



FACT SHEET

WATER

- Water is made up of hydrogen and oxygen (H₂O). It contributes no energy or nutrients yet is involved in all chemical reactions of the body. Under normal circumstances infants require about 150ml/kg/day of water. Children require about 1-1.5 litres/day and adults about 1.5 - 2 litres/day.
- Water makes up about 60% of the total body weight of an average adult. However it makes up about 75% of total body weight in infants less than 4 month of age.
- The functions of water include:-
 - * maintaining fluid balance - replaces losses from skin, lungs, faeces and urine.
 - * transporting substances such as oxygen, nutrients and waste products to and from cells.
 - * maintaining reactions to sustain life
 - * necessary for secretions and excretions
- All foods contain some water. Breast milk, infant formula and cow's milk contain about 89% water; fruits and vegetables contain about 90% water; bread about 40% water; Heinz Infant cereals about 10% water, and various cooked meats about 50-60% water. Water is also formed when proteins, fats and carbohydrates are metabolised.
- Water intake is determined by thirst, regulated through the hypothalamus and antidiuretic hormone (ADH). Infants, unconscious and tube fed adults who cannot control their water intake run the risk of dehydration or water deficiency.
- Water is mainly lost through the lungs and skin with the rest lost from the urine and stool. Dehydration occurs when 1-2% of body weight lost is as a result of fluid losses. Infants are prone to dehydration because a large part of their body weight is water; they have a higher rate of water turnover; their surface area is large and they have a poor thirst mechanism.
- Breast fed infants and infants fed correctly prepared infant formula require little or no supplemental water. However extra water may be required during periods of febrile illness, refusal of the infant to accept fluids, diarrhoea and high environmental temperatures.
- All water used in the preparation of infant formula must meet the standards specified in the Australian Drinking Water Guidelines. All water, whether tap or bottled, used in the preparation of infant formula must be boiled to kill unwanted bacteria. Commercial bottled waters are often recommended where the town water supply is deemed unsafe. However they are not sterile. Mineral or soda water are not suitable.
- The Infant Feeding Guidelines for Health Workers recommend that all water used in the preparation of infant formula be brought to the boil and boiled for 5 minutes. Water may be boiled in an electric jug or kettle with an automatic cut-off switch. Kettles and jugs with no automatic cut-offs should be switched off within 30 seconds of boiling. Boiling water for 10 minutes or longer is not recommended as heavy metals may be concentrated in the water. Jugs should be emptied and refilled with tap water prior to use. The water must be cooled before adding formula powder or liquid.
- The prevalence of dental caries is lower where infants and children have access to fluoridated water and when long-term exposure of teeth to nutrient-containing liquids is avoided. For children between 6 months and 2 years of age who are living in areas where the household water supply is not fluoridated, daily supplementation with 0.25mg fluoride may be recommended.



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- Although Australia's water supply is generally low in lead, risk of contamination may occur where domestic plumbing uses brass fittings. Small amounts of lead may leach into water which has been standing in pipes for more than 6 hours. When this happens, water should be run for a few seconds before using. Water from hot water systems should not be used for drinking, cooking or mixing infant formula as hot water dissolves lead from fittings more effectively than cold.
- Copper can also be a problem in drinking water. The National Health and Medical Research Council has set limits on the maximum safe level of copper in water. Copper is a gastrointestinal irritant and drinking water with high levels can cause vomiting and diarrhoea. Water standing in copper pipes can contain high levels of copper. It is important that the water is flushed out before being used for drinking or use in infant formula preparation.

References.

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