



What the New Guidelines for the Prevention and Management of Chronic Diseases Mean for RDNs: Research and Team-Based Patient Care

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Within the past 3 years, updates to several authoritative health guidelines have been released. The committees tasked with updating them evaluated the evidence to establish recommendations for prevention and treatment of chronic disease. Registered dietitian nutritionists (RDNs) are essential to the implementation of these guidelines by helping individuals understand and adhere to the recommendations. Furthermore, research RDNs interpret existing evidence and contribute new research to fill knowledge gaps, thereby informing guideline updates. Thus, it is imperative that RDNs are aware of the current recommendations. The purpose of this article is to summarize updates with a focus on the recommendations most relevant to RDNs, and highlight evidence gaps requiring nutrition research, where appropriate. The following guidelines are included:

- 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association (ACC/AHA) Task Force on Clinical Practice Guidelines
- 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol
- Physical Activity Guidelines for Americans, 2nd Edition
- 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease
- American Diabetes Association (ADA) Standards of Medical Care in Diabetes – 2019

IN THIS ISSUE

Article: What the New Guidelines for the Prevention and Management of Chronic Diseases Mean for RDNs: Research and Team-Based Patient Care	1
Chair's Message	6
Outgoing Chair's Message	7
Treasurer's Report	8
RDPG Member Spotlight	9
Student Member Spotlight	12
Student Article: SNAP Challenge: Challenges faced by prospective dietitians on a limited food budget	13
HOD Report	17
Letter from the Editor	17
RDPG List of Official Volunteers	18



- 2019 Dietary Reference Intakes for Sodium and Potassium developed by the National Academies of Sciences, Engineering, and Medicine

While not a guideline, the EAT-Lancet Commission Report proposed dietary targets of which RDNs should be aware. Thus, a brief summary of its findings will follow discussion of the new guidelines.

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APHA/ASH/ASPC/NMA/PCNA GUIDELINE FOR THE PREVENTION, DETECTION, EVALUATION, AND MANAGEMENT OF HIGH BLOOD PRESSURE IN ADULTS

The 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults¹ was prepared by the American College of Cardiology (ACC) and American Heart Association (AHA) Task Force on Clinical Practice to update the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure from 2003.² The writing group included representatives from AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA. It guides clinicians in the prevention, detection, evaluation and treatment of high blood pressure in adults. A separate guideline for children was issued by the American Academy of Pediatrics in 2017³; this will not be reviewed.

The most significant revision was the change in diagnostic criteria for hyperten-

sion. Previously defined as systolic blood pressure (SBP) ≥ 140 mm Hg and/or diastolic blood pressure (DBP) ≥ 90 mm Hg, the new guideline defines hypertension as ≥ 130 and/or ≥ 80 mm Hg SBP and DBP, respectively. Accordingly, the revised treatment goal – lifestyle or pharmacological – is now $< 130/80$ mm Hg. The “prehypertension” category was eliminated; instead, SBP between 120-129 mm Hg with normal DBP (< 80 mm Hg) is termed “elevated.”

The revised hypertension definition reclassified many prehypertensive adults as hypertensive, shifting the prevalence of hypertension among the US adult population from about one-third to one-half. Importantly, lifestyle changes alone are indicated for most of the reclassified individuals, and lifestyle remains the foundation of treatment at all BP levels. Estimated SBP reductions of 4-11 mm Hg are achievable for hypertensive patients adopting a healthy, reduced sodium diet, limiting excessive alcohol intake, increasing physical activity, and losing excess weight. Specifically, the guideline ascribes the most potent blood pressure lowering effect to consuming a DASH dietary pattern, rich in fruits, vegetables, whole grains, and low-fat dairy and limiting saturated and total fat. Benefits of reduced sodium intake (optimally < 1500 mg) and increased potassium intake (3500-5000 mg/d) – “preferably by consumption of a diet rich in potassium” rather than supplements – are acknowledged. However, authors found insufficient evidence for the BP-lowering effectiveness of other dietary

patterns such as Mediterranean, vegetarian, or low-carbohydrate diets. RDNs and nutrition researchers are positioned to build this evidence base.

BP-lowering medications are additionally recommended to reduce atherosclerotic cardiovascular disease (ASCVD) risk in certain patients. Decisions regarding initiation and intensity of pharmacological therapies are informed by baseline BP, comorbidities, and estimated 10-year ASCVD risk (Box 1). This guideline also acknowledges benefits of using out-of-office BP to confirm and manage hypertension. Out-of-office BP measurement includes home and ambulatory BP monitoring (ABPM). A systematic review conducted by the US Preventative Task Force reported better prediction of long-term ASCVD outcomes using ABPM rather than office BP.⁴ Increased use of ABPM in clinical practice and research is anticipated.

2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APHA/ASPC/NLA/PCNA GUIDELINE ON THE MANAGEMENT OF BLOOD CHOLESTEROL

The 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol⁵ was developed by the ACC and the AHA along with the National Lipid Association and nine other societal collaborators. This document guides clinical practitioners in the management of high blood cholesterol and related disorders.

Replacing the 2013 Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults,⁶ the current guideline cites new evidence from randomized controlled trials that supports more aggressive pharmacological treatment of high cholesterol, guided by LDL-C targets. Lifestyle therapy remains the foundation for risk reduction across all risk levels and ages. Diet, exercise, and weight management recommendations from the 2013 AHA/ACC Guideline on Lifestyle Management to Reduce Cardiovascular Risk are carried forward.⁶ This guideline recommended a dietary pattern emphasizing intake of vegetables, fruits, whole grains, legumes, healthy proteins (including low-fat dairy, low-fat poultry, fish, seafood, and nuts), and non-tropical vegetable oils while limiting sweets, sugar-sweetened beverages, and red meats, with calorie intake adjusted to support healthy weight man-

BOX 1. ASCVD RISK ESTIMATION

The blood pressure guidelines, cholesterol guidelines, and Standards of Medical Care in Diabetes endorse estimation of 10-year ASCVD risk using pooled cohort equations to guide treatment decisions for primary prevention. These equations use observational data from representative population samples to estimate an individual's risk of experiencing an ASCVD event within 10-years. An online calculator available from the ACC, the ASCVD Risk Estimator Plus (<http://tools.acc.org/ASCVD-Risk-Estimator-Plus>), allows clinicians to input patient age, sex, race, blood pressure, cholesterol, smoking history, and diabetes history along with current use of anti-hypertensive treatments, statins, and/or aspirin therapy to generate a percentage estimate for 10-year ASCVD risk. The ACC/AHA classify risk as low ($< 5\%$), borderline (5 to $< 7.5\%$), intermediate (7.5 to $< 20\%$), and high ($\geq 20\%$).

The risk calculator also provides an estimate of lifetime risk. In patients ≤ 59 years of age, calculated 10-year risk is generally low because age is the strongest determinant of risk. Thus, lifetime risk estimation is recommended for younger patients, particularly 20-39 year olds. This estimation serves to inform clinician-patient discussions about lifestyle changes that can reduce risk. Limited data are currently available to inform risk predictions outside of the 40-79 year age range, so estimates may be less accurate for younger and older patients.

(Continued on page 3)

agement. A saturated fat target of 5-6% was recommended for LDL-C lowering. Moderate-to-vigorous physical activity was recommended for at least 3-4 sessions of at least 40 minutes duration each, per week.

