



HHS Public Access

Author manuscript

J Acad Nutr Diet. Author manuscript; available in PMC 2017 February 01.

Published in final edited form as:

J Acad Nutr Diet. 2016 February ; 116(2): 219–225. doi:10.1016/j.jand.2015.10.018.

Emerging Opportunities for Registered Dietitian Nutritionists to Help Raise a Healthier Generation of Native American Youth

Sheila Fleischhacker, PhD, JD*

Keywords

American Indians; Alaska Natives; food; nutrition; health disparities

American Indian children are experiencing alarming signs of nutrition-related chronic diseases such as overweight/obesity, hypertension and acanthosis nigricans—a skin condition characterized by areas of dark, velvety discoloration in body folds and creases.¹ Children who develop acanthosis nigricans are at higher risk for developing type 2 diabetes mellitus. This commentary aims to increase awareness of emerging opportunities for registered dietitian nutritionists (RDNs) to help raise a healthier generation of American Indian and Alaska Native children and adolescents (Native youth, for short). RDNs working for, with or near tribal communities or as educators, preceptors or mentors who develop the next generation of RDNs have tremendous potential to shape the public health landscape to advance Native health.

INTEGRATING NUTRITION INTO COMPREHENSIVE APPROACHES

Tribal governments, urban Indian organizations, tribal food policy councils, and other community-driven groups are increasingly exploring comprehensive health and wellness policies and plans.^{2–7} Several initiatives utilize environmental, policy and system approaches to promote healthy eating. Other efforts have been in response to the First Lady Michelle Obama's *Let's Move!* in Indian Country call to action or supported, in part, by a growing list of funding mechanisms specifically designed to foster tribally-led community changes such as: the First Nations Development Institute Native Agriculture and Food Systems Initiative, the Healthy Native North Carolinians Network, the Notah Begay III Foundation's Native Strong: Healthy Kids, Healthy Futures, and the United States Centers for Disease Control and Prevention (CDC) A Comprehensive Approach to Good Health and Wellness in Indian Country (*See Table 1*). RDNs working for, with or near tribal

*Corresponding Author and Reprint Contact, Sheila Fleischhacker, PhD, JD, Senior Public Health & Science Policy Advisor, Office of Nutrition Research, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health, Department of Health and Human Services, Two Democracy Plaza, Room 635, 6707 Democracy Boulevard MSC 5461, Bethesda, Maryland 20892-5461, voice – 301-594-7440, blackberry – 301-640-1396, fax – 301-480-3768, sheila.fleischhacker@nih.gov.

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Conflicts of Interest: The author declares no conflicts of interest. The content is solely the responsibility of the author and does not necessarily represent the official views of the RWJF, NIH or KBR.

communities can play an instrumental role in collaborating with tribal leaders to develop, implement, evaluate, sustain and disseminate comprehensive health and wellness policies and plans that include provisions to promote healthy eating. The National Congress of American Indians Policy Research Center Tribal Public Health Law project is one tool RDNs can use to: (1) find resources tailored to tribal governments working to develop their own public health laws; (2) identify existing laws such as tribal child care facilities licensure; and (3) disseminate lessons learned on tribally-led healthy eating laws, policies and resolutions.⁸ RDNs can focus on identifying existing or possible tribal self-governance strategies that emphasize community and economic development, along with food sovereignty—a reemerging indigenous value ensuring people who produce, distribute and consume food have the right to determine their food production and distribution mechanisms and policies.^{3,9–11}

