**AEB Update: Egg Consumption Cuts Stroke Risk**

Consuming an egg a day could decrease stroke risk, according to a recent meta-analysis published in the Journal of the American College of Nutrition (JACN). Researchers examined studies that were published from 1982 to 2015 and that involved close to 300,000 participants, to draw their conclusions. They found that consuming one egg per day reduced the risk of stroke by 12 percent.

*(Continued inside)*

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**Will You “Go with Purpose” to IFT? Go with Eggs.**

“Go with Purpose.” The theme for this year’s meeting, “Go with Purpose,” exhorts attendees to remember that our charge is to provide every person on the planet with a “safe, nutritious and sustainable food supply.” We couldn’t agree more. Egg products provide a safe and nutritious supply of ingredients that can help achieve that goal.

In terms of supply, egg ingredients are available in abundance. We’ve got an equally abundant library of concepts and ideas that can help you take advantage of egg functionality, flavor and versatility. Explore the possibilities and potential of egg ingredients at our booth #1758 in Las Vegas, June 25-28. On hand to answer any technical or functional questions will be Shelly McKee, Ph.D., and Technical Advisor for the American Egg Board.

**Go for the Gold**

While going with purpose, might as well go for the gold, or the gold standard with new product introductions. Today’s consumer is looking for clean label products that deliver on taste, texture and appearance. Egg ingredients can play key roles in developing gold standard foods, especially in baking applications.

Last year at IFT we presented a newly published collection of reports that compared the functional and organoleptic performance of egg ingredients to blends or ingredients commonly recommended as egg replacers. That first set of reports focused on yellow batter cake, crème cake blueberry muffins, cookies, brownies, sponge cake and more. Gold standard results were achieved using egg ingredients in these baking applications. That research continues and this year, new reports compare and contrast the performance of eggs vs. replacements in nougat, angel food cake, frozen custard, frozen waffles, mayonnaise and pasta.

View the latest research results at our booth. In addition, all of the reports and research results are housed on a single website, RealEggs.org.

*(Continued inside)*
Stroke is the fifth leading cause of death in the United States.1 In addition, researchers concluded there was no association between eating an egg and coronary heart disease.

Principal study investigator Dominik Alexander, Ph.D., Ann Arbor, MI, is quoted as saying “Eggs do have many positive nutritional attributes, including antioxidants, which have been shown to reduce oxidative stress and inflammation. “They are also an excellent source of protein, which has been related to lower blood pressure,” he continued.

One large egg contains six grams of high-quality protein and antioxidants, found within the egg yolk, as well as 13 other vitamins and minerals in varying quantities, including vitamins E, D and A.

Dr. Alexander’s research corroborates changes in the 2015 Dietary Guidelines for Americans, which eliminated dietary cholesterol limits and includes eggs among lean protein choices recommended for consumption. The guidelines noted eggs are an affordable, accessible, nutrient-rich source of high-quality protein.

As mounting scientific evidence reflects the health benefits of eggs, this means egg ingredients can lend a “healthy halo” to food products, which is good news for the consumer and manufacturer alike.

Trend Watch: Baking at Home

We might be a nation in search of better health, but seemingly consumers find comfort in baking at home. According to Mintel, on a global basis, baking ingredients and mixes are the third most active sub-category in bakery in its new products database. And North America records the highest level of new products introduced for baking ingredients and mixes, including chilled doughs and varieties.

Consumers say they’re pressed for time but would like to bake and cook more. In population segments of particular interest to marketers, 40 percent of 25-34 year olds in the U.S. say they are baking more now than they did in the past. Overall 22 percent of American consumers who own bakeware say they are baking more now than a year ago.

But what are they looking for? They want convenience coupled with mixes and ingredients that feature natural claims. Overall, baking mixes are overshadowed by the perception they are too processed.

The report states that baking ingredients and mixes likely “will benefit from a continued increase in natural sourcing.” In addition, baking ingredients and mixes, it says, “could appeal to healthy eaters looking to increase their protein intake in a subtle manner.” This is particularly true for the North American market, with 63 percent of American consumers looking for more protein when purchasing foods they consider ‘healthy.’ New products in the baking mix category introduced within the last year for example feature pancake mixes that promote higher than average protein content.

In addition to convenience, single portion or single serve baking mixes appear popular. Mixed and baked in a mug or cup, the consumer need simply add water or an egg and microwave for an instant gratification, indulgent treat. Mixes with original herbal or floral notes also appear popular, appealing to the consumer quest for variety yet a nod to natural elements.

