

Window to Nutrition - EDITION 3, August 2015



YOUR TRUSTED
DESTINATION FOR
HEALTH, NUTRITION
& GENERAL WELLNESS
AND POLICIES



Nutrition
Policy



General
Wellness



Infant
& Child
Nutrition



Maternal
Nutrition



Healthcare
Nutrition



Performance
Nutrition



Nutrition Policy

'Gluten-Free' Claims - Health Canada has registered a Marketing Authorization which "... permits the use of gluten-free claims for gluten free oats and foods that contain them as ingredients ... Health Canada considers 'gluten-free oats' as those that do not contain more than 20 parts per million (ppm) of gluten from wheat, rye, barley, or their hybridized strains ..."

Vegetables and Fruit Consumption and Heart Disease Health Claim - Health Canada has concluded that "... sufficient scientific evidence exists to support a health claim about vegetables and fruit consumption and a reduced risk of heart disease. The evidence is not sufficient to support a beneficial effect of fruit or vegetable juice on heart disease risk . The claim is relevant and generally applicable to the Canadian population. The following wording is proposed: A healthy diet rich in a variety of vegetables and fruit may help reduce the risk of heart.

EFSA approves health claim related to glycaemic carbohydrates and contribution to normal cognitive function. The EFSA Panel considers that the food constituent that is the subject of the health claim is glycaemic carbohydrates, which are dietary sources of glucose. Glycaemic carbohydrates contribute to the maintenance of normal brain functions, including cognition. The Panel concludes that a cause and effect relationship has been established between the consumption of glycaemic carbohydrates and contribution to normal cognitive function. A daily intake of 130 g of glycaemic carbohydrates has been estimated to cover the glucose requirement of the brain. Such amounts can be consumed as part of a balanced diet. The target population is the general population.

EFSA approves immune and metabolism health claims, rejects colic discomfort. The European Food Safety Authority (EFSA) has approved three children's health claims for immune health and energy-yielding metabolism but rejected a fourth infant claim for the reduction of gastrointestinal discomfort.

EFSA confirms safety of synthetic oligosacchrides in infant, follow-on formula. EFSA has confirmed the safety of two synthetic oligosaccharides - opening the door for their use in infant and follow-on formula.

EFSA approves vitamin D and normal function of the immune system, healthy inflammatory response, and maintenance of normal muscle function, health claim. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) has published a positive opinion on Vitamin D and contribution to the normal function of the immune system: evaluation of a health claim pursuant to Article 14 of Regulation (EC) No. 1924/2006. The Panel has concluded that a cause and effect relationship has been established between the dietary intake of vitamin D and contribution to the normal function of the immune system. The following wording reflects the scientific evidence: 'Vitamin D contributes to the normal function of the immune system.' The target population is infants and young children up to three years of age.

FDA extends menu labeling compliance date to December 2016. The U.S. FDA has announced it is extending the compliance date for the menu labeling rule to Dec. 1, 2016, for those covered by the rule. The FDA agrees additional time is necessary for the agency to provide further clarifying guidance to help facilitate efficient compliance across all covered businesses and for covered establishments to come into compliance with the final rule.

FDA Proposes Additional Revisions to the Nutrition Facts Label. The U.S. FDA is proposing additional revisions to the Nutrition Facts label for packaged foods. The supplemental proposal would, among other things, require declaration of the percent daily value (%DV) for added sugars. The percent daily value would be based on the recommendation that the daily intake of calories from added sugars not exceed 10 percent of total calories.

[go to TOP](#)



General Wellness

Some like it sweet, others not so much: It's partly in the genes. A new study from

the Monell Center and collaborating institutions suggests that a single set of genes affects a person's perception of sweet taste, regardless of whether the sweetener is a natural sugar or a non-caloric sugar substitute. Studying twin pairs allowed the researchers to determine how much influence the twins' shared genetics contributed to their perception of sweet taste intensity. The resulting data indicate that genetic factors account for approximately 30% of person-to-person variance in sweet taste perception. The study also revealed that those who perceived the natural sugars as weakly sweet experienced the sugar substitutes as similarly weak. This suggests that there may be a shared pathway in the perception of natural sugar and high-potency sweetener intensity.

