

# Shining Evolutionary Light on Global Health Challenges: Assessing Human Health in Rural Madagascar



## Mandena, Madagascar

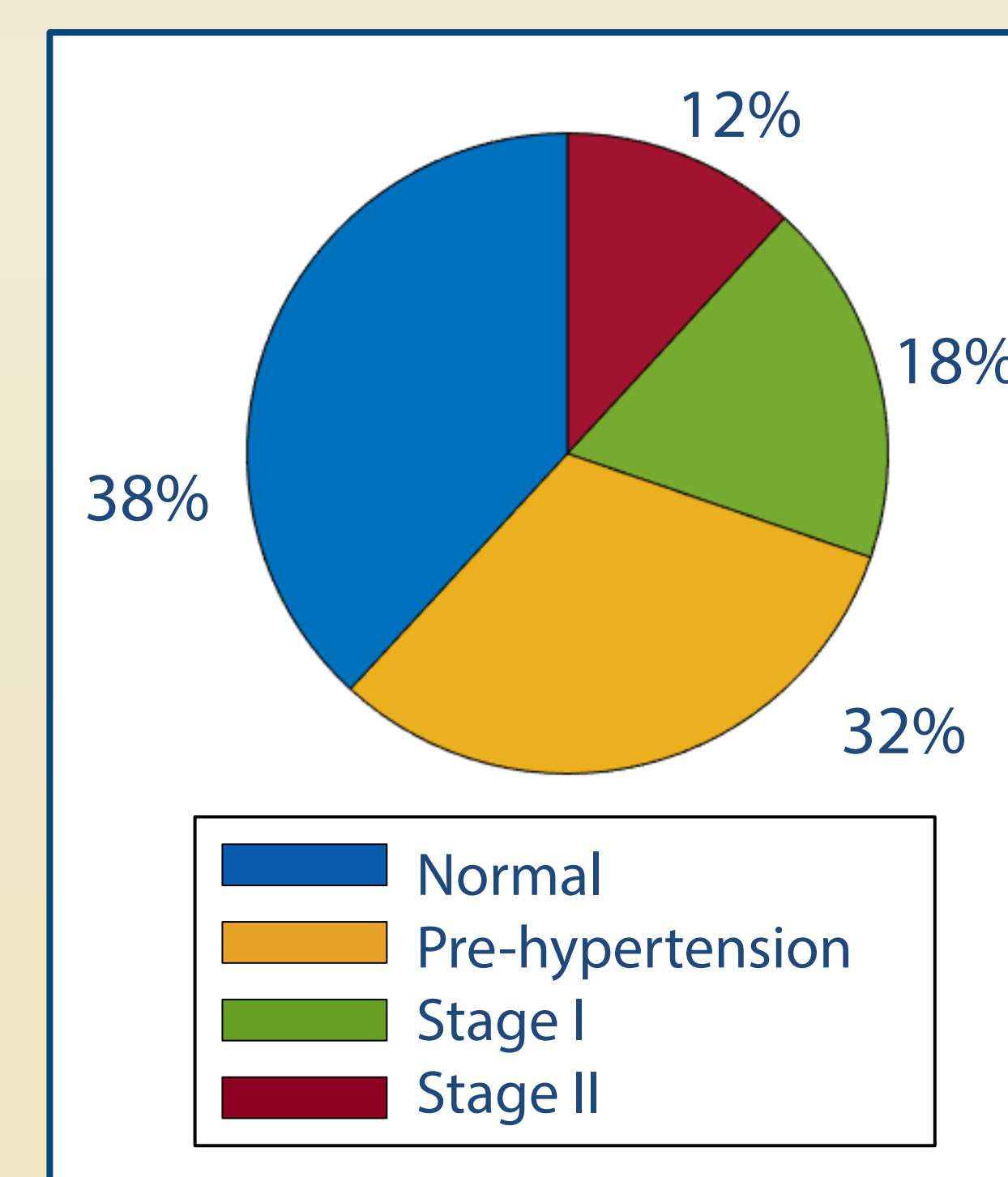
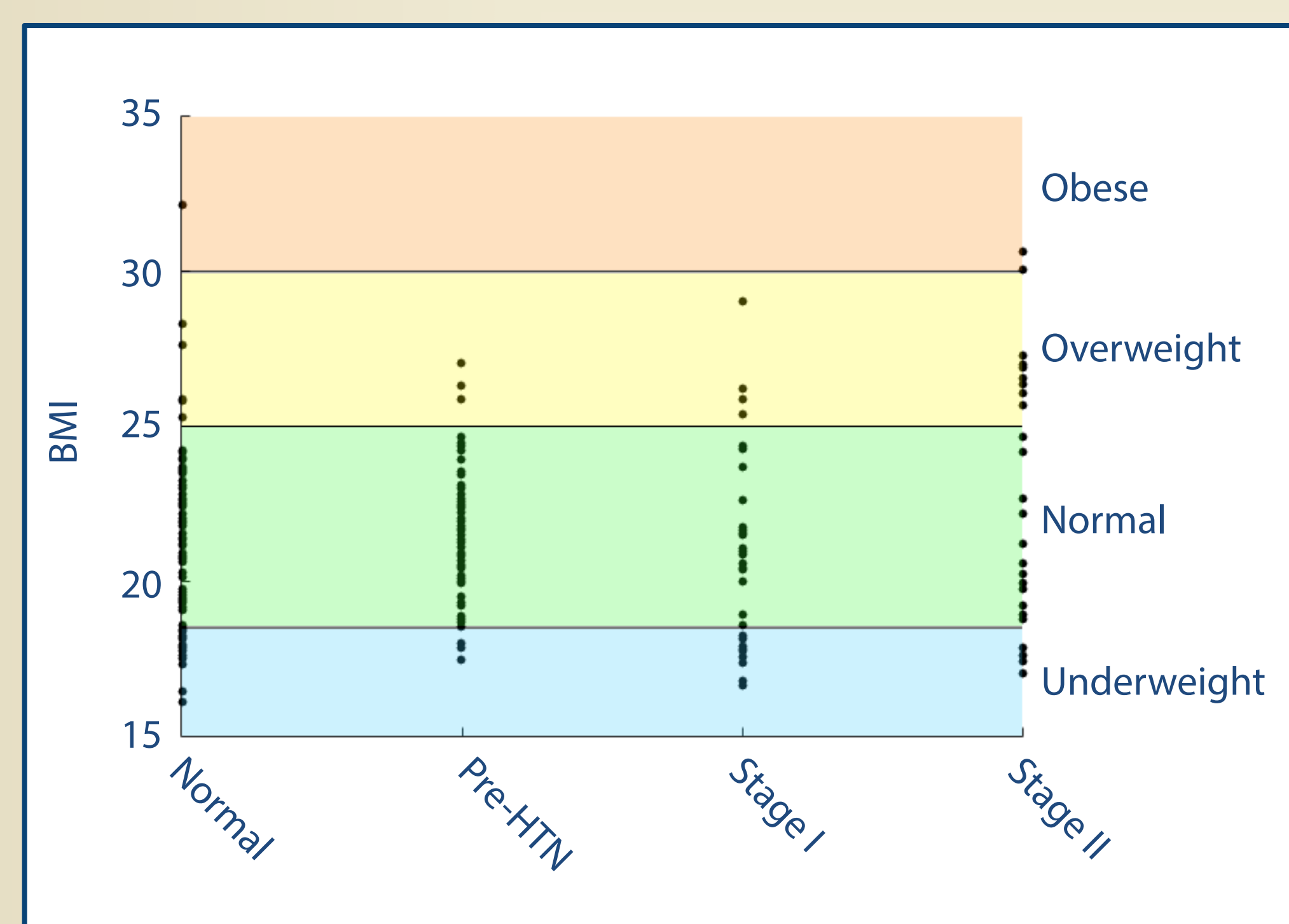
A. SOBEL, T. AJAYI, R. CLARKE, M. MANUS, D. SAMSON, D. SCHMITT, T. TRENTADUE, A. WILLOUGHBY, J. YU, C. NUNN BASS  
CONNECTIONS IN GLOBAL HEALTH, DUKE A&S & SOM



