Obesity trends in the US

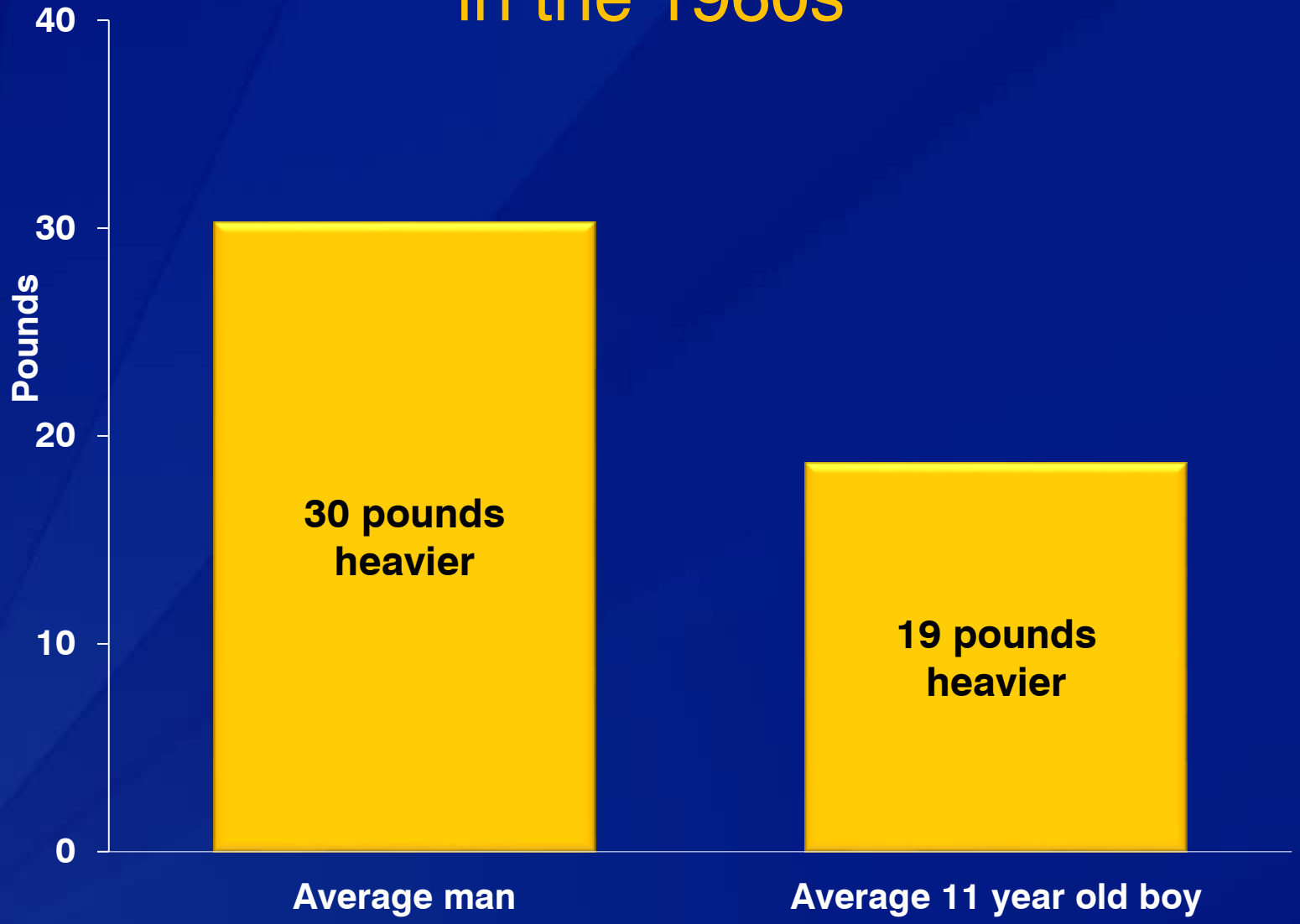
Cynthia Ogden, PhD, MRP

NHANES Analysis Branch Chief and Epidemiologist

National Center for Health Statistics

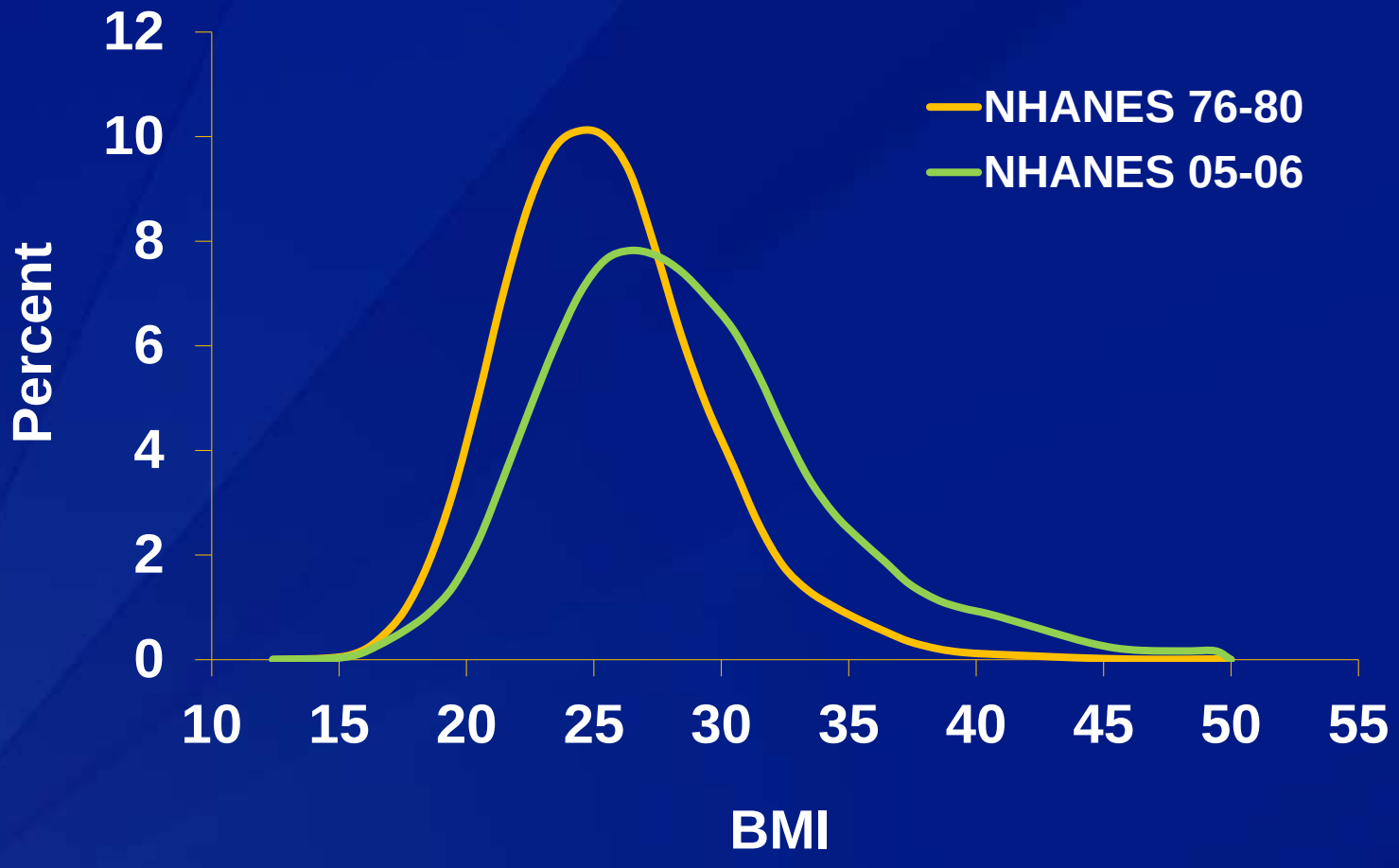
Division of Health and Nutrition Examination Surveys

Americans heavier in 2007-2010 than in the 1960s



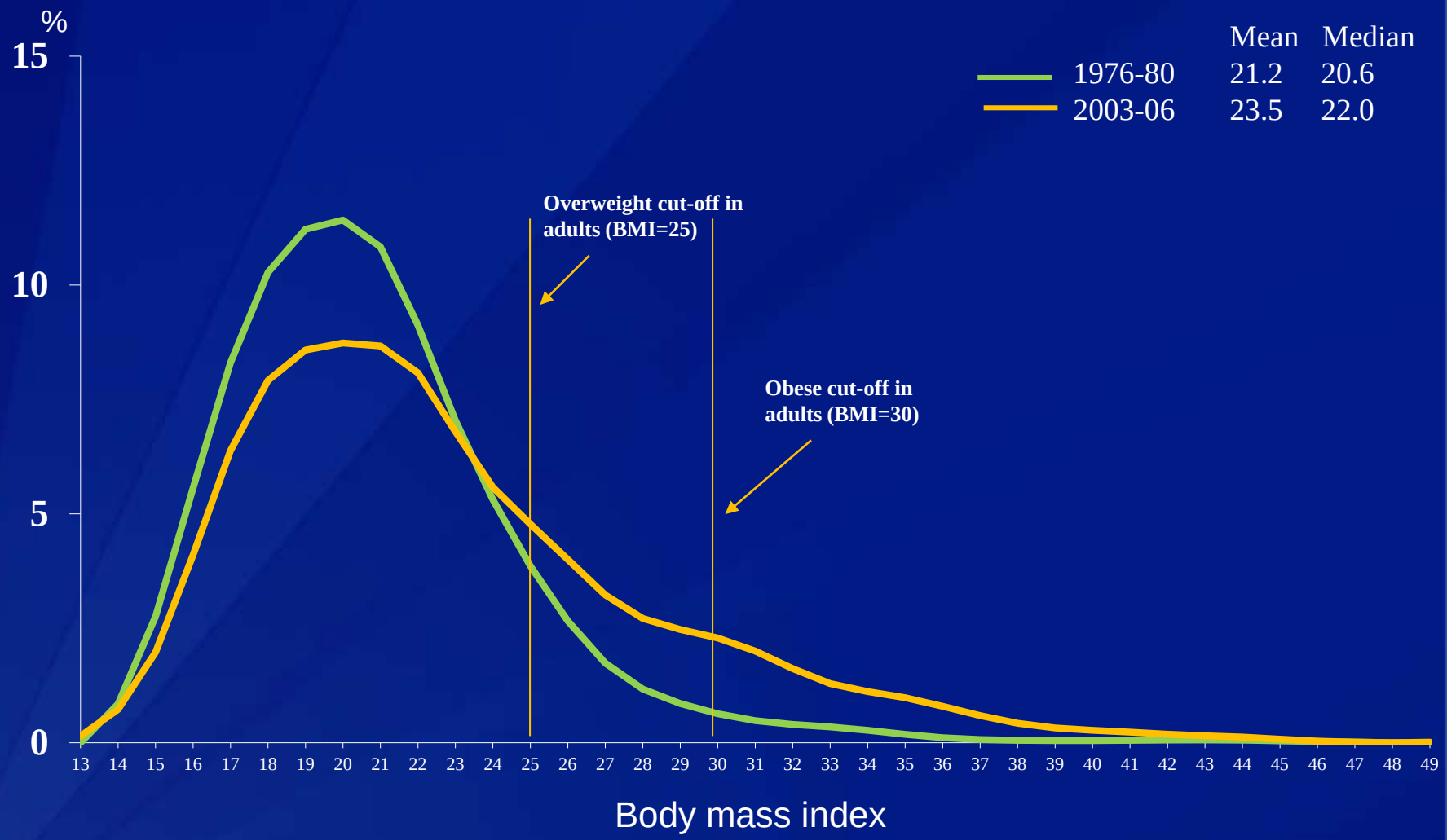
Sources: CDC/NCHS; National Health and Nutrition Examination Survey; www.cdc.gov/nchs/data/ad/ad347.pdf; http://www.cdc.gov/nchs/data/databriefs/db82.htm http://www.cdc.gov/nchs/data/series/sr_11/sr11_252.pdf (NHESI, NHESII, 2007-2010)