Relevance: *Part of what determines our perception of sweetness is inborn in our genetic makeup, individual variations in sweetness preferences and likings of different sweeteners need to be taken into consideration when formulating products.*

Sweet, Salty and Now Fatty: Scientists Work to Uncover 'Sixth' Taste. For decades scientists agreed on four basic food tastes: sweet, salty, sour and bitter. In recent years, scientists also have agreed on a fifth sense, umami. Fat has been thought to be a flavor carrier that could deliver taste and odor compounds derived from different parts of food, and as a component that provided texture and what food scientists call "mouth feel" in foods. New research by Richard Mattes, professor of foods and nutrition at Purdue University, indicates that humans can indeed taste fat, implying that it might be a sixth basic taste. This finding could explain why fat-free foods aren't as popular as full-fat versions. A recent study found that blood fat levels in individuals that had been allowed to taste and smell the fat rose three times more than the control group. Blood fat levels didn't rise in people who could only smell the cream cheese but not taste it. "This tells us that taste is the stimulus that causes the rise in blood fat levels. The taste, and not the smell, is what the body is responding to," Mattes says.

Relevance: *When developing low-fat products, need to take into consideration the taste sensory attributes of fat and ensure product solutions deliver on the taste, odor and texture characteristics of fat.*

Majority of Americans not eating enough fruit, veggies. A new study by the U.S. Centers for Disease Control and Prevention (CDC) shows that half of the total U.S. population consumed less than 1 cup of fruit and less than 1.5 cups of vegetables daily. This equates to 76% of the U.S. population not meeting fruit intake recommendations, and 87% not meeting vegetable intake recommendations.

Relevance: *Leveraging Kerry Crystals™ Fruit and Vegetables Powders in product formulations can help fill the fruit and veggie gap in American diets.*

The Healthy Beverage Index is associated with reduced cardio-metabolic risk in adults. Researchers have developed the Healthy Beverage Index (HBI). HBI, a 10-item scoring index that captures total energy from beverages, total fluid requirements, and recommended limits for beverage subgroups, such as low-fat milk, fruit juice, and alcohol. This tool can be used to more accurately evaluate dietary consumption of all types of fluids. The researchers found that higher HBI scores were associated with more favorable lipid profiles, decreased risk of hypertension; and, among men, better C-reactive protein levels.

Relevance: *Healthy Beverage Index (HBI), could be used to evaluate overall quality of beverage intake and to determine if improvements in beverage intake patterns are associated with improvements in health.*

Changing beverage consumption patterns have resulted in fewer liquid calories in the diets of US children: National Health and Nutrition Examination Survey 2001-2010 Beverage consumption patterns have been linked to obesity and chronic

disease risk. New study examined the consumption of all commonly consumed beverages among US children aged 2 to 19 years. Between 2001-2002 and 2009-2010, total daily beverage consumption (excluding water) decreased from 24.4% to 21.1% energy (32.0 to 27.9 oz). Significant decreases occurred in sugar-sweetened sodas (13.5% to 10.2% energy), whole milk (2.7% to 1.6% energy), fruit juices with sugar added (2.3% to 2.1% energy), and fruit-flavored drinks (1.6% to 0.8% energy). Significant increases occurred for sweetened coffees/teas, energy drinks, sport drinks, and unsweetened juices though the contribution of each to total energy intake remained <1%. Low-/no-calorie drink consumption also increased, rising from 0.2 to 1.3 oz/day.

Relevance: *Changing beverage consumption patterns reflect positive trends in the form of reduced intake of SSBs, whole milk, and total calories from beverages.*

Added phosphate' linked to spikes in blood levels. New study suggest that phosphates that are artificially added to foods like dairy and cereal products appear to cause bigger spikes in blood phosphorus levels than naturally occurring phosphates, potentially putting harmful stress on kidneys. Analysis shows that dairy products and cereals/grains having inorganic phosphate additives significantly increase serum phosphorus concentration, despite being consumed less frequently than foods without phosphate additives. It seems prudent for the Nutrient Facts Label to include phosphorus but also for food manufacturers to consider alternatives to phosphate additives.

Relevance: *Developing new solutions to replace Phosphorus added to foods and beverages will be an area for innovation.*

[go to TOP](#)



Infant & Child Nutrition

Impacts of In Utero and Early Infant Taste Experiences on Later Taste

Acceptance: A Systematic Review. Dietary behavior exerts a critical influence on health and is the outcome of a broad range of interacting factors, including food and taste acceptance. These may be programmed in utero and during early infancy. A recent systematic review examined the hypothesis that fetuses and infants exposed to sweet, salty, sour, bitter, umami, or specific tastes show greater acceptance of that same taste later in life. Twenty studies comprising 38 subgroups that differed by taste, age, medium, and duration of exposure were included. Exposure to bitter and specific tastes increased the acceptance of these tastes. Studies on sweet and salty tastes showed equivocal results. Studies on sour tastes were sparse. The systematic review clearly shows programming of the acceptance of bitter and specific tastes. For other tastes the results were either equivocal or confined to a few number of studies that

