

**Executive Summary**

▶ Updating breakfast for today's time-crunched, health-conscious consumer.

▶ Vitamins, minerals and proteins that help jumpstart the body.

▶ Incorporating whole-grain goodness into the morning meal.

# First Things First: Building a 21st-Century Breakfast

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Photo: American Egg Board

If lunch and dinner know what's good for them, they'll ditch their PR teams and sign on with whoever's handling media for breakfast. You can hardly open a magazine, scan a headline or hear a news-cast without learning something complimentary about the morning meal. Take this stat: Breakfast accounted for almost 60% of foodservice traffic growth over the five years preceding 2010, according to The NPD Group, Port Washington, NY. While morning meal visits were inching up 2% annually during the period, lunch struggled to stay flat and evening traffic fell 2%.

Which just goes to show: Breakfast is big, and getting bigger. Figuratively, that is: We've long since traded the workingman's flapjacks and home fries of yore for the 21st-century equivalent of a latte and energy bar, but we're still starting our days with sustenance. Because as much as breakfast has changed, one thing's stayed the same: It's still the most important meal of the day.

To keep it the most relevant, as well, product developers have to think outside the cereal box and address the issues that matter today. That means building breakfasts to be hassle-free, tantalizing and packed with the healthful, whole-food ingredients that don't just make consumers feel good about their choices, but make them feel good, period.

## Growing brains, growing bodies

Consumers intuitively know that breaking the overnight fast with a fortifying spread is sound practice. But those of us with a more scientific bent need cold, hard proof. Investigators have obliged, generating a buffet of research on breakfast's benefits. "There are several reasons that breakfast has become a focus of attention lately," says Mitch Kanter,

Ph.D., director of the Egg Nutrition Center, American Egg Board (AEB), Park Ridge, IL. Some of the most convincing, he says, point to the meal's significance for youth.

School children, Kanter explains, not only "benefit from the many essential nutrients found in breakfast foods," but also "need to avoid snacking on empty-calorie foods to prevent obesity, and need a high level of focus to master the concepts presented at school." Researchers reported in the journal *Pediatrics* (2008; 121:e638-645) that "increased breakfast frequency contributed to improved nutrient intake and decreased body mass index" over the course of a 5-year longitudinal analysis of adolescent eating behavior called Project EAT, Kanter says.

Similarly, a 2010 study in the *International Journal of Obesity* (34(7):1,125-1,133) found that, compared to breakfast-skipping students, those who ate morning meals rich in protein enjoyed greater satiety throughout the morning, consumed fewer calories at lunch and better controlled their appetites the rest of the day. It's possible the effects relate to the stimulatory effects of protein consumption on concentrations of the appetite-depressing hormone PYY.

In improving youth cognition and physical performance, the support for breakfast is just as abundant. A 2008 study in the *American Journal of Clinical Nutrition* (67: 8,04S-8,13S) noted that, in the absence of breakfast, cognitive function and learning abilities suffer, "particularly among nutritionally at-risk children," Kanter says. "Interestingly," he continues, "Mathayya and colleagues observed in their 2007 study in *Physiology & Behavior* (30;90(1):142-150) that the introduction of midmorning snacks to 7- to 9-year-old children often improved

memory.” Meanwhile, a 2002 study in *Annals of Nutrition and Metabolism* (46(Supp 1):24–30) reported comparably improved academic performance and nutritional status in students who participate in school breakfast programs.

### The meal we never outgrow

Wendy Bazilian, DrPH, RD, author of “The SuperFoods RX Diet” and spokesperson for the Cherry Marketing Institute, Lansing, MI, has noted herself how many

“interesting studies” on breakfast involve young subjects. “We really care about those developing minds and bodies,” she says. But the lessons “apply to the big kids, as well.”

