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We need data! The importance of collecting more and better data to achieve a diverse, inclusive profession

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Funding Disclosure: There is no funding or support to disclose.

Conflicts of Interest: None.

The Academy of Nutrition and Dietetics (the Academy) revised its definition on diversity and inclusion in 2019 in an effort to revamp its work toward achieving a diverse and inclusive profession.¹ The revised definition states "the Academy encourages diversity and inclusion by striving to recognize, respect and include differences in ability, age, creed, culture, ethnicity, gender, gender identity, political affiliation, race, religion, sexual orientation, size, and socioeconomic characteristics in the nutrition and dietetics profession." The murder of George Floyd, an unarmed Black man, by Minneapolis police in May 2020, led to a reckoning among many white Americans about racial and social injustice. Likewise, during this time, the Academy has

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made some efforts to promote enhanced diversity and inclusion in the profession. The Academy's Diversity and Inclusion Committee as well as the Diversity and Inclusion Strategic Planning Task Force began working together in late June 2020 to develop an action plan with goals to gather more information about attitudes, barriers, and opportunities for change.⁴ An update issued by the Diversity and Inclusion Committee in December 2020 provided the transcripts from listening sessions held by a third party research firm, updating members and updated members about actions being taken to improve outreach to recruit individuals from underrepresented communities (e.g., providing mini-grants).⁵ However, the plans to analyze, summarize, or take actions based on participants' feedback are unclear. Moreover, increasing the number of outreach events or resources for grant writing are small scale efforts that will likely do little to address systemic barriers to diversity or foster an inclusive profession.

A diverse profession is one in which the members represent the range of human characteristics, and an inclusive profession is one in which power is shared among individuals across that range.⁶ Achieving professional diversity and inclusion must begin with the recruitment and retention of a diverse student body and extend throughout a career progression. The importance of professional diversity and inclusion cannot be overstated; a more diverse workforce will be better equipped to serve the diverse patient population by providing more culturally humble care.⁷ This point was recently emphasized by former Academy President Judith Rodriguez and colleagues who highlighted the moral imperative (via the professional Code of Ethics)

to diversify the professional workforce in order to better address racial inequities related to power and privilege and to serve the principles of social responsibility and justice.⁸ Inclusion cannot exist without diversity, and in order to feel included, individuals must feel that their identity is recognized. The current data collected by the Academy, the Commission on Dietetic Registration (CDR), and the Accreditation Council on Education in Nutrition and Dietetics (ACEND) reflect dated demographic categories and demonstrate poor diversity⁹⁻¹¹; for example, race and gender are captured in narrow categories, and no information on disability status is ascertained.

The aim of this article is to a) analyze the importance of diversity and inclusion in the nutrition profession, b) identify how data are collected in three demographic areas (race and ethnicity, gender and sexual orientation, ability status), and c) explore better practices in collecting these data. It is imperative to measure a more comprehensive set of identities in order to better explore the impacts of bias and intersectionality on food and nutrition professionals.

Systemic oppression, identity, and the nutrition profession

Policies and practices that intentionally marginalized and disadvantaged individuals based on demography has led to systemic oppression.¹² Those oppressed tend to be victims of bias (racism, sexism, homophobia, ableism), and they remain oppressed today. Health professions, including nutrition, are not immune to these injustices. Historically, nutrition is a gendered profession in which women originally comprised the entirety of the profession. In fact, the first dietitian training programs recruited women to serve in World War I; they were eventually termed the "Women's Medical Specialist Corps" and did not accept men until 1947.^{13,14} During this time, dietitians were professionalizing their work for the first time, and white, protestant, middle class dietitians attempted to distinguish themselves from Black and immigrant women who were typically food workers and cooks (which were considered demeaning professions).¹⁵ By asserting that they were scientific cooks (not merely home cooks or chefs) with an expertise in diet as it related to health, the first dietitians attempted to distance themselves from subordinate Black, Indigenous, and people of color (BIPOC) and immigrants while aligning themselves with male physicians toward the top of the medical hierarchy. At the same time, persons with non-conforming gender identities or who were not

^a Throughout this article, Black and the names of marginalized racial and ethnic groups are capitalized but white is not in order to elevate the shared identity that the term Black encapsulates and to be sure to de-align white from white supremacists, who capitalize white as an assertion of racial superiority.^{2,3}

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heterosexual were considered to have a mental illness, and persons with physical disabilities were socially marginalized.¹⁵

The racist, homophobic, and classist foundation of the profession was interwoven in the early years of the profession. Women credited with founding dietetics, including Leanna Cooper, were affiliated with the Battle Creek Sanitarium which was associated with Seventh-day Adventism and based on the principles of Sylvester Graham.¹⁵ Graham asserted that dietary stimulation contributed to debility, which sheds light on the degree to which those with disabilities were marginalized and subjugated at the time. Moreover, the Battle Creek Sanitarium's director was John Kellogg who founded the Race Betterment Foundation which promoted eugenics as a way to promote a middle class, able-bodied white race, and white dietitians during World War I were known for aligning themselves with eugenics (i.e., "race betterment" work).¹⁵

Cooper and others at the time established cooking schools as a way to "civilize" Indigenous peoples and promote Protestant ideology (including gender norms).¹⁵ White women were the gatekeepers of the dietetics profession which is reflected in a history of segregated internships across the country (e.g., North and South) coupled with tracking Black women into food service positions (rather than clinical or community nutrition) served to maintain power dynamics.¹⁶ While the Academy, ACEND, and CDR have taken steps to achieve greater diversity, the impact of these injustices remains evident in that nutrition is still not a profession known to the Black community.¹⁶ Black RDNs, including the first Black President of the Academy, Dr. Evelyn Crayton, report experiencing bias and racism (e.g., microaggressions) while receiving dietetics education and training.¹⁷

While racial inequities may be the most documented in nutrition, broad scale discrimination and bias against other groups in society are well documented, resulting in the Civil Rights Act of 1964, the Americans With Disabilities Act (1990), and others.¹⁸

It is possible to re-orient systems to be more equitable through intentional action. One of the first steps required to do so is to assess the current educational and professional landscape by answering critical questions about who is currently participating in a given system



and who is excluded. In order to answer these questions, detailed data about the demography of marginalized groups is necessary. Collecting more detailed data using pre-existing measures is a very low-cost endeavor, making better data collection an easily attainable goal. CDR and ACEND already collect limited demographic data about credentialed professionals and students in accredited programs, respectively. With some changes, particularly to race and ethnic identity, gender identity and sexual orientation, and ability status, it would be relatively easy for nutrition and dietetics to better understand the professional demography.

Racial and ethnic identity

Presently, the race and ethnicity of dietetics professionals and students is captured using two questions generated and commonly used by the United States' Office of Management and Budget (OMB) and other government agencies.¹⁹ One question gathers information about Hispanic ethnicity and the second question about race. These questions were first generated in 1977 and updated in 1997 by OMB.²⁰ Some federal agencies, like the Census Bureau, recommended revising these questions to better capture the true identities of US adults, but the recommendations have not been adopted.²¹ The current questions have been criticized for several reasons including that many people, particularly those who are Hispanic/Latinx, do not consider race and ethnicity as separate identities,¹⁹ and persons who identify as Middle Eastern and North African (MENA) are not adequately represented by the current categories.²² Compellingly, 14.3% of RDNs do not report or prefer not to disclose their race.⁹ This proportion may be so large because some may feel that their racial/ethnic identity is a disadvantage.

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One interesting aspect of the current racial/ethnic categories is that Asian identity has been disaggregated more than other races and ethnicities; Asian Americans may either identify as ‘Asian’ or as ‘Native Hawaiian or Pacific Islander’. Disaggregating racial/ethnic data for Asian Americans has been especially important to capture the variability in other important demographics between sub-groups.²³ For instance, during 2013-2015 median household income for Asian Indians was over \$100k; for Koreans it was around \$50k; and for ‘Other Micronesians’ it was only \$30k. It is likely that differences would be observed between other racial/ethnic sub-groups as well.

In health research specifically, there is a call for even greater disaggregation in order to more effectively address health disparities and equity.²⁴ As such, greater disaggregation of health professionals’ racial/ethnic data is critical in order to develop culturally humble nutrition education. A culturally competent profession is an inclusive one,²⁵ making the racial/ethnic composition of food and nutrition professionals important. While a disaggregated, validated survey item to measure race/ethnicity does not currently exist, evidence of best practices for collecting better race/ethnicity data indicates a need to include community voices in the item development process.²⁴ Some nutrition researchers have already begun to do this. For instance, a recent article aimed to capture a racially/ethnically diverse sample of dietetics students utilized a one-item question with 11 answer options: African/African American, Afro-Caribbean or Afro-Latinx, Central/South American Latinx, North American/Caribbean Latinx, Native American/Alaska Native, Middle Eastern, Indian/other nation in Indian subcontinent, Pacific Islander/South Asian, East Asian, White, and two or more races/ethnicities.²⁶ Since this question was not validated, however, its validity should be explored prior to broader adoption.

Gender identity and sexual orientation

Since its inception in 1917, the nutrition profession and the Academy have been comprised almost exclusively of cis-gender, heterosexual, white females. The gender data indicate an overwhelmingly ‘female’ identity among members (about 85.4%),⁹ yet nearly 11% are unreported/prefer not to disclose. These data may indicate that these members, similar to those who do not report their racial/ethnicity, may identify as transgender, gender queer, agender or intersex, descriptors that are not available to choose from when completing the survey. In the year 2020, ACEND added the option of “Other/non-binary” for program directors when reporting the gender of 2019-2020 program graduates and current students. It remains to be seen whether this option will be collected as part of Academy and CDR data collection.

Although sexual orientation is not included in any data collected by the Academy, ACEND or CDR, collecting this information is an important step for any organization interested in addressing disparities and seeking to reflect the communities it serves.²⁷ A 2017 Gallup poll estimated 4.1% of the American population identify as Lesbian, Gay, or Bisexual (LGB).²⁸ More recent statistics (2019) from the Williams Institute at the UCLA School of Law suggest that approximately 4.5% of people in the US identify as LGBT (Lesbian, Gay, Bisexual, Transgender).²⁹ These numbers suggest that those who identify as Lesbian, Gay, Bisexual, Transgender, Queer, Asexual, Intersex, and all others whose gender/sexuality is non-conforming (LGBTQAI+) have a significant membership in our society, and as such, collecting these data is needed to ensure the Academy, ACEND, and CDR are inclusive in their practices.