The major focus of this guideline is to advise clinicians on initiation of and monitoring response to pharmacological therapies. Factors weighed in such decisions include baseline low-density cholesterol (LDL-C), pre-existing disease, age, and calculated 10-year ASCVD risk. RDNs in research may find the guideline useful when planning studies as target populations may be taking these medications. Researchers should explicitly define whether dose and/or type of drug will affect eligibility for participation and ensure adherence to therapies throughout study duration.

PHYSICAL ACTIVITY GUIDELINES FOR AMERICANS, 2ND EDITION

The 2nd edition of the Physical Activity Guidelines for Americans⁷ was released in November 2018. Issued by the US Department of Health and Human Services, these guidelines provide policy makers and health professionals with recommendations to help the public maintain and improve health through physical activity.

Since the previous edition was released in 2008,⁸ evidence supporting benefits of physical activity and exercise across the lifespan has accrued. RDNs should be aware of evidence showing physical activity can slow disease progression in hypertension and type 2 diabetes; decrease the risk of gestational diabetes in pregnant women; and reduce the risk of excessive weight gain and support healthy weight maintenance in all people. Physical activity also benefits bone health and weight status in young (3-5 years old) children; new guidelines for this age group recommend preschoolers engage in active play for at least three hours daily. A single bout of moderate- to vigorous-intensity exercise can reduce blood pressure, improve insulin function throughout the rest of the day, and improve mood, stress, brain function, and sleep. Emphasizing immediate results may motivate individuals who are not driven by the long-term benefits.

The resounding message of these guidelines is to move more and sit less. A significant change from the previous edition is removal of the 10-minute bout minimum recommended for aerobic activity. Instead,

any duration of aerobic activity (e.g. a one-minute stair climb) can contribute to the weekly minimum recommendation. A focus on accruing active minutes through small behavior changes can make weekly targets more accessible and encourage people to move throughout the day.

The recommended weekly activity targets for ages six and older have not changed. Adults should accumulate 150-300 minutes of moderate- or 75-150 minutes of vigorous-intensity aerobic activity plus muscle-strengthening exercises at least twice weekly. The same targets apply to older adults, as physically able, with the addition of balance training. Children and adolescents ages 6-17 should include at least an hour per day of moderate-to-vigorous activity, with specific guidance to include aerobic, muscle-strengthening, and bone-strengthening exercises.

2019 ACC/AHA GUIDELINE ON THE PRIMARY PREVENTION OF CARDIOVASCULAR DISEASE

The 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease⁹ was issued in March 2019. This guideline updates the 2013 Guideline on Lifestyle Management to Reduce Cardiovascular Disease¹⁰ as well as components of the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults.⁶ In contrast to previous guidelines, the new guideline advises clinicians and public health practitioners on both lifestyle and medical therapies recommended for primary CVD prevention in a single document. Note that blood pressure and cholesterol management recommendations for primary CVD prevention are carried forth from their respective 2017 and 2018 guidelines.^{1,6}

The 2019 Guideline leads with overarching recommendations for all facets of primary prevention care to be team-based, patient-centered, and considerate of social determinants of health. RDNs are essential members of the care team, as they are uniquely trained to provide dietary guidance to support disease prevention and weight management. It is important to acknowledge that patients' personal values as well as social determinants of health (including psychosocial, socioeconomic, educational, environmental, cultural, and racial/ethnic characteristics) may impact the appropriateness and/or efficacy of certain prevention recommendations. Patient-clinician

collaboration can identify the best prevention strategy for each patient.

A healthy lifestyle is recognized as the most important factor for CVD prevention, with diet and exercise as principal defining factors. Physical activity recommendations are consistent with the Physical Activity Guidelines for Americans.⁷ The diet pattern recommended for primary CVD prevention emphasizes fruits, vegetables, legumes, nuts, whole grains, lean vegetable or animal proteins, and fish while reducing cholesterol and sodium and minimizing intake of *trans* fats, processed meats, refined carbohydrates, and sweetened beverages. In addition, replacement of saturated fat with monounsaturated fat and polyunsaturated fat is recommended. Dairy is not included in the dietary pattern for CVD prevention, as authors deemed evidence linking dairy intake to CVD risk factors "inconclusive." This should not be misinterpreted as a recommendation to exclude dairy but rather a call for more evidence clarifying its role in CVD prevention. Caution is advised regarding low-carbohydrate diets, as long-term adherence in observational studies has been associated with increased mortality risk unless the protein and fat sources that replace carbohydrates are plant-derived.¹¹ RDNs should remain aware of developments in this area of research and ensure they are accurately communicated to the public.

STANDARDS OF MEDICAL CARE IN DIABETES – 2019

First released in 1989, the Standards of Medical Care in Diabetes are updated annually by the ADA. This document aims to provide clinicians, patients, researchers, payers, and "other interested individuals" with information, goals, and tools to guide and provide diabetes care.

The 2019 update recommends provision of diabetes care by a multidisciplinary team, specifically identifying RDNs as members of that care management team (recommendation 4.2).¹² Consistent with previous recommendations, it continues to advise self-management education for all individuals with diabetes. As providers of diabetes care and education for self-management, RDNs can improve diabetes-related outcomes. The ADA recognizes the value of RDN-administered medical nutrition therapy to improve glycemic control, citing associated A1C reductions of 1.0-1.9% and

(Continued on page 4)

0.3-2% in people with type 1 and 2 diabetes, respectively.¹³ Consistent with previous versions, no specific diet is recommended as evidence does not support one ideal macronutrient distribution for all people with diabetes. In general, nutrition therapy should be individualized, considering patient preferences, current eating patterns, metabolic goals, and barriers.

The appraisal of low-carbohydrate diets, added in 2018,¹⁴ remains largely unchanged in this edition. Potential short term glycemic and lipid improvements on low-carbohydrate diets are acknowledged, but long-term sustainability is questioned. The ADA now explicitly recommends that certain individuals (e.g. pregnant women, children) not consume low-carbohydrate diets. A stronger stance on nonnutritive sweeteners is also communicated in this edition, advising reduced consumption of both sugar- and nonnutritive-sweetened beverages.

Other updates include a change in the diabetes diagnostic criteria to allow diagnosis on the basis of two abnormal test results from the same blood sample; previously, two separate samples were required. The use and potential value of telemedicine for

patient care is acknowledged, and technological innovations in diabetes management are discussed in a newly added section. For the first time, the ACC endorsed the “Cardiovascular Disease and Risk Management” section. Consistent with the ACC/AHA blood pressure and cholesterol guidelines, the ADA recommends calculation of 10-year ASCVD risk to guide treatment goals and therapies.

DIETARY REFERENCE INTAKES FOR SODIUM AND POTASSIUM

The updated Dietary Reference Intakes for Sodium and Potassium report was released in March 2019,¹⁵ replacing the previous 2005 report.¹⁶ Dietary reference intakes (DRIs) for nutrients are developed by committees appointed by the Health and Medicine Division (formerly Institute of Medicine) of the National Academies of Science, Engineering, and Medicine. These reference values, specific to age, gender, and life stage, establish a scientific basis to develop dietary guidelines, survey population health, and inform policies for the US and Canada.

