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## Nutrition Column

# *An Update on Water Needs during Pregnancy and Beyond*

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### Abstract

Adequate water intake is essential to maintaining life. Pregnant and breastfeeding women should be encouraged to increase their intake of water and other fluids to meet their bodies' needs. Infants do not need additional water; breast milk or formula contributes adequate amounts of water to their diet.

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An essential element of life, water constitutes 55%–65% of a person's body weight, making it the most common element in the body (Winson, 2001). Water needs to be taken in throughout the day because the body cannot produce enough on its own (Dudek, 2001). Intake of fluids should approximately equal output. Adults lose between 1450 to 2800 ml each day from insensible (immeasurable) and sensible (measurable) losses (Dudek, 2001). Insensible water losses include evaporation from the skin and exhalation. Sensible water losses include urine and stool excretions. Water losses are approximately equal between insensible and sensible.

Water needs can be calculated based on food consumption. Individuals generally need 1–1.5 ml of water for each calorie consumed (e.g., a person eating a 2000-

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calorie diet would need 2000–3000 ml of fluid each day (Dudek, 2001). Most pregnant women are advised to increase their caloric consumption by about 300 calories, beginning in the second trimester (Dudek, 2001). Therefore, they would need at least 300 ml of additional fluid intake.

The small intestine absorbs 85%–90% of water intake (Wardlaw, 2000). Most of the remaining water is absorbed in the large intestine. Adequate water intake is necessary for optimal absorption of water-soluble vitamins, which include ascorbic acid, nicotinic acid, riboflavin, B<sub>12</sub> (thiamine), and B<sub>6</sub> (pyridoxine).

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Water carries out several additional functions within the body: It provides shape and structure to cells; regulates body temperature; aids digestion and the absorption of nutrients; transports nutrients and oxygen to cells; acts as a solvent for vitamins, minerals, glucose, and amino acids; provides a foundation for chemical reactions; eliminates waste products; and is a major component of mucus and other lubricating fluids (Dudek, 2001).

### Sources of Water

Surface water and groundwater are the two main sources of water (Whitney & Rolfes, 2002). Most major cities obtain water from surface sources, which include lakes, rivers, and reservoirs. Individuals in rural areas are more likely to use groundwater, which is found in underground aquifers (rock formations) and pumped up through private wells. The potential for contamination exists in both types of water supplies. Surface water is more quickly contaminated because it is open and exposed to the elements. Potential sources of contamination include acid rain, highway runoff, and industrial wastes. In general, surface contamination is reversible because new water is added via fresh rain. In contrast, groundwater becomes contaminated more slowly. However, because groundwater is replaced more slowly, contaminants can build up over time and become more difficult to remove. Con-

cerns about water safety and possible contamination can be addressed via the Environmental Protection Agency safe drinking water hotline at 1-800-426-4791.

Contamination can be avoided with the use of bottled water. Currently, about 700 different brands of bottled water are available in the United States. Bottled water is regulated by the Food and Drug Administration for water quality and accurate labeling (Dudek, 2001). Different types of bottled water are identified in the Table.

### Pregnancy Needs

General fluid needs increase during pregnancy in order to support fetal circulation, amniotic fluid, and a higher blood volume. The current recommendation for water intake is drinking 8–10 glasses of water each day. In addition to maintaining fluid volume needs, most municipal water contains fluoride, which can aid the development of teeth and bones in the growing fetus (Henderson & Lenders, 1999). However, pregnant women must be cautioned that some water is tainted with lead, which can result in spontaneous abortion, decreased stature, and deficiency in the neurodevelopment of the growing fetus (Henderson & Lenders, 1999). Water contamination can be of particular concern in the

**Table** Types of Bottled Water

Type	Definition
Artesian	Water that comes from a confined aquifer (rock formation); water levels stand higher than the natural water table.
Mineral	Water that contains no less than 250 ppm* of total dissolved solid minerals. These minerals are naturally present (not added). “Low” mineral content water refers to water that contains 250 ppm to 500 ppm and “high” refers to amounts greater than 1,500 ppm.
Purified	Water that has been processed to remove minerals. Demineralization occurs by reverse osmosis, deionization, and other similar processes. Distilled water has been purified by creating steam that is recondensed into water. Minerals are removed as the steam is recondensed.
Sparkling	Water that contains carbon dioxide gas through either natural processes or artificial addition.
Spring	Water that comes from a natural spring in the ground. May be carbonated.

\*ppm (a unit of measure) = parts per million  
 From Dudek, S. G. (2001). *Nutritional essentials for nursing practice* (4th ed.). Philadelphia: Lippincott.

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pregnant woman who already has a reduced immunity related to the pregnancy. This problem is further compromised in the woman who is immune deficient for other reasons (e.g., HIV/AIDS infection) (Kraak, 2001). Additionally, a common complaint of pregnancy is constipation. Decreased gut motility and iron supplementation may contribute to this problem. Increased fluid intake can help to alleviate constipation. An adequate fluid supply also ensures that the mother has enough reserves to tolerate blood loss during delivery.

### **The Breastfeeding Mother**

The breastfeeding mother should be encouraged to drink enough water to quench her thirst or a little more. A common recommendation for the mother is to drink a glass of water with meals and whenever she breastfeeds. A woman who drinks additional fluids does not produce additional breast milk (Whitney & Rolfes, 2002). Consumption of excess water can result in water toxicity; however, water toxicity is rare in normal adults.

### **Infancy**

Like adults, infants have high water requirements. The younger the infant, the higher the percentage of body weight that is water (Whitney & Rolfes, 2002). Breast milk or formula contains the appropriate amount of water and replaces normal losses experienced by the infant. Infants are particularly prone to water loss via

hot weather, diarrhea, and vomiting. Dehydration can rapidly develop in an infant or small child who is losing excessive water. Supplemental water (or intravenous fluids) may be required in extreme circumstances. Normally, increased fluid intake of breast milk or formula is adequate.

Water supplementation of the infant during the early breastfeeding weeks can be detrimental to establishing lactation. In addition, newborns who receive water supplementation tend to have higher bilirubin levels than those who do not (Nicoll, Ginsburg, & Tripp, 1982). Water supplementation has also been associated with greater weight loss in the first week of life (Glover & Sandilands, 1990).

In summary, water is an important nutrient to expectant mothers and their infants.

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## **Bubble Bath for the Soul**

*Take a music bath once or twice a week for a few seasons, and you will find that it is to the soul what the water bath is to the body.*

Oliver Wendell Holmes