INDIAN HEALTH SERVICE

Division of Diabetes
Treatment and Prevention

It Takes a Village:

Effective Approaches to Child Nutrition in Indian Country

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Where do we begin?

Snapshot: Native Youth Today

There were over 2.1 million American Indians and Alaska Natives (AI/AN) under the age of 24 living in the US.
(2010 US Census)

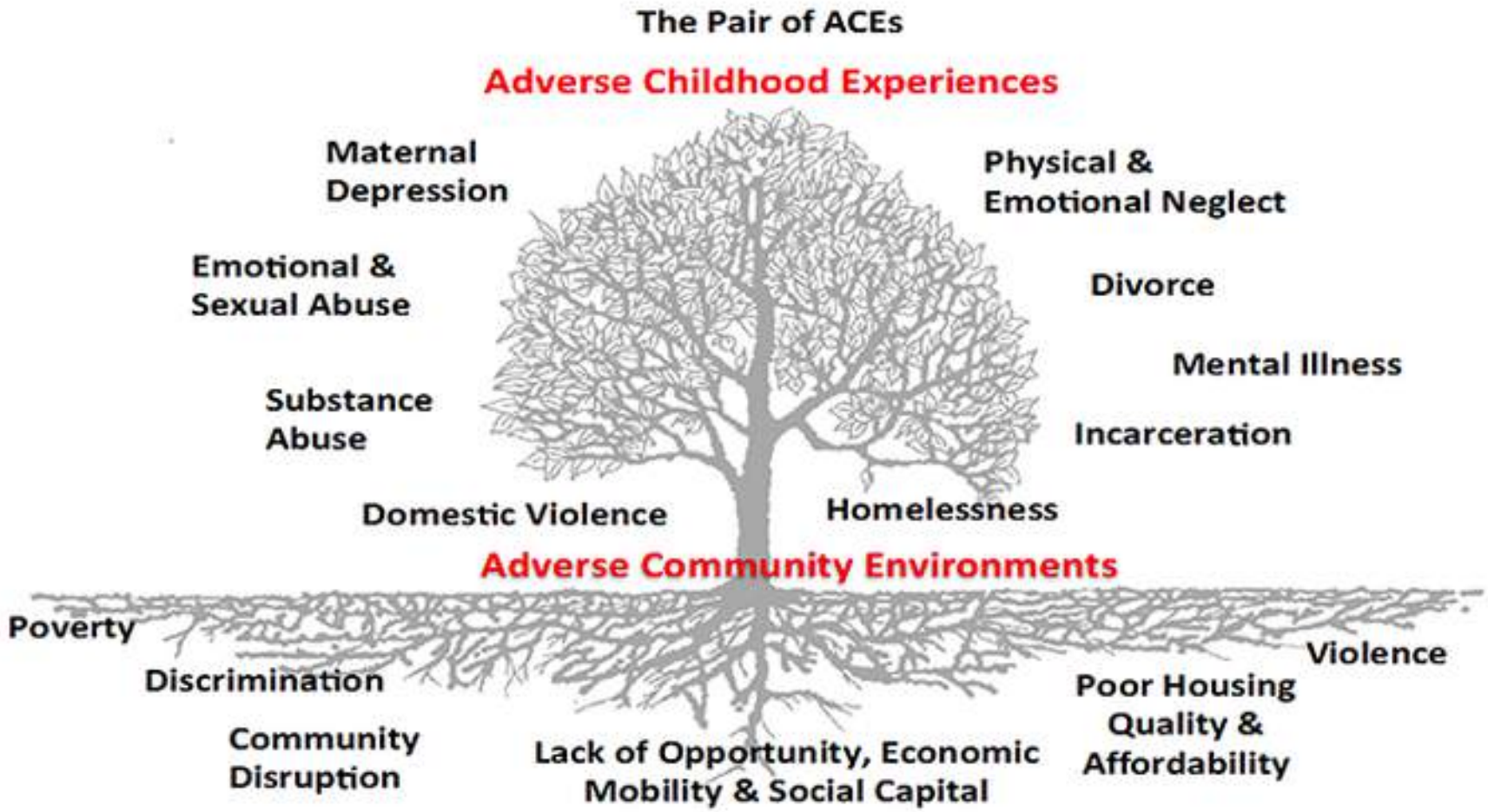
90% of all AI/AN students attend public schools
(National Indian Education Association Statistics)

