

## INTISARI

**Latar Belakang:** CT-Scan merupakan modalitas pencitraan penting dalam evaluasi struktur kepala, termasuk rongga orbita mata. Pengukuran ketebalan dan diameter otot ekstraokuler menggunakan CT-Scan dapat membantu membedakan kondisi normal dan patologis pada orbita. Namun, data normatif mengenai ukuran otot ekstraokuler pada populasi Indonesia masih terbatas.

**Tujuan:** Menentukan ukuran normal ketebalan otot ekstraokuler pada populasi Indonesia berdasarkan hasil volumetrik CT-Scan, serta menganalisis perbedaan ukuran berdasarkan usia dan jenis kelamin.

**Metode:** Penelitian ini menggunakan desain analisis deskriptif *cross-sectional*. Data diperoleh dari rekam medis CT-Scan orbita pasien dengan kondisi normal di RSUP Dr. Sardjito pada periode Januari - Juni 2023, yang diukur secara volumetrik dan dianalisis berdasarkan kelompok usia dan jenis kelamin.

**Hasil:** Dari 273 subjek data, diperoleh rerata ketebalan otot sebesar ( $3.52 \pm 0.42$  mm). Didapatkan nilai otot rektus superior ( $2.92 \pm 0.57$  mm), rektus inferior ( $3.51 \pm 0.63$  mm), rektus lateral ( $3.92 \pm 0.62$  mm), dan rektus medial ( $3.76 \pm 0.47$  mm). Terdapat perbedaan ketebalan EOM berdasarkan jenis kelamin, dengan nilai tertebal pada kelompok otot RS laki-laki dibandingkan kelompok perempuan.

**Kesimpulan:** Penelitian ini menyajikan data normatif ketebalan EOM (*Extraocular Muscle*) berbasis CT-Scan pada populasi dewasa Indonesia. Terdapat perbedaan ketebalan yang bermakna berdasarkan jenis kelamin dengan nilai lebih besar pada laki-laki, dan usia tidak berpengaruh signifikan. Terdapat simetrisitas antara sisi kiri dan kanan, mendukung prinsip bilateralitas orbita. Hasil ini konsisten dengan studi internasional dan berpotensi menjadi referensi lokal penting untuk evaluasi klinis dan pengembangan riset lanjutan di bidang radiologi dan oftalmologi.

**Kata Kunci:** CT-Scan, otot ekstraokuler, ukuran normal, ukuran, pengukuran.

## ABSTRACT

**Background:** CT scan is an important imaging modality for evaluating head structures, including the orbital cavity. Measurement of extraocular muscle thickness and diameter using CT scans can help distinguish between normal and pathological orbital conditions. However, normative data on extraocular muscle size in the Indonesian population remains limited.

**Objective:** Determining normal value of the extraocular muscle in Indonesia Population to determine the normal thickness of extraocular muscles in the Indonesian population based on volumetric CT-Scan results, and to analyze differences in measurements based on age and sex.

**Method:** This study employed a descriptive cross-sectional design. Data were obtained from the medical records of orbital CT scans of patients with normal conditions at Dr. Sardjito General Hospital during the period of January to June 2023. Measurements were performed volumetrically and analyzed according to age and sex groups.

**Results:** From a total of 273 subjects, the average extraocular muscle (EOM) thickness was found to be  $3.52 \pm 0.42$  mm. The mean thickness of the individual rectus muscles was as follows: superior rectus ( $2.92 \pm 0.57$  mm), inferior rectus ( $3.51 \pm 0.63$  mm), lateral rectus ( $3.92 \pm 0.62$  mm), and medial rectus ( $3.76 \pm 0.47$  mm). A significant difference in EOM thickness was observed based on sex, with the superior rectus muscle showing greater thickness in males compared to females.

**Conclusion:** This study provides normative data on extraocular muscle thickness based on CT scan measurements in the adult Indonesian population. A significant difference in muscle thickness was observed between sexes, with males showing larger values, while age did not show a significant effect. Symmetry was observed between the left and right sides, supporting the principle of orbital bilaterality. These findings are consistent with international studies and offer valuable local reference data for clinical evaluation and future research in radiology and ophthalmology.

**Keywords:** CT scan, extraocular muscle, normative measurement, thickness, measurement.