

Concentration of vitamin d from neonatal dried blood spots and the relation to gestational age, birthweight and ponderal index: the d-tect study

A C Keller (DK) [1], M N Händel (DK) [2], P Frederiksen (DK) [3], R Jacobsen (DK) [4], A Cohen (DK) [5], J M (AU) [6], B L Heitmann (DK) [7]

Background: Studies have suggested that vitamin D status at birth may be associated with a range of neonatal outcomes.

Aim: The aim of this study was to assess the association between neonatal 25(OH)D3 concentration and gestational age, birth weight, ponderal index and size for gestational age.

Method: Neonatal capillary blood stored as dried blood spots was used to assess 25(OH)D3 concentrations among 2814 subjects selected from a random population sub-sample of individuals, born in Denmark from May 1st 1981 to December 31st 2002.

Results: There was an inverse association between 25(OH)D3 concentration and gestational age at birth (95%CI -1.5; -0.5, $p < 0.001$). There was an inverted U-shaped association between 25(OH)D3 and birth weight and ponderal index ($p = 0.04$), but there was no association with size for gestational age.

Conclusion: This study suggests that neonatal 25(OH)D3 concentration is associated with gestational age at birth, birth weight and ponderal index, but not with size for gestational age.

[1] Parker Institute, [2] Parker Institute, [3] Parker Institute, [4] Parker Institute, [5] Staten Serum Institute, [6] University of Queensland, [7] Parker Institute