



## HEALTHY MOTHERS – HEALTHY BABIES

*Omega-3s in Pregnancy and Infancy*

### **Pregnancy—Nutrients for Two**

Pregnancy is a special time to nourish mothers and their developing babies. Both depend greatly on the mother's nutrition. Pregnancy increases the need for nearly all nutrients, but some nutrients must be available at specific times for the developing baby. Several of these are most abundant in fish—selenium and iodine, for example—and one occurs exclusively in fish—the omega-3 fatty acid, DHA\*. These nutrients are critical for the baby's brain development.

### **DHA—Critical for Brain Development**

DHA is a building block for the growing brain and eyes. It is needed for optimum brain growth and the development of neurons (nerve cells in brain), especially in the last three months of pregnancy and during the baby's first two years. DHA is concentrated in the retina of the eye and is important for visual function. DHA also enables neurons to relay messages to each other. This communication is critical for brain function.

There is growing evidence that after birth babies who obtain DHA from breast milk or DHA-supplemented infant formula score better on developmental tests compared with infants fed formula without DHA. They also have more mature nervous systems. Some studies suggest that children who are well nourished in DHA are better able to learn and less likely to develop learning or behavioral abnormalities compared with children who have not consumed DHA.

### **Where Do Mothers Get DHA?**

Mothers, like all of us, obtain nearly all their DHA from food, mostly from eating fish and shellfish. Fatty fish such as salmon, mackerel, herring, and sardines have the greatest amounts. A small amount of DHA can be made from certain seed oils (e.g., flax, canola, walnut), but the amounts produced are very small and may not meet the developing infant's needs. The best way to ensure that the developing baby gets enough DHA is to eat fish, especially fatty species. If women do not eat any fish, they can obtain DHA from fish oil capsules, DHA-supplemented eggs, and some fortified nutrient bars. Relying only on plant foods for omega-3s may not meet the infant's or mother's need for DHA.

### **Where Do Developing Babies Get DHA?**

In the last three months of pregnancy, the baby takes up large quantities of nutrients, including DHA, from the mother. Mothers who eat fish while they are pregnant and nursing ensure that their babies have enough DHA for proper brain and eye development. Because breast milk contains DHA the baby obtains it during feeding. Mothers who eat fish while they are breastfeeding have more DHA in their milk than mothers who do not eat fish.

If the mother does not eat seafood, the baby will try to meet its needs from the mother's own body stores. Whether the amount the baby obtains is enough for its needs depends on how well nourished the mother is. Mothers who do not eat any fish have less DHA available for their babies and have less stored DHA.

### **DHA in the First 6 Months of Life**

The brain continues to grow for the first two years after birth. For that reason, foods with DHA are important in early life. Breastfeeding ensures that the infant obtains DHA from mother's milk. When breastfeeding stops, infant formula and foods with DHA should be fed.

Mothers who use infant formula should choose one that contains DHA and AA, another fatty acid. These fatty acids are now added to many, but not all, infant formulas, so check the label to see that DHA is present.

### **Premature and Low Birthweight Babies**

Babies born before 37 weeks of gestation and newborns weighing less than 5 1/2 pounds (2500 grams) are likely to fall short of the DHA they need for the best development. This is because they have not had enough time to obtain the DHA they need from their mothers and have no DHA stores. Premature and very small babies usually receive special infant formula until they can breastfeed or have grown enough to take standard infant formula. It is important for these tiny babies to have formula with DHA and AA to ensure proper brain and eye development. Studies have shown that premature and low birthweight babies develop better and have fewer health problems when given formula with DHA compared with babies fed unsupplemented formula.

### **Providing DHA to Toddlers and Young Children**

After 6 months of age, when solid foods are introduced, infants can obtain DHA from egg yolks that contain this nutrient. Eggs with DHA are marked on the label. At about one year of age, canned fish such as salmon or light tuna can be given to children.

### **Is Eating Fish Safe?**

Some people have been frightened away from eating fish because of worries about mercury and other contaminants. Although *all* fish and shellfish contain tiny amounts of contaminants, Alaska fish and shellfish have among the lowest levels of all fish available. Recent analyses from the state of Alaska confirm that Alaska salmon, cod, and pollock present negligible health risks from mercury and other contaminants. To be safe, the Food and Drug Administration advises all pregnant and nursing women and young children to avoid eating shark, swordfish, tilefish, and king mackerel because of their mercury content. However, women and children can safely consume Alaska fish and get the important nutrients they need without concern about health dangers from contaminants.

*Written by Joyce A. Nettleton, DSc, ScienceVoice Consulting, Denver, CO*

*\*DHA, docosahexaenoic acid. DHA may be added to some foods such as eggs, but is present naturally only in fish and shellfish.*

**www.alaskaseafood.org**

Administrative Office (800) 478-2903

311 N. Franklin, Suite 200, Juneau AK 99801-1147

Marketing Office (800) 806-2497

150 Nickerson Street, Suite 310, Seattle WA 98109