

Idaho Academy of Nutrition and Dietetics Poster Abstracts – 2025

Title: Food Access and Shopping Habits of Idaho Residents: A Needs Assessment for Nutrition Intervention Programs

Authors: Firuza Allahgulyeva, MS, University of Idaho (**Presenting Author**); Annie Roe, PhD, RDN, University of Idaho; Shelly Johnson, MS, University of Idaho; Siew Guan Lee, MS, RD, University of Idaho; Joey Peutz, MS, CFCS, University of Idaho; Kristin Hansen, MS, University of Idaho.

Background: To guide nutrition intervention programs and improve access to nutritious food, a survey was conducted to understand better the food access and shopping habits of Idaho residents.,

Methods: The University of Idaho Extension's Eat Smart Idaho program conducted a state-wide survey. Eligible participants were Idaho residents aged 18 and above. Participants, recruited via a flyer, completed an anonymous survey via a QR code or paper-based questionnaire. The 32-item survey included questions on demographics, grocery shopping habits, and attitudes toward nutrition education tools. Descriptive statistics were calculated using MS Excel.

Results: Eat Smart Idaho collected 327 survey responses and analyzed 313. Most participants shopped alone (46%) or with another adult (23%), traveled 1-5 miles to the nearest grocery store (65%), and 27% did not shop at the closest store due to affordability. Participants shopped 1- 2 times per week, with 75% never using grocery pick-up services. Important factors for purchasing food included cost (72%), taste (59%), nutritional value (55%), and versatility (55%); organic and allergen-free options were less important. Sales (58%), familiarity (51%), and grocery lists (66%) significantly influenced purchases, with attractive packaging being the least important factor (71%).

Conclusion/Limitations: The survey results highlight that Idaho residents prioritize cost, taste, nutritional value, and versatility in their food choices. Affordability and accessibility remain critical barriers. These insights will guide Eat Smart Idaho in developing targeted nutrition intervention resources such as educational handouts, food demonstrations, nutrition education displays, and digital content. Interventions will be implemented to promote healthier eating habits in Idaho communities.

Learning Objective: Describe Idaho residents' food access and shopping habits, understand key factors influencing their food choices, and apply findings to develop targeted nutrition interventions promoting healthier eating habits.

Funding Disclosure: This work and material are supported and funded by USDA's Supplemental Nutrition Assistance Program-SNAP and the Expanded Food and Nutrition Education Program from the USDA National Institute of Food and Agriculture. USDA and University of Idaho are equal opportunity providers.

Faculty Sponsor: Annie Roe, PhD, RDN, University of Idaho

Title: Assessing Food Insecurity Among Vandal Athletes

Authors: Firuza Allahgulyeva, MS, University of Idaho, Faith Sasken, University of Idaho, Christian Silva (**Presenting Author**), University of Idaho, Gracie Strauber, University of Idaho, and Ginny Lane, RD, PhD, University of Idaho.

Introduction/Background /Literature Review: Food insecurity is described by the US Department of Agriculture as, “a household level economic and social condition of limited or uncertain access to adequate food.” College athletes have a greater risk of experiencing food insecurity due to their demanding schedules of practices, strength training, matches, and games.

Methods: The data was collected through a 13-question survey of University of Idaho athletes and 2 interviews. The healthcare professional’s survey included open-ended questions about available resources, identifying food insecurity, athlete engagement, and staff collaboration. The student-athlete interview explored their knowledge of food security, personal experiences, available resources, and support provided by the university based on their sport.

Results: A survey of 14 athletes (7 males, 7 females) revealed that 62% had meal plans and saw the campus dietitian during the season, an equal percentage were unaware of food assistance programs, and only one had visited the Vandal Food Pantry. Most athletes (62%) reported being moderately satisfied with the university’s nutrition services. A healthcare professional shared that 15% of athlete consultations reveal food insecurity, often linked to weight or body composition goals.