A lack of options outside of the binary (male, female) when asked to indicate gender in the context of professional membership and/or programs impacts the profession of dietetics in myriad ways. For example, it demonstrates a lack of awareness of the current state of understanding regarding gender: that gender is not binary.³⁰ Not having one’s gender identity correctly reflected within the demographic data collected for the profession serves to “erase” that individual from counting themselves as a part of the group. Also, in order to create and sustain a profession that is truly diverse and inclusive, it is imperative to evaluate the current state of gender diversity in order to accurately assess if diversity has been achieved. Without data on members’ gender identity, it is impossible to assess whether or not programs designed

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to improve diversity are having a positive impact. This argument can also be made for collecting data on sexual orientation.

Some professional groups across the US have begun collecting data on gender identity and sexual orientation. In 2017, The American Medical Association House of Delegates adopted a measure to revise its data collection on physician members and medical students to expand demographic data to include sexual orientation and gender identity.³¹ This group chose to use information provided by The Williams Institute (UCLA Law) as their model.³² Current recommendations call for a two-step approach to the collection of gender identity data. For sexual identity data, the recommendation is for a subset of questions to be added to self-administered portions of the survey with an eye toward ensuring respondents privacy and anonymity are maintained. Information regarding how to word such survey questions can be found in the UCLA School of Law/Williams Institute “Best Practices for Asking Questions to Identify Transgender and Other Gender Minority Respondents on Population-Based Surveys.”³²

Ability status

Ability is the element of identity that is perhaps the most fluid. Circumstances, often unforeseen, can move an individual across ability categories at any time. The most common reason for new-onset disability is aging, yet many fear disclosing their disability out of fear of stigma. National data indicate that 11% of undergraduate students³³ and 25% of U.S. adults ages 18-64 years report having a disability.³⁴ While the Academy’s revised diversity definition includes persons with differences in ability as important to diversity and inclusion, neither the Academy, ACEND, nor CDR collect information on the degree and type of disabilities among nutrition professionals. A caveat is that for the first time in 2019, the Academy’s Compensation and Benefits Survey included disability questions, but this information was collected only as a reason for non-employment in the field and not as an estimate of disability prevalence among credentialed practitioners. Disability/health problems were listed by 3% of respondents, indicating they were not employed or self-employed in a nutrition/dietetics-related position.¹⁰

The omission of data collection on disability status hinders the inclusion of people with disabilities for the same reasons described above; it erases this critical aspect of identity. Perhaps more importantly, asking about disability demonstrates a professional culture that shows people with disabilities that they are welcome – a critical first step toward inclusion. When students, interns, and credentialed practitioners learn and work alongside peers with disabilities, stereotypes can be broken. Moreover, it has been posited that increasing the number of physicians with disabilities benefits patients with disabilities,³⁵ and the same can be postulated for increasing the number of nutrition professionals with disabilities.

The meaning of “disability” shifts with context. For the purposes of diversity and inclusion within the nutrition professions, data collection should focus on domains of functioning (i.e., sensory (vision and hearing), physical (limits on basic physical activities such as walking, climbing stairs, reaching, lifting or carrying), and mental (difficulty in learning, remembering or concentrating), rather than on medical model of diagnosed specific conditions or impairments.³⁶

Conclusion and Recommendations

The lack of exhaustive and comprehensive demographic categories in the Academy, ACEND, and CDR’s data collection presents an opportunity for the nutrition profession to be leaders in creating a more equitable profession. Counting the number of students, dietetic interns and credentialed practitioners with different identities is the first step in addressing systemic inequality and would ultimately result in a greater likelihood of resources to support the success of a diverse group of nutrition professionals. It would also establish baseline metrics that can be used later to assess the impact of programs and initiatives aimed to increase diversity. If revised and new demographic questions are to be used, they must also be piloted and reviewed by diverse members of stakeholder groups.

Addressing the power disparities that exist with a critical lens to examine how those disparities continue to be perpetuated by the systems in place is imperative. An evidence-based approach, which is the foundation of the nutrition profession, can be easily applied to collect better data about *who* the current system excludes. Next, it will be imperative to address *how* and *why*.

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Trivia Questions

1. **True or False:** The Pfizer-BioNTech COVID-19 Vaccine is approved by the FDA.
2. **Multiple Choice:** The 2020-2025 Dietary Guidelines for Americans were released in December 2020. Based on the choices below, what was unique to these guidelines versus prior versions of the Dietary Guidelines for Americans?
 - a. It is the first time dietary guidance was offered based on “life stages” including pregnancy and lactation since people at different ages should be consuming different diets.
 - b. Food coupons were offered
 - c. The 2020-2025 Dietary Guidelines for Americans are only available to RDs/RDNs for download
3. **Multiple Choice:** In 2007, the USDA’s Center for Nutrition Policy and Promotion (CNPP) created a panel of experts to conduct systematic reviews of individual studies on diet and health known as the Nutrition Evidence Library (NEL). In 2019, the name changed to:
 - a. The Nutrition Evidence Platform (NEP)
 - b. The Nutrition Evidence Systemic Review (NESR)
 - c. The Food and Diet Consortium (FDC)
4. **True or False:** Data from Real World Evidence surpasses the value and evidence of data from randomized clinical trials.
5. **Multiple Choice:** Which famous African-American agricultural scientist developed the crop rotation method based on nitrogen soil levels?
 - a. Frederick McKinley Jones
 - b. George P. Seeds
 - c. George Washington Carver

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A Letter from the RDPG Chair

Nancy Emenaker, PhD, RDN, LD, FAND

Message from the RDPG Chair

It is hard to believe it is already summer 2021! So much of 2020 was marred by COVID-induced hardships posing professional and personal challenges and hardships in our daily lives. Many wonder when our lives might return to some resemblance of pre-COVID normality! While those experiencing personal loss of friends or family members may face a different reality.... Our sincere heartfelt best wishes are with you and yours.

This past year, we witnessed our Research DPG listserv transition to the Academy's new Higher Logic platform updating our DPG member communications abilities! Over the next months, our Research DPG website transitions to Higher Logic, fully modernizing our Research DPG communications! This opens new growth and development opportunities allowing the Research DPG to host webinars and virtual working meetings through this single member only entry site. We look forward to good things in 2021 and beyond!

I also want to express my heartfelt thanks to each Research DPG member this year. Your support and friendship were always felt and appreciated. In June we transitioned to the new Research DPG leadership team and we trust each will continue to extend a helping hand in the coming months. It has been my sincere privilege to serve as your 2020-2021 Chair. You have shared your enthusiasm for improving the health of all those we serve – helping make my year as Chair a particularly rewarding experience.

Continue to grow professionally and personally, pushing beyond your individual comfort zone and daring to dream big. Dream big not only as researchers but for what we could be as the dietitians and Research DPG members. Then work to make it happen!

Our field moves forward because of the scientific advances each member contributes. Remembering to expand your horizons, gain diverse perspectives, and cultivate greater understanding and appreciation of others. It is our differing experiences that connect us as humans and as researchers – moving us from the ordinary towards the extraordinary. It is our individual differences that makes us unique! Hone your passion for nutrition and dietetics research not just within yourself but take others along for the research adventure of a lifetime by mentoring!

Finally, continue to look for ways to make an impact in your respective fields through your communities, workplaces, our Research DPG and the Academy. As always, your research colleagues are here to help and support you. Together we can accomplish cutting edge advances in nutrition and dietetics making our communities healthier and safer places for everyone.

Best wishes for a productive 2021!

Nancy

Nancy Emenaker, PhD, M.Ed., RDN, LD, FAND

2020-2021 Chair

Lessons learned from a pilot trial aiming to determine the effect of processed food consumption in Diet-Induced Thermogenesis

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Conflicts of interest: None.



Abstract

Aim: To determine and compare the diet-induced thermogenesis (DIT) response of isocaloric meals of equivalent whole and processed ingredients. **Methods:** Healthy, college-age males ($n = 12$) participated in a randomized, controlled crossover study, each participating in one whole food (WF) and one processed food (PF) trial. Baseline resting metabolic rate (RMR) was assessed via indirect calorimetry before either meal (WF/PF variants of rice, eggs, green beans, and palm oil). Hourly measurements followed for six hours or until return to baseline RMR. Differences in DIT response were tested with a paired t-test. Repeated measures analysis of variance used two meals and six time frames as within subject factors. The within subject factor design tested for within food, within time, and food by time effects. **Results:** Numerous circumstances (such as participants falling asleep or power outages) resulted in the exclusion of all but five participants from final analysis. Baseline RMR readings were similar between groups (1653.8 ± 425.1 kcal/day PF vs 1682.8 ± 504.3 kcal/day WF; $p=0.621$), as were average daily energy intakes

based on diet logs (2583.3 ± 829.0 kcal PF vs 2309.0 ± 1080.5 kcal WF; $p=0.397$). No significant differences were determined between meals. **Conclusion:** Results of this study did not confirm higher DIT response in WF meals. More stringent protocols (such as assuring wakefulness of the participants) for data collection and analysis and ultra-processed food meals that are equivalent offerings and isocaloric to WF meals are recommended.

Keywords: diet-induced thermogenesis, metabolic response, processed foods, whole foods, indirect calorimetry

Introduction

It is increasingly apparent in the battle against rising obesity rates that efforts to reverse this trend must include numerous and multifaceted strategies in order to have synergistic, impactful outcomes. Various factors influence the prevalence of obesity including lifestyle choices, genetics, environmental influences, government policies, and access to healthcare.¹⁻³ A primary cause is thought to be an imbalance of energy where greater caloric intakes exceed levels of physical activity.⁴ Increased caloric intake can be partially explained by the advent and proliferation of pre-prepared processed food (PF) offerings in global food systems in the last several decades,⁵⁻⁸ displacing the presence of whole foods (WFs) such as fresh fruits and vegetables, whole grains, and meats in the American diet.^{9,10} Investigations into the relationship of PF consumption and its potential association with net energy balance are warranted to evaluate the possible physiological consequences, e.g. contributions to the obesity epidemic.

