



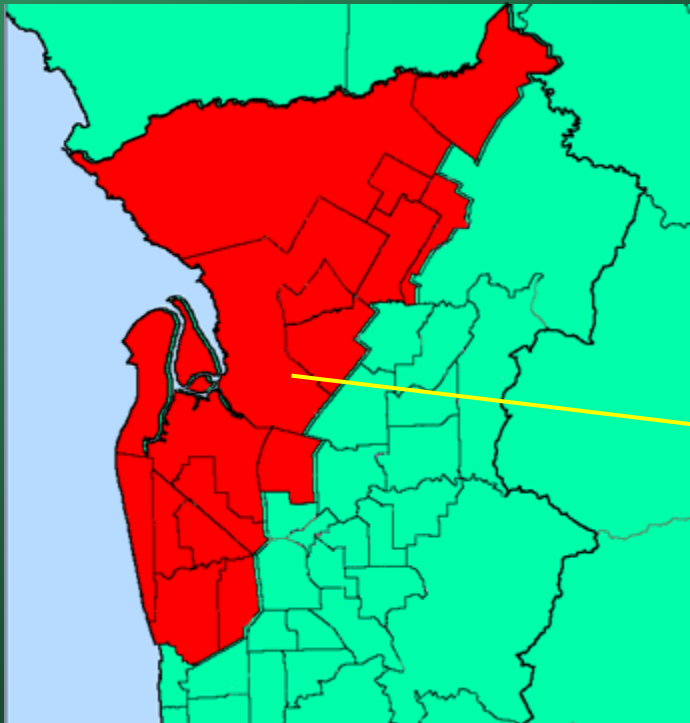
# The relationship of central obesity with diagnosed and undiagnosed diabetes: Results from the North West Adelaide Health Study

Katherine Baldock, Heather Jury, Catherine Chittleborough,  
Patrick Phillips, Anne Taylor,  
& the North West Adelaide Study Team

# Background

- Well known “diabesity” association
  - Central adiposity may be a greater predictor of chronic disease than generalised obesity
- ➔ Aim to examine prevalence of diabetes in a representative sample among those classified with central adiposity according to three different definitions

# North West Adelaide, South Australia

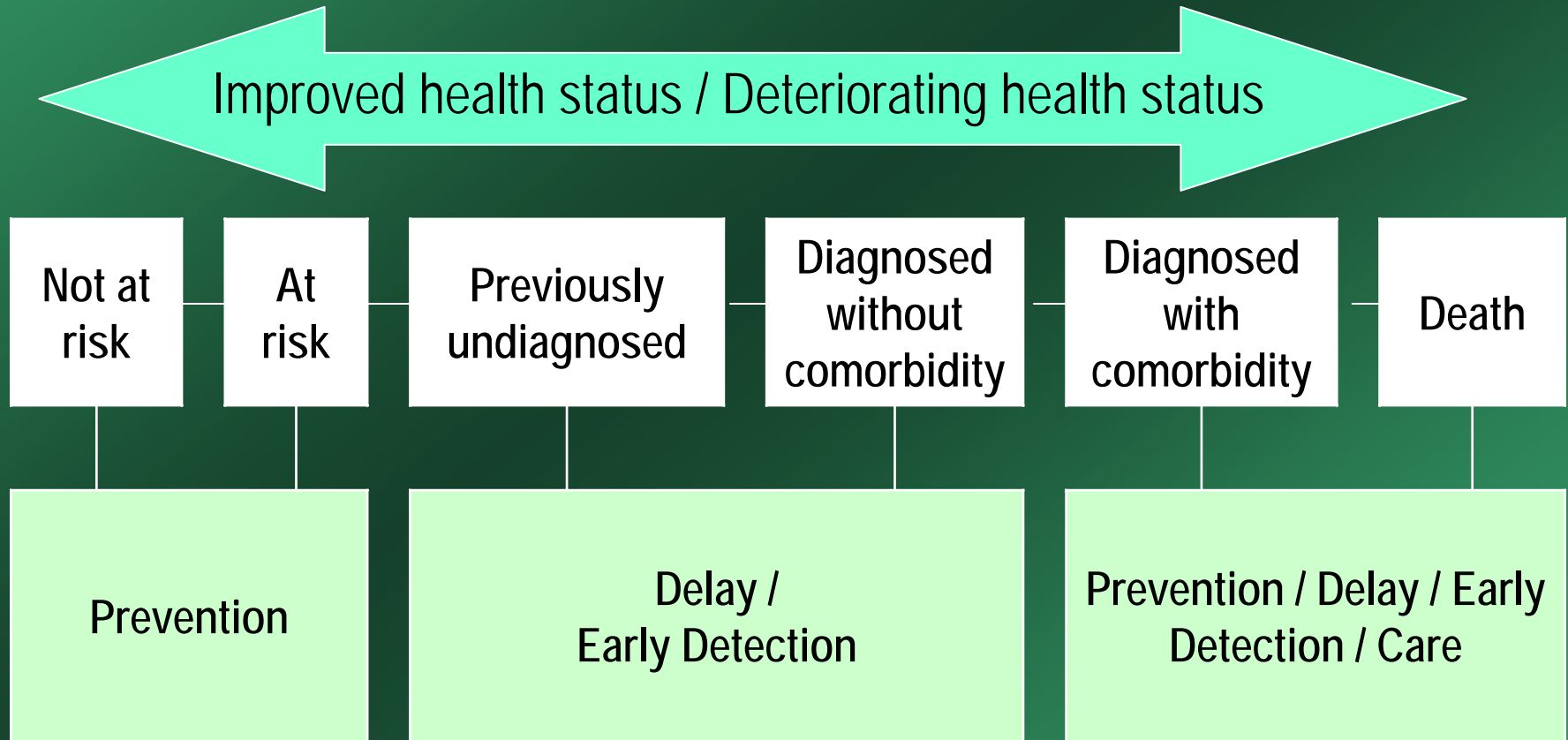




# North West Adelaide Health Study

- Biomedical cohort study
- Participants (n=4060) randomly selected from Electronic White Pages
- 18+ years of age
- Participation rate 71.2%, Response rate 49.4%
- Focus on priority chronic conditions and their determinants

# Chronic disease continuum



# Data collection

- Telephone recruitment interview
- Self completed questionnaire
  - ◆ Chronic conditions, risk factors, sociodemographics, quality of life, family history
- Clinic assessments
  - ◆ Fasting plasma glucose
  - ◆ Height
  - ◆ Weight
  - ◆ Waist & hip circumference



# Diabetes definition

- Diagnosed diabetes
  - ◆ Self-reported being told by a doctor they had diabetes
  
- Previously undiagnosed diabetes
  - ◆ Fasting plasma glucose  $\geq 7.0$  mmol/L and no previous doctor diagnosis

