

Key Nutrients During Early Childhood

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Today's discussion

- Iron
- Folate
- Iodine
- Vitamin D



Iron – an essential nutrient

- Involved in:
 - Oxygen transport
 - Enzymatic function
 - Immune function
 - Brain development
- Two types:
 - Haem iron from animal foods
 - Non haem iron from plant foods

Iron – many at risk groups

- Toddlers have an increased risk of deficiency
 - RDI = 9mg/day
 - EAR = 4mg/day
- RDI for women = 18mg/day
- RDI for men = 8mg/day
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Iron - symptoms of deficiency

- Behavioural problems
- Repeat infections
- Loss of appetite
- Lethargy
- Failure to thrive.
- Non-food cravings (pica)



Iron - causes of iron deficiency

- Prematurity
- Exclusive breastfeeding beyond six months
- Introduction of cows milk as the main drink significantly prior to 12 months
- High intake of cows milk
- Low or no meat intake
- Poor diet in the second year of life

Iron – where do we get it?

- Meat, poultry and fish
- Vitamin C
- Solid foods at meal times
- The fussy eater



Folate – the best start to life

- Involved in:
 - DNA and RNA synthesis
 - Production of new cells
 - Manufacture of red blood cells
 - Prevention of NTDs



Folate – what do we need?

- Toddlers 1-3 years
 - RDI = 150ug/day
 - EAR = 120ug/day
 - UL = 300ug/day
- RDI for women = 600ug/day
- Planning pregnancy = + 400ug/day

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Folate - symptoms of deficiency

- Often subtle
 - GI issues including diarrhoea, loss of appetite or weight loss/poor growth
 - Irritability and sleeplessness
 - Behavioural disorders
- Macrocytic anaemia



Folate – where do we get it?

- Green leafy vegetables
- Lentils, dried beans and chickpeas
- Oranges
- Wholegrain breads* and cereals
- Vegemite



Iodine – pass the salt please

- Involved in:
 - Thyroid hormone synthesis
 - Metabolic rate
- Two hormones synthesised:
 - Thyroxine
 - Tri-iodothyronine



Iodine – what do we need?

- Toddlers 1-3 years
 - RDI = 90ug/day
 - EAR = 65ug/day
 - UL = 200ug/day
- RDI for men & women = 150ug/day

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Iodine – symptoms of deficiency

- Dry skin
- Hair loss
- Fatigue
- Slowed reflexes
- Goitre
- Diminished intelligence
- Stunted growth



Iodine – potential causes of poor intake

- Salt in processed food is not iodised*
- Less iodine in milk because of changes in treatment/cleaning methods
- A possible reduction of iodine levels in Australian soils
- A reduction in the use of salt in cooking



Iodine – where do we get it?

- Iodised salt
- Seafood
- Vegetables*
- Bread



Vitamin D – let there be light

- Involved in:
 - Calcium absorption
 - Bone development
 - Teeth development
 - Muscle development



Vitamin D – what do we need?

- No RDI
- AI = 5ug/day
- UL = 80ug/day

- AI for men and women up to 50 = 5ug/day
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Vitamin D – symptoms of deficiency

- Bone and muscle pain
- Delayed motor development
- Rickets



Vitamin D – where do we get it?

- Sunshine*
- Fatty fish
- Eggs
- Liver
- Fortified margarines and milks

Sunshine recommendations

- Fair to olive skin
 - Sept - April (before 10am or after 3pm)
 - May – August (across the week)
- Very dark skin
 - Sept – April (3 to 6 times that of fair people)
 - May – August (across the week)





Questions ?

