

# The obesity “epidemic”

It depends on how you look at it.

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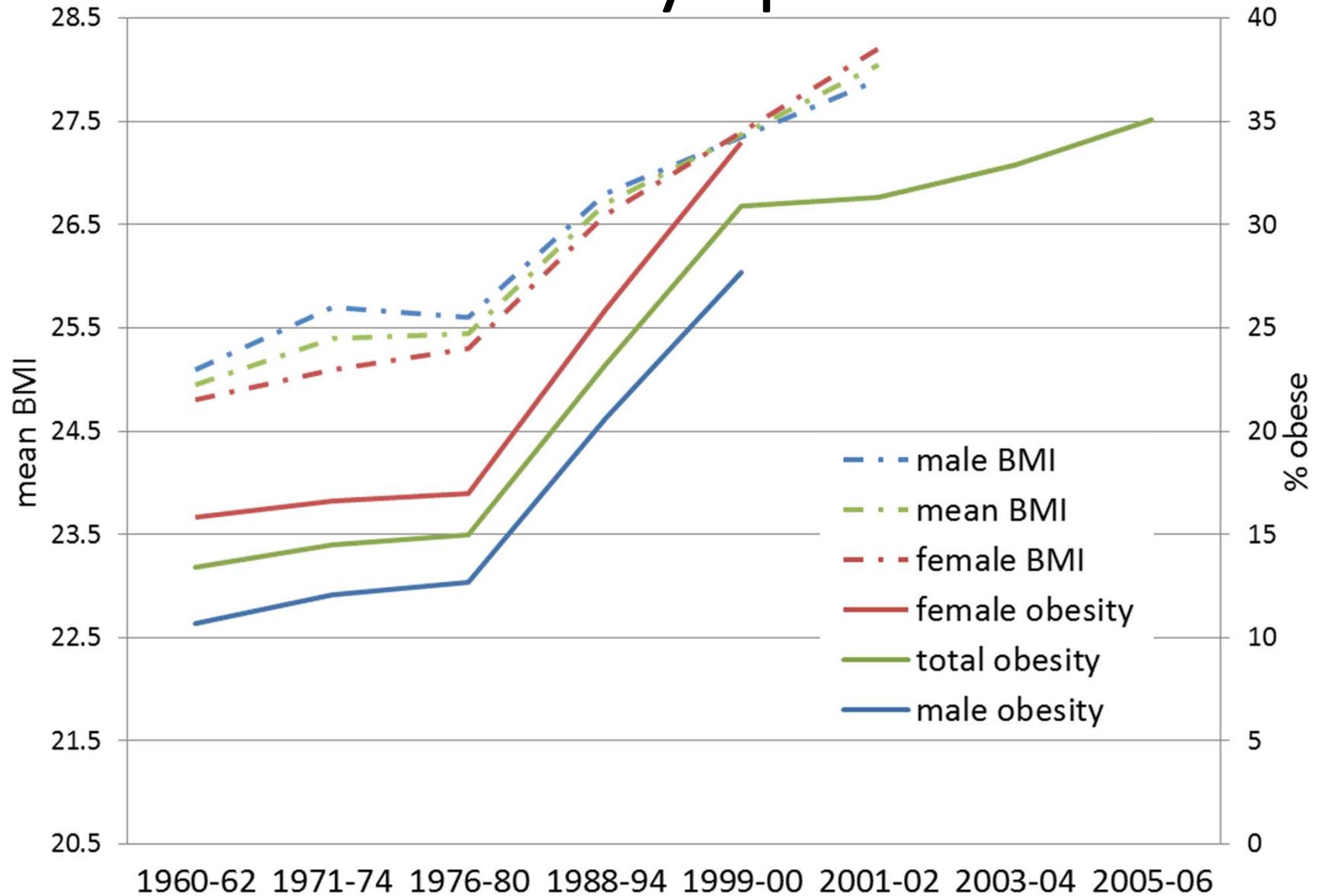
# The obesity epidemic

- Conventional wisdom holds that obesity in the US increased greatly after 1980.
- This conclusion has caused some to reject potential causes of obesity (e.g., television, cars) that arose before 1980 (e.g., Cutler, Glaeser, & Shapiro, 2003).

# The obesity epidemic

- Why this conclusion?
- Most estimates of obesity trends in the United States rely on body mass index observations from the cross-sectional National Health and Nutrition Examination Survey (NHANES)
- $\text{BMI} = \text{weight in kilograms} \div (\text{height in meters})^2$
- Obesity:  $\text{BMI} \geq 30$

# The obesity epidemic



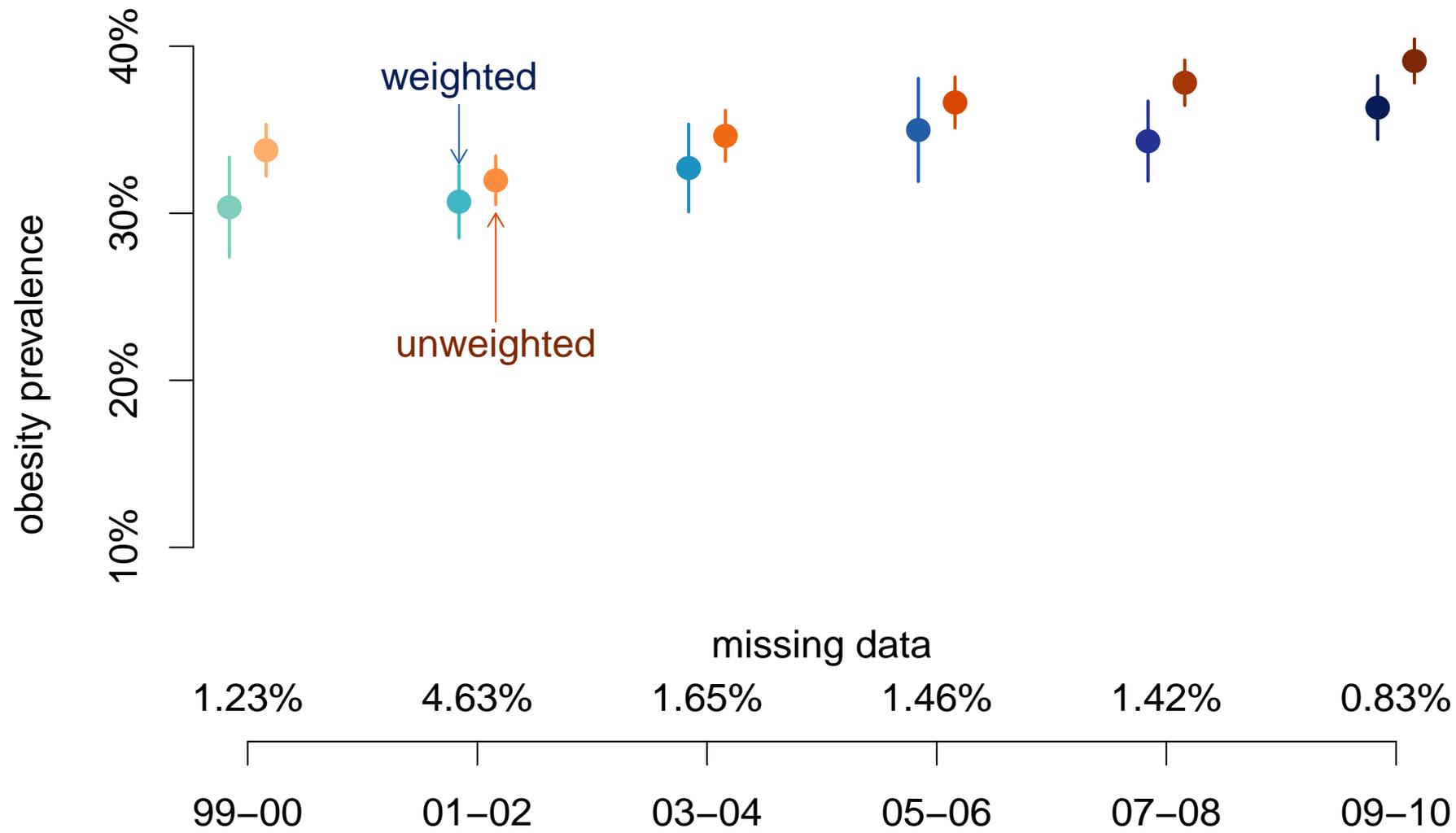
# The obesity epidemic

- More recent waves from the continuous NHANES, however, indicate that this rise in obesity appears to have slowed down (Flegal, Carroll, Ogden, & Curtin, 2010).
- “The good news, if you can call it that, is that the rate of increase in obesity in the United States seems to be slowing. The bad news is that no one knows exactly why” (Ambinder, 2010, p. 74).

# The obesity epidemic

- Do the latest data show continued leveling of obesity rates?