Change in BMI distribution, adults 20-74 y



Note: Age-adjusted by the direct method to the year 2000 US Bureau of the Census using age groups 20-39, 40-59 and 60-74 years. Pregnant females were excluded.
SOURCE: CDC/NCHS. National Health and Nutrition Examination Survey; Ogden et al. 2007, NCHS Data Brief

Percentage distribution of adolescents ages 12-19 years, by body mass index (BMI), US, 1976-80 and 2003-2006



Sources: US National Health and Nutrition Examination Survey II 1976-1980; US National Health and Nutrition Examination Survey 2003-2006; Ogden et al. 2011 Epidemiology of Obesity in Children and Adolescents; Springer Series on Epidemiology and Public Health Volume 2, pp 69-93

Research

Original Investigation

Prevalence of Childhood and Adult Obesity in the United States, 2011-2012

Cynthia L. Ogden, PhD; Margaret D. Carroll, MSPH; Brian K. Kit, MD, MPH; Katherine M. Flegal, PhD

Supplemental content at jama.com

IMPORTANCE More than one-third of adults and 17% of youth in the United States are obese, although the prevalence remained stable between 2003-2004 and 2009-2010.

OBJECTIVE To provide the most recent national estimates of childhood obesity, analyze trends in childhood obesity between 2003 and 2012, and provide detailed obesity trend analyses among adults.

DESIGN, SETTING, AND PARTICIPANTS Weight and height or recumbent length were measured in 9120 participants in the 2011-2012 nationally representative National Health and Nutrition Examination Survey.

MAIN OUTCOMES AND MEASURES In infants and toddlers from birth to 2 years, high weight for recumbent length was defined as weight for length at or above the 95th percentile of the sex-specific Centers for Disease Control and Prevention (CDC) growth charts. In children and adolescents aged 2 to 19 years, obesity was defined as a body mass index (BMI) at or above

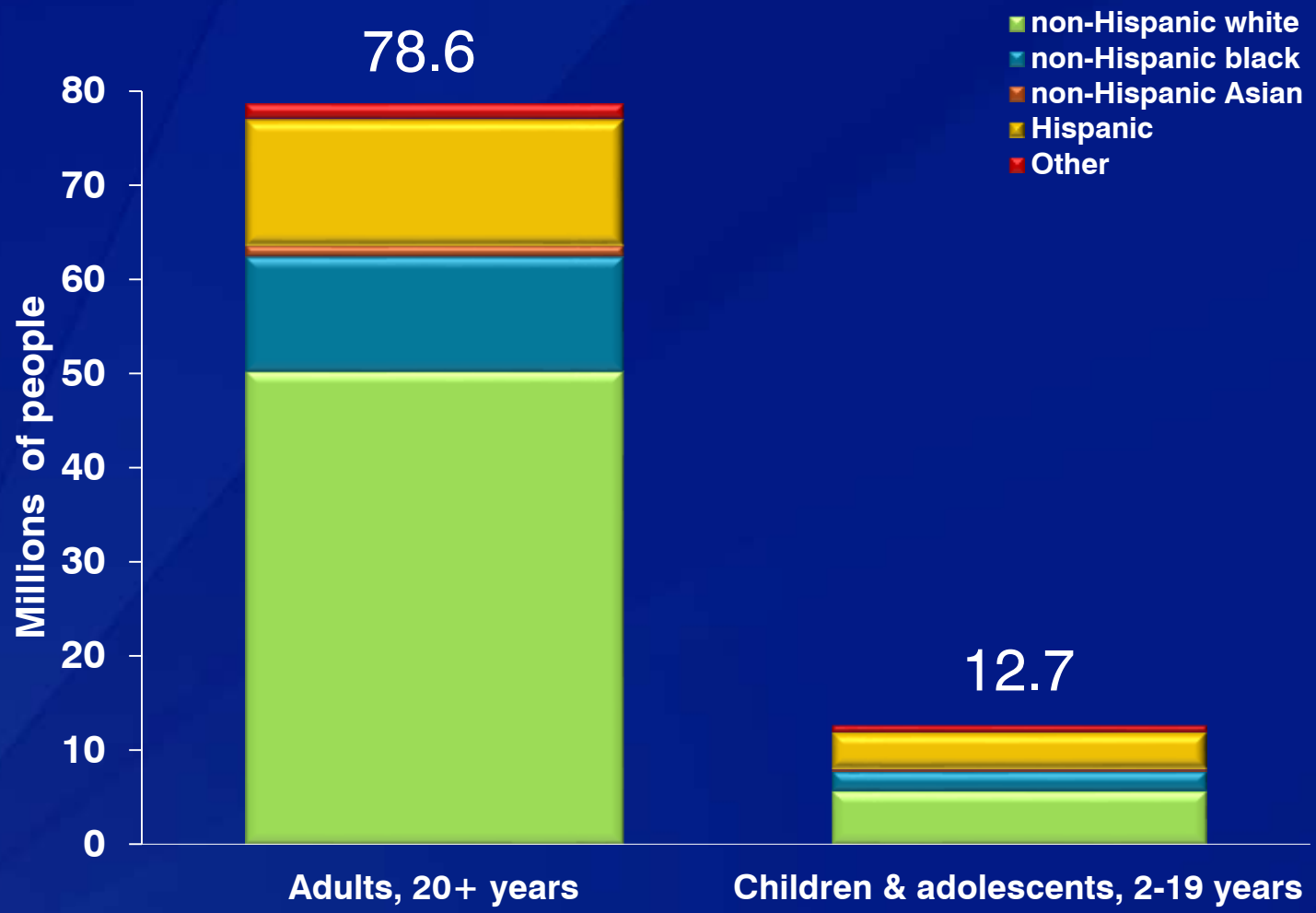
Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adultobesity in the United States, 2011-2012. JAMA. 2014 Feb 26;311(8):806-14. doi:10.1001/jama.2014.732. PubMed PMID: 24570244.

Prevalence of obesity in the US, 2011-2012

- **16.9% of children & teens 2-19 y**
- **34.9% of adults ≥20 y**

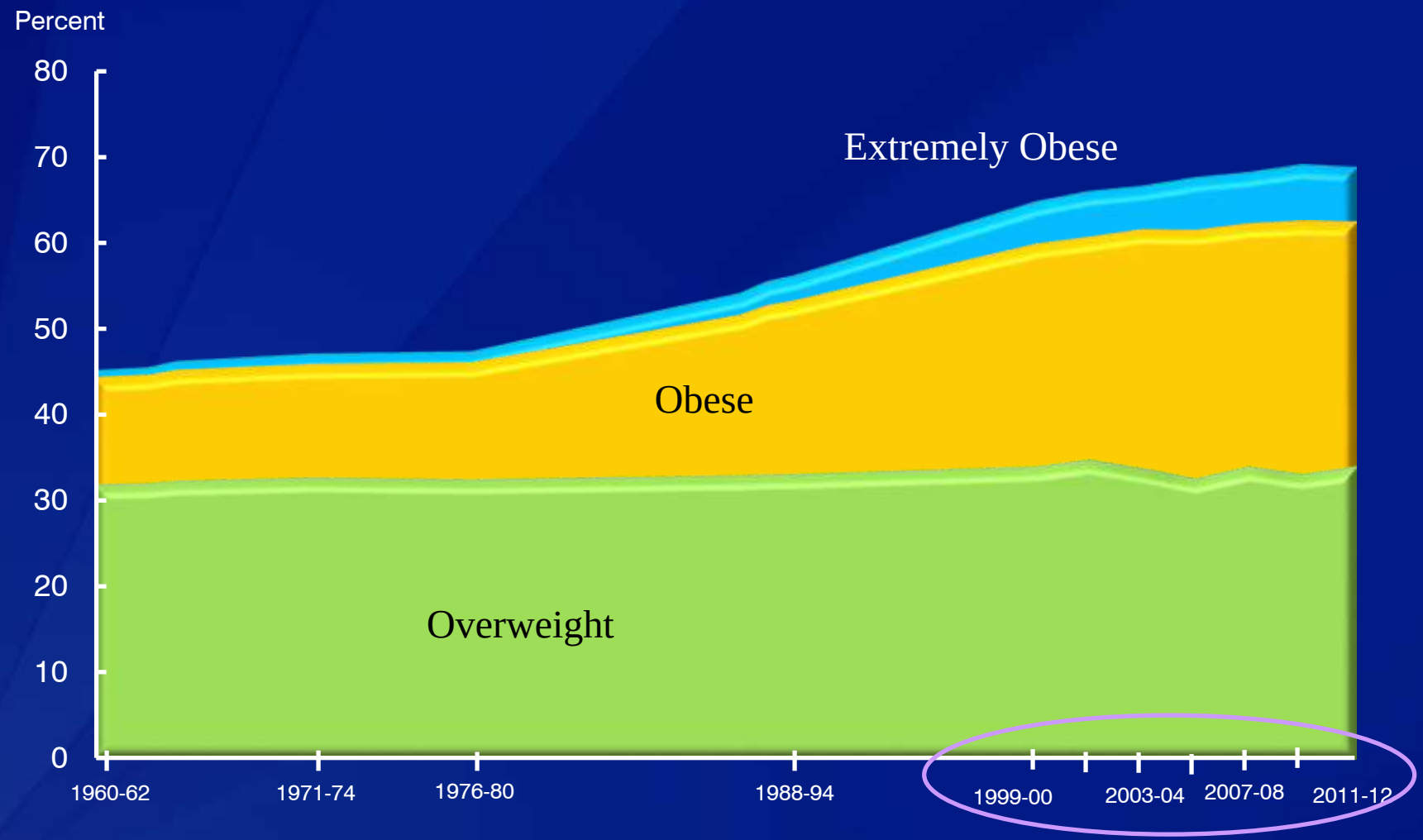
Source: CDC/NCHS, National Health and Nutrition Examination Survey, 2011-2012; Ogden et al. NCHS Data Brief 2013 and Ogden et al. JAMA 2014