For example, the 2008 International Food Information Council Foundation (IFIC) review, “Breakfast and Health” concludes that the breakfast-eating habit correlates with improved heart health, lower body weight and a better diet in general. Bazilian points out that specific breakfast foods often correlate with positive health outcomes, too. “A study

found that individuals who ate whole-grain cereal most days were nearly 30% less likely to suffer heart failure,” she says. The findings came from an analysis of the observational Physicians’ Health Study and were presented in 2007 at the American Heart Association’s 47th Annual Conference on Cardiovascular Disease Epidemiology and Prevention.

Kanter agrees that breakfast “seems to set the pace for the entire day.” For adults hoping to shed weight, forgoing the morning meal could prove penny-wise and pound foolish. “Research shows that breakfast skippers often make up for calorie deficits by over-eating later in the day,” he says. “Eating a well-balanced breakfast helps provide energy for activity throughout the day.” The National Weight Control Registry cites eating breakfast as one of the behaviors universal among people who lose weight and keep it off. Of the registry’s members—who’ve lost an average of 66 pounds and kept it off for 5.5 years—78% eat breakfast every day.

Kanter believes that breakfast is so important partly because it supplies us with so much of what we lack. “Children’s diets are often full of non-nutritious choices, leaving them deficient in key areas of vitamins C and D, calcium and iron,” he says. “Busy teens are growing and need a variety of nutrients, but want something convenient. Athletes often need more calories—from nutritious choices—for

performance. The elderly lack many of the same nutrients as children.” Enter the healthy breakfast.

### A nutrition opportunity

The 2010 USDA Dietary Guidelines for Americans singled out four “nutrients of concern” for us all—calcium, vitamin D, potassium and fiber—and these, Bazilian says, “lend themselves nicely and neatly to getting in a breakfast of milk, whole-grain cereal and fruit. We know that people who miss breakfast are really challenged to make up for some of those nutrient gaps later in the day. So the nutrients are there. It’s a key eating opportunity.”

Although not among USDA’s nutrients of concern, protein also deserves attention for its role in muscle synthesis, strength and satiety. Yet, most Americans consume fewer than 10 grams of protein at their morning meals. Douglas Paddon-Jones, Ph.D., associate professor of physical therapy and internal medicine, University of Texas Medical Branch, Galveston, TX, has found that spreading protein intake throughout the day maximizes its benefits. Getting roughly 30 grams at each meal, he argues, more effectively supports lean muscle maintenance than skimping early in the day and relying on dinner to pick up the protein slack.

But with a breakfast of toast, waffles, pancakes, juice or pastries providing relatively little protein—and breakfast cereal averaging only 2 to 3 grams per serving—our a.m. protein efforts need help. The half-cup of milk we splash on our flakes or puffs may add another 4 grams, but the U.S. Dairy Export Council (USDEC), in its report “Whey Protein and Breakfast” (2011), recommends increasing protein further still with perhaps whey-fortified milk, adding 10 to 15 grams per cup, or whey protein, at approximately 20 grams per scoop.

### Morning danger zones

But if breakfast is an opportunity to load in nutrients we need, it’s also an opportunity to get less of those we’ve already gotten enough of—like sodium, which is rife in breakfast meats, and sugar. “As a public health professional,” Bazilian says, “I’m quick to look on the label for how many types of sugar are in a product.” On many yogurts, bars and the most notorious breakfast cereals, she’ll find several. But setting aside the drama over “good” sugar versus “bad,” Bazilian believes we could all stand to consume less, and breakfast is a sound place to start cutting.

Recommendations are that fat should contribute 20% to 35% of our daily caloric total, so we should aim to keep the fat in our breakfast formulations within that range, too. But in the end, Bazilian emphasizes the positive: “I steer more toward the quality of the ingredients and the foods in the breakfast and managing the calories, salt, fat and sugar within that. I really look at the quality that the food is giving me.”

### The whole-foods breakfast

By focusing on foods and not just individual nutrients, Bazilian embodies a popular way of thinking. She says she’s seen a decline in consumer interest in fortified foods, and that people instead look to get their nutrients through “fresh” and “real” foods, “whether it’s a whole food or a whole food that is an ingredient in another food.”

