Eggs contain two nutrients - choline and lutein - that play a critical role in brain development and cognition.\(^{10}\)

Prioritizing Breakfast: Practical Back-to-School Advice

by CHRIS BARRY, PA-C, MMSC

It’s hard to believe, but back-to-school time is already upon us. As parents scramble to obtain all the necessary school supplies, it is important for clinicians to discuss healthy nutritional strategies with our patients. Breakfast, the most overlooked meal, is where I like to start. Many of my patients don’t feel that breakfast is important, and would rather get a few minutes of extra sleep. Studies have repeatedly shown that large numbers of children skip breakfast every day.\(^1\)

Unfortunately, skipping breakfast can have significant short- and long-term consequences. Children who do not eat breakfast regularly are more likely to be overweight and have more behavior problems in school.\(^2,3,4,5,6\) Many children and their parents don’t know that eating a healthy breakfast can improve school performance, memory, and attention.\(^1,6,7,8\)

CONTINUED on Page 4...

DID YOU KNOW?

ENC is a credible source of nutrition & health science information & the acknowledged leader in research & education related to eggs.

WHAT’S INSIDE

Prioritizing Breakfast: Practical Back-to-School Advice ................................................................. 1
Eggs for the Nutritionally Vulnerable .................................................................................................... 2
Osteoporosis Prevention – Thinking Beyond Calcium ........................................................................ 6
EGGS FOR THE NUTRITIONALLY VULNERABLE

by TIA M. RAINS, PhD

Public health guidance encourages the consumption of nutrient-dense foods to meet vitamin and mineral needs without excessive calorie intake. This recommendation applies regardless of age, sex, race/ethnicity, body mass, socioeconomic status, etc. But nutritionally vulnerable populations, like malnourished children and food insecure families, might derive a bigger benefit from this strategy than other groups.

For example, malnutrition is one of the biggest health burdens in developing countries, particularly in pregnant women and young children. Regional diets are often deficient in protein and other macronutrients, as well as essential vitamins and minerals. Such inadequacies in infants and children can result in stunting (inadequate height for age) and wasting (inadequate weight for height). According to the World Health Organization, 159 million children are stunted and another 50 million suffer from wasting. There are many consequences of these conditions, including impaired cognitive development, immune dysfunction, as well as mortality in severe cases.

Two new studies, from different parts of the world, evaluated the impact of providing whole eggs to malnourished infants and children on weight and height.

In both cases, the simple addition of one or two eggs a day significantly improved growth outcomes in these nutritionally vulnerable children:

- An investigative team led by Washington University in St. Louis showed that feeding one egg a day (versus none) to 6 to 9-month-old infants in undernourished areas of Ecuador decreased the prevalence of stunting by 47% and underweight by 74%.
- Researchers from the University of Arkansas found that adding two eggs a day to the diets of 6 to 8-year-old children in undernourished areas of rural Uganda resulted in increased height and weight.

While many strategies are currently being explored to prevent stunting and wasting in young children, egg farms can operate in rural environments and provide a low cost and sustainable source of eggs to impoverished communities around the world.

Although ‘malnourishment’ is often used to describe severe nutrition deficiencies in developing countries, there are also cases of undernourishment in other parts of the world.

HOT OFF THE PRESS

The American Medical Association recently announced its recommendation to include choline in prenatal vitamins. Choline is an essential nutrient that is particularly important during pregnancy, as it impacts fetal brain development and can help prevent birth defects. Food sources can also help pregnant women meet their choline needs, and eggs have one of the highest amounts of choline of any food.

Read more here:
EggNutritionCenter.org/AMACholineReco
For example, 15.8 million families in the United States are considered low-income or food-insecure.³

It would make sense that nutrient-dense affordable foods, like eggs, could help close the gap between current nutrient intakes and recommendations.

However, USDA data show that eggs make up just 1.1% of SNAP household food expenditures, compared with 9.3% for soda, 6.9% for prepared desserts, and 2.1% for candy.⁷

And while egg consumption has been increasing in recent years among the general population, according to a new study published in *Nutrients*, egg intake among food insecure individuals and SNAP participants specifically has not changed over time.⁸ Considering how inexpensive and nutritious eggs are, why aren’t they consumed more frequently in this nutritionally vulnerable population?

