Nutrition Professionals' Knowledge, Consumption and Recommendations of Whole Grains

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Learning Outcome: Describe the relationship between nutrition professionals' knowledge, consumption and recommendations of whole grains.

Research outcome: To determine the relationship between nutrition professionals' knowledge, consumption, and recommendations of whole grains.

Methods: A cross-sectional study was conducted with nutrition professionals (n=480). Participants were recruited via email and social media from October 2020-February 2021. The participants completed a validated 21-question survey about whole grain knowledge, consumption, and recommendations.

Analysis: The analyses included descriptive statistics and Pearson correlation tests.

Results: Survey respondents included 72.5% Registered Dietitians Nutritionists (RD/RDN) and 27.5% RD in training (e.g. dietetic intern, student). Nutrition professionals felt whole grains were important in their own diet (93%) and their patient/clients' diet (75%). A slight majority of nutrition professionals (58%) strongly or somewhat agreed that "personal grain preference influences the grains that you recommend to patients/clients", despite 67% agreeing to the statement, "client income/background influences the types of grains you recommend to patients/clients." Nutrition professionals correctly classified 14.9±3.2 of the 23 food classification questions and 9.6±1.8 for the 11 whole grain knowledge statements. Nutrition professionals with direct patient care (n=373) have personally consumed 15.9±3.74 different grains and recommended 9±4.15, the correlation being r=0.29, indicating a significant positive correlation.

Conclusions: Nutrition professionals were able to identify whole grain foods and demonstrated knowledge of whole grain benefits; however, there was a disconnect between knowledge and recommendations. Future research should further investigate nutrition professionals' knowledge, beliefs, and attitudes towards whole grains. To align nutrition professionals' whole grain knowledge and recommendation practices, there is a need for enhanced training and education on whole grain varieties.

Funding source: None

Optimizing Iron Supplementation by Monitoring Serum Ferritin Concentration

Author(s): L. Lamport, B. Weinberger, R. Schanler; Cohen Children's Medical Center of New York/Northwell Health

Learning Outcome: Implement a protocol for initiating and titrating Fe dosages based on therapeutic monitoring of ferritin levels and assess its impact on timing and dosing of Fe supplementation for preterm infants.

Background: Iron (Fe) is essential for growth, but optimal intake is controversial. Preterm infants often develop deficiency but are also susceptible to oxidant injury from overload. An AAP expert panel recommends Fe dosing based on serum ferritin levels. Our practice had been to supplement Fe (2 mg/kg/d) for all preterm infants receiving full-volume human milk feeds. Objectives were to implement a protocol for initiating and titrating Fe dosages based on therapeutic monitoring of ferritin levels and assess its impact on timing and dosing of Fe supplementation for preterm infants.

Methods: Preterm infants (< 32 wks or < 1500 g, n=41) reaching full-volume feeds were included. Ferritin was measured every 2 wks. For ferritin 40-300 μg/L, Fe was started (2 mg/kg/d) or continued at current dose; for ferritin < 40 μg/L, Fe was increased by 1-2 mg/kg/d; for ferritin > 300 μg/L, Fe was held until ferritin decreased.

Results: Ferritin levels were not correlated with dietary Fe intake. Fe was initiated later, but peak doses were higher. It was deferred in 29% of infants because of ferritin > 300 μg/L, and only 42% of those were predictable from diet or transfusions. One infant required Fe despite transfusion. 34% of infants required escalating Fe doses. All formula-fed infants needed additional Fe despite intake of > 2 mg/kg/d from feeds.

Conclusion: Fe requirements are not predictable based on dietary or transfusion history. Physiologic supplementation with Fe based on ferritin levels may decrease the incidence of deficiency and overload, improving outcomes for preterm infants.

Funding source: None

Personalized Dietary Approach for Rhinitis and Sinusitis

Author(s): S. Linke[1], G. Zarini[2], M. McLean[2]; [1]Food Sensitivity Specialists LLC, [2]Oxford Biomedical Technologies, Inc

Learning Outcome: Provide scientific evidence to improve the nutritional health of individuals with medical conditions.

Background and Aim: There is limited research on the clinical relevance of personalized elimination diets to manage inflammatory conditions of the nose and sinuses; therefore, we examine the effects of the Lifestyle Eating and Performance (LEAP) program to alleviate symptoms among individuals with rhinitis (R) and sinusitis (S).

Methods: The retrospective study included de-identified data of 33 individuals [(R=16) and (S=17)]. Dietitians utilized the in-vitro Leukocyte Activation Assay-MRT (LAA-MRT) results to develop the personalized LEAP program based on the oligoantigenic diet principles. The LAA-MRT measures white blood cells reactivity to scale the degree of an adverse immune response to 150 food and food-chemical antigens. A self-reported symptom survey was used to evaluate the severity and frequency of symptoms in 5 domains with a higher score signifying a less desirable health state. Descriptive statistics and linear mixed models (LMMs) were conducted using IBM, SPSS V27. The study was approved by an independent Institutional Review Board (IRB).

Results: Twenty-nine (88%) were female, age was 45.1±17.5 years, and had a body mass index (BMI) of 25.9±5.6 kg/m2. The follow-up time of the intervention was 11.1±7.7 weeks. LMMs showed a significant decrease in mean (SE) symptoms scores pre- versus (vs.) post-intervention for each domain [nasal/sinus (8.7±1.0 vs. 3.7±0.6, P<0.001); lungs (3.8±0.6 vs. 1.0±0.3, P<0.001); head/ears (5.1±0.8 vs. 2.3±0.5, P=0.008); mouth/throat (3.8±0.7 vs. 1.2±0.3, P<0.001); and digestive (11.0±1.3 vs. 3.9±0.9, P<0.001)].