A noteworthy update is the implementation of a new DRI model proposed in the

2017 report, *Guiding Principles for Developing Dietary Reference Intakes Based on Chronic Disease (the Guiding Principles Report)*.¹⁷ This model evaluates adequacy and toxicity reference values separately from nutrient intake values recommended for chronic disease reduction. Thus, a new DRI value, the Chronic Disease Risk Reduction Intake (CDRR), is now established when evidence permits. The relationship between nutrient intake and risk of chronic disease was sufficiently characterized to establish a CDRR for sodium but not potassium. To be clear, the committee identified moderate strength evidence for a causal relation between potassium supplementation and reduced blood pressure. However, heterogeneity in studies, lack of a dose-response relationship, and insufficient evidence for its relation with chronic disease outcomes prohibited establishment of a CDRR.

Consistent with the prior report, insufficient evidence exists to establish adequacy or toxicity levels for either nutrient. Adequate Intake (AI) levels, which estimate intakes of apparently healthy individuals, were re-evaluated and updated. For most groups, AI levels for sodium and potassium decreased or were unchanged. However, the sodium AI increased for adults over 50 years of age and the potassium AI increased for infants 7-12 months of age. Table 1 compares previous and revised DRIs for both nutrients.

The committee identified several research needs to which nutrition investigators can contribute to inform sodium and potassium recommendations. Better methods to assess sodium and potassium intakes are needed as limitations of current self-reported intake and urinary output measurements are acknowledged. Long-term trials are required to characterize the effect of potassium intake, in different doses and forms, on blood pressure and chronic disease risk. Improved characterization of the relation between sodium intake and these outcomes is needed as well, along with characterization of intraindividual differences in response to sodium intake. The interrelationship between potassium and sodium must be better characterized, as their actions are biologically linked and may predict health outcomes better together than either nutrient alone.

EAT-LANCET REPORT

The EAT-Lancet Commission tasked 37 leading international scientists from diverse dis-

Table 1. Potassium and Sodium Dietary Reference Intakes

	Potassium (mg/d)			Sodium (mg/d)		
	AI 2005	AI 2019	CDRR	AI 2005	AI 2019	CDRR
Infants 0-6 mo	400	400	-	120	110	-
Infants 7-12 mo	700	860	-	370	370	-
Children 1-3 y	3000	2000	-	1000	800	≤1200
Children 4-8 y	3800	2300	-	1200	1000	≤1500
Males 9-13 y	4500	2500	-	1500	1200	≤1800
Males 14-18 y	4700	3000	-	1500	1500	≤2300
Males 19-30 y	4700	3400	-	1500	1500	≤2300
Males 31-50 y	4700	3400	-	1500	1500	≤2300
Males 51-70 y	4700	3400	-	1300	1500	≤2300
Males >70 y	4700	3400	-	1200	1500	≤2300
Females 9-13 y	4500	2300	-	1500	1200	≤1800
Females 14-18 y	4700	2300	-	1500	1500	≤2300
Females 19-30 y	4700	2600	-	1500	1500	≤2300
Females 31-50 y	4700	2600	-	1500	1500	≤2300
Females 51-70 y	4700	2600	-	1300	1500	≤2300
Females >70 y	4700	2600	-	1200	1500	≤2300
Pregnancy 14-18 y	4700	2600	-	1500	1500	≤2300
Pregnancy 19-30 y	4700	2900	-	1500	1500	≤2300
Pregnancy 31-50 y	4700	2900	-	1500	1500	≤2300
Lactation 14-18 y	5100	2500	-	1500	1500	≤2300
Lactation 19-30 y	5100	2800	-	1500	1500	≤2300
Lactation 31-50 y	5100	2800	-	1500	1500	≤2300

Abbreviations: AI, Adequate Intake; CDRR, Chronic Disease Risk Reduction intake. CDRRs were not determined for potassium, all groups, or for sodium in infants <12 months of age.

(Continued on page 5)

ciplines to establish “scientific targets for healthy diets and sustainable food production” by evaluating the global food system from the aspects of consumption and production. This report is a call to action; the authors state that there is a pressing need to change foods consumed and produced to feed a growing world population.

Generally, a shift toward a more plant-based diet with fewer animal-derived products is recommended for both human and environmental health. Compared to current intakes, global consumption of fruits and vegetables, nuts, and legumes should double while consumption of red meat and sugar must be reduced by more than 50%. Target intakes of specific foods and food groups are expressed in calories per day. These values represent averaged global recommendations and achievement of these targets will healthfully sustain the planet and its people.

SUMMARY

There is significant overlap in these guideline updates, and importantly, they align with the recommendations made in the past five years by the same organizations, as well as the National Lipid Association (NLA)¹⁹. A healthy diet emphasizing vegetables, fruits, whole grains, legumes, plant or lean proteins, nuts, seeds, and non-tropical vegetable oils is recommended; sodium, added sugars, and saturated fat should be limited and *trans* fat avoided. In addition, the importance of moving more and sitting less is emphasized as well as the health benefits of engaging in physical activity. Notably, many of the guidelines recommend RDN referral, which concurs with the evidence (reviewed by NLA¹⁹) that shows RDN-administered medical nutrition therapy improves cardiometabolic risk factors.

RDNs are communicators of and contributors to the evidence base that informs recommendations to support population health. Understanding current recommendations positions RDNs to contribute knowledgeably and effectively in patient care teams and guide individuals to adopt healthier lifestyles. Therefore, RDNs have a key role in the translation of guideline updates into clinical practice for the benefit of patient care. Nutrition science is continually evolving, and research RDNs are best positioned to contribute to high-quality scientific evidence that strengthens the base upon which future guideline updates are founded.

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Chair's Message

Barbara Gordon, MBA, RDN, LD
Research DPG 2019-2020 Chair

Research DPG Members,

In June, I humbly took the reins from Dr. Vargas as Chair of the Research DPG. What an honor to guide the efforts of the Executive Committee and serve all of you. We start the year with a strategic plan in place aimed at:

- Expanding prospective food and nutrition research, and
- Conducting systematic reviews and developing evidence-based practice guidelines and position papers in collaboration with key stakeholders.

Many DPG initiatives were identified to optimize achievement of these strategic goals—some a continuation from past years and some new. I selected the following four highlights to share with you:

Grant funding and recognition. Thanks to the diligent efforts of Sponsorship Committee members Lauri Byerley and Carol Berg Sloan, we've already obtained the sponsorship funds needed for both student and active DPG member awards and grants.

In addition, we'll continue to identify DPG members to nominate for Academy national awards and alert members about Academy-level leadership opportunities. Last year, two of our nominees won national awards:

- Medallion Award: Dr. Karen Chapman-Novafokski, PhD, RD, LDN, University of Illinois at Urbana-Champaign
- Excellence in Practice Award: Dr. Susan Steck, PhD, MPH, RD, FAND, University of South Carolina

Please be on the lookout for email blasts and listserv posts about these opportunities.

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Remedy this today—sign into the researchdpg.org and go to your profile. Scroll down to Subscriptions and “opt in” for both of these options.

Mentorship of researchers. Mentorship Chair Whitney Linsenmeyer will continue to pair senior researchers with up-and-coming researchers. Also, we are expanding the program to include a publication track, which will pair members who have published with those wanting guidance on how to navigate the process of getting published in the scientific literature. Interested? Email rdpgmentor@gmail.com.

