

Stereology of the human thyroid gland [Estereología de la glándula tiroides humana]

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The thyroid gland is an extensive, medium and symmetrical endocrine gland situated on the anterior side of the neck at the lower third and the upper third junction. The thyroid follicle is the functional and structural unit of the thyroid gland. Follicles are separated from each other by narrow interfollicular connective tissue. Stereological values of follicular, parafollicular and colloid containing follicles have been observed in experimental animal models. The aim of this study was to determine the existence of a stereological pattern in the human thyroid gland defined by age and sex. A sample of six human thyroid glands of adult males with no history of thyroid disease or disorder obtained from non fixed human cadavers; of these cadavers the gland was removed and processed for thyroid follicle density ($21.09 \text{ mm}^2/\text{mm}^3$), follicular cell number density ($10.81 \times 10^5 \text{ cells}/\text{mm}^3$) and parafollicular ($1.81 \times 10 \text{ cells}/\text{mm}^3$). With the average gland volume (21.3 mm^3) we determined the total number of follicular cells (230.22×10^5) and parafollicular (38.33×10^5). The number of follicles per mm^2 ($46.18 \text{ follicles}/\text{mm}^2$) was also determined. Prior information and knowledge of numerical values and normal stereological proportions provides excellent parameters for determining hyper or hypotrophic endemic or exogenous alterations leading to stratification of certain disorders which was already observed in experimental models where differences amongst models were significant.

Morphology

Stereology

Thyroid gland