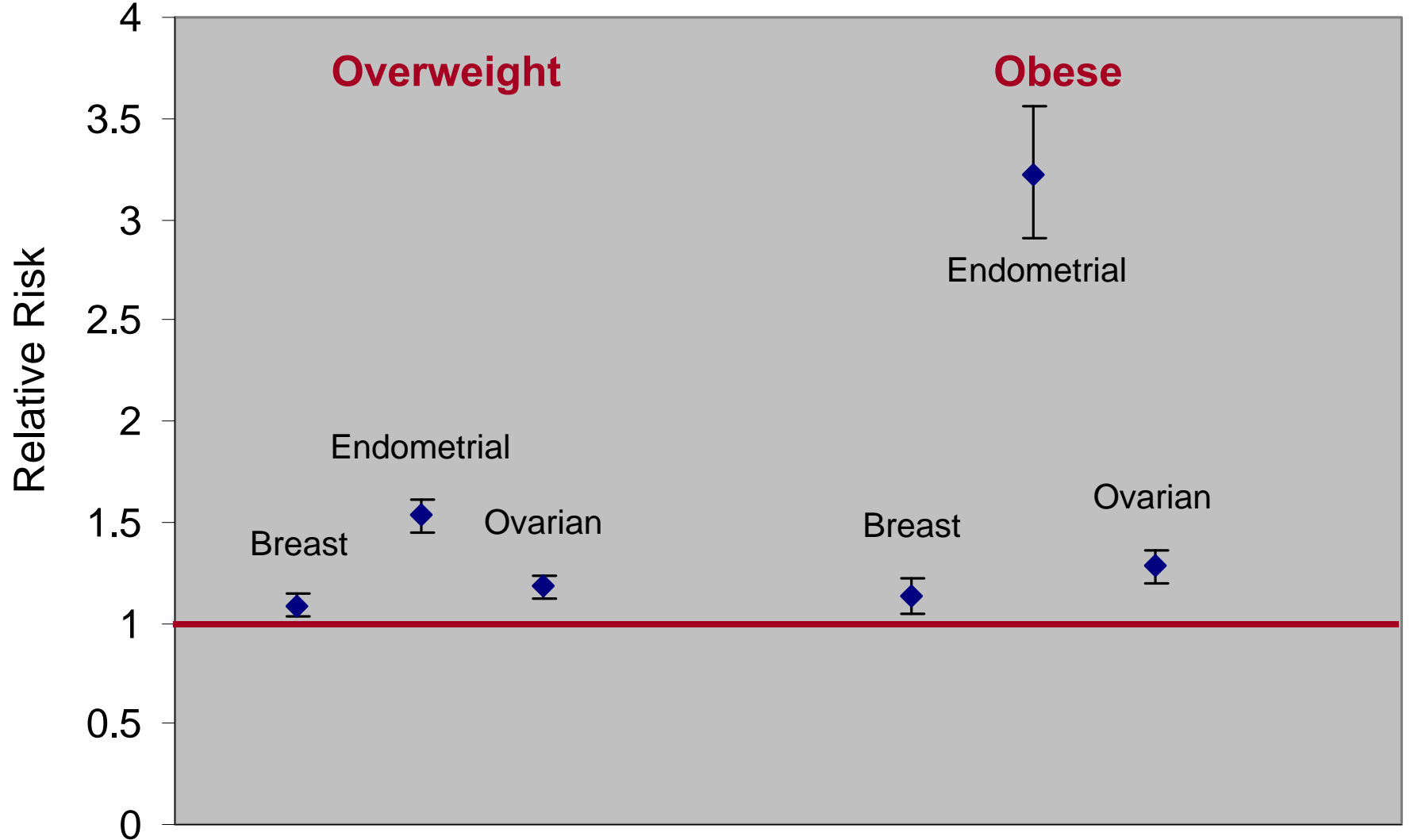
<http://www.cancer.org/cancer/cancercauses/tobaccocancer/secondhand-smoke>



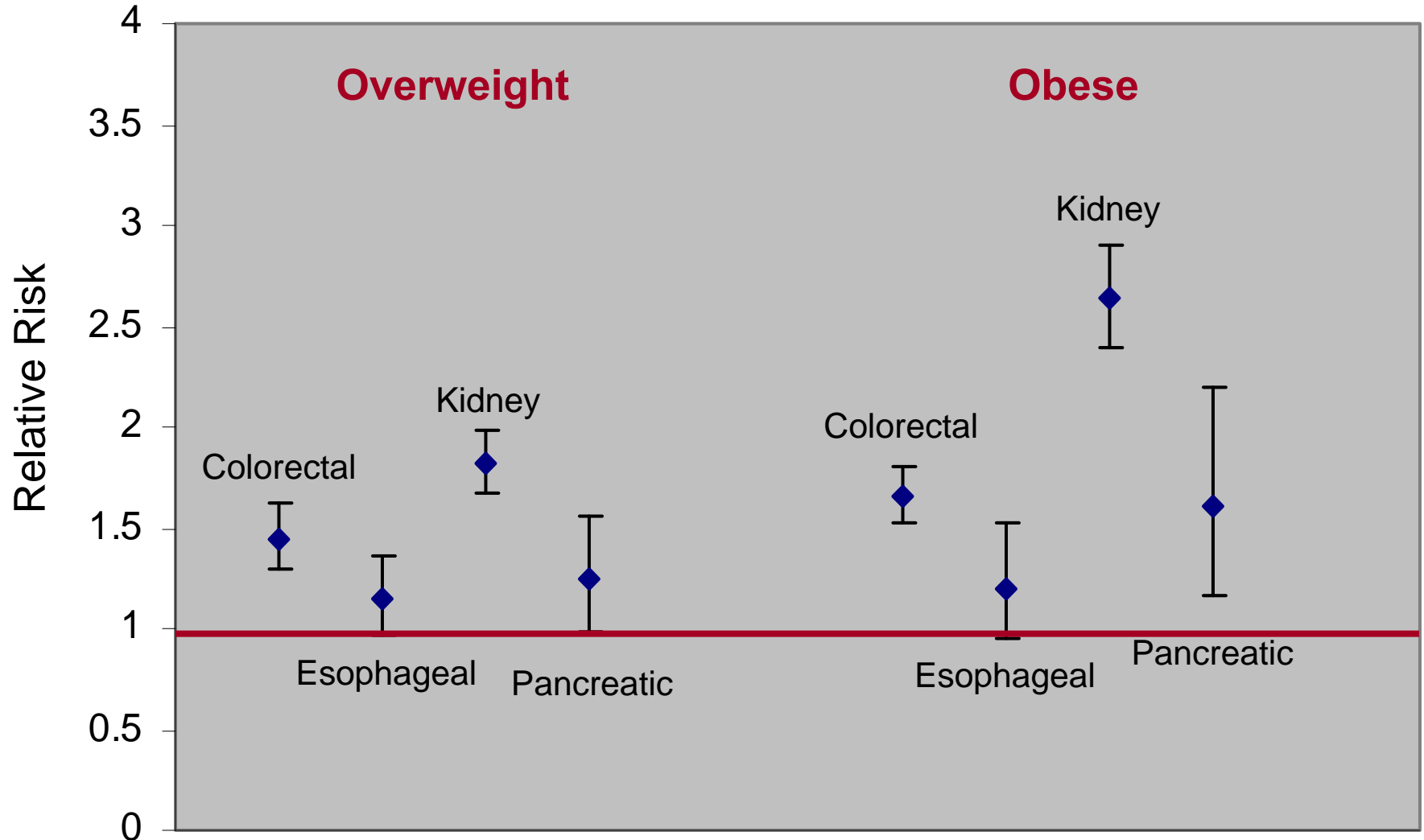
2. Excess body fatness and weight gain

- If you are overweight or obese, lose weight.
- Maintain a healthy weight.
- Body fatness increases the risk of many cancers:
 - Breast in post-menopausal women
 - Endometrium
 - Esophagus
 - Pancreas
 - Colorectum
 - Kidney