90+ million obese individuals in the US



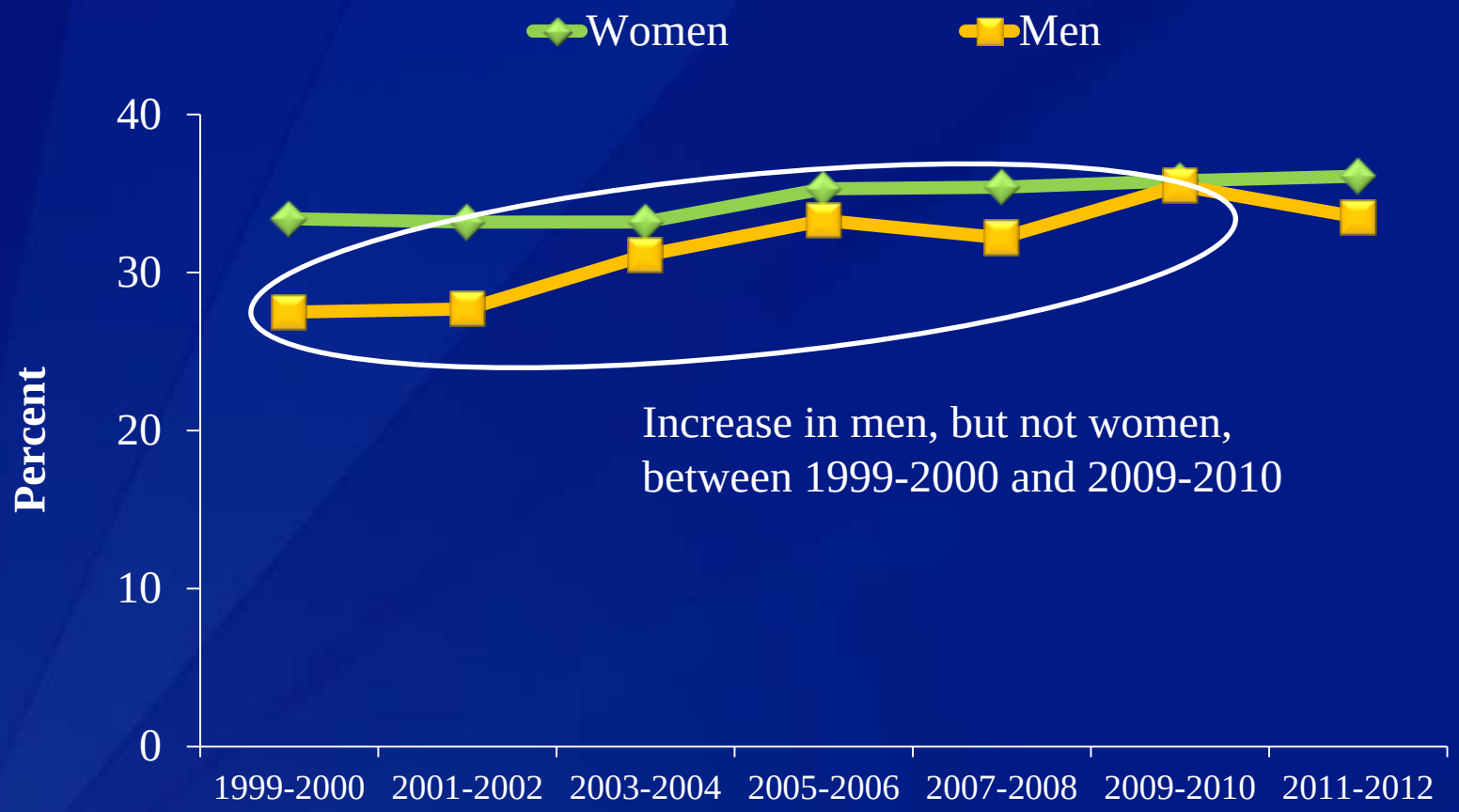
Source: CDC/NCHS, National Health and Nutrition Examination Survey, 2011-2012; Ogden et al. NCHS Data Brief 2013 and Ogden et al. JAMA 2014

Obesity but not overweight increased in 1980s and 1990s in adults; more recently obesity levels have plateaued



SOURCE: CDC/NCHS. National Health and Nutrition Examination Survey; http://www.cdc.gov/nchs/data/hestat/obesity_adult_09_10/obesity_adult_09_10.htm

Most recent obesity trends in adults 20+y: 2 year surveys



Source: CDC/NCHS, National Health and Nutrition Examination Survey; Ogden et al. 2012, NCHS data brief; Ogden et al 2014 JAMA.

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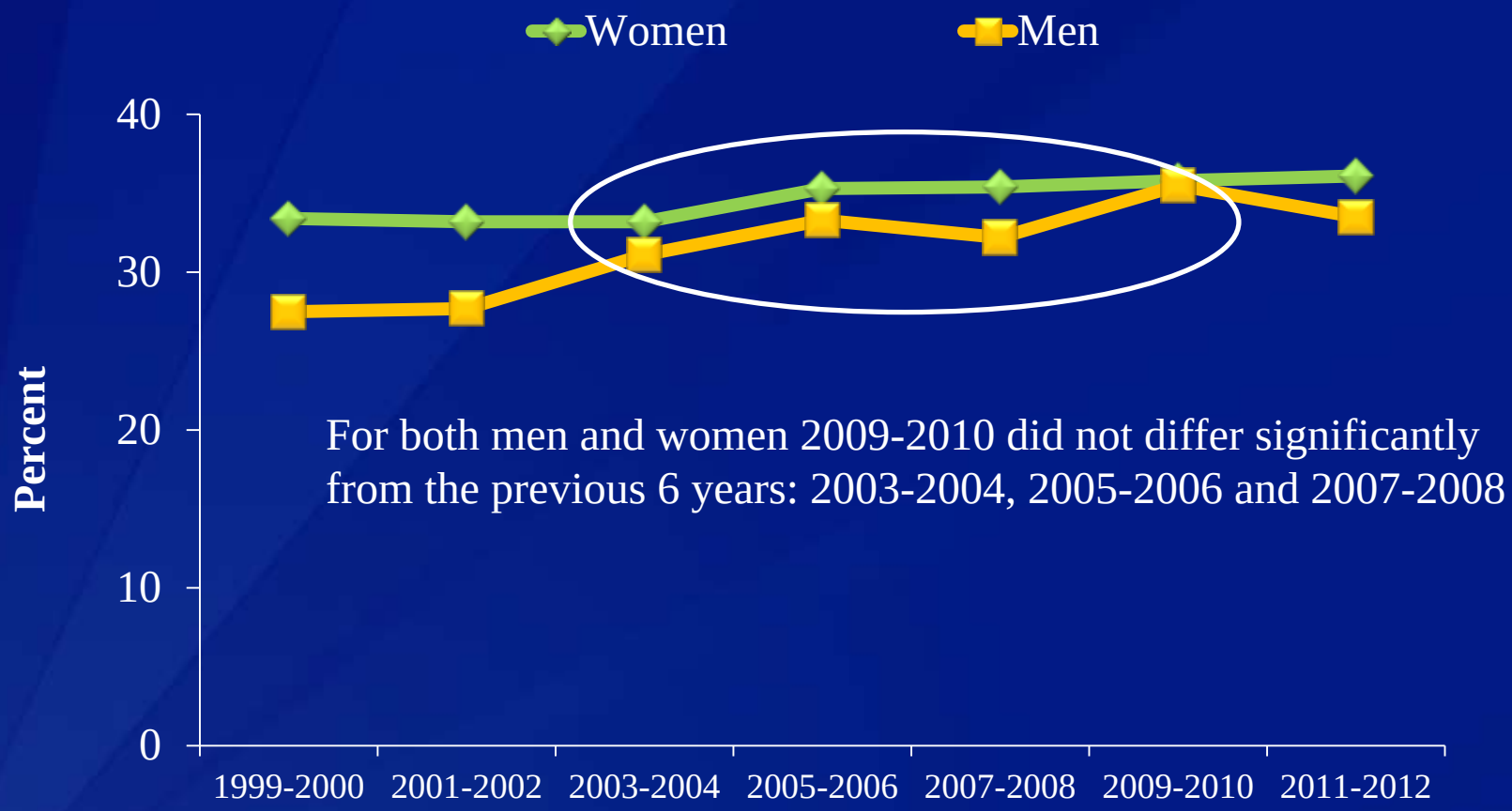