Promotion of diversity in research. Previous RDPG Diversity Liaison, Dr. Suzi Baxter, was awarded a grant on behalf of our DPG. She'll be overseeing this grant, which includes collaborating on

the development of a series of webinars about individuals with disabilities. And, our current Diversity Liaison, Dr. Shelly DeBiasse, is working on expanding the inclusivity of our DPG.

Member-only resources. *The Digest* continues to evolve, and this year it will include a treasure trove of research resources and our DPG webinars will continue to look for ways to fill gaps with regards to research topics. Got ideas? Please email researchdpgchair@gmail.com.

Lastly, please mark your calendars!

We hope to see all of you at FNCE. Please save the date for the Research DPG Member Reception which will take place on Sunday, October 27th from 5:00 pm-6:30 pm. We'll keep you posted as we work out the details.

And, if you are coordinating, moderating, or presenting a session or poster at FNCE, we want to know. We are posting a running list on the website. Please email your session information to webmaster@researchdpg.org.

I look forward to a busy and exciting year!

Best,

Barb

Barbara Gordon, MBA, RDN, LD



Outgoing Chair's Message

Ashley Vargas, PhD, MPH, RDN, FAND
Research DPG 2018-2019 Chair

Research DPG Members,

It has been a true honor to serve as the Chair of the Research DPG this last year. I cannot express how fulfilling it was to represent such a diverse group of dietetic practitioners who share a passion for research. I enjoyed having the chance to speak to so many DPG members at FNCE® 2018 who provided great insight into the needs of members and future directions for the DPG.

To continue this momentum, as Past Chair, I will continue efforts to complete the strategic planning exercise I began earlier in my tenure as Chair. Barbara Gordon, our incoming Chair, also plans to continue the momentum we built over the last year and I look forward to working closely with her. Barbara has a clear vision of continually improving how the RDPG serves its members and I am looking forward to her leadership.

Stay nerdy, my friends.

Best,

Ashley

Ashley J. Vargas, PhD, MPH, RDN, FAND
researchdpgchair@gmail.com

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Please email the Editor-in-Chief, Tricia Psota, at tricia@triciapsota.com to inquire.



Treasurer's Report



RESEARCH DPG BUDGET FOR 2018-2019

	<i>Item</i>	<i>Annual Budget (\$)</i>	<i>Year to Date as of January 31, 2019 (\$)</i>
Revenue	Membership Dues	23,320	15,244
	Grants/Contracts	27,338	16,460
	Meeting/symposium registration	0	470
	Donations/gifts	0	100
	Revenue Total	50,658	30,274
Expenses	Lodging	1,161	4,443
	Subsistence	320	413
	Transportation	550	2,161
	Professional/consulting	1,670	0
	Postage	150	0
	Teleconferences	300	208
	Website Hosting	588	392
	Advertising/promotion	1,125	0
	Depreciation	3,524	2,349
	Other Expense	9,000	655
	Member Dues & Seminar Fees	192	2,205
	Credit Card Processing Fees	350	350
	Outside Services	1,800	1,754
	Donations to AND Foundation	700	500
	Honorariums & Awards	13,633	12,100
	Audio Visual Services	0	0
	Food Service	11,151	6,320
	Printing & Copying Services	250	1,000
	Expenses Total	48,264	34,850
OPERATING EXCESS – DEFICIT		2,394	-2,576

Reserve as of January 31, 2019: \$70,965

Reserve Percentage (reserve divided by expense budget)

$\$70,965 / \$48,264 = 147\%$



RDPG Member Spotlight:

Mary N. R. Lesser PhD, RD

Lecturer / Postdoctoral Researcher / Pediatric Dietitian
University of California, Berkeley
Children's Hospital Oakland Research Institute
UCSF Benioff Children's Hospital, Oakland

Please provide a brief description of your current position.

My position is actually a bit unique since I technically hold three!

At the University of California, Berkeley I am a Lecturer in the Department of Nutritional Sciences and Toxicology, where my primary responsibilities are to teach and advise undergraduate students. In the Fall I teach the Nutrition in the Community course (also known as the Public Health Nutrition course to many of the students) and help co-teach the first Medical Nutrition Therapy course. In the Spring I teach the second portion of the Medical Nutrition Therapy course. Throughout the year I meet with assigned and unassigned student advisees to help guide them through their final years at UCB in academic as well as postgraduate school and career endeavors.

At Children's Hospital Oakland Research Institute (CHORI), I am a Postdoctoral Researcher in the laboratory of Dr. Janet King. My primary responsibility for this position currently is to finish writing up all of the findings of the research I completed with Drs. Janet King and Ellen Fung. My research has focused on nutrition during pregnancy, looking at both macro- and micronutrient metabolism.

At UCSF Benioff Children's Hospital, Oakland (UCSF BCHO), I am a part-time Pediatric Registered Dietitian where I work with two patient populations: 1) young athletes and 2) blood and marrow transplant recipients. My position is housed in the Clinical Nutrition department, but I work alongside the Sports Medicine department to manage the Sports Nutrition program for young athletes and the Blood and Marrow Transplant (BMT) team to work with the patients who undergo transplantation as part of treatment for a variety of diseases.

Please provide a description of your background (e.g., academic, research, etc.). How did you get to where you are now?

I am originally from Northern California and have always been fascinated with how food fuels the body and influences health. Even from a young age I can remember paying attention to the meals we would eat as a family and if they contained all the "food groups." I actually used to come up with meal, activity, and chore plans for my brother and me on school vacations!

However, when I was thinking about college and a career, I did not know what a Registered Dietitian (RD) was and actually set down the path of attending medical school to become a physician. I knew I liked science and had always been interested in pediatrics, so I thought if I could become a doctor, then I would integrate more nutrition into my practice. So as a student at the University of California, Davis (UCD), I started out majoring in Human Development with a minor in Nutrition. It was not until the end of my first year that I learned that you could "practice" nutrition and that career was that of a RD. After learning about the RD career path, I switched and then pursued a Bachelor of Science in Clinical Nutrition and a minor in Human Development.

While at UCD, I was very fortunate to have had the opportunity to participate in a handful of research opportunities, which helped me realize how much I enjoyed research and how important conducting research is for the field of nutrition. The experience that stands out the most was working with Dr. Katie Kavanaugh (University of Tennessee, Knoxville) when she was a graduate student in Dr. Kathryn Dewey's laboratory. Her project involved looking at feeding practices and intake in infants and growth patterns. It was a great learning ex-

perience and something that really resonated with me as something I wanted to continue to be a part of in graduate school and maybe as part of my career. When finalizing my list of possible dietetic internship and graduate programs, I focused on those that were combined and where I could continue to be exposed to and/or a part of research. When I was accepted to the Frances Stern Nutrition Center-Tufts University combined MS/RD program, I was more than excited for all the opportunities that would be available to me.