8% attend schools administered by the Bureau of Indian Affairs
(National Indian Education Association Statistics)

The national graduation rate for AI/AN high school hovers around 79% in comparison to over 94% for white students.
(Childstats.gov)

Suicide is the 2nd leading cause of death – 2.5 times the national rate – for AI/AN youth in the 15 to 24 age group.
(CDC)

The **poverty rate** among AI/ANs in 2014 was 28.8%, and **more than one in three AI/AN children live in poverty**.
(2010 US Census)



Ellis, W., Dietz, W. (2017) A New Framework for Addressing Adverse Childhood and Community Experiences: The Building Community Resilience (BCR) Model. Academic Pediatrics. 17 (2017) pp. S86-S93. DOI information: 10.1016/j.acap.2016.12.011

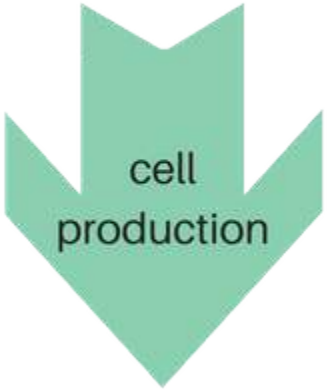
Child Nutrition

First 1,000 Days

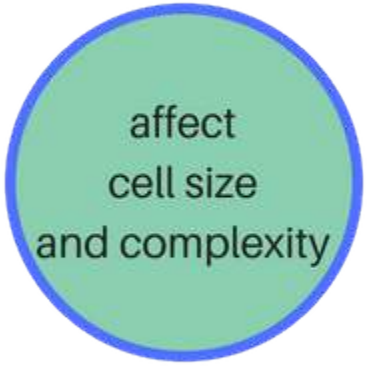
Nutrients and Development

- Brain requires specific nutrients during development
- Needs change depending on phase

Early Shortages



Later Shortages



(Blair, 2016)

Early Childhood

Ages 2-5

- Children quadruple their birth weight by age 2
- Between ages 2 and 5, children gain an average of 4.5 to 6.5 lbs and grow 2.5 to 3.5 inches per year
- As growth rates decline during early childhood, children's appetites decrease, and the amount of food they consume may become unpredictable

Source: Bright Futures: Nutrition, 3rd Edition

Early Childhood

- Obesity prevalence has risen from 5% to more than 12% among US children ages 2 to 5
- Iron deficiency and iron-deficiency anemia are common in children, especially children from families with low incomes
- Children with special health care needs may have nutrition concerns

Source: Bright Futures: Nutrition, 3rd Edition

Parents are responsible for What, When, and Where their child eats.

Children are responsible for deciding whether to eat and how much.

Middle Childhood

Ages 5-10

- Slow, steady rate of physical growth
- Common nutrition concerns during middle childhood include the following:
  - Decrease in consumption of milk and milk products
  - Increase in consumption of sweetened beverages, especially soft drinks
  - Limited intake of fruits and vegetables
  - Higher consumption than recommended of foods high in fat, especially saturated and trans fats
  - Rise in overweight and obesity
  - Increase in body image concerns

Source: Bright Futures: Nutrition, 3rd Edition

Adolescence

Ages 11-21

- Early adolescence (ages 11 to 14)
  Includes pubertal and cognitive changes
- Middle adolescence (ages 15 to 17)
  A time of increased independence and experimentation
- Late adolescence (ages 18 to 21)
  Make important personal and vocational decisions

Source: Bright Futures: Nutrition, 3rd Edition

Adolescence

Ages 11-21

This stage is the most dynamic period of human development!