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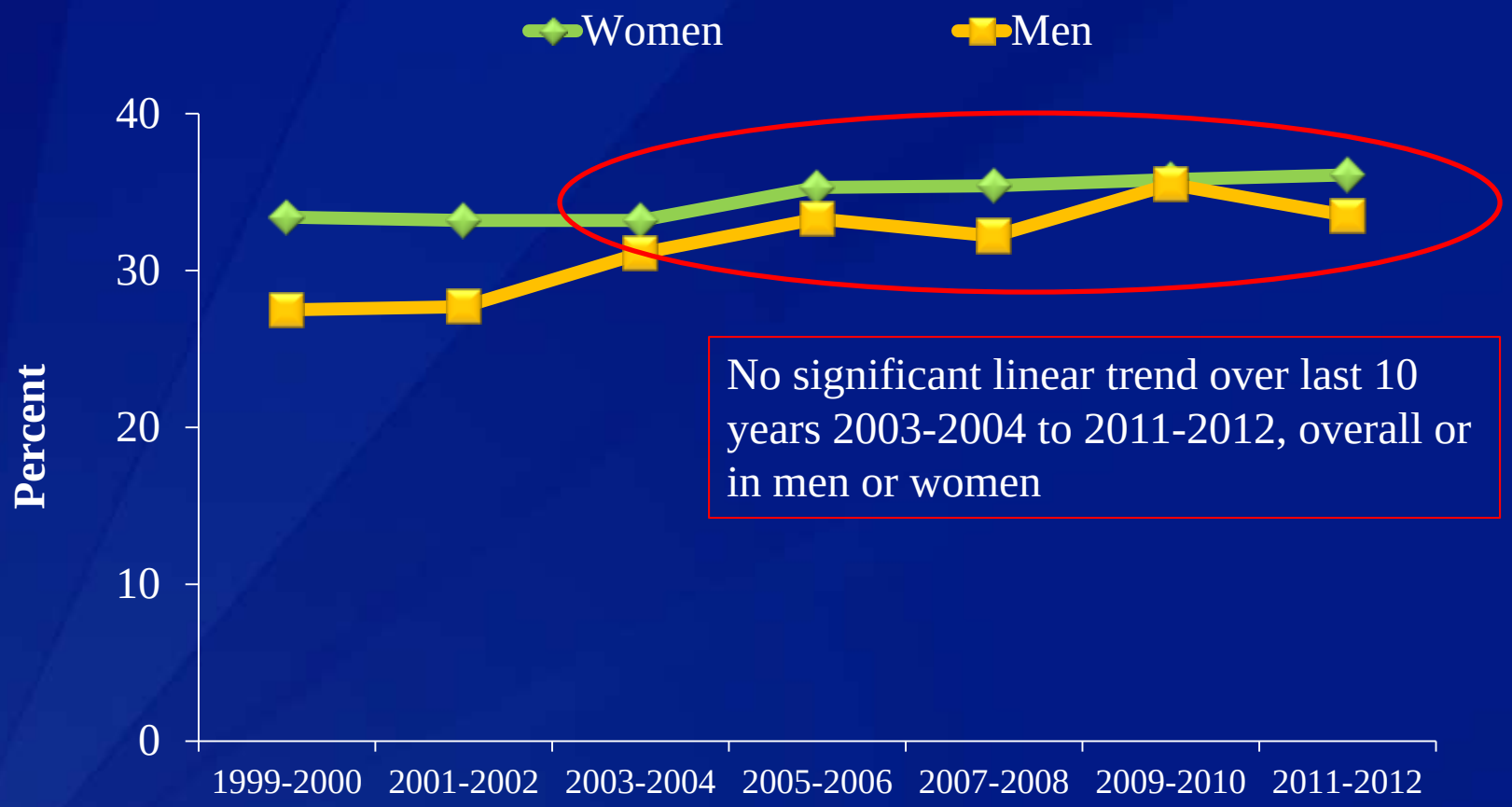
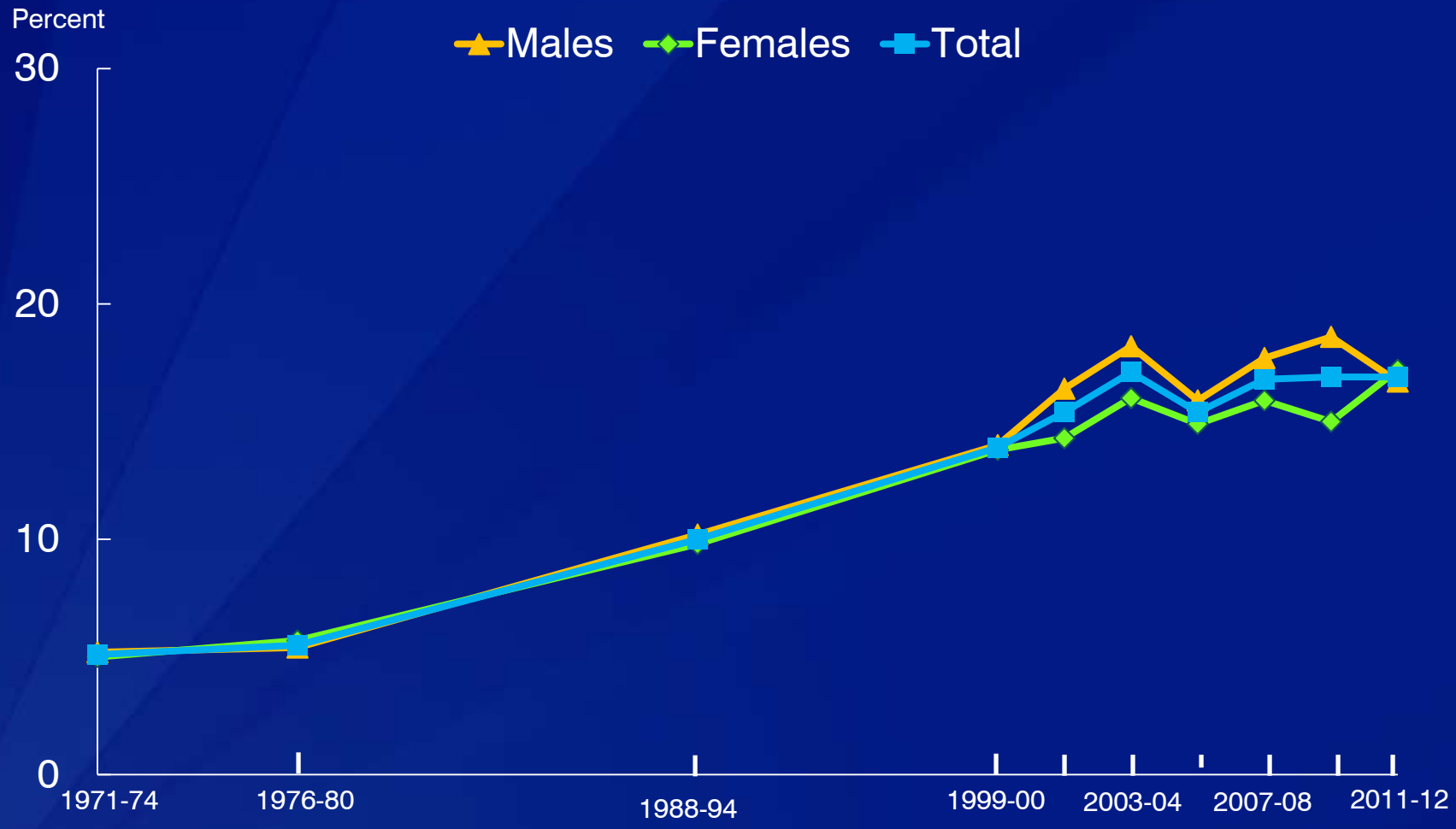


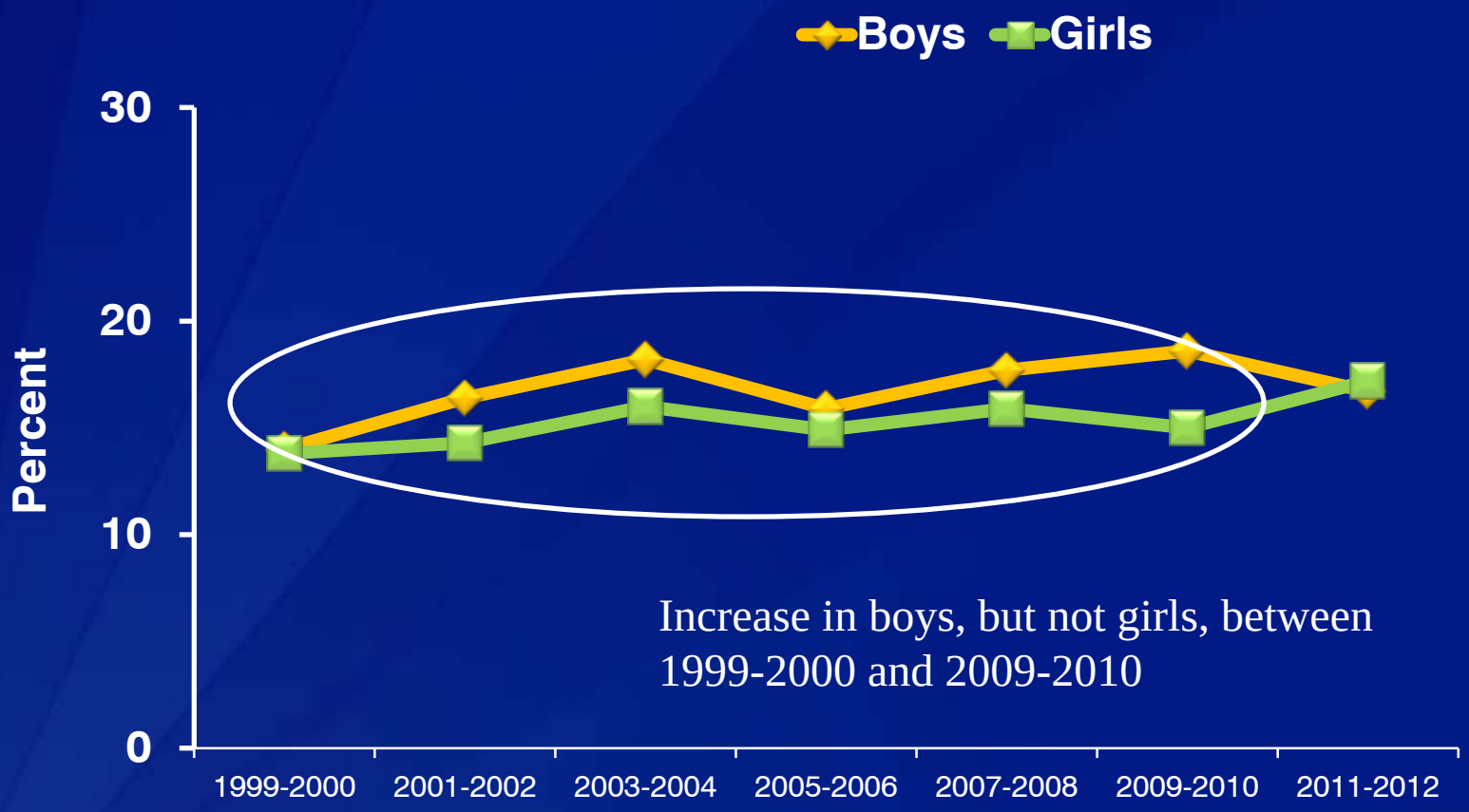
Source: CDC/NCHS, National Health and Nutrition Examination Survey; Ogden et al. 2012, NCHS data brief; Ogden et al 2014 JAMA.

Trends in obesity among children and adolescents 2-19 years, by sex: US, 1971-74 through 2011-12



