

**KORELASI KADAR TESTOSTERON TERHADAP KEMAMPUAN  
VISUOSPASIAL PADA MAHASISWA FAKULTAS KEDOKTERAN  
UNIVERSITAS JENDERAL SOEDIRMAN**

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**ABSTRAK**

Kemampuan visuospasial merupakan salah satu fungsi kognitif yang dibutuhkan mahasiswa fakultas kedokteran. Mahasiswa dengan kemampuan visuospasial tinggi memiliki keunggulan untuk mengidentifikasi keterkaitan visual dan spasial diantara objek-objek. Beberapa penelitian menyatakan bahwa kemampuan visuospasial dapat dipengaruhi oleh hormon testosteron. Testosteron dapat meningkatkan kemampuan visuospasial karena adanya proses aromatisasi testosteron menjadi estrogen lokal konsentrasi tinggi di presinaptik otak. Beberapa penelitian yang telah dilakukan menunjukkan hasil yang tidak konsisten sehingga diperlukan penelitian dengan metode dan instrumen pengukuran yang berbeda. Tujuan penelitian ini adalah untuk mengetahui korelasi kadar testosteron terhadap kemampuan visuospasial. Penelitian ini menggunakan desain *crosssectional* dengan uji korelasi *Pearson*. Subjek penelitian adalah 34 mahasiswa laki-laki Fakultas Kedokteran Universitas Jenderal Soedirman yang dipilih secara *consecutive*. Semua subjek penelitian berusia antara 18-25 tahun. *Design Organization Test* (DOT) digunakan untuk mengukur kemampuan visuospasial. Kadar testosteron diukur menggunakan teknik *enzyme-linked immunosorbent assay* (ELISA) *direct*. Hasil penelitian menunjukkan bahwa kadar testosteron total memiliki rerata 3,79 ng/mL, SD  $\pm 0,789$  ng/mL. Skor DOT memiliki rerata 44,26, SD  $\pm 7,87$ . Uji *Pearson* menunjukkan nilai  $p=0,004$ ,  $r=0,485$  sehingga terdapat korelasi signifikan dengan kekuatan sedang antara kadar testosteron dengan kemampuan visuospasial. Dapat disimpulkan bahwa kadar testosteron berkorelasi dengan kemampuan visuospasial pada mahasiswa Fakultas Kedokteran Universitas Jenderal Soedirman. Semakin tinggi kadar testosteron maka kemampuan visuospasial seseorang juga semakin tinggi.

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**Kata Kunci:** *Design Organization Test* (DOT), Hormon, Kemampuan Visuospasial, Testosteron

## **CORRELATION OF TESTOSTERONE LEVELS AND VISUOSPATIAL ABILITY ON STUDENT OF MEDICAL FACULTY OF JENDERAL SOEDIRMAN UNIVERSITY**

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### **ABSTRACT**

*Visuospatial ability is one of the cognitive functions needed for medical faculty students. Students with high visuospatial abilities have the superiority to identifying visually and spatially the relationships between objects. Some studies suggest that visuospatial abilities can be influenced by the hormone testosterone. Testosterone can enhance visuospatial abilities due to the process of aromatizing testosterone to a high concentration of local estrogen in the presynaptic brain. Some research that has been done shows inconsistent results, so that research with different measurement methods and instruments is needed. The aim of this study was to determine the correlation of testosterone levels and visuospatial abilities. This study used cross-sectional design with Pearson test. The subjects of the study were 34 male students of the Faculty of Medicine, Jenderal Soedirman University, who were chosen consecutively. All study subjects were aged between 18-25 years. Design Organization Test (DOT) was used to measure visuospatial abilities. Testosterone levels was measured by the enzyme-linked immunosorbent assay (ELISA) direct. The results showed that total testosterone levels had a mean of 3.79 ng/ mL, SD  $\pm$  0.789 ng / mL. The DOT score had a mean of 44.26, SD  $\pm$  7.87. The Pearson test showed  $p=0.004$ ,  $r = 0.485$  so that there was a significant correlation with moderate strength between testosterone levels and visuospatial abilities. It can be concluded that there is correlation between testosterone levels and visuospatial abilities in students of Medical Faculty, Jenderal Soedirman University. The higher level of testosterone, the higher one's visuospatial abilities.*

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**Keywords:** *Design Organization Test (DOT), Hormone, Testosterone, Visuospatial Ability*