Conclusion/Limitations: While many athletes have meal plans and nutrition services, awareness of food assistance programs is low. Food insecurity remains a concern, especially for those managing weight and body composition.

Learning Objective: The learner will understand food security among collegiate athletes and campus resources.

Funding Disclosure: No funding, and authors declare no financial conflicts of interest.

Faculty Sponsor: Ginny Lane, RD, PhD, University of Idaho

Title: Assessing School Lunch Behaviors and Nutrition Trends in Lewiston, ID, and Pullman, WA: An Observational, Comparative Study

Authors: Ashlee Bachman, University of Idaho; Atesha Banki, University of Idaho (**Presenting Authors**); Snags Pedersen, University of Idaho; Ginny Lane, PhD, RD, University of Idaho

Background: Childhood nutrition affects long-term health, including risks for obesity and type 2 diabetes. Schools influence dietary habits through meal programs and nutrition education.

Objective: This observational study examined the relationship between classroom nutrition education and student food choices during lunchtime in elementary schools in Lewiston, ID, and Pullman, WA.

Methods: A cross-sectional observational study, approved by the University of Idaho IRB, was conducted from December 2024 to January 2025. Elementary schools were selected based on geographic proximity across state lines. Lunch consumption patterns were observed among kindergarten and fifth-grade students. Forty student observations were collected at each school (10 students per grade level per observer). Observers used a structured checklist to track consumption of vegetables, fruit, protein, grains, dairy, and milk. Both observers received training to ensure consistency. Teacher surveys via Qualtrics assessed nutrition education practices. Data were summarized using descriptive statistics to compare consumption patterns.

Results: Vegetable consumption was higher in Lewiston (80% of fifth graders, 60% of kindergarteners) than Pullman (10% of fifth graders, 40% of kindergarteners). Milk consumption was higher among kindergarteners (60%) than fifth graders (15%). Fifth graders engaged more with their meals (73%) than kindergarteners (47%), who spent more time playing with food (40%). Only one teacher used USDA's MyPlate.

Conclusion: Differences in food choices and lunch engagement suggest that consistent, age-tailored nutrition education may improve dietary behaviors and encourage lifelong healthy eating habits.

Funding Disclosure: No funding, and authors declare no financial conflicts of interest.

Faculty Sponsor: Ginny Lane, RD, PhD, University of Idaho

Title: Analysis of Effect Size of Produce Prescriptions for At-risk Pediatric Populations in the United States: A Systematic Review

Authors: Nichole Cortez, MS, RDN, CSP, LD, CNSC (**Presenting Author**); Barbara Gordon, EdD, RDN, FAND

Background: Inadequate dietary intake and food insecurity contribute to unfavorable health outcomes. Produce Prescription Programs (PPP) increase access to fruits and vegetables among high-risk populations. PPPs have been found to improve biomarkers of disease among adults but the effects in children are not yet fully understood.

Objective: Examine the efficacy of pediatric PPPs on outcomes of children (0-18 years), and the prescription dosage required to promote beneficial outcomes.

Methods: A systematic review was conducted following the PRISMA protocol on pediatric PPP programs. Articles published within the past 10 years were retrieved. Inclusion criteria included studies reporting on discrete health outcomes, diet quality, and food insecurity. Mathematical modeling was utilized to convert produce benefit monetary amounts into comparable variables, allowing for better comparison between programs and outcomes.

Results: Nine articles reporting on seven pediatric PPPs conducted at 67 sites in the United States were identified. Program designs, produce prescription dosages, and produce redemption rates varied but overall programs improved food security status and fruit and vegetable intake. Programs are well-received and may increase acceptance of unfamiliar or new fruits and vegetables. Higher prescription dosages did not yield improved outcomes. The change in FV intake was similar across all programs regardless of the dosage, with the largest change noted in the program where produce was delivered in place of providing vouchers.

Conclusions: PPPs improve dietary intake of FV and food security status among at-risk children. Programs providing at least 35% of expected produce cost improved FV intake. More research is needed to determine the optimal amount of produce to provide, the ideal form (fresh, frozen or canned) and the degree to which PPP's might improve health.