TABLE 2. ESTIMATED CALORIE REQUIREMENTS (IN KILOCALORIES) FOR EACH GENDER AND AGE GROUP AT 3 LEVELS OF PHYSICAL ACTIVITY[11]

Gender	Age (years)	Sedentary[a]	Moderately Active[b]	Active[c]
Female	9–13	1,600	1,600–2,000	1,800–2,200
	14–18	1,800	2,000	2,400
	19–30	2,000	2,000–2,200	2,400
Male	9–13	1,800	1,800–2,200	2,000–2,600
	14–18	2,200	2,400–2,800	2,800–3,200
	19–30	2,400	2,600–2,800	3,000

[a]Sedentary means a lifestyle that includes only the light physical activity associated with typical day-to-day life.
[b]Moderately active means a lifestyle that includes physical activity equivalent to walking about 1.5 to 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day-to-day life.
[c]Active means a lifestyle that includes physical activity equivalent to walking more than 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day-to-day life.

Source: Bright Futures: Nutrition, 3rd Edition

Adolescence

Ages 11-21

Common nutrition concerns during adolescence include the previous concerns noted in Middle Childhood and the following:

- **Increase in eating disorders, body image concerns, dieting, and unsafe weight-loss methods**
- **Prevalence of iron-deficiency anemia (in females) and hyperlipidemia**
- **Food insecurity among adolescents from families with low incomes**

Source: Bright Futures: Nutrition, 3rd Edition

Older Children/Adolescents

TABLE 3. DESIRED OUTCOME FOR THE CHILD, AND THE ROLE OF THE FAMILY			
	Educational/Attitudinal	Behavioral	Health
Desired Outcomes for the Child	Understands that healthy eating behaviors and regular physical activity are crucial to growth, development, and health Understands the importance of eating a variety of healthy foods and how to increase food variety Understands the importance of a healthy diet consisting of 3 meals per day and 1 to 2 snacks as needed Understands the physical, emotional, and social benefits of physical activity and how to increase physical activity level Understands that people come in unique body sizes and shapes, within a range of healthy body weights	Consumes a variety of healthy foods Makes healthy food choices at and away from home Engages in at least 60 minutes of physical activity on most, and preferably all, days of the week Watches television or plays computer or video games no more than 1 to 2 hours of quality programming a day	Maintains optimal nutrition to promote growth and development Achieves nutritional and physical well-being, without signs of iron-deficiency anemia, undernutrition, obesity, eating disorders, dental caries (tooth decay), or other nutrition-related problems Achieves and maintains a healthy body weight and positive body image

Source: Bright Futures: Nutrition, 3rd Edition

Older Children/Adolescents

Role of the Family	Understands physical changes that occur with growth and development Understands the relationship between nutrition and short- and long-term health Understands children's eating behaviors and how to increase the variety of healthy foods they eat Understands the importance of a healthy diet consisting of 3 meals per day and snacks as needed Understands the importance of family meals Understands that people come in unique body sizes and shapes, within a range of healthy body weights Understands the dangers of unsafe weight-loss methods and knows safe ways to achieve and maintain a healthy weight	Provides a positive role model: practices healthy eating behaviors, engages in regular physical activity, and promotes a positive body image Provides a variety of healthy foods at home, and limits the availability of high-sugar and high-fat foods, especially those high in saturated and trans fats Eats meals together regularly to ensure optimal nutrition and facilitate family communication Provides opportunities for the child to participate in meal planning and food preparation Uses nutrition programs and food resources if needed Engages in regular physical activity with the child	Provides developmentally appropriate, healthy foods and modifies them if necessary Helps the child achieve and maintain a healthy weight Provides opportunities and safe places for the child to engage in physical activity

Source: Bright Futures: Nutrition, 3rd Edition

Sugar-Sweetened Beverages

JUICE

- Juice should not be given to infants younger than 6 months
- After age 6 months, provide 100% fruit juice in a cup instead of a bottle and limit it to 4 to 6 oz per day

Other Sugar-Sweetened Beverages

(Fruit drinks, Soft drinks, Sports drinks, Sweet tea)

- Drinking unlimited amounts of beverages high in sugar are at increased risk for:
  - dental caries (tooth decay)
  - minor infections
  - experiencing loose stools and diarrhea
- Sugar-sweetened beverages contain “empty calories” taking up space in the stomach

Source: Bright Futures: Nutrition, 3rd Edition

Body Image

- Avoid criticizing about his or her size or shape
- Focus on traits other than appearance when talking with children
- Talk to children about how the media affects his or her body image
- Be a good role model—avoid criticizing your own size or shape or that of others

Issue: Access to Nutritious Foods

Food Deserts

Limited access to supermarkets, supercenters, grocery stores, or other sources of healthy and affordable food

Getting the Right Nutrition

Children may live in families who do not have a consistent and dependable supply of healthy food.