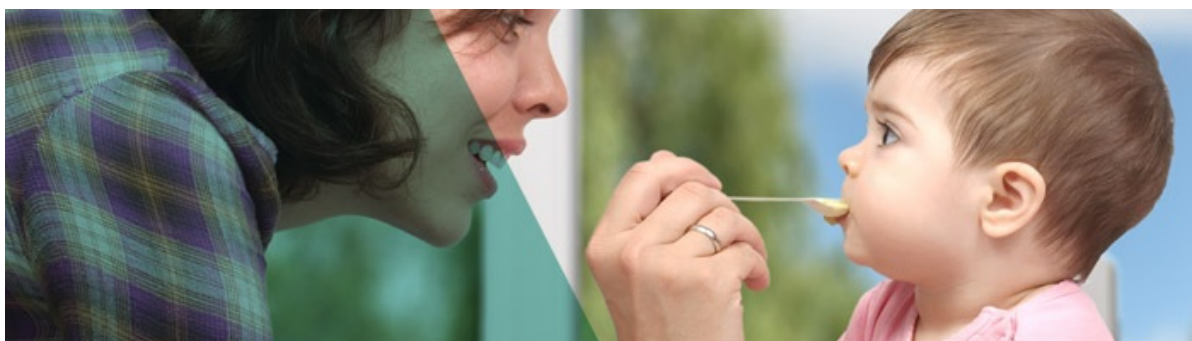
precluded us from drawing conclusions.

Relevance: *Early exposure of infant to different tastes may influence food and beverage taste preferences.*

Infections in infants fed formula supplemented with bovine milk fat globule membranes. Observational studies have shown that even in high-income countries formula-fed infants have a higher incidence of acute otitis media (AOM), and gastrointestinal and respiratory tract infections during the first year of life compared with breast-fed infants. We hypothesized that components of the milk fat globule membrane (MFGM) may be responsible for some of these differences and that supplementation with bovine MFGM would decrease the infectious morbidity in formula-fed infants. A recent clinical study showed that the cumulative incidence of AOM during the intervention was significantly lower in the experimental formula group than in the standard formula group (1% vs 9%), and did not differ from the breast-fed reference group (0%). The incidence (25% vs 43%) and longitudinal prevalence of antipyretic use were significantly lower in the experimental group than in the standard group. Serum immunoglobulin G concentrations against pneumococcal serotypes 1, 5, and 14 were lower in the experimental group than in the standard group. Supplementation of formula with bovine MFGM reduces the risk of AOM, decreases antipyretics use in formula-fed infants, and has immunomodulatory effects on humoral response against pneumococcus vaccine.

Relevance: *Supplementation of formula with bovine MFGM may help improve immune health of infants.*

[go to TOP](#)



Maternal Nutrition

Maternal Protein Intake during Pregnancy Is Not Associated with Offspring Birth Weight in a Multiethnic Asian Population. Maternal diet during pregnancy can influence fetal growth. However, the relation between maternal macronutrient intake and birth size outcomes is less clear. Recent study examined the associations between maternal macronutrient intake during pregnancy and infant birth size from the Singapore GUSTO (Growing Up in Singapore Towards healthy Outcomes) mother-offspring cohort. Mean maternal energy intake and percentage energy from protein, fat, and carbohydrates per day were 1903 kcal, 15.6%, 32.7%, and 51.6%, respectively. No associations were observed for maternal macronutrient intake and birth weight. In male offspring, higher carbohydrate or fat intake with lower protein intake was associated with longer birth length and lower ponderal index, but this was not observed in female offspring. Maternal macronutrient intake during pregnancy was not associated with infant

birth weight. Lower maternal protein intake was significantly associated with longer birth length and lower ponderal index in male but not female offspring.

Relevance: *Maternal nutritional intake can impact infant health and nutrition outcomes.*

Is eating for two a good idea? Maintaining a healthy weight during pregnancy helps mother and baby. Excessive weight gain during pregnancy is associated with poor maternal and neonatal outcomes including gestational diabetes, hypertension, caesarean section, macrosomia, and stillbirth. Diet or exercise interventions, or both, may reduce excessive gestational weight gain (GWG) and associated poor outcomes; however, evidence from the original review was inconclusive. Recent Cochrane review evaluated the effectiveness of diet or exercise, or both, interventions for preventing excessive weight gain during pregnancy and associated pregnancy complications. Diet or exercise, or both, interventions reduced the risk of excessive GWG on average by 20% overall. Interventions involving low glycaemic load diets, supervised or unsupervised exercise only, or diet and exercise combined all led to similar reductions in the number of women gaining excessive weight in pregnancy. In addition, for combined diet and exercise counselling interventions there was a 13% (-1% to 25%) reduction in caesarean delivery outcome. In subgroup analysis by risk, high-risk women (overweight or obese women, or women with or at risk of gestational diabetes) receiving combined diet and exercise counselling interventions experienced a 15% reduced risk of infant macrosomia. Infants of high-risk women had a reduced risk of respiratory distress syndrome if their mothers were in the intervention group.