It all comes back to synergy—the notion that nutrients don’t act in isolation but in the context of our broader diets. “There’s more appreciation for the idea,” Bazilian says, even among consumers who may not be able to define or describe it. “And while it’s still so important that the scientific community does research on individual nutrients to understand why and how the synergy happens, we eat food. And we don’t just eat food—we eat meals, and patterns of food over time.”

Incorporating a variety of whole foods into breakfast may even be a more efficient way for our bodies to extract the nutrients within. As Kanter explains, “The best-utilized type of iron, found in meat, fish and poultry, is called heme iron. Vitamin C helps iron absorption, so it’s really important to get a variety of foods at breakfast to help improve absorption and utilization of iron in eggs and whole grains.”

And it’s telling that the Dietary Guidelines for Americans didn’t just call attention to nutrients of concern, but identified whole grains, fat-free and low-fat dairy, fruits and vegetables as “food groups to encourage.”

### Wholly positive

Indeed, “Americans source the majority of their whole grains” at the morning meal, notes Dave Sheluga, Ph.D., director of consumer insights, ConAgra Mills, Omaha, NE. “Whole grains are an important contributor to a healthy breakfast, providing a feeling of fullness and mental alertness—plus long-term benefits of reducing risk of heart disease, stroke and diabetes.”

## Feeling our oats

Consumers are catching on, recognizing the satiating and digestive benefits of whole-grain fiber as key reasons to consume more whole grains. In a ConAgra Mills-sponsored concept test fielded Oct. 20 through 25, 2010, 42% of respondents said they were looking to add more whole grains to their diets.

And with nearly 8 out of 10 breakfasts eaten at home, retail breakfast manufacturers have a role to play in delivering the whole-grain goodness consumers want. “Whole grains are easy to incorporate into many grain-based breakfast products,” Sheluga notes. “Food manufacturers have figured this out and have already introduced whole-grain versions of breakfast bars and muffins.”

In another online concept test ConAgra Mills commissioned in late 2010, whole-grain products in all four categories tested—bagels, pancakes, waffles and English muffins—“were viewed as significantly more nutritious than the regular product, significantly more unique and had significantly higher taste appeal,” Sheluga says. “This is great news for manufacturers.”

Taste wariness persists, though, especially among consumers new to whole grains. Yet, all it takes to rescue the holdouts from their reluctance may be a little explaining. When consumers in the concept test received “taste reassurance” for the whole-grain concepts—namely, the message that the products “are made from unique white whole-grain flour. They have the same great taste, texture and appearance as our regular products. In fact, most people can’t even tell the difference”—they gained “the confidence they need to accept a ‘new’ whole-grain product,” Sheluga says. “We believe this is a key reason why consumers viewed the whole-grain versions as better-tasting than the regular version across all concepts.”

In light of whole grains’ acceptance potential, Sheluga finds their relative rarity on foodservice breakfast menus “surprising.” But the bigger surprise might be the increasing prevalence of a whole-grain breakfast staple—oatmeal—at QSR.

Venues from McDonald’s and Burger King to Chick-fil-A and Starbucks now menu the hot cereal, but as Kelly Henderson, technical services manager, Viterra

Oat and Specialty Grain Milling, Kansas City, MO, points out, this isn't Grandma's oatmeal. "Besides instant oatmeal," he says, "now more people are cooking large-flake and steel-cut oatmeal and adding fresh fruit to provide a healthier diet."

Prepared and served this way, oats really do live up to their healthy reputation, and to the heart-health claim that FDA granted the soluble fiber in oatmeal as part of a diet low in saturated fat and cholesterol. "Oats and oat-based products will definitely bolster the diet profile," Henderson says, "providing roughly 2 to 3 grams of dietary fiber per serving."