Metabolic energy expenditure has three primary components.^{4,11} Basal metabolic rate (BMR) is the minimal rate of energy expenditure in resting endotherms; this is closely related to and often mistakenly used interchangeably with resting metabolic rate (RMR) which, while still a measure of resting metabolic activity, tacitly implies some level of energy expenditure above that of BMR.

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Lessons learned from a pilot trial aiming to determine the effect of processed food consumption in Diet-Induced Thermogenesis

Activity thermogenesis (AT) is the energy expended to produce physical activity whether by exercise or activities of daily living. Diet-induced thermogenesis (DIT) refers to the increase in metabolic rate required to digest food and assimilate nutrients. The makeup of an individual's metabolic profile will vary depending on typical levels of physical activity, genetic factors, eating frequency and volume, and even macronutrient composition of meals.⁴ A more complex meal should produce a higher DIT response and thus lower net energy assimilation.¹² PFs typically provide an abundance of simple carbohydrates and less structural and nutritional complexity related to the removal of fiber, the loss of micronutrients, and the mechanical and chemical breakdown of PF ingredients.¹³ It is therefore desirable to compare DIT responses of meals that are isocaloric but different in levels of ingredient processing. This pilot study sought to compare the DIT response from PF and WF meals in healthy male college students.

Methods

Participants. Thirteen males were enrolled in this randomized, crossover, clinical trial. Inclusion criteria were: 18-29-year-old males; a body mass index (BMI) between 18.5-29.9 kg/m²; infrequent use of tobacco or marijuana; and no history of metabolic abnormalities (**Table 1a**). Participants with egg allergies, claustrophobia, or other serious health conditions were excluded from participation. Females were excluded to avoid variability that might stem from menstrual cycles or birth control medications. Central Washington University's (CWU) Human Subjects Review Committee approved the study prior to subject recruitment or any data collection. All participants provided written informed consent prior to the start of the study.

Meals. Participants completed resting energy expenditure (REE) measurements on two separate occasions where they ingested one of two types of randomly assigned isocaloric meals with a high degree of similarity in terms of macronutrient composition. WF meals included brown rice, fresh scrambled eggs, fresh steamed green beans, and unrefined palm oil for cooking the eggs. Participants were fasted for at least 12 hours and arrived at the laboratory between 7:00 – 8:00 AM. The laboratory room temperature was maintained at 72 °F. PF meals included white rice, powdered eggs (rehydrated), drained canned green beans, and palm oil shortening. A standard meal serving of approximately



600 kcal was served to each subject. Meal properties were WF meal: 495 g total mass, 606 kcal, 27.2 g fat, 66.3 g carbohydrate, 22.0 g protein, 8.3 g fiber; PF meal: 535 g total mass, 604 kcal, 27.0 g fat, 69.4 g carbohydrate, 21.2 g protein, 5.5 g fiber. Participants were requested to consume the entire meal within the allotted 30 minutes. Calorie values were determined by assessing data on ingredient packages, manufacturers' websites, and databases.

Experimental Protocol. Each subject participated in two trials within one week of each other, following the same procedures at each visit. All participants completed three-day diet records prior to each trial. Participants were instructed to restrict protein intake to a maintenance level of 0.8 g/kg of body weight during the three days. Additionally, participants were asked to gradually restrict exercise to a minimum (no strenuous/sustained physical activity), abstain from alcohol, tobacco, or marijuana, and consume no more than 300 mg of caffeine the day prior to the trial. This prevented any extended effects on metabolic rate that may stem from intensive exercise, excessive protein consumption, or substance consumption.¹⁴ All participants fasted for 12 hours prior to each trial.

Participants rested for 20-30 minutes before having baseline RMR measured. All segments of the trial involving participants were scheduled in 30-minute periods to allow two participants per day to be rotated on one metabolic measurement cart (Parvo Medics, TrueOne 2400, Sandy, UT). Participants alternated periods of rest, eating, and metabolic measurement at the laboratory. After the baseline RMR was obtained, participants were provided one type of meal (WF or PF) to consume in a 30 minute period before the first DIT measurement. The order of assigned meals was randomized. Measurements were repeated hourly, and the start of each measurement began one hour after the beginning of the prior measurement. A total of seven measurements (one base-

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line and six DIT measurements) were taken for each trial unless participants were determined to have returned to baseline RMR early (defined as two consecutive measurements at or below baseline). All participants reported to the laboratory between 7:00 and 9:30 am. Between measurements, participants remained in the laboratory and were permitted to engage in restful, non-stimulatory activities, including resting, reading, homework, sleeping, or Internet browsing. Participants were permitted to consume water as desired, but no additional food or drink beyond the meal was allowed.

Metabolic Measurements. All measurements of energy expenditure were taken with a Parvo Medics TrueOne 2400 with a canopy hood attachment and ParvoMedics RMR software following standardized procedures.¹⁴ Participants laid supine on a padded table and were provided a head pillow before the gas collection hood was placed over their heads and torsos. Participants were instructed to breathe normally and to avoid deep breaths, sighs, yawning, fidgeting, or falling asleep. Canopy hood measurements lasted approximately 20 minutes. The first five minutes of each measurement were discarded, and the average readings of the five-minute interval with the lowest coefficient of variance (CV) were recorded per standardized protocol.¹⁴

Dietary Data. Three day diet logs were obtained and reviewed with each subject for accuracy before being analyzed with nutrition analysis software (ESHA Research, Food Processor Nutrition Analysis 11.1) to assess average energy, macronutrient, fiber, and caffeine intake. Additionally, the entirety of each three-day log and the single day before each trial were separately analyzed for each subject in order to evaluate excessive protein or caffeine consumption that may have affected DIT results.

Data Analysis. Sample size was determined using G*Power statistical analysis software (Heinrich Heine University of Düsseldorf, Germany, 2016). An effect size of 0.98 for the sample size estimation was derived from reported DIT coefficients of Barr & Wright.¹² The desired power was set to 0.8 which resulted in a minimum sample size of 11 participants. Descriptive statistics of demographic, life-style, and body composition characteristics were calculated for the study population.

The DIT response curve was calculated individually by subtracting the baseline metabolic rate from subsequently measured hourly values. Therefore, the BMR value is represented as zero in the DIT response curve graph. A 6th order polynomial curve fit was used to determine the area under the individual DIT response curves which represents total DIT energy expenditure (kcal/day) over six hours.

Shapiro-Wilk test for normality revealed normal distribution of the data. A paired t-test was used to test for differences between the DIT energy expenditure for WF and PF. Repeated measures analysis of variance used the two food conditions and six time frames as within subject factors. The within subject factor design tested for within food, within time, and food by time effects. Significance level of $p = 0.05$ was Bonferroni adjusted for post hoc tests.

Results

In total, 12 participants were recruited and initiated the study, and five participants completed all aspects of the study design. Data from seven participants were excluded from the analysis due to 1) one participant becoming ill, 2) a power outage impacting data for 2 participants, 3) 4 participants sleeping during the testing procedure. This resulted in artificially low measurements, premature termination of one or both trials, or trials that were highly (and perhaps artificially) uncharacteristic of a DIT response curve which represents the changes in metabolic rate relative to RMR over time (**Figure 1**). This resulted in a total of five participants included in the final analysis. Participants were healthy adult, predominantly non-Hispanic white males (average age: 22.2 ± 1.9 years) with an average BMI of 22.9 ± 4.1 kg/m², and primarily non-users of tobacco, alcohol, and marijuana.

Baseline RMR readings were similar between the two conditions (1653.8 ± 425.1 kcal/day PF vs 1682.8 ± 504.3 kcal/day WF; $p = 0.621$) as were average daily energy intakes based on pre-test dietary records (2583.3 ± 829.0

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kcal PF vs 2309.0 ± 1080.5 kcal WF; $p = 0.397$). While average fat intake was similar between groups, the PF group had a moderately higher intake of carbohydrates and slightly, but not significantly, higher intake of protein, caffeine, and alcohol (no significant differences were noted; **Table 1b**).

No significant differences appeared between the DIT responses for WF (889.4 ± 348.4 kcal) and PF meals (1209.0 ± 596.0 kcal); $t = -0.954$, $p = 0.394$. A paired samples analysis of WF and PF data also revealed no significant differences between meal types at each timepoint of measurement (data not shown).

Discussion

No difference in DIT response to consumption of an isocaloric meal comprised of either WF or PF was observed. To the best of our knowledge, only one other study has examined these associations.¹² In that study the researchers identified a 9.7% higher thermodynamic efficiency in PF meals when compared to WF meals in contrast to our results, indicating that WF meals required more energy to digest. The meals used by Barr and Wright were cheese sandwiches and had some discrepancies in macronutrient proportions (20.7% fat, 19.2% carbohydrate, 33.3% protein, 100% fiber) compared to the current study's provided meal. In the current study, special effort was taken to design meals that would be as similar as possible on an ingredient-by-ingredient basis; thus, eggs, rice, green beans, and palm oil were selected to make the meals, and each ingredient could be procured in either a raw/unrefined form or a form that had undergone some degree of processing prior to purchase. While using this approach made macronutrient differences almost negligible, the result may have made the two meals too similar in composition resulting in a lack of statistically significant DIT response difference.