Learning Objective: Discuss current evidence supporting pediatric nutrition prescription programs and state the minimal estimated benefit amount needed to improve dietary intake

Funding Disclosure: None to disclose

Faculty Sponsor: Barbara Gordon, EdD, RDN,

Title: Bridging the Rural-Urban Divide to Address Hunger in the United States Northern Mountain West

Authors: Emily Fisk, MPA, Boise State University, Anna Kouts, MPA, Boise State University, Benjamin G. Larsen, PhD, Boise State University, Kelsey Cooper, MPH, Idaho Foodbank, Jenifer Reader, MHE, RDN, LD, Idaho State University (**Presenting Author**), Barbara Gordon, EdD, RDN, LD, Idaho State University

Introduction: Barriers to food security are multifactorial in both rural and urban contexts, putting individuals at increased risk for poor nutritional intake and chronic physical and mental health conditions. To glean insights on addressing hunger, this study explored the impact of the rural-urban divide on food security among residents of the U.S. Northern Mountain West.

Methods: Interviewers conducted semi-structured, open-ended interviews among eight participants in three states with similar challenges and characteristics.

Results: Findings were stratified by the level of food security determinants: Individual, interpersonal, organizational, community, and public policy/systems.

Conclusion: Three overarching themes emerged: Paralyzing social stigma, food assistance barriers, and transportation insecurity. Rural challenges included geographic isolation, supply chains, transportation, cultural differences, and stigma stemming from a self-sufficiency mindset and lack of anonymity. Urban challenges included cost of living, public transportation, and stigma manifested by marginalized identity and negative vendor-client interactions. Best practices compiled from participant input included collaboration/coalition building, streamlined food assistance application systems, reframed food security experience, and support for local economies. This study offers an emerging approach to ameliorating food security across the rural-urban divide.

Learning Objective: Participants will be able to describe barriers and facilitators to food security in both rural and urban settings.

Funding Disclosure: No funding was received for this study. The authors have nothing to disclose.

Title: Egg Consumption and Child Growth: Findings from a Pilot Poultry Project in Guatemala

Authors: Rita Franco, MSc, University of Idaho; Michele Monroy-Valle, PhD, University of Saskatchewan; Hassan Vatanparast, MD, PhD, University of Saskatchewan; Ginny Lane, PhD, RD, University of Idaho (**Presenting Author**).

Introduction: In Momostenango, Guatemala, 60% of children experience stunted growth, affecting their cognitive development, economic opportunities, and long-term health. A key growth-limiting factor is their monotonous, grain-based diet that lacks sufficient protein. This study examines whether household egg production improves child nutrition by increasing egg consumption and height-for-age scores.

Methods: A pilot poultry project was launched in 2019 with ten rural families, selected based on land availability, absence of egg allergies, and the presence of young children (0-10 years). Families built chicken coops, purchased hens and feed, and received poultry care and nutrition training. Data was collected in 2019, 2022, and 2024. ANCOVA analyzed the relationship between egg production, consumption, and child growth.

Results: Egg consumption was positively associated with height-for-age ($\beta = 0.144$, $p = 0.043$). However, egg production had no significant effect ($p = 0.102$). Families faced challenges maintaining sustainable poultry operations due to high feed costs, vaccinations, and hen replacement.

Conclusion: Children's egg consumption, rather than production alone, is key to improving child growth. Future efforts should focus on increasing egg access, addressing economic barriers, and promoting sustainable poultry practices.

Learning Objective: The learner will appreciate egg consumption's role in preventing childhood stunting in rural Guatemala.

Funding: University of Saskatchewan, Queen Elizabeth Scholars, and the University of Idaho. The data was gathered from research participants in Momostenango, Guatemala.