As a dietetic intern, I took full advantage of all the opportunities available at Tufts, especially the research-focused opportunities. I was fascinated by the research being conducted at the Human Nutrition Research Center on Aging (HNRC) and applied to work as a nutrition tech in the Metabolic Research Unit. I loved being a part of the feeding trials and seeing how all the meals and snacks I helped prepare were specific in helping to answer a research question or observe for particular clinical outcome. I was especially interested in the nutritional genomics studies being conducted in Dr. Jose Ordovas' laboratory. I was (and still am) such a nerd when it comes to nutrient-gene interaction research, especially epigenetics. While at Tufts, I became interested in how my continued interest in human development also could be connected with my new interest in nutrient-gene interactions. The combination of my curiosity and determination to learn more about nutrition and epigenetics and with encouragement from my advisor, Dr. Johanna Dwyer, led me to return to the UCD to complete my PhD in Nutritional Biology with an emphasis in Developmental Nutrition.

As an individual classically trained in clinical research methodology and patient care, I

(Continued on page 10)

returned to the basics and learned the science of reproduction and developmental processes for both mom and baby. Along with general textbook knowledge, I learned the laboratory and bench skills needed to perform research in this area of nutrition. I worked in the laboratory of Dr. Carl Keen and using the Fetal Origins of Atherosclerosis as a premise, I undertook the exploration on the effects of maternal consumption of high levels of certain flavonoids on reproductive, developmental, and cardiovascular outcomes in normal and atherosclerosis mutant mouse models.

Since completing my doctoral work, I have continued my research training, working as a Postdoctoral Scholar in the laboratory of Dr. Janet King at CHORI. At CHORI I have had the opportunity to work alongside Dr. King and Dr. Ellen Fung. My work as a Postdoctoral Scholar has embodied the concept of Developmental Origins of Health and Disease; however where my dissertation work was very molecular in nature, working only with animal models, my research now incorporates both clinical and molecular work, utilizing a human model.

While securing my position as a postdoc, I also wanted to keep up on my clinical skills (it had been five years since my internship!) and secured a position as a Pediatric Registered Dietitian at UCSF BCHO. Originally I was hired to work with the Hematology, Oncology, and Transplant teams. Approximately one year after starting this position, the Sports Medicine department approached me to create a nutrition component for their program. And thus, my Sports Nutrition program was created! After returning from maternity leave, I decreased my appointment at UCSF BCHO so now I still work with the Sports Medicine department, but I am only working with the BMT team.

Also while completing my postdoc (and working part-time), a Lecturer position opened up at the University of California, Berkeley. I was hesitant to apply at first (my plate was a little full!), but I knew how much I enjoyed teaching as a graduate student and how I wanted to keep those skills fresh, especially if teaching was something I wanted to incorporate into my career long term. So I applied and was hired part-time to teach two courses as well as advise undergraduate students.

And here I am today Researching a little, teaching a little, and working with patients a little!

Please summarize your current research.

My general research interests focus on the underlying mechanisms that constitute the relationship between nutrition with health and/or disease outcomes. I am particularly interested in the roles of the maternal environment and nutrition in early life development and to what extent nutrition influences short and long-term health outcomes of the developing fetus.

In my tenure as a Postdoc (current research), I have completed two projects investigating specific maternal factors that influence fetal growth and birth outcomes. In the first study, we looked at the influence of pre-pregnancy obesity, gestational weight gain, and the postprandial metabolic and satiety response of different sources of dietary fat. This work was recently published! In the second study, we investigated racial differences in calcium absorption during late gestation. This work has been presented at the Experimental Biology conference. This project is currently being written up for publication.

How did you become involved/interested in your current line of research?

This may have been somewhat addressed above (question #2), but honestly it has been a collection of events and starting with my general interest in nutrition and development. And then throughout my education and training as a dietitian and researcher and my current positions, there have been experiences and people who have helped me continue to grow and learn about this area of research and thus, refine my interests and develop more specific research questions.

What advice would you give to a young researcher for developing a successful line of research?

This is actually kind of a difficult question for me since I still consider myself a “young” or early career scientist!

I would encourage early career researchers to remain curious, ask questions, and pursue research endeavors that are of interest. I also would highlight the importance of learning and practicing technical skills [i.e., grant writing, securing funding, executing the research (recruitment, wet and dry lab work), data collection and analysis, and publications]. However, I also would emphasize how important mastering and continuing to build upon the more “soft”

skills are in establishing a successful line of research. Examples of these skills include being an effective communicator (in a variety of contexts), creating a network, establishing a mentoring network for personal development, being a mentor to others, working with and leading or managing others, etc. Many of the above suggestions actually come from what I have learned from other professionals more advanced in their scientific careers.

In my role as an Executive Board Member of Early Career Interest Group of the American Society of Nutrition, this was an area that as a group we were always trying to target and provide resources to our members. One way we accomplished this was to lead a symposium that included a panel of speakers of scientists who were more advanced in their careers. We then published a review of these symposiums to share with our members. I actually continue to reference these articles and implement many of the suggestions of those speakers. Learning from others, especially those who may share an area of interest similar to your research, has been particularly helpful in my own career.

What are your career goals?

I have always enjoyed variety in my career (hence the multiple positions!) and therefore see myself being in a position that continues to be involved in research endeavors, but also incorporates an element of teaching, clinical work, and community outreach. An ultimate goal would be in a position where I am able to integrate and emphasize the important medical, public health, and policy implications of ongoing nutrition research and then translate these findings into evidence-based practice guidelines.

How has your affiliation with the Academy impacted your career progression?

The Academy has provided information and resources that have helped me in every stage of my career. As an undergraduate student, I often referenced eatright.org for educational materials to supplement my learning and to help me prepare and ultimately apply for a dietetic internship program. As an intern and graduate student I was able to become more involved in state associations (primarily Massachusetts) and various DPGs (Research and SCAN). As a student leader, it was great networking and working with dietitians in positions that I

(Continued on page 11)

could learn from and practice my leadership skills with. Even now as an early career professional, I continue to learn from and network with other RDs in my state association (California) and the DPG (Research) I am a part of! As a practicing RD, I often reference the Pediatric Nutrition Care Manual and the Evidence Analysis Library (EAL) for reviewing practice guidelines and gaining a better grasp on the research that supports or does not support current nutrition treatment modalities in specified populations. I also require my students to become familiar with and utilize the EAL in the MNT course I teach. The students are always amazed at how helpful a resource the EAL is! The Academy has always served as a wealth of information and a place where I have been able to connect with and establish relationships with other nutrition professionals that have supported me throughout my education and career path thus far.

If someone were to ask you to explain why research is important to the field of dietetics, what would you say?

I came across an article not too long ago on an education site that provided a great outline of why research (in general) is important. I adapted this outline to reflect why research is important when talking about the importance of research in the field of nutrition and dietetics to others.

Why is research important in our field?

- Nutrition and dietetics research is a tool for building knowledge and facilitating learning for students, professionals, and the public.
- Research in nutrition and dietetics helps to build an understanding of various food- and nutrition-related issues and thus increase the public's awareness of these issues.

- Nutrition- and dietetics-related research helps to build a successful "business" by providing information to create and/or modify evidence-based practice guidelines and to train credible, competent practitioners in the field.
- Especially in our field, research can help to prove mistruths and misunderstandings of food- and nutrition-related topics and provide evidence to support the actual truths.
- Research supports life-long learning as it enhances reading, writing, listening, critical thinking, and speaking skills, which are important for everyone at any stage of their career.

Overall, research in nutrition and dietetics helps contribute to developing knowledge in the field, informing practice guidelines, and educating and training RDs.



