

Window to Nutrition - EDITION 5, March 2016



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

**FDA Denies Petition to Require GMO Labeling; Issues Final Guidance** - The FDA has [denied petitions](#) to consider requiring the labeling of biotech foods. The FDA action comes as lawmakers are nearly in agreement on legislation that would bar states from requiring GMO labeling on food products - Vermont is set to start GMO labeling in July - but may possibly require disclosures online and through smartphone codes. FDA also [published final guidance for manufacturers](#) who wish to voluntarily label their foods as containing or not containing such ingredients.

**Looking for calorie labels on menus? Not until 2017** - FDA is delaying enforcement from December 1, 2016, to the date that is one year after it issues final, Level 1 guidance on menu labeling. The draft Level 1 guidance was issued on Sept. 11, 2015, and FDA is considering all comments received and will issue the final guidance as soon as possible.

**EFSA Scientific Opinion on "Vitamin C 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 considers that the role of vitamin C in the functioning of the immune system applies to all ages, including infants and young children (from birth to three years of age). The Panel concludes that a cause and effect relationship has been established between the dietary intake of vitamin C and contribution to the normal function of the immune system. The following wording reflects the scientific evidence: 'Vitamin C contributes to the normal function of the immune system.' The target population is infants and young children up to three years of age.

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### **Reduced dietary intake of simple sugars alters perceived sweet taste intensity but not perceived pleasantness**

- Individuals who adhere to reduced-sodium diets come to prefer less salt over time, but it is unclear whether sweet taste perception is modulated by reduced sugar intake. Study examined how a substantial reduction in dietary intake of simple sugars affects sweetness intensity and pleasantness of sweet foods and beverages among healthy men and women aged 21-54 y for 5 mth. Results showed no systematic differences between groups in rated sweetness during the baseline or first diet month. During the second diet month, the low-sugar group rated low-sucrose pudding samples as more intense than did the control group. During the third diet month, the low-sugar subjects rated both low and high concentrations in puddings as ~40% sweeter than did the control group.

*Relevance: This study provides evidence that changes in consumption of simple sugars can influence perceived sweet taste intensity.*

### **Salt Promotes Passive Overconsumption of Dietary Fat in Humans**

- Excess fat consumption has been linked to the development of obesity. Fat and salt are a common and appetitive combination in food; however, the effect of either on food intake is unclear. Study investigated the effects of both fat and salt on ad libitum food intake and, the effects of fat taste sensitivity on satiation responses to fat and whether this was affected by salt among 48 healthy adults [16 men and 32 women, 18-54 y]. Salt increased food and energy intakes by 11%, independent of fat concentration. There was no effect of fat on food intake, but high-fat meals increased energy intake by 60%. Women consumed 15% less by weight of the high-fat meals than the low-fat meals. Fat taste sensitivity was negatively associated with the intake of high-fat meals but only in the presence of low salt.

*Relevance: Salt may promote passive overconsumption of energy in adults and it may override fat-mediated satiation in individuals who are sensitive to the taste of fat. Sodium reduction continues to be a major focus for food and beverages.*

### **The causal role of breakfast in energy balance and health: a randomized controlled trial in obese adults.**

- The associations between breakfast and health remain unclear in obese individuals. The Bath Breakfast Project, a randomized controlled trial, examined the link between breakfast habits and components of energy balance in free-living obese humans (21-60 y). Components of energy balance were measured under free-living conditions with random allocation to daily breakfast ( $\geq 700$  kcal before 1100) or extended fasting (0 kcal until 1200) for 6 wk. Breakfast resulted in greater physical activity thermogenesis during the morning than when fasting during that period (difference: 188 kcal/d) but without any consistent effect on 24-h physical activity thermogenesis (difference: 272 kcal/d). Energy intake was not significantly greater with breakfast than fasting (difference: 338 kcal/d). Body mass increased across both groups over time. Metabolic/cardiovascular health also did not respond to treatments, except for a reduced insulinemic response over time with daily breakfast.