# Central obesity definition

	Males	Females
<i>Waist to hip ratio</i> <sup>a</sup>		
WHR	> 1.0	> 0.85
<i>Waist circumference</i> <sup>b</sup>		
WC1	≥ 100 cm	≥ 90 cm
WC2	≥ 95 cm	≥ 80 cm

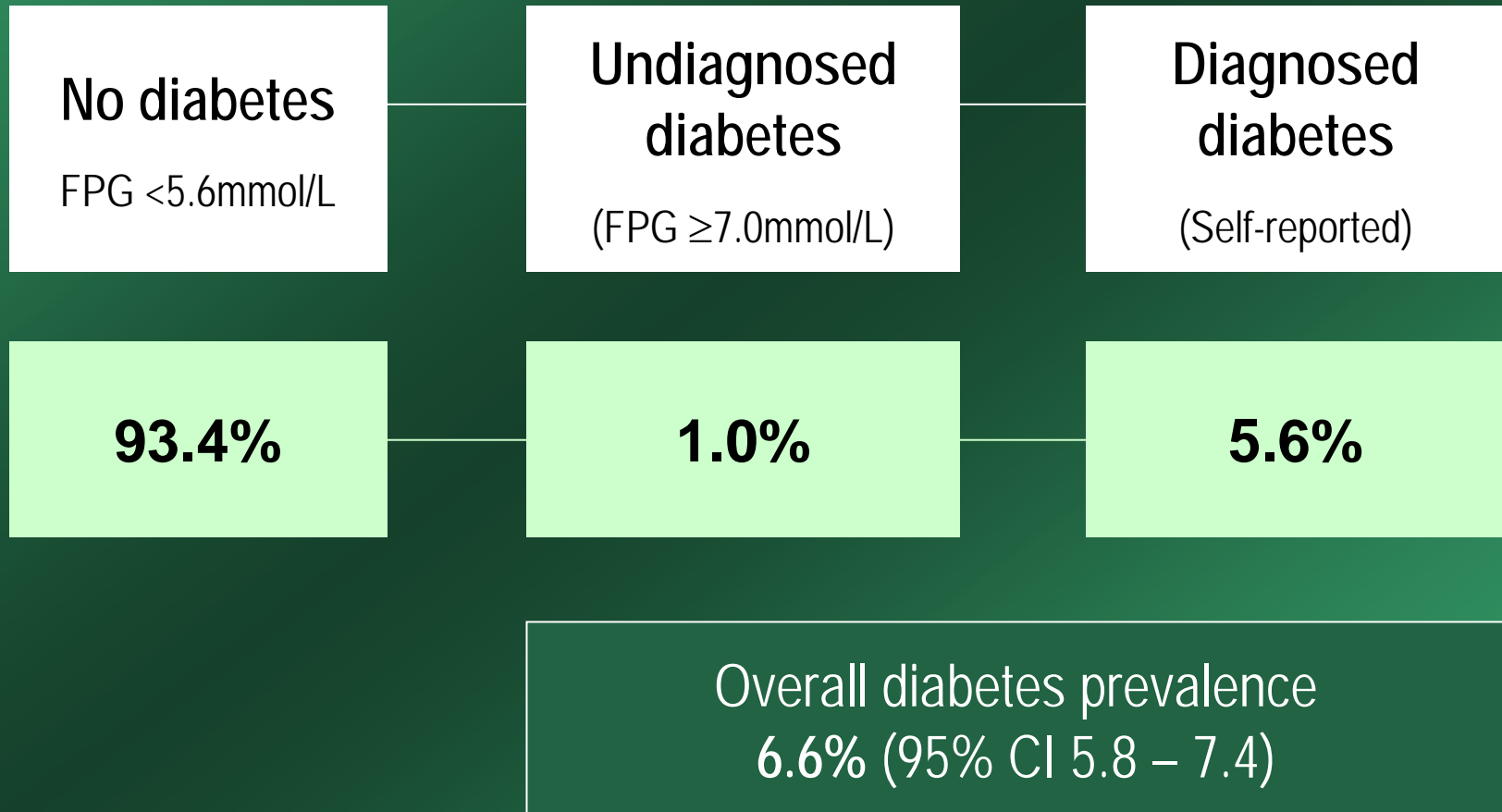
<sup>a</sup> NIDDK (2002)