The answer is complicated and illuminates some of the disadvantages brought on by poverty. People with lower incomes often don’t have as much time, or perhaps even access to kitchen facilities to cook, so prepared or packaged food has a real advantage in terms of convenience. Many may also live in urban or rural food deserts, where the only accessible establishments that sell food are convenience stores that don’t stock many eggs or other fresh foods.

In the meantime, researchers at USDA are now conducting studies to evaluate the impact of incorporating eggs into everyday diet patterns on diet quality among nutritionally vulnerable populations, and how changes in retail egg prices affect food-purchasing decisions for families.

That research should provide some answers as to the impact of one or two eggs a day among the people most in need and help identify some of the barriers to egg consumption in this population.

For more on the Ecuador/Uganda studies, to access informational fast facts or to download the graphic, visit eggnutritioncenter.org/EggsMalnutritionResearch

REFERENCES

7. USDA FNS. Foods typically purchased by supplemental nutrition assistance program (SNAP) households (summary). November 2016.
Decades of research demonstrate the benefits of breakfast for school-aged children, such as better concentration and attention. Working with patients/clients to find easy solutions to help increase breakfast consumption is crucial.

In addition, creating a breakfast routine helps to establish healthy eating habits that will carry on throughout life.

Components of a healthy breakfast can include protein, fiber-rich whole grains, and fruit. A breakfast high in protein, specifically, has been shown to promote longer periods of fullness and less snacking during the day.9

The most common reason my patients give for skipping breakfast is lack of time.

Many children, especially teenagers, stay up late at night, with homework, extracurricular activities, sports, and social activities. These children often wake up with barely enough time to get dressed and out the door to catch the school bus or ride to school.

I help these breakfast-skippers set their priorities correctly. Everyone has room to spare a few minutes, and with good planning, a healthy and delicious meal can be prepared and eaten in under 10 minutes. I challenge my patients to set their alarm just 10 minutes earlier every day for a week, and use the extra time to eat a healthy breakfast high in protein, fiber-rich whole grains, and fruit. More often than not, the child discovers that a quick, nutritious breakfast can help them feel more alert at school, and prevents them from getting hungry so quickly. Most of my patients who take this challenge report that they now routinely set their alarm a little earlier to ensure time to eat breakfast.

There are several ways to streamline the breakfast process to make it as time efficient as possible. The key to ensuring a good breakfast is planning. There are things that can be done relatively quickly that help save time in the mornings. One thing I like to do for my own children to streamline the morning routine is to boil several eggs on the weekend and peel them. My children then have an easy, quick protein source at breakfast. Another favorite of mine is scrambled eggs in a mug and microwaving...
them, which takes under 3 minutes to prepare (make sure to use the non-stick spray for easy clean up). Other ideas for a quick breakfast include: breakfast burritos or tacos, egg muffin frittatas that can be made ahead and heated up in the microwave, and breakfast flatbreads. All of these items can be served with fresh fruit (which can be cut the night before, if needed), whole grain toast and/or a glass of milk.

One reason I recommend eggs and serve them to my children is because in addition to protein they contain two nutrients - choline and lutein - that play a critical role in brain development and cognition.10

One large egg contains 147 milligrams of choline (more than half of the choline most 4-8 year old’s need), which is an important nutrient involved in memory, mood and learning.11 Eggs also contain lutein, which plays an important role in brain function for infants and toddlers.12

Quite simply, there are so many benefits to eating breakfast, people must simply prioritize, plan their breakfast the night before, wake up a few minutes earlier... whatever it takes to ensure that children eat an adequate breakfast every day. As we get closer to the start of school, be sure to talk to children about the importance of eating a nutritious breakfast every day. With so many health benefits, breakfast is a meal that kids cannot afford to skip.

REFERENCES
Osteoporosis-related fractures are a substantial burden on public health and the U.S. economy.

New research demonstrates that dietary strategies to prevent osteoporosis should extend beyond recommending adequate calcium intake.

Osteoporosis prevention should be a three-pronged strategy promoting: Calcium intake, protein intake and physical activity.