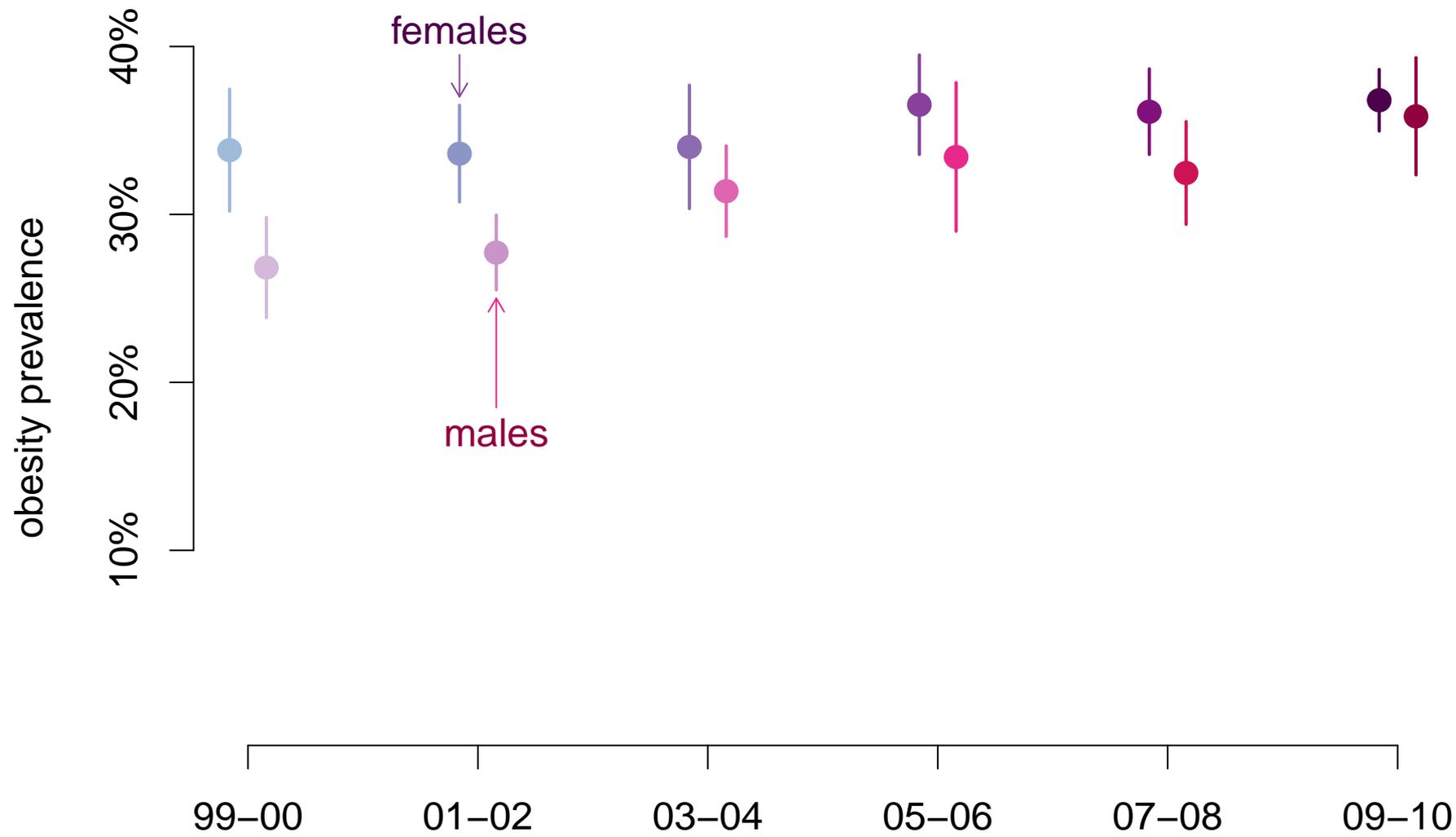
# Obesity rates, all adults ages 20–74



# The obesity epidemic

- Do the latest data show continued leveling of obesity rates?
  - Rate from NHANES 2009-10 (36.3%) is not significantly different from prior wave, but is significantly higher than 1999-02.
  - Marked differences from accounting for complex sampling and unit non-response.

# Obesity rates, all adults ages 20–74



# The obesity epidemic

- Do the latest data show continued leveling of obesity rates?
  - Rate from NHANES 2009-10 (36.3%) is not significantly different from prior wave, but is significantly higher than 1999-02.
  - Most of this trend is due to males, who have closed the obesity gap.

# The obesity epidemic

- Did the epidemic really start in 1980?

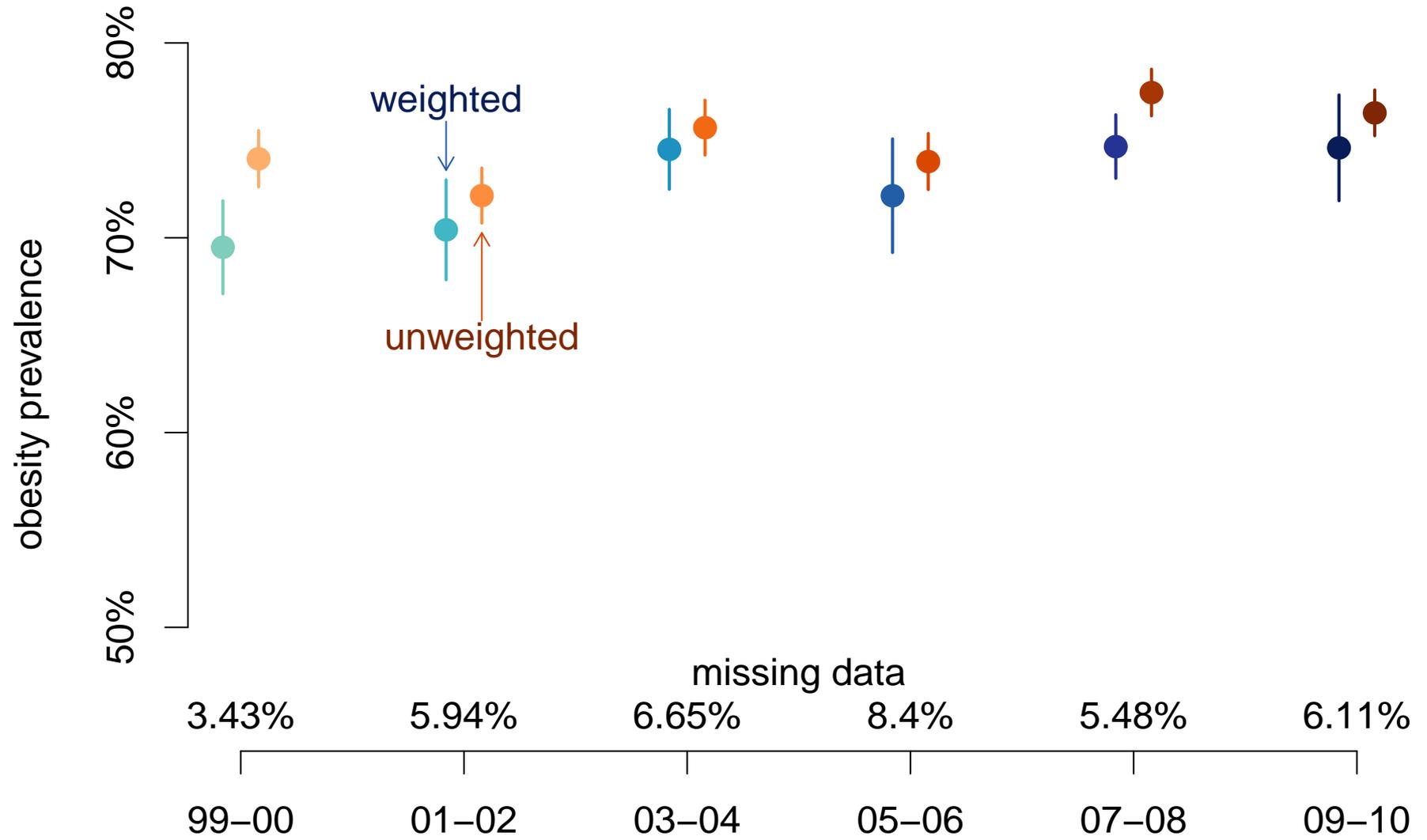
# The obesity epidemic

- Did the epidemic really start in 1980?
- NHANES and NHES included two skinfold thickness measures.
- Burkhauser, Cawley, & Schmeiser (2009) converted these to percent body fat to create an alternative view of trends in obesity prevalence.

# The obesity epidemic

- Did the epidemic really start in 1980?
- Obesity defined from percent body fat shows a steadier increase from the 1960s through 2000.
- Obesity may have been on the rise before the first NHES.
- Do recent trends in percent body fat obesity parallel BMI-defined obesity trends?

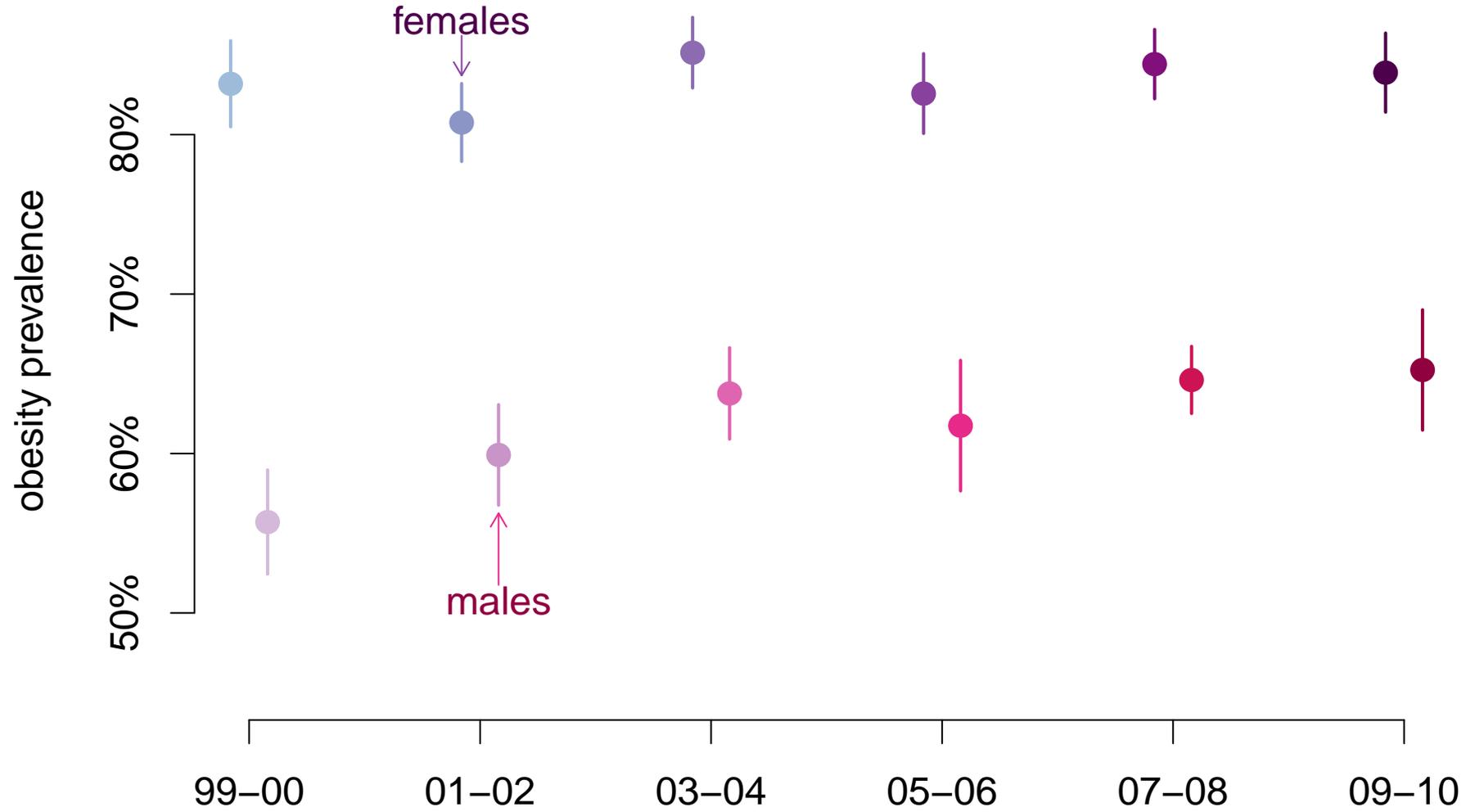
# Skinfold obesity rates, all adults 20–74



