News
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****Research indicates "top guns" have fewer sons

DALLAS--Do "top guns" have fewer sons? The answer to the old Air Force myth is "yes," according to research done by a geneticist at The University of Texas Southwestern Medical Center at Dallas.

Dr. Bertis Little recently reported in Aviation, Space, and Enviromental Medicine that a group made up of Air Force "top guns" and U.S. astronauts produced a ratio close to 60:40 (girls to boys) instead of the normal 50:50 ratio. All the pilots, who flew large amounts of time at high G forces (a measurement based on the pull of gravity), were attending the Air War College at Maxwell Air Force Base in Alabama in 1965. Data on these pilots, as well as the astronauts, were taken from published biographies.

"With the coming of the nuclear, jet and space ages, new stresses and interacting combinations of stresses on the human genetic makeup arise," said Little. "Lore among pilots has suggested a deficit in the number of male offspring produced." Earlier studies of pilots in West Germany and in the United States had noted a lower number of males, 45.6 percent and 40.8 percent respectively. The differences in both studies were attributed to stress. Little, however, is interested in looking at the possible effects of G-force on male fertility by comparing various task assignments and levels of exposure.

Information including the numbers, sexes and ages of the children in the family and the ages of the pilots and their wives was included in the data. Also computed was the age of each father at the time when each of his children was born. The officers were grouped into three categories: non-pilots, non-tactical officers (who have little exposure to G forces because of the types of planes they fly, such as transports and heavy bombers) and tactical officers, who fly fighters and trainers.

Little, who is an assistant professor of obstetrics and gynecology at UT Southwestern, says that he became interested in exploring the myth while he was a faculty member at The University of Texas at Austin. He, his wife Lori, who also participated in the study, and his in-laws were "iced in" in the hill area of Austin. His father-in-law Cecil H. Rigsby, a retired Air Force colonel who is second author in the study, mentioned the top-gun myth, and the two got down Rigsby's old war-college annual and began looking at girls vs. boys in offspring. Just playing around with a hand calculator, it looked like there was some truth in the myth, so Little decided to pursue a serious study.

Formal results indicated that the low G-force exposure group (non-rated officers and non-tactical pilots) had about 50 percent male offspring while the high G-force exposure group (tactical pilots and astronauts) had 38 percent and 43 percent males, respectively. The 62 high-G pilots and astronauts had 40 percent male offspring while the 220 other officers had 50 percent boys.

(More)

Little said that fathers in the study averaged 41.8 years of age in 1965 at the time the data were reported, and their average age was 27.5 in 1965 at the time of the births of their first children. The geneticist admits that his study does not prove that exposure to high G-force causes the drop in the number of male offspring but says, "It does suggest an association between the high-G exposure and reduced male to female ratio."

Nor is this study a closed chapter. Little has already begun work with mice that have been used in NASA-financed studies under conditions similar to high-G force exposure. Little is working with a control group of mice. The geneticist is doing a blind study in which he is attempting to identify which mice have been "flying" at high G in a centrifuge by analyzing the X and Y chromosomes in their sperm counts.

The genetecist believes that fertility studies such as these will have tremendous implications for us in the future. "More pilots are flying more types of aircraft at higher speed every day. Also, as technology takes us beyond the face of the earth at great speeds, effects on physiology and reproduction will become increasingly important."

Futhermore, Little said that while few studies have been done in this area about man's fertility, nothing has been investigated about the effects of flying for long times and at high altitudes on women.

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Note: The University of Texas Southwestern Medical Center at Dallas was formerly named The University of Texas Health Science Center at Dallas. The components of UT Southwestern are Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences and Southwestern Allied Health Sciences School.