*Relevance: In obese adults, daily breakfast leads to greater physical activity during the morning, whereas morning fasting results in greater energy intake later in the day.*

### **Are edible insects more or less 'healthy' than commonly consumed meats? A comparison using two nutrient profiling models developed to combat over- and undernutrition**

Insects have been the subject of recent attention as a potentially environmentally sustainable and nutritious alternative to traditional protein sources. This review examined the hypothesis that insects are nutritionally preferable to meat, using two evaluative tools that are designed to combat over- and under-nutrition. 183 datalines of publicly available data on the nutrient composition of raw cuts and offal of three commonly consumed meats (beef, pork and chicken), and six commercially available insect species, for energy and 12 relevant nutrients. According to the Ofcom model (nutrient profiling used in the UK), no insects were significantly 'healthier' than meat products. The Nutrient Value Score assigned crickets, palm weevil larvae and mealworm a significantly healthier score than beef and chicken. No insects were statistically less healthy than meat.

*Relevance: Insect nutritional composition is highly diverse in comparison with commonly consumed meats. The food category 'insects' contains some foods that could potentially exacerbate diet-related public health problems related to over-nutrition, but may be effective in combating under-nutrition.*

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## **Infant & Child Nutrition**

### **The double burden of under- and overnutrition and nutrient adequacy among Chinese preschool and school-aged children in 2009-2011**

Coincident with economic development, China has experienced a marked transition from undernutrition to overweight/obesity over the last few decades. The 2009-2011 China Health and Nutrition Survey (n=1191 in 2009; n=1648 in 2011) aimed to explore the burden of under- and overnutrition and nutrient adequacy among 2-12-y-old Chinese children. In 2011, ~19% of 2-6-y-old children were underweight, 4% were stunted, 10% were overweight and 12% were obese. Among 7-12-y-old children, stunting was almost 0%, whereas ~21% were underweight, 13% were overweight and 6% were obese in 2011. Overweight and obesity were more prevalent among children from urban areas and higher income households. Children, 2-6-y-old from urban areas and higher income households experienced the highest increase in obesity from 2009 to 2011. Children from urban areas and higher income households had overall higher intakes of total daily energy and

most macro- and micronutrients but a significant proportion of children did not meet the recommendations for important micronutrients.

*Relevance: Underweight and stunting currently coexist with overweight and obesity among Chinese children <12-year-old. The burden of childhood under- and overnutrition may constitute a public health concern in modern China that can be addressed by developing food and beverages to meet the specific nutritional needs of Chinese children.*

### **Eating behaviour and weight status at 2 years of age: data from the Cork**

**BASELINE Birth Cohort Study** - The prospective maternal-infant dyad Cork BASELINE Birth Cohort Study, analysed associations between eating behaviours and weight status in 2-year-old children (n=1189). Eighty percent of children were of normal weight, 14% were overweight or obese and 6% were underweight. Food approach behaviours including Enjoyment of Food and Food Responsiveness were associated with overweight/obesity. The food avoidant behaviours of Satiety Responsiveness and Slowness in Eating (were associated with underweight at 2 years.

*Relevance: Eating behaviours are associated with weight status as early as 2 years of age; ensuring young children have access to nutritious foods is key to ensure long term health.*

### **Protein Concentration in Milk Formula, Growth, and Later Risk of Obesity: A**

**Systematic Review** - Protein intake may influence important health outcomes in later life. Study investigated current evidence on the effects of infant formulas and follow-on formulas with different protein concentrations on infants' and children's growth, body composition, and later risk of overweight and obesity. Twelve RCTs met inclusion criteria. Different formula protein concentrations did not affect linear growth other than a transient effect on mean length at 3 mo observed in a meta-analysis of 4 studies (mean difference, - 0.27 cm). Lower mean weight and weight z scores obtained from the infants fed lower-protein formulas were observed only from 6 to 12 mo of age. Data from one large RCT showed that consumption of a lower-protein infant formula may reduce BMI at 12 mo of age and later (12 mo, 24 mo, and 6y) and the risk of obesity at 6 y. Effects on body composition remained unclear.