<sup>b</sup> Han et al. (1995) *BMJ*; Lean et al. (1995) *BMJ*

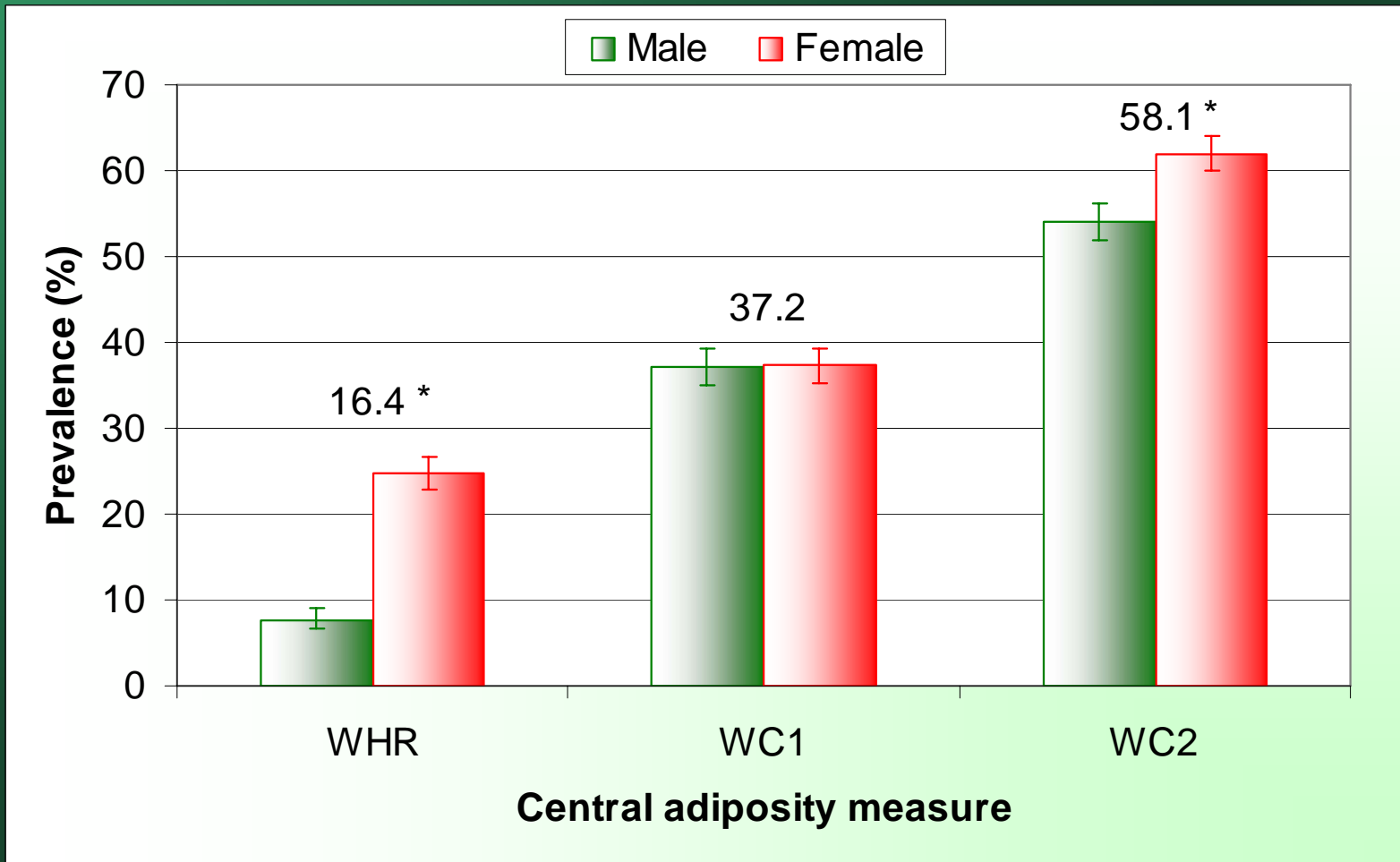


# Diabetes continuum

(n=4060)