Strengths of this study included the use of hood canopy indirect calorimetry and direct observation of participants between metabolic measurements, but limitations were encountered, too. The meal design may have been an inappropriate model to test and extrapolate to the general population. We suggest that a meal of eggs, cooked rice, and green beans is unlikely to be viewed as a PF meal; "processed food" tends to imply packaged and convenience foods, often made of low cost, typically high carbohydrate and low fiber ingredients, and fre-



quently utilizing additives and preservatives. In academic settings these types of foods have been referred to as "ultra-processed foods" (UPFs).^{3,5,10,12} UPFs are potentially more indicative of what consumers of PF meals encounter. Taking such care to ensure equivalency on an ingredient-by-ingredient basis does not account for the vast differences that consumers face when choosing between WFs and PFs. Rather than a high degree of ingredient and macronutrient similarity, we suggest that the consumer's acceptance of a WF meal and its PF counterpart as equivalent offerings may be more useful in studying the relationship between food processing and DIT. This would support the use of cheese sandwiches or a similar type of simple meal from the previous study.¹²

The pre-study instructions emphasized the importance of maintaining a restful, non-stimulating environment and an alert subject with a steady breathing pattern. Despite this, most participants became sleepy during multiple measurements, and subsequently, the frequent sleep-inducing effect of the equipment was not fully recognized until several trials had been completed. Consequently, more rigorous attention was dedicated to ensuring participants stayed awake. Despite these efforts, several participants still reported experiencing micro-sleep during which point metabolic data dropped markedly.

A major and recognized limitation of this study is the small sample size. While 12 participants were recruited, only five were included in final analysis due to reasons outlined above.

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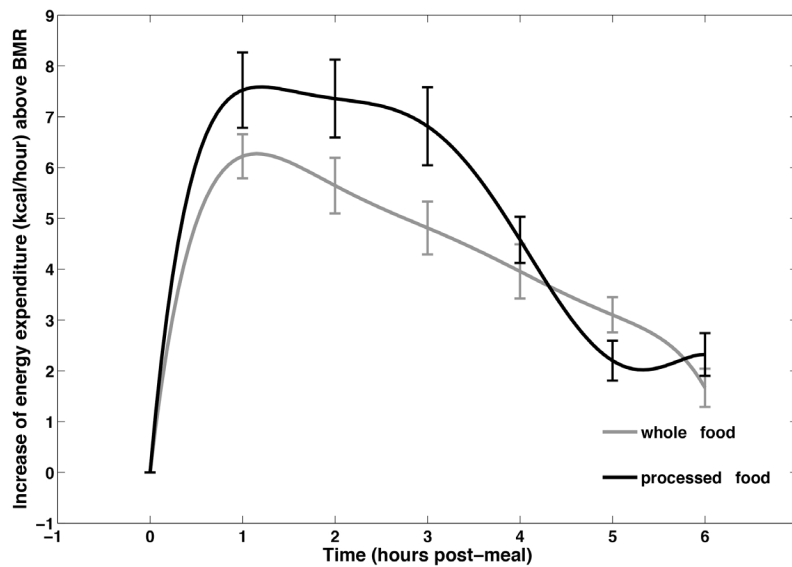
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Conclusions and Implications for Future Studies

This study suggests no significant differences were observed in the DIT response following consumption of either a WF or PF meal. It is important to hold the limitations of this study in consideration while assessing the results, as protocol design, meal selection, and unforeseen circumstances all impacted the data collection and final analysis. These findings are relevant only within the outlined parameters of this study;

further research is required to expand on the work done by Barr and Wright. Future investigations may benefit from a more rigorous study design and should examine ultra-processed food meals that are equivalent offerings and isocaloric to WF meals but are not as closely matched ingredient-by-ingredient, such as the cheese sandwiches.¹² Participants' willingness to accept WF and PF offerings as equivalent meals in future research should be assessed.

Figure 1. Average increase in metabolic rate (\pm SE) above basal metabolic rate (diet induced thermogenic response) for six h after whole and processed food meal trials for five healthy male participants in a crossover design.



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Table 1. a) Baseline characteristics of participants (n=5) **b)** average 3-day dietary intakes for participants (n=5).

Characteristic	Result
	mean ± standard deviation
Age (y)	22.2±1.9
Body mass index	22.9±4.1
Duration of physical activity (min/wk)	527.0±267.0
Duration of sleep (hr/day)	7.6±1.1
	n (%)
Ethnicity	
White	4 (80)
Hispanic	1 (20)
Marital Status	
Married	2 (40)
Single	3 (60)
Student Status	
Current Students	4 (80)
Non-Student	1 (20)
Education Attained	
Some College	2 (40)
Bachelor's Degree	2 (40)
Graduate Degree	1 (20)
Tobacco	
Non-users	4 (80)
Hx past use	1 (20)
Caffeine	
Non-users	2 (40)
Users; < 300 mg/day	3 (60)
Alcohol	
Non-users	4 (80)
Users; < 1 drink/day	1 (20)
Marijuana	
Non-users	4 (80)
Users; < weekly	1 (20)
Regular OTC Use	
Non-users	4 (80)
Benadryll	1 (20)
Shift Work	
Shift workers	1 (20)
Non-shift workers	4 (80)

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Dietary intake*	Meal Type	
	Whole Food	Processed Food
	mean ± standard deviation	
Energy (kcal)	2309.0±10.85	2583.3±829.0
Fat (g)	84.1±34.6	86.3±37.5
Fat (kcal)	756.8±311.4	649.5±371.6
Carbohydrate (g)	312.5±188.0	361.3±126.1
Carbohydrate (kcal)	1250.0±751.8	1445.3±504.5
Protein (g)	88.0±31.5	95.2±22.4
Protein (kcal)	352.2±125.9	381.0±126.1
Fiber (g)	28.0±27.6	25.6±8.0
Caffeine (g)	26.8±32.8	34.1±55.8
Alcohol (g)	0.0±0.0	5.7±12.7

*No significant differences in any category (p = 0.32 to 0.85).

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Disparities in Diabetes Self-Management Education and Support Utilization and a Need for a Tailored Stage of Behavior Change Strategy: A Literature Review

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Approximately 34.2 million US individuals (10.5% of the adult population) were diagnosed with diabetes in 2018.¹ Type 2 diabetes represents 90-95% of all diagnosed diabetes cases.¹ People with diabetes are at a greater risk for developing diabetes-related complications (e.g. retinopathy, nephropathy, neuropathy, and macrovascular complications).² Microvascular complications from diabetes are the primary cause of adult blindness, kidney failure and non-traumatic lower limb amputations in the US.¹ Macrovascular damage increases the risk of cardiovascular disease and is the main cause of death for individuals with type 1 or type 2 diabetes.³⁻⁵ Diabetes is also associated with significant health care expenditures. In 2017, the estimated US cost of diabetes was \$327 billion of which 73% represented direct medical costs.⁶ The rise in health care spending, lost productivity, premature mortality and diminished quality of life due to diabetes implies a significant strain on US individuals and the healthcare system.⁶

Diabetes management can reduce the risk of chronic complications and morbidity among individuals with diabetes.^{7,8} Self management is the primary goal in diabetes care because it is associated with positive outcomes such as an improvement in the quality of life and a decrease in glycated hemoglobin A1c (HbA1c), leading to cost reductions.^{6,9,10} The American Diabetes

Association Standards of Care in Diabetes-2021 emphasize “all people with diabetes should participate in diabetes self-management education and receive the support needed to facilitate the knowledge, decision making, and skills mastery necessary for diabetes self care.”¹¹ Diabetes self-management education and support (DSMES) has been demonstrated to be cost-effective and associated with favorable improvements in clinical outcomes, self-care behaviors and quality of life. However, there continues to be an increase in the economic burden of diabetes especially poorly controlled chronic disease.^{6,12} Effective strategies for diabetes self-management in the adults with type 2 diabetes are needed.

A systematic review revealed attrition, bias, dropouts, low participation and recruitment rates were common challenges among diabetes intervention programs.¹³ Of concern, poor adherence to self-management behavior, increased risk of chronic complications, and worsening blood glucose control occur in individuals who do not complete the DSMES program in its entirety.¹⁴

Personal barriers for individuals not participating in DSMES classes included lack of transportation, distance from class, family obligations, time constraints, work schedule and diabetes-related comorbidities as well as inability to afford co-pays or lack of health insurance coverage for diabetes education.¹⁵⁻¹⁸ In addition to the barriers relating to DSMES class attendance, understanding the factors that influence an individual’s decision to participate and continue in a DSMES program is important. A lack of perceived risk and seriousness of diabetes among individuals has affected participation rates in diabetes self-management.¹⁹ Forty-six percent of individuals who were aware of diabetes education did not attend DSMES because they believed they were “unlikely to develop diabetes complication.”¹⁹ Relationship with diabetes (i.e. poor understanding of the disease and comorbid depression as well as lack of symptoms) affected participation rates in DSMES classes.²⁰ Differences in the perceived risk and seriousness of the disease and its related complications, health beliefs and misperceptions

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of the disease are explanations for the disparities in the utilization of the DSMES program.

The Transtheoretical Model (TTM) has been applied in guiding effective DSMES delivery. TTM suggest that individuals move through five stages of change: 1) precontemplation (no intentions of making a behavior change within the next six months), 2) contemplation (aware of the need and intends to take action within the next six months), 3) preparation (intends to take action within the next 30 days and has taken some behavioral actions in that direction), 4) action (changed the overt behavior for less than six months), and 5) maintenance (changed the overt behavior for greater than six months).²¹ The stages of change rarely occur in a linear fashion, and they include 10 processes of change that are mediated between the stages.²¹

Not every patient is ready or even willing to take part in a self-management education program.²² Unfortunately, most behavior change intervention programs, including routine DSMES, were designed for individuals who are ready to take action; conversely, there as many as 80% of individuals in the pre-action stage.²³⁻²⁵ Therefore, the needs of 8 of 10 individuals are not being met in intervention programs.²³ TTM-based interventions can assess an individual's readiness to act on a new behavior and provide stage-specific strategies to direct behavioral changes.

As the number of newly diagnosed diabetes cases increases in the US, there is an opportunity and need to develop stage-specific tailored DSMES strategies to maximize the utilization and benefits of DSMES services.

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Correct Answers to Trivia questions

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1. True.

On August 23, 2021, the Food and Drug Administration granted full approval to Pfizer-BioNTech's two-dose vaccine for people ages 16 and up, making it the first Covid-19 vaccine to pass this final regulatory hurdle. The vaccine will now be marketed as Comirnaty <https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/comirnaty-and-pfizer-biontech-covid-19-vaccine>.

Link to answer: <https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/pfizer-biontech-covid-19-vaccine-frequently-asked-questions>

2.a.

