

WG 2 (Preventive Medicine and Healthcare Policies)

Small Starts, Big Risks: How Prematurity and Birthweight Impact Teen Blood Pressure

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Background:

Prematurity affects 11% of births worldwide and is linked to long-term kidney complications due to incomplete nephrogenesis. This increases the risk of hypertension, proteinuria, and chronic kidney disease (CKD) later in life.

Purpose:

This study examines whether adolescents born prematurely or small for gestational age (SGA) have higher blood pressure (BP) than those born at term with normal birth weight.

Methods:

A retrospective cohort study analyzed medical data from 513,802 late adolescents (ages 16–18) examined at Israel Defense Forces (IDF) medical facilities (2005–2018). Participants were categorized by birth weight and gestational age. BP measurements were analyzed while adjusting for confounders like BMI and sex.

Results:

Preterm and VLBW/ELBW adolescents had a higher prevalence of hypertensive-range BP. Obesity was strongly associated with hypertension, independent of birth weight. Proteinuria was rare, with no significant differences across birth weight categories.

Conclusions/Possible Implementations:

Prematurity and low birth weight are early risk factors for adolescent hypertension, highlighting the need for long-term monitoring. Military medical evaluations could incorporate birth history to identify at-risk recruits early.

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How Thin Can I Be? BMI Thresholds in Women Combat Recruits

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Background:

Historically, women soldiers weighing ≤ 49 kg at enlistment have been disqualified from combat roles in the Israel Defense Forces (IDF), regardless of their body mass index (BMI), due to concerns about injury risk. However, this policy lacks direct empirical support. Identifying potentially unnecessary disqualifying criteria is essential for optimizing combat readiness while ensuring soldier health and performance.

Objective:

This study aims to examine the association between body weight—particularly in the underweight range—and the risk of overuse injuries among women serving in combat roles.

Methods:

We will analyze data from women soldiers recruited for combat roles, assessing the relationship between body weight, BMI at enlistment, and overuse injuries. Injury outcomes will be determined based on physicians' diagnoses and recommended accommodations for physical strain. We will focus on women who, despite weighing ≤ 49 kg at enlistment, were still assigned to combat roles.

Preliminary Findings:

Between 2014 and 2023, 8,045 women soldiers were diagnosed with stress fractures, identified using the ICD-10Z codes. Among combat women soldiers, the prevalence of stress fractures was 13.9%. Of the 461 women who enlisted weighing ≤ 49 kg, 56 (12.1%) sustained a stress fracture.

Statement of significance:

Our preliminary findings suggest that the current weight-based disqualification criteria may warrant reevaluation. The outcome of this research has direct implications for military policy, contributing to evidence-based decision-making that balances operational effectiveness with soldier health and safety.