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INTRODUCTION

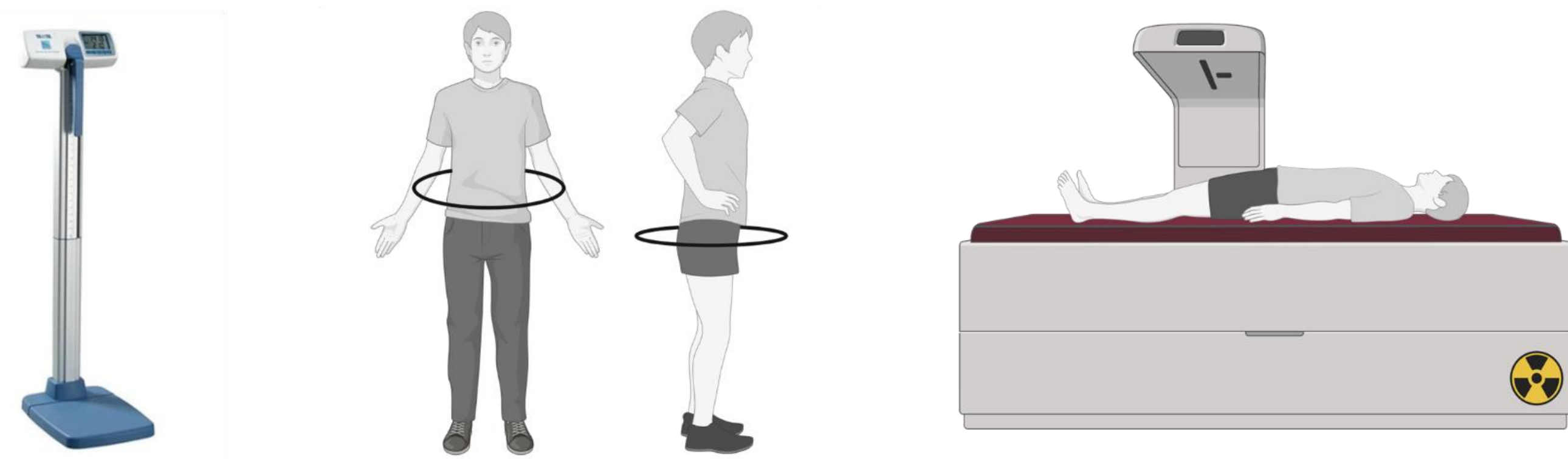
- Cardiovascular baroreflex sensitivity (cBRS) represents how well the nervous system makes rapid changes in heart rate to tightly control blood pressure.¹
- Lower cBRS is associated with higher rates of cardiovascular morbidity and mortality.¹
- Body mass index values above 40 kg/m² (i.e., stage 3 obesity) are associated with lower cBRS values and worse autonomic cardiovascular control.²
- However, it is unclear whether otherwise healthy young adults with milder stages of obesity (stages 1–2) have lower cBRS.

PURPOSE & HYPOTHESIS

- The purpose of this study was to test the hypothesis that young adults with stage 1–2 obesity would exhibit lower cBRS than adults without obesity.

CROSS-SECTIONAL STUDY DESIGN

We measured height, mass, waist circumference, and body fat percentage using dual x-ray absorptiometry (DXA)



We measured beat-to-beat blood pressure using finger photoplethysmography and heart rate using electrocardiogram



We split participants based on their body mass index: under 30 kg/m² (without obesity) or 30–40 kg/m² (stage 1-2 obesity)



We calculated cardiac vagal baroreflex sensitivity (cBRS) using the sequence method from spontaneous fluctuations in systolic blood pressure and cardiac R–R intervals

FUNDING SOURCES, CONTACT INFORMATION, DISCLOSURES

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RESULTS

Table 1. Participant characteristics (n = 15)	Without Obesity (n = 5)	With Obesity (n = 10)	p value
Age (years)	23 ± 1	24 ± 2	0.450
Body mass index (kg/m ²)	24 ± 1	34 ± 3	< 0.001
Waist circumference (cm)	81 ± 6	100 ± 9	< 0.001
Body fat (%)	20 ± 14	33 ± 9	0.049
Systolic blood pressure (mmHg)	118 ± 3	118 ± 7	0.834
Heart rate (bpm)	56 ± 9	70 ± 13	0.066

We present data as mean ± SD. We compared groups using independent, two-tailed t-tests.