Link to answer: <https://www.dietaryguidelines.gov/resources/2020-2025-dietary-guidelines-online-materials/top-10-things-you-need-know-about-dietary>

3. b.

Link to answer: <https://nesr.usda.gov/about>

4. False.

Both sources of data have limitations. One source suggests observational data can complement but not completely replace randomized clinical trials. Link to support answer: <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2752575>

5. c.

Link to answer: <https://www.farmproject.org/blog/2017/2/4/hikqys8igv0bo368aco3mrb1rv7d1>

Challenges and Ethical Considerations in Clinical Research

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The Academy of Nutrition and Dietetics' Scientific Integrity Principles Subcommittee under the Council on Research is dedicated to increasing awareness regarding conducting research and adhering to scientific integrity principles (SIP). This group also maintains SIP oversight over all Academy groups. The following interview is part of a Research Spotlight Series where different areas of research are highlighted. The purpose of these interviews is to discuss important questions and issues related to conducting research in a variety of settings. The first interview is a conversation with the Scientific Integrity Principles Subcommittee on conducting clinical research.

Obtaining approval for the institutional review board (IRB) is the first step prior to starting a clinical research study. What additional steps or additional approvals are needed before you can begin research in a clinical facility?

There is no single right answer to this question. Depending on the nature of the research protocol and the regulatory framework in the specific clinical facility, a researcher may have to obtain several additional

approvals before starting the research. Some of the previous mentioned auxiliary reviews may be part of the IRB review process or they may require additional application(s). I am going to discuss a few key points that should be applicable in most cases.

- If the specific research study is a clinical trial, you need to register your study on a clinical trial registry (such as the [clinicaltrials.gov](https://www.clinicaltrials.gov)) prior to starting recruitment.
- If the specific research study includes exposure to radiation, your protocol needs to be approved by the radiation safety committee of your institution.
- If you conduct research in a clinical research facility, your protocol may need to be approved from a safety and/or scientific review committee that oversees research activities in this facility.
- If the specific research study involves oral or intravenous administration of medications or other FDA regulated substances (for example stable isotope tracers), the research protocol needs to be approved by the investigational pharmacy of the clinical facility where you plan to conduct research.
- If the specific research study includes administration of novel agents, off-label use of medications or a use of a new device, additional approvals may be needed from the FDA.
- Over the last few years cyber security has evolved as a major issue in clinical research. Some institutions require review of all the data collection practices and devices (e.g., laptops, tablets, etc.) especially when the research protocol involves data storage in cloud services. The purpose of this review is to minimize the risk for loss of confidentiality.

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Challenges and Ethical Considerations in Clinical Research

- If a research project involves materials that are infectious (or potentially infectious) and storage of biohazardous materials, they will need to undergo review and will need to have all of their own certifications in place. Additionally, the research team will likely have to obtain approval from the Institutional Biosafety Committee which ensures the safety and health of the community.
- When research involves any laboratory testing or clinical laboratory sample retrieval, it may need to undergo review by a Pathology and Laboratory Clinical Research Oversight Committee.
- Prior to starting any research activities, all the research team members will have to obtain official training (minimally) in the basic principles of human research which is usually administered via the Collaborative Institutional Training Initiative (CITI Program).
- Finally, a conflict-of-interest committee may review the study for existing or perceived conflict of interest.

For more general information related to IRB, you can also read through the [Academy's IRB Fact Sheet](#).

What if one is planning on retrospectively collecting patient data from an electronic medical record (EMR) with no intention to follow-up with patients or contact them. Do they need to go through the IRB process?

Yes. Even retrospective studies have to undergo IRB review. If the study includes collection of only de-identified data or specimens, the protocol can be eligible for exempt status. If the proposed study includes retrospective review of data including identifiers or potential identifiers, there is a risk for loss of confidentiality. In this case, the research team needs to compile an IRB protocol that will describe how the researchers are going to handle the data and how they will minimize the risk for loss of confidentiality.

Based on previous clinical research you have conducted, what have you noticed are some challenges in working in an inpatient facility to collect research data? What are some tips to manage these challenges?

Challenge: Patients may be hesitant, feel unwell or be too busy with medical appointments to participate in research.

Tip:

Design a protocol aiming to minimize participant burden. Provide non-coercive incentives to the participants to enroll in the study.

Challenge: Navigating the regulatory framework can be a challenge especially for new investigators.

Tip:

- Consult with the IRB and Clinical Trial Office at your institution.
- Seek mentorship from a senior investigator and available educational opportunities in your institution.

Challenge: Verifying adherence to the research protocol especially when it involves a dietary and/or other lifestyle intervention.

Tip:

- Biomarkers can be used to verify adherence in some aspects of dietary intake. For example, concentration of ketones in the plasma can be used to monitor adherence in a research study that involves a ketogenic diet intervention.
- Wearable technologies such as activity monitors and continuous glucose monitors can be also used to verify adherence in physical activity, sleep, eating duration, etc. However, there might be security and privacy issues depending on the technology used.
- Performing a highly controlled feeding study in an inpatient facility, but this option is expensive and labor intensive.

Challenge: Influence of confounding factors (medications, medical procedures, etc.) to the study outcome.

Tip:

Depending on the budget and the main outcomes of the study, there are different strategies that can be implemented to minimize the influence of potential confounding factors. For example, strict enrollment criteria or assessment of the potential confounders followed by appropriate statistical adjustment. When feasible, it is highly recommended to work with a statistician starting from the study design phase of the study.

Challenge: Designing electronic or paper case report forms for data collection.

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Challenges and Ethical Considerations in Clinical Research

Tip:

Get familiar with the available research data capturing systems (e.g., RedCap or the [Academy of Nutrition and Dietetics Health Informatics Infrastructure](#)). These systems help collect data and also can produce various types of reports.

Working in clinical facilities can allow you to work with a variety of different populations, including what may be considered “vulnerable populations.” Although adults who are not cognitively impaired do not fall under the strict category of “vulnerable populations”, they can be under stress by being an inpatient or a resident in a long-term care or rehab facility. What are the ethical considerations for performing research with these patients? How do you mitigate or address these concerns?

This is a very good point. We often think about people with cognitive impairment as “vulnerable populations”, but the truth is there are many individuals with different characteristics and/or under certain circumstances can be considered vulnerable.

According to the current policies, vulnerable populations include children, prisoners, individuals with impaired decision-making capacity, pregnant people, and economically or educationally disadvantaged people who are likely vulnerable to coercion or undue influence.

For certain categories (such as children and individuals who are unable to grant consent), there are strict policies in place defining how potential candidates can be enrolled in research. Those are usually publicly available on the website of the local IRB. For example, a parent and child may need to provide a consent and/or assent (depending on the age of the child) for studies involving a pediatric population. Another example is that obtaining the consent of a legally authorized representative is necessary to enroll patients with impaired decision-making capacity in a clinical study.

When our target research population includes patients with a known diagnosis (inpatients or outpatients) or residents in a long-term care or rehab facility, the principal investigator needs to carefully design the study in such a way to avoid undue influence or potential

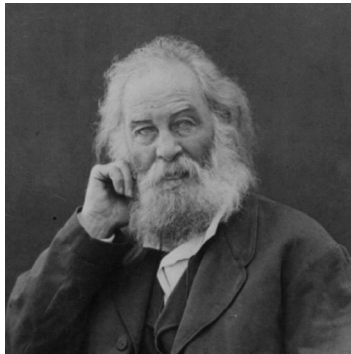
coercion. Some key points to keep in mind are the following:

- **Health literacy level of the potential participant.** Approximately a third of all adults in the United States have limited health literacy, and data support that education level is not always equal to health literacy level. Increased emotional stress increases time to comprehension. Additionally, cultural issues, language proficiency, setting, and communication style are additional factors that can affect understanding.
- **Clarifying the differences between clinical care and clinical research (to treat vs. to learn).** It is important to emphasize that the decision to participate or not in a research study will not affect their relationship with their health care team. In case of a randomized clinical trial, another potential key aspect is the randomization process. The research team should clarify to potential participants that may receive the “treatment” under investigation or be assigned to the placebo group.
- **Clarity and literacy level of consent, study related materials and level of communication.**
- **Ensuring comprehension using the “teach back” method.**
- **Ensuring consent during the participation and emphasizing the patient’s right to withdraw at any point in the study.** Participants should also know that their decision to participate or withdraw from the study will not affect their relationship with their healthcare provider.
- **Emphasizing that patients to take time to review the consent and discuss it with their family, domestic partner, etc.**
- **Ensuring equitable treatment of all participants.** Due to a number of reasons, certain segments of the population or minorities may be more apprehensive about participating in research. Equitable participation in research is very important for the generalizability of the results in the real world.

Pioneers in Professional Dietetics – Fifteenth in a Series: Walt Whitman’s Patient Care Notes

Submitted by Danielle M Torisky, PhD, RDN

Associate Professor, Dietetics Program, Health Professions Department, James Madison University, Harrisonburg, VA



Famous for his poetry, Walt Whitman’s writing skill served him well in recording his experience as a Civil War nurse. This article focuses on his Civil War diary (1), in which he meticulously recorded details of food and other patient care services he delivered

to individual wounded soldiers in hospitals in the Washington, DC area, for three years (December 1862 to December 1865) “both on the field and in the Hospitals in and around Washington City” (1, p 1). He kept notebooks and pencil with him and would often record on the spot what he was observing firsthand – or from “narratives” of those describing what they had witnessed in battle.

Whitman’s keen observation combined with his remarkable writing and sensitivity allowed him to capture the humanity in the moment of giving and receiving “gifts” of food, many of which were by special request and meant a great deal to the convalescing or dying recipient of his patient care. Whitman appeared to instinctively recognize food as an expression of care beyond its importance to physical health. At the same time, he appeared to be aware that some patients were “mark’d cases needing special and sympathetic nourishment” (1, p 38) and indicates his consultation with the doctor on duty before offering specific foods to such individuals. His services were not limited to nursing and nourishment but rather to the whole person; not surprisingly, for example, his writing talent was employed in writing letters home to families on behalf of sick and wounded soldiers unable to do so themselves. Elsewhere in his memoir, he also noted problems in design and delivery of services in a separate city receiving overwhelming numbers of sick and wounded from battles in nearby Manassas, Chancellorsville, Fredericksburg, and others (1, p 35, 48, 72). Excerpts follow:

- The Camp, Brigade, and Division Hospitals Whitman visited December 23-31, 1862 were tent hospitals with little insulation from the cold winter conditions

and where there were “thousands of cases” with daily mortality in the hundreds. “I go around from one case to another. I do not see that I do much good, but I cannot leave them” (1, p 2).