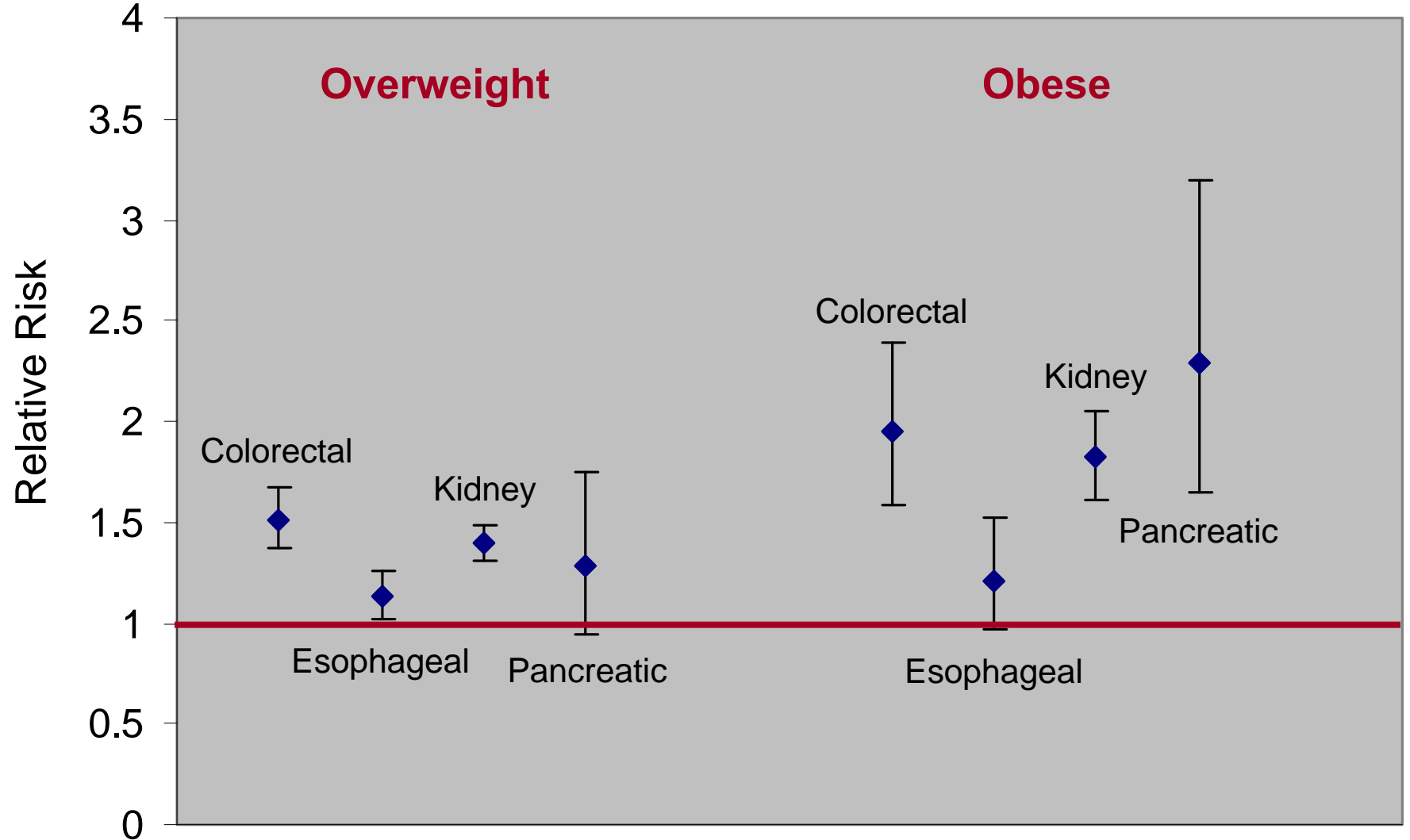
Overweight and obesity are associated with increased cancer risk - Women



Overweight and obesity are associated with increased cancer risk - Women

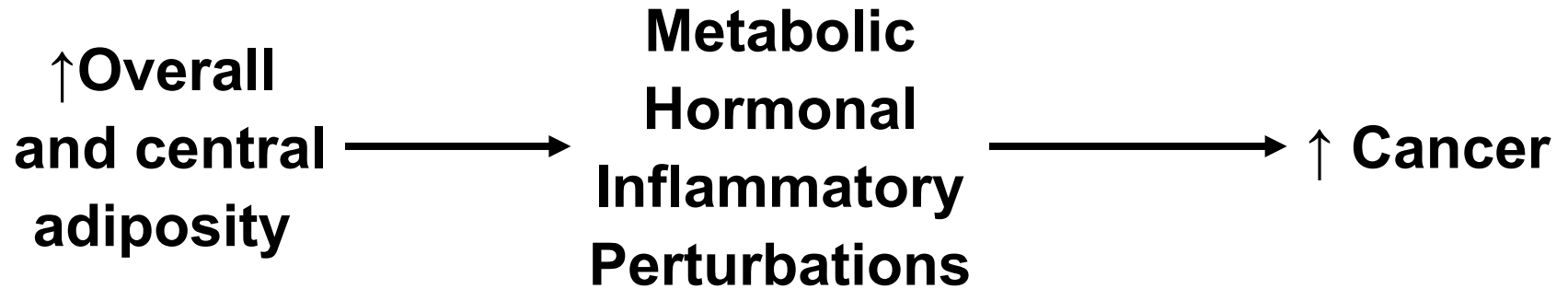


Overweight and obesity are associated with increased cancer risk - Men

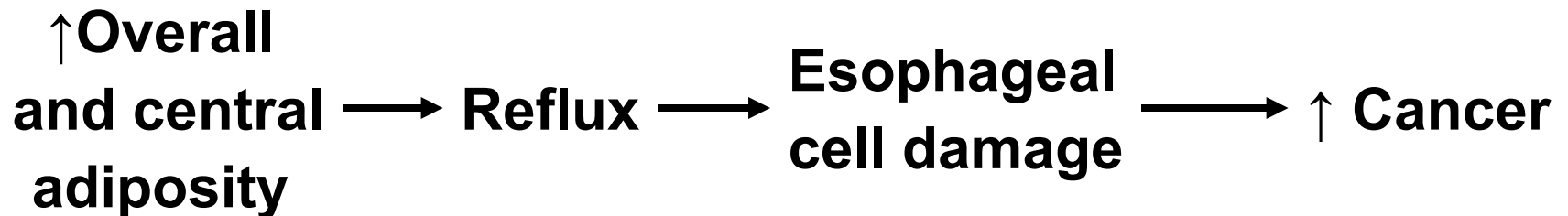


How does body fatness influence cancer risk?

Many cancers



Esophageal cancer (adenocarcinoma)



Measuring body fatness

- Body mass index

- BMI = weight in kg / square of height in m

- <http://www.nhlbisupport.com/bmi/>

- http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html

- Categories (BMI in kg/m²)