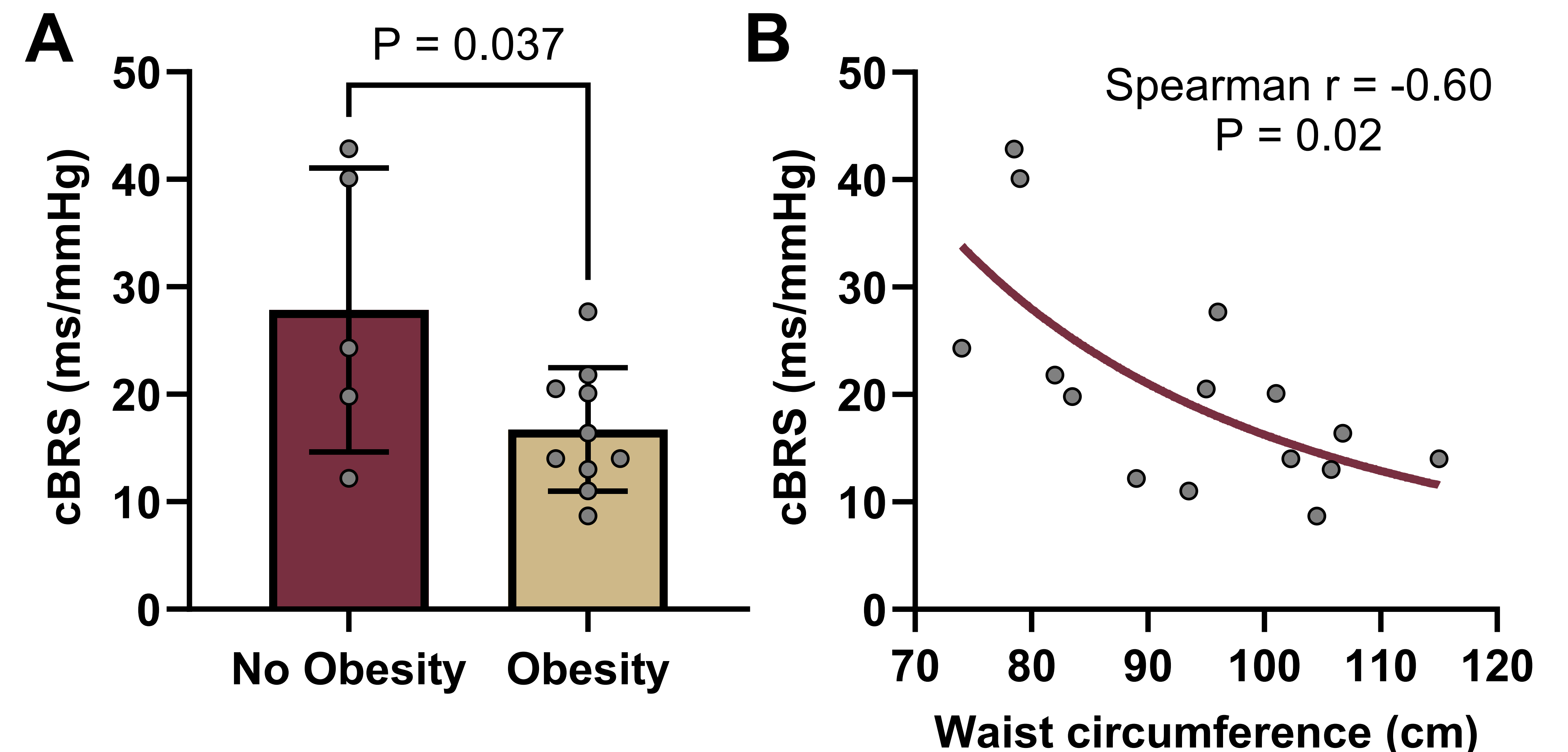


Figure 1. (A) Cardiac vagal baroreflex sensitivity (cBRS) was lower among adults with obesity. (B) cBRS was moderately inversely associated with waist circumference. Not shown are moderate inverse relations between cBRS and body fat % (Pearson $r = -0.64$, $P = 0.01$) and between cBRS and body mass index (Pearson $r = -0.57$, $P = 0.03$).

CONCLUSION

These preliminary data support our hypothesis that cBRS was lower in young, otherwise healthy adults with stage 1–2 obesity than in people without obesity.

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