RDPG Student Spotlight:

Heather Reymunde Wittmer
Marywood University

Please list your research interests.

Pediatric Nutrition - General, chronic conditions, food allergies, and sports nutrition

Maternal Nutrition - Pregnancy and lactation

Please describe your path (i.e., education, work experience, etc.) that led you to pursue a degree in nutrition and/or nutrition research.

Although nutrition wasn't my first passion in a science field, I developed an intense interest during my twin pregnancy and while raising my sons. My professional evolution from engineer to dietitian has been driven by my innate curiosity and continues to drive my study in the field.

I graduated in 2006 from Pennsylvania State University with my Bachelor of Science in Civil Engineering, as a member of Chi Epsilon Honors Engineering Fraternity, with a focus in hydraulics and applied hydrology. Following graduation, I worked in the field of civil engineering in Phoenix, Arizona for four years. I spent my first 2.5 years in the area of land development and drainage analysis and the remainder in planning and designing water and wastewater systems.

I loved my profession in engineering, but I felt pulled in the direction of nutrition, preventive medicine, and nutrition therapy. I began my formal study of nutrition at Marywood University in the fall of 2016 and very quickly felt at home. As a seasoned student but new to the field of dietetics, I concurrently fulfilled the DPD requirements while completing my master's degree and balancing life. Having little experience in the area of research but always up for a challenge, I chose to complete a master's thesis titled: "The Relationship between Weight and Performance in Elementary Age Wrestlers" and during this time joined the Academy's Research DPG.

I graduated in January 2019 from Marywood University with a Master of Science in Nutrition and I applied to the spring 2019 dietetic internship match. Post-graduation, I joined Marywood University's Nutrition, Athletic Training and Exercise Science Department faculty as an adjunct professor teaching Graduate Research Methodology; I also am continuing my position as the Nutrition Lab Assistant for various courses in the nutrition curriculum.

What is the focus of your graduate work? Please describe one or two highlights of your research career thus far.

My graduate work was robust and covered many areas of nutrition. My thesis, more specifically, focused on the topics of pediatrics and sports nutrition. The experience of completing a thesis at the graduate level has given me the opportunity to present my research at FNCE® 2018 and apply for other calls for abstracts and awards through the Research DPG.

For personal reasons, I also have had many questions on the role of nutrition and its impact on cancer prevention and treatment. My research experience qualified me for acceptance at the John Milner Cancer Research Practicum sponsored by the National Cancer Institute and the National Institutes of Health in March 2019.

What are your plans for the future (e.g., academia, government, and/or industry)?

My short-term goals following the dietetic internship include working as a pediatric RDN while also teaching and conducting research. My long-term goals include eventually establishing a private practice where I plan to collaborate with pediatricians while still actively participating in research opportunities.

Do you have any advice or words of wisdom to share with students interested in the nutrition field?

No matter your age or past career, the field of dietetics is always in need of qualified practitioners. If you have the desire to go that route, pursue it, and don't take shortcuts. The path to becoming a qualified nutrition professional is lengthy and requires knowledge and practical experience to legally practice as a nutrition expert, but it opens you up to vast opportunities within the field of nutrition and beyond.

List any published work, if applicable.

Reymunde, H., O'Hora, E., Reggie, S., Della-Valle, D. Relationship between Weight and Performance in Elementary Age Wrestlers. *J Acad Nutr Diet.* 2018; 118(9): A74.

Student Article:

SNAP Challenge: Challenges faced by prospective dietitians on a limited food budget

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The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

ABSTRACT

Objective: To evaluate the dietary intake of undergraduate nutrition students and their professor who participated in the SNAP Challenge.

Methods: Eleven individuals with a nutrition background participated in the seven day challenge. Participants received a \$25 gift card from a grocery store to purchase their food. Paired t-tests assessed differences between daily target averages and daily consumption averages generated by the USDA SuperTracker.

Results: Participants exceeded levels of vitamin B12 and protein and consumed fewer than the recommended empty calories. However, participants fell short of recommended daily target averages for eight of the 17 items measured, in addition to total calories.

Conclusions: Nutrition knowledge assisted participants in making healthy food choices; yet, they were unable to meet all the dietary recommendations for particular minerals, vitamins, and all food groups using the limited budget.

Keywords: Farm Bill, Food Insecurity, Food Stamps, Nutrition, Poverty, SNAP-ED

Individuals who experience food insecurity have difficulty obtaining an adequate amount of food because of a lack of resources such as money, transportation, or availability.¹ In 2017, it was reported that about 11.8% of households in the United States were food insecure. However, a greater prevalence

rate of 15.7% has been found among households with children.¹ In addition, some food insecure individuals live in food deserts where they have very limited or no access to nutritious and affordable foods.

The Supplemental Nutrition Assistance Program (SNAP) is an entitlement program administered by the Food and Nutrition Service under the United States Department of Agriculture (USDA).¹ SNAP is the largest food support program in the country which serves to provide financial assistance to low-income individuals as a way to lessen food insecurity and improve nutrition among this population. SNAP, formerly known as the Food Stamp Program, was established in 2008 by the Food and Nutrition Act. Approximately 44.2 million people, or one in seven Americans, currently participate in SNAP.^{1,2} In order to qualify for SNAP, households must meet gross income, net income, asset, and employment requirements. Specifically, households must have a monthly gross income (before taxes) that is less than 130% of the federal poverty guidelines as well as a net monthly income that is below the poverty line. In addition, able-bodied households and households with individuals under the age of 60 must have less than \$2,000 in assets. Last, able-bodied adults between 18-50 years of age and without dependents must fulfill employment requirements.

On average, a SNAP recipient receives \$128.21 in benefits per month which is equivalent to about \$1.40 per person per meal.² Congress recently passed the 2019 Farm Bill. Originally, the House's version of the Farm Bill had planned to reduce SNAP benefits by more than twenty billion dollars over the next ten years.³ The proposed

bill specifically aimed to toughen SNAP requirements by obliging work requirements of parents with children aged 6 to 12 and preventing families whose gross income is only slightly above the poverty line from qualifying for benefits.³ These cuts would increase hardships for families who rely on food assistance programs. The Senate Farm Bill took a different approach from the House bill and did not propose cuts. Instead, the Senate bill acknowledged the value that SNAP provides to families living in poverty by proposing to minimize paperwork for households with elderly or disabled people.⁴

Proposed cuts to the Farm Bill raise concerns because research has found that SNAP recipients consume foods of lower dietary quality compared to non-participants.⁵ The lower quality of SNAP recipients' diets is related to purchasing less expensive foods as a consequence of having limited funds.⁶ Higher consumption of processed meats, sugary beverages, sweets, and potatoes with lower consumption of nutrient-dense foods such as fruits, vegetables, whole grains, and lean meats have been observed among SNAP recipients.⁵ Greater consumption of low-nutrient, calorie-dense food increases individual risk for developing elevated low-density lipoprotein cholesterol, triglycerides, and fasting glucose which are risk factors for obesity and cardiovascular disease.⁵ Elevated cardiovascular risk indicators place individuals at risk for developing metabolic syndrome.⁵ In addition, the financial stress associated with being at risk for food insecurity may impose psychological distress on parents, further increasing the risk for metabolic syndrome.⁷ Parental

(Continued on page 14)

stress may consequently lead to poor family interactions, causing the children under their care to experience negative health effects.⁸⁻¹¹ Food insecurity and the issues that stem from it place children and adolescents at risk for experiencing academic and behavioral problems.¹²⁻¹⁵ Thus, cuts to SNAP and previous cuts to the SNAP Education program, which informs individuals how to make healthy meals on a limited budget,¹⁶ could place families' nutrition, physical and mental health, and development at increased risk.