Additionally, RDNs have the expertise needed to identify tribally-led strategies sensitive to the fact that many tribal communities must address the co-existence of food insecurity and obesity among their Native youth and families.¹² Thus, RDNs' ability to work at both the prevention and treatment stages of nutrition-related chronic diseases will be vital given high prevalence of chronic conditions and oral health issues among even young children.¹³ Likewise, RDNs can help raise parents and other key stakeholders' awareness of healthy child feeding and weight management practices.^{14–16} Moreover, RDNs can assist with developing cost-effective multi-level, multi-sector approaches that address the social determinants of health, mobilize tribal assets including family and community ties, and incorporate other tribal priorities such as suicide and substance abuse prevention. Lastly, at the tribal, state or national levels, RDNs can help promote the unique authority and needs of tribal leaders and organizations in raising a healthier generation of Native youth. Too often, health promotion and disease prevention efforts call attention to the role of leaders at the federal, state and local levels while neglecting to recognize the authority granted by the United States Constitution for tribal leaders to enact changes that can foster healthy eating.¹⁷ When developing curriculum and other educational or experiential learning or technical assistance materials, RDNs can avoid making this same oversight by being explicit and specific about approaches tribal leaders could take to foster healthy eating.

FOSTERING EMERGING TRIBALLY-LED HEALTHY EATING STRATEGIES

The following tribally-led strategies are emerging as lead approaches to fostering healthy eating and as relevant RDN opportunities to help raise a healthier generation of Native youth.

Improving access to locally grown, affordable foods and beverages

Numerous opportunities exist where RDNs can work with tribal communities to start or expand community-driven approaches to improving access to locally grown, affordable foods and beverages (*See* Table 1).² Improving food access is fundamental to fostering healthy eating. Evidence illustrates rural, isolated tribal communities are far from retail food outlets compared to more urban, wealthier and Caucasian communities.^{18–20} A recent report explored the complex historical and contemporary challenges to Native American healthy food access, childhood obesity and health disparities; and, recommended a first step toward

a solution is “becoming aware of the extent of the problem of Native health disparities and its deep interconnections to United States Indian policy, poverty, historical trauma and food systems.”²⁰ This Report emphasized strategies focusing on “increasing tribal control of assets related to food production and purchasing for and by Native communities.”²⁰

In a variety of settings, RDNs can be instrumental in developing, implementing, and evaluating tribally-led community gardens, farmers' markets, farm-to-table programs, mobile retail food outlets and other innovative approaches to improving access to locally grown, affordable foods and beverages. RDNs can also help ensure counseling, along with educational materials and messages consider the patients or clients' current food environment. One approach can be creating or participating in multidisciplinary teams, including local food providers and health professionals, to identify outlets and specific menu and grocery items that improve the purchase, preparation and consumption of locally grown, affordable food and beverages.^{21,22} Through the United States Department of Agriculture (USDA) Supplemental Nutrition Education Assistance Program-Education (SNAP-Ed)²³, their Team Nutrition initiative²⁴ or other USDA mechanisms, RDNs can partner with tribal chefs including youth to create and disseminate culturally appropriate, low-cost meals featuring traditional foods and beverages offered through the USDA Food Distribution Program on Indian Reservations²⁵, community gardens, farmers' markets or other retail venues. Equally important, RDNs can inform community members about federal food and nutrition assistance programs such as SNAP and the USDA Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), as well as work with existing or emerging retail outlets to participate with these programs.²⁶ For example, the Choctaw Nation of Oklahoma recently became the 52nd state agency to operate the USDA Senior Farmers' Market Nutrition Program (SFMNP), which provides access to fresh, locally grown fruits and vegetables to low-income, older Americans.²⁷

Strengthening tribal institutional and commercial food service nutrition standards

While the type and size of institutional food service options on or near tribal communities vary, RDNs have the potential to strengthen food and nutrition standards and help balance the often dual risks of excess weight gain and hunger faced by far too many Native youth, families and communities.¹² That is, RDNs can help to ensure the use of culturally, contextually and economically feasible menu planning approaches and vending machine offerings. In the 21 participating tribal schools in Pathways (a randomized trial that tested the effect of a school-based program to prevent obesity in Native youth), school meal improvements were associated with reductions in student intake of percent calories from fat and saturated fat at school lunch and over the whole day.²⁸ Currently, 183 Bureau of Indian Education-operated schools are working towards implementing the Alliance for a Healthier Generation's Healthy School Program.²⁹ RDNs can also work with child care program staff and providers to develop, implement and evaluate culturally appropriate and contextually feasible nutrition policies and practices.³⁰ Further, RDNs can promote participation in and compliance with the US Department of Health and Human Services Head Start program's nutrition provisions³¹ and the USDA's Child and Adult Care Food Program (CACFP) menu pattern requirements³². *Let's Move!* in Child Care offers training and resources for providers striving to meet food and beverage goals.³³