# The obesity epidemic

- Do the latest data show continued leveling of obesity rates?
  - Rate from NHANES 2009-10 (74.6%) is not significantly different from prior wave, but both are significantly higher than 1999-00.
  - Marked differences from accounting for complex sampling and unit non-response.

# Skinfold obesity rates, all adults 20–74



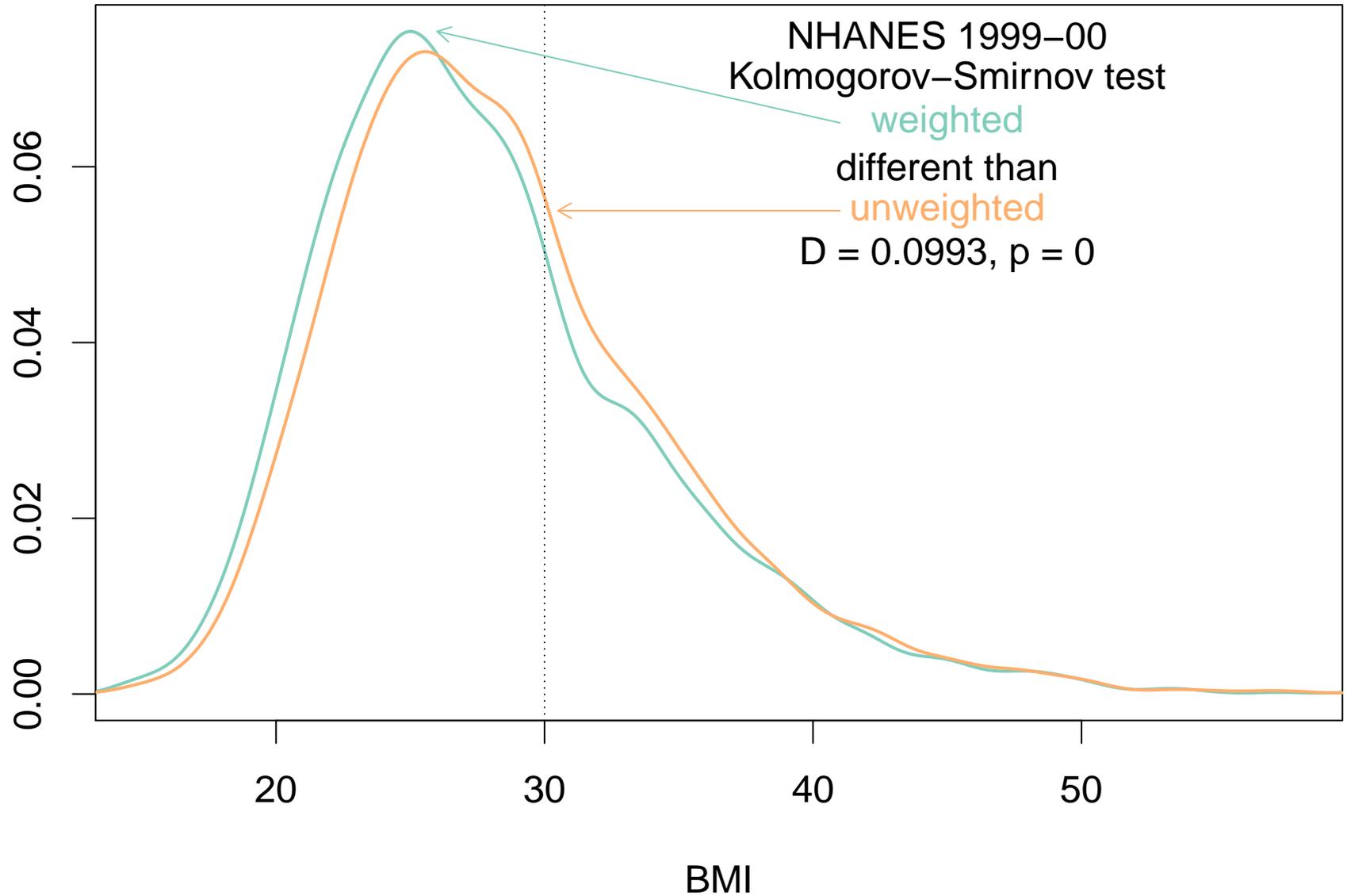
# The obesity epidemic

- Do the latest data show continued leveling of obesity rates?
  - Rate from NHANES 2009-10 (74.6%) is not significantly different from prior wave, but both are significantly higher than 1999-00.
  - Most of the increase is again due to males, but males still less likely to be obese by the percent body fat definition.

# The obesity epidemic

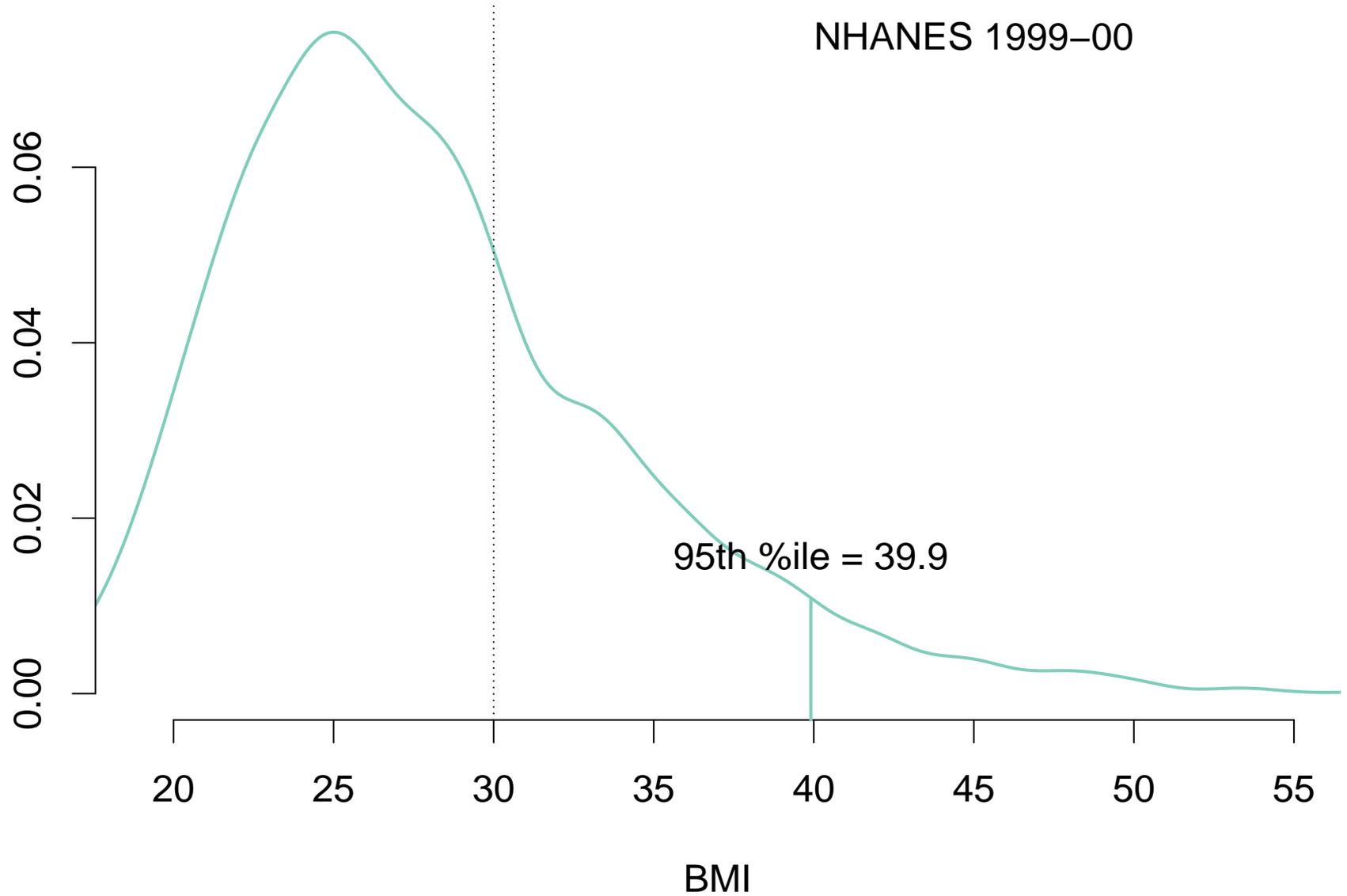
- The distribution of BMI is shifting upward *and* becoming more skewed.
  - 95<sup>th</sup> percentile: 33.9 in the early 1970s, 39.8 in 1999-00 (Anderson & Butcher, 2006).
  - Largest increases are near the top of the BMI distribution (Flegal & Troiano, 2000).
  - At 5' 10":
    - BMI of 33.9 = 236 lbs.
    - BMI of 39.8 = 277 lbs.