Oats are also naturally low in sodium and saturated fat, yet they supply "certain mono- and polyunsaturated fats that are good for health," Henderson says. And while we don't associate antioxidants and oats the way we would, say, broccoli or red wine, Henderson says that oats, like other grains, contain "a number of phytochemicals that may be protective against heart disease and cancers." One such group consists of avenanthramides, phytoalexin antioxidants unique to the groats of oat seeds. "Relative to other

grains," he adds, "oats are also high in thiamine, vitamin E, pantothenic acid, folic acid, biotin and choline."

### Breakfast's protein powerhouses

Of course, it's the combination of these nutrients in the whole oat that yields the most benefit, according to the synergy theory. As Henderson puts it: "The key to healthy eating is a balanced diet. Well-balanced meals and whole-grain foods should provide all the important nutrients, so supplements may not be needed as often."

That's a message proponents of dairy foods have picked up on. "Dairy provides a unique combination of nutrients not naturally found in other food or beverage choices," says Gregory Miller, Ph.D., president of the Dairy Research Institute, Rosemont, IL. "Over the last couple of decades, nutrition guidance has mostly centered on telling consumers what to avoid—sodium, certain fats, added sugars—and I think turning the paradigm toward choosing nutrient-rich foods rather than nutrient avoidance is a critical step toward improving the quality of the American diet."

With its potassium, riboflavin, zinc, phosphorous, vitamin D and calcium, dairy fits the bill. But it's as a source of high-quality protein that it's attracting notice at breakfast—particularly with consumers keen on keeping the munchies at bay. “Consuming protein in the morning is good for satiety,” says Erin Gramza, R&D senior scientist, Sargento Food Ingredients, Elkhart Lake, WI. “Breakfast is a good time to include a serving of dairy for protein and calcium, whether it's milk in a latte, string cheese paired with fruit or Greek yogurt, which is becoming more mainstream as consumers switch to it for its higher protein content, thick texture and tangy taste. Even whey protein in a breakfast smoothie can ensure a feeling of fullness for a longer period of time.”

Gramza singles out nuts and nut butters as protein-rich enhancements to the morning meal. “By combining a few sliced almonds with oatmeal, or some peanut butter on whole-grain toast, the added fat and protein can help an otherwise high-carbohydrate meal take longer to digest, which in turn may keep you feeling full for a longer time,” she says.

Indeed, research from the Almond Board of California, Modesto, CA, found that almonds fulfill two key criteria consumers look for in healthful breakfasts: they're “tasty and nutritious,” and they “fill you up until lunch.”

And almond's satiety story has scientific support. In a session at IFT Wellness 12, Richard Mattes, MPH, RD, distinguished professor of foods and nutrition, Purdue University, West Lafayette, IN, shared results of his research into how the “second meal effect” lowers the benefits of specific nutrients on postprandial blood-glucose concentrations. Key to his message was consuming a breakfast containing low-glycemic almonds helps stabilize blood glucose throughout the day, while also extending the feeling of fullness that keeps consumers from overeating later on.

If the plans are for a nutty breakfast product without allergen concerns, a look at confection sunflower kernels or sunflower butter might be in order. While there hasn't been extensive research on sunflower kernels and satiety per se, research does point to the role of protein and fiber in staving off hunger (*International Journal of Obesity* 2000; 24:1,167-1,175). Sunflower seeds contain about 23%

protein and 13.5% fiber, and while about 50% fat, it's mainly polyunsaturates (69% of the fat) and monounsaturates (21%). Sunflower seeds can also boast high levels of vitamin E and selenium. And it's hard to talk about breakfast satiety without mentioning eggs. As Kanter notes, research published in the *International Journal of Obesity* in 2008 (32(10):1,545-1,551) demonstrated that “an egg-based breakfast was more effective than a bagel-based meal in leading to weight loss among obese adults without impacting typical blood lipid profiles.” With more health-conscious consumers welcoming yolks back into previously egg-white-only dishes, too, the whole egg can participate in the “whole foods” trend that's increasingly influencing breakfast.