Other ripe venues for strengthening nutrition standards include tribal worksites, tribal government related meetings and events, as well as tribally-owned or operated casinos, resorts, restaurants, and health care settings.³⁴ Tribal leaders can explore menu labeling requirements for retail food outlets operating on tribal lands, which would necessitate nutrient analysis and nutrition education expertise for effective implementation. Taxation is another tool tribal governments have used to improve the healthfulness of retail foods and beverages sold on tribal lands. That is, the Healthy Diné Nation Act of 2014 imposes a tax on the gross receipts at a rate of two percent upon minimal-to-no-nutritional value food and beverage items sold.³⁵ Taken together, these approaches strengthen tribal institutional and commercial food service nutrition standards and afford RDNs a variety of valuable opportunities to provide nutritional guidance.

Breastfeeding promotion

RDNs play a major role in efforts to promote breastfeeding and can be instrumental in encouraging the development, implementation, and evaluation of tribal workplace policies such as the Navajo Nation Healthy Start Act of 2008.³⁶ Through its Nutrition and Dietetics Training Program³⁷, the Indian Health Service (IHS) sponsors culturally relevant workshops on team-oriented clinic-community partnerships focused on ensuring all 13 IHS obstetric facilities maintain the Baby Friendly³⁸ designation. IHS also offers toolkits describing best practices to support the initiation and sustained breastfeeding during the first year.³⁹ Outside clinical settings, RDNs working at the 32 tribally-administered WIC programs or in WIC offices serving American Indians and Alaska Natives have opportunities to instill the importance of healthy eating from neonatal periods onward for both the mom and her child(ren).⁴⁰ In comparison to other racial/ethnic groups in the US, several studies have documented higher birth weights for American Indian and Alaska Native newborns and greater weight-for-height during the preschool years.⁴¹ In one study, Pima youth gained excessive weight compared to CDC standards, with gains occurring as early as the first six months and between two and 11 years old.⁴² Another study conducted with American Indian children ages five to eight years old reported elevated cardiovascular risk was predicted by a child's body mass index at age one.⁴³

BUILDING THE EVIDENCE AND CAPACITY TO ADVANCE NATIVE HEALTH

A key ingredient to developing effective tribally-led environmental, policy and system approaches for promoting healthy eating will be establishing a culturally and contextually relevant evidence base. Limited data exist on dietary intake and nutrition-related chronic diseases among American Indians and Alaska Natives.⁴⁴⁻⁴⁸ Compounding the paucity of data is the fact that available information is not representative or informative for guiding tribal-level action given heterogeneity of the more than 500 tribal communities in the US.⁴⁹

RDNs have been^{50,51} and can continue to be vital assets to trans-disciplinary research efforts to examine the multifactorial etiology of the nutrition-related chronic diseases and health disparities facing today's Native youth. These factors include but are not limited to poverty, genetics, environment, access to health care challenges, stress associated with historical trauma including contemporary threats to cultural identity and national sovereignty, and institutional and interpersonal discrimination.⁵²⁻⁵⁷ Community-based participatory research

or other tribally-driven research models have effectively engaged tribal leaders in nutrition-related projects.^{3,5,58–62} Creating and conducting collaborative research approaches built on trust helps foster tribal ownership by encouraging tribal members to drive the assessment of community needs and priorities, identify community assets and strengths, and develop culturally and contextually appropriate strategies addressing issues and concerns.⁶³ As research is gathered and analyzed, RDNs have an important responsibility to effectively communicate findings to tribal leaders and other key stakeholders and, more importantly, help disseminate and translate the results so other tribal communities can use these findings to guide the development of their actions to promote healthy eating.

