



**European Conference on Aerospace Medicine  
2010 Athens  
10th – 13th November 2010**

**ABSTRACT**

<b>Title: DOES G FORCE INCREASE THE INCIDENCE OF VARICOCELE IN AIR FORCE PILOT CADETS?</b>	
<b>Author(s) Name:</b> <u>P. Kousoulis</u> <sup>1</sup> , K. Skrepetis <sup>2</sup> , G. Athanasiades <sup>2</sup>	
<b>Affiliation:</b> 1. Hellenic Air Force, 120 Flight Training Wing Medical Service, Kalamata, Greece. 2. General Hospital of Kalamata, Department of Urology	
<b>Objectives:</b> Air Force pilots are subjected during training to acceleration (G) forces that are not encountered in other individuals. These can have a profound effect in the vascular system. Specific training and anti-G manoeuvres are routinely used to counteract these effects and allow pilots to operate at the limits of human tolerance. The objective of the present study is to determine whether these training conditions affect the incidence of varicocele.	
<b>Methods:</b> Between March 2006 and March 2007 a cross-sectional study was performed in order to assess the incidence of varicocele in 234 Air Force pilot during training (120 hours of flight and a specific endurance training). The pilots were assessed clinically and with a scrotal Doppler ultrasound if there was a clinical suspicion of varicocele. Height, weight, body mass index (BMI) and testicular volume were recorded for every participant. A group of 35 pilots randomly selected with absence of varicocele confirmed with Doppler ultrasound acted as control group.	
<b>Results:</b> Left sided varicocele was confirmed with Doppler ultrasound in 23 (9.8%) pilots. No case of right or bilateral varicocele was identified. Affected pilots tended to be taller ( $p=0.073$ ) and had a smaller mean left testicular volume ( $p<0.001$ ) than the control group. Eight cases (35%) were grade I, 10 (43%) grade II and five (22%) grade III. Linear regression analysis showed that for grade I and II there was a trend for the testicular volume to decrease ( $p=0.349$ and $0.067$ respectively). In grade III varicocele this difference was statistically significant ( $p<0.05$ ).	
<b>Conclusions:</b> The incidence of varicocele in fighter pilots during training is not higher to other groups of the same age. Affected individuals tended to be taller, with ipsilateral testicular hypotrophy. Longitudinal studies are needed to further clarify the development of varicocele in this unique population.	
<b>Name and address for correspondence:</b> Mr. Panagiotis Kousoulis, Emmanouilidou street 8, 17122, Athens, Greece	
<b>Telephone No.:</b> +306983511835	<b>Fax No.:</b>
<b>E-mail:</b> pkousoulis@gmail.com	<b>Date:</b> 01/09/2010