“Many products are already on the market, capitalizing on whole eggs and whole foods, Kanter says. “Omelets with veggies and cheese, packaged hard-

boiled eggs, breakfast egg sandwiches or burritos with whole-wheat products and vegetables or lean protein like Canadian bacon—the list goes on,” he notes. “If consumers demand these healthy items, someone will make them.”

### Breakfast bit by bit

Hopefully, they’ll be made in a to-go format, as consumers are already demanding more convenience from their breakfasts. And while their main motive may be getting out the door sooner, when done right, convenience can confer the added advantage of squeezing more benefits from the morning meal.

Consider the “staggered breakfast.” As Gramza explains: “A growing trend is to eat breakfast in stages, which can help busy people keep fueled until lunchtime. Many people are starting their days with perhaps a latte and a piece of toast first thing and then having a second small breakfast mid-morning of perhaps a piece of fruit, yogurt or smoothie.” The approach works not only for the time-pressed, she says, but also for those who want to keep their energy levels on an even keel.

According to The NPD Group’s 2011 “Morning MealScape” report, 41% of respondents spread breakfast over two or more occasions, compared to 38% who eat in one fell swoop. As Dori Hickey, director of product development, NPD Group, points out, “By developing versatile products and positioning products as both a meal and a snack, food companies can meet consumers’ varied morning meal needs and maximize sales volume.”

That means trimming portion sizes and building portability into the format. It may even mean including a straw: The NPD report notes that 43% of those surveyed drink their morning meals, calling even a cup of joe “breakfast.” There may be room to persuade these imbibers to start their day with nutritious smoothies, which Gramza says “also lend themselves well to breakfast snacking for their fun form and ability to transform fruit or yogurt into something a little more unique.”

### Breaking breakfast rules

Gramza suggests including “natural ingredients like Greek yogurt, fruits or soymilk” in smoothies, calling the beverages “perfect vehicles for fortification with vitamins, minerals, protein and fiber.” She even acknowledges the trend toward adding vegetables like spinach, carrots or kale


“as a way to increase nutrient value by using whole foods. In a berry smoothie, you can’t even taste the spinach, but kids especially like the unique green color.”

It’s a strategy that Bazilian endorses. “Whether it’s eggs and toast or cereal and milk,” she says, “I’m always thinking that there should be a fruit or vegetable somewhere in the mix.” And while vegetables at breakfast might strike most doughnut fans as weird, it’s becoming more common as Americans grow more comfortable with cuisines and cultures that simply treat breakfast differently.

“From a taste standpoint, we’re getting more adventurous with savory and spicy,” Bazilian says, “and so we’re becoming more open than we traditionally have been with the typical American breakfast.” Pizza for breakfast no longer means snagging last night’s leftovers on the way out the door; actually topping a flatbread with eggs, bacon and cheese is becoming a profitable menu strategy for foodservice breakfast providers.

Gramza sees ethnic flavors as a prospect for exciting product development. “Breakfast sandwiches and wraps are items that work well with savory flavors and can be an opportunity where ethnic profiles are more common,” she says. “Take the breakfast burrito, which can be filled with eggs, grilled vegetables, chorizo, authentic asadero cheese from Oaxaca or añejo enchilada cheeses.”

Does that mean the iconic bowl of frosted sugar lumps is not long for this world? Hardly. According to the 2009 “Breakfast Outlook Report” from the Sterling-Rice Group, Boulder, CO, cold cereal and granola are still the most-eaten breakfast products on offer, showing up on approximately 21 billion breakfast tables in North America alone. Yet, there’s no reason they can’t be healthy or innovative. Chef John Csukor, Jr., president and CEO, KOR Food Innovation, Ashland, VA, formulated “almond cereal stix,” a shelf-stable, dry cereal designed for bowl life and satiety, with 11 grams of protein per 4-oz. serving. Made using whole almonds, almond flour and almond milk, the “stix” represent a unique direction for cereal.

And for many, that’s all the jump start we need. 

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