*Relevance: The current evidence is insufficient for assessing the effects of reducing the protein concentration in infant formulas on long-term outcomes.*

### **Including whey protein and whey permeate in ready-to-use supplementary food improves recovery rates in children with moderate acute malnutrition: a**

**randomized, double-blind clinical trial** - The utility of dairy ingredients in the supplementary foods used in the treatment of childhood moderate acute malnutrition (MAM) remains unsettled. Study evaluated the effectiveness of a peanut-based ready-to-use supplementary food (RUSF) with soy protein compared with a novel RUSF containing dairy ingredients in the form of whey permeate and whey protein concentrate in the treatment of MAM among rural Malawian and Mozambican children 6-59 mo of age. The proportion of children that recovered from MAM was significantly higher in the group that received whey RUSF (83.9%) than in the group that received soy RUSF (80.5%). Children who consumed whey RUSF also demonstrated better growth markers, with a higher mean mid-upper arm circumference (MUAC) at the time of discharge, greater MUAC gain during the course of treatment, higher mean weight-for-height z score at discharge, and greater weight gain.

*Relevance: Milk protein can contribute to the treatment of MAM among young children.*

### **Effects of community-based sales of micronutrient powders on morbidity episodes in preschool children in Western Kenya**

- Use of micronutrient powders (MNPs) is considered the preferred approach for childhood anemia control, concerns

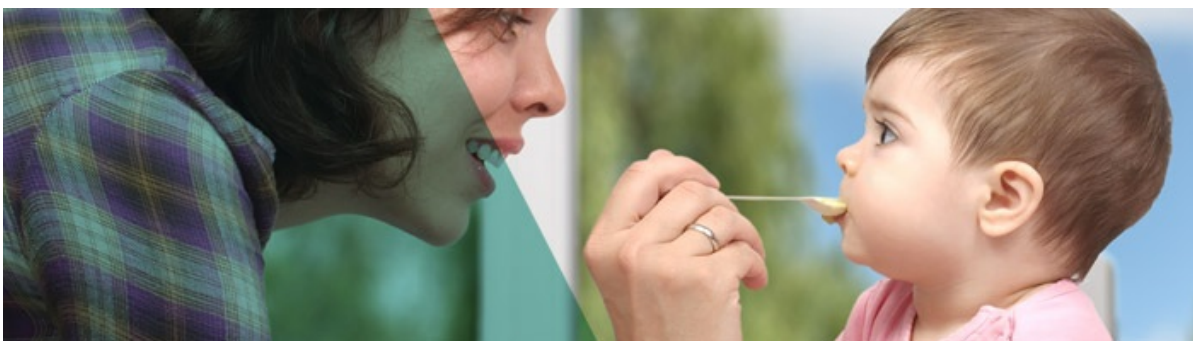
about iron-related morbidity. Study measured the effects of community-based sales of MNPs on diarrhea-, fever-, cough-, and malaria-morbidity episodes in children 6-35 mo of age in rural Western Kenya. MNPs (containing iron, vitamin A, zinc, and 11 other micronutrients) and other health products (e.g., insecticide-treated bednets, soap, and water disinfectant) were marketed in 30 intervention villages and household visits every 2 wk were used to monitor self-reported MNP use and morbidity. Mean MNP intake in intervention villages was 0.9 sachets/wk. Children in intervention villages vs. children in control villages, had ~60% fewer hospitalizations for diarrhea (0.9% vs. 2.4%) and 70% fewer hospitalizations for fever (1.8% vs. 5.3%) but no significant differences in hospitalizations for respiratory illness (1.1% vs. 2.2%) or malaria (3.1% vs. 2.9%). There were no differences between groups in the numbers of episodes of diarrhea, cough, or fever.

*Relevance: MNP was not associated with increased infectious morbidity in young children and was associated with decreased hospitalizations for diarrhea and fever. An integrated distribution of MNPs with other health and nutrition interventions would be appropriate in settings with a high child malnutrition and infection burden.*