An emerging body of literature suggests that U.S. college students are at an increased risk for experiencing food insecurity due to various financial circumstances.^{17,18} Research also suggests that food insecure college students may have lower overall self-rated health and academic performance compared to food secure college students.^{18,19} The question remains whether an academic background in nutrition can buffer college students from experiencing the negative dietary consequences of living on a limited budget. The SNAP Challenge was an exercise in food shopping by each study participant to eat all meals from a limited food budget, i.e. \$25.00 for one week, which is comparable to a SNAP budget. The overarching goal of the SNAP Challenge was to increase awareness of the decisions, emotions, and well-being of low-income individuals. The purpose of this study was to evaluate the average daily dietary intake of a class of undergraduate students and their professor from a large southern university who participated in the SNAP Challenge. All participants in the challenge had a background in nutrition or were currently majoring/minoring in nutrition. The hypothesis was that a class of students and their professor could meet average daily dietary recommendations based on their nutrition knowledge despite the limited budget. The study has implications for health behavior and policies designed to address the health of low-income families.

METHODS

A total of ten undergraduate students enrolled in a nutrition policy course and their professor participated in the SNAP Challenge for seven days during the spring 2014 semester. Prior to the start of the SNAP Challenge, the Institutional Review Board approved the study. Each participant received a \$25 grocery gift card from a local grocery store a week before the challenge. All students were required to purchase their

food for the week using only the gift card. Participants pre-planned their spending and meals for the week before shopping. During the grocery-shopping phase, a Registered Dietitian was available to assist all students with selecting low-cost healthier food options.

Participants used the USDA SuperTracker website to generate the data for the study.²⁰ The USDA SuperTracker was a nutrition assessment tool that was available online from 2011 to 2018. Each participant entered demographic (age in years; sex), level of physical activity (less than 30 minutes, 30-60 minutes, or more than 60 minutes of daily moderate activity), and anthropometric (height in feet and inches; weight in pounds) information into the SuperTracker. Food consumed throughout the week was categorized under breakfast, lunch, dinner, and snacks and recorded in the SuperTracker. At the end of the week, each participant downloaded a 1) food groups and calories report and a 2) nutrients report generated by the SuperTracker. The SuperTracker provided the daily target and daily consumption averages for each participant (see Table 2 for specific details).

A third-party member assigned each participant an identification number. The third-party member compiled the individual data from each participant onto one Excel spreadsheet. Averages for each of the items in the five groups noted above were calculated. A paired sample t-test was used to assess differences between daily target averages and daily consumption averages.

RESULTS

A total of nine females and two males participated in this study (Table 1). On average, participants were 25 years of age (SD = 8.41) [Range: 20 – 46] and diverse (i.e. five Hispanic, three White, two Asian, and one Black).

On average, the study participants exceeded their vitamin B12 intake and consumed fewer empty calories (Table 2). Yet, participants consumed less than the daily target averages for calcium, potassium, vitamin D, grains, vegetables, fruits, dairy, and oils. Participants also consumed fewer total calories. Females were significantly low in iron and vitamin C; however, they exceeded their required protein intake.

DISCUSSION

Despite nutrition knowledge, SNAP Challenge participants were not able to meet all the dietary recommendations for particu-

lar minerals, vitamins, and all food groups especially dairy, fruits, and vegetables. The low intake of fruits and vegetables is similar to a typical college student's diet.^{19,21,22} If study participants were to maintain a SNAP Challenge diet, they would be at increased risk for osteopenia, osteoporosis, or bone fractures (calcium and vitamin D deficiency), muscle weakness (potassium deficiency), anemia (iron deficiency), and fatigue and connective tissue defects (e.g., gingivitis, impaired wound healing related to vitamin C deficiency).²³⁻²⁶ Such dietary patterns are of utmost concern during the college years where these patterns may continue into middle and late adulthood, ultimately leading to diet-related chronic diseases.²² Increased consumption of grains, vegetables, fruits, and dairy could assist with preventing the mineral and vitamin deficiencies observed.

SNAP Challenge participants were likely unable to meet mineral, vitamin, and food group recommendations due to their low average total caloric intake (1286 kcal), which was only 58% of the target value (2200 kcal). As a consequence of eating on a limited budget, SNAP Challenge participants may have reduced their daily caloric intake in an effort to sustain enough food to last through the entire week. This situation mirrors the consumption behaviors of SNAP recipients towards the end of the month as their SNAP allotment diminishes.²⁷ Although low-income SNAP recipients may consume fewer calories than recommended, research has shown that a big portion of these calories come from energy-dense foods which contain solid fats and added sugars which are typically less expensive and more readily available compared to nutritionally dense foods.⁵ Similarly, college students' diets are shown to commonly be high in saturated

Table 1. Demographics of SNAP Challenge Participants (N = 11)

	Mean (SD) [Range] or Percentage
Age	25.00 (8.41) [20-46]
Gender (Female)	82%
Race	
White	27%
Hispanic	45%
Black	9%
Asian	18%

(Continued on page 15)

Table 2. Daily Dietary Recommended Target and Consumption Averages

	Daily Target Average Mean (SD)	Daily Consumption Average Mean (SD)
Dietary Recommendations for Females and Males (N = 11)		
Minerals		
Calcium (mg)	1000 (0.00)	582.09 (243.34)***
Potassium (mg)	4700 (0.00)	2191.55 (659.17)***
Sodium (mg)	< 2300 (0.00)	2067.55 (659.03)
Vitamins		
B6 (mg)	1.3 (0.00)	1.55 (0.42)
B12 (µg)	2.4 (0.00)	3.33 (1.30)*
D (µg)	15 (0.00)	4.09 (1.92)***
Folate (µg)	400 (0.00)	442.91 (179.96)
Limits		
Total Calories (kcal)	2200 (322.49)	1286.36 (305.09)***
Empty Calories from Total Calories (kcal)	282.73 (73.24)	169.27 (50.23)***
Saturated Fat from Total Calories (%)	< 10 (0.00)	9.18 (5.58)
Cholesterol (mg)	< 300 (0.00)	350.09 (140.84)
Food Groups		
Grains (oz)	7.00 (1.26)	5.27 (2.33)*
Vegetables (cups)	2.86 (0.45)	1.86 (1.34)*
Fruits (cups)	2.00 (0.22)	0.88 (0.56)***
Dairy (cups)	3.00 (0.00)	0.93 (0.66)***
Oils (tsp)	6.45 (1.29)	2.09 (1.51)***
Dietary Recommendations Specific to Females (n = 9)		
Iron (mg)	18.00 (0.00)	11.33 (4.24)**
Vitamin C (mg)	75.00 (0.00)	37.89 (24.52)**
Fiber (g)	25.00 (0.00)	22.22 (6.30)
Protein (g)	46.00 (0.00)	60.67 (8.31)***
Dietary Recommendations Specific to Males (n = 2) ^a		
Iron (mg)	8.00 (0.00)	14.5 (3.54)
Vitamin C (mg)	90.00 (0.00)	131.5 (127.99)
Fiber (g)	38.00 (0.00)	30.5 (13.44)
Protein (g)	56.00 (0.00)	84.5 (10.61)

^aDue to the small sample size mean differences were not calculated.