Food insecurity is when households have difficulty providing **enough food** for **all of their members** at **some time** during the year due to a **lack of resources**.

Avoid hunger by getting cheaper foods that have little to no nutritional value which lends itself to inadequate nutrients for normal growth and development.

What happens when someone is experiencing food insecurity?

They…

- Are at greater risk for being emotionally distressed
- Eat less expensive foods which are often unhealthy
- Have little choice over what kinds of food to buy or receive for free, making it difficult or impossible to eat balanced meals
- Have periods when they don't eat, then overeat when food is available

Health Impacts of Food Insecurity: Children & Adolescents

- Chronic health/behavior issues (Rose-Jacobs, 2008)
- Asthma (Mangini, 2015)
- Iron-deficiency anemia (Eicher-Miller, 2009 and Skalicky, 2006)
- Greater chance of being hospitalized (Cook, 2013)

Cook JT, Black M, Chilton M, et al. Are food insecurity's health impacts underestimated in the US population? Marginal food security also predicts adverse health outcomes in young US children and mothers. Adv Nutr. 2013;4(1):51–6.

Eicher-Miller HA, Mason AC, Weaver CM, McCabe GP, Boushey CJ. Food insecurity is associated with iron deficiency anemia in US adolescents. Am J Clin Nutr. 2009;90(5):1358–1371.

Mangini LD, Hayward MD, Dong YQ, Forman MR. Household Food Insecurity is Associated with Childhood Asthma. J Nutr. 2015;145(12):2756-64.

Rose-Jacobs R, Black MM, Casey PH, et al. Household food insecurity: associations with at-risk infant and toddler development. Pediatrics. 2008;121(1):65–72.

Skalicky A, Meyers AF, Adams WG, Yang Z, Cook JT, Frank DA. Child food insecurity and iron deficiency anemia in low-income infants and toddlers in the United States. Matern Child Health J.2006;10(2):177–185.

Health Impacts of Food Insecurity: Children & Adolescents

- Greater developmental risk (Rose-Jacobs, 2008)
- Low birth weight (Laraia, 2010)
- Higher anxiety and depression (Whitaker, 2006)
  - Suicide in adolescents (Alaimo, 2002)

Alaimo K, Olson CM, Frongillo EA. Family food insufficiency, but not low family income, is positively associated with dysthymia and suicide symptoms in adolescents. J Nutr. 2002;132(4):719–725.

Laraia, BA, Siega-Riz AM, Gundersen C. Household food insecurity is associated with self-reported pregravid weight status, gestational weight gain, and pregnancy complications. J Am Diet Assoc. 2010;110(5):692–701.

Rose-Jacobs R, Black MM, Casey PH, et al. Household food insecurity: associations with at-risk infant and toddler development. Pediatrics. 2008;121(1):65–72.

Whitaker RC, Phillips SM, Orzol SM. Food insecurity and the risks of depression and anxiety in mothers and behavior problems in their preschool-aged children. Pediatrics. 2006;118(3).

Understanding Food Insecurity

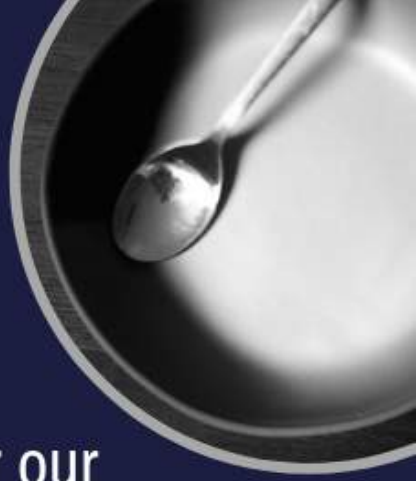
More Likely to Occur:

- End of the month
  - SNAP or income may have run out (Mabli, 2014)
- Holiday seasons
- Birthdays, life-cycle rituals
- Feast Days
- Ceremonies
- Summer or holiday breaks – kids out of school (Mabli, 2014)
- Seasonal bills
- Periods of illness resulting in competing housing and medical costs (Mabli, 2010)