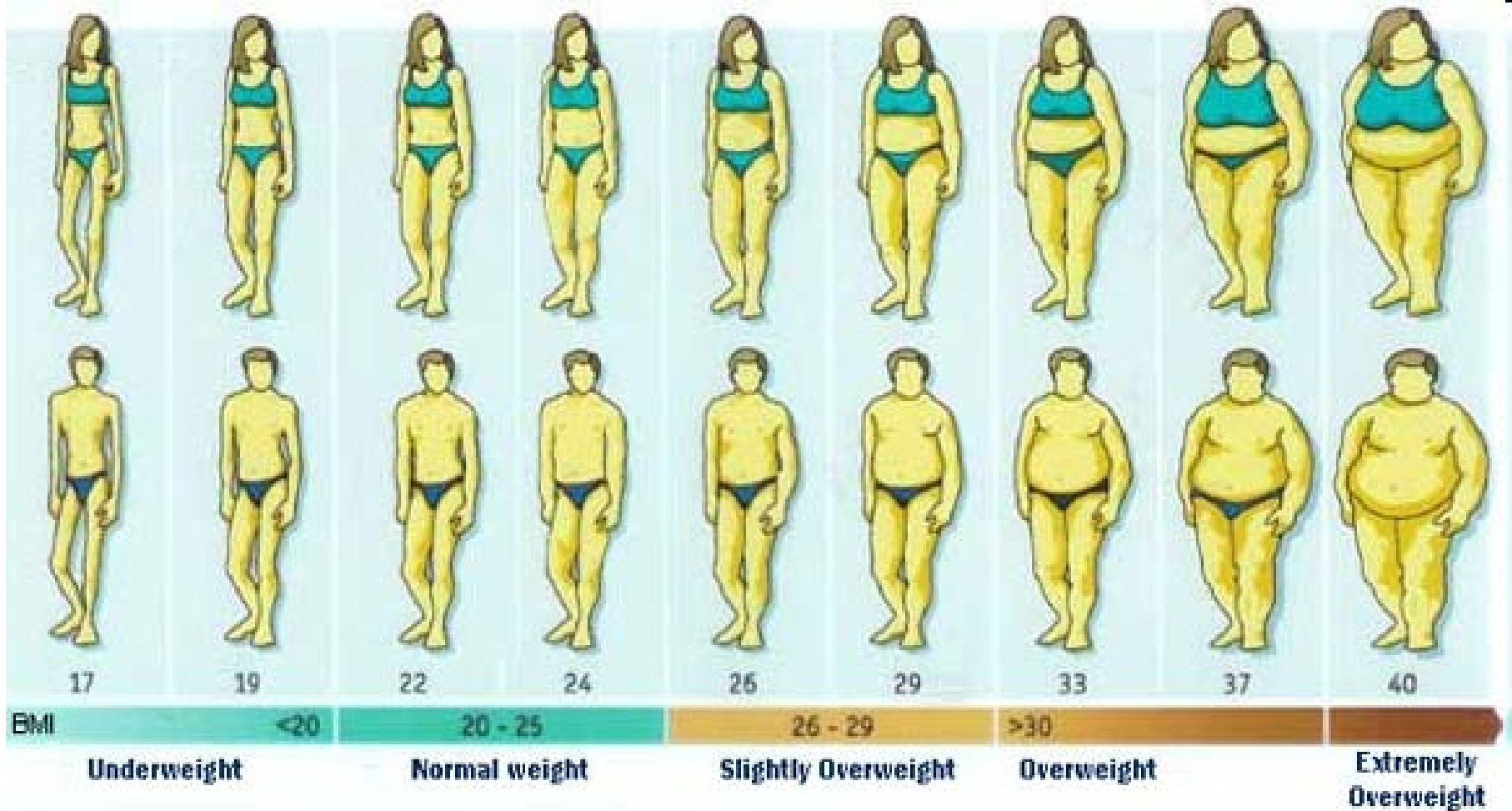
- Underweight: less than 18.5

- Normal weight: 18.5 to less than 25 ← **Goal**

- Overweight: 25 to less than 30

- Obese: 30 or more

“BMI Visual Graph”



Measuring body fatness

- Waist circumference

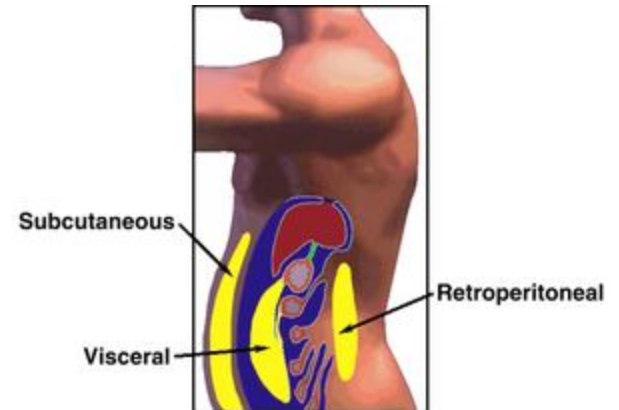
- Normal waist

- Women: 35" or smaller
 - Men: 40" or smaller

← **Goal**

- Too large

- Women: larger than 35"
 - Men: larger than 40"



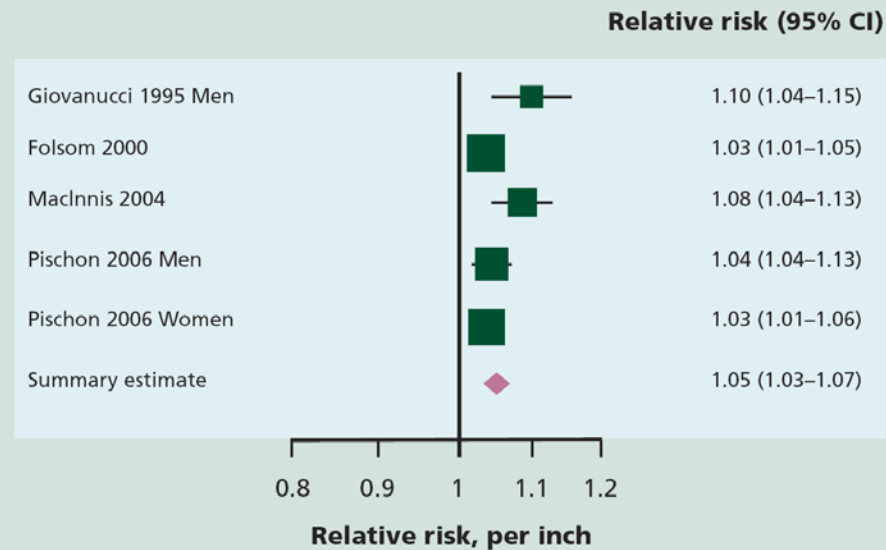
Fat around the middle and risk of colorectal cancer

- Large waist circumference (central adiposity) is a risk factor for colorectal cancer.



Figure 6.1.22

Waist circumference and colorectal cancer; cohort studies



Why repeat the body fatness message?

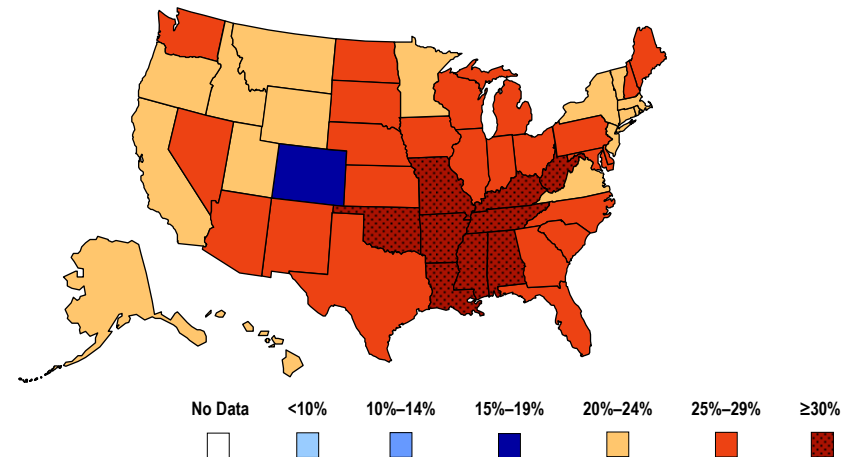
- **63.4%** of American adults are overweight or obese