Evolutionary biology is central to many of our most urgent health problems on a global scale. For example, our propensity for obesity, hypertension, and diabetes can be traced to our evolutionary history and millions of years of selection to detect (and actively seek) salt, sugars and fats. We launched a series of projects in Madagascar to investigate the links between evolutionary biology, ecology, and global health.

## PROJECT OBJECTIVES

- Collect basic health data, including body mass, height, blood pressure, heart rate, and temperature.
- Collect survey data on lifestyles.
- Enroll participants in more focused studies.
- Engage with the community to set the stage for long-term research.



## CONCLUSIONS

- Body mass index was within normal ranges for 75% of our 228 participants, with more individuals below (15%) than above (9%) normal cut-offs.
- We discovered extraordinarily high levels of hypertension – 30% – despite a lack of obvious risk factors in the village.
- We will investigate drivers of hypertension in future studies.

## HYPERTENSION RATES IN MANDENA AS DEFINED BY JNC 8.

## METHODOLOGY

- We enrolled 228 adults in the general health survey and assessment.
- Of those, 162 went on to additional, more in-depth studies.
- We collected data on blood pressure and heart rate with an automated upper-arm blood pressure cuff, following 5 minutes of inactivity.
- We also collected data on height and weight, and all participants answered a survey comprised of 31 questions.
- For their participation, individuals were given a fresh coconut. Additional compensation was provided for some of the other projects. A local nurse was on hand to provide prescriptions and referrals for further medical care, and we had rapid test kits to test for malaria.



MEASURING BLOOD PRESSURE AND BODY TEMPERATURE



WORKING WITH MALAGASY INTERPRETERS TO COLLECT HEALTH SURVEY DATA.

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