Korean Circ J. 2025 Oct;55(10):936-937
https://doi.org/10.4070/kcj.2025.0139
pISSN 1738-5520·eISSN 1738-5555

kcj
Korean Circulation Journal

Editorial

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Growth in Children with Congenital Heart Disease: Filling the Gap With Nationwide Evidence

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▸ See the article "Physical Growth Trajectories in Children With Congenital Heart Disease: A Nationwide Study" in volume 55 on page 923.

OPEN ACCESS

Received: Apr 8, 2025
Revised: May 3, 2025
Accepted: May 7, 2025
Published online: May 27, 2025

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Funding
The author received no financial support for the research, authorship, and/or publication of this article.

Conflict of Interest
The author has no financial conflicts of interest.

Over the past few decades, the survival of children born with congenital heart disease (CHD) has markedly improved, transforming what was once a fatal condition into a chronic pediatric disease.[1)2)] Beyond survival, ensuring healthy growth and development has emerged as a critical aspect of long-term care in this growing population.

In this issue of the *Korean Circulation Journal*, Cha et al.[3)] present an impressive nationwide cohort study investigating the longitudinal growth trajectories of children with CHD during the preschool period. Utilizing data from more than 325,000 children, including more than 65,000 children with CHD, this study is one of the most extensive population-based analyses addressing growth outcomes in this vulnerable group.

The authors provide robust evidence that children with CHD, particularly those with complex or moderate forms, are at a significantly higher risk of growth impairment than their peers without CHD. Their results demonstrate a clear severity-dependent gradient of growth deficits, with height, weight, and body mass index Z-scores showing persistent impairments throughout preschool years. Importantly, these differences remained significant even after adjusting for known confounders such as sex, socioeconomic status, and preterm birth. This persistence of growth deficits suggests that additional mechanisms—potentially involving metabolic or hormonal dysregulation—may be contributing factors beyond the measured variables.

This study addresses a critical knowledge gap in the field. Previous research has primarily relied on single-center cohorts or lacked longitudinal data.[4)5)] The authors provide a detailed and generalizable depiction of early life growth patterns in children with CHD at the national level by leveraging comprehensive data from the national health screening program for infants and children.

Nevertheless, these findings have important clinical and research implications. First, the study reaffirms the need for systematic longitudinal growth surveillance in children with CHD, particularly during the crucial preschool period when catch-up growth is most feasible. Second, it highlights the potential need for tailored interventions such as nutritional support, endocrine evaluation, and early referral to specialized care to mitigate growth

Data Sharing Statement
The data generated in this study is available from the corresponding author upon reasonable request.

failure. Finally, the persistent growth deficits observed even in children with simple CHD suggest that the adverse impact of CHD on physical growth may extend beyond anatomical severity. This could reflect broader social, behavioral, or metabolic factors.

However, several limitations of this study merit attention. The reliance on administrative data and International Classification of Diseases, Tenth Revision codes may have led to the overestimation of simple CHD diagnoses and underreporting of genetic syndromes that could influence growth. Moreover, the lack of detailed information on nutritional status, parental height, and other environmental factors limits the causal interpretation. Nevertheless, the scale and rigor of the analysis provide a compelling foundation for future studies and policy planning.

In conclusion, this study provides valuable real-world evidence that children with CHD remain at risk of suboptimal physical growth, even in an era of improved survival. Their study enhances our understanding of the long-term challenges faced by these patients and underscores the need to integrate structured growth monitoring and early interventions into routine CHD care.

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