A 2013 report in *The Journals of Gerontology, Biological Sciences and Medical Sciences* stated that osteoporosis-related fractures are a substantial burden, not just on our public health but also our economy. In the United States, they estimated the cost of fractures to exceed $19 billion annually.¹

For years, women have been coached to get their calcium to prevent osteoporosis. Advertising campaigns with white mustaches and creamy cups of yogurt encouraged women of all ages to get three servings of dairy products a day to prevent osteoporosis and its related health problems. Calcium supplements and bone health treatments are also highly advertised to women in the United States. Yet according to the International Osteoporosis Foundation, “osteoporosis and low bone mass are currently estimated to be a major public health threat for almost 44 million U.S. women and men aged 50 and older.”²

Which begs the question, are we doing enough for bone health?

Calcium intake is just one part of a three-pronged strategy for osteoporosis prevention.

In addition to getting enough calcium, women should also be counseled to get enough protein in their daily diet. A study recently published in the *American Journal of Clinical Nutrition* seems to indicate that protein intake is also part of the formula to prevent osteoporosis.³ The study conducted on 746 postmenopausal women found a positive relationship between protein intake, specifically dairy and animal protein, and bone strength and architecture.

Meaning it is not just calcium that builds strong bones, but also protein.

The third often missing but critical element in a comprehensive osteoporosis prevention plan is exercise; specifically load bearing and strength training activities. The medical profession has long encouraged load-bearing exercise such as running or jumping activities to help strengthen bones. However, a meta-analysis published in 2016 in the journal *Sports Medicine* indicates that a combination of impact exercise (like running) and strength training is the best course of action to improve and maintain bone mineral density in both pre- and post-menopausal women.⁴

### NOW AVAILABLE: CONTINUING EDUCATION

ENC recently launched two new (free!) self-study continuing education (CE) modules offering 1 hour of CE for registered dietitians.

To access the CE modules, visit: eggnutritioncenter.org/ContinuingEd
Health and fitness professionals can help their female clients create a lifestyle that supports good bone health at all stages of life with these three key steps.

**Emphasize calcium from whole food sources.** Calcium supplement recommendations should come from a doctor or registered dietitian. Other health and fitness professional instead can help a client get her daily intake of calcium from both dairy and non-dairy foods. Most women know that yogurt and milk are great sources of calcium however they don’t know that leafy greens like 1½ c. kale and foods like tofu and fortified cereals can be good sources of calcium.5 This can be especially helpful for those who suffer from dairy intolerance or allergies.

**Educate clients on how to balance the plate with quality protein sources.** Women on the go tend to rely on easy to grab foods like fruit or low fat snacks like pretzels or popcorn. Educating clients on how to pair up a protein with their favorite snack, like a hard-boiled egg with pretzels or a piece of natural and nitrate-free beef jerky to go with the banana, not only helps bone health; it also helps balance blood sugar and keep hunger at bay a little longer.6

**Create exercise programs that include both weight bearing and strength training exercises.** For clients who can’t or don’t like to run, small bursts of plyometric exercises like jump squats, dancing or even stair climbing can prove an adequate stimulus for osteoporosis prevention. Following Physical Activity Guidelines for Americans7 by participating in weight training exercise two or more days a week will also provide the needed strength training activities to support good bone health.

These small but impactful steps along with bone density screenings make a more comprehensive plan to battling the public health crisis of osteoporosis.

For more information on dietary protein’s impact on bone health, visit ENC’s website to learn the findings of a recent meta-analysis:

tia.m.rains@eggnutritioncenter.org

**REFERENCES**

5. U.S. DHHS. National Institutes of Health. Calcium Fact Sheet for Health Professionals.
WHAT’S INSIDE

Prioritizing Breakfast: Practical Back-to-School Advice .......................... 1
Eggs for the Nutritionally Vulnerable ...... 2
Osteoporosis Prevention – Thinking Beyond Calcium .................... 6

UPCOMING EVENTS

American Association of Diabetes Educators Annual Conference
Indianapolis, IN  { AUGUST 4–7 }

Cardiometabolic Health Congress Regional Chicago Meeting
Chicago, IL  { AUGUST 12 }

Food & Nutrition Conference & Expo
Academy of Nutrition and Dietetics
Chicago, IL  { OCTOBER 21–24 }

is a quarterly publication produced by the Egg Nutrition Center (ENC) that presents up-to-date reviews, summaries and commentaries on nutrition for health promotion and disease prevention, including the role of eggs as part of a nutritious and healthful diet. ENC accepts article submissions from health professionals. Opinions expressed by the authors may not be those of ENC. Some authors are compensated for their articles.