



# FACT SHEET

## IRON

\* Iron is important because it:-

- forms part of haemoglobin, which carries oxygen in the blood to all body cells
- is found in muscles as myoglobin where it provides oxygen for physical activity
- has an essential role in brain growth and immunity.

\*Dietary Guidelines for Children and Adolescents from the National Health and Medical Research Council recommend that children eat foods containing iron.

\* **Full term infants** are born with adequate iron stores which last until around 6 months. **Preterm or low birth weight infants** are born with reduced iron stores which become inadequate sooner so extra iron may be required earlier.

\* Breast milk contains little iron (0.5 - 0.8mg/litre) but it is highly available, with at least 50% being absorbed. Cows milk is a poor source of iron (0.4 - 0.6mg/litre) with only 10% being absorbed. About 6% of iron in iron fortified infant formula is absorbed. However the amount present in infant formula (7-12mg/litre) is higher than in breast milk to ensure adequate iron nutrition.

\* Cows milk should not be used as the main milk drink before 12 months. Breast milk or iron fortified infant formula alone will meet the infants iron requirements until around 6 months.

\* During the second 6 months of life iron needs triple as growth accelerates along with an increase in total body iron. Iron deficiency becomes a real risk at this time. Breast milk or iron fortified infant formula alone after 6 months **will not** meet baby's iron requirements hence foods must supply additional iron.

\* The best sources of iron for infants 4 -12 months are:-

- Breast milk or iron fortified infant formula
- Iron fortified infant cereals (introduced from around 6 months, but not before 4 months). These contain at least twice the iron of adult cereals.
- Red meat, pork, chicken, fish (introduced from 6 months)
- Legumes (mashed) - from 6 months
- To a lesser extent vegetables

The best sources of iron for children over 12 months are:-

- Iron fortified breakfast cereals and bread
- Iron fortified toddler milks
- Red meat, pork, chicken, fish
- Legumes
- Vegetables

\* Heme iron from red meat, pork, fish, chicken is better absorbed than non heme iron from plants (vegetables, legumes), cereal based foods (breakfast cereals, bread, rice, pasta), eggs and dairy foods. Absorption of non heme iron can be enhanced by eating with meat (beef sandwich) or eating with a vitamin C rich food eg fruit on cereal. All Heinz infant cereals contain added vitamin C to maximise iron absorption as does Heinz Nurture iron fortified toddler milk.

\* Inhibitors of iron absorption include a high calcium and phosphorus intake (from supplements and dairy foods), phytates and polyphenols (from legumes, cereals and nuts), tannins (found in tea), oxalates (in spinach), and phosphitin (egg yolk). As dairy foods can reduce the iron absorbed from meals, children should have one meal a day that does not include milk as the beverage or dessert.

\*Iron deficiency is a concern in children, particularly between the ages of 9-24 months. It may



## FACT SHEET

have adverse long lasting effects on behaviour, mental performance and motor skills. Common causes of iron deficiency are prematurity, exclusive breast feeding past 6 months, incorrect usage of infant formula, delayed introduction of solids, early introduction of cows milk as the main milk drink, and low intake of readily absorbed heme iron foods such as red meat, pork, chicken and fish. Iron supplements should not be given to infants and children unless under medical supervision. Iron supplements prescribed for adults are toxic for young children.

\*Heinz Nurture Toddler enriched with vitamins and minerals, particularly iron, is useful for active, fussy eaters who may be at risk of iron deficiency because of poor eating habits. One 230ml serve of Heinz Nurture Toddler milk provides 50% of a toddlers iron daily iron requirements.

### References

1. Saxelby S. *Nutrition for Life*. Hardie Grant Books, 4<sup>th</sup> Edition, 2002.
2. Mann J, Truswell AS. *Essentials of Human Nutrition*, Chapter 9 p145-158, Oxford University Press, 2nd edition 2002
3. National Health and Medical Research Council. *Dietary Guidelines for Children and Adolescents (1995) and Draft Dietary Guidelines for Children and Adolescents (2001)*,.
4. Allen JR & Baur L. *Iron deficiency in infants and children*. *Medicine Today*. September 2000 pp 44-52.
5. Allen J. *Iron in the Infants diet*. Heinz Sight April 1992, Number 35.
5. Oti -Boateng P, Seshadri R, Petrick S, Gibson RA, Simmer K. *Iron status and dietary intake of 6-24 month old children in Adelaide*. *J.Paediatr. Child Health*(1998):34; 250-253.
6. . Australian Iron Status Advisory Panel. 1995 *Iron deficiency in children: Information for Child Health Nurses and Iron deficiency in children: a comprehensive management guide*
7. Australian Iron Status Advisory Panel. *Iron Bioavailability, A Summary*. June 1998
8. Cobiac L, Baghurst K. *Iron Status and dietary iron intakes of Australians*. Supplement to Food Australia April, 1993
9. Food Standards Australia New Zealand, Food Standards Code, 2002, Standard 2.9.2 Foods For Infants and Standard 1.3.2 Vitamins and Minerals.