



**Purpose:** The primary purpose of this study was to investigate the link between waist-circumference and different blood pressure categories.

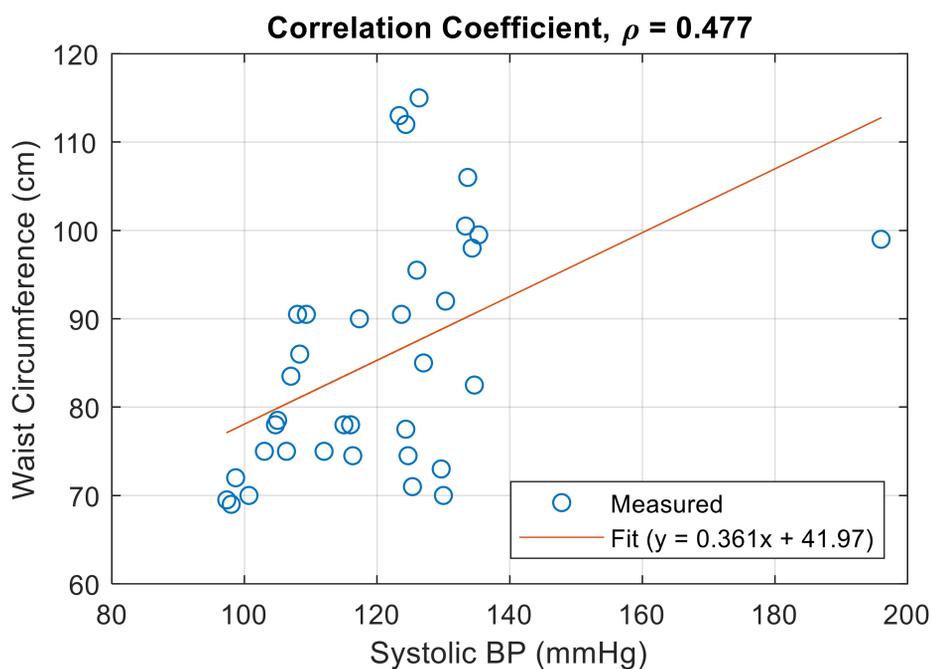
**Hypothesis:** Participants with a lower waist circumference will be associated with lower blood pressure categories.

**Methods:**

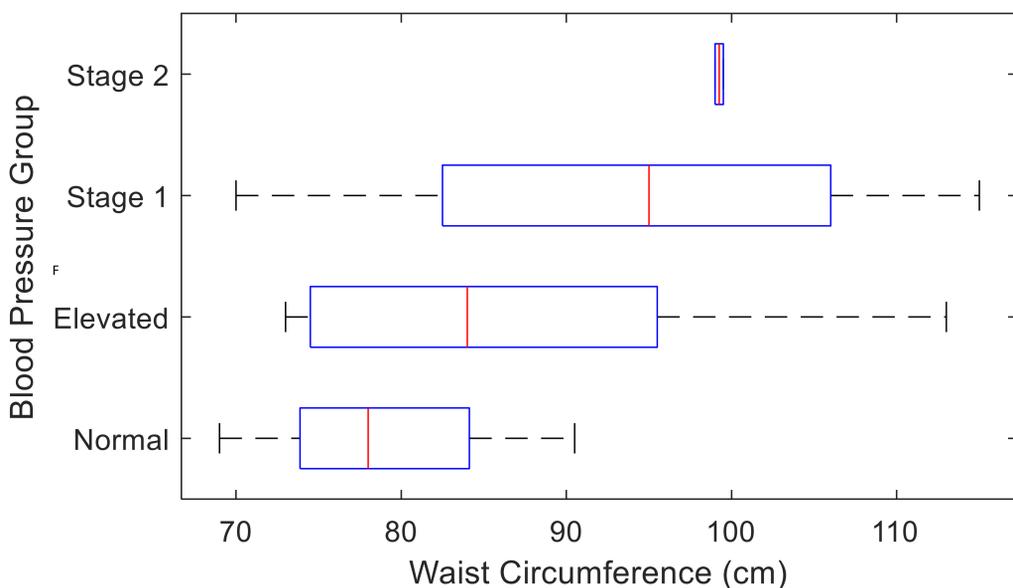
- Subjects: Female staff (18+years) without prior clinical diagnosis of cardiovascular or metabolic disease were recruited from Pennsylvania State University, Berks-campus.
- Height, weight, heart rate, blood pressure, waist circumference, and medical history were assessed.
- After 5-minute rest period, the average of three blood pressure measurements and waist circumference after expiration were obtained at the level of the iliac crest.