Conclusions: Findings indicate the potential therapeutic role of a personalized dietary approach to improve symptomatology among individuals with rhinitis and sinusitis.

Funding source: Oxford Biomedical Technologies, Inc.

Pilot and Feasibility Study to Assess the Impact of Fermented Vegetable Consumption on the Gut Microflora in Women

Author(s): A. Galena, A. Arikawa; University of North Florida

Learning Outcome: Describe the effects of fermented vegetable consumption on human gut microflora and their role in disease prevention.

This randomized, parallel arm pilot study examined the effects of regular consumption of fermented vegetables for six weeks on the profile of the gut microflora. Participants were recruited via flyers, newspaper advertisements, and email. Thirty-three women were randomly assigned to either the fermented vegetable (Group A), non-fermented vegetable (Group B), or control group (Group C). Participants randomized into the vegetable groups were asked to consume 100 grams of vegetables per day. Participants provided stool samples for microbial analysis at baseline and follow-up. Pearson's correlations were computed between alpha diversity and dietary intake. Microbial diversity results were compared within and between groups using the Wilcoxon-Signed-Rank and Kruskal-Wallis test, respectively. The average intake of vegetables consumed per participant was 2.8 kg and 3.2 kg for Groups A and B, respectively. Firmicutes was the predominant phyla and Blautia was the predominant genus across treatment groups with relative abundances of 70-78% for Firmicutes and 17-24% for Blautia. After six weeks, alpha diversity was significantly higher in group A compared with group C (P=.037), and the relative abundance (RA) of Ruminococcus torques was lower in group A compared with baseline levels, while RA of Negativibacillus massiliensis increased in group B, and RA of Mediterraneibacter glycyrrhizinilyticus decreased in group C. Bifidobacterium was significantly correlated with intake of riboflavin (r=.43) and vitamin B12 (r=.40), and Prevotella was significantly correlated with intake of animal protein (r=-.33). It remains to be determined how changes in RA of different microbial species resulting from consumption of fermented vegetables may promote health.

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Personalized Dietary Approach for Rhinitis and Sinusitis

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Oxford BIOMEDICAL TECHNOLOGIES
LEAP LIFESTYLE EATING AND PERFORMANCE

BACKGROUND

- Rhinitis and sinusitis are frequently occurring inflammatory conditions associated with increased healthcare use and an overall decline in quality of life.
- Various medications are prescribed to treat these conditions with mixed results and potential adverse side effects.
- Dietary modifications that aid in reducing inflammation and improve clinical outcomes are a vital component of treatment for rhinitis and sinusitis.
- Identification of specific foods and chemicals that trigger symptoms open great perspectives for clinical practice.
- A personalized diet could play a key role in managing these two conditions where food selection and proper reintroduction are essential strategies.
- However, there is limited research on the benefits of personalized elimination diets to manage inflammatory conditions of the nose and sinuses.

OBJECTIVE

- We examine the effects of the Lifestyle Eating and Performance (LEAP) program to alleviate symptoms among individuals with rhinitis and sinusitis.

METHODS

- The retrospective study included de-identified data of 33 individuals [(rhinitis =16) and (sinusitis =17)].

METHODS (cont'd)

- Dietitians utilized the in-vitro Leukocyte Activation Assay-MRT (LAA-MRT) results to develop the personalized LEAP program based on the oligo-antigenic diet principles.
- The LAA-MRT measures white blood cells reactivity to scale the degree of an adverse immune response to 150 food and food-chemical antigens.
- A self-reported symptom survey was used to evaluate the severity and frequency of symptoms in 5 domains with a higher score signifying a less desirable health state.
- Descriptive statistics and linear mixed models (LMMs) were conducted using IBM, SPSS V27.
- The study was approved by an independent Institutional Review Board (IRB).

RESULTS

- Twenty-nine (88%) were female, age was 45.1±17.5 years, and BMI was 25.9±5.6 kg/m^2.
- The follow-up time of the intervention was 11.1±7.7 weeks. LMMs showed a significant decrease in mean (SE) symptoms scores pre- versus (vs.) post-intervention for each domain [nasal/sinus (8.7±1.0 vs. 3.7±0.6, P<0.001); lungs (3.8±0.6 vs. 1.0±0.3, P<0.001); head/ears (5.1±0.8 vs. 2.3±0.5, P=0.008); mouth/throat (3.8±0.7 vs. 1.2±0.3, P<0.001); and digestive (11.0±1.3 vs. 3.9±0.9, P<0.001)].

Table 1. Baseline Characteristics	N=33 M±SD
Gender (F) n (%)	29 (88%)
Age (years)	45.1±17.5
BMI (kg/m^2)	25.9±5.6
Time follow-up (weeks)	11.1±7.7

Table 2. Measures Pre- and Post-Dietary Intervention

Symptom Survey Score	Pre-LEAP program M±SE	Post-LEAP program M±SE	P-value
Nasal/Sinus	8.7±1.0	3.7±0.6	<0.001
Lungs	3.8±0.6	1.0±0.3	<0.001
Head/Ears	5.1±0.8	2.3±0.5	0.008
Mouth/Throat	3.8±0.7	1.2±0.3	<0.001
Digestive	11.0±1.3	3.9±0.9	<0.001

CONCLUSION

- Findings from this study indicate the potential therapeutic role of a personalized dietary approach to improve symptomatology among individuals with rhinitis and sinusitis.
- Further prospective studies, including inflammatory markers, are needed for a more comprehensive understanding of personalized dietary approaches in treating these conditions.