Mabli J, Cohen R, Potter F, Zhao Z. *Hunger in America 2010. National Report Prepared for Feeding America*. Princeton, NJ: Mathematica Policy Research Inc; 2010

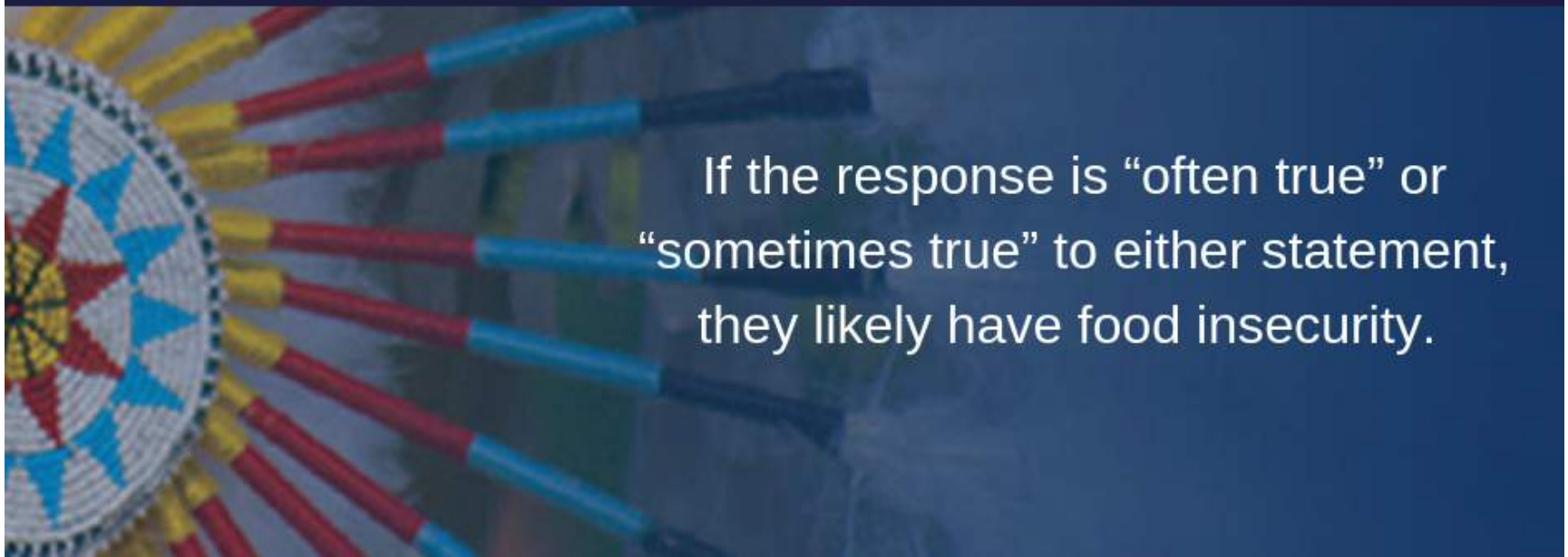
Mabli J, Worthington J. Supplemental Nutrition Assistance Program participation and child food security. Pediatrics. 2014;133(4):610–619.

Food Insecurity Assessment



Read each statement and ask your client if the statement is often true, sometimes true, rarely true, or never true.

- Within the past 12 months, we worried whether our food would run out before we got money to buy more.
- Within the past 12 months, the food we bought just didn't last and we didn't have money to get more.



If the response is "often true" or "sometimes true" to either statement, they likely have food insecurity.