Relevance: *Diet or exercise, or both, during pregnancy can reduce the risk of excessive weight gain during pregnancy and improve pregnancy outcomes such as, lower risk of caesarean delivery, maternal hypertension, macrosomia, and neonatal respiratory morbidity, particularly for high-risk women receiving combined diet and exercise interventions.*

[go to TOP](#)



Healthcare Nutrition

DIETARY INTAKE

Current dietary protein recommendations need updating, experts say. Protein is an essential component of a healthy diet and is a focus of research programs seeking to optimize health at all stages of life. The focus on protein as a nutrient often centers on its thermogenic and satiating effect, and when included as part of a healthy diet, its potential to preserve lean body mass. A growing body of literature, suggests that current

dietary protein recommendations may not be sufficient to promote optimal muscle health in all populations. A protein intake moderately higher than current recommendations has been widely endorsed by many experts and working groups and may provide health benefits for aging populations. Further, consuming moderate amounts of high-quality protein at each meal may optimally stimulate 24-h muscle protein synthesis and may provide a dietary platform that favors the maintenance of muscle mass and function while promoting successful weight management in overweight and obese individuals. Dietary protein has the potential to serve as a key nutrient for many health outcomes and benefits might be increased when combined with adequate physical activity. Future studies should focus on confirming these health benefits from dietary protein with long-term randomized controlled studies.

Relevance: *Given the importance of adequate protein intake to maintain health, developing higher protein food and beverage products to meet the protein nutritional needs of consumers will continue to be a key focus area.*

METABOLIC HEALTH

Impact of daily potassium intake and sodium-to-potassium ratio on reduction of blood pressure. A meta-analysis of randomized controlled trials evaluated the efficacy of daily potassium intake on decreasing blood pressure in non-medicated normotensive or hypertensive patients. Meta-regression analysis showed that both increased daily potassium excretion and decreased sodium-to-potassium ratio were associated with blood pressure reduction. Potassium supplementation is associated with reduction of blood pressure in patients who are not on antihypertensive medication, and the effect is significant in hypertensive patients. The reduction in blood pressure significantly correlates with decreased daily urinary sodium-to-potassium ratio and increased urinary potassium.

Relevance: *Potassium is a key nutrient of deficit in the diets of most individuals. Given the beneficial effects of Potassium in controlling blood pressure, developing food and beverage products to deliver adequate amounts of potassium, along with lower sodium content, can help individuals manage their blood pressure.*

Decrease in Glycemic Index Associated with Improved Glycemic Control among Latinos with Type 2 Diabetes. New study examined long-term longitudinal associations between changes in glycemic index and glycemic load with glycemic and metabolic control among Latino adults with diabetes. Increases in glycemic index from baseline to 12 months were associated with increased logarithm of HbA1c levels and waist circumference over time, but not with fasting glucose, blood lipids, or body mass index. There was modest evidence to support small, positive associations between glycemic load and HbA1c levels and waist circumference. Lowering glycemic index is associated with improvements in certain metabolic risk factors among Latinos with diabetes.

Relevance: *Targeting glycemic index may be an important component of dietary strategies for diabetes self-management.*

High-energy breakfast with low-energy dinner decreases overall daily hyperglycemia in patients with type 2 diabetes. A group of Israeli and Swedish researchers found that when subjects with type 2 diabetes consumed a diet consisting of a large breakfast and light dinner as opposed to an isocaloric diet with a light breakfast and large dinner, glucose excursions were significantly reduced, with increased GLP-1 levels and increased insulin levels. High energy intake at breakfast is associated with significant reduction in overall post-prandial hyperglycemia in diabetic patients over the entire day. This dietary adjustment may have a therapeutic advantage for the achievement of optimal metabolic control and may have the potential for being preventive for cardiovascular and other complications of type 2 diabetes.

Relevance: Nutrient composition of food and beverage consumed at breakfast can have an impact on blood glucose levels throughout the day.

