

van Santen SS et al. Body Composition and Bone Mineral Density in Craniopharyngioma Patients: A Longitudinal Study Over 10 Years. J Clin Endocrinol Metab. 2020 Dec 1;105(12):dga607. doi: 10.1210/clinem/dga607.

CONTEXT: Patients with craniopharyngioma suffer from obesity and impaired bone health. Little is known about longitudinal changes in body composition and bone mineral density (BMD).

OBJECTIVE: To describe body composition and BMD (change).

DESIGN: Retrospective longitudinal study.

SETTING: Two Dutch/Swedish referral centers.

PATIENTS: Patients with craniopharyngioma (n = 112) with a dual X-ray absorptiometry (DXA) scan available (2 DXA scans, n = 86; median Δ time 10.0 years; range 0.4-23.3) at age \geq 18 years (58 [52%] male, 50 [45%] childhood onset).

MAIN OUTCOME MEASURES: Longitudinal changes of body composition and BMD, and associated factors of Δ Z-score (sex and age standardized).

RESULTS: BMI (from 28.8 ± 4.9 to 31.2 ± 5.1 kg/m², P < .001), fat mass index (FMI) (from 10.5 ± 3.6 to 11.9 ± 3.8 kg/m², P = .001), and fat free mass index (FFMI) (from 18.3 ± 3.2 to 19.1 ± 3.2 kg/m², P < .001) were high at baseline and increased. Fat percentage and Z-scores of body composition did not increase, except for FFMI Z-scores (from 0.26 ± 1.62 to 1.06 ± 2.22 , P < .001). Z-scores of total body, L2-L4, femur neck increased (mean difference 0.61 ± 1.12 , P < .001; 0.74 ± 1.73 , P < .001; 0.51 ± 1.85 , P = .02). Linear regression models for Δ Z-score were positively associated with growth hormone replacement therapy (GHRT) (femur neck: beta 1.45 [95% CI 0.51-2.39]); and negatively with radiotherapy (femur neck: beta -0.79 [-1.49 to -0.09]), glucocorticoid dose (total body: beta -0.06 [-0.09 to -0.02]), and medication to improve BMD (L2-L4: beta -1.06 [-1.84 to -0.28]).

CONCLUSIONS: Z-scores of BMI, fat percentage, and FMI remained stable in patients with craniopharyngioma over time, while Z-scores of FFMI and BMD increased. Higher glucocorticoid dose and radiotherapy were associated with BMD loss and GHRT with increase.