Faculty Sponsor: Ginny Lane, PhD, University of Idaho

Title: The Efficacy and Safety of the Usage of Chamomile Products During Pregnancy

Authors: Barbara Gordon, EdD, RDN, FAND, Idaho State University, (**Presenting Author**); Tess Ferguson, BS, Medical Student, Idaho College of Osteopathic Medicine

Research Outcome: Chamomile is a commonly used herb during pregnancy for anxiety, depression, sleeping problems, morning sickness, and labor pain. This study evaluated the existing literature on the safety and efficacy of chamomile during the peripartum and postpartum periods of pregnancy.

Methods: A systematic literature review was conducted; inclusion criteria were peer-reviewed primary research studies (experimental and observational) published in English that provided discrete findings of chamomile as an intervention. Four peer-reviewed databases were searched (through June 2024). The preferred Reporting Items for Systematic Reviews and Meta-analyses protocol was employed. The quality of studies was assessed using Cochrane Risk-of-Bias Assessment tools.

Results: A total of 23 studies (16 clinical trials, 7 observational studies, n=2,065 women from 9 countries) were precipitated for inclusion in this review. Most of the articles (19/23) provided findings on the efficacy of chamomile as an alternative therapy during various stages of pregnancy; the other five studies reported on safety considerations. Modes and dosages of chamomile delivery varied (aromatherapy or massage, tea, capsules, oral homeopathic remedies, and topical application). Benefits reported included pain relief during labor and following cesarean section, anxiety relief, enhanced wound healing, decreased incidence of post-dural puncture headache, increased postoperative bowel motility, improved sleep quality, nipple pain relief during breastfeeding, induction of labor in post-term pregnancy, and decreased nausea/vomiting. Adverse effects included skin irritation and headaches associated with aromatherapy via inhalation and massage; nausea, headaches, and dizziness associated with oral homeopathic drops. The level of evidence on the safety and efficacy of chamomile usage was weak and limited. Some studies reported clinically significant findings that were not statistically significant. Limitations of this review were the small sample size and inclusion of multiple studies by the same research teams; these findings likely reflect insights from the same cohorts of women.

Conclusion: Evidence-based clinical practice recommendations on chamomile usage during pregnancy are not currently possible. The need for randomized, double-blind placebo control studies with larger study populations and consistent study protocols (e.g., type and dosage of chamomile ingested) emerged. Given the clinically significant findings, a provider might share the potential benefits and risks of using chamomile products with patients who use or desire to use chamomile products.

Learning Objective: Discuss the level of evidence supporting the potential benefits and risks related to the usage of chamomile products during pregnancy.

Funding: None to disclose.

Nutrition Assessment for Adolescent Athletes

Authors: Julie Jirik, University of Idaho, Angelina Widman, University of Idaho, Lydia Morris, University of Idaho, Jessica Hall, University of Idaho (**Presenting Authors**), Ginny Lane, PhD, RD, University of Idaho

Background: Adolescent athletes have increased nutritional needs, yet lack nutritional knowledge, potentially compromising health and performance. This study analyzed the nutritional knowledge of adolescent athletes in Moscow, Idaho.

Methods: An observational study was conducted with adolescent basketball player boys (n= 7) and cheerleader (n=5) girls aged 12-15 from Moscow Middle school. Participants completed a self-assessment through an online questionnaire including Likert-scale questions and qualitative responses. Coaches completed a separate survey (n=1). The University of Idaho Institutional Review Board approved the study.

Results: Most athletes (91.7%) have good-to-strong awareness of nutrition. However, their dietary intake indicated low awareness of carbohydrate (67%) and protein (75%) needs. Only 25% consume a high-protein snack more than 3 days per week during training and 25% refuel with a high-carbohydrate snack after training just 1-2 days per week. Knowledge of fat requirements appears to be limited, with 42% of respondents rating their fat intake as low to moderate. Furthermore, 41.7% did not eat 3 meals or snacks per day.

Conclusion: The adolescent athletes had a Food-Nutrition Related Knowledge Deficit, indicating the need for a nutrition education program to promote a healthy relationship with food and support healthy growth and development.

Learning Objective: Learners will understand current nutrition concerns among adolescent athletes.

