

PRESS RELEASE

For more information, contact:

Egg Nutrition Media Hotline
312-233-1211
info@eggnutrition.org

NEW STUDY INDICATES THAT PEOPLE MAY NEED MORE DIETARY CHOLINE THAN PREVIOUSLY THOUGHT

Eggs One of the Best Sources of the Nutrient

Washington, D.C. (May 23, 2007) – A new study published in the May issue of the *American Journal of Clinical Nutrition* indicates that the current recommended Adequate Intake (AI) for choline may, in fact, be inadequate for some people.¹ Choline is an essential nutrient for normal functioning of all cells, including those involved with liver metabolism, brain and nerve function, memory, and the transportation of nutrients throughout the body.

In this depletion-repletion study, 57 adult subjects (26 men, 16 premenopausal women and 15 postmenopausal women) were fed a diet containing 550 mg of choline for 10 days, then fed less than 50 mg a day of choline for up to 42 days.

- When deprived of the nutrient, 77 percent of men, 80 percent of postmenopausal women and 44 percent of premenopausal women developed fatty liver or muscle damage.
- Six men (23 percent) developed these signs while consuming the initial 550 mg of daily choline, even though 550 mg is the current AI for men.
- Nineteen percent of the subjects required as high as 825 mg of daily choline to prevent or reverse the organ dysfunction associated with the low-choline diet, an amount significantly higher than the current AI.
- For all participants, blood homocysteine levels increased during choline depletion. Other studies have associated high homocysteine levels with heart disease.

“These study results clearly indicate that some adults, notably men and post-menopausal women, need more choline than is recommended by the current AI,” says study co-author Kerry-Ann da Costa, PhD, a research assistant professor at the University of North Carolina at

¹ Fischer LM, et al. Sex and menopausal status influence human dietary requirements for the nutrient choline. *Am J Clin Nutr* 2007; 85:1275-85.

Chapel Hill. "We hope these findings will aid the Institute of Medicine in refining the Dietary Reference Intake (DRI) of this nutrient."

This study is the most complete study of choline requirements to date and is the first to include women. Its division of participants into two groups – one receiving dietary supplementation of folic acid and one not – also determined that susceptibility to choline deficiency was not altered by folic acid supplementation.

Closing the Choline Gap

Additional research on the population demonstrated that choline intake is far below the current AI, a concern that intakes may be too low to meet the needs of many individuals.

- Research conducted at Iowa State University found that only 10 percent or less of older children, men, women and pregnant women in America get the AI of choline each day.²
- A separate study presented this month at the National Nutrient Data Bank Conference found that choline intake decreases with age and that adults ages 71 and older consume an average of about 264 milligrams per day – roughly half of the AI for choline.³

Eggs, beef liver, chicken liver and wheat germ are considered excellent sources of choline. Two eggs contain 280 milligrams of choline, half the recommended daily supply.

"Eggs are a practical food that can help people get the choline they need, along with several other nutrients, at just 75 calories an egg," says registered dietitian Maye Musk. "Choline is actually found in the yolk of the egg, so people who consistently only eat egg whites may be missing out on a key nutrient opportunity."

Why Choline Matters

The importance of dietary choline has been well-established.

- A 2004 study in the *American Journal of Epidemiology* linked poor dietary choline to adverse outcomes during pregnancy, including a four-fold increased risk of having a baby with a neural tube defect.⁴
- A research review published in the *Annual Reviews of Nutrition* suggests that choline plays an important role in normal fetal

² Jensen HH, et al. Choline in the diets of the US population: NHANES, 2003-2004, Iowa State University (presented at Experimental Biology 2007, Washington DC)

³ Keast DR, Food sources of choline in the diets of US older adults: NHANES, 1999-2004." (presented at the 31st National Nutrient Databank Conference, Washington DC) Food sources of choline in the diets of US older adults: NHANES, 1999-2004.

⁴ Shaw GM, et al. Periconceptional dietary intake of choline and betaine and neural tube defects in offspring. *Am J Epid* 2004; 160(2):102-109.

development, particularly during the stages that involve knowledge acquirement and life-long memory function.⁵

For more information, on the benefits of choline for pregnant women, visit www.pregnancyfoodguide.org or www.enc-online.org. For additional information or media interviews, contact the Egg Nutrition Media Hotline at 312-233-1211 or info@eggnutrition.org.

#

About the American Egg Board (AEB)

AEB is the U.S. egg producer's link to the consumer in communicating the value of *The Incredible Edible Egg*[™] and is funded from a national legislative checkoff on all egg production from companies with greater than 75,000 layers in the continental United States. The board consists of 18 members and 18 alternates from all regions of the country who are appointed by the Secretary of Agriculture. The AEB staff carries out the programs under the board direction. AEB is located in Park Ridge, Ill. Visit www.aeb.org for more information.

About the Egg Nutrition Center (ENC)

ENC was established in 1979 for the purpose of providing commercial egg producers and processors, health promotion agencies, and consumers with a resource for scientifically accurate information on egg nutrition and the role of eggs in the health and nutrition of the American diet. The center exists under a cooperative agreement between the American Egg Board (AEB) and United Egg Producers (UEP). ENC is located in Washington, DC. Visit www.enc-online.org for more information.

⁵ Zeisel SH. Choline:critical role during fetal development and dietary requirements in adults. *Annu Rev Nutr*, 2006; 26:229-50.