*(WELLMUNE Study) **Cow's milk-based beverage consumption in 1- to 4-year-olds and allergic manifestations: an RCT*** - Nutrients such as docosahexaenoic acid (DHA), prebiotics and  $\beta$ -glucan have been associated with reduced incidence of respiratory illnesses and allergic manifestations (AM). A double-blind, randomized, controlled trial, assessed if consumption of a cow's milk-based beverage with these and other nutrients supports respiratory, gastrointestinal, and skin health in otherwise well-nourished, healthy children (1-4 y of age). Children from two daycare centers in Brazil were fed three servings/day of a cow's milk-based beverage (CMBB; n = 125) containing DHA, the prebiotics polydextrose (PDX) and galactooligosaccharides (GOS),  $\beta$ -glucan, and other key nutrients, or a control cow's milk-based beverage (control; n = 131) for up to 28 weeks. The CMBB group had fewer episodes of AM, which included allergic rhinitis or conjunctivitis, wheezing, allergic cough, eczema and urticaria, compared to the control group. The hazard ratio for increased number of episodes of AM was lower in the CMBB group compared to control (HR, 0.64). There was no difference in the incidence of respiratory infections and diarrheal disease between groups.

*Relevance: A cow's milk-based beverage containing DHA, PDX/GOS, and yeast  $\beta$ -glucan, and supplemented with micronutrients, including zinc, vitamin A and iron, when consumed 3 times/day for 28 weeks by healthy 1- to 4-year-old children was associated with fewer episodes of allergic manifestations in the skin and the respiratory tract.*

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**Maternal Nutrition**

### **Effects of maternal and child lipid-based nutrient supplements on infant development: a randomized trial in Malawi**

- Maternal and infant undernutrition is associated with poor infant development; however, few studies have examined the impact of combined pre- and postnatal dietary supplementation on infant development. Study examined whether provision of small-quantity lipid-based nutrient supplements (SQ-LNSs) to mothers during pregnancy and the first 6 mo postpartum (n=869), and to children aged 6-18 mo, improves infant development in Malawi. Pregnant women received one of the following daily: an iron and folic acid (IFA) capsule, a multiple micronutrient (MMN) capsule containing 18 micronutrients, or a 20-g sachet of SQ-LNSs containing 22 vitamins and minerals, protein, carbohydrates, essential fatty acids, and 118 kcal. Children in the lipid-based nutrient supplement (LNS) group only received SQ-LNSs from 6 to 18 mo of age. By maternal report, children in the LNS group achieved walking alone and waving goodbye earlier than the IFA group and standing with assistance earlier than the MMN group. There was a trend for a greater percentage of children in the LNS group (58%) to walk alone at age 12 mo than in the IFA (49%) and MMN (49%) groups.

*Relevance: Lipid-based-nutrient supplements to pregnant women and infants in may affect the age of acquisition of certain developmental milestones and may be an vehicle to deliver appropriate nutrition to the mothers and infants.*

### **Early Pregnancy Cravings, Dietary Intake, and Development of Abnormal Glucose Tolerance**

- Project Viva examined relationships of pregnancy cravings with dietary intake and risk of developing isolated hyperglycemia (IH), impaired glucose tolerance (IGT), or gestational diabetes (GDM) later in pregnancy among 2,022 mothers in eastern Massachusetts. During the first trimester, 22% women craved sweets, 11% craved salty foods, 13% craved savory foods, and 4.9% craved starchy foods. Sweet cravings were associated with increased intake of sucrose (1.9 g/d), total fat (1.5 g/day), and saturated fat (0.8 g/d); salty cravings were associated with increased fiber (0.7 servings/d); savory cravings were associated with increased n-3 fatty acids (0.10 g/d) and starchy cravings were associated with increased carbohydrates (8.0 g/d) and decreased total fat (-2.6 g/d). Salty cravings were associated with lower risk of GDM.

*Relevance: New cravings in the first trimester of pregnancy can impact dietary intake and health outcomes during pregnancy.*

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**Healthcare Nutrition**

### **Are the Recommended Dietary Allowances for Vitamins Appropriate for Elderly People?**

- An adequate vitamin intake is essential for a good nutritional status, especially in older women, who are more sensitive to nutritional deficiencies. The American, European and Italian Recommended Dietary Allowances (RDAs) derive mainly from studies on adults, and it is not clear whether they also apply to elderly people. Studied compared the RDAs with the actual vitamin intake of a group of healthy older women (n=286; >65 y). The calculated RDA were 2,230 µg retinol equivalents for vitamin A, 2.8 µg for vitamin B-12, 0.9 mg for thiamin, 1.4 mg for riboflavin, 3.6 mg for pantothenic acid, 1.4 mg for vitamin B-6, 320 µg for folic acid, and 115 mg for vitamin C. These older women had adequate intake of riboflavin, vitamin B-6, and folic acid, but should be raised for vitamin B-12 and for vitamin C.