Addressing Food Insecurity: A Toolkit for Pediatricians

Prepare

Educate and train staff on food insecurity and the need for universal screening

Follow AAP's recommendation of screening at scheduled check-ups or sooner, if indicated

Incorporate food insecurity screening into the institutional workflow

Show sensitivity when screening for food insecurity

Screen

Use the AAP-recommended Hunger Vital Sign:™

1. **"Within the past 12 months, we worried whether our food would run out before we got money to buy more."**
   -often true -sometimes true -never true -don't know/refused

2. **"Within the past 12 months, the food we bought just didn't last and we didn't have money to get more."**
   -often true -sometimes true -never true -don't know/refused

Patients screen positive for food insecurity if the response is "often true" or "sometimes true" for either or both statements

Document and code the administration and results of screening in medical records

Intervene

Administer appropriate medical interventions per your protocols

Connect patients and their families to the federal nutrition programs and other food resources

Document and track interventions in medical records

Support advocacy and educational efforts to end childhood food insecurity

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

For more information, visit:
http://www.frac.org/aaptoolkit

FRAC
Food Research & Action Center

Approaches in Indian Country

Youth-Led Projects

- The Pollination Project – Community Garden Native Youth Outreach

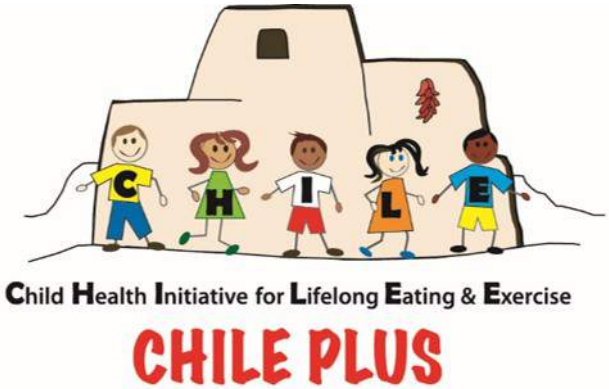
  Azelya Yazzie's outreach project focuses on helping Native American youth in California to learn how to grow and cook their own traditional foods.
- Black Mesa Water Coalition (BMWC)
  - Formed as a student-led group in 2001 and has since evolved into an intergenerational organization based in Flagstaff, AZ
  - BMWC directs food production and educational programs on a thirteen-acre community farm to help address the immediate and long-term needs of Navajo and Hopi communities
  - Food First 2018 Food Sovereignty Prize Honoree

https://thepollinationproject.org/grants-awarded/azelya-yazzie-community-garden-native-youth-outreach-project
https://foodfirst.org/announcing-the-2018-food-sovereignty-prize-honorees/

CHILE Plus
The Child Health Initiative for Lifelong Eating and Exercise Plus

Program Components

1. Classroom curriculum – nutrition and physical activity
2. Foodservice component – healthy snacks and meals
3. Professional development training
4. Family engagement and events
5. Partner with a community grocery store
6. Healthcare providers: partner with local pediatricians, WIC offices, etc. to provide consistent messaging around nutrition and physical activity.



http://prc.unm.edu/chile-plus

Approaches in Tribal Communities

CENTER FOR AMERICAN INDIAN HEALTH

John Hopkins Center for American Indian Health

- Family Spirit
- Feast for the Future

FEAST FOR THE FUTURE
JOHNS HOPKINS CENTER FOR AMERICAN INDIAN HEALTH

www.feastforthefuture.org

National Native Youth Efforts

NB3
NOTAH BEGAY III FOUNDATION

WERNATIVE

CENTER FOR NATIVE AMERICAN YOUTH
AT THE ASPEN INSTITUTE

HEALTHY NATIVE YOUTH

Packed Promise

The Chickasaw Nation's food delivery research project funded by the USDA.

This home-delivered food project is for Pre-K to 12th grade students who receive free school meals at school districts within the Chickasaw Nation.

- Each month, caregivers can choose the food kit they want for each student in their household.
- Orders can be made through the website or by calling the Packed Promise staff.
- Orders are delivered to their doorstep.
- A bonus $15 FRESH check is also included with orders – used to buy fresh and/or frozen fruits and veggies at WIC approved grocery stores within the Chickasaw Nation, or at Chickasaw Nation approved local farmers' markets.