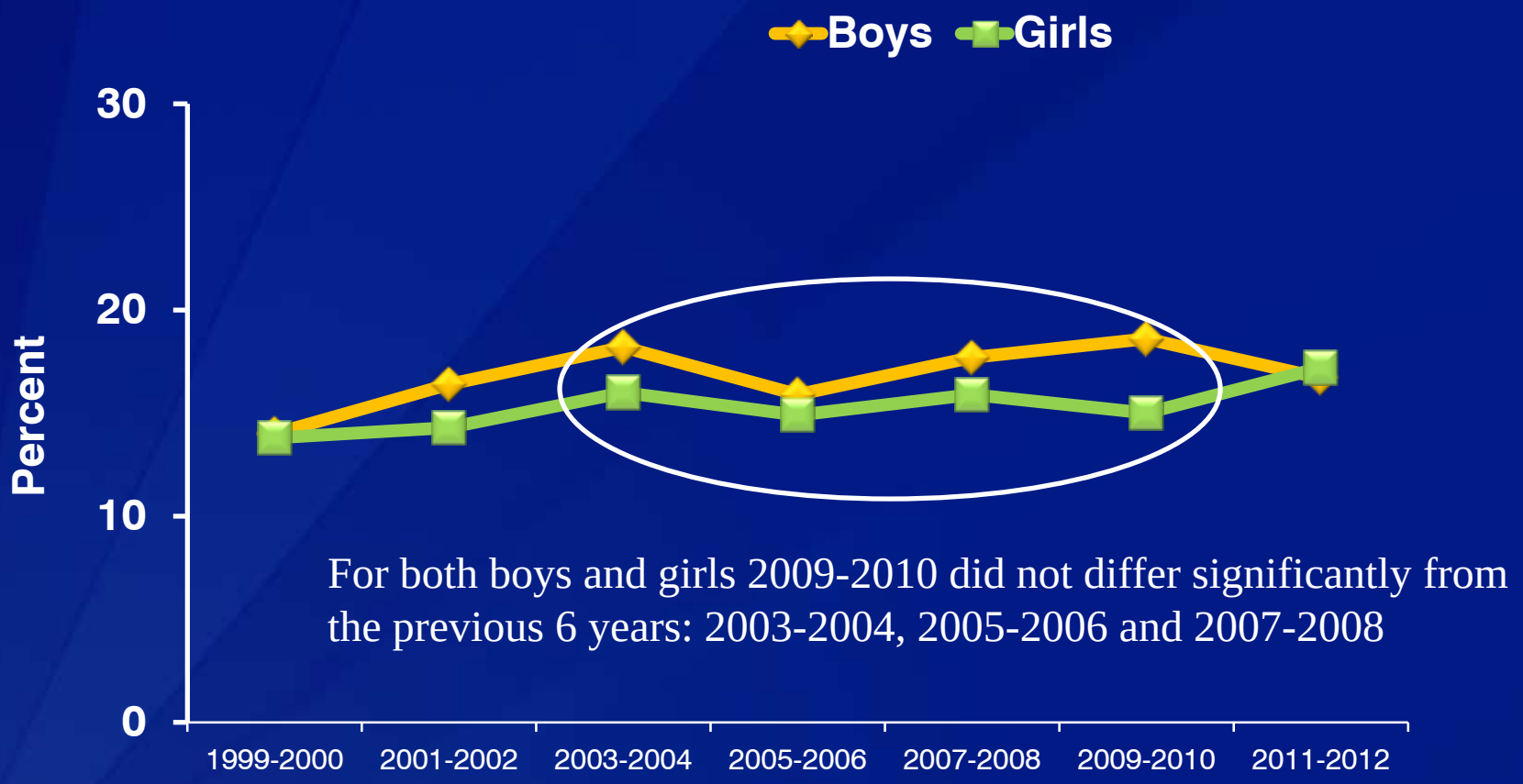
Source: CDC/NCHS. National Health Examination Surveys II (ages 6-11), III (ages 12-17), and National Health and Nutrition Examination Surveys (NHANES) I-III, and NHANES 1999-2000, 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010 and 2011-2012.

Most recent obesity trends in youth 2-19 y: 2-year surveys



Source: CDC/NCHS, National Health and Nutrition Examination Survey; Ogden et al. 2012, NCHS data brief; Ogden et al. 2014 JAMA

Most recent obesity trends in youth 2-19 y: 2-year surveys



For both boys and girls 2009-2010 did not differ significantly from the previous 6 years: 2003-2004, 2005-2006 and 2007-2008

Source: CDC/NCHS, National Health and Nutrition Examination Survey; Ogden et al. 2012, NCHS data brief; Ogden et al. 2014 JAMA

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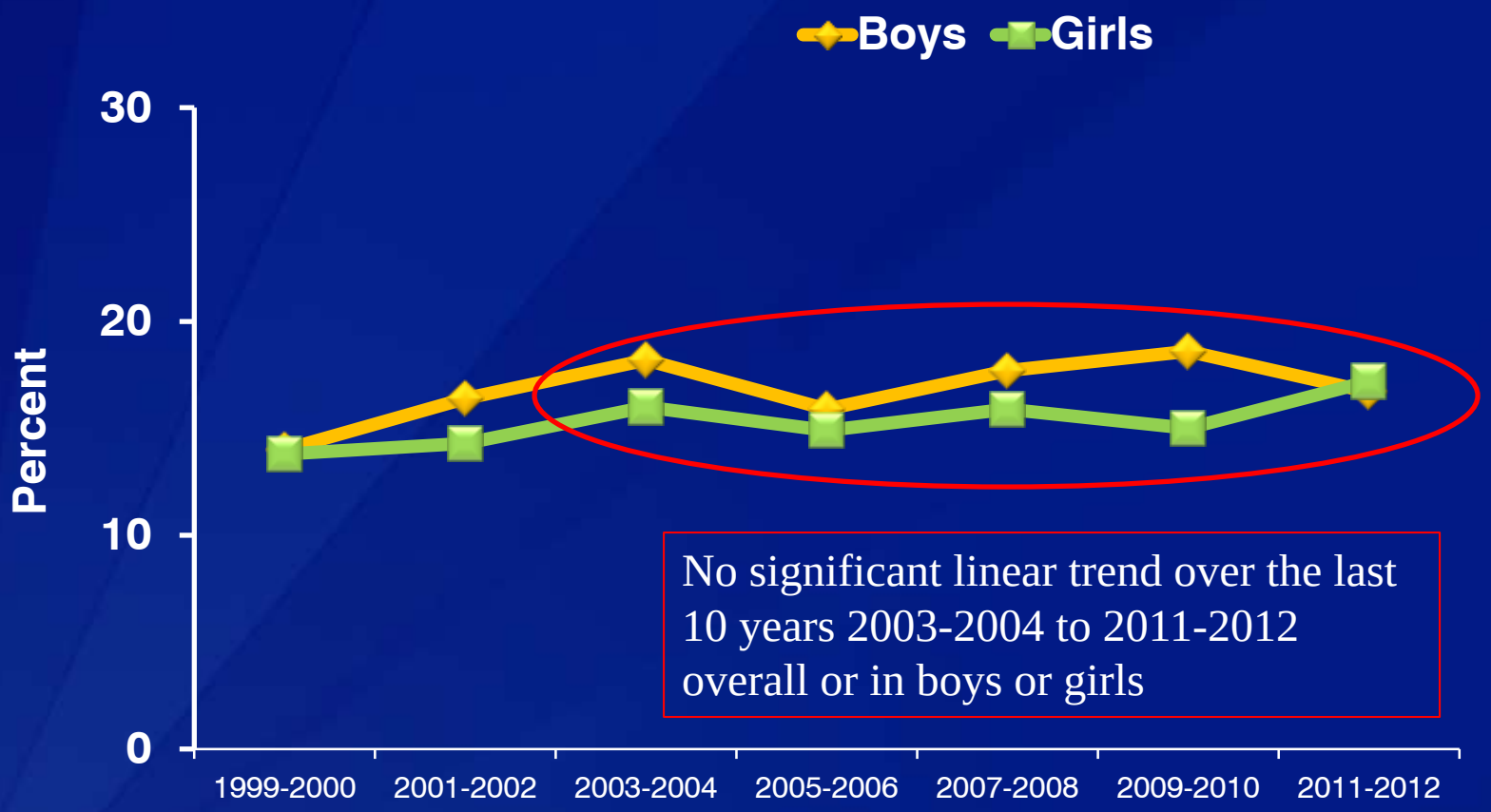
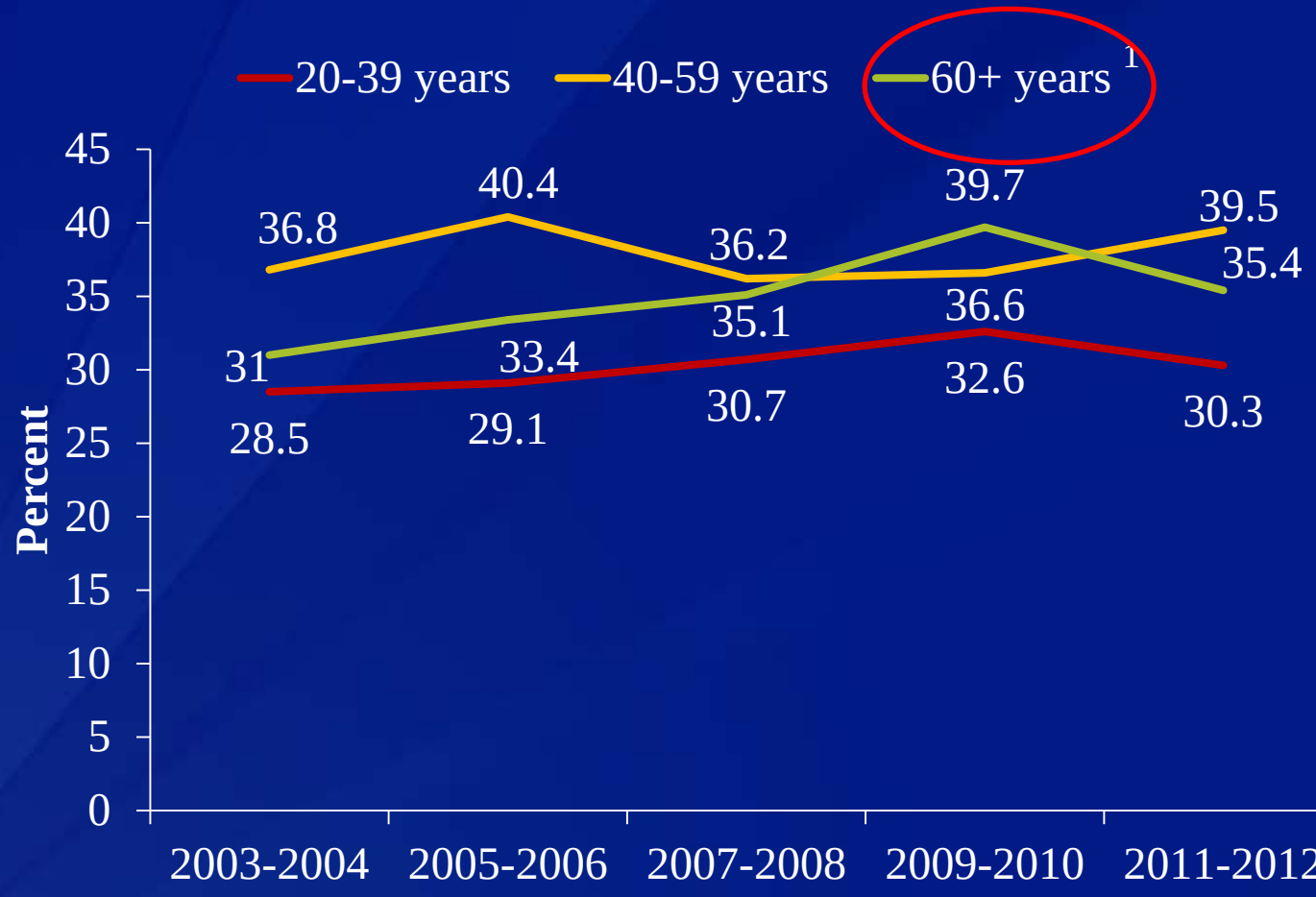


Source: CDC/NCHS, National Health and Nutrition Examination Survey; Ogden et al. 2012, NCHS data brief; Ogden et al. 2014 JAMA

