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Estimated dietary nitrate provision in children aged 2–3 years attending long day care services in Perth, Western Australia

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Nitric oxide (NO), as a regulator of vascular homeostasis, plays a key role in cardiovascular health. Dietary nitrate is the only known exogenous source of NO, through an enterosalivary nitrate–nitrite–NO pathway.⁽¹⁾ Dietary nitrate has been shown to reduce blood pressure and improve vascular function in randomised controlled clinical trials.⁽²⁾ A habitual intake of 60 mg dietary nitrate per day in adults has also been observed to reduce cardiovascular disease risk compared to those with low nitrate intake.⁽³⁾ Early introduction of dietary nitrate could therefore help reduce the risk of cardiovascular disease development as childhood behaviours can track into adulthood. The aim of this study was to quantify the provision of dietary nitrate in children aged 2–3 years attending long day care (LDC) centres and to identify the main nitrate food sources. This study quantified the provision of nitrate in children aged 2–3 years attending LDC services. A secondary data analysis was conducted from a consecutive 2-day weighed food record of the food provided at 30 LDC centres over a 3-year period. In this study, nitrate values were assigned to each ingredient from comprehensive nitrate content of foods databases.^(4,5) Descriptive statistics and Wilcoxon signed rank tests were used for data analysis. Total mean \pm SD (range) nitrate content provided at morning tea (MT), lunch (L) and afternoon tea (AT) for total nitrate was 24.2 ± 11.3 (0.19–34.4) mg/child/day; for vegetables sources exclusively was 16.65 ± 11.89 (0–34.74) mg/child/day; and meat sources exclusively was 0.39 ± 0.64 (0–3.18) mg/child/day. In conclusion, increasing vegetable provision from foods such as leafy green vegetables, children aged 2–3 years may benefit from cardioprotective effects into adulthood.

References

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