Funding: No funding was received for the research, and the authors declare no financial conflicts of interest.

Faculty Sponsor: Ginny Lane, PhD, RD, University of Idaho

Title: Nutritional Intake of International Athletes Attending the University of Idaho

Authors: Khristie Pascoe, University of Idaho, Dante Cox, University of Idaho, Jesse Stinton, University of Idaho, Cody Ruiz (**Presenting Author**), University of Idaho, Ginny Lane, PhD, RD, University of Idaho.

Introduction: Food insecurity impacts 29-38% of college students, especially international students and student-athletes.

Methods: Participants were recruited through flyers posted in the athletic Fueling Station as well as in the Student Rec Center gym. A hyperlink QR code provided access to the online questionnaire. The questionnaire data was collected through the online Qualtrics tool and analyzed using Microsoft Excel.

Results: The information collected indicates that the athletes are not going completely without food during a typical day. Thirteen participants responded they consume 3 meals and 1-2 snacks per day. Yet, this still may not be sufficient nutritional intake to support the physical demands of their sport.

Conclusion: Our results didn't provide similar findings to those found in the current literature. This assessment would not be generalizable to other sports teams or other universities because most international student-athletes who completed the survey were from one sport. Future research may want to explore how culturally appropriate the meals and snacks they consume are.

Learning Objective: Assess the nutritional intake of the University of Idaho's international student-athlete population.

Funding Disclosure: No funding was received for the research, and the authors declare no financial conflicts of interest.

Faculty Sponsor Ginny Lane, Ph. D., RD, University of Idaho.

Title: Diabetic Ketoacidosis among Children and Adolescents with Type 1 or Type 2 Diabetes Mellitus: SEARCH for Diabetes in Youth Study, SEARCH 3 Cohort

Authors: Hussain Qazaq (**Presenting Author**), PhD Student, University of Idaho; Ginny Lane, PhD, RD, University of Idaho; Elizabeth Jensen, PhD, Wake Forest University; Angela Liese, PhD, University of South Carolina; Kristi Reynolds, PhD, MPH, Kaiser Permanente; Cate Pihoker, MD, Seattle Children's Hospital; Anna Bellatorre, PhD, University of Colorado

Background: Diabetic ketoacidosis (DKA) is an acute hyperglycemic emergency accompanied by acidosis and ketosis in people with diabetes mellitus resulting from lack of insulin and elevated counter-regulatory hormones. DKA may result in cerebral edema or death. This study seeks to understand the risk factors for DKA.

Methods: A total sample of 2765 individuals were accessed from the SEARCH registry study database, which is a population-based study of youth onset diabetes among youth. Data was gathered using a mail-in-survey to collect demographic data and the Pediatric Quality of Life Inventory. Relative risk was calculated for significant predictors of DKA episode in a logistic regression model using DKA episode as the outcome variable.

Results: Children at highest risk for a DKA episode include those with type 1 diabetes (3.3X), those in the lowest quality-of-life quartile (2X), and those with Medicaid/Medicare (1.45X).

Conclusions: The results emphasize the importance of comprehensive quality of care, including screening for quality-of-life issues, to improve diabetes-related outcomes among youth.

Learning Objective: Participants will identify DKA risk factors to inform comprehensive care planning.

Funding: Funded by the Center for American Indian and Alaska Native Diabetes Translation Research (CAIANDTR): Pilot Project Fund.

