

## **CAN WE PROTECT SPERMATOGENESIS AGAINST TESTICULAR INSULT**

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### **ABSTRACT**

spermatogenesis is the process that takes place within seminiferous tubules of testis, in which spermatozoa are formed from germ cells through 3 phases. the spermatogenesis process is initiated from germ cell replication, followed by meiosis, and finally spermiogenesis. each germ cell gives rise to 16 primary spermatocytes, each of them results in 4 spermatids and subsequently 4 sperms. there are 3 million germ cells undergo spermatogenesis per day, and about 200 million sperms should be formed later on. considering half of sperm die during spermatogenesis process, eventually only remain 100 million sperms. however, actually most of males undergo infertility as a consequent of worsen of sperm quality especially oligoasthenoteratozoospermia (oat) due to testis insult.

there are several causes of oat, among other things is related to life style. the unfit life style has significant influence toward oat occurrences. on the other hand, healthy life style aside from capable to increase in health status, as well as the protection of spermatogenesis from various insult of the testis. several life styles have been proved influencing toward testicular function are smokes, intake alcohol, and likely phone usages. the aforementioned habit induces the increase in ROS production and antioxidant level depression. in addition to increase in ROS production, alcohol intake also deteriorates the intake of nutrient. immeasurable exercise, both lack of exercise or chronic intensive exercise may induce increase in ROS production. in addition to increase in ROS production, chronic intensive exercise also suppresses testosterone concentration through axis of hypothalamus-hypophysis-testis. furthermore, tight underwear, chronic sauna, and some activities that increase in intrascrotal temperature may decrease in sperm quality, instead cause DNA fragmentation. decrease in sperm quality, subsequent of testis temperature elevation is caused by impairment of protein G as an intracellular messenger from FSH and LH in the testis.

change the life style from unfit to healthy life style is much necessitated to ameliorate sperm quality and indirectly protect from various testis insult and male infertility.

key word: spermatogenesis, life style, testicular insult