- In January, 1863, Whitman spent time in Armory Square Hospital, the temporary Patent Office hospital, and others, indicating that thanks to donations from others he was able to serve patients “as almoner of others home” [i.e., deliverer of alms] and “now able to do a little good” (1, p 3). For nine hours on a Sunday afternoon in Campbell Hospital, he first visited a young soldier “very sick with pleurisy and typhoid fever; young man, farmer’s son...downhearted and feeble; a long time before he would take any interest; wrote a letter home to his mother...at his request; gave him some fruit and one or two other gifts...”. After mailing the letter, Whitman continued through and “observ’d every case in the Ward, without, I think, missing one; gave perhaps from twenty to thirty persons, each one some little gift, such as oranges, apples, sweet crackers, figs, etc.” (1, p 7).
- Thursday Jan 21, 1863, Armory Square Hospital. Whitman “went pretty thoroughly through Wards F,G,H, and I; some fifty cases in each Ward...” and after distributing stationery items “distributed in small portions, to proper subjects, a large jar of first-rate preserv’d berries, which had been donated to me by a lady – her own cooking” (1, p 7). He continued to distribute “...as I thought judicious, tobacco, oranges, apples, &c” along with cash gifts to others. He explained, “The wounded men often come up broke, and it helps their spirits to have even the small sum I give them” (1, p 8).
- Wed Feb 4, 1863, Armory Square Hospital. A New York soldier “with a bad throat” received horehound candy (1, p 10).
- Late February, 1863, Campbell Hospital, Ward 6. A “very sick” Connecticut soldier in his twenties with “no appetite” was approached by Whitman as he “was anxious to do something” for him. With coaxing the patient “confess’d that he had a hankering for a good home-made rice pudding...at this time his stomach was very weak...(The doctor, whom I consulted, said

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nourishment would do him more good than anything; but things in the hospital, though better than usual, revolted him)” (1, p 13). Whitman was able to convey his request to a local “Mrs. O’C” who “made the pudding herself, and I took it up to him the next day. He subsequently told me he lived upon it for three or four days...” (1, p 13).

- June 18, 1863, Armory Square Hospital, Ward 1. A New Jersey soldier had developed pneumonia after serving as a nurse himself. Whitman described him as “an elderly, sallow-faced, rather gaunt, gray-hair’d man; a widower, with children” who “express’d a great desire for good, strong, green tea” (1, p 20). This was provided by “an excellent lady, Mrs. W” who sent the tea with a monetary contribution. “The doctor said give him the tea at pleasure; it lay on the table by his side, and he used it every day” (1, p 20). A patient identified as “Bed 3, Ward E, Armory, has a great hankering for pickles, something pungent. After consulting the doctor, I gave him a small bottle of horse-radish; also some apples; also a book...” (1, p 20).

These and other examples in the Memoranda indicate that Whitman went to great pains to find or match exactly the articles of foods appropriate to the patient to the best of his ability and availability. Over 150 years later, dietitians include patient food preferences and tolerances in determining a nutrition care plan. He also had a personal standard which will be familiar to health practitioners in 2020: Not only did Whitman express gratitude for his own good health, he also believed it important to prepare for his “daily or nightly tours... by fortifying myself with previous rest, the bath, clean clothes, a good meal, and as cheerful an appearance as possible” (1, p 21). In December of 1865, Whitman concluded with “Three Years Summ’d Up... I made over 600 visits or tours, and went, as I estimate, among from 80,000 to 100,000 of the wounded and sick, as sustainer of spirit and body in some degree, in time of need” (1, p 73).

Research note: Whitman’s documentation of patient cases in the Memoranda was so detailed that historians and curators at the National Museum of History of Medicine were able to identify specimens in the museum actually belonging to four soldiers he visited in the hospitals. According to Barbian et al., “Uniting these remains with Whitman’s words yields a new interpretation that

bears witness to individual histories during a time of unprecedented conflict in American history”. They further state, “These four soldiers, treated by [Dr.] Bliss and cared for by Whitman, are also young men suffering from wounds received in battle. Their individual stories would have been lost to us save for the words and images Whitman provides” (2).

Those dietitians wishing to delve further into Whitman’s Civil War service should consult the biography written by Morris (3). For more information about Civil War hospital sites in the Washington, DC area, including several mentioned by Whitman, an interactive map, along with descriptions of sites, is available through the National Library of Medicine (4). It may be helpful to read Whitman’s description of “The Hospitals” (1, p 32) to imagine the landscape in August of 1863 and compare with the present-day map.

Images:

- Walt Whitman https://commons.wikimedia.org/wiki/File:Walt_Whitman,_1819-1892_LCCN2002710167.jpg Title: Walt Whitman, 1819-1892 Abstract/medium: 1 photographic print. Date: 1871. In this photo Whitman is about 52, and 4 years before he published his Memoranda in 1875.
- “Armory Hospital, 2” – Library of Congress (free photos) <https://www.loc.gov/item/2019635199/> Detailed LOC description: “1 print: lithograph; sheet 8 x 14 cm. | Civil War envelope shows Armory Square Hospital, military hospital for the Union Army, Washington, D.C. Date: 1864.”

Reference

1. Whitman, W. *Memoranda During the War*. Originally published 1875 by the author. Bedford, MA: Applewood Books, 1993.
2. Barbian, L, Sledzik, PS, & Reznick, JS. “Remains of War: Walt Whitman, Civil War Soldiers, and the Legacy of Medical Collections.” *Museum History Journal* 2012 Jan; 5(1)7-28. <https://doi.org/10.1179/mhj.2012.5.1.7> Abstract only (Public access version of this work is available through NIH at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3381362/> . Last accessed and cited 8-1-2020.)
3. Morris, R Jr. *The Better Angel: Walt Whitman in the Civil War*. New York: Oxford University Press, 2001.
4. National Library of Medicine, History of Medicine. “VISIT: Historical Medical Sites near Washington, DC.” <https://www.nlm.nih.gov/hmd/historic-medical-sites/index.html> Last accessed 8-1-2020.

RDPG Budget for 2020-2021 Pao Ying Hsiao PhD, RDN, RDPG Treasurer



		Annual Budget (\$)	Year to Date as of March 31, 2021 (\$)
<i>Revenue</i>	Membership Dues	25,155	20,253
	Grants/Contracts	0	-9,250
	Advertising	500	0
	Revenue Total	25,655	11,003

<i>Expenses</i>	Lodging	1,390	0
	Subsistence	264	0
	Transportation	532	0
	Professional/Consulting	2,637	1,216
	Postage	125	14
	Office supplies	0	63
	Teleconferences	286	0
	Website Hosting	1,517	490
	Advertising/Promotion	150	0
	Depreciation	3,524	1,468
	Other Expense	10,900	0
	Member Dues & Seminar Fees	226	4,960
	Credit Card Processing Fees	392	377
	Donations/contributions	100	100
	Outside Services	0	1,267
	Donations to AND Foundation	650	400
	Honorariums & Awards	10,870	3,450
	Food Service	8,150	63
	Printing & Copying Services	600	0
	Expenses Total	42,313	13,868
OPERATING EXCESS – DEFICIT		-16,658	-2,865

Reserve as of June 10, 2021	\$85,288
Reserve Percentage (reserve divided by expense budget)	\$85,288 / \$42,313 = 202%



Policy - Member Story Spotlight

Christina Badaracco, MPH, RDN
Research Scientist, Avalere Health

1. Please provide a brief description of your current position.

I work for healthcare consulting firm called Avalere Health. My title “Research Scientist” encompasses a large portion of my work, while the rest involves project management, business development, and communications. My primary project is called the [Malnutrition Quality Improvement Initiative \(MQii\)](#), which has been operating for nearly 8 years. I actually met the project team at FNCE a few years ago; though I didn’t intend for a casual conversation to lead to a job opportunity, I was offered a position several months later. I manage a learning collaborative of nearly 300 hospitals and clinics across the country that are seeking to improve the quality of care they deliver to patients who are malnourished or at risk of malnutrition; I also contribute to multi-site research and strategic planning for the initiative. Additionally, I support other client projects that draw upon my knowledge of research, scientific writing, and social determinants of health. I lead internal educational opportunities such as nutrition lunch and learns, journal club, and wellness events. Finally, I am involved in a working group focused on expanding our work related to preventive services and public health, and I eagerly seek opportunities to integrate nutrition into more of our client projects.

Outside of my full-time job, I write articles about nutrition and sustainable agriculture for various outlets, develop [cookbooks for the Transamerica Center for Health Studies](#), tutor (particularly in nutrition), and teach culinary medicine to medical students at Georgetown as well as patients through a local Med-Star Health clinic.

2. How long have you been a member of the Research DPG? What made you decide to join?

I newly joined the Research DPG in 2020. I have always been interested in nutrition research—in fields ranging from food science to epidemiology—and was eager to learn more about the latest efforts in our field and to interact and learn from more

experienced leaders. I hope to learn more about professional opportunities both through job announcements and from meeting people who work in various settings as I continue to be a member. I look forward to opportunities to contribute my own expertise in research across the diverse fields of quality improvement, culinary medicine, and sustainable agriculture. Though opportunities to meet in person have been hampered due to COVID-19, I have been able to participate in several webinars, and I look forward to joining any events the group hosts during FNCE this year. Finally, I have recently been so pleased to see that my former teacher from UC Berkeley, Mary Lesser, has been elected the next DPG chair.