# Distribution of BMI, adults 20–74

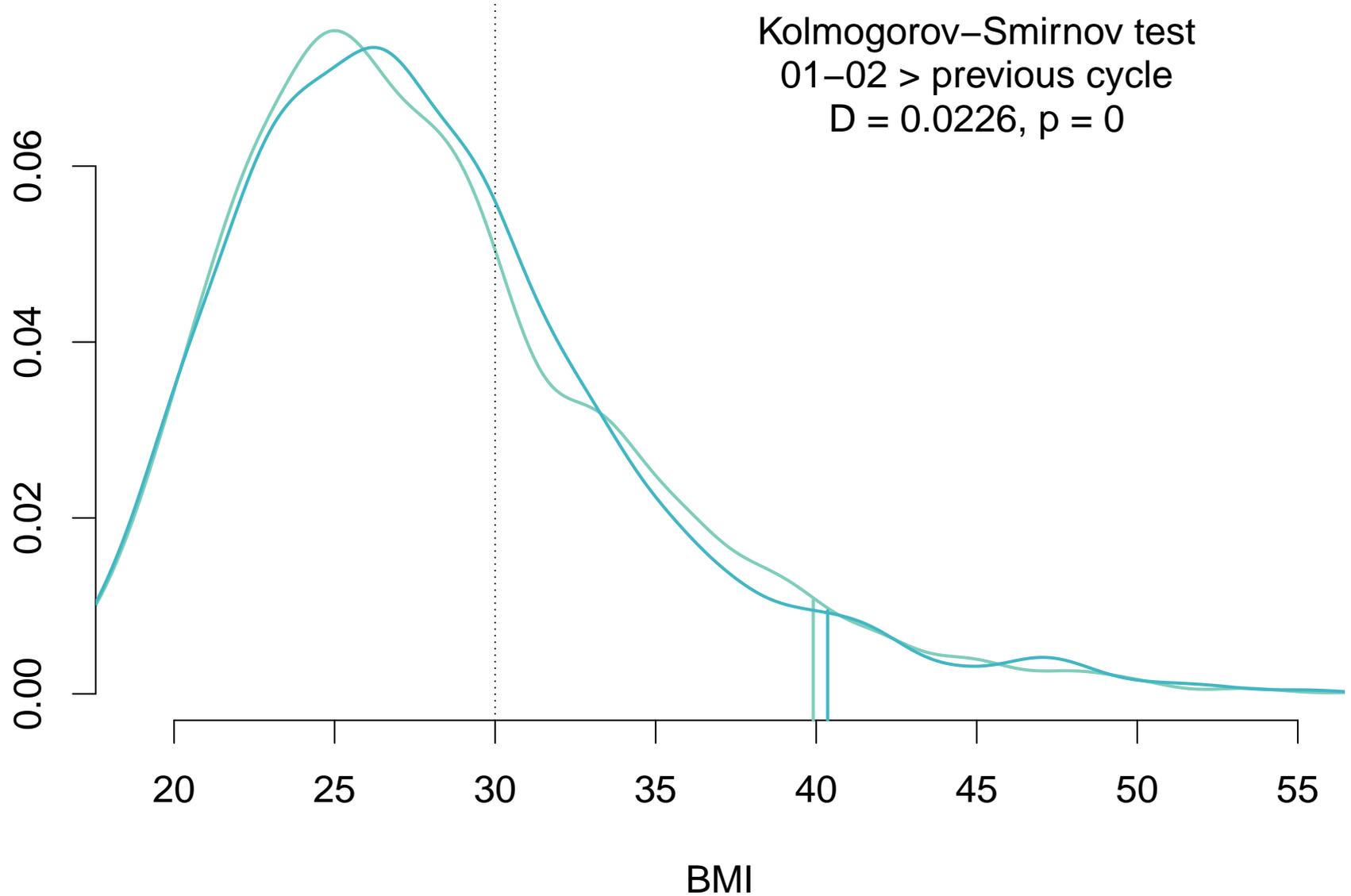


# Distribution of BMI, adults 20–74

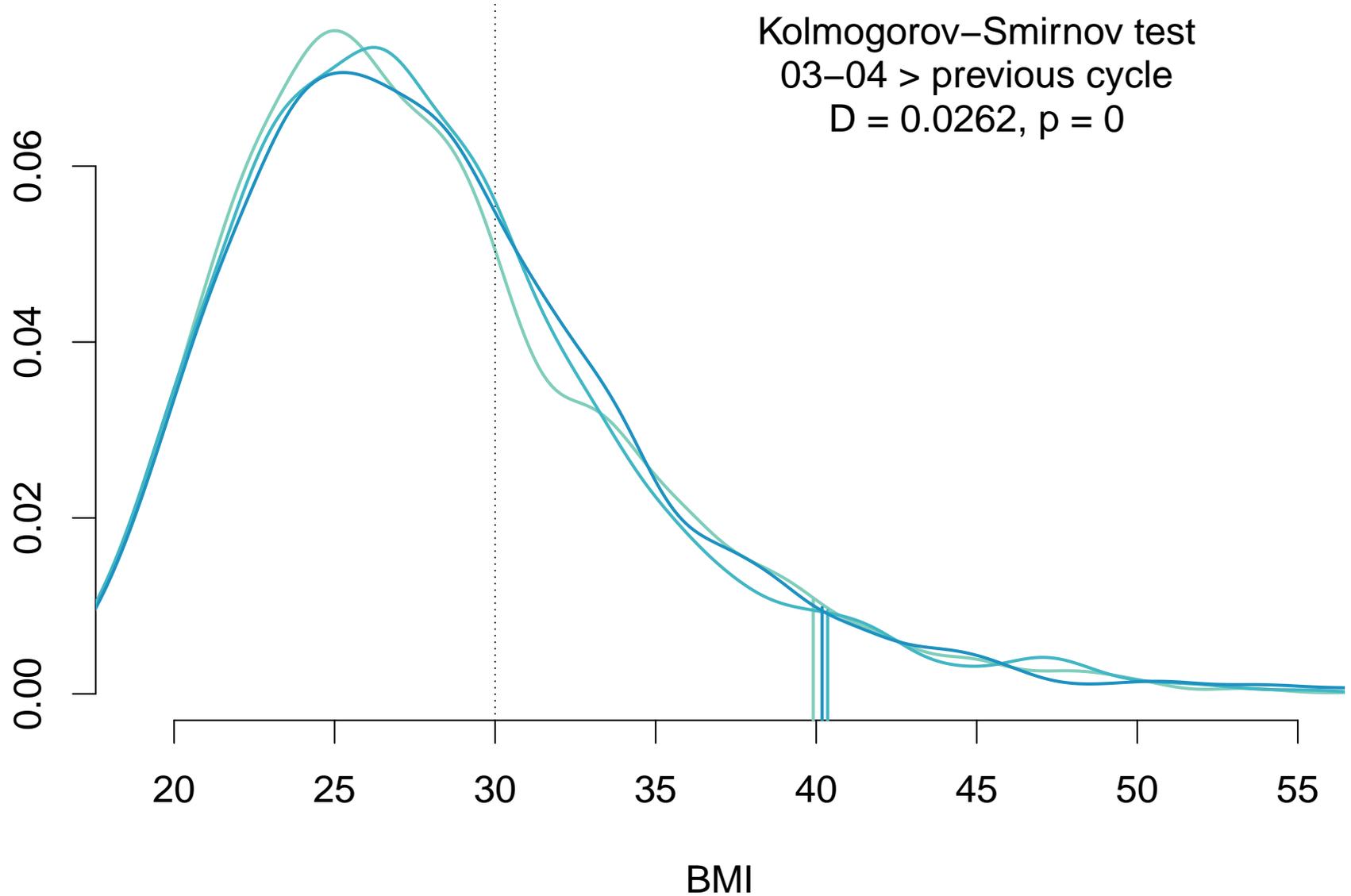
NHANES 1999–00



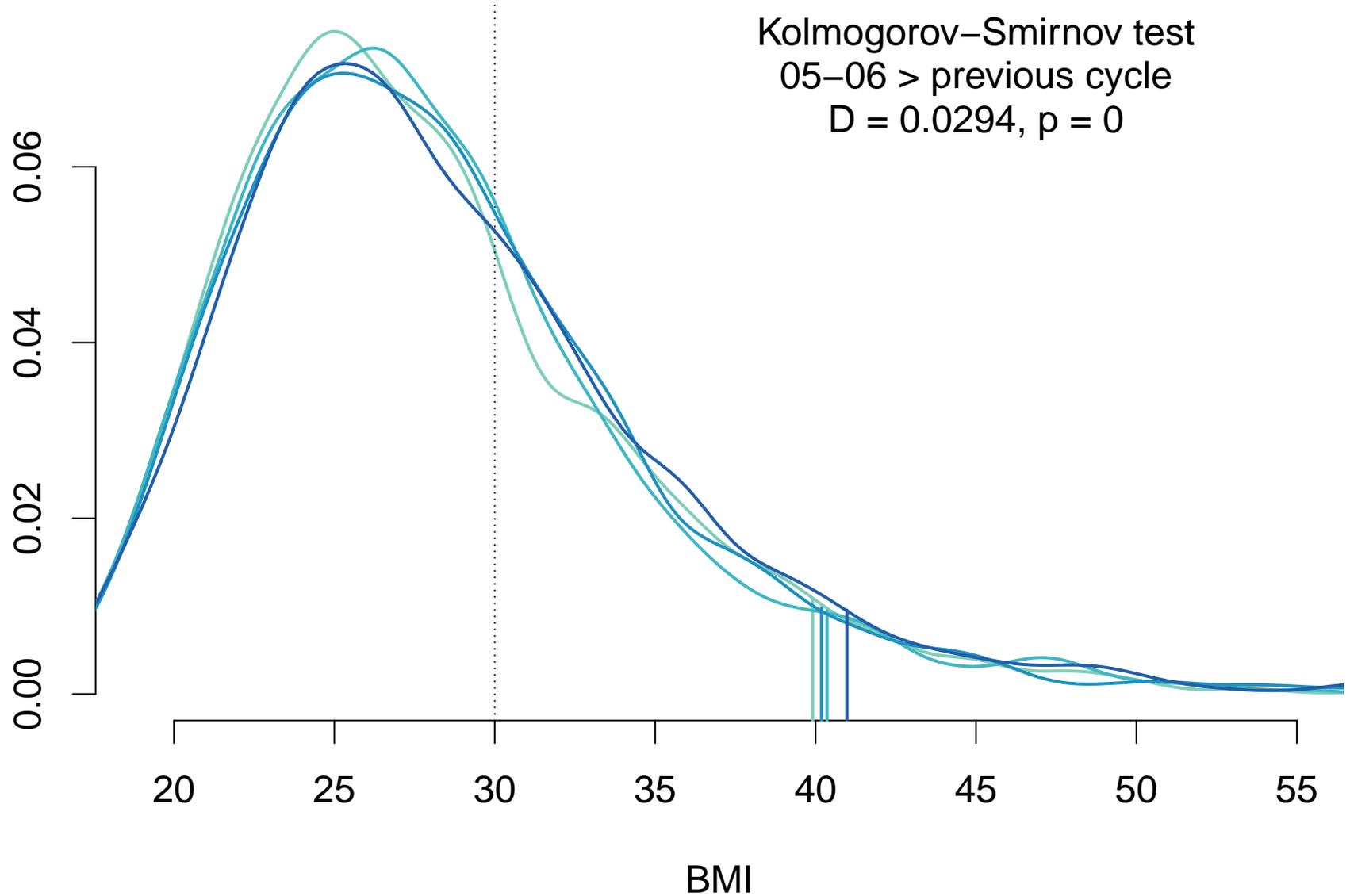
# Distribution of BMI, adults 20–74



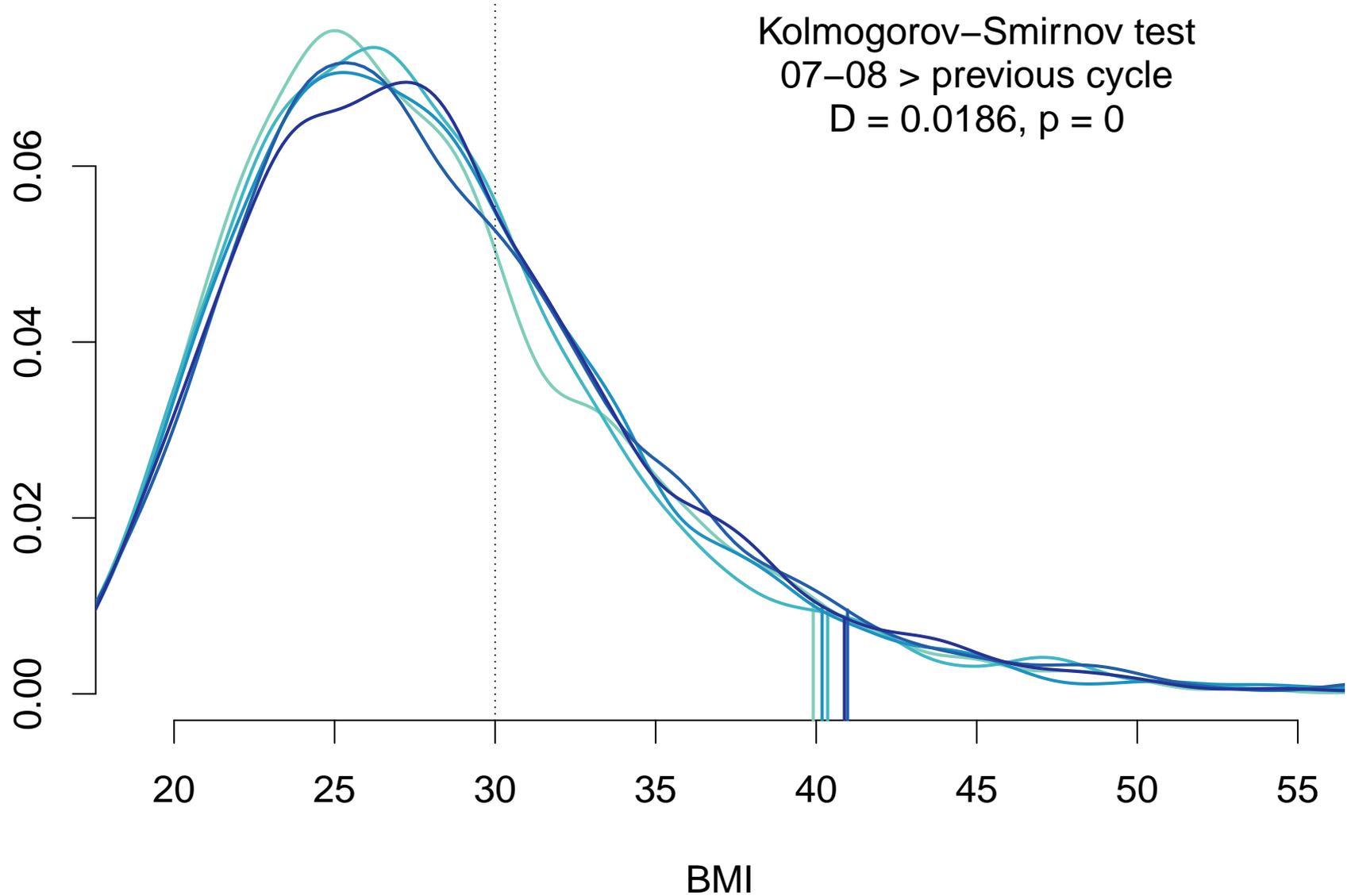
# Distribution of BMI, adults 20–74



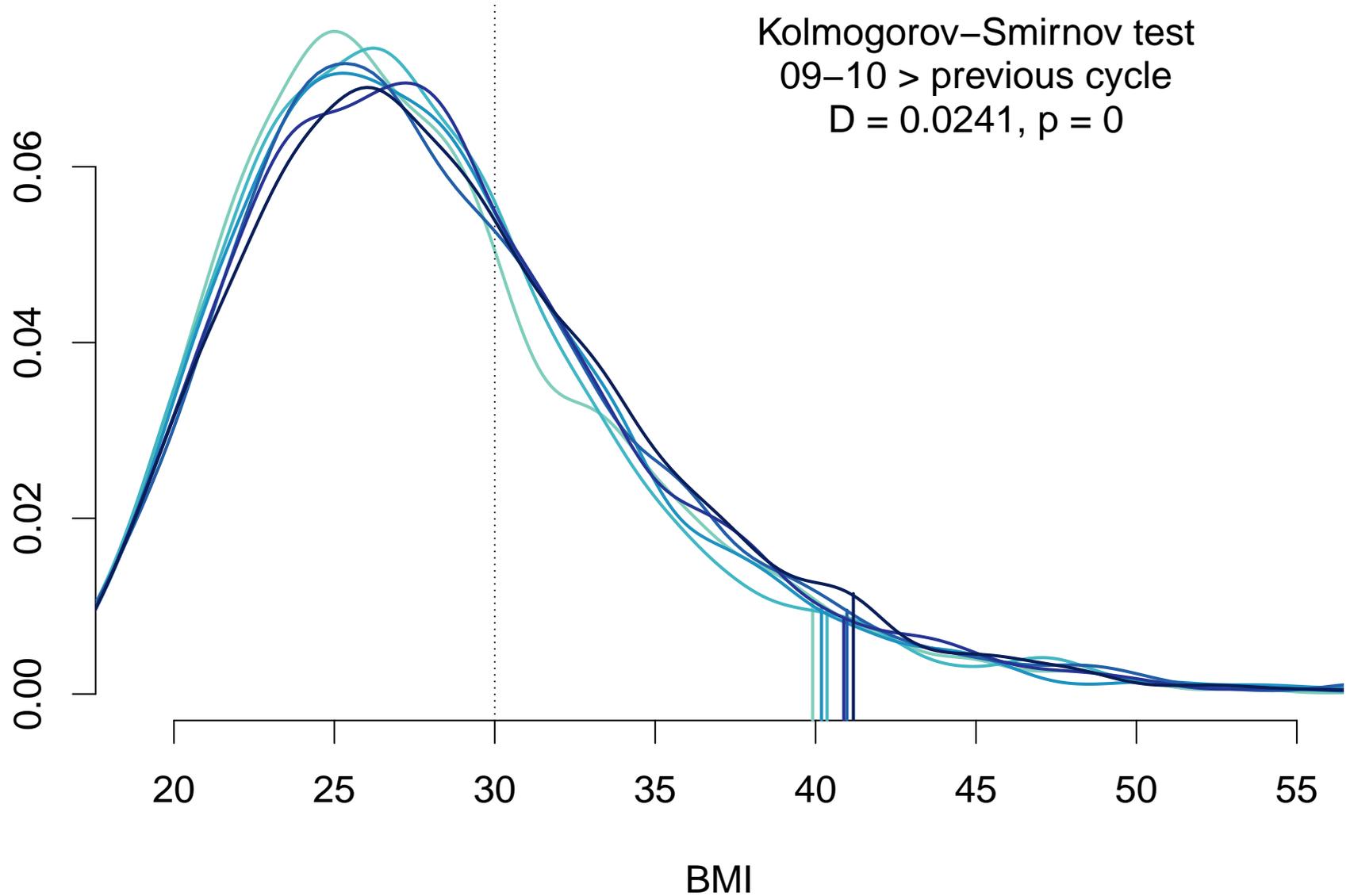
# Distribution of BMI, adults 20–74



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# The obesity epidemic

- Both BMI and percent body fat distributions show significant upward shifts.
- While the last 7 years have seen little change in obesity rates, the obese appear to be getting heavier.

