

## Effect of melatonin on histology of the epididymidis of adult rat.

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### **Abstract**

**Background:** The spermatozoa are provided with the needed capacity for normal motility, in the epididymidis, so the function of epididymidis is very important for the normal fertility. Melatonin is the basic neuro-hormone of the pineal gland, regulates the sexual and reproductive activities in all mammals including man.

**Objective:** To study the effect of different doses of dietary melatonin on the histology of adult rat's epididymidis.

**Methods:** Melatonin was supplied to adult Wister albino rats with their diet, for successive 30 days. Rats were divided into 6 groups. Group I was the control. Group II, III, IV, V and VI were given a daily dose of 125, 250, 500, 750 and 1000 µg / kg body weight, respectively. After the last day of treatment, animals were killed under effect of anesthesia; epididymidis was removed, fixed in Bouin's solution and processed routinely for histological study.

**Results:** The results showed significant positive effects on epididymidis, since it increased the epididymal wall thickness, epididymal, as well as spermatozoal clump within epididymal tubules, with normal therapeutic dosages, whereas significant damaging effects were seen with raising dosages.

**Conclusion:** Dietary melatonin has clear positive effects on the rat's epididymidis within therapeutic doses, since it increased the epididymal wall thickness, epididymal, as well as spermatozoal clump within epididymal tubules, whereas it had highly damaging changes in surplus doses.

**Keywords:** Epididymidis, melatonin, and infertility.

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### **Introduction**

The epididymidis is the site of accumulation, storage and physiological maturation of spermatozoa; hence spermatozoa get their capacity for normal motility<sup>(1, 2)</sup>, so the function of this part of male genital system is very vital for the normal fertility<sup>(3, 4)</sup>.

Melatonin is the basic neuro-hormone of the pineal gland<sup>(5, 6)</sup>.

This hormone evidently plays an important regulatory role in the sexual and reproductive activities in all mammals including man<sup>(7, 8, 9)</sup>, hence, it would be of great interest to study the relationship between melatonin and epididymidis structural and so functional status. Histological morphometric study could be estimated by using Zeiss Integrating Micrometer – disk Turret I of 25 point system, (which measures the relative surface area by counting the points superimposed through a disk put on the microscopic eye piece during slide examination, so the number of these points positively related with the relative measurement of the surface area), the total points falling on each epididymidis wall, lumen, and

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