*Relevance: Findings suggest that nutrient recommendations of older individuals may have to be adjusted appropriately to meet their nutrient requirements.*

### **Whey protein, amino acids, and vitamin D supplementation with physical activity increases fat-free mass and strength, functionality, and quality of life and decreases inflammation in sarcopenic elderly**

- Interventions to attenuate the adverse effects of age-related loss of skeletal muscle and function include increased physical activity and nutritional supplementation. Study tested the hypothesis that nutritional supplementation with whey protein (22 g), essential amino acids (10.9 g, including 4 g leucine), and vitamin D [2.5 µg (100 IU)] along with regular, controlled physical activity would increase fat-free mass, strength, physical function, and quality of life, and reduce the risk of malnutrition in sarcopenic elderly persons (n=130; 53 men and 77 women; mean age: 80.3 y) participating in a 12-wk RCT. Compared with physical activity and placebo, supplementation plus physical activity increased fat-free mass (1.7-kg gain), relative skeletal muscle mass, android distribution of fat, handgrip strength, standardized summary scores for physical components, activities of daily living, mini nutritional assessment, and insulin-like growth factor I, and lowered C-reactive protein.

*Relevance: Supplementation with whey protein, essential amino acids, and vitamin D, in conjunction with age-appropriate exercise, not only increases fat-free mass and strength but also can help enhance other aspects that contribute to well-being in sarcopenic elderly.*

### **Dietary protein intake is associated with better physical function and muscle strength among elderly women**

- Dietary protein intake might be beneficial to physical function (PF) in the elderly. Cross-sectional and prospective associations of protein intake of g/kg body weight (BW), fat mass (FM) and lean mass (LM) with PF were examined in 554 women aged 65.3-71.6 y belonging to the Osteoporosis Risk Factor and Prevention Fracture Prevention Study. Sarcopaenia was defined using European Working Group on Sarcopenia in Older People criteria. At the baseline, women with higher protein intake ( $\geq 1.2$  g/kg BW) had better performance in hand-grip strength/body mass (GS/BM), knee extension/BM, one-leg stance, chair rise, squat, squat to the ground, faster walking speed for 10 m and higher short physical performance battery score compared with those with moderate and lower intakes (0.8-1.19 and  $\leq 0.8$  g/kg BW, respectively). In follow-up results, higher protein intake was associated with less decline in GS/BM, one-leg stance and tandem walk for 6 m over 3 years. Associations were detected between protein intake and PF in non-sarcopaenic women. FM was negatively associated with PF measures.

*Relevance: This study suggests that higher protein intake and lower FM might be positively associated with improved physical function in elderly women.*



## CARDIOMETABOLIC HEALTH

**Personalized Nutrition by Prediction of Glycemic Responses** - Elevated postprandial blood glucose levels constitute a global epidemic and a major risk factor for prediabetes and type 2 diabetes, but existing dietary methods for controlling them have limited efficacy. This study continuously monitored week-long glucose levels in an 800-person cohort, measured in response to 46,898 meals, and found high variability in the response to identical meals, suggesting that universal dietary recommendations may have limited utility. A machine-learning algorithm that integrates blood parameters, dietary habits, anthropometrics, physical activity, and gut microbiota showed that it accurately predicted personalized postprandial glycemic response to real-life meals. A blinded randomized controlled dietary intervention based on this algorithm demonstrated significantly lower postprandial responses and consistent alterations to gut microbiota configuration. Results suggest that personalized diets may successfully modify elevated postprandial blood glucose and its metabolic consequences.