Subgroup analyses of 10 year trends

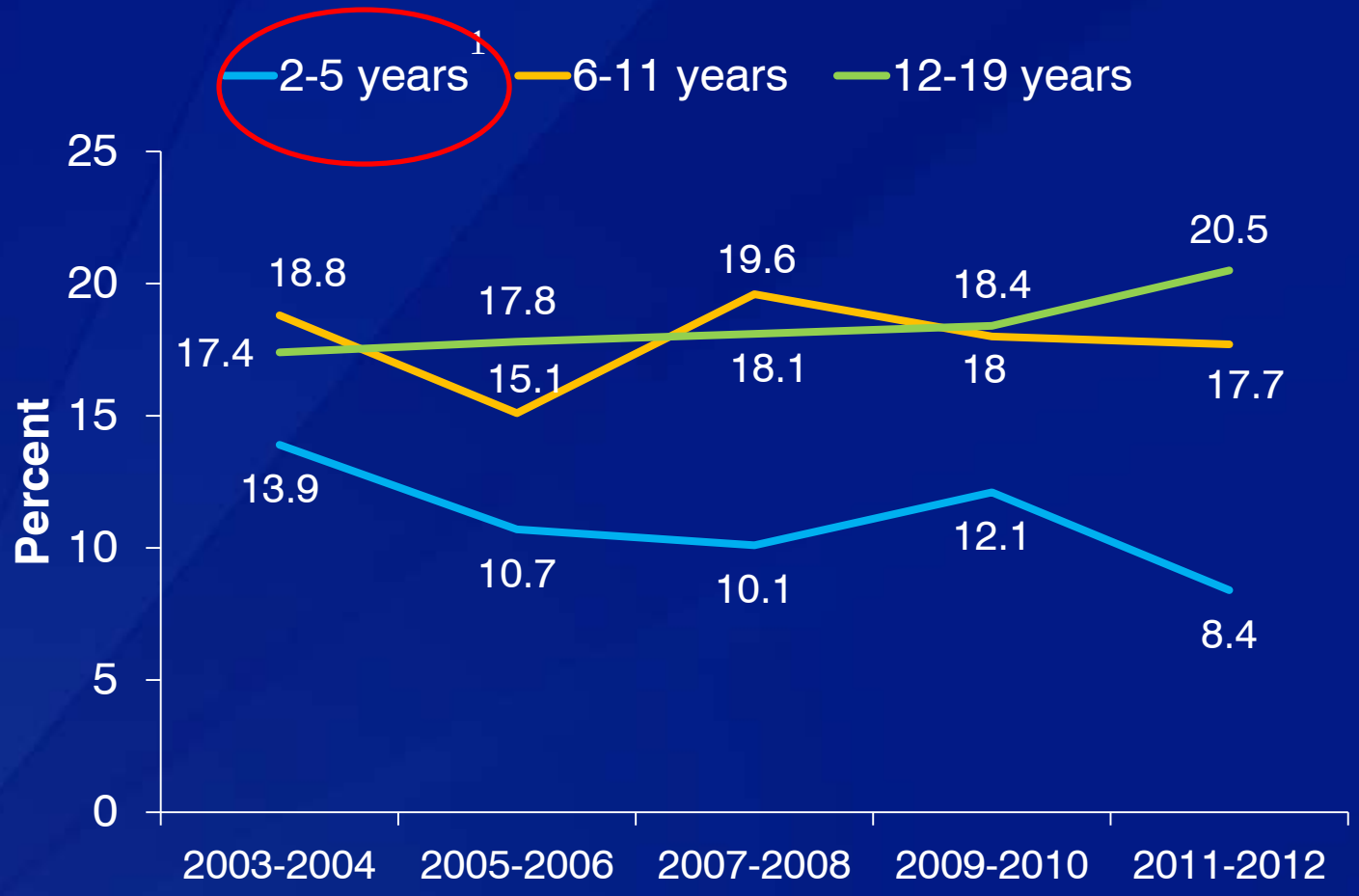
Trends in obesity prevalence among adults 20+ years, by age, US, 2003-2004 to 2011-2012



1. p = .004 for linear trend

SOURCE: CDC/NCHS, National Health and Nutrition Examination Surveys; Ogden et al. 2014 JAMA

Trends in obesity prevalence among youth 2-19 years, by age, US, 2003-2004 to 2011-2012



1 p=.03 for linear trend

SOURCE: CDC/NCHS, National Health and Nutrition Examination Surveys; Ogden et al. 2014 JAMA

Embargoed Until:
February 25, 2014; 4 p.m. ET

Contact: Division of News & Electronic Media
(404) 639-3286

New CDC data show encouraging development in obesity rates among 2 to 5 year olds

Though overall obesity rates remain unchanged, rates in young children improve

The latest CDC obesity data, published in the February 26 issue of the *Journal of the American Medical Association,* show a significant decline in obesity among children aged 2 to 5 years. Obesity prevalence for this age group went from nearly 14 percent in 2003-2004 to just over 8 percent in 2011-2012 – a decline of 43 percent – based on CDC's National Health and Nutrition Examination Survey (NHANES) data. Although the

THE WHITE HOUSE
Office of the First Lady

FOR IMMEDIATE RELEASE
February 26, 2014

OBESITY RATES ON THE DECLINE AMONG YOUNG CHILDREN

New CDC study shows significant decline in prevalence of obesity over a sustained period of time

Washington, DC – As the First Lady's *Let's Move!* initiative celebrates its fourth anniversary, we are seeing real progress. A new study out this week shows that the rates of childhood obesity are beginning to decline among children ages two to five.

HEALTH

Obesity Rate for Young Children Plummets 43% in a Decade

By SABRINA TAVERNISE FEB. 25, 2014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What is FOIA?
The Freedom of Information Act (FOIA) is a law that gives you the right to access information from the federal government. It is often described as the law that keeps citizens in the know about their government.
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FOIA DATA AT A GLANCE - FY 2008 through FY 2013
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BMI | 7:30 AM | MAR 28, 2014

Reports of a Drop in Childhood Obesity Are Overblown

By EMILY OSTER

It is no secret that the United States has a weight problem. Roughly 30 percent of American adults are clinically obese, or have a body mass index of at least 30. That's more than 175 pounds for someone who's 5 foot 4, the average height of an American woman; or more than 203 pounds for

TOP STORIES

Research

Original Investigation

Prevalence and Trends in Obesity and Severe Obesity Among Children in the United States, 1999-2012

Asheley Cockrell Skinner, PhD; Joseph A. Skelton, MD, MS

IMPORTANCE Childhood obesity is the focus of public health efforts and accurate estimates of the prevalence and severity of obesity are needed for policy decisions and directions for future research.

OBJECTIVE To examine the prevalence of obesity and severe obesity over time for 14 years of the continuous National Health and Nutrition Examination Survey, 1999 to 2012, and to examine differences in the trends by age, race/ethnicity, and sex.

DESIGN, SETTING, AND PARTICIPANTS Representative sample (N = 26 690) of children in the United States, ages 2 to 19 years, in repeated cross-sections of the National Health and Nutrition Examination Survey, 1999 to 2012.

MAIN OUTCOMES AND MEASURES Prevalence of overweight (body mass index [BMI] ≥ 85th percentile), obesity (BMI ≥ 95th percentile for age and sex), class 2 obesity (BMI ≥ 120% of the 95th percentile or BMI ≥ 35), and class 3 obesity (BMI ≥ 140% of the 95th percentile or

Supplemental content at jamapediatrics.com

Skinner AC, Skelton JA. Prevalence and Trends in Obesity and Severe ObesityAmong Children in the United States, 1999-2012. JAMA Pediatr. 2014 Apr 7. doi:10.1001/jamapediatrics.2014.21. [Epub ahead of print] PubMed PMID: 24710576.

Severe obesity on the rise among children in the U.S.

A new analysis led by a UNC researcher ***finds that all classes of obesity in children have increased over the last 14 years.*** *In addition, there is a troubling upward trend in the more severe forms of childhood obesity.*

Embargoed until 4 p.m. EDT Monday, April 7, 2014

CHAPEL HILL, N.C. – A new study led by a University of North Carolina School of Medicine researcher finds little to cheer about in the fight against childhood obesity, despite a recent report to the contrary.

The study, published April 7 in *JAMA Pediatrics*, found that all classes of obesity in U.S. children have increased over the last 14 years. Perhaps most troubling, the study found an upward trend in the more severe forms of obesity – those in which children have a body mass index (BMI) that is 120 to 140 percent higher than their peers.

…

These findings are in contrast to a recent report that showed a decline in obesity among young children in the last decade. Dr. Skinner explains the disparity: "Both our study and the prior one used the National Health and Nutrition Examination Survey. However, the earlier study examined only the last decade, while we make use of all available years — from 1999 to 2012. In 2003, there was an unusual uptick in obesity among young children, which led to the appearance of a significant decline. However, when we look at the bigger picture, that change is not there."

Concerns about our recent trend analysis

- **Oversampling of non-Hispanic Asians in 2011-2012**
  - Sample weights adjust for oversampling
- **No adjustment for race/ethnicity**
  - Adjusted analyses - similar results (p values .03 versus .02)
  - Unadjusted analyses show overall population trends
- **No adjustment for multiple statistical tests**
  - We provided p-values for reader
- **Start of trends in 2003-2004**
  - Previous work no change 2003-04 to 2009-10 in overall youth
  - Last 10 years
- **Bouncing of estimates**
  - Combining 2 year cycles