<http://apps.nccd.cdc.gov/brfss/list.asp?cat=OB&yr=2009&qkey=4409&state=All>

- **27.8%** of high school students are overweight or obese

<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5905a1.htm>

Percentage of US Adults who are Obese (BMI 30+ kg/m²), 2009



<http://www.cdc.gov/obesity/data/trends.html>

Excess body fatness is a risk factor for premature death

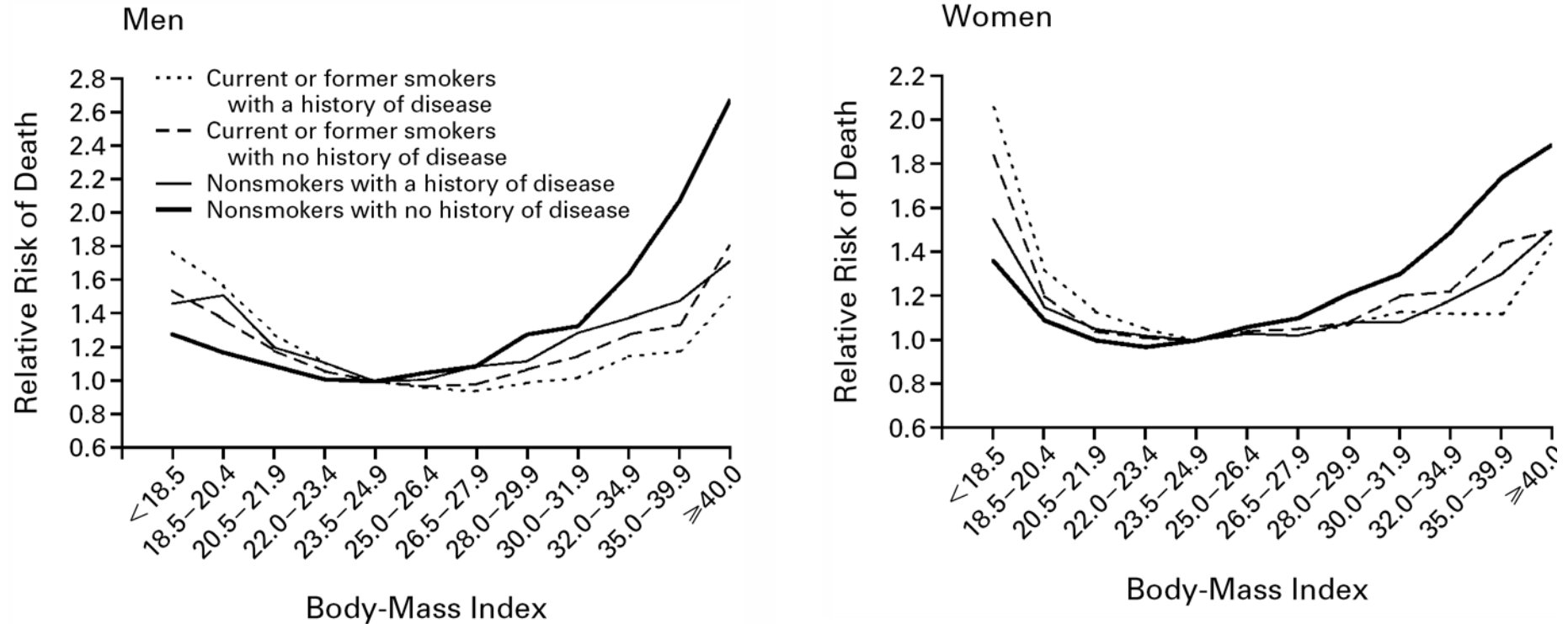
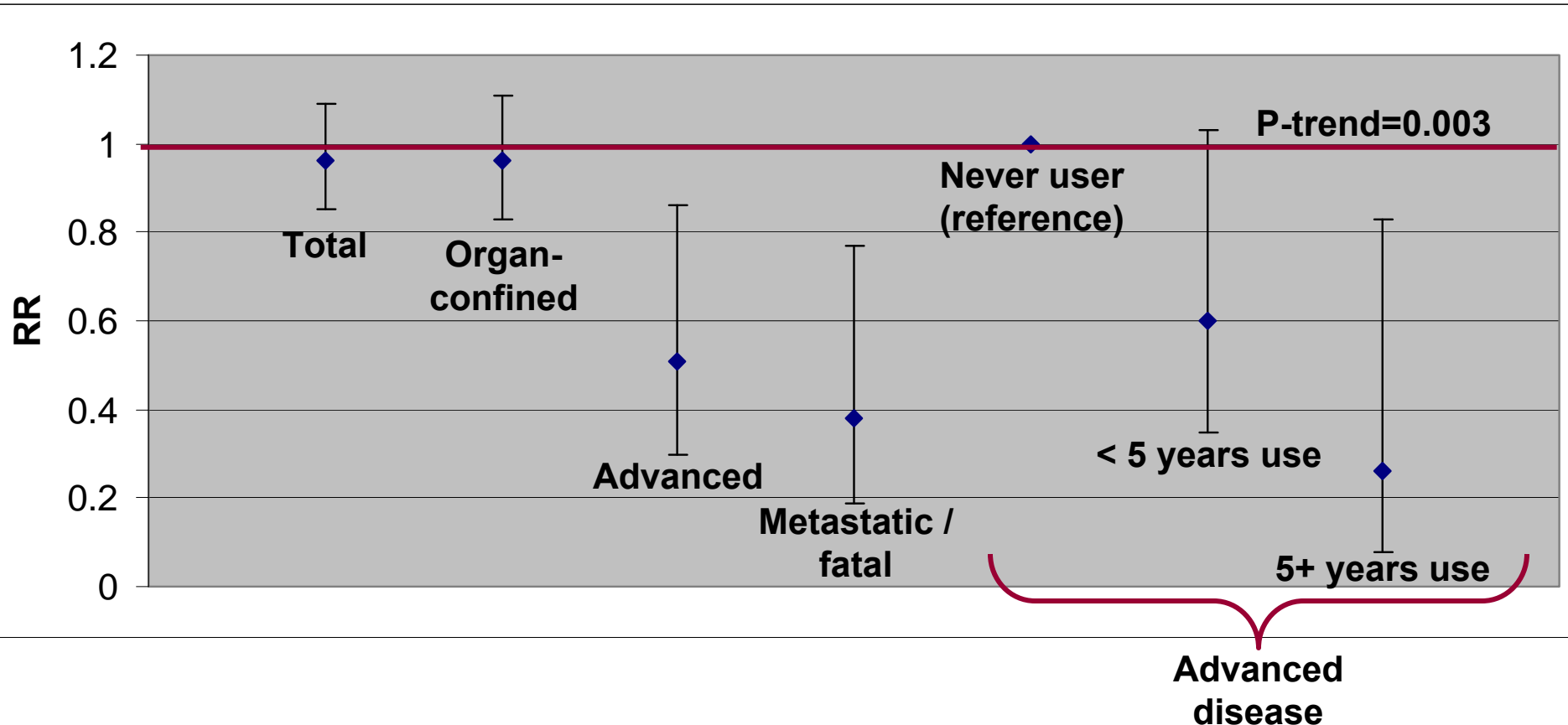


Figure 1. Multivariate Relative Risk of Death from All Causes among Men and Women According to Body-Mass Index, Smoking Status, and Disease Status.

The four subgroups are mutually exclusive. Nonsmokers had never smoked. The reference category was made up of subjects with a body-mass index of 23.5 to 24.9.

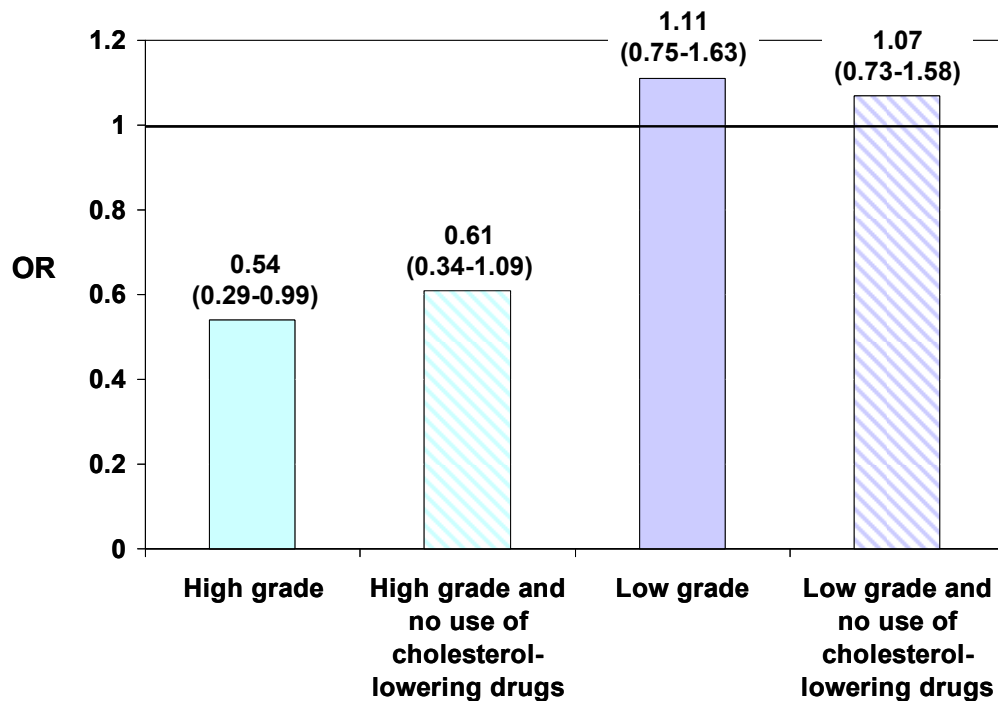
Statin drug use is inversely associated with risk of aggressive prostate cancer



Same association for long-term use and high-grade disease

Cholesterol may underlie the association between statins and aggressive prostate cancer

Association between low plasma cholesterol (<25th percentile) and high- and low-grade prostate cancer restricted to men with organ-confined disease, HPFS



Platz EA, Clinton SK, Giovannucci E. Int J Cancer 2008; 123:1693-8. PMID: 18646186.