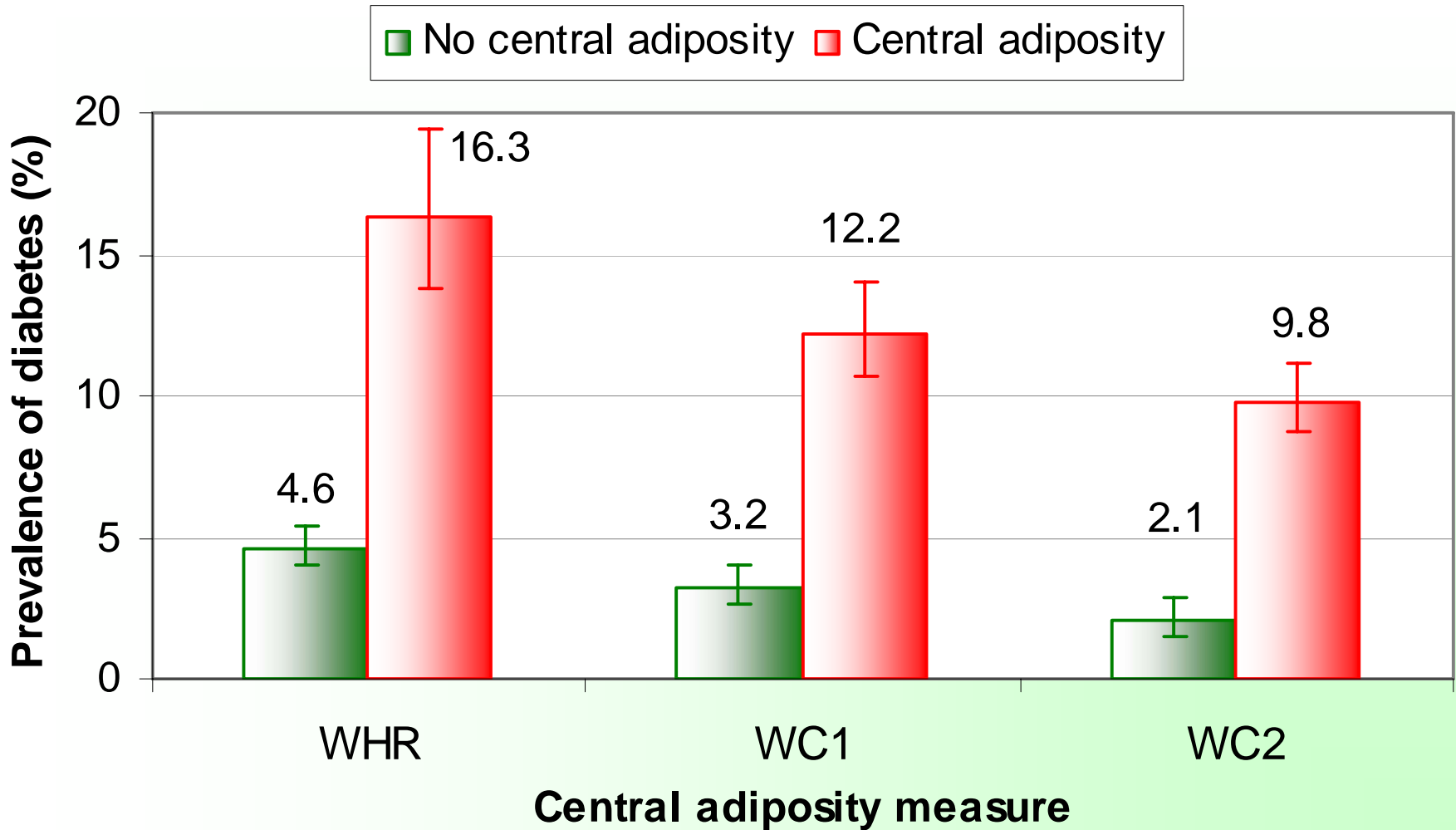


# Central adiposity prevalence

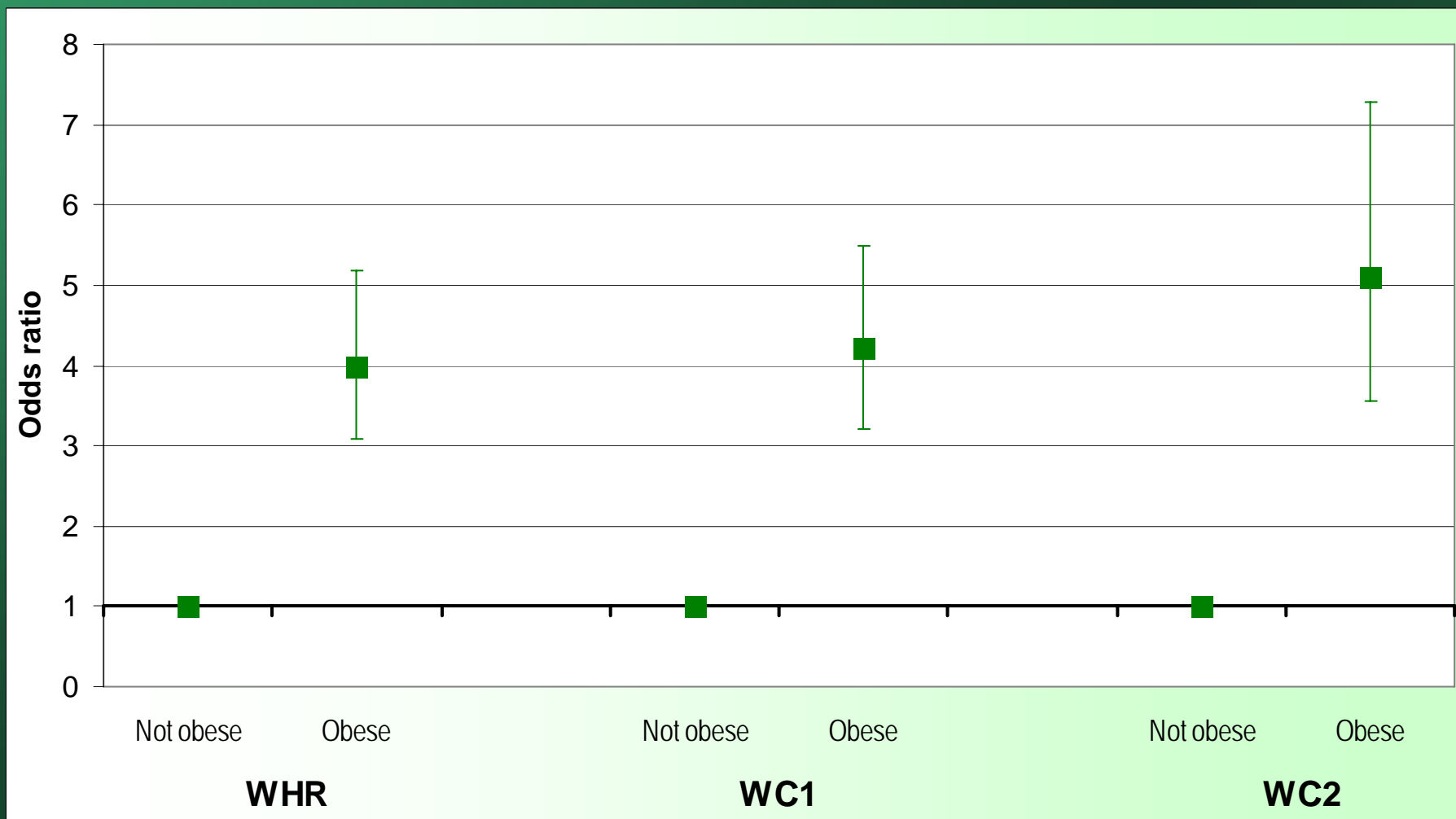


\* Statistically significant difference between males and females ( $p < 0.05$ )

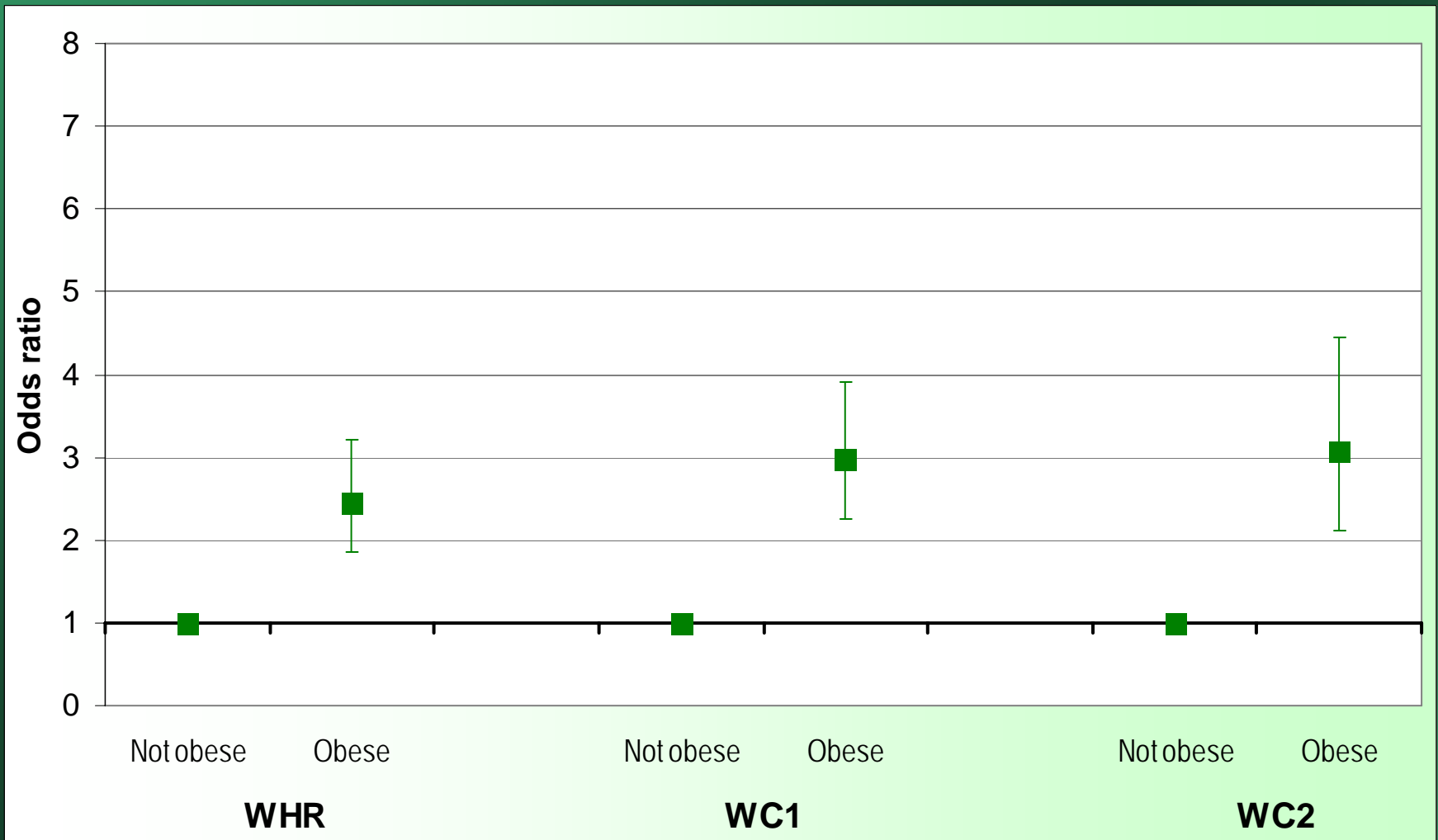
# Diabetes prevalence by central adiposity



