

Overweight and Obesity Are Associated With Illness-Related Duty Days Lost in a Nationwide Cohort of Young Soldiers

Bar Lossos^{1,2} MD MSc, Bar Weinstein¹ PhD, Jacob Megreli^{1,2} MD MPH, Ma'ayan Shaked¹, Zivan Aviad Beer^{1,2} MD MHA, Doron Yaya-Stupp^{1,2} MD PhD,

Meir Schechter^{1,2} MD PhD

¹ Medical Data Research Institute, Israel Defense Forces Medical Corps, Ramat Gan, Israel

² Department of Military Medical Research, Faculty of Medicine, Hebrew University of Jerusalem, Jerusalem, Israel



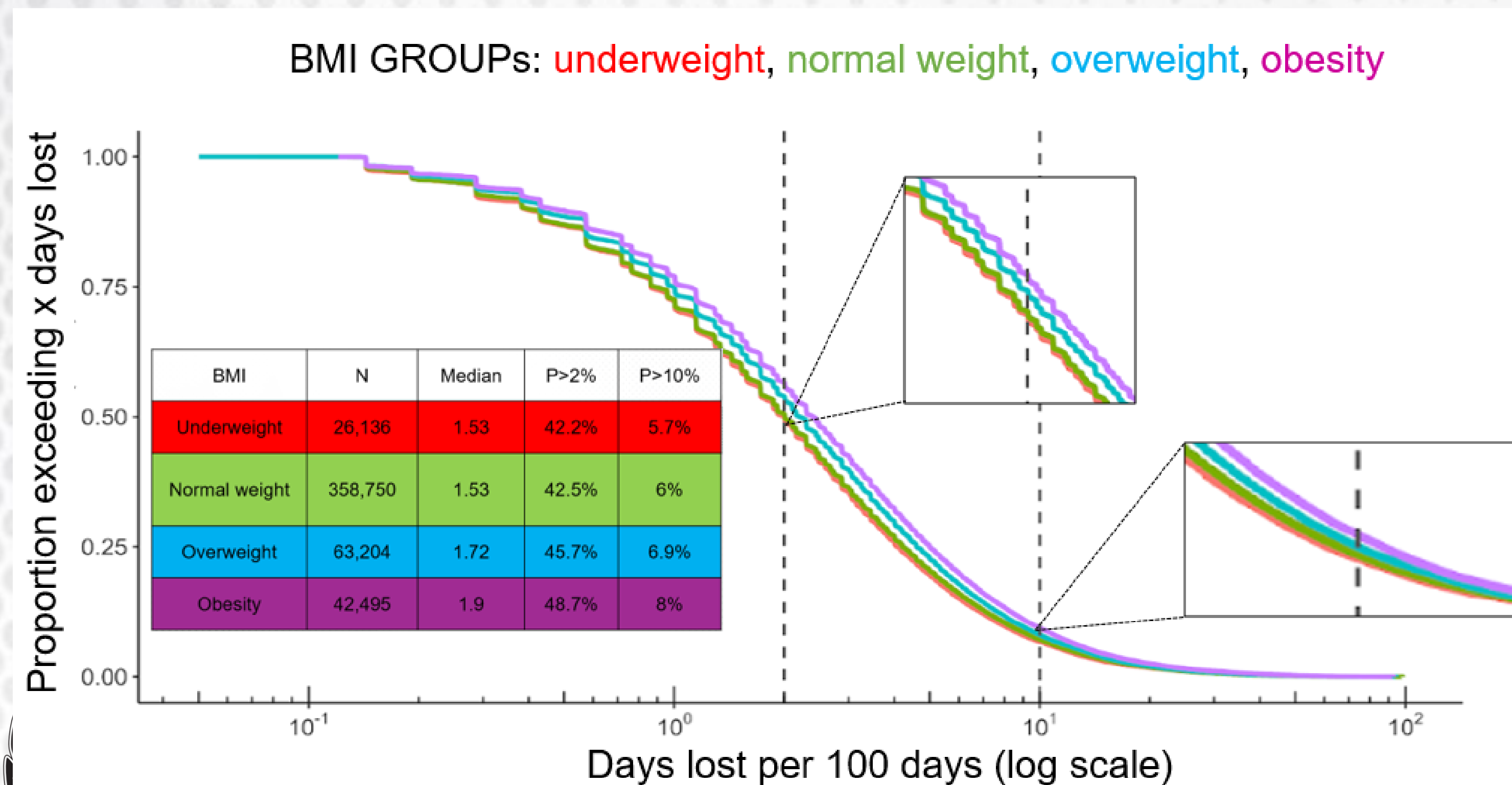
Introduction

- About one-fifth of active-duty U.S. service members in 2020 had obesity, with prevalence continuing to rise. Excess body weight may affect military readiness by increasing morbidity and reducing duty availability. While the long-term health risks of obesity are well established, its impact on illness-related duty absence among young service members remains unclear.