**Results:**

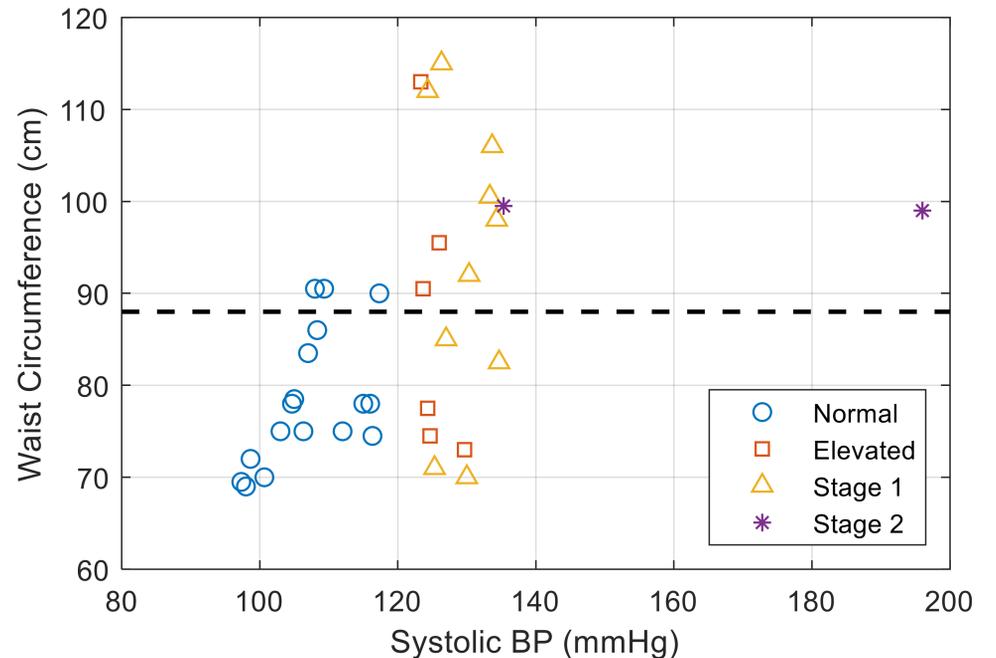
**Figure 1:** Correlation of Waist Circumference to Systolic Blood Pressure



**Figure 2:** Box-Plots of Waist Circumference for the Four BP Groups



**Figure 3:** Distribution of Waist Circumference Among the Four BP Categories



**Discussion:**

- Obesity is causally linked to diabetes, coronary heart disease, stroke, hypertension, osteoarthritis and certain forms of cancer.
- The prevalence of adult overweight and obesity as defined using BMI has increased worldwide since the 1980s, with no country demonstrating any successful declines in the 33 years of recorded data
- Workplaces are potentially promising settings for health promotion given that adults spend a substantial amount of their time at work, they are controlled environments, and have existing delivery infrastructure and social networks.

**Conclusion:**

- The primary findings of this research indicate that there was a direct relationship between waist circumference and the four blood pressure categories.
- A simple and non-invasive health screening method such as, measuring waist circumference could quickly and easily identify those at increased health risk to allow for earlier interventions to improve long-term health outcomes for female employees.

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**References:**

1. Ng, M. et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 384, 766–781 (2014).
2. Afshin, A., Forouzanfar, M. H., Reitsma, M. B. & Sur, P. Health effects of overweight and obesity in 195 countries over 25 years. *N. Engl. J. Med.* 377, 13–27 (2017).