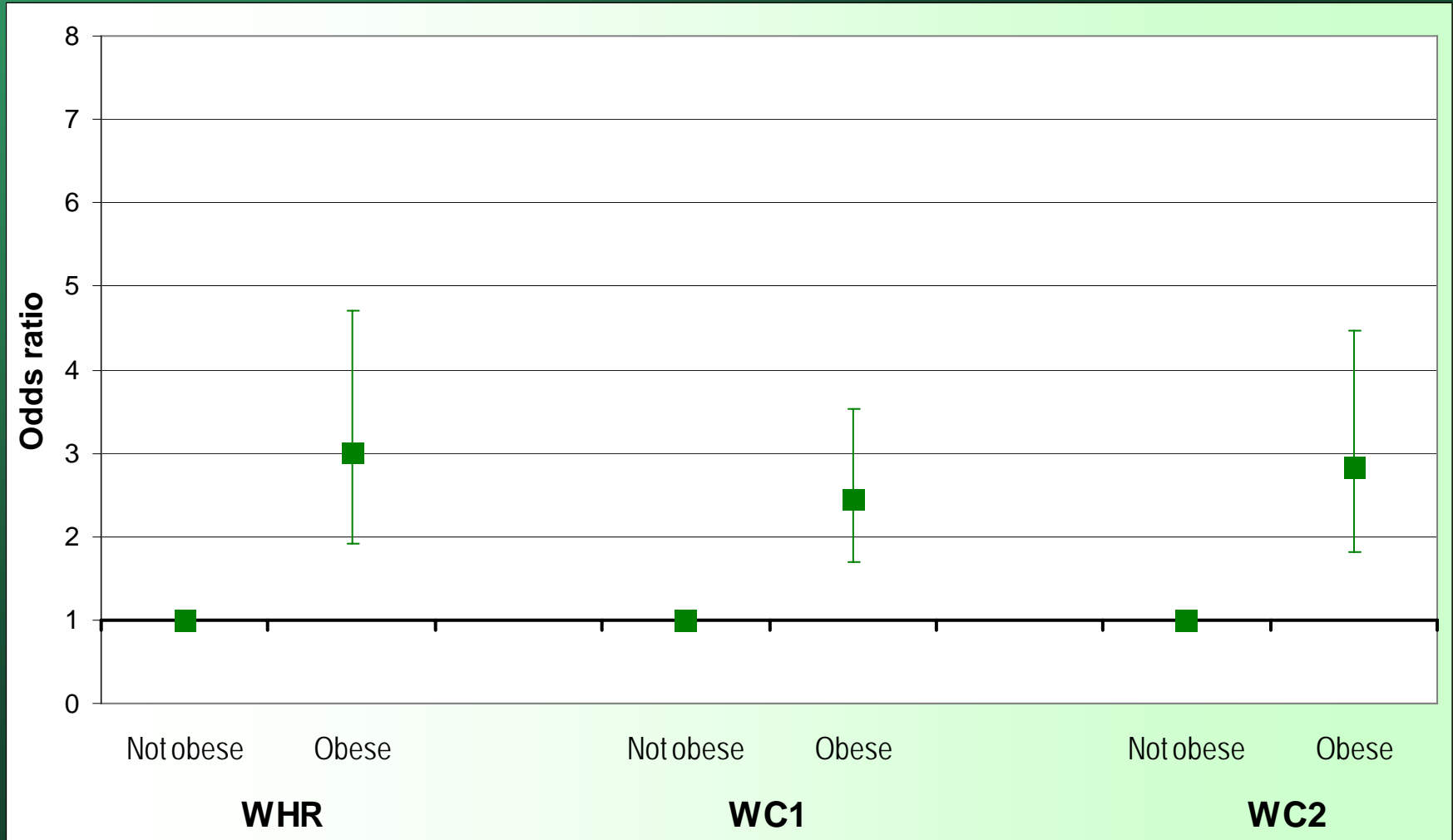
# Unadjusted odds ratios associated with diabetes



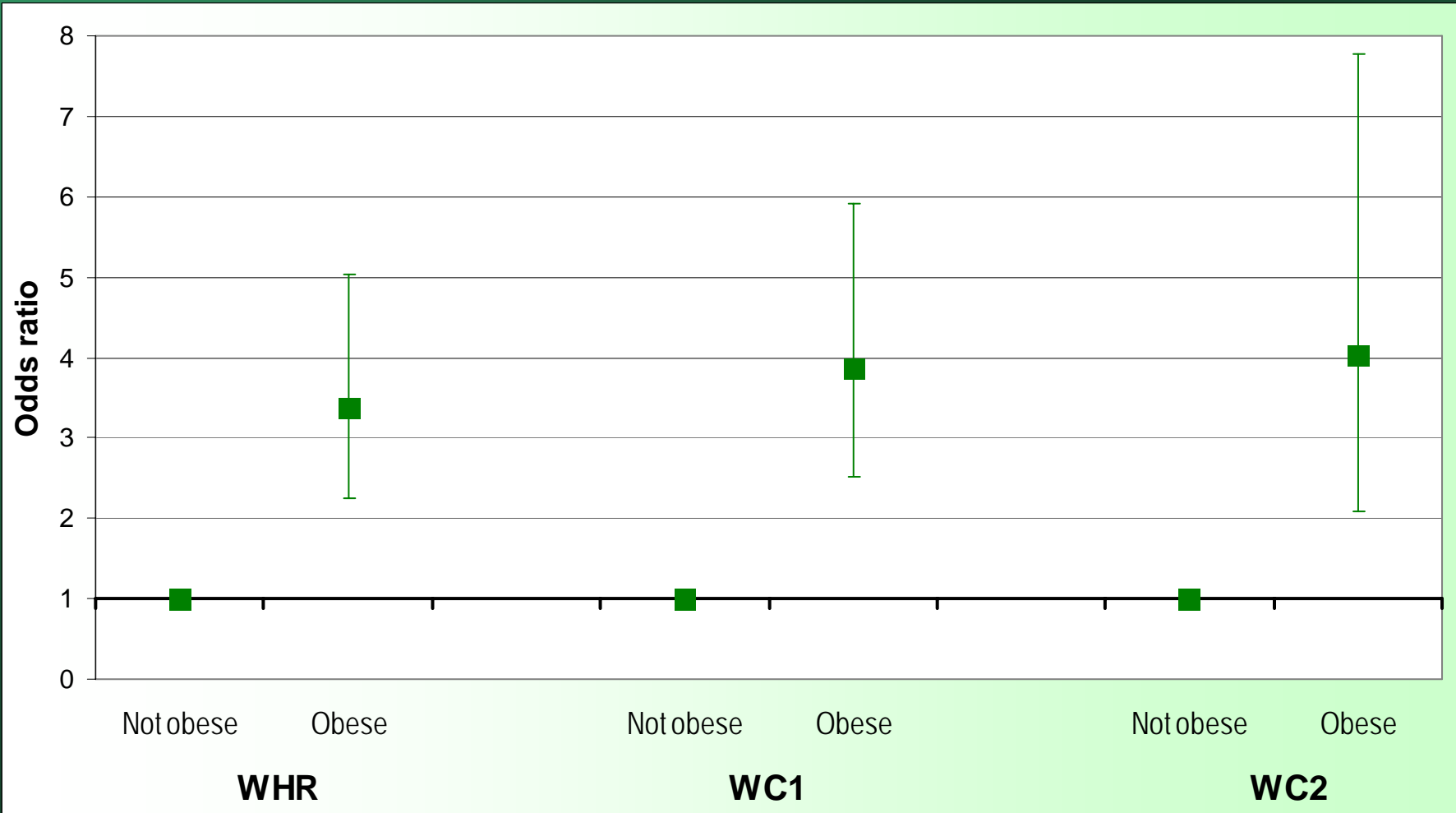
# Odds ratios associated with diabetes, adjusted for age