# The obesity epidemic

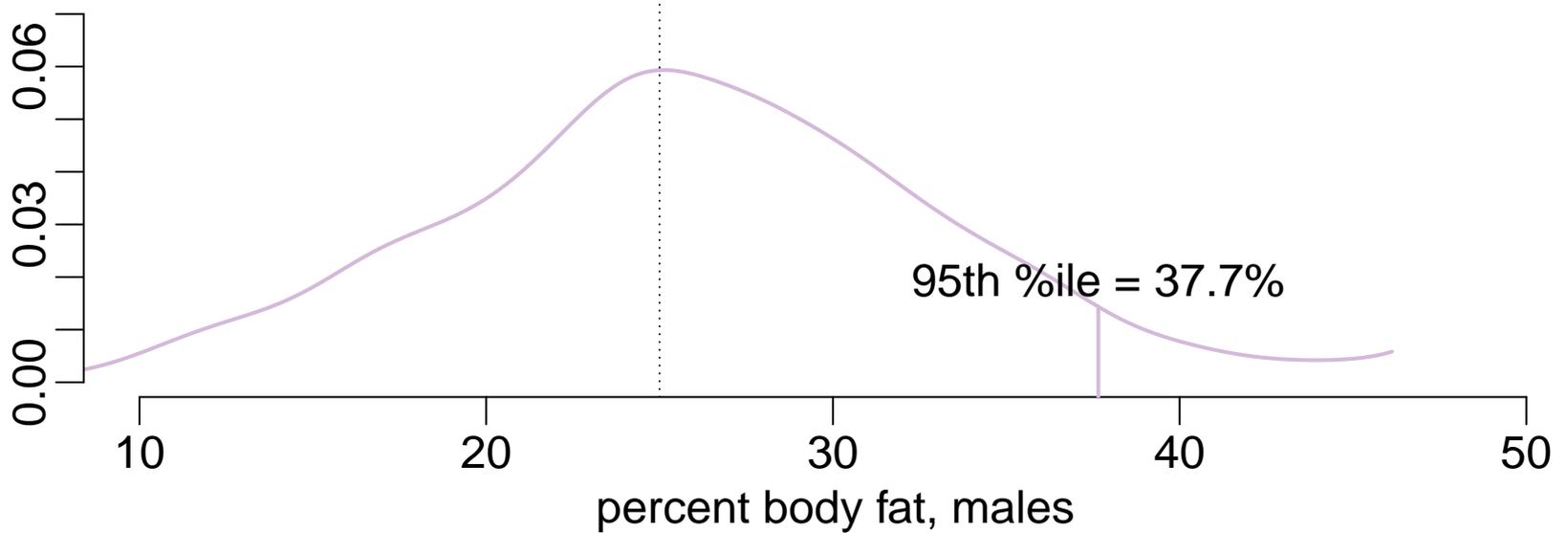
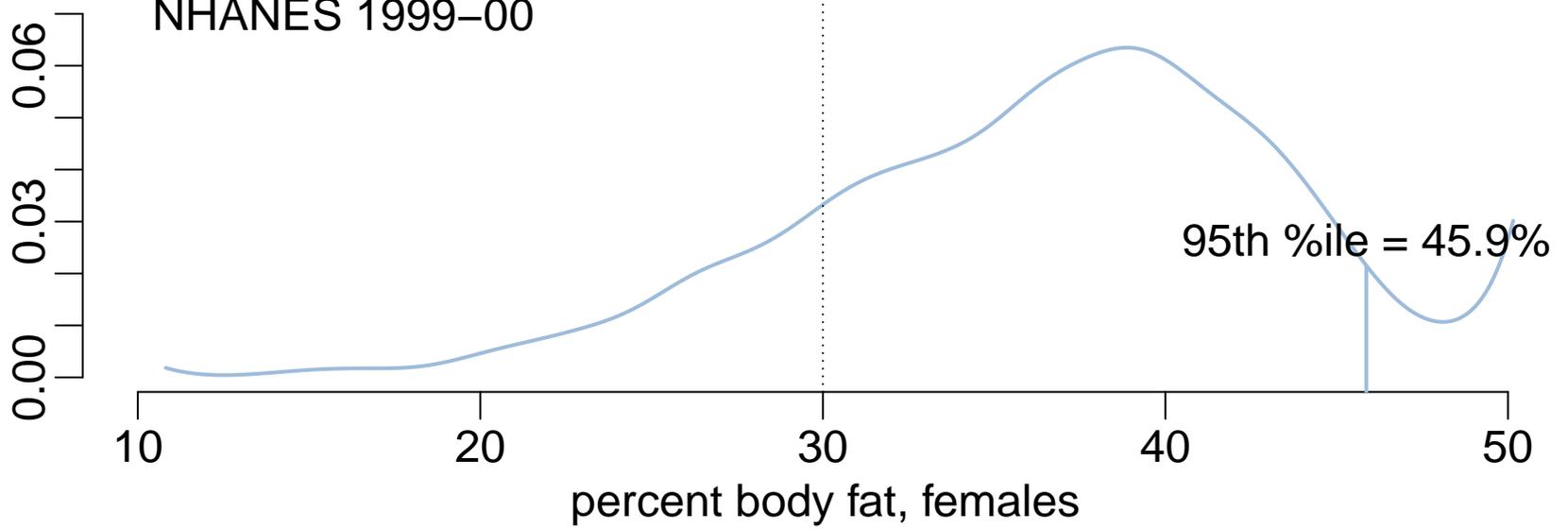
- “Since thin people can’t enjoy life, we eke out pleasure by telling fat people how to lose weight, as if they don’t know. Cook! Plant a garden! Read this posting of fast-food-menu calories! Buy fresh produce! Bike to work! Do stuff skinny folk would never do” (Stein, 2012, p. 58).

# The obesity epidemic

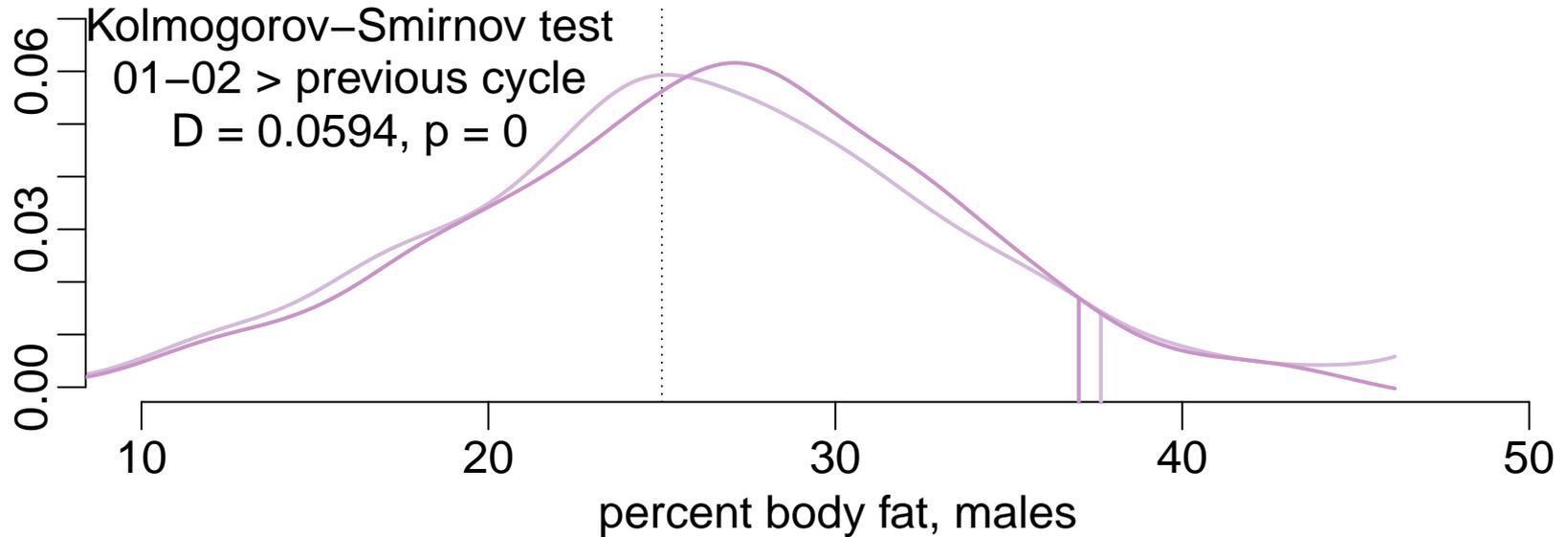
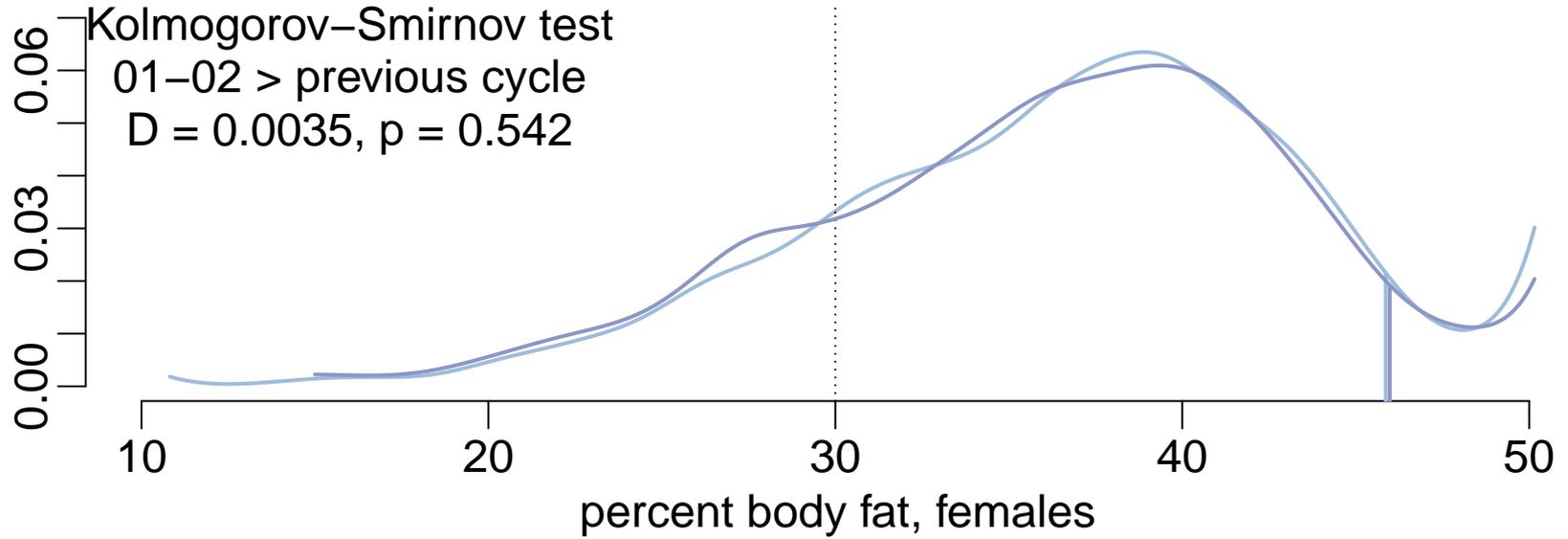
- “Putting individual solutions and free will up against the increase in portion sizes, massive technological and societal changes, food-company taste-engineering, and the ubiquity of effective television advertisements is like asking Ecuador to invade China” (Ambinder, 2010, pp. 77-78).