Faculty Sponsor: Ginny Lane, PhD, RD, University of Idaho

Title: One-time Lessons Promote Intent-to-Change Nutrition and Physical Activity-related Behaviors Among Adults and Youth with Low-income

Authors: Cody Ruiz, University of Idaho (**Presenting Author**); Shelly Johnson, MS, University of Idaho; Siew Guan Lee, MS, RDN, University of Idaho; Joey Peutz, MS, University of Idaho; Kali Gardiner, BS, RDN, University of Idaho; Calla Chapin, BS, RDN, University of Idaho; Cammie Jayo, BS, University of Idaho; Becky Woodhouse, BS, RDN, University of Idaho; Kristin Hansen, MS, University of Idaho; Annie J. Roe, PhD, RDN, University of Idaho

Introduction/Background /Literature Review: Eat Smart Idaho (ESI) is a statewide University of Idaho Extension program providing nutrition and physical activity education to Idaho adults and low-income youth, including series and one-time lessons. ESI has a long history of demonstrating behavior change through a series of lessons. However, offering one-time lessons is newer to the program, and the effectiveness is not as well known.

Objective: To understand the short-term influence of one-time nutrition education lessons on participants' intent to change nutrition and physical activity-related behaviors.

Methods: From October 2023 to September 2024, ESI used evidence-based curricula to provide one-time lessons on diet quality, physical activity, food safety, and food resource management. Self-reported demographic data was collected at the beginning of each lesson. Surveys administered at the end of each lesson captured participants' goals or intent-to-change food and physical activity related behaviors.

Results: Five-hundred, eighty-three adults and 1417 youth completed one-time lessons. The average group size for adults was 6 ± 4 while youth groups were 16 ± 7 . Most participants were Caucasian (76% adults, 86% youth) and non-Hispanic (84% adults, 91% youth). Most adults were female (63%) while youth were 49% female and 51% male. All adults and 628 youth completed post-lesson surveys. Following a one-time lesson participants planned to make positive behavior changes related to diet quality (88% adults, 55% youth), physical activity (46% adults, 54% youth), food safety (92% adults, 91% youth), and food resource management (95% adults, 42% youth).

Conclusion/Limitations: Providing one-time lessons is an effective way to motivate adults and youth to progress towards making positive changes in nutrition and physical activity related behaviors.

Learning Objective: Participants will learn how one-time nutrition education classes influence intentions to change or maintain nutrition and physical activity-related behaviors.

Funding Disclosure: Eat Smart Idaho is supported and funded by USDA's Supplemental Nutrition Assistance Program (SNAP) and the Expanded Food and Nutrition Education Program from the USDA National Institute of Food and Agriculture. USDA and University of Idaho are equal opportunity providers.

Faculty Sponsor: Annie J. Roe, PhD, RDN

Title: Nutritional Status of Children with Autism in Dhaka City, Bangladesh

Authors: Nuha Raissa Seoty, MPhil, PhD candidate (**Presenting Author**), University of Idaho, Ferdousi Begum, MBBS, MD, MPH, State University of Bangladesh, Ginny Lane, PhD, RD, University of Idaho.

Introduction: Globally, about 1 in 127 people had autism spectrum disorder (ASD) in 2021. Children with ASD may present with eating difficulties, such as food selectivity and refusal of new foods, which could place them at risk for nutritional concerns. This study investigates the nutritional status of children with ASD in Dhaka City, Bangladesh.

Methods: A cross-sectional study was conducted among 202 mothers and their children with ASD aged 6-18 years from ten selected autism schools in Dhaka city. Children's height and weight were measured, and their BMI was calculated. The children's BMI was evaluated regarding the BMI-for-age categories of the CDC. Mothers filled out a questionnaire about their child's dietary practices.

Results: The vast majority (91%) of children with ASD were very selective about their food choices and had challenges accepting new foods. More than 80% of children required eating support, experienced difficulties with chewing food, and exhibited altered behavior during mealtimes. Just under half (40%) of the children were underweight, 34% were healthy weight, 19% were overweight, and 6% were obese.

Conclusion/Recommendation: Nearly two-thirds of ASD children were malnourished and faced nutritional challenges. The authors recommend developing specialized dietary plans for children with ASD.

Learning objective: Learners will understand the nutritional challenges of children with ASD.

Funding: No funding was received for the research, and the authors declare no financial conflicts of interest. The data was gathered from selected schools in Dhaka City, Bangladesh.

Faculty Sponsor: Ginny Lane, PhD, RD, University of Idaho.