Focus on Vitamin D

***Prof Mike South*, Royal Children's Hospital (RCH)**

Vitamin D deficiency is more common than we thought and has very many important effects beyond bone health (which itself is obviously very important).

The AAP have recommended routine supplementation for Breast fed babies for a long time. It is the dose that has changed in the latest guideline. The recommendation is for all breast fed infants to receive 400IU of Vitamin D daily from soon after birth. They also recommend routine screening of all women in pregnancy and treatment if the 25OH Vit D is below 80nmol/L. They claim new evidence supports a potential role for Vit D in maintaining innate immunity and preventing diseases such as diabetes and cancer. This raises huge public health issues with some significant implications for routine Paediatric care if we take these recommendations seriously.

Australian Guidelines are under review, and the results of the recent APSU surveys examining the incidence of and risk factors for vitamin D deficiency rickets will improve our understanding of vitamin D deficiency in Australia and undoubtedly inform the new guidelines.

In Australia we may get less Vit D deficiency in standard breast fed babies because of more intense UV B exposure but this is uncertain and not true for all babies. Guidelines to reduce sun-exposure to prevent skin cancer may obviously have negative effects on vitamin D production.

You might like to read the best existing Australian guidelines on the topic: Prevention and treatment of infant and childhood vitamin D deficiency in Australia and New Zealand: a consensus statement.

The authors suggest that to prevent vitamin D deficiency, **at-risk children** should receive 400 IU vitamin D daily; if compliance is poor, an annual dose of 150 000 IU may be considered. They define at-risk children in these the groups:

- Reduced intake or synthesis of vitamin D_3
  - Being born to a vitamin D-deficient mother; most commonly veiled or dark-skinned women, or women of Asian background who actively avoid exposure to sunlight
  - Prolonged breastfeeding
  - Dark skin colour
  - Reduced sun exposure — veiled or modest clothing, chronic illness or hospitalisation, intellectual disability, and excessive use of sunscreen
  - Low intake of foods containing vitamin D
- Abnormal gut function or malabsorption
  - Small-bowel disorders (eg, coeliac disease)
  - Pancreatic insufficiency (eg, cystic fibrosis)
  - Biliary obstruction (eg, biliary atresia)
- Reduced synthesis or increased degradation of 25-OHD or 1,25-$(OH)_2$D
  - Chronic liver or renal disease
  - Drugs: rifampicin, isoniazid and anticonvulsants

25-OHD = 25-hydroxyvitamin D or calcidiol.
1,25-$(OH)_2$D = 1,25-dihydroxyvitamin D or calcitriol. ◆