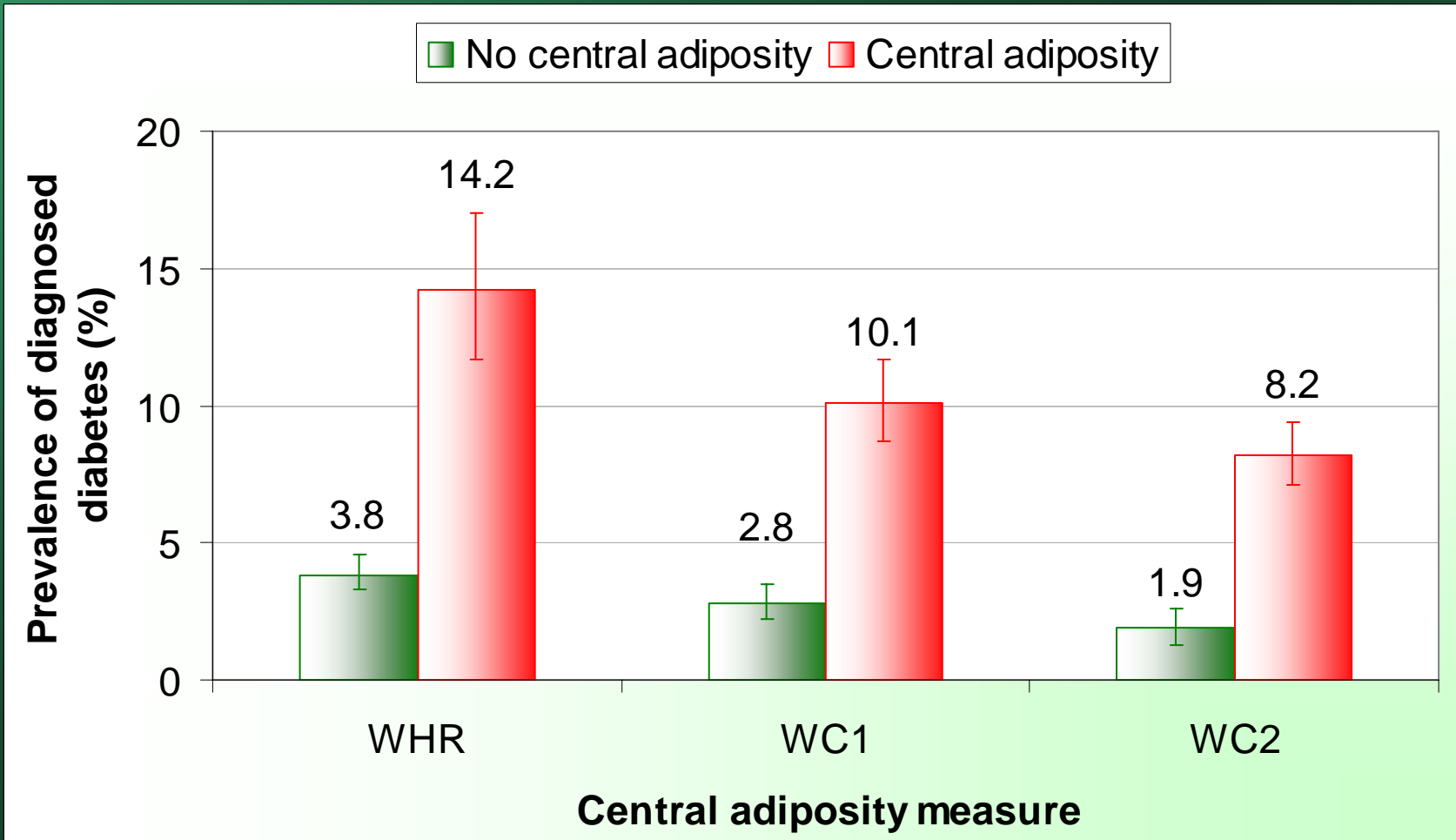
# Odds ratios associated with diabetes, adjusted for age [MALES]