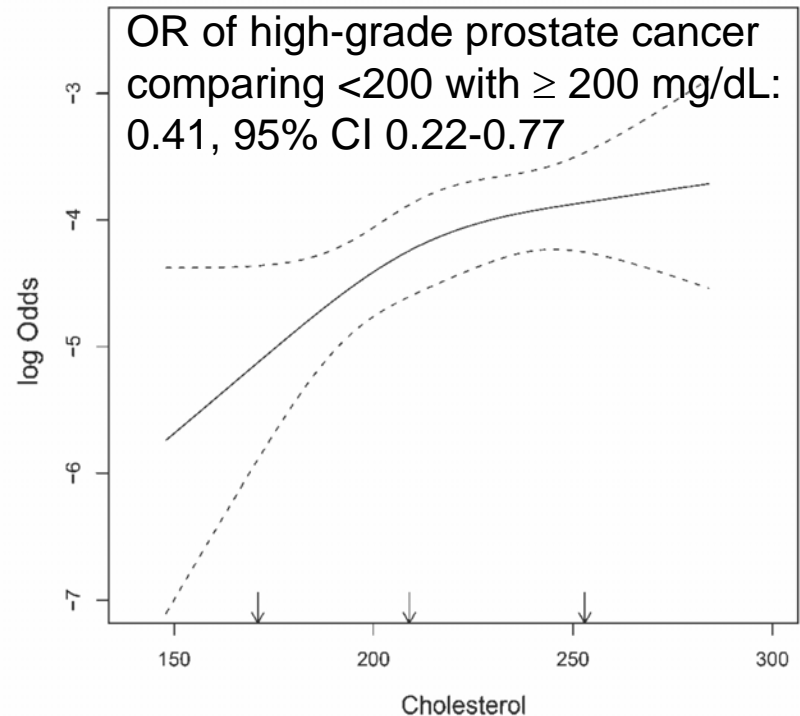


Figure 1. Association between serum cholesterol concentration (mg/dL) and Gleason 8 to 10 prostate cancer, placebo arm of the PCPT. The association was estimated using restricted cubic splines with three knots (arrows), truncating at the 2.5 percentile and 97.5 percentile, and adjusting for age, race, family history, BMI, diabetes, regular aspirin use, and history of heart attack. The *P* value for the test of association was 0.015.

Platz EA, Till C, Goodman PJ, Parnes HL, Figg WD, Albanes D, Neuhaus ML, Klein EA, Thompson IM Jr, Kristal AR. Cancer Epidemiol Biomarkers Prev 2009;18:2807-13. PMID: 19887582.

Guidelines in the context of cancer

- Strive to keep BMI well within the normal range.
- World Cancer Research Fund / American Institute for Cancer Research



BODY FATNESS

Be as lean as possible within the normal range¹ of body weight

PUBLIC HEALTH GOALS

Median adult body mass index (BMI) to be between 21 and 23, depending on the normal range for different populations²

The proportion of the population that is overweight or obese to be no more than the current level, or preferably lower, in 10 years

PERSONAL RECOMMENDATIONS

Ensure that body weight through childhood and adolescent growth projects³ towards the lower end of the normal BMI range at age 21

Maintain body weight within the normal range from age 21

Avoid weight gain and increases in waist circumference throughout adulthood

How to lose weight

- Information:
 - <http://www.cancer.org/Healthy/EatHealthyGetActive/TakeControlofYourWeight/index>
 - http://www.aicr.org/site/PageServer?pagename=reduce_weight_home
 - http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/control.htm

Proportion of cancer deaths that could be avoided if US adults were not overweight/obese

Table 4. Estimated Population Attributable Fraction According to Body-Mass Index for Mortality from Cancer in U.S. Men and Women.*

Body-Mass Index	Men			Women		
	Prevalence of Exposure	Relative Risk	Population Attributable Fraction	Prevalence of Exposure	Relative Risk	Population Attributable Fraction
	%		%	%		%
All subjects						
25.0–29.9	42.1	0.97	–1.2	28.8	1.08	2.0
30.0–34.9	21.0	1.09	1.8	22.5	1.23	4.5
35.0–39.9	9.2	1.20	1.8	10.7	1.32	3.0
≥40.0	3.6	1.52	1.9	7.9	1.62	4.9
Total population attributable fraction			4.2			14.3
Subjects who never smoked						
25.0–29.9	42.1	1.11	4.0	28.8	1.14	3.3
30.0–34.9	21.0	1.38	6.8	22.5	1.33	6.1
35.0–39.9†	12.8	1.31	3.4	10.7	1.40	3.5
≥40.0				7.9	1.88	7.0
Total population attributable fraction			14.2			19.8

3. Physical inactivity and sedentary behaviors

- Increase physical activity and reduce sedentary time.
- More physical activity is associated with a LOWER risk of cancer of the:
 - Colon
 - Breast in post-menopausal women
 - Endometrium

How does inactivity influence cancer risk?

Inactivity → **↑ Body fatness** → **↑ Cancer**

Inactivity → **↑ Insulin resistance, inflammation** → **↑ Cancer**

Physical activity has many health benefits

- Lower risk of:
 - Premature death
 - Coronary heart disease, stroke, type 2 diabetes, osteoporosis, and depression
 - Hypertension and elevated cholesterol
- Increases fitness and functional capacity
- Reduces depression
- Enhances cognitive function
- Reduces risk of falls

Physical activity and sedentary behaviors

- What counts as physical activity?
 - Leisure time activities, including walking
 - Walking and biking for transportation
 - Household and yard work, including washing car
 - Workplace activity
- What counts as vigorous physical activity?
 - For example, running, aerobics, tennis playing, bicycling, swimming
- What are sedentary behaviors?
 - Sitting while reading, watching TV/DVDs, using a computer, driving



How inactive are we?

- **24.2%** of US adults did not participate in any physical activities in the past month
- **70.8%** of US adults did not participate in 20 or more minutes of vigorous physical activity on 3 or more days of the week.

<http://apps.nccd.cdc.gov/brfss/list.asp?cat=EX&yr=2009&qkey=4347&state=All>

CDC Office of Surveillance, Epidemiology, and Laboratory Services
Behavioral Risk Factor Surveillance System
BRFSS Home | Contact Us

Prevalence and Trends Data

NOTE: When comparing prevalence of variables across states or years, we recommend the use of confidence intervals. If the confidence intervals overlap, the difference is not statistically significant.

Please choose from the following pull-down menus to search for BRFSS data.

State:

Year:

Category:

[States conducting surveillance, by year](#)

For more information on risk factors and calculated variables, see the [Technical Documents and Survey Data](#) for a specific year.

Recommended citation: Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, [appropriate year].

<http://apps.nccd.cdc.gov/brfss/>

Physical activity guidelines for Americans

- “All adults should avoid inactivity.
 - Some physical activity is better than none.
 - Adults who participate in any amount of physical activity gain some health benefits.”

Physical activity guidelines for Americans

- “For substantial health benefits, adults should do aerobic physical activity
 - at least 2.5 hours / week of moderate-intensity,
 - at least 1.25 hours / week of vigorous-intensity, or
 - An equivalent combination of moderate- and vigorous intensity activity
 - Aerobic activity should be performed in episodes of at least 10 minutes, and preferably, it should be spread throughout the week.”

Physical activity guidelines for Americans

- “For additional and more extensive health benefits, adults should increase their aerobic physical activity to
 - 5 hours / week of moderate intensity,
 - 2.5 hours / week of vigorous intensity, or
 - An equivalent combination of moderate- and vigorous-intensity activity.
 - Additional health benefits are gained by engaging in physical activity beyond this amount.”

Physical activity guidelines for Americans

- “Adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.”