Beyond helping to conduct and communicate research findings, RDNs can help tribal governments and other key stakeholders identify available datasets (e.g., IHS or school annual body mass index measurements), synthesize available data on relevant nutrition and health issues for a tribal community, and identify culturally and contextually sensitive evidence informed approaches suitable for a tribal community exploration. Presently, various efforts exist (Healthy Native North Carolinians Network⁴ and the Notah Begay III Foundation's Native Strong: Healthy Kids, Healthy Futures⁶⁴) that specifically work toward building capacity among tribal leaders and organizations to develop and evaluate tribally-led community changes that foster healthy eating. Evaluation expertise is often needed among these funded tribal grantees, especially since compared to Caucasian populations fewer nutrition-related measures have been validated among Native American populations.^{48,65,66}

While working on academic-community collaborative projects to address research gaps and build the evidence base, RDNs often have meaningful opportunities to cultivate the next generation of RDNs capable of advancing the state of the science on Native health. RDNs, dietetic interns or students, or aspiring RDNs can work on these projects to explore research as a career, earn their doctorate or harness their skills to be an independent investigator. A recent example is the National Institutes of Health (NIH) \$240 million investment in Building Infrastructure Leading to Diversity (BUILD) training awards to improve the recruitment of students from diverse backgrounds into the biomedical research workforce and encourage them to become future contributors to the NIH-funded research.⁶⁷ The NIH, among other federal agencies, support a variety of funding mechanisms to promote diversity in health related research.^{68,69} Another opportunity is designing or delivering cultural competency training for researchers, practitioners or other stakeholders; specifically providing expertise on how to promote culturally appropriate dietary behaviors, child feeding practices, and weight management practices, as well as effective ways to blend traditional practices with western medicine.^{70–73}

ENGAGING AND EMPOWERING NATIVE YOUTH

Special efforts can be made to engage and empower Native youth—the next generation of tribal leaders.^{74–79} An emerging opportunity is the White House Generation Indigenous Native Youth Challenge (“Gen-I Initiative”).⁸⁰ Launched in 2014, the Gen-I Initiative invites youth aged 14–24, non-profit organizations and educational institutions to develop networks committed to addressing issues facing Native youth including healthy eating and nutrition-related chronic diseases. Finally, and one of the most important activities RDNs

can focus on, is the recruitment, training and retention of American Indian and Alaska Native students and professionals into food, nutrition and dietetics professions.⁸¹ The Academy of Nutrition and Dietetics sponsors a variety of resources and programs to address the underrepresentation of American Indians and Alaska Natives in our profession such as a toolkit for mentoring diverse student populations to pursue dietetics careers.⁸² The Academy also supports awards and programs that can encourage RDNs to increase the diversity and cultural competency of our dietetics professionals by means of the Diversity Mini-Grants, the Diversity Leaders Program, the Diversity Promotion Grants and the Diversity Action Award.⁸³

CONCLUSION

New opportunities exist for RDNs to help address nutrition-related health disparities among American Indian and Alaska Native individuals, families and communities. Particularly promising are emerging opportunities for RDNs working for, with or near tribal communities to partner with tribal leaders including Native youth on catalyzing and sustaining tribally-led approaches to foster healthy eating among tribal communities. Chronic disease does not have to be the fate of this generation.

Acknowledgments

Support was provided in part by Healthy Eating Research, a national program of the Robert Wood Johnson Foundation (RWJF) (ID #66958); the National Institutes of Health (NIH) University of North Carolina Interdisciplinary Obesity Training Grant (T 32 MH75854-03); and Kate B. Reynolds Charitable Trust (KBR).