According to Mintel, there has been a push towards more natural sourcing in the last year, with 32 percent of launches in North America featuring at least one natural claim, up from 22 percent in 2015. Analysts recommend companies promote products as less processed and featuring more raw ingredients, while keeping convenience in mind.

Egg Ingredient Spotlight:
Fantastic Foams with Egg Whites

It’s unmistakable, distinctive and in many applications, indispensable. Egg whites create foam with volume, from six to eight times the volume of the original liquid. This functional property alone could make egg whites a valuable baking ingredient, especially for meringues and angel food cakes, but aeration is just one of the 20-plus functional benefits supplied by egg ingredients overall.

Egg white composition is approximately 88 percent water to twelve percent protein. Foams are a type of colloidal dispersion known as suspension, when air is dispersed through a liquid phase. The proteins within egg whites are what allow stable foams to form. Egg white proteins have both hydrophobic (water repelling) and hydrophilic (water loving) surface areas. The protein is folded over itself, with the hydrophobic surface areas tucked inside. Whipping causes the egg white proteins to unfold, exposing the hydrophobic surface areas. While the hydrophilic areas bond with water, the hydrophobic surface areas help create the air bubble, as proteins bond together around the bubble surface. This traps the air bubble for foam unrivaled by any other natural substance. This aminating quality of egg whites allows for the creation of gold standard macarons, meringues, soufflés and angel food cakes.

As the whipping or beating progresses, the air bubbles decrease in size and increase in number, with the air bubbles surrounded and supported by egg proteins. Other foams can be subject to collapse, or not yield the fluffy texture and uniform air micelles commonly achieved using egg whites. Egg white provides food manufacturers with a superior foam aiding agent due to the low air-to-liquid interfacial tension. During baking, these proteins bond with each other, forming a delicate, yet reinforced network that strengthens baked goods, creating and maintaining volume. Ovalbumin is responsible for the original foam volume when egg whites are whipped. Ovomucin is responsible for holding onto the air bubbles during heating and have elastic qualities that allow the protein to stretch as the air bubbles enlarge.

Cream of tartar or potassium bitartrate also helps stabilize the egg white foam by lowering the pH of the egg white and shortens the time necessary to form foam. Flour and sugar help stabilize structure and lend texture and gums stabilize foams to help prevent moisture loss (syneresis and meringue shrinkage). Citric acid helps improve egg white protein functionality by reducing pH and stabilizing product color. To allow the egg white foam to achieve its fullest potential, make sure to keep any fats separate from the egg whites while foaming. The baking sector encompasses a wide variety of formats, from bread and rolls to pastries and desserts.

For more information about egg functionality within baking or other types of applications, visit AEB.org/TechTalkVideos.
Do you dunk?  Try to find someone unfamiliar with biscotti and it would be a stretch. Yet this popular Italian cookie, whose creation is credited to pastry chef Antonio Mattei in the city of Prato, Tuscany, wasn’t a familiar sight in American bakeries and coffee houses until the 1980s. While the Tuscan version was often liberally bestowed with almonds, the recipe has expanded to include almost any variety of nuts, fruits and flavors.

Biscotti are particularly cozy with a cup of coffee and can credit a good portion of their popularity to Americans’ growing coffee obsession. Biscotti are noisy confections, baked twice, resulting in a crunchy, firm and eminently dunkable cookie. In the typical process of biscotti creation, the dough is formed into logs, baked, cooled and baked again. This second baking draws moisture out of the biscotti.

Gold standard biscotti rely on eggs, traditionally whole eggs, to supply optimal texture and overall appearance. Eggs lend a crispier, crunchy texture and help increase shelf life. Many consumers view biscotti as a premium product and expect higher quality, achievable with egg ingredients for crunchy, firm biscotti.

While whole eggs feature in many biscotti formulations, each of the components, egg whites and egg yolk, supply important functional properties and could be used on their own in formulation.

Eggs supply such a broad range of functionality that they contribute on many levels to the dough and finished product. Depending on the mixing methods used, the eggs will provide some aeration and help to create an open, tender texture. In the dough itself, liquid eggs are often the only source of water in the formula and in combination with the fats and lecithin from the yolk, are an important part of creating an optimal dough texture that will deposit and form easily during processing.

The eggs also help to restrict spread of the product, helping the biscotti to maintain its height and characteristic oblong or oval shape. In the finished product, the protein within the egg will provide an important structural function that will keep the product from being too fragile during packaging, transport and storage, as well as maintain its characteristic texture.