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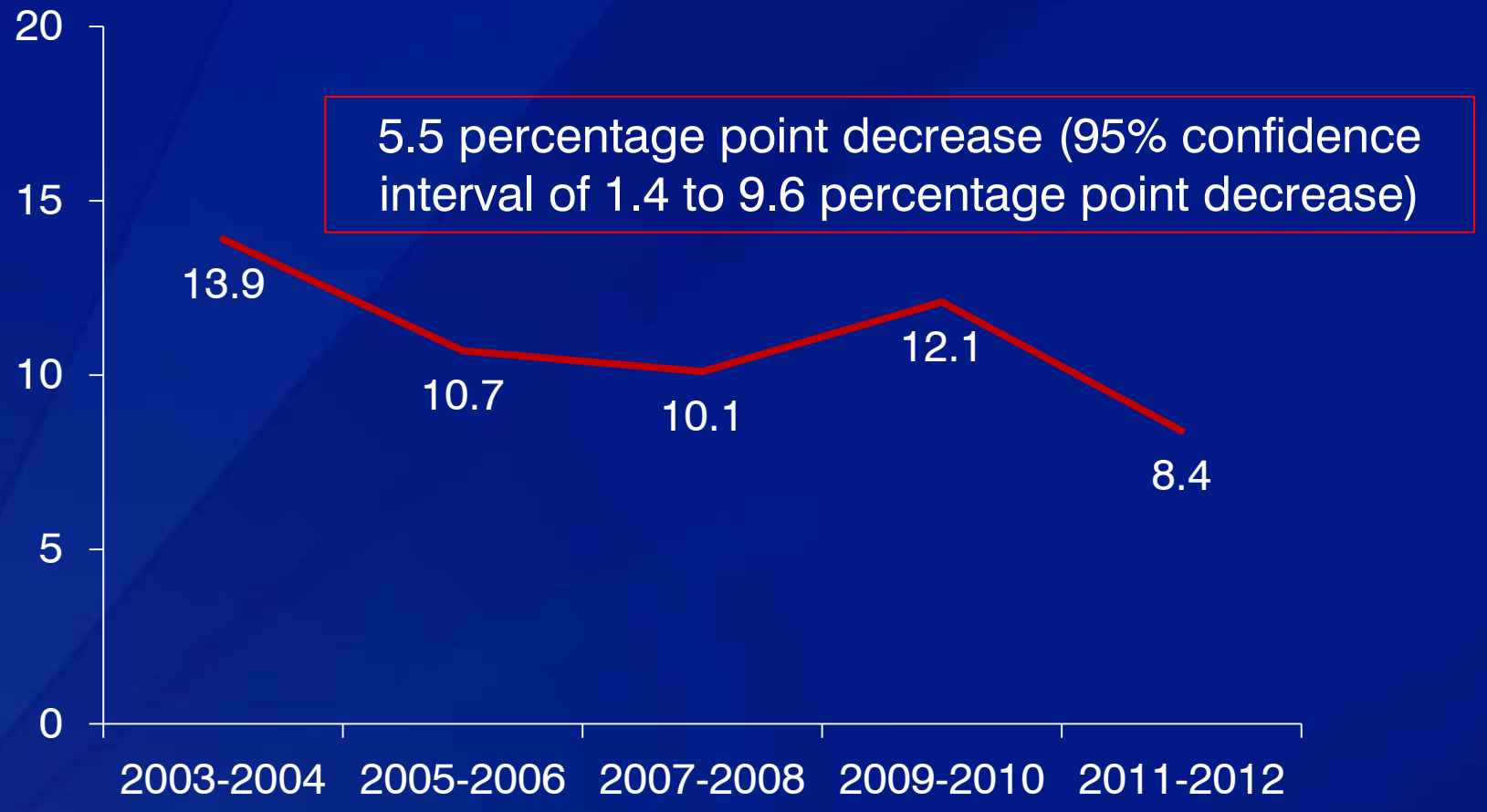
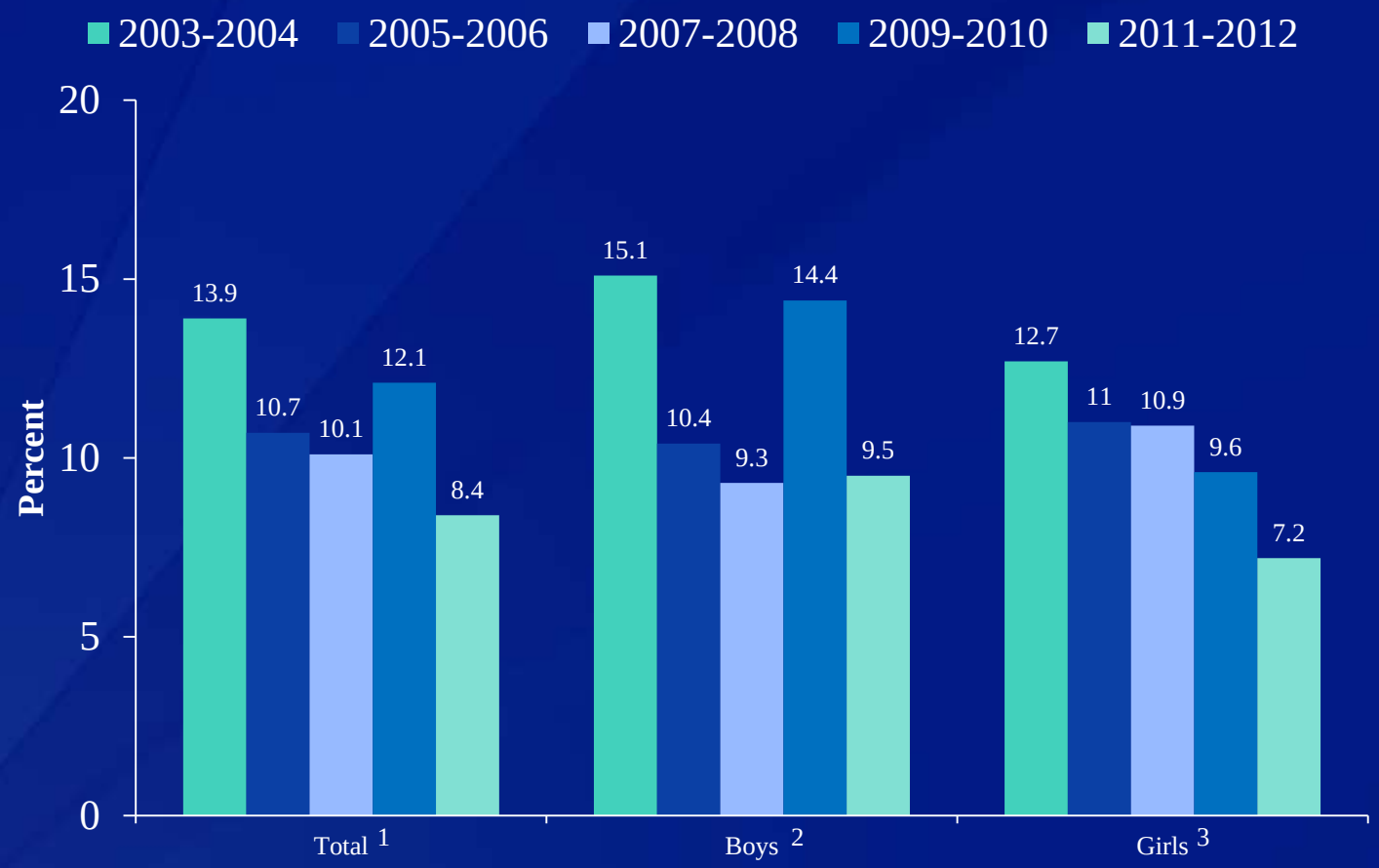
Trends in obesity prevalence among youth 2-5 years, by age, US, 2003-2004 to 2011-2012



SOURCE: CDC/NCHS, National Health and Nutrition Examination Surveys

Trends in obesity prevalence among children 2-5 years, US, 2003-2004 to 2011-2012



1. p=.03 for linear trend
2. p=.21 for linear trend
3. p=.07 for linear trend

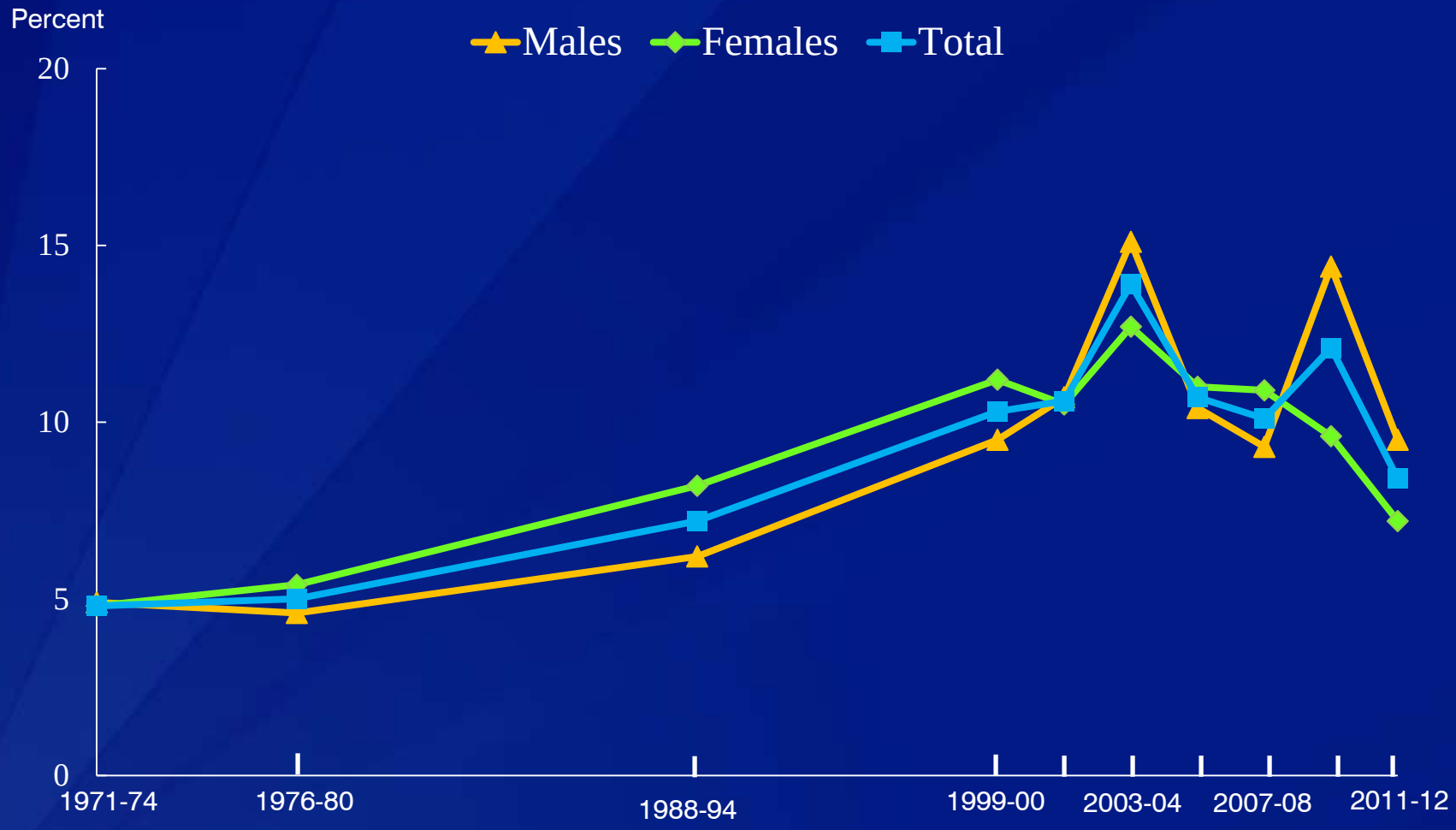
SOURCE: CDC/NCHS, National Health and Nutrition Examination Surveys, estimates are weighted

Trends in obesity prevalence among children 2-5 years, US, 1999-2000 to 2011-2012

1. p=.40 for linear trend
2. p=.88 for linear trend
3. p=.18 for linear trend

SOURCE: CDC/NCHS, National Health and Nutrition Examination Surveys, estimates are weighted

Trends in obesity among children and adolescents 2-5 years, by sex: US, 1971-74 through 2011-12



Source: CDC/NCHS. National Health Examination Surveys II (ages 6-11), III (ages 12-17), and National Health and Nutrition Examination Surveys (NHANES) I-III, and NHANES 1999-2000, 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010 and 2011-2012.