Methods

- Retrospective cohort study, included all Israel Defense Forces military personnel enrolled between 2017-2025 with a measured BMI value.
- Electronic health records were linked with military personnel data on daily attendance, absence, and sick leave, adjudicated daily by the soldier's commander and human resources personnel. Soldiers were stratified by sex- and age- matched BMI percentiles into underweight ($\leq 5\%$), normal weight (5-85%; reference), overweight (85-95%), and obesity ($\geq 95\%$) groups. Rate ratios and proportion of duty days lost were calculated.

BMI and all-cause illness attributed workdays lost



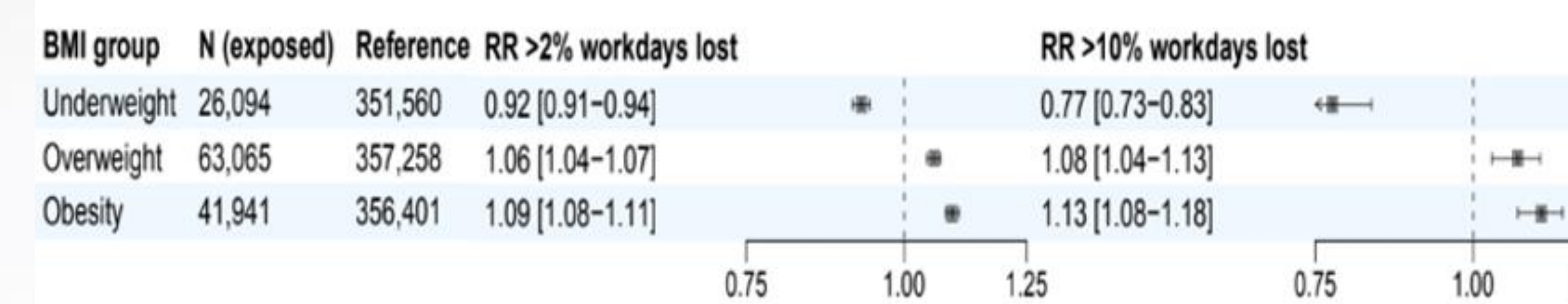
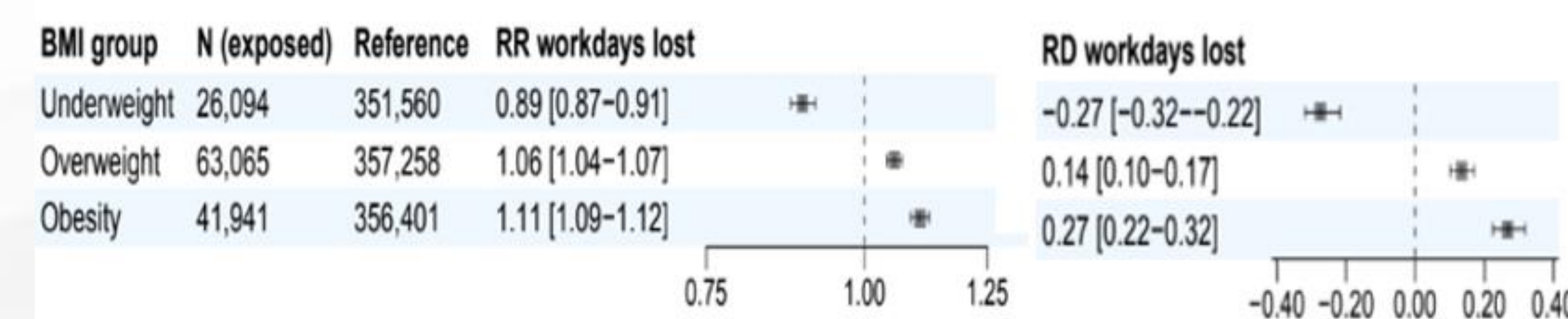
Participants

481,067 soldiers (44% female). There were 24,295, 24,052, 384,640, and 48,080 individuals with underweight, normal weight, overweight, and obesity, respectively

