

Dietary counselling for blood cholesterol from infancy to young adulthood: CVD risk prevention should start at early age.

Atherosclerotic cardiovascular disease starts early in life.

Atherosclerotic cardiovascular disease (ASCVD) remains to be the leading cause of mortality and disability worldwide (1). Atherosclerosis, the underlying cause of cardiovascular disease (CVD), begins early in life and develops over several decades before CVD symptoms appear in middle or late adulthood (2,3). The early onset of ASCVD emphasises the importance of primordial prevention and early intervention to prevent, slow or potentially reverse progression (2,3). While most children and adolescents do not have CVD, many of them have CVD related risk factors such as lack of physical activity and poor diet. Non-HDL-C is a lipoprotein marker of all atherogenic apolipoprotein B-containing lipoproteins that tends to be stable from childhood to adulthood. However, lifestyle can modulate it to some extent (4).

Early dietary counselling can help shifting youngsters at risk towards healthier lifestyle.

The Special Turku Coronary Risk Factor Intervention Project (STRIP) has shown that dietary patterns from infancy onwards impact blood lipid levels, with counselling of e.g. replacing saturated with unsaturated fats being associated with better non-HDL-cholesterol (HDL-C) levels (4).

This finding suggests that infancy-onset long term dietary counselling could be an effective intervention to manage non-HDL-C and therefore lower CVD risk development in adulthood.

A recent study by Meng *et al.* describes findings from a 26-year randomized controlled trial in Finland (4). The study tracked non-HDL-C measurements from infancy to young adulthood, as well as the impact of dietary counselling intervention on non-HDL-C.

Infants at 5 months of age were enrolled and randomly assigned to the intervention or control group. At the end of the study, there were 399 participants in the intervention and 399 in the control group. The intervention group received individualized biannual dietary & anti-smoking counselling from the age of 7 months until 20 years old. Throughout the study, non-HDL-C levels of participants in both groups was frequently measured, at 7 months, annually from 13 months to 20 years and at the age of 26 years.

The study showed that from the age of 13 months, the intervention group had lower non-HDL-C levels on average compared to the control group. This demonstrates that dietary counselling from infancy onwards can reduce the persistent risk of unhealthy non-HDL-C levels, and therefore may help reduce the risk of CVD. Hence, this study provides more reasons to encourage non-HDL-C screening and intervention at young age, to help reduce the risk of CVD later in life.

CVD prevention through emphasising healthy diet and lifestyle should start in early life.

As childhood, adolescence and young adulthood are critical periods in life for maintaining good cardiovascular health, multilevel interventions such as counselling of a healthy diet and lifestyle tailored to this young generation are needed to promote healthy lifestyle behaviour and reduce the risk of CVD (2).

For more information on the dietary management of dyslipidaemias, please visit the e-learning tool <https://www.dietattheheart.com>

References:

1. World Health Organization. Cardiovascular diseases (CVDs). Available at: [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)).
2. Oliver Stanesby, Matthew K. Armstrong, Petr Otahal et al. Tracking of serum lipid levels from childhood to adulthood: Systematic review and meta-analysis. *Atherosclerosis* 391 (2024) 117482. <https://doi.org/10.1016/j.atherosclerosis.2024.117482>
3. Jean Jacques Noubiap, Ulrich Flore Nyaga. Cardiovascular disease prevention should start in early life. *BMC Global and Public Health* (2023) 1:14. <https://doi.org/10.1186/s44263-023-00015-4>
4. Yaxing Meng, Harri Niinikoski, Suvi P Rovio et al. The Influence of Dietary Counseling Over 20 Years on Tracking of Non-High-Density Lipoprotein Cholesterol from Infancy to Young Adulthood. *J Pediatr* (2024) 264:113776. doi: 10.1016/j.jpeds.2023.113776. Epub 2023 Oct 14.