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Table 1

Selected activities to improve access to locally grown, affordable foods and beverages in American Indian and Alaska Native communities

Activity	Description
<p>Association of American Indian Physicians (AAIP) Healthy, Active Native Communities (HANC) Mini-Awards https://www.aaip.org/programs/capacity-building-assistance/healthy-active-native-communities-hanc/</p> <p>Supported by the CDC Office of State, Tribal, Local, and Territorial Support</p>	<p>Provides on-line resources, as well as calls for grant proposals from Tribal Health Departments and American Indian and Alaska Native non-governmental key players in the public health workforce aiming to adapt and implement the CDC Winnable Strategies' to engage their communities in improving health using environmental, systematic, and/or policy change.</p>
<p>CDC: A Comprehensive Approach to Good Health and Wellness in Indian Country http://apply07.grants.gov/apply/opportunities/instructions/oppCDC-RFA-DP14-1421PPHF14-cfda93.762-cidNCCDPHP-NR-instructions.pdf</p> <p>Financed by the Prevention and Public Health Funding</p>	<p>Building on and growing from lessons learned from a variety of its funding mechanisms and technical assistance supporting work in tribal communities, this funding mechanism supports 22 new grants providing tribes and villages with support to work on strategies including improving access to healthy foods.</p>
<p>First Nations Development Institute Native Agriculture and Food Systems Initiative http://www.firstnations.org/programs/foods-health</p> <p>Partners and funding sources include AARP Foundation, The Christensen Fund, CHS Foundation, US Department of Agriculture Office of Advocacy and Outreach, US Department of Agriculture Rural Development, Walmart Foundation, and W.K. Kellogg Foundation</p>	<p>Through a variety of past and current projects, First Nations Development Institute has focused on improving access to healthy foods among Native American children and families including grant making and trainings.</p>
<p>Healthy Native North Carolinians Network (HNNC) http://americanindianhealthyeating.unc.edu/healthy-native-north-carolinians-2/</p> <p>Funding sources include Kate B. Reynolds Charitable Trust, Healthy Eating Research, a national program of the Robert Wood Johnson Foundation, and the National Institutes of Health</p>	<p>Expanding from partnerships formed during the American Indian Healthy Eating Project started in 2008. Continues to grow and work collaboratively to facilitate sustainable community changes around active living and healthy eating within American Indian tribes and urban Indian organizations in North Carolina. Healthy eating strategies used include: community gardens, farmers' markets, healthier concession stand offerings, and various nutrition-related educational and promotional activities including tribal cookbooks.</p>
<p>Let's Move! in Indian Country http://lmic.ihc.gov/</p> <p>Federal partners include the White House, Executive Office of the President, US Department of Health and Human Services, US Department of Interior, US Department of Education, Corporation for National and Community Service and AmeriCorps, and US Department of Agriculture</p>	<p>Recognizes the unique needs and potential of tribal governments and urban Indian organizations to address obesity among Native youth. Various <i>Let's Move!</i> in Indian Country partners offer relevant grant making opportunities, resources and technical assistance. Tribal communities can also leverage resources and tools from other <i>Let's Move!</i> sub-initiatives working on improving access to healthier foods such as <i>Let's Move!</i> Salad Bards to Schools.</p>
<p>MoGro Mobile Grocery http://www.mogro.net/</p> <p>Partners and funding sources include the Johns Hopkins Center for American Indian Health, Notah Begay III Foundation, La Montanita Coop, W.K. Kellogg Foundation, Newman's Own Foundation, and US Department of Agriculture</p>	<p>Using a temperature-controlled truck, MoGro provides healthy, affordable food to Pueblo communities lacking access due to remote location, transportation, and/or cost.</p>
<p>Notah Begay III Foundation (NB3) http://www.nb3foundation.org/</p> <p>Partners and funding sources include The Robert Wood Johnson Foundation, W.K. Kellogg Foundation, Nike N7 Fund, and Walmart Foundation</p>	<p>Work to build a national framework designed to reduce childhood obesity and type 2 diabetes among Native youth. The NB3 Foundation offers a variety of programs and initiatives including its Native Strong initiative that uses grant making, capacity building, research, and advocacy.</p>
<p>US Department of Agriculture (USDA) Community Food Projects Competitive Grants Program</p>	<p>An example of an USDA funding mechanism that has been and could be utilized to support the development, implementation, and evaluation of</p>

Activity	Description
http://nifa.usda.gov/fundingopportunity/community-foodprojects-competitive-grantsprogram-cfpcgp	community food projects working with tribal communities to improve access to healthy, affordable foods.

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