How to increase physical activity

- Information:
 - <http://www.health.gov/PAGuidelines/adultguide/default.aspx>
 - <http://www.cancer.org/Healthy/EatHealthyGetActive/GetActive/index>

4. Alcohol drinking

- Minimize the amount and frequency of alcohol drinking.
- Alcohol increases the risk of cancers of the:
 - Mouth, pharynx, larynx
 - Esophagus
 - Colorectum in men and probably in women
 - Liver
 - Breast in post-menopausal women

Alcohol drinking increases the risk of breast cancer: even 1 drink per day



Alcohol drinking

- **5.1%** of US adults are heavy drinkers
 - Women: 1+ drink per day
 - Men: 2+ drinks per day
- **15.5%** of US adults are binge drinkers
 - Women: 4+ drinks on one occasion
 - Men: 5+ drinks on one occasion

5. Red meat and processed meat

- Reduce consumption of red and processed meat.
 - Replace with beans and other nonmeat proteins
- Higher consumption of red and processed meat is associated with a higher risk of:
 - Colorectal cancer

Processed
meat



Proportion of colon cancer risk that is potentially preventable in the population

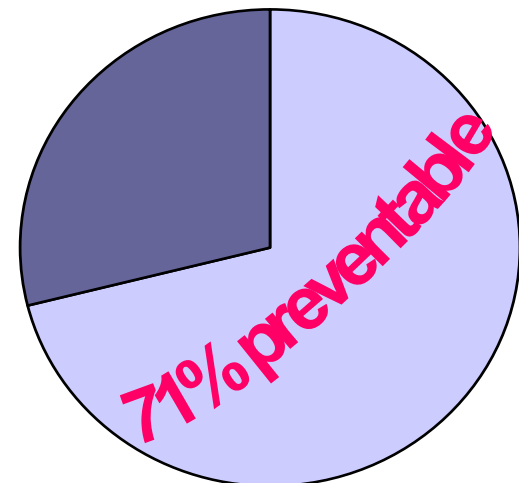
Risk factors

- Obesity
- Inactivity
- Smoking
- Alcohol
- Red meat intake
- Folic acid intake

Sub-optimal level

- > 25 kg/m²
- < 15 MET-hours/week
- > 3 packyears
- > 15 g/day or former drinker
- > 2 servings/week
- < 100 µg from supplement

If everyone had 'good' levels:



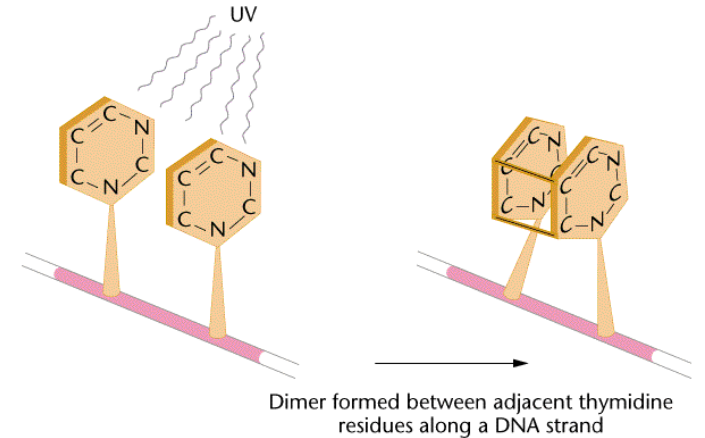
6. Overexposure to the sun

- Avoid being overexposed to the sun and sun burn.
- Overexposure to the sun causes:
 - Squamous cell skin cancer
 - Basal cell skin cancer
 - Melanoma



Overexposure to the sun

- Ultraviolet light from the sun causes DNA damage called thymidine dimers, which lead to mutations



http://faculty.quinnipiac.edu/health/biology/buckley/bi_571/DNA_repair/sld049.htm

- Sunlight also ages the skin.

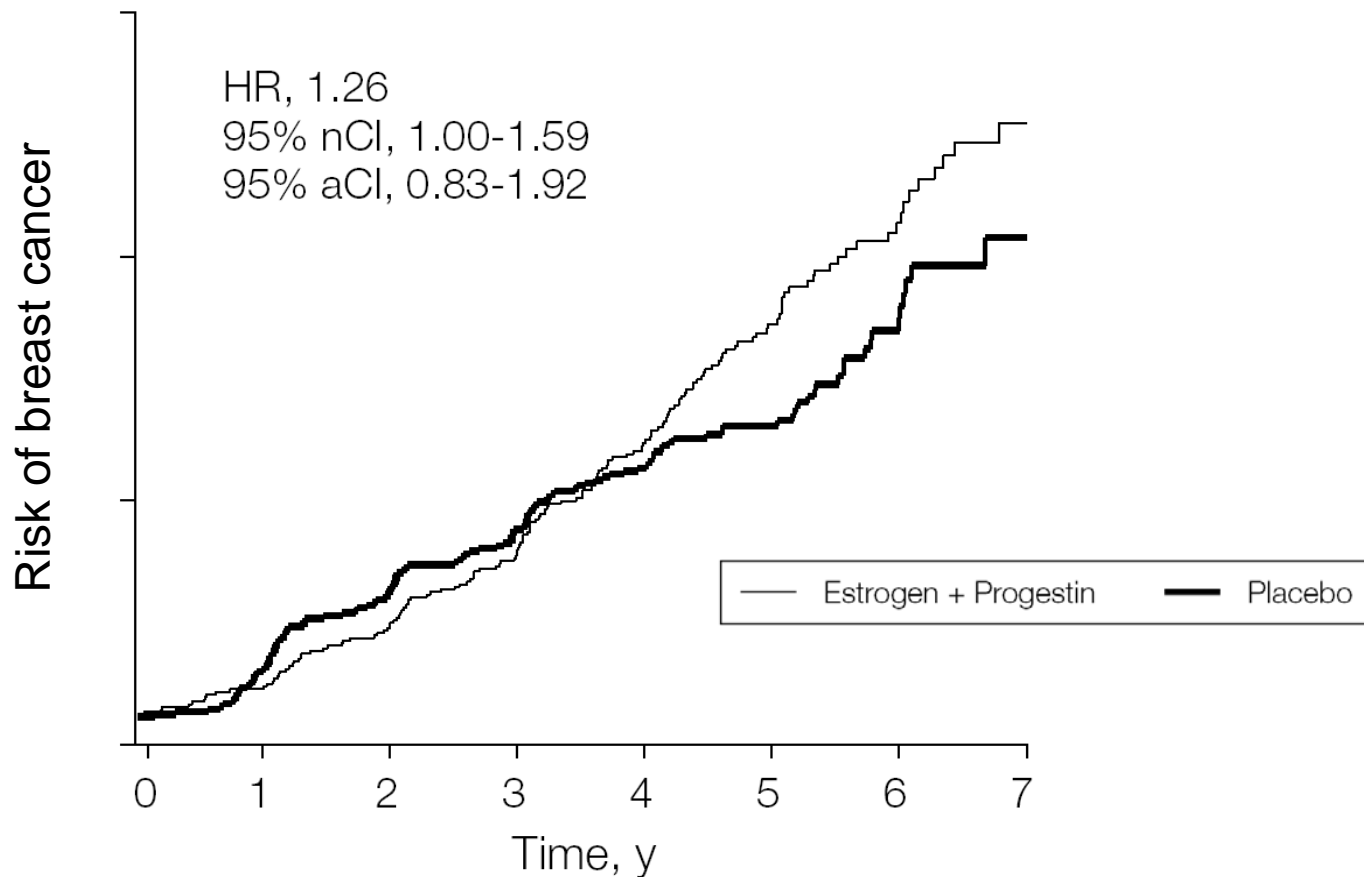
Should the sun be avoided altogether?

- Some exposure to the sun may be helpful for avoiding vitamin D levels that are too low.
- Vitamin D is needed for bone health.
 - New recommendations for vitamin D intake for Americans were released in November 2010
 - <http://www.iom.edu/Reports/2010/Dietary-Reference-Intakes-for-Calcium-and-Vitamin-D.aspx>
- Low vitamin D may increase the risk of some cancers
 - But the evidence is insufficient at this time for making vitamin D recommendations for cancer
 - <http://www.cancer.gov/cancertopics/factsheet/prevention/vitamin-D>

7. Hormone replacement therapy

- Talk to your doctor about the benefits versus risks.
- Hormone replacement therapy causes
 - Breast cancer
 - Endometrial cancer (estrogen without progesterone)

Hormone replacement therapy and breast cancer risk



16608 postmenopausal women aged 50-79 years, followed median of 5.2 years

Writing Group for the Women's Health Initiative Investigators *JAMA*. 2002;288:321-333.

Hormone replacement therapy

- For information:
 - <http://www.fda.gov/ForConsumers/ByAudience/ForWomen/ucm118624.htm>
 - <http://www.nih.gov/PHTindex.htm>
 - <http://www.cancer.gov/cancertopics/factsheet/Risk/menopausal-hormones>

Other medications: Should aspirin be taken to prevent cancer?