*Relevance: Personalized diets created with the help of an accurate predictor of blood glucose response that integrates parameters such as dietary habits, physical activity, and gut microbiota may help successfully lower post-meal blood glucose and its long-term metabolic consequences.*

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## Performance Nutrition

### **Nutrition and Athletic Performance: A joint position paper between the Academy of Nutrition and Dietetics, Dietitians of Canada and the American College of Sports Medicine**

- It is the position of the Academy of Nutrition and Dietetics (Academy), Dietitians of Canada (DC) and the American College of Sports Medicine (ACSM) that the performance of, and recovery from, sporting activities are enhanced by well-chosen nutrition strategies. This position paper provide guidelines for the appropriate type, amount, and timing of intake of food, fluids, and supplements to promote optimal health and performance across different scenarios of training and competitive sport. The paper makes a significant shift away from recommendations based on activity type and more toward a focus on where an athletes might be in his or her training cycle. Protein intake recommendations in general are set at 1.2 to 2.0 g/kg body weight; paper recommends spacing this intake throughout the day and more protein might be needed if an athlete is trying to lose body (fat) weight during training so as to maintain lean body mass. There is also less emphasis on the consumption of a large protein serving shortly after training. Paper also promotes more nutrient dense carbohydrates. This evidence based review makes specific recommendation on a few

key micronutrients, iron, vitamin D, calcium and antioxidants.

*Relevance: This position paper can be leveraged to develop evidence based targeted food and beverage products to meet the nutritional needs of active individuals.*

**Higher compared with lower dietary protein during an energy deficit combined with intense exercise promotes greater lean mass gain and fat mass loss: a randomized trial**

- A dietary protein intake higher than the Recommended Dietary Allowance during an energy deficit helps to preserve lean body mass (LBM), particularly when combined with exercise. Study tested whether manipulation of dietary protein intake during a marked energy deficit in addition to intense exercise training would affect changes in body composition. During a 4-wk period, hypoenergetic (~40% reduction compared with requirements) diets providing 33 kcal/kg LBM were consumed by young men who were randomly assigned (n = 20/group) to consume either a lower-protein (1.2 g · kg<sup>-1</sup> · d<sup>-1</sup>) control diet (CON) or a higher-protein (2.4 g · kg<sup>-1</sup> · d<sup>-1</sup>) diet (PRO). All performed resistance exercise training combined with high-intensity interval training for 6 d/wk. As a result of the intervention, LBM increased in the PRO group (1.2 kg) and to a greater extent compared with the CON group (0.1 kg). The PRO group had a greater loss of fat mass than did the CON group (PRO: -4.8kg; CON: -3.5kg). All measures of exercise performance improved similarly in the PRO and CON groups as a result of the intervention with no effect of protein supplementation.

*Relevance: In combination with resistance exercise, higher protein energy deficit diets can help promote increase in LBM and loss of fat mass.*

**Fluid retention, muscle damage, and altered body composition at the Ultraman triathlon**

- Study examined the effects of participation in a 3-day multistage ultraendurance triathlon (stage 1 = 10 km swim, 144.8 km bike; stage 2 = 275.4 km bike; stage 3 = 84.4 km run) on body mass and composition, hydration status, hormones, muscle damage, and blood glucose among male and female triathletes (n=18) before and after each stage of the race. Following the race, significant changes included reductions in body mass, fat mass, and percent body fat; increases in percent total body water and urine specific gravity; and unchanged absolute total body water and fat-free mass. There were also extremely large increases in creatine kinase, C-reactive protein, aldosterone and cortisol combined with reductions in testosterone and the testosterone:cortisol ratio. There were associations between post-race aldosterone and total body water (r = -0.504) and changes in cortisol and fat-free mass (r = -0.536). Blood glucose increased in a stepwise manner prior to each stage.