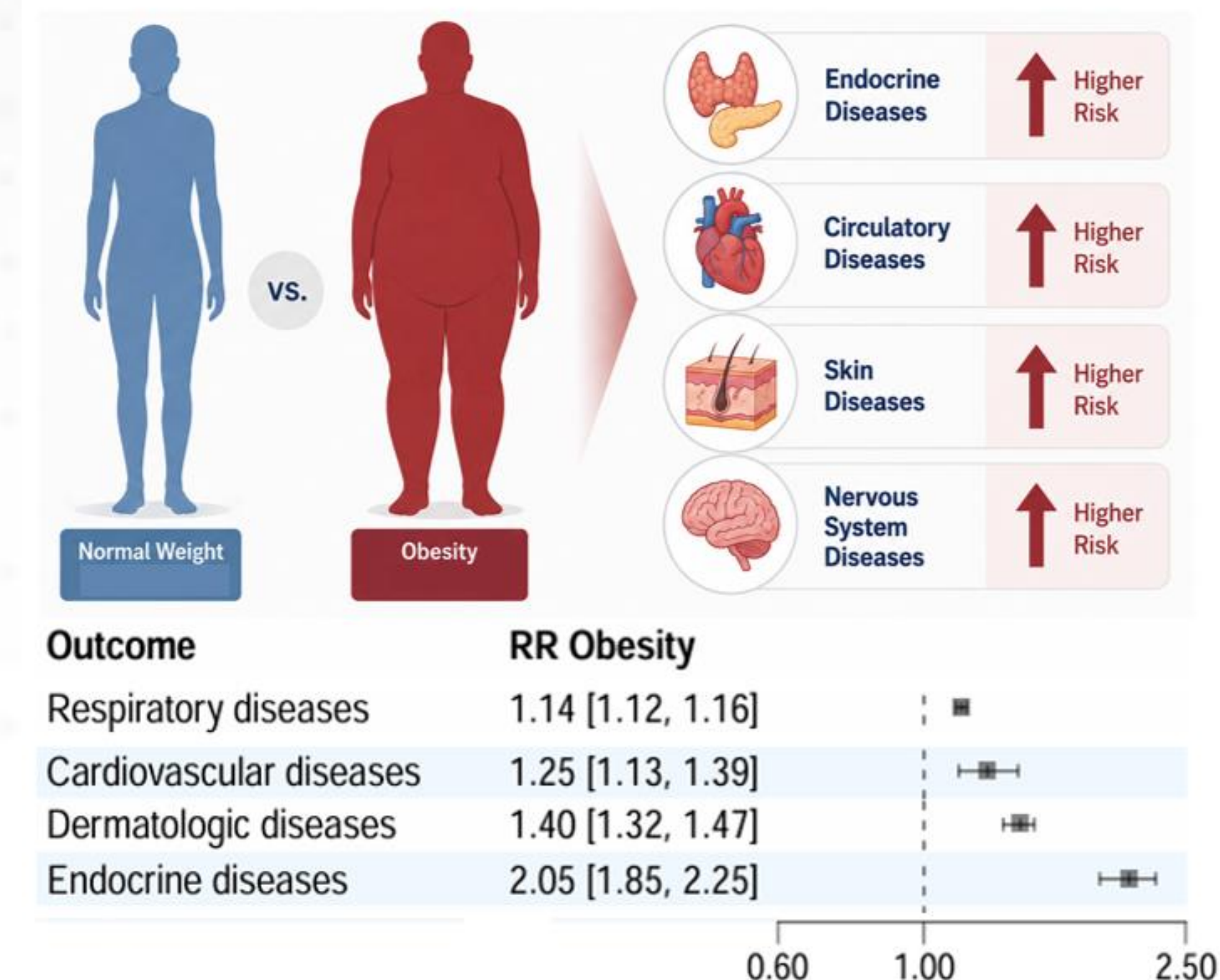
Results

- Results revealed **significant associations between overweight, obesity and the proportion of illness-related duty days lost.**
- Among those with normal weight, 5.3 million illness-attributed duty days were lost (2.6%) out of 204.6 million total duty days. Corresponding proportions in the underweight, overweight, and obesity groups were 2.4%, 2.9%, and 3.1%. The proportion of soldiers with $\geq 2\%$ of duty days lost due to illness (reflecting ~5 days per year) was 40.8%, 41.7%, 45.4%, and 48.1% among those with underweight, normal weight, overweight, and obesity, respectively.
- A Cause-specific analysis from electronic health records with ICD9 diagnoses revealed that soldiers with overweight or obesity have a higher risk for dermatologic, endocrine, circulatory diseases and more.

Overweight and obesity are associated with increased rates of workdays lost



Cause-specific illness attributed workdays lost



Conclusions

- In this nationwide cohort of young service members, **overweight and obesity were associated with increased illness-related duty days lost**, highlighting excess weight as a modifiable determinant of military operational readiness even before complications develop.

Abstract disclaimer: The authors declare that they have no conflicts of interest or disclosures relevant to the content of this abstract. All research procedures were conducted in accordance with established ethical guidelines and with the approval of the appropriate institutional review board. The findings presented are based on the data available at the time of submission and may be subject to further analysis or refinement.



At the moment of truth,
IDF MEDICAL CORPS.