

3rd International Conference and Expo on

Natural, Traditional & Alternative Medicine

September 24-25, 2018 | Montreal, Canada

Relationship of night flight stress exposure, sex hormone concentration, and *Tribulus terrestris* consumed in male flight crew after a month of long range flights

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Background and Purpose: Testosterone, an anabolic steroid promotes the male sexual characteristics and is essential for several key reproductive which may change by different variables such as sleepless or fatigue. The present study aims to investigate the relationship between night flight stress exposure, serum testosterone concentration and *Tribulus terrestris* consumed in male flight crew after a month of long-range flights.

Method: Thirty-five healthy male pilots (45.7 ± 5.18 years, 28.1 ± 4.2 BMI), not on hormone therapy, and had average 20 nights with long-range flight during 2 months of the project, participated in the study. At the second month, they used 450 mg a day of natural fresh *Tribulus terrestris* (crud extract with hot water). The blood sample was collected before, at the end of one month, and after the second month. Serum level of testosterone was determined by ELISA kit. Pilots were also asked to keep a log of how they felt throughout the two months of the project when they spent their nights in a flight sleeping for up to 15 hours.

Result: Testosterone levels were significantly reduced after one month of night sleep deprivation compared to pretest and increased after the second month. The men with the lower levels of testosterone reported a decline in their sense of wellbeing and their mood.

Conclusion: Night duty is associated with reduced wellbeing and vigor, which may also occur as a negative consequence for young men, including reduced libido and poor reproduction. This can repair with consumption of daily natural fresh *Tribulus terrestris*.

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