- The U.S. Preventive Services Task Force
 - “recommends against the routine use of aspirin and nonsteroidal anti-inflammatory drugs (NSAIDs) to prevent colorectal cancer in individuals at average risk for colorectal cancer.”
 - <http://www.uspreventiveservicestaskforce.org/uspstf/uspsasco.htm>

Effect of daily aspirin on long-term risk of death due to cancer: analysis of individual patient data from randomised trials

Peter M Rothwell, F Gerald R Fowkes, Jill F F Belch, Hisao Ogawa, Charles P Warlow, Tom W Meade

Lancet 2011; 377: 31-41

Published Online

December 7, 2010

DOI:10.1016/S0140-

6736(10)62110-1

Long-term, daily aspirin use is associated with a lower risk of cancer death

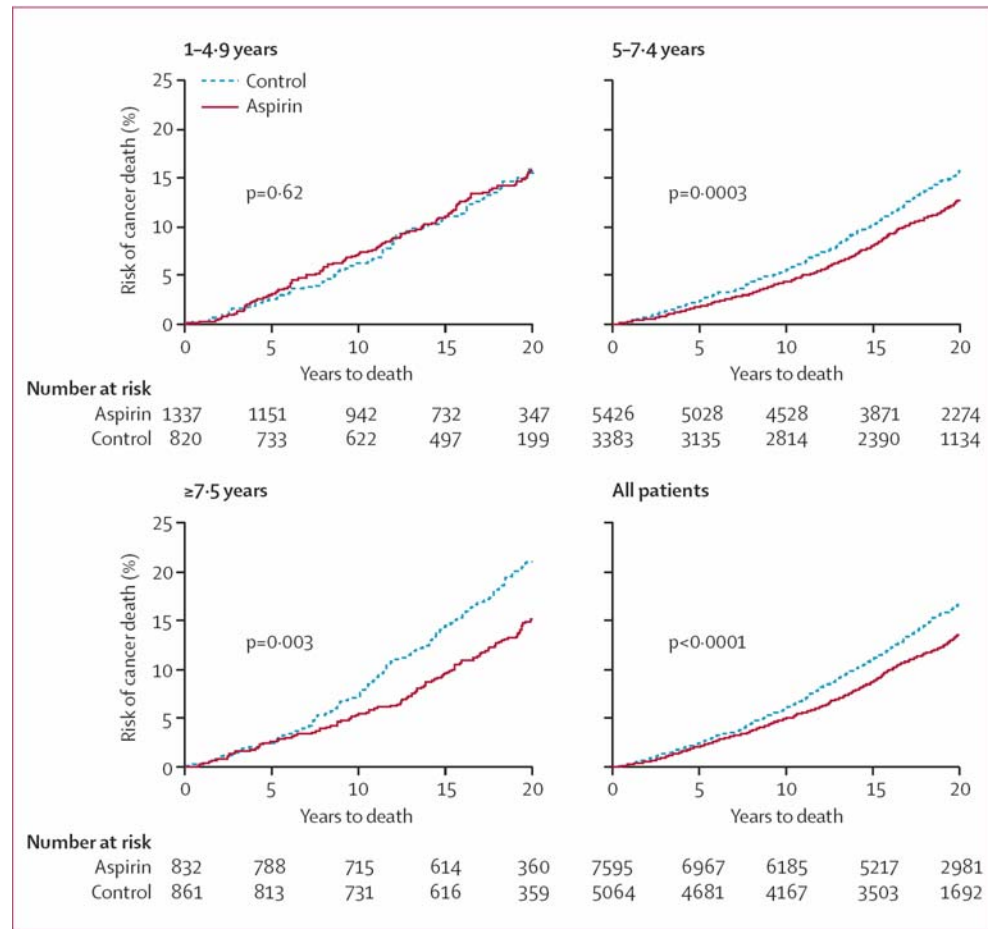


Figure 3: Effect of allocation to aspirin versus control on 20-year risk of death due to any solid cancer stratified by scheduled duration of trial treatment in three trials with long-term follow-up¹⁷⁻¹⁹
 Continuous variable interaction, p=0.01.

8. Infectious agents

- Human papillomavirus (HPV) causes cervical cancer.
- Hepatitis B virus causes liver cancer.
 - <http://www.cancer.gov/cancertopics/wyntk/liver/page4>
- *Helicobacter pylori* causes stomach cancer.
 - <http://www.cancer.gov/cancertopics/types/stomach>

HPV and cervical cancer

- Two FDA-approved HPV vaccines
 - Both approved for females 9 to 26 years old
 - One approved for males 9 to 26 years old
- For information on HPV, screening, and vaccination:
 - <http://www.cdc.gov/std/HPV/STDFact-HPV.htm>
 - <http://www.cancer.gov/cancertopics/factsheet/Prevention/HPV-vaccine>

Screening for cervical cancer

- Screen for pre-malignant cervix changes
 - US Preventive Services Task Force
 - strongly recommends screening for cervical cancer in women who have been sexually active and have a cervix.
 - recommends against routinely screening women older than age 65 for cervical cancer if they have had adequate recent screening with normal Pap smears and are not otherwise at high risk for cervical cancer.

Does screening prevent cancer?

- Depends on the type of screening.
- Yes
 - Pap smear – detects premalignant cervical lesions, which can be removed
 - Colonoscopy – detects premalignant adenomas, which can be removed

Does screening prevent cancer?

- Depends on the type of screening.
- No
 - Mammograms detect breast cancer – detects cancers earlier than they would otherwise be detected
 - Benefit – earlier detection means earlier treatment leading to better prognosis
 - PSA screening detects prostate cancer – detects cancers earlier than they would otherwise be detected
 - Benefit / risk complex and may depend on age and comorbidities

What about cell phones?



PRESS RELEASE
N° 208

31 May 2011

IARC CLASSIFIES RADIOFREQUENCY ELECTROMAGNETIC FIELDS AS POSSIBLY CARCINOGENIC TO HUMANS

Lyon, France, May 31, 2011 -- The WHO/International Agency for Research on Cancer (IARC) has classified radiofrequency electromagnetic fields as [possibly carcinogenic to humans \(Group 2B\)](#), based on an increased risk for [glioma](#), a malignant type of brain cancer¹, associated with wireless phone use.

Background

Over the last few years, there has been mounting concern about the possibility of adverse health effects resulting from exposure to radiofrequency electromagnetic fields, such as those emitted by wireless communication devices. The number of mobile phone subscriptions is estimated at [5 billion globally](#).

From [May 24–31 2011, a Working Group of 31 scientists from 14 countries has been meeting at IARC in Lyon, France, to assess the potential carcinogenic hazards from exposure to radiofrequency electromagnetic fields](#). These assessments will be published as Volume 102 of the IARC *Monographs*, which will be the fifth volume in this series to focus on physical agents, after [Volume 55](#) (Solar Radiation), [Volume 75](#) and [Volume 78](#) on ionizing radiation (X-rays, gamma-rays, neutrons, radio-nuclides), and [Volume 80 on non-ionizing radiation \(extremely low-frequency electromagnetic fields\)](#).

IARC's Classification of biological, physical, and chemical agents with respect to carcinogenicity

- Group 1 *Carcinogenic to humans*
- Group 2A *Probably carcinogenic to humans*
- Group 2B *Possibly carcinogenic to humans*
- Group 3 *Not classifiable as to its carcinogenicity to humans*
- Group 4 *Probably not carcinogenic to humans*

What about cell phones?

- WHO's Key Fact List:
- *Mobile phone use is ubiquitous with an estimated 4.6 billion subscriptions globally.*
- *The electromagnetic fields produced by mobile phones are classified by the International Agency for Research on Cancer as **possibly** carcinogenic to humans.*
- *Studies are ongoing to more fully assess potential long-term effects of mobile phone use.*
- *WHO will conduct a formal risk assessment of all studied health outcomes from radiofrequency fields exposure by 2012.*

A few words about strategies

- For reducing cancer risk in people at higher than average risk
- For reducing cancer burden and enhancing the lives of cancer survivors

Following the recommendations for healthy aging is a good start

- Women and men at high risk of cancer or who have had cancer are still at risk for cardiovascular disease, stroke, diabetes, and other common chronic diseases just like other people who have not had cancer.

