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ASSOCIATION BETWEEN DIETARY CALCIUM INTAKE AND BLOOD PRESSURE AMONG PORTUGUESE CHILDREN

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Background and objectives: Higher blood pressure (BP) in childhood is associated with cardiovascular risk. It has been described that dietary calcium intake may affect BP regulation. The objective of this study was to analyze the association between dietary calcium intake and BP in children.

Methods: A cross-sectional study was conducted with 128 Portuguese children (47.7% of boys) aged 6-8. Anthropometric measurements were recorded (weight, height, biceps, triceps, subscapular and suprailiac skinfolds) and physical activity was assessed during 7 consecutive days by accelerometry. Dietary intake was assessed using a 3-day food record completed by parents. Dietary calcium intake was expressed as the calcium-to-protein ratio. BP was measured using an electronic sphygmomanometer (COLIN DP 8800). Two measurements were taken and the mean of these was considered. Data was analyzed separately for girls and boys, and linear regression analysis was used to estimate the association between calcium intake and systolic and diastolic BP (SBP and DBP, respectively) adjusting for age, height, sum of skinfolds, physical activity, energy intake, magnesium, potassium and sodium intake.

Results: For girls and boys, respectively, SBP mean was 95.4 ± 7.6 and 97.5 ± 6.5 mmHg ($P=0.101$), DBP mean was 56.3 ± 6.5 and 57.6 ± 5.9 mmHg ($P=0.220$). No significant difference was seen in the calcium intake and calcium-to-protein ratio of girls compared to boys ($P>0.05$, for all). After adjusting for confounders, calcium-to-protein ratio was significantly inversely associated with SBP in girls (girls: $r=-0.685$, $P=0.034$ and boys: $r=-0.010$, $P=0.979$). No association was found with DBP in both genders.

Conclusions: In our sample, calcium intake seems to be inversely related to SBP in girls. Further studies are needed to test the effects of dietary calcium intake on BP in children.

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Key words: children; dietary calcium intake; blood pressure.

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FREQUENCY AND DETERMINANTS OF DHA SUPPLEMENT USAGE IN PREGNANCY AND LACTATION IN GERMANY

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Background and objectives: Docosahexaenoic acid (DHA) supply in pregnancy via placenta and in infancy via breast milk depends on mother's food intake. Beside fish as a natural source, DHA supplements might be an alternative approach to ensure an adequate supply. Major aim was to describe frequencies and determinants of DHA supplementation in pregnancy (DHA-P) and during lactation (DHA-L) in a nationwide survey of mothers in Germany.

Methods: The survey was nested in the randomized controlled trial PINGU on fatty acid status optimization in infancy. From an existing panel for consumer surveys (Kantar Health GmbH) mothers with children up to 36 months of age were selected for an online interview on mother's and children's intake of polyunsaturated fatty acid-rich foods (field period: December 2010). Data of 985 mothers were weighted to ensure representativeness for mothers in Germany.

Results: 27.8% of mothers in Germany used DHA supplements during pregnancy, 16.8% during lactation. DHA-P and DHA-L was higher in mothers with first children compared with later children (DHA-P: 31.5% vs. 24.6%, $p=0.015$; DHA-L: 19.2% vs. 14.7%, $p=0.06$) and in high compared with low social classes (DHA-P: 35.8% vs. 23.6%, $p=0.001$; DHA-L: 24.4% vs. 14.4%, $p=0.0001$), but did not differ between younger and older mothers. The proportion of mothers eating fish at least one time per week was higher among supplement users compared with non-users (pregnancy: 53.8% vs. 36.3, $p=0.0001$; lactation: 62.9% vs. 36.8%, $p=0.0001$).

Conclusion: DHA supplementation is common in German mothers especially in pregnancy, but also during lactation. However, the benefit of supplementation was questionable in the majority of supplementing mothers since fish was already part of the usual diet. DHA supplements might be promoted especially in lower social classes, if fish is disliked.

Key words: DHA, supplements, pregnancy, lactation. Funded by the German Federal Ministry of Education and Research