

LONGITUDINAL GROWTH PATTERN OF HUNGARIAN CHILDREN WITH ACHONDROPLASIA: THE EVALUATION OF TREATMENT-RELATED GROWTH CHANGES

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Background: Achondroplasia is characterized by a distinctive growth pattern involving disproportionate short stature, limb shortening, macrocephaly and altered growth velocities throughout childhood.

Objective: The project aims to examine the impact of vosoritide (VOXZOGO®) treatment on growth patterns in children with achondroplasia and to assess the applicability of the European achondroplasia-specific growth references to a Hungarian achondroplasia cohort.

Subjects and methods: The longitudinal study was initiated in October 2025. To date, 20 Hungarian children with achondroplasia, aged 2–13 years, have been enrolled at the Department of Paediatrics, Semmelweis University, Budapest, Hungary. Anthropometric assessments are conducted at baseline and repeated at 3-month intervals throughout the follow-up period. Measurements include body weight, body height/length, sitting height, arm span, lengths of the upper and lower limb segments, trunk and limb circumferences and breadths, as well as head dimensions. The observed growth patterns are evaluated relative to the growth channels defined by the European achondroplasia-specific reference standards.

Results: In this pilot study, analyses focused on body weight, body height/length, body mass index and head circumference. The preliminary findings demonstrate the applicability of the European achondroplasia-specific reference standards for monitoring individual growth trajectories. At this preliminary stage, the analyses focus on determining whether the observed growth patterns remained within or deviated from the growth channels of the achondroplasia-specific references.

Conclusion: Our newly developed anthropometric protocol provides a standardized framework for the longitudinal assessment of growth in children with achondroplasia and includes an extensive set of body and head measurements that enable detailed monitoring of body proportions and cranial growth throughout childhood. Extended follow-up will be required to clarify the influence of vosoritide treatment on the overall growth patterns of children with achondroplasia.

Keywords: Achondroplasia; Dwarfism; Somatic growth; Body proportions; Vosoritide (VOXZOGO®) treatment.