Marine Corps Study on Body Composition Leads to Change

MARINE CORPS BASE QUANTICO, Va. – The U.S. Marine Corps' Training and Education Command, in collaboration with the United States Army Research Institute of Environmental Medicine, recently concluded a year-long study to evaluate current body composition standards and ensure service standards optimize health, performance, and fitness, Headquarters Marine Corps said in a release

Gen. David Berger, commandant of the Marine Corps, received the study's findings and made the following decisions: the performance exemption for Marines who score a 285 or higher on their fitness tests will remain in place. Prior to assigning Marines to the Body Composition Program, commanders will assess body composition using more advanced body composition methods effective Jan. 1, 2023; and a 1% increase in total allowable body fat for female Marines, also effective Jan. 1.

The Marine Corps will codify these changes via official messages in the coming months. This announcement is being published ahead of official and final changes to the policy because the Marine Corps recognizes needed change cannot wait.

"This study marks a milestone in understanding the health and performance of our Marines," said Berger. "Our primary focus in the Marine Corps is the individual Marine and this study is a pivot point. We will continue to learn and explore additional modifications to our body composition program."

This study was one of the most technologically advanced studies on the topic since the 1980s, drawing participation from a diverse group of 2,173 Marines, including 1,435 men and

738 women, 196 of whom were postpartum. The study was conducted at three locations: Marine Corps Bases Quantico, Virginia; Camp Lejeune, North Carolina; and Camp Pendleton, California.

“Ultimately, this is about warfighting. We need to find the most practical, accurate, and unbiased method of measuring body composition to maintain a healthy, ready force,” said Berger. “In order to make changes, we have to understand the impacts and availability of our proposed alternative methods. This will take some time to get it right, but we owe it to our Marines to move quickly. We continue to make changes across the force that aim to better take care of our most important asset – our Marines.”

Every participant was first assessed utilizing methods that measure the size and proportions of the human body via height, weight, and the current service wide tape test.

Then, participants received three assessments that measure tissue density. The first assessment was a Dual Energy X-Ray Absorptiometry scan, the most accurate means to estimate body fat, lean body mass and bone density. The second assessment was a 3D body scan using a two-compartment model approach to assess fat and lean mass. The third method was through bioelectrical impedance analysis, which uses an imperceptible electrical current to estimate lean mass and fat mass.

Finally, the performance assessment, called the Counter Movement Jump, was conducted on a force plate designed to measure the forces and movement applied when conducting an upward jump.

Going forward, the Marine Corps will still conduct height and weight measurements with the accompanying tape test. The research concluded that the tape test correctly identifies 91.6% of male Marines and 92% of female Marines as over the allowable body fat. Under this new process, the 0.6% of male

and 6.3% of female Marines who are erroneously identified as exceeding body fat standards by the tape test would be correctly identified within standards by completing the Dual Energy X-Ray Absorptiometry scan.

“Our research demonstrated the taping method is still a viable solution to determine if a Marine is within an optimal body composition range. However, we recognize that a more scientifically advanced method of determining body composition is required before a Marine is assigned to a program that could have career implications,” said LtGen. Kevin Iiams, commanding general, Training and Education Command.

Therefore, under this policy, Marines who are identified as over their allowable body fat percentage when taped will receive a DEXA or BIA scan to ensure body fat percentage accuracy prior to enrollment in the body composition program.

“We also recognized that male and female Marines’ body composition standards did not similarly compare to performance-related body fat. Female standards were leaner than the males,” said Iiams. “We have updated the maximum percentage allowed for females to reflect what the science told us was an equally-balanced and standardized body composition across the force.

“These are likely not the last changes to come for the body composition program,” said Iiams. “We are a learning organization and will continue to refine these important health and readiness-programs as we collect more data.”