*Relevance: Participation in Ultraman triathlon was associated with fluid retention and dramatic alterations in body composition, muscle health, hormones, and metabolism. Appropriate rehydration and recovery beverages should be consumed to support proper recovery.*

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## Weight Management

### **The Effects of Increased Protein Intake on Fullness: A Meta-Analysis and Its Limitations**

- Higher protein intake has been implicated in weight management because of its appetitive properties. However, the effects of protein intake on appetitive sensations such as fullness have not been systematically assessed. This study synthesized the available evidence on the effect of protein intake on fullness using a quantitative meta-analysis and a secondary directional analysis using the vote-counting procedure. Five studies met all criteria for the meta-analysis. Twenty-eight studies met all criteria for the directional analysis. The meta-analysis indicated higher protein preloads have a greater effect on fullness than lower protein preloads. The directional analysis also revealed a positive effect on fullness with higher protein preloads

*Relevance: Higher protein preloads can play an important role in satiety and energy intake.*

### **Protein-Enriched Liquid Preloads Varying in Macronutrient Content Modulate Appetite and Appetite-Regulating Hormones in Healthy Adults**

- Dietary protein is considered the most satiating macronutrient, yet there is little evidence on whether the effects observed are attributable to the protein or to the concomitant manipulation of carbohydrates and fat. This study examined the effect of consumption of preloads varying in macronutrient content on appetite, energy intake, and biomarkers of satiety in 36 adults. Individuals received a breakfast consisting of 1 of 7 isovolumetric (670 mL) and isoenergetic (2100 kJ) liquid preloads matched for energy density and sensory properties but with different macronutrient composition (levels: 9%, 24%, or 40% of energy from protein combined with a carbohydrate-to-fat ratio of 0.4, 2, or 3.6, respectively). Prospective consumption was 12% lower after intake of the high-protein (40%)/3.6 carbohydrate:fat preload than after intake of the low-protein (9%)/0.4 carbohydrate:fat preload solely because of the increased protein, irrespective of the manipulation of the other macronutrients. Most appetite ratings tended to be suppressed (13%) with increasing protein content of the preloads. Carbohydrate elicited greater increases in fullness and postprandial responses of glucose and insulin than did protein and fat.

*Relevance: Protein has a more pronounced effect on suppressing appetite than carbohydrates and fat. Modulating the nutritional profile of a meal by replacing fat with protein can influence appetite in healthy adults.*

### **Intermittent energy restriction and weight loss: a systematic review**

- Intermittent energy restriction (IER) is an eating pattern of regular daily periods of restricted energy intake followed by periods of unrestricted energy intake. This is gaining prominence as an alternative weight-loss strategy to daily energy restriction (DER). This systematic review examined the effectiveness of IER on weight loss in overweight and obese adults compared with DER. All studies reported significant weight loss for IER groups. Average weight loss was approximately 0.2-0.8 kg/wk. IER resulted in comparable weight loss to DER when overall energy restriction remained similar between diets. The majority of studies that reported body composition outcomes showed equal efficacy for fat mass, fat-free mass and waist circumference.

*Relevance: Weight loss can be achieved in overweight and obese adults following IER and this loss is comparable to a DER diet and may be an effective alternative strategy to promote weight loss. Portion controlled food and beverage meals and snacks can help*



## Scientific Conferences & Tradeshows

### Kerry Nutrition External Scientific Engagement

#### Conference Attendance & Presentations

Clinical Nutrition Week 2016 (ASPEN), January 2016, Austin, TX

- "Bakers yeast beta-glucan decreases episodes of common childhood illness in 1 to 4 year old children during cold season in China" (Wellmune Study)
  - Manuscript accepted for publication in Journal of Nutrition and Food Science
- XXV Curso Internacional De Avances En Pediatria, March 2016, Lima, Peru
  - Simposio 3: Gloria "Inmunidad Y Nutricion" (Wellmune Children Immune Health Presentation - Satya Jonnalagadda on behalf of Don Cox)
- Experimental Biology, March-April 2016, San Diego, CA
  - Julie Hess, Satya Jonnalagadda, Joanne Slavin - "Dairy Foods: Current Evidence of their Effects on Health"
  - Manuscript published in Comprehensive Reviews in Food Science and Food Safety: <http://onlinelibrary.wiley.com/doi/10.1111/1541-4337.12183/abstract>

#### Publications

- Julie Hess, Satya Jonnalagadda, Joanne Slavin: "What is a snack, why do we snack, and how can we choose better snacks?"
  - Manuscript accepted for publication: Advances in Nutrition



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For more information or feedback please contact:  
[\*\*kerryhealthandnutritioninstitute@kerry.com\*\*](mailto:kerryhealthandnutritioninstitute@kerry.com)*

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