***p < .001; **p < .01; *p < .05

fat and carbonated sodas.^{21,22} Contrary to SNAP recipients and college students, the SNAP Challenge participants did not exceed in empty calories or saturated fat and did not consume carbonated beverages (data not shown); this may have been due to the participants' nutrition background and strong efforts to eat healthfully on a limited budget.

SNAP Challenge participants exceeded the average daily recommended intake for vitamin B12 and protein, met the average daily recommended intake for vitamins B6 and folate, and did not exceed the average recommended amount of sodium. The large intake of vitamin B12 is likely directly related to the high protein intake. The low intake of sodium was likely related to participants

consuming home cooked dried beans rather than canned beans (data not shown). The use of dried beans could be related to nutrition-related knowledge of low-sodium choices, as well as cultural preferences since the demographic of study participants was noted to be close to 50% Hispanic.²⁸ This is in contrast to prior research suggesting there is a high level of sodium intake among SNAP recipients⁵ and college students.²²

Advantages that the SNAP Challenge participants had over some SNAP recipients and college students were access to a car and a grocery store chain that carried a wide assortment of healthful foods. In light of the increased risk of food insecurity among U.S. college students,^{17,18} greater access and availability of healthful foods are needed.

The use of on-campus food pantries, "meal swipes" (i.e. donated meal passes at dining halls), and food scholarships are current innovative approaches that are being used to make food available to college students.²⁹⁻³¹ Future research is necessary to evaluate the efficacy of these implementation programs on reducing food insecurity among college students.

In summary, the limited budget associated with the SNAP Challenge may have prevented students from meeting all minerals, vitamins, and food groups. However their nutrition knowledge appeared to assist them in making healthy food choices, which resulted in lower consumption of empty calories and sodium intake and higher consumption of vitamin B12 and protein. Limitations of the study were the small sample size and a lack of a control group (i.e. dietary data from individuals with similar characteristics not on a limited budget). Further, study participants had seemingly greater nutrition knowledge than the average SNAP recipient or average college student. This was demonstrated as the participants benefited from their course content knowledge and assistance from a Registered Dietitian who was available to assist the students in selecting lower cost foods that were also nutrient dense. While this option is available to all customers at the grocery store where the students shopped, this service is not highly utilized. Thus, pre- and post-test information on participants' nutrition knowledge could provide a greater understanding of how nutrition knowledge could potentially impact food selection. The findings of the current study suggest that nutrition education is a key influence in making healthy food choices on a limited budget. This echoes previous research where a general nutrition course was found to be effective in increasing fruit and vegetable consumption and decreasing consumption of French fries among college students.¹ Future research on program development may consider training college students to become community nutrition educators as part of the university core curriculum. Such training may be a way to impart nutrition knowledge to college students. Further, the authors envision college students trained as community nutrition educators could provide important health knowledge through food demonstrations, recipe sharing, and distribution of nutrition educational pamphlets to low-income individuals who ac-

(Continued on page 16)

cess the food pantries at community centers. It would be imperative to assess the relationship of food insecurity and nutrition knowledge before and after program implementation. Although SNAP recipients fall short on consumption of various minerals, vitamins, and food groups, based on the current findings, nutrition education may assist consumers make healthier food choices on a limited food budget.

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HUMAN SUBJECTS APPROVAL STATEMENT

This study was approved by the University of Houston's Institutional Review Board [14224-01 – (4206)].

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House of Delegates Update

David H. Holben, PhD, RDN, LD, FAND (Research DPG Delegate, HOD)

It is an honor to continue as the RDPG Delegate to The Academy of Nutrition and Dietetics House of Delegates (HOD). As HOD representative of the RDPG, it is my goal to effectively communicate with you, the members of the Research DPG, about HOD-related matters.

The Fall 2018 HOD meetings were held on October 18-20, 2018, at the Marriott Marquis, Chicago, Illinois, prior to the 2018 Food and Nutrition Conference and Expo™ (FNCE®). The purpose of this article is to provide a summary of the Fall 2018 meeting for the members of the Research DPG.

Marcy Kyle and the HOD Leadership Team led HOD members in the HOD Dialogue Session that centered on 'Leading Together for Good Governance.' As such, the structure, culture, and process of HOD were discussed. In a nutshell, the HOD structure, culture, and process is being examined, so that it can best help The Academy of Nutrition and Dietetics to fulfill its mission and realize its vision. The outputs of the meeting were turned over to the HOD Evolution Designers. This group will: 1) review workbooks that contain a summary of each discussion table from the fall HOD meeting, as well as related pre-fall HOD meeting discussions; 2) review the HOD Culture Survey results, in collaboration with the HOD Culture Team; and 3) develop potential models that include must-have features of the HOD dialogue for further vetting by the HOD. This is an exciting time for our profession!

Several updates were also delivered during the HOD meeting. Updates were provided by Academy President, Mary Russell, Academy Foundation Chair, Marty Yadrack, Academy Treasurer, Manju Karkare, the Academy Nominating Committee, and the Academy Political Action Committee (ANDPAC).

The Spring 2019 Virtual HOD meeting was held March 30-31, 2019 and was led in the same manner as in the fall, with similar updates. The focus of HOD was *Food Systems and Sustainability: Shaping Dietary Guidance*. The goal of the dialogue was to inform current efforts as well as to potentially identify new areas to explore. The relevance of sustainability to consumer food choices and the role of nutrition and dietetics practitioners in guiding these choices through evidence-based practice and communications was explored through the areas of education, training, practice, and research.

In addition to the above, the HOD Culture Team provided recommendations for HOD structure. A follow-up HOD meeting was scheduled for May 6, 2019. Feedback from RDPG members prior to the May 6 meeting was solicited. It is vital that each member's voice is heard.

Again, it is an honor to serve as your delegate to the HOD. Should you have questions, comments, or input, please feel free to contact me using the contact information provided in this newsletter.



Letter from the Editor

Tricia Psota, PhD, RDN

Hello RDPG members!

I hope all of you are enjoying the summer and finding a way to stay cool. During the summer our schedules often change and may allow for more time to be spent on side projects. I know many colleagues use this time to catch up on writing. Does this sound familiar? Do you have any research findings you'd like to share with our DPG? Or maybe you have attended an interesting workshop and would like to share what you learned? If so, please get in touch! I would love to hear your ideas for articles for *The Digest*.

I am currently seeking research articles from dietitians and dietetic students/interns. As a reminder, RDPG members who submit an article that is accepted, receive a \$200 stipend. Students who submit articles learn about the publication process in a supportive environment. If you or any RDPG member(s) you know do not have research findings to publish but would like to write an article or series of articles on a particular topic (e.g., research methodology, utilizing NHANES, or conducting a systematic review), please let me know!

If you have any questions, comments, and/or referrals for authors or article topics, please submit them to tricia@triciapsota.com.

Thank you!

Tricia Psota, PhD, RDN

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