3. How has policy and research shaped your career?

Food and nutrition policy has played a prominent role throughout my career. I worked at the Environmental Protection Agency (EPA) after college and intended to pursue a career in environmental policy. As my interest in continuing my career in that area waned, however, I decided to pursue a career in public health and nutrition. Instead of regulating the negative environmental impacts of agriculture, I desire to help improve the food system through education and empowerment of consumers. The generation of evidence about nutrition science and dietary behavior is important to inform policies that support Americans in improving their health through nutritious food. I conducted my first public health internship in the Oakland Unified School District where I learned about and helped to contribute to the many barriers impeding food quality and good health among its children. My second summer, I worked in a completely different setting and completed an internship in clinical research at the NIH Clinical Center, focused on a study about food preparation behaviors among ethnic groups; this experience further motivated me to pursue research in my career. I conducted qualitative research during the elective rotation of my dietetic internship and

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have subsequently conducted primary and secondary research for multiple independent consulting jobs. I conducted extensive research related to agricultural policy to inform [the book about the farm bill](#) that I co-wrote in 2019; I greatly appreciated that opportunity to share the important information I learned and concluded about needed change in our food system and to hone my skills related to science and policy communications. It is critical for all scientists—including dietitians—working in research to seek ways to communicate clearly and effectively to ensure their findings can improve health directly through consumer behavior as well as through improving policies affecting nutrition spanning from the federal level to individual municipalities.

4. Which of the following programs has impacted your education or career the most (see examples below)? Why?

- Child Nutrition Programs - WIC, School Breakfast and Lunch Program, Summer food programs
- Farm and Agriculture Programs - Farmer's Market Nutrition Program, AFRI grants
- CDC Grants, Programs, and Research - SPAN, HOP, REACH grant programs; Diabetes Prevention Program
- Older Americans Act Nutrition Programs - Home-delivered nutrition services

My work experience has focused on multiple categories of government nutrition programs. Currently, programs through the Older Americans Act are related to my work on malnutrition because they are important for augmenting food resources for recipients particularly those who are malnourished and/or food insecure. Related to those are programs affecting the quality of care and supplemental benefits received by patients in traditional Medicare and Medicare Advantage, respectively, which affect access to medical nutrition therapy as well as food.

My book about the farm bill and subsequent education to audiences spanning from congressional staffers to university students focused on farm and agriculture programs funded through the farm bill. This includes thought leadership about how SNAP (which comprises the majority of the farm bill's funding) can [promote better health](#) and how our system of crop insurance and subsidies should be revised to support a more resilient, fair, and safe food system.

Finally, two previous jobs were focused directly on child nutrition programs. I completed an internship

in the Oakland Unified School District during my master's program in which I learned about the many barriers to good food quality in the National School Lunch Program and contributed to innovations to improve it. Finally, I counseled WIC participants for a few months during my dietetic internship when I similarly learned about barriers to good health and food insecurity experienced by participants as well as considered means to optimize the program and health outcomes (and have since [written about it for my work](#)).

5. Why is your program, research or other federally funded work important? Whom does it serve?

My research projects in consulting are funded by clients (such as life science companies, health plans, provider networks, etc.) or other grant funding, not federal funding. Using data about the nutrition care process and patient outcomes, outcomes of the MQii benefit multiple entities:

- Patients receive better quality of care that prevents and treats malnutrition in acute care settings, ensuring they fare better during admission and ensuring access to resources upon discharge helping to reduce readmissions and even mortality
- For providers and payers, improvements in patients' nutritional status leads to improved health outcomes and lower costs of care
- Dietitians receive more attention and financial resources from hospital leaders when evidence generated through our project shows the value of their services; on a national level, we developed and supported adoption of electronic clinical quality measures that are the first on which dietitians can report, increasing reimbursement for participants in the Medicare Merit-Based Incentive Payment System (MIPS). (Note that the Academy is a key partner in supporting our advocacy work.)

My other projects benefit other audiences; for example, a current project for a life sciences company aims to identify opportunities for improving state policies that affect Medicaid beneficiaries' access to behavioral healthcare, and a health plan project aims to develop a strategy to better meet the needs of its diverse customer base across counties in Pennsylvania. My freelance teaching, research, and writing benefit specific cohorts of students or patients as well as the general public seeking information about healthy eating and cooking.

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6. What data can you share to show its impact?

Data produced by my work are not publicly available, but many have resulted in publications. For example, the extent of my research about the farm bill is found in my book published in 2019. Many of our findings generated through the MQii have been published in articles, such as the following:

- [Perspectives of Registered Dietitian Nutritionists on Adoption of Telehealth for Nutrition Care during the COVID-19 Pandemic](#)
- [Impact of an Interdisciplinary Malnutrition Quality Improvement Project at a Large Metropolitan Hospital](#)
- [How a Malnutrition Quality Improvement Initiative Furthers Malnutrition Measurement and Care: Results from a Hospital Learning Collaborative](#)

I continue to work on other conference posters and manuscripts for my work at Avalere and for my independent work in culinary medicine and sustainable agriculture as well.

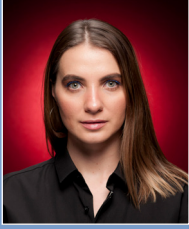
7. Why should federal funding continue to be allocated? Have you faced any challenges that additional funding could assist with?

Federal funding for programs that promote public health and improve management of disease is important for improving quality of life and reducing healthcare costs for all Americans, particularly given the continued rise in our burden of chronic disease and impacts of COVID-19. Some programs are most efficiently and effectively implemented at the state or local level, of course, and rely on additional/other sources of funding. I believe that many aspects of federal programs related to nutrition need to be improved, however, in order to make them more efficient and effective, given the burden they impose on taxpayers and our continued and rising deficit. Conducting robust program evaluations, improving efficiencies across programs pursuing similar goals, and incorporating more direct input of the latest scientific evidence can help to do so. Further, funding through NIH, USDA, and CDC that is not influenced

by the food or pharmaceutical industries is critical for supporting unbiased evidence generation related to food and nutrition across the systems of food production and healthcare. My efforts to elevate food and nutrition in healthcare consulting are stymied when our traditional funding sources don't align with organizations focused on nutrition. Further, the value of nutrition care in improving health and reducing healthcare costs is not adequately understood or appreciated in the healthcare system as a whole. Therefore, funding from federal entities (such as that supported by the recent [2020-2030 Strategic Plan for NIH Nutrition Research](#)) could help to overcome this barrier.

8. How do you personally stay up to date with policy news and initiatives? (Share your favorite resources!)

I closely follow policy news and initiatives on a daily basis through information sent by my consulting firm. We receive emails with news related to the healthcare industry (including policy updates) every day; they direct us to articles in the news as well as peer-reviewed publications. For client- and public-facing articles and podcasts that I develop, I must also research pertinent policies; a recent example is the expansion of supplemental benefits covered by Medicare Advantage plans which I researched to inform my article [about how health plans seek to address food insecurity](#). In addition to reading other articles written by my colleagues, I seek information from entities such as Kaiser Health News and Kaiser Family Foundation and Commonwealth Fund. I can find updates about policies directly affecting dietitians through the Academy's Public Policy Weekly News, SmartBrief, and Eat Right Weekly emails. I regularly participate in webinars offered by universities, think tanks, nonprofits, and government agencies that provide such information; recent examples include the National Health Council and the Tufts Friedman School of Nutrition Science and Policy. Finally, conferences such as FNCE and the Rise Summit on Social Determinants of Health provide some policy-related information.



Research DPG Student Spotlight

Tatiana Diacova

PhD student, MS, RDN

1. Please provide a brief description of your current position.

I am currently a 3rd year Ph.D. student in Dr. Francene Steinberg's lab at UC Davis. I have completed all the required coursework, and now I am focusing on research and taking my qualifying examination this summer.

2. How did you get to where you are now? Please provide a description of your background (e.g., academic, research, and anything else you want to tell us).

My story is that I am one a first-generation immigrant, born and raised in Moldova. Growing up, I have always been fascinated with scientists. I remember watching talk shows with my dad where scientists were often the invited guests. I did not understand what they were discussing, but their ability to speak so eloquently and know so much mesmerized me. I secretly dreamed of becoming one of them when I grew up. I kept that dream to myself, as it is still a belief back home that being a scientist is not a "suitable" job for a woman.

In college, I chose linguistics as my major. Luckily, this soon presented an opportunity to study in the US. Shortly after arriving in Los Angeles, I started college and a full-time job. When I enrolled in my first nutrition course, I was instantly taken aback by everything I was learning. I remember how challenging the course was and how proud I felt to receive an A as the final grade.

I later obtained my BS and MS degrees in nutritional science at California State University, Los Angeles (CSULA). There were not many research opportunities at CSULA, so to try myself in research for the first time, I had to think outside the box and join a food microbiology lab. I knew nothing about the field at the time but decided to just go for it. Two years in this lab allowed me to graduate with a master's

thesis that explored the effect of ground beef fermentation on the growth of common food pathogens. This experience made me fall in love with microbiology.

After completing my MS degree and the dietetic internship, I also obtained my RD credential and decided to pursue a Ph.D. degree. I got accepted into the Nutritional Biology program at UC Davis and joined Dr. Francene Steinberg's laboratory. Dr. Steinberg's research focus allows me to combine my two passions—nutrition and microbiology—by looking at how dietary components affect gut microbiota composition and functionality.

3. Please summarize your current research.

My research investigates how polyphenols in the Mediterranean diet food components (olive oil and walnuts specifically) affect gut microbiota composition/functionality and how that, in turn, affects cardiometabolic health of the host.

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

While working on my MS degree at CSULA, I had the opportunity to conduct food microbiology research. I knew little about the field at the time, but Dr. Sunil Mangalassary, a Food Science professor, gave me the opportunity to apply myself in research. To prepare for the job I completed a certification that entailed taking several microbiology, food safety, and food science courses.

This experience taught me a good lesson – take advantage of any opportunity that comes your way because you never know which one will lead you to your dreams.

I am now specializing in host-microbiome interactions while pursuing my Ph.D. degree at UC Davis.

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

I think the main advice I would give is to stay curious and eager to step outside of your comfort zone. It was difficult for me to decide what I was interested in because I was just excited to be involved in research, period. I was open to researching anything because it was science in general that intrigued me. That is the reason why figuring out a research interest was a process for me. To be honest, at times, I felt discouraged because everyone around me seemed to have it all figured out. I recommend reading scientific literature, speak to people involved in research, try different things, and see what excites you the most. It is OK to take your time in figuring this out.