# Distribution of percent body fat, adults 20–74

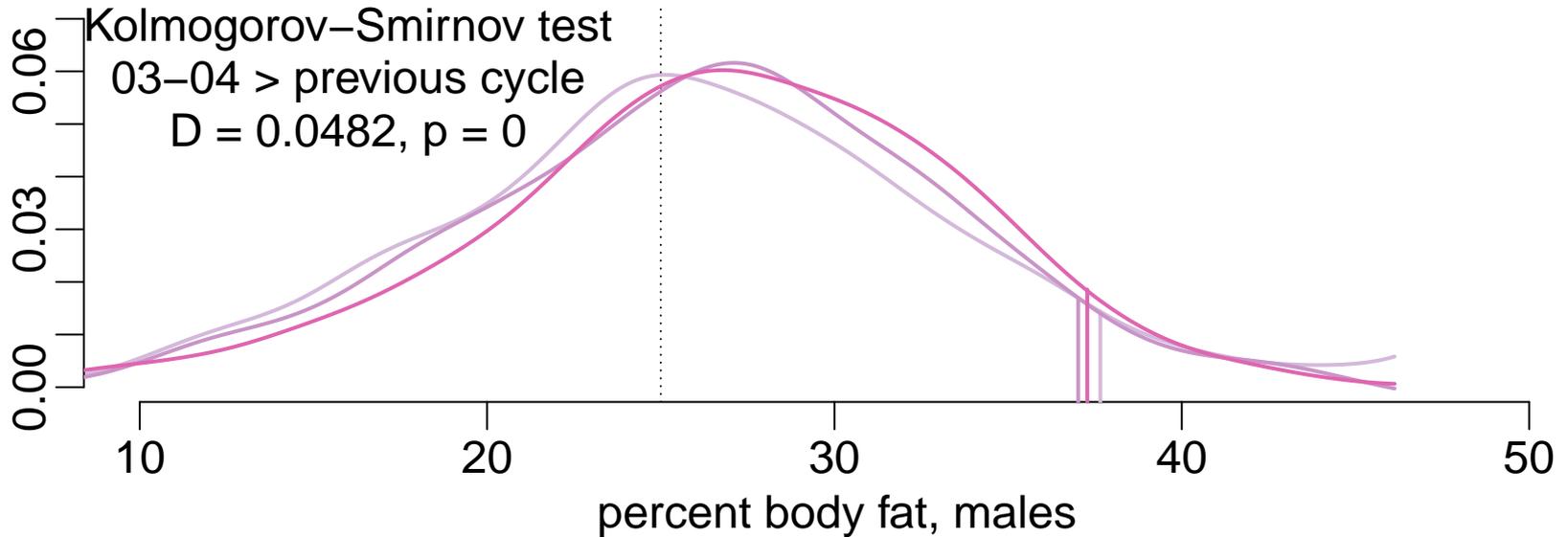
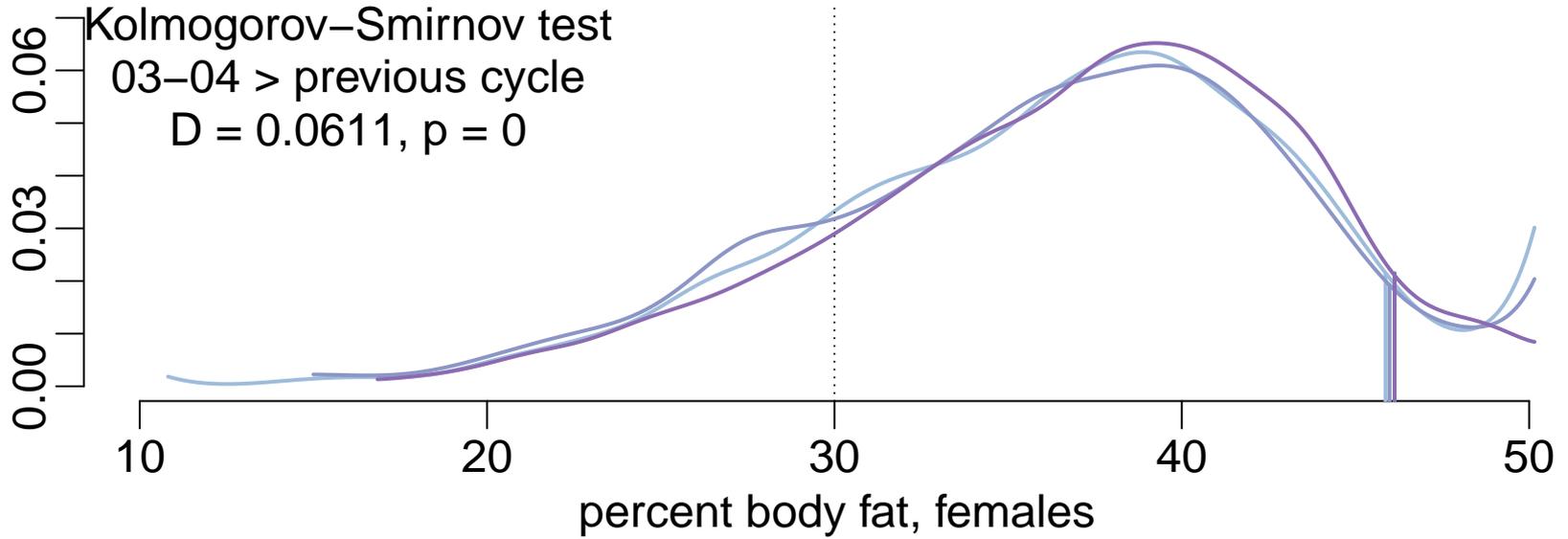
NHANES 1999–00