[go to TOP](#)



Performance Nutrition

Yeast beta glucan may improve post-exercise immunity. Strenuous exercise has previously been shown to decrease mucosal immunity, part of the body's first line of defense against foreign challenges, for up to 24 hrs. Such immunosuppression can increase the risk of developing upper respiratory tract infections (URTI) and result in lost training days and performance time. A study presented at the National Strength and Conditioning Association annual conference, shows that Wellmune, a proprietary brand of baker's yeast beta glucan, may help improve mucosal immunity post-exercise amongst general, non-exercising adults. The double-blind, crossover design study evaluated 109 young men and women (aged 18-35) who consumed either 250 mg of Wellmune or a placebo for 10 days. Participants then participated in intervals of brisk treadmill walking or light jogging that totaled 90 min of exercise in a hot, humid environment. The researchers found that Wellmune supplementation caused a significant increase in salivary IgA—an antibody that plays a critical role in mucosal immunity—demonstrating that the yeast beta glucan may have a positive impact on potential immunosuppression in a less active population. This new study's findings add to previous peer-reviewed studies in marathoners and fit recreational athletes that demonstrate Wellmune can help athletes stay healthy before and after intense workouts.

Relevance: *Wellmune may help improve resistance to infection and decrease risk of URTI associated with exercise stress among active individuals.*

[go to TOP](#)





Weight Management

α -Galacto-oligosaccharides Dose-Dependently Reduce Appetite and Decrease Inflammation in Overweight Adults.

Dietary fibers have been associated with a reduction in appetite and energy intake. However, although a few studies suggest that non-viscous fibers can exert such effects, likely through colonic fermentation, limited data are available. Recent study shows that after α -GOS intake (6, 12, and 18 g/d), changes in appetite scores were significantly higher. The administration of 6, 12, or 18 g α -GOS/d significantly and dose-dependently increased the change in energy intake from day 0 to day 15 during a test meal. Reductions in energy intake during lunch and dinner were also higher in the α -GOS groups in the dose-effect study. At day 15, LPS was dose-dependently reduced without an association with α -GOS composition and CRP was significantly lower in the α -GOS groups than in the control group in the formulation-effect study. Consumption of α -GOSs over 14 d dose-dependently reduced appetite, food intake, and inflammation in overweight adults with no impact of α -GOS composition.

Relevance: *Inclusion of non-viscous fibers, such as α -GOS, in food and beverage products may contribute to satiety and weight management and mitigate metabolic disorders.*

Effects of Oatmeal and Corn Flakes Cereal Breakfasts on Satiety, Gastric Emptying, Glucose, and Appetite-Related Hormones.

The extent to which different types of breakfasts affect appetite and food intake is unclear. This study assessed the satiety effects of a high-fiber cereal, we compared oatmeal, isocaloric corn flakes, and water. emptying tracer). Lunch meal intake was significantly lowest after consuming oatmeal, which was lower for overweight subjects than lean subjects. Fullness was greatest, and hunger lowest after consuming oatmeal. Slower gastric emptying observed after consuming oatmeal. Satiety was greater and ad libitum test meal intake lower after consuming oatmeal than after corn flakes, especially in the overweight subjects.

Relevance: *Higher satiety breakfast solutions, such as high protein and high fiber products, can help keep hunger at bay and aid in weight management.*

[go to TOP](#)





Scientific Conferences & Tradeshows

Kerry Nutrition External Scientific Engagement

Conference Attendance

Nutrition at Key Life stages Conference Highlights:

- Preterm Nutrition - Human milk fortifiers contain too much carbohydrates and not enough protein to recover weight loss in first 2months of preterm infant's life.
- Breast feeding and a slower pattern of infant weight gain have been shown to reduce the risk of obesity, CVD and diabetes.
- Bottle fed infants tend to be over fed and have a reduced high satiety response thus affecting appetite regulation.
- The skin barrier is not fully developed in utero and therefore maybe susceptible to immune intolerance with food exposure.
- Sarcopenia - Protein metabolism is central to the nutritional issues, along with potentially modifying factors as energy balance and vitamin D status.

Conference Presentations

The 14th ASEAN Food Conference (Manila, June 2015): Satya Jonnalagadda - Meeting the Nutritional Needs of ASEAN Population.

20th China Dairy Industry Association Annual meeting (Beijing, August 2015): Satya Jonnalagadda - Kerry's Science and Technology: Meeting Nutritional Needs



*Window to Nutrition is brought to you by the Kerry Health and Nutrition Institute.
For more information or feedback please contact:
kerryhealthandnutritioninstitute@kerry.com*