6. What are your career goals?

Besides research, I am also very passionate about diversity in Science, Technology, Engineering and Math (STEM), mentorship, and science communication. To contribute to diversifying STEM, I now serve on the Diversity in STEM Coalition and Affirmative Action & Diversity Committee at the UCD campus. To inspire future nutrition experts and leaders, I am currently volunteering in a virtual RD mentorship program as well as taking a lead in the efforts of breaking barriers for girls in STEM domains back home. I am also very active in the realm of science communication by serving on the organizing committee for a science communication conference in Los Angeles and as a recruitment/newsletter chair for a nutrition science-focused blog. Moreover, I design and implement online nutrition courses and public health programs for my fellow Moldovans back home. I have recently become the Moldova Country Representative within the International Affiliate of the AND (IAAND), which is one of my proudest achievements so far.

Going forward, I aim to perfect my skills as a researcher, be a diversity champion, mentor, and science communicator. My career goal is to teach

at a US-based university and take the lead on public health efforts back home. I also dream of starting the first Nutrition Department at a Moldovan university to help raise a generation of nutrition professionals that would not have to leave their home country to succeed in nutrition science.

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

I have been involved with the Academy for two years now. I served as a community outreach co-chair last year and now as a nominating committee member with the California Academy of Nutrition and Dietetics, Northern Area District. These experiences helped me build professional relationships with local RDs and partners in the community. I also received several invitations to speak at mentoring events and work on a few projects since then. Overall, these experiences helped me gain more confidence as a nutrition professional. Active Academy involvement is definitely something I would recommend for networking and professional development opportunities. Or change last sentence to: I highly recommend active involvement in the Academy to network and seek out professional development opportunities.

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

Food is required for our survival. Food is also a big part of traditions, culture, and celebrations. But that is not all that there is to it! Food can dramatically change how we feel on a day-to-day basis, how we perform in all aspects of our lives, and even support life expectancy. In fact, most premature deaths in the world are due to lifestyle-related diseases. Appropriate food choices can serve as first line of defense against chronic diseases. Exploring how we can optimize our relationship and interactions with food and the exact mechanisms of these interactions can ultimately help us create a healthier, happier, and longer-lived society. Nutrition research can save lives!



A Note from HOD Delegate

David H. Holben, PhD, RDN, LD, FAND

HOD Delegate, 2017-2020

It has been a year like no other and in times like this it is important to reflect how these experiences may shape our future. Throughout this past year in the House of Delegates we spent time discussing a volatile, uncertain, complex and ambiguous (VUCA) environment and how RDNs and NDTRs can thrive in a VUCA world. This will require us to think in perhaps a new way and to continually seek opportunities to lead, learn and grow. The Academy is charting a course based on 4 important characteristics for RDNs and NDTRs to consider including agility, courage, being a trusted source and embracing system thinking. For more information, check out the Academy's Navigating Future Practice VUCA change driver document at <https://www.eatrightpro.org/leadership/governance/governance-resources/visioning-process>.

The focus of the Spring 2021 HOD meeting was on creating A Culture of Positive Behaviors to Increase Inclusion, Diversity, Equity and Access (IDEA). Delegates tackled the complicated critical issue question, how does the Academy promote a culture of positive behaviors to increase, inclusion, diversity, equity and access? The meeting started with a review of The Academy's Diversity and Inclusion statement, which reads, "The Academy encourages diversity and inclusion by striving to recognize, respect and include differences in ability, age, creed, culture, ethnicity, gender, gender identity, political affiliation, race, religion, sexual orientation, size and socioeconomic characteristics in the nutrition and dietetics profession." In small groups, delegates discussed microaggression experiences and observations to bring awareness to behaviors that can lead to hostile and an invalidating climate. The HOD encourages all Academy

members to self-reflect and take action against microaggressions. Delegates also brainstormed actions to support and advance the IDEA action plan goals:

- Establish infrastructure and resources to achieve optimal and sustainable IDEA outcomes.
- Increase recruitment, retention and completion of nutrition and dietetics education and leadership at all levels for underrepresented groups.
- Cultivate organizational and professional values of equity, respect, civility and anti-discrimination.
- Advance food and nutrition research policy and practice through a holistic IDEA lens.

For more information on the strategies and tactics discussed and submitted to the Diversity and Inclusion Committee for incorporation into the HOD's program of work for the upcoming year, please refer to <https://www.eatrightpro.org/leadership/governance/house-of-delegates> and select the Critical Issues and Updates tab. Also check out the resources for taking action steps against microaggressions.

Another highlight this year was the approval to expand the HOD to include delegates from each of the 7 minority interest groups. It has been a very productive and informative year in the HOD and I am looking forward to working together and moving forward with the critical issues ahead of us. I welcome your questions, comments, or input, please feel free to contact me using the contact information provided in this newsletter. I truly look forward to the opportunity to work with you and represent your voices and ideas in the important work ahead!



Research DPG Member Spotlight

Lorrene Ritchie

Title: Director of the Nutrition Policy Institute (NPI) and Cooperative Extension Specialist

Institution: University of California Division of Agriculture and Natural Resources

1. Please provide a brief description of your current position.

For the past seven years I have had the honor and pleasure of serving as the inaugural Director of the Nutrition Policy Institute (NPI). I am also a Cooperative Extension Nutrition Specialist at the University of California Division of Agriculture and Natural Resources. I oversee a staff of about 30 researchers and support staff working on several dozen research projects at any given time. NPI conducts and evaluates research related to the impact of nutrition on public health with a focus on the federal nutrition assistance programs including the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), the Child and Adult Care Food Program, the National School Lunch and School Breakfast Programs, and the Supplemental Nutrition Assistance Program Education.

2. How did you get to where you are now? Please provide a description of your background (e.g., academic, research, and anything else you want to tell us).

As an undergraduate student, I studied biochemistry, and my first job out of college was as a lab tech doing clinical research on Parkinson's disease. I loved this job, but after a few years, I felt like I had mastered it and was ready for new challenges. I took a nutrition class just for fun and never looked back! I went on to get an M.S. and Ph.D. in nutritional sciences from the University of California, Berkeley and also became a Registered Dietitian.

3. Please summarize your current research.

I have devoted most of my 30-year career to conducting research to inform nutrition programs and policy. The goal of my work is the prevention of food insecurity and obesity and promotion of health and wellness through structural changes to food access and promotion, with a focus on the youngest and most vulnerable populations in the U.S. My research interests include evaluation of: 1) interven-

tions to improve intake of water and other healthy beverages in lieu of sugary drinks in children; the relationship of school- and community-level programs and policies on children's dietary intakes and weight status; 2) the impact of nutrition policy and the Child and Adult Care Food Program on the diet quality of young children; 3) the impact of WIC in general and specific modernizations to the program on child feeding practices and dietary outcomes; and 4) how food insecurity relates to measures of dietary intake and health in children.

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

I started out as a basic nutrition researcher and initially had not thought much about public health nutrition. But I was lucky enough to be invited to work with a group of wonderful public health researchers (including an amazing mentor, Dr. Pat Crawford). Once I 'caught the public health bug' and saw the transformative power of public health research to inform programs and policy, I was hooked.

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

Two things: 1) Be open to paths that you hadn't considered (or even known to consider); and 2) seek to work with people you enjoy and admire. Nutrition is a relatively young science, and there is so much important research to be done. It is hard to get funding and to complete studies in the 'real world' with the funding available, and progress is typically slow. Yet if you are working on meaningful projects with wonderful people, you can't help but love the work. One additional bit of advice is to practice positive self-talk. As a 'first gen' student to go on to a career in research, I wasted way too much time with self-doubt. I have tried to reverse that thinking by recognizing the advantage of coming from a 'modest background' in informing research. We need more diverse points of view dedicated to improving nutrition and health!

Continued on page 33

6. What are your career goals?

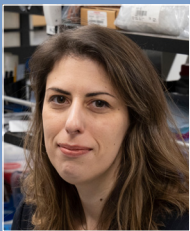
Before I retire, I have two goals, both of which will take a huge effort on the part of all of us, so I hope those reading this will share these goals. The first is to see 'universal' free school meals become the law of the land, so that all children have access to healthy foods. Second, I would like to see nutrition and health literacy be a core subject taught in all grade levels in schools. As a society we value youth by making sure all have access to a free public education; let's extend that value to focus more attention on the basic needs and health of children.

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

One very tangible thing the Academy provides is trusted expertise. For example, I was a part of an initial team that refined the evidence analysis process that was used for Academy Position Papers (and now is used to develop the Dietary Guidelines for Americans). I continue to look to the Academy for information I can trust as science-based.

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

Without science, there is no dietetics. Use of research to inform what we do is what sets us apart from the many others who may dispense with nutrition information.



Letter from the Editor

Maria Chondronikola, PhD, RDN
Editor-in-Chief, The Digest

Dear Research DPG Members,

It's a pleasure to present to you the Summer 2021 issue of the Digest on which our team has diligently worked for the last several months. This topic includes a wide range of topics which I hope that you will enjoy. We also feature spotlight members Loraine Ritchie Ph.D., R.D.N. and Tatiana Diacova M.S., R.D.N.

We are currently seeking research articles from researchers working in the area of nutrition and dietetics as well as nutrition students/ dietetics interns. 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 or literature review), please let us know.

This is my last Letter from the Editor and I'd like to recognize all the individuals vital to the publication of *The*

Digest. First, I'd like to thank the assistant editors Judy Gould, Lori Stockert and Prabhdeep Sandha. I also am grateful for the contributions of the RDPG executive committee members and the Academy DPG Manager, Katie Gustafson, who provided guidance from the national office and reviews each edition for which I am thankful. Lastly, I'd like to thank each and every author and board member for their submissions. The quality content you provide keeps our members informed and up-to-date on nutrition research and RDPG activities.

If you have any questions, feedback, and/or referrals for authors or article topics, please submit them to digesteditor@researchdpg.org.

Maria Chondronikola, PhD, RDN
Editor-in-Chief

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