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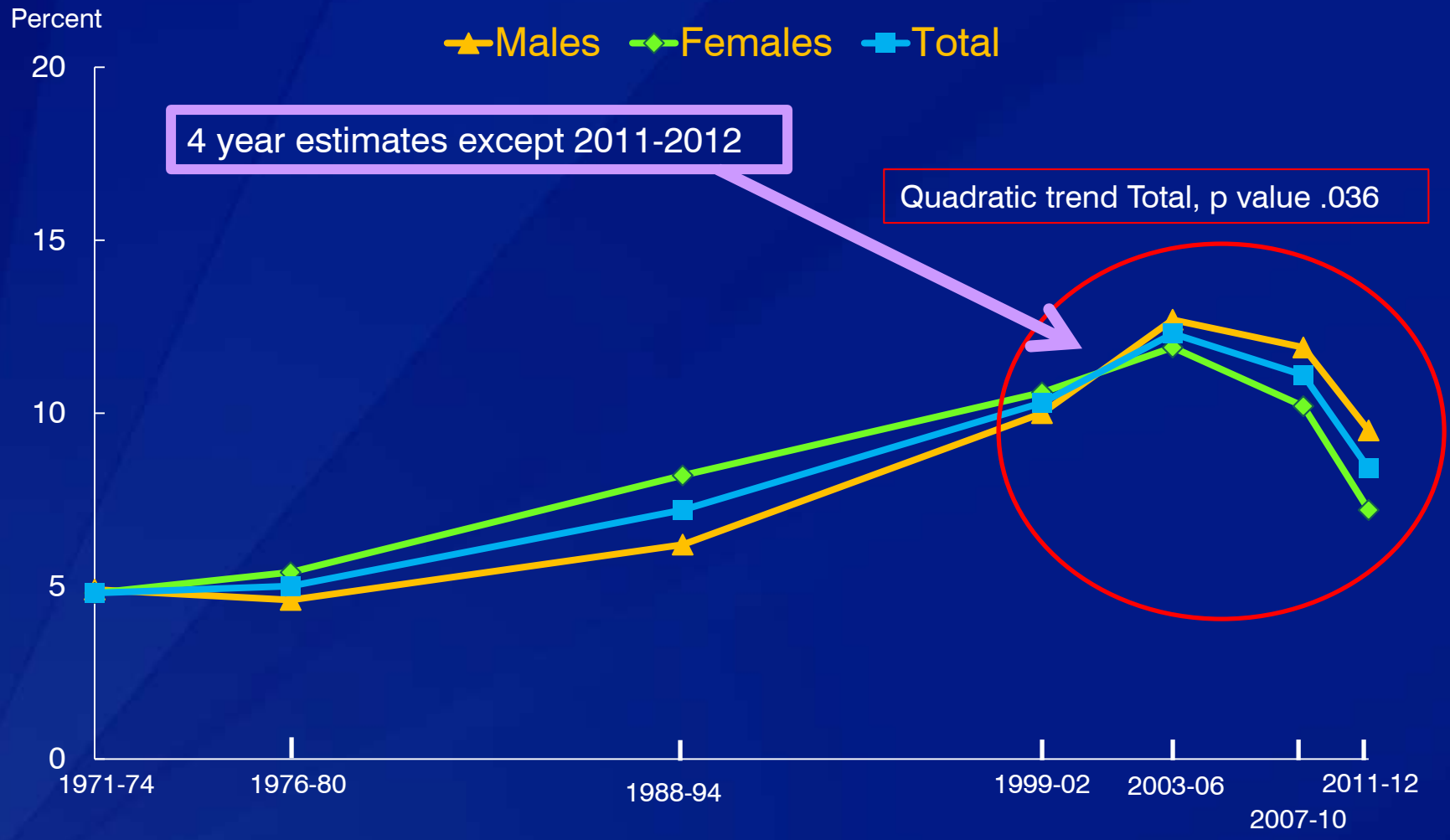

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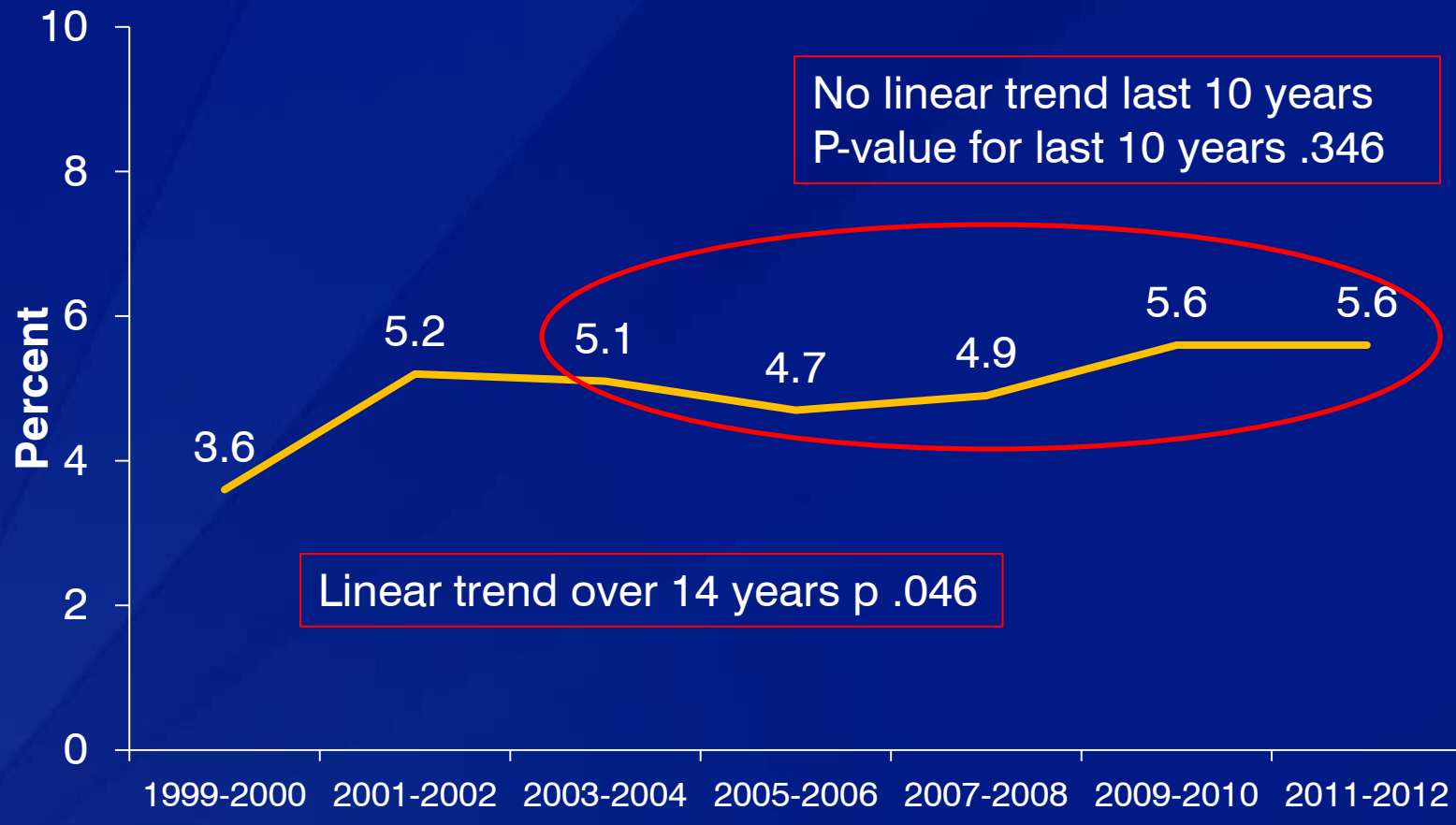
Trends in “extreme” obesity prevalence among youth 2-19 years, US, 1999-2000 to 2011-2012



SOURCE: CDC/NCHS, National Health and Nutrition Examination Surveys, “extreme” obesity defined as 120% of the 95th percentile


A Simple Theory, and a Proposal, on H.I.V. in Africa


Disease of Pakistan's Poor Now Worries the Affluent


A Soldier's War on Pain


De Ni

HEALTH | NEWS ANALYSIS

Obesity Studies Tell Two Stories, Both Right

By SABRINA TAVERNISE APRIL 14, 2014

BASED ON THE INCREDIBLE TRUE STORY

WASHINGTON — Researchers at the University of North Carolina published a paper last week that introduced another wrinkle into the debate about childhood obesity. They disputed recent findings that obesity among young children had fallen since 2004, arguing that a longer view — using data all the way back to 1999 — showed that these youngsters were not really getting any thinner.

So which view is correct? The answer seems to be both.

Obesity has become a major health problem in the United States, affecting about 17 percent of Americans ages 2 to 19, up from about 5 percent in the early 1970s. The rate rose for years but then leveled off, and the current debate centers on whether obesity has begun to decline in the youngest of these children.

The question has drawn considerable attention not just because scientists

Obesity trends

- **Between 2003-2004 and 2011-2012**
  - No change in obesity among all adults 20+ y and youth 2-19 y
  - No change in extreme obesity among youth 2-19 y
  - Cautious interpretation of subgroup analysis
    - Decline in 2-5 year olds girls
    - Increase in adult women 60 years and older
- **NHANES 2013-2014 will help clarify trends**
  - 2 year data are limited for subgroup analysis
- **Many ways to look at trends**
  - Linear? Quadratic? Over what time period?

NPR

What has become of our brains?

Why Doesn't America Read Anymore?

npr.org

In an age of readily available infor
we seem to be losing touch wi

Karol Wheelar Really - I read everyday. After donating 100+ books and boxing up books, the book shelves and magazine rack is still overflowing.
SMH ... Why NPR have you made this over generalization?
Like · Reply · 8 mins

ShoreBud Mike Because it's so much easier to have overpaid, politically biased people on television tell us what we should think. And we drink it all in, never questioning anything. Life... at the touch of a button or two.
Like · Reply · 1 · 11 mins

Heather Maki People don't read because they don't want to exercise their brains. They want to be fed information, not research it or read about it for themselves. I read constantly, I taught myself to read at the age of 3, and h
stopped.
Like · Reply · 1 · 12 mins

Heather Gray 150+ books/year, plus between 50-100 pages of peer
medical, scientific, health, and health policy content per day. Ther
us than you think.
Like · Reply · 2 · 15 mins

Buster Howell Plenty of people read. They read junk, that
Game of Thrones, Harry Potter and lots of other useless crap
anything but distract you from addressing the more important thi
matter.
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Why Doesn't America Read Anymore?

April 01, 2014 10:13 AM ET

What has become of our brains?

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Congratulations, genuine readers, and happy April Fools' Day!

We sometimes get the sense that some people are commenting on NPR stories that they haven't actually read. If you are reading this, please like this post and do not comment on it. Then let's see what people have to say about this "story."

Best wishes and have an enjoyable day,

Your friends at NPR

Conclusions

- Obesity
  - Important public health concern
  - High visibility
  - Many players and interests
- NHANES analyses important contributions

Thank you to my colleagues

Katherine Flegal, PhD
Brian Kit, MD
Margaret Carroll, MSPH

Disclaimer

The findings and conclusions in this presentation are those of the author and not necessarily of CDC