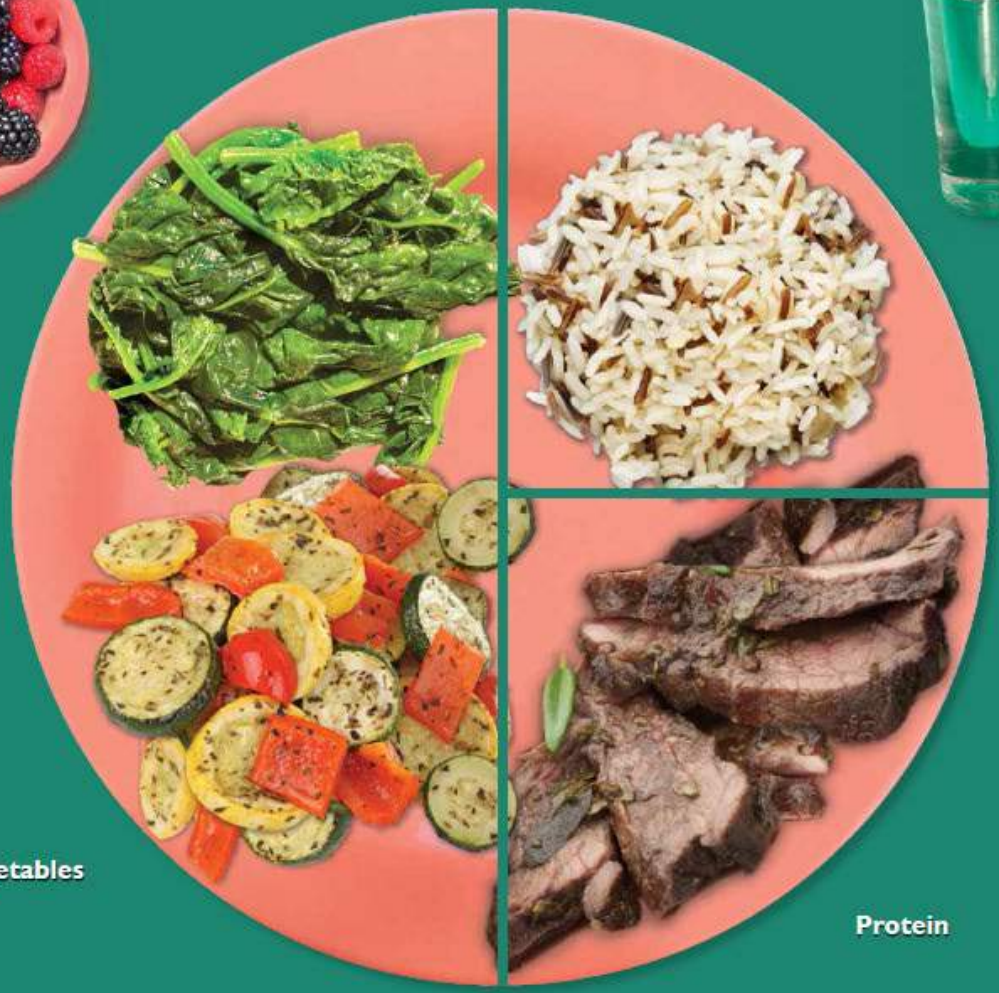
www.packedpromise.com

Updated IHS Nutrition Resource

MY NATIVE PLATE

Fruit

Water



Grain/ Starch

Vegetables

Protein

Use your plate as a guide to help you eat in a healthy way!

1. Fill half of your plate with vegetables.
2. Fill the other half of your plate with a grain/starch and a protein.
3. Add a side of fruit.

Pictured here:

- Mixed berries
- Cooked spinach
- Baked squash with peppers and herbs
- Steamed wild rice
- Baked deer meat with sage
- Water

Take a picture with your cell phone. Look at the picture later as a reminder!

Produced by:
Indian Health Service, Division of Diabetes Treatment and Prevention, 04/2018

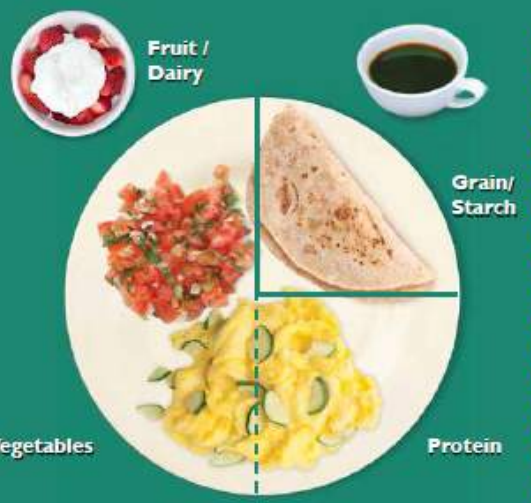
Remember:

- Stay active
- Drink water
- Use a 9-inch plate

Notes:

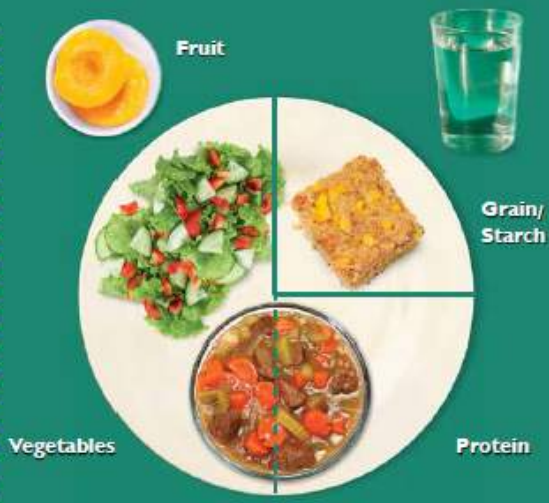
www.ihs.gov/diabetes

More Ideas for My Native Plate



Pictured here: Yogurt with strawberries, salsa, scrambled eggs with zucchini, tortilla, coffee

Pictured here: Apple, carrots, celery, lettuce, tomato, onion, pickle, beef patty, bun, unsweetened tea



Pictured here: Peaches, salad, beef and vegetable stew, cornbread, water

Ways to Add Variety to Meals and Snacks

Vegetables and Fruits

Tips

- Stock up on fresh, frozen, and canned vegetables and fruits.
- Keep fruits and vegetables on hand for snacking.
- Plan some meals around a vegetable main dish, such as a stir fry, stew, or soup.
- Enjoy fruit as a dessert.

Examples

Vegetables: Wild greens, tomatoes, carrots, leafy greens, zucchini, avocados, broccoli, green beans, cucumbers, onions, peppers, okra

Fruits: Berries, melons, apricots, peaches, citrus fruits, bananas, apples, pears

Proteins

Tips

- Choose fish, beans, lentils, eggs and nuts more often to cut down on meat.
- Instead of a beef patty for your burger, try a veggie, black bean, turkey, soy, or bison patty.
- Grill, stew, or bake meat instead of deep frying.
- If milk upsets your stomach, try yogurt, lactose free milk, or soy milk.

Examples

Animal proteins: Fish, wild game, bison, poultry, mutton, beef, pork, eggs

Plant proteins: Beans, lentils, nuts, nut butters, seeds, tofu, soy products

Dairy proteins: Milk, lactose free milk, yogurt, cheese, cottage cheese

Grains and Starches

Tips

- Choose whole grain foods, such as whole wheat breads, corn tortillas, oatmeal, and wild or brown rice.
- Try whole wheat flour instead of white flour.
- Add wild or brown rice to main dishes, such as a stir fry, stew, or soup.
- Bake or roast potatoes instead of deep frying.

Examples

Grains: Pastas, breads, crackers, rice, oats, quinoa, barley, cereals, tortillas, flour, cornmeal

Starchy vegetables: Potatoes, corn, green peas, winter squash

Produced by the IHS Division of Diabetes Treatment and Prevention.
For more information and materials, visit www.ihs.gov/diabetes.
04/2018

www.ihs.gov/diabetes

2019 Conference • Oklahoma City

Diabetes in Indian Country

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SAVE THE DATE

August 6-9, 2019

Oklahoma City Convention Center

Diabetes in Indian Country Conference

IHS, Tribal, and Urban clinicians, community health providers, and SDPI grantees will:

- **LEARN** the latest information and earn CME/CE credits*
- **NETWORK** with other grantees and clinicians
- **SHARE** best practices
- **SHOWCASE** their successful work in AI/AN communities

*ACCREDITATION: The Indian Health Service (IHS) Clinical Support Center is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The Indian Health Service Clinical Support Center is accredited with distinction as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

More info coming soon. Visit diabetesinindiancountry.com

kelli.begay@ihs.gov

Thank You