Strategies for reducing the risk of specific cancers in high-risk women

- Often involve personalized medical decision-making
 - Weigh the risks versus the benefits
- For example, women at high risk for breast cancer and their doctors may discuss the risks and benefits of
 - Chemoprevention with drugs
 - Surgery to remove the breasts
 - Surgery to remove the ovaries (pre-menopausal women)

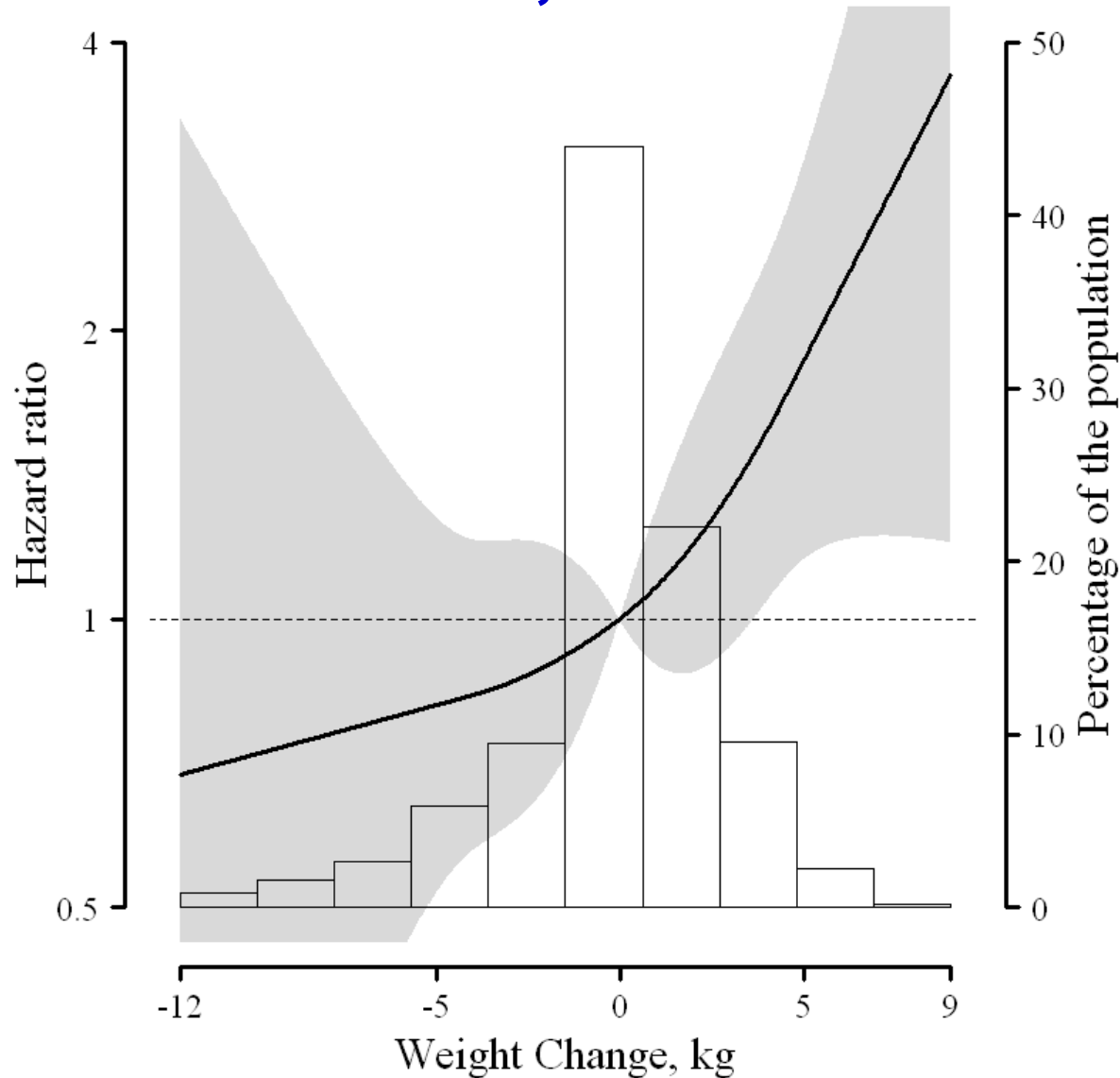
Strategies for reducing risk of breast cancer in high-risk women

- Information:
 - http://www.cancer.gov/cancertopics/pdq/prevention/breast/healthprofessional#Section_186
 - <http://www.uspreventiveservicestaskforce.org/uspstf/uspsbrpv.htm>

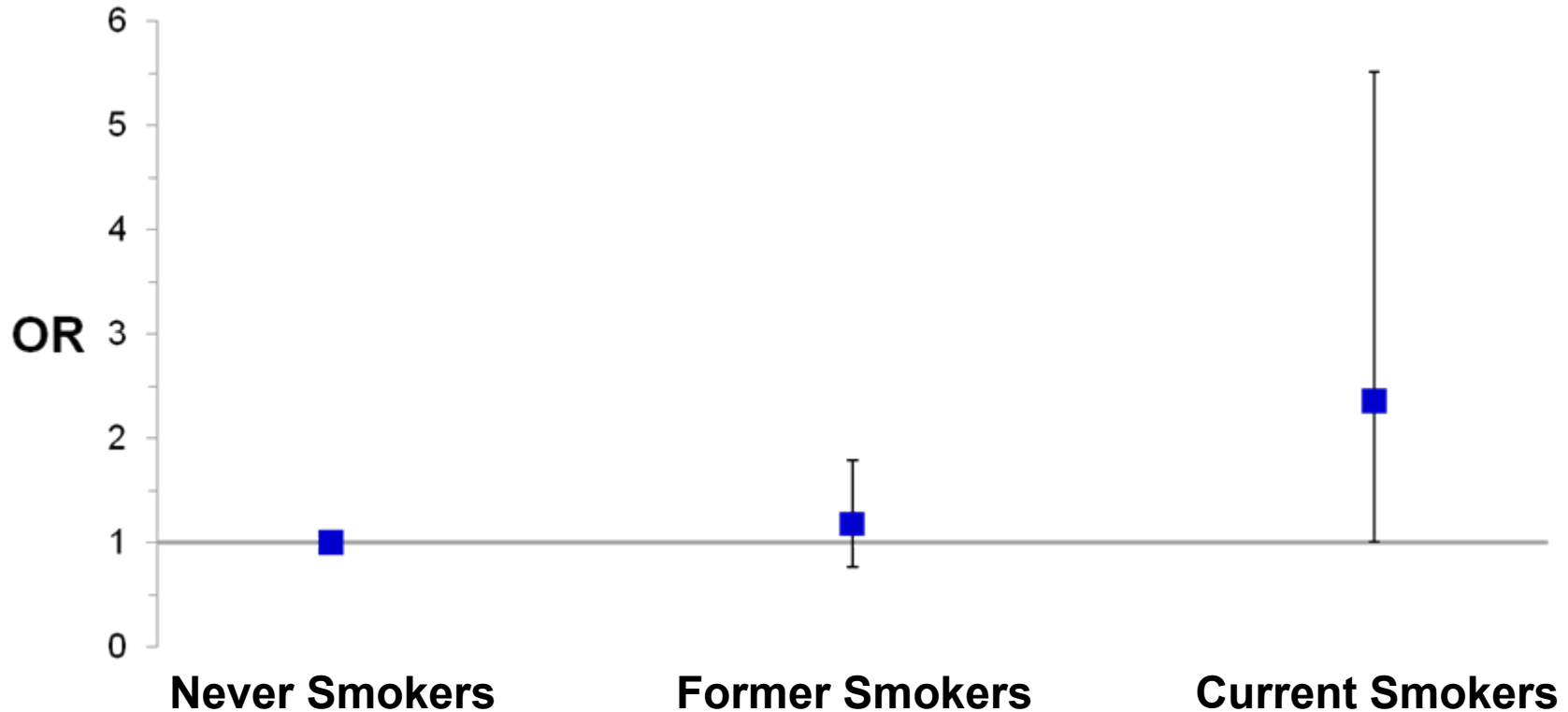
Strategies for reducing cancer burden and enhancing the lives of cancer survivors

- Active area of research
 - Prevention of cancer recurrence
 - Improving and maintaining overall well-being of cancer survivors
- Information for the men in your lives:
 - Two examples of work from my group

Men who gain weight have a higher risk of recurrence, JHH 1993-2006



Men who smoke have a higher risk of prostate cancer recurrence



Smoking status 1 year after surgery

Adjusted for body mass index and physical activity 1 year after surgery, age, race/ethnicity, family history, pre-operative PSA, year of surgery, stage, surgical margins, and grade

For reducing cancer burden and enhancing the lives of cancer survivors

- Information on survivorship:
 - <http://www.cancer.gov/cancertopics/coping/survivorship>
 - <http://www.cancer.org/Treatment/Survivorship/DuringandAfterTreatment/NutritionforPeoplewithCancer/nutrition-and-physical-activity-during-and-after-cancer-treatment-answers-to-common-questions>

Take home messages

- Focus on cancer risk behaviors for which evidence is strong
- Focus on common cancer risk behaviors
- Target your cancer risk behaviors that are risk behaviors for major chronic diseases
- Identify your cancer risk behaviors and thus, your cancer risk
- Engage your family and friends