While liquid eggs are often used, dried eggs can provide the needed functionality mentioned above. Because biscotti dough can be relatively low in moisture, and may have a very short mixing time, formulators should take care when using dried eggs to ensure they are evenly incorporated and hydrated.
Egg Product Innovations

Red’s Turkey Sausage Egg & Cheese Breakfast Burrito
Red’s ALL NATURAL, LLC. Turkey Sausage Egg & Cheese Breakfast Burrito features antibiotic-free turkey sausage blended with cage-free scrambled eggs and a mixture of Pepper Jack, Mozzarella and white Cheddar cheese, nestled in a hand-rolled, bakery style tortilla. Each burrito provides 19 grams of protein. One package contains ten burritos that can be prepared in the microwave for a quick, portable meal.

Simple Truth Organic Gluten Free White Chocolate Cherry Cookies
This cookie package from Simple Truth, marketed by Kroger, USA feature organic gluten-free white chocolate cherry cookies that are not only USDA certified organic but also non-GMO. The white chocolate meshes with brown and cane sugars and cherries for sweet flavor while eggs help bind together the dry ingredients. Serving size is one cookie with five cookies per each five-ounce package.

Halo Top Chocolate Mocha Chip Ice Cream
Eden Creamery, USA presents a light ice cream in its Halo Top brand line that is designed to appeal to the “free-from” consumer movement that demands clean and simple foods and ingredient labels. This light ice cream claims it is low in sugar, fat and calories while delivering a profile high in protein. The product is also free from artificial softeners, artificial sweeteners, corn syrup, synthetic growth hormones and gluten. The first three ingredients on the label feature milk, cream and eggs. Packaged in one-pint cartons.

Kroger Wild Caught Breaded Calamari Rings
Wild caught squid form the basis for these breaded calamari rings from Kroger, suggested as a great meal starter. Two and a half recommended servings fill each eight-ounce package. Preparation instructions include either oven baked or deep-fried, with egg whites in the ingredient mixture to help breading adhere to the substrate. A hint of Romano cheese adds just a touch of flavor.
Freeze Frame! Challenges in Frozen Foods.

In its Patent Perspectives: Frozen Food report, published February 2017, Mintel discusses recent innovations in freezing technologies that aim to deliver frozen foods with improved nutritional value. Consumers like the convenience of frozen foods, however Mintel research says that consumers are concerned about their nutritional value.

In a survey of U.S. consumers conducted in 2016, 85 percent agreed that frozen snacks are easy to prepare. However, they also are concerned about the nutritional quality of frozen foods, with 40 percent of consumers stating they think frozen snacks are too high in calories. A separate survey showed that 29 percent of frozen breakfast food consumers agree they would eat more frozen breakfast foods if they were less processed.

According to the report analysts, manufacturers “need to improve consumers’ perception about the nutritional properties of frozen foods. Frozen food manufacturers must continue to innovate or risk losing consumers to other sections of the store.”

In addition to new freezing technologies, manufacturers can select ingredients that will promote the taste, texture and appearance of frozen foods while at the same time contributing positively to a nutritional profile.

Frozen foods present multiple challenges to formulators. The ingredients must not only maintain their integrity during the freezing process but also contribute to final product taste, texture and appearance during preparation, which often means microwave heating.

Egg ingredients work well within a frozen environment and maintain integrity during microwave preparation, offering 20-plus beneficial functional properties while appearing simply as “eggs” on the label. This helps speak to the consumer desire for less processed foods. In addition, one large egg contains six grams of high-quality protein, contributing to a nutritious breakfast or snack food. Mixed with a variety of vegetables, paired with any number or flavor of cheeses, perched atop a whole grain roll or baked good, eggs can help create successful frozen food products.

Eggs in Schools

Hard-boiled eggs are now approved by the USDA, and they meet the government’s Smart Snacks in Schools Standards. Hard-boiled eggs supply a “nutrient-rich” option for healthy snacks or à la carte items, as long as no fat has been added to them. We have serving tips and discuss packaging options. Find out more by visiting AEB.org/SmartSnacks.

New Online Egg Product Buyers’ Guide

The newest version of the Egg Product Buyers’ Guide is available and more user friendly than ever. Available online, the Buyers’ Guide enables purchasers to search for the right supplier according to the most important parameters, whether that is product or type. The online nature of the guide also allows for the information to be updated more quickly, so users can count on finding the most current information regarding egg product suppliers.

To start using the online Egg Product Buyers’ Guide, visit AEB.org/BuyersGuide.

About the American Egg Board (AEB)

Through AEB, U.S. egg producers come together, in accordance with statutory authority, to establish, finance and execute coordinated programs, on research, education and promotion—all geared to drive demand for eggs and egg products. AEB and all program activities are funded by U.S. egg producers, subject to USDA approval. Visit www.aeb.org for more information.

For further information on topics presented, please contact the American Egg Board.

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