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GOOD MUSCLE FITNESS INCREASES HIGH SUSTAINED G-ENDURANCE AMONG INDONESIAN MILITARY FIGHTER PILOTS

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Background:

Good muscle fitness will improve the capability of pilots to cope with High Sustained G (HSG). Fighter pilots who handle sophisticated aircrafts have increased chances of being exposed to HSG. To minimize the danger of this force, fighter pilots should repeatedly practice high intensity Anti G Straining Maneuvers (AGSM) to the point of fatigue. The aim of this study is to determine how muscle fitness can affect HSG.

Methods:

The subjects consisted of voluntary military fighter pilots who agreed to join this study. They were all exposed to Simulated Air Combat Maneuver (SACM) human centrifuge protocols at the Saryanto Aerospace Medicine Institution (Lakespra Saryanto) in Jakarta. The endurance of each pilot was measured by the duration of time they could withstand HSG. Muscle fitness was evaluated by the score of routine military fitness test procedures.

Results:

Of the 25 subjects who participated in this study, two pilots dropped out because they experienced severe motion sickness. The mean age and flying hours of the subjects were 28.0 (SD 3.4) years and 501.4 (SD 232.3) hours, respectively. Those who had higher muscle fitness scores had increased HSG duration [Pearson's correlation (r)=0.76; p=0.001].

Conclusion:

Greater muscle fitness increases HSG endurance among Indonesian military fighter pilots. Effective muscle fitness training may increase a fighter pilot's ability to perform aircraft tactical maneuvers for a longer period of time.

Keywords:

High sustained G, muscle fitness, military fighter pilots