# Odds ratios associated with diabetes, adjusted for age [FEMALES]

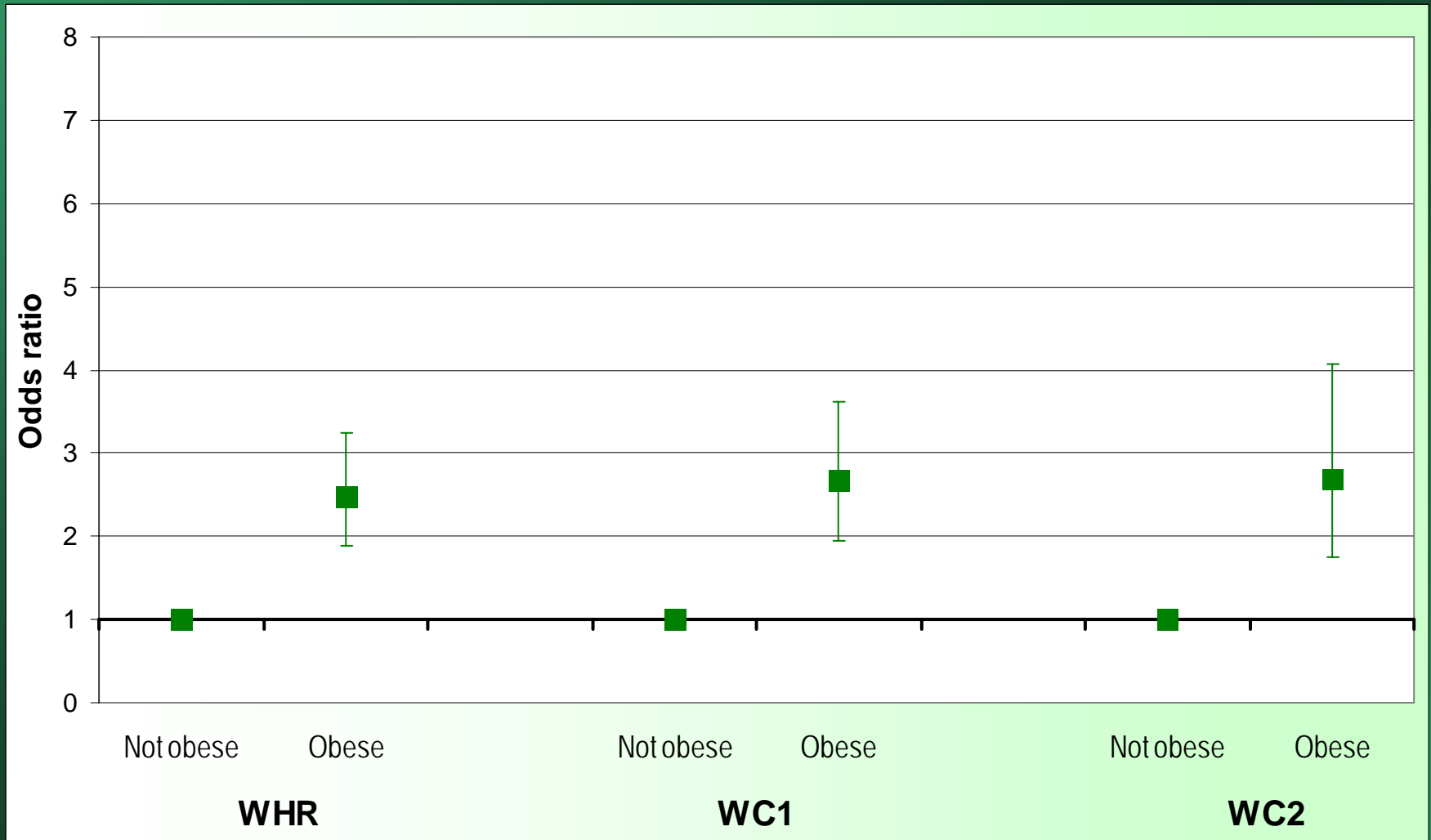


# Diagnosed diabetes prevalence by central adiposity

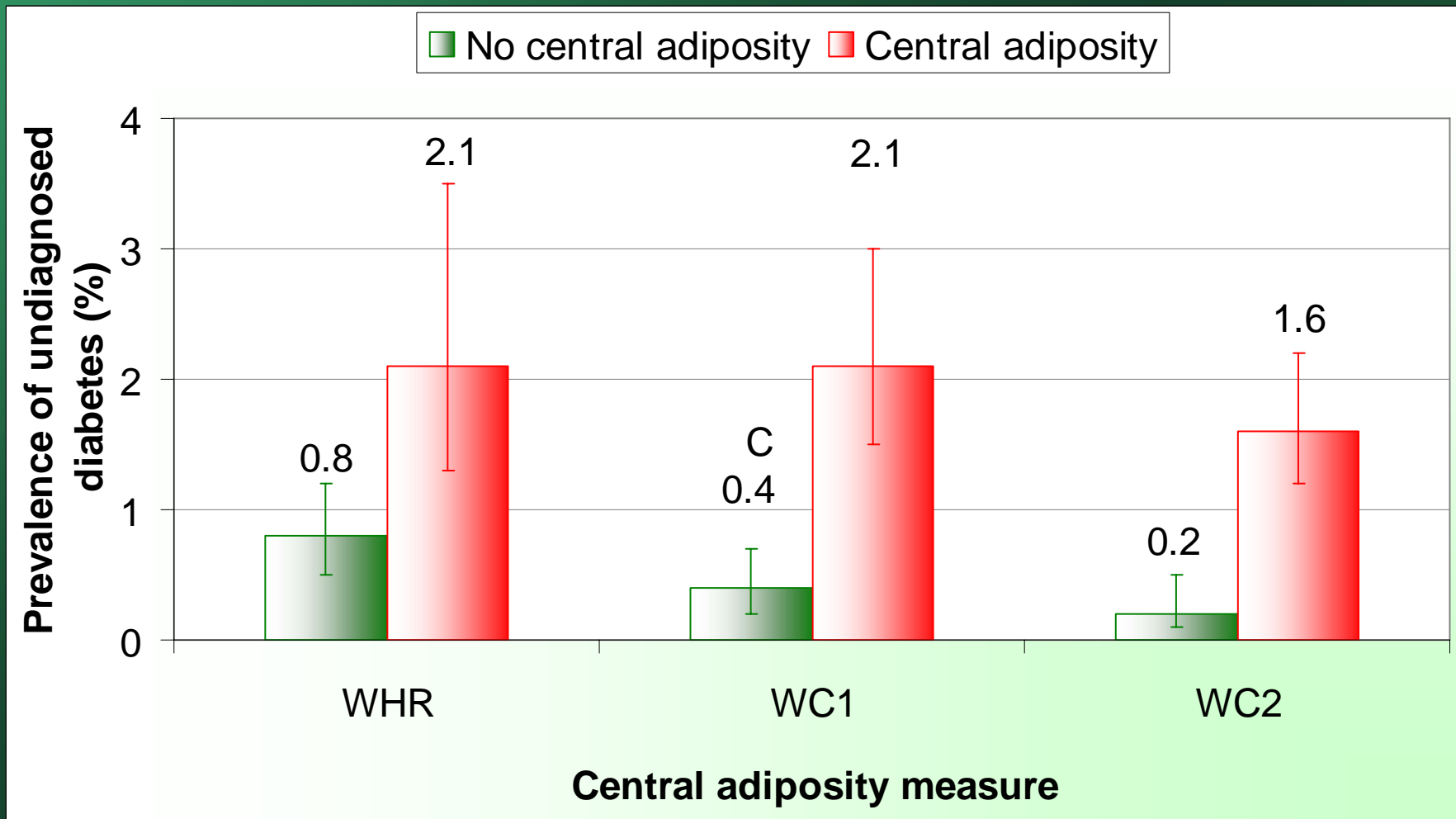




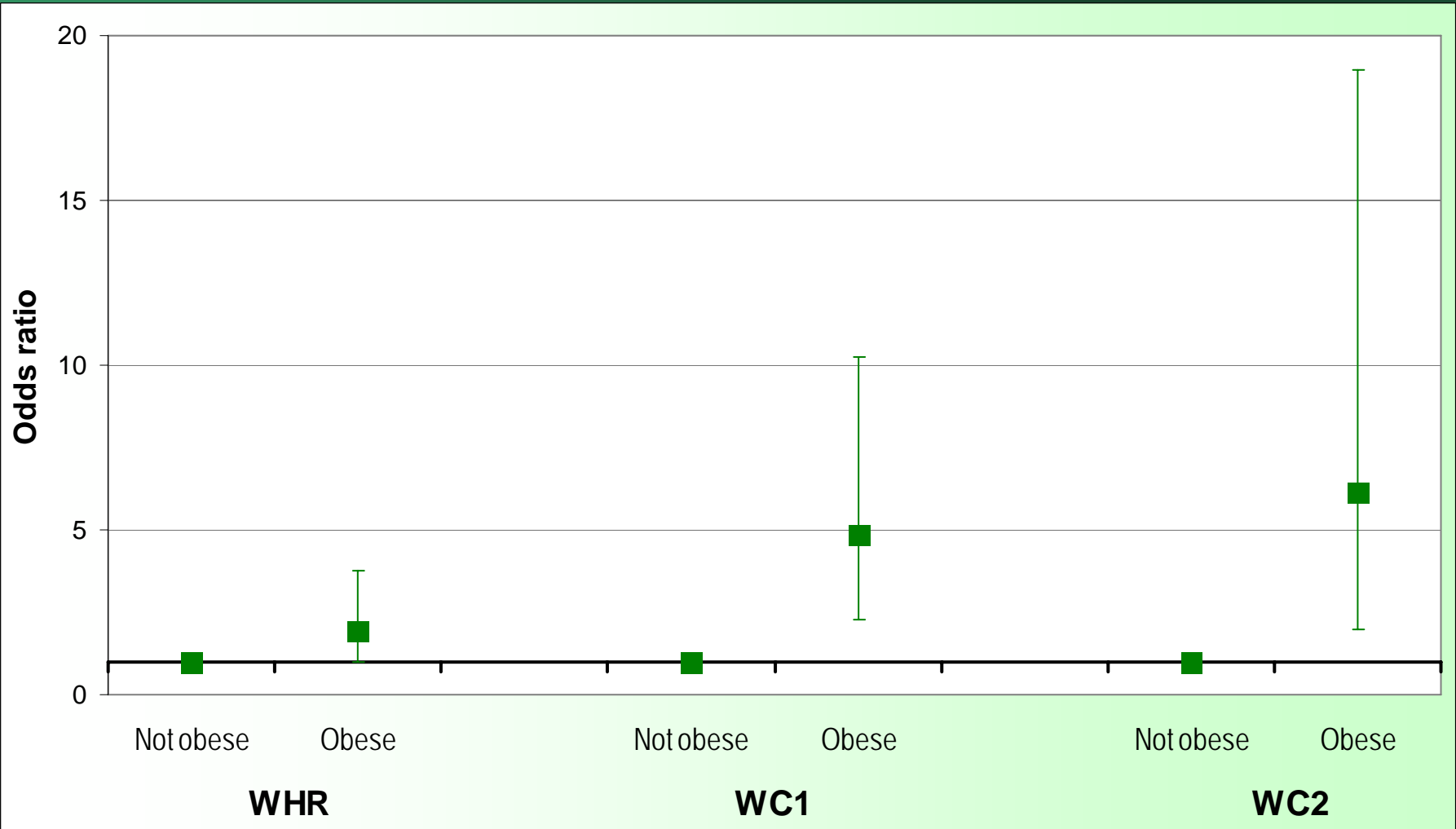
# Odds ratios associated with diagnosed diabetes, adjusted for age



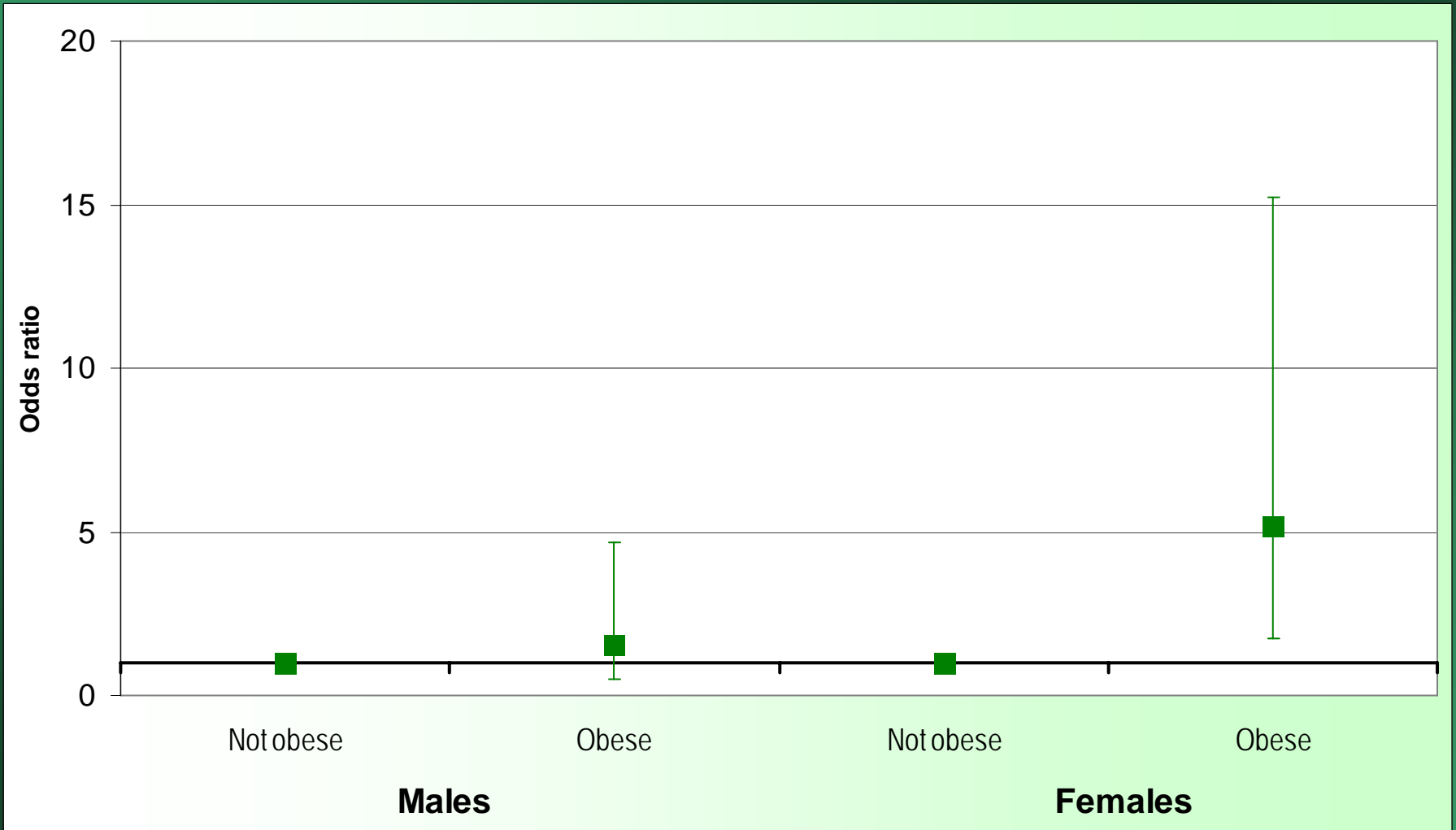
# Undiagnosed diabetes prevalence by central adiposity



# Odds ratios associated with undiagnosed diabetes, adjusted for age



# Odds ratios for WHR associated with undiagnosed diabetes, adjusted for age



# Conclusions

- The prevalence of diabetes was significantly higher among those with central adiposity
- This association holds for all three definitions of central adiposity, and for diagnosed and undiagnosed diabetes, even when controlled for age
- Interventions that aim to reduce the prevalence of obesity will potentially reduce the burden of diabetes



## Contact details

- North West Adelaide Health Study website

<http://www.nwadelaidhealthstudy.org>

- Population Research & Outcome Studies Unit  
(SA Department of Health)

<http://www.health.sa.gov.au/pehs/PROS.html>