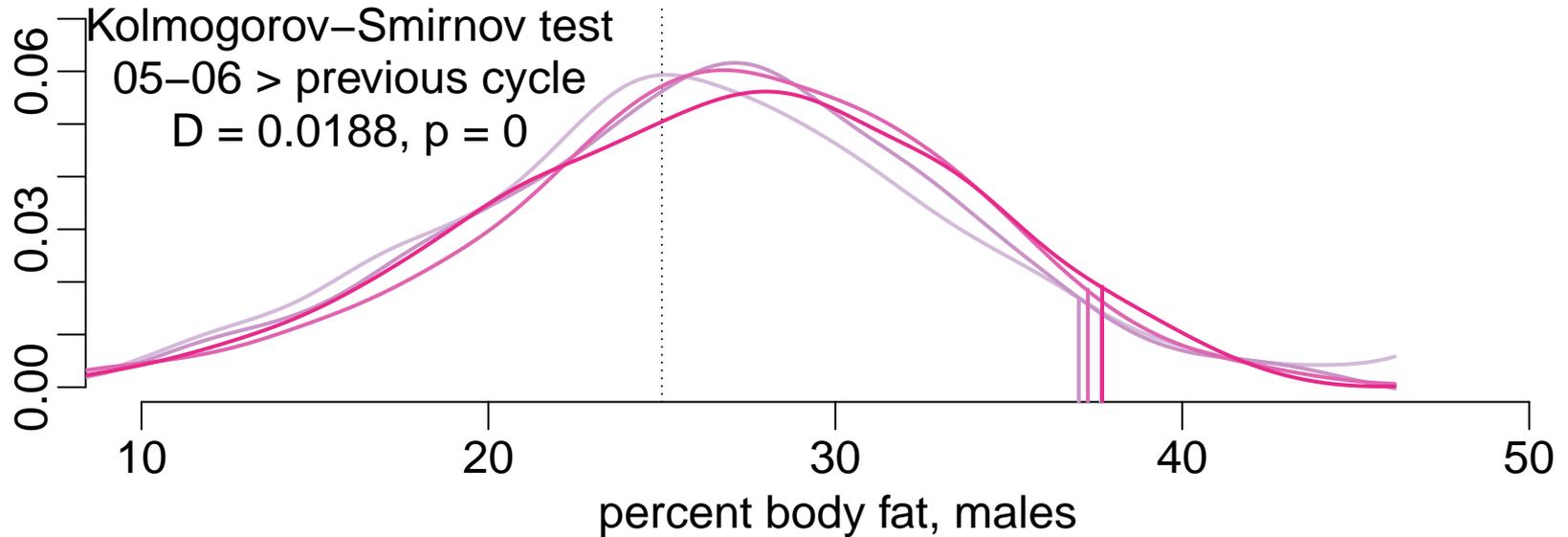
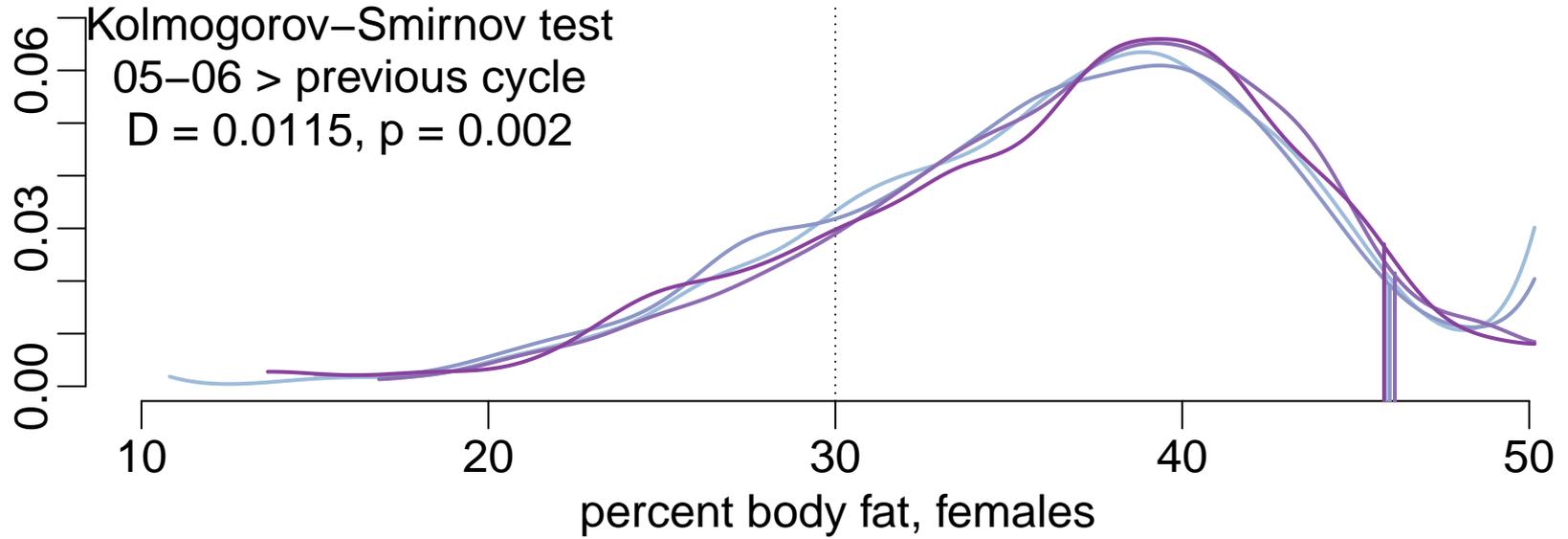
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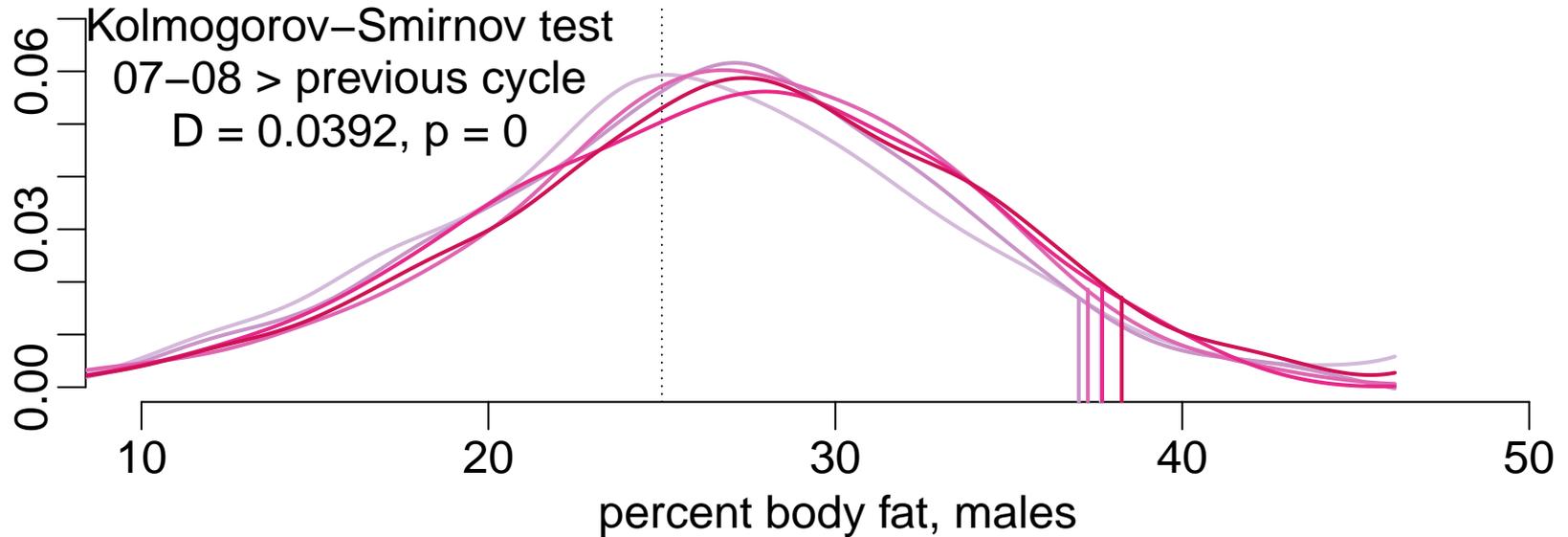
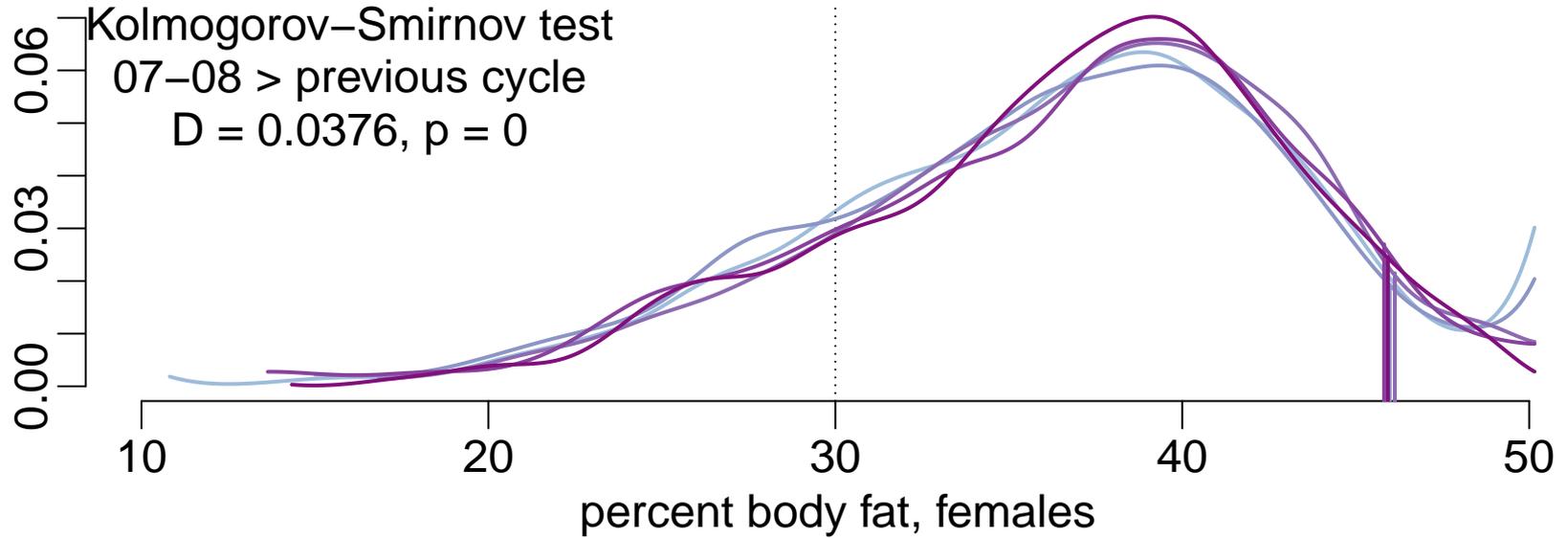
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