# EFFECT OF DARKNESS AND ILLUMINATION ON THE PINEAL GLAND OF ADULT MALE ALBINO RAT: MORPHOLOGICAL AND ULTRASTRUCTURAL STUDY

*Thesis*

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# SUMMARY

The pineal gland is a neuro-endocrine tissue that secretes melatonin which regulates changes in the functions of the endocrine system as well as the functions of many other systems according to light and dark conditions. The aim of the current work was to study histological and ultrastructural changes of the pineal gland according to dark and light conditions.

Thirty adult male albino rats were used in the present study. The rats subdivided into three groups (ten rats each) as follow: group I (exposure to natural diurnal changes), group II (exposure to continuous darkness for 4 weeks) and group III (exposure to continuous light for 4 weeks).

Prolonged exposure to continuous darkness or continuous light induced observable changes of the relative population of pinealocytes type I and II. Continuous darkness increased the number of pinealocyte type I, associated with increase in cytoplasmic organelles. Continuous light increased pinealocytes type II associated with a relative decrease in pinealocytes type I.