

# Indigenous Foods Improve Health



Dr. Gary Ferguson, CEO  
Rural Alaska Community Action Program, Inc.  
September 18, 2017

*Healthy People, Sustainable Communities, Vibrant Cultures*

# RurAL CAP Vision and Mission

## RurAL CAP

Rural Alaska Community Action Program, Inc.

### Vision

Healthy People, Sustainable Communities, Vibrant Cultures

### Mission

To empower low-income Alaskans through advocacy, education, affordable housing and direct services that respect our unique values and cultures





# Concept of Morbidity Line











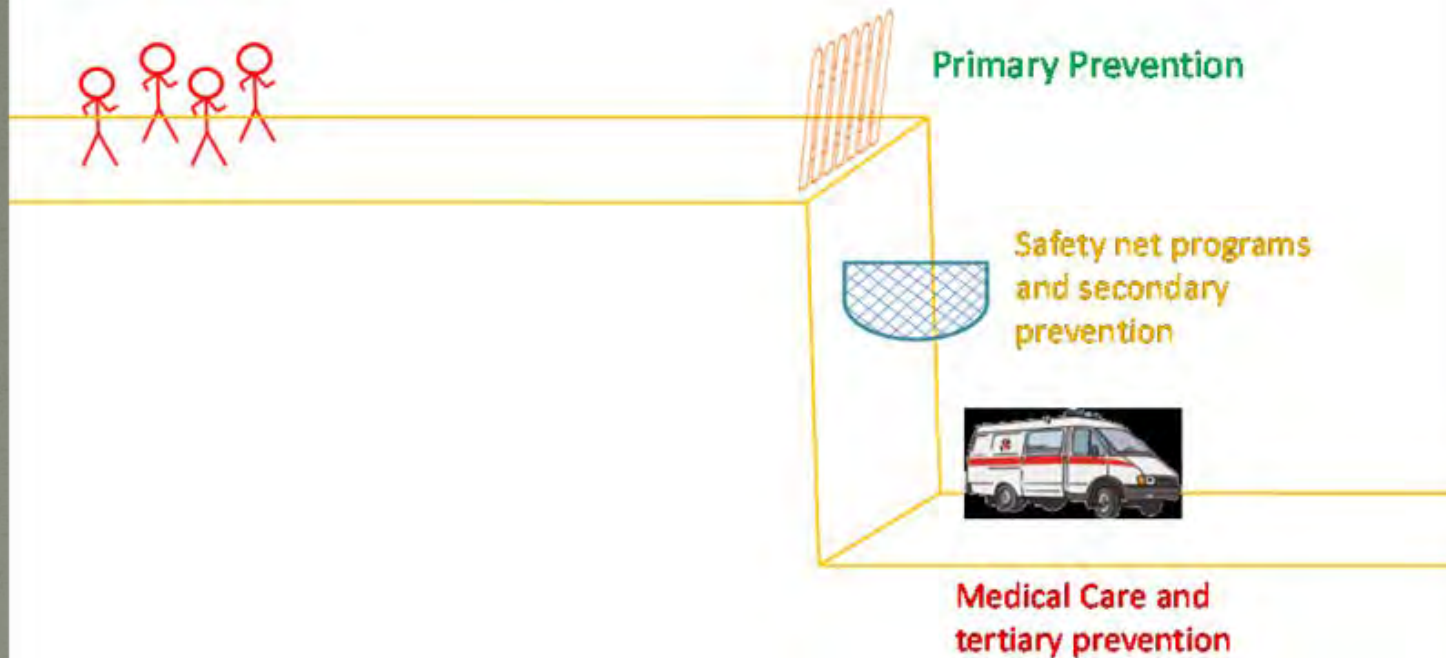






## Social determinants of health

## Current medical model



# Domains of Health Influence



<http://www.countyhealthrankings.org>



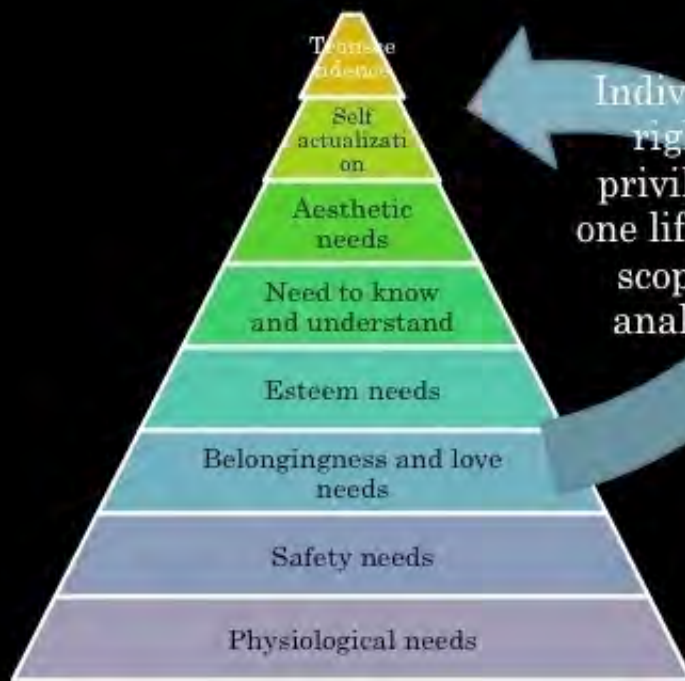


Photo credit: National Geographic

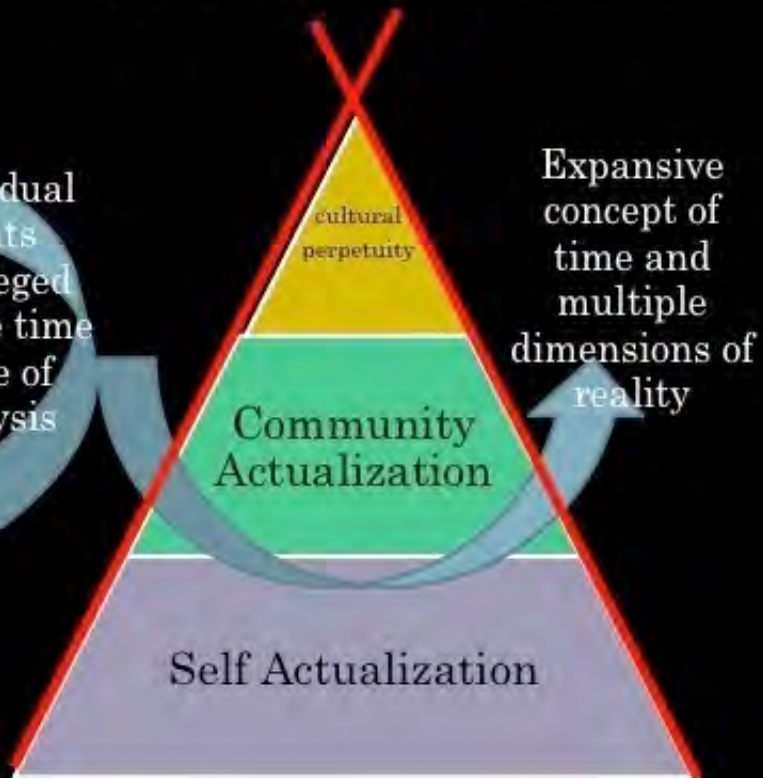


# MASLOW'S HIERARCHY OF NEEDS (INFORMED BY BLACKFOOT NATION (ALTA))

## Western Perspective



## First Nations Perspective



Individual rights privileged one life time scope of analysis

Expansive concept of time and multiple dimensions of reality

Huitt, 2004; Blackstock, 2008; Wadsworth,



Weston  
Price





1933...travelled to remote Alaskan villages

- ...examples of physical excellence and dental perfection such as has seldom been excelled by any race in the past or present.



<https://price-pottenger.org/about-us/history>



“..strong rugged babies”





# Virtually NO dental decay, until...



... villages with trading posts... "store grub" ...

"A typical effect of modernization on a growing girl was shown in a case in which the central incisors and 16 other teeth were attacked by dental caries. Sixty-four per cent of her teeth had tooth decay."



# 1<sup>st</sup> generation of children born after adoption of 'store grub'

- Dental arch deformities
- Crooked Teeth
- Changed facial form

**“We have few problems more urgent  
or more challenging  
than reversing these trends.”**

Weston A. Price, 1933









Loss of ancestral diet: dental health plummeted, with defects in next generation with switch to processed foods



ALASKA SPORTSMAN: THE BEST HUNTING SPOTS

Alaska  
INSIDE  
SPECIAL SECTION  
for Alaskans Only

# Alaska

The Store  
Outside  
Their Door

CAN NATIVES SUSTAIN THE  
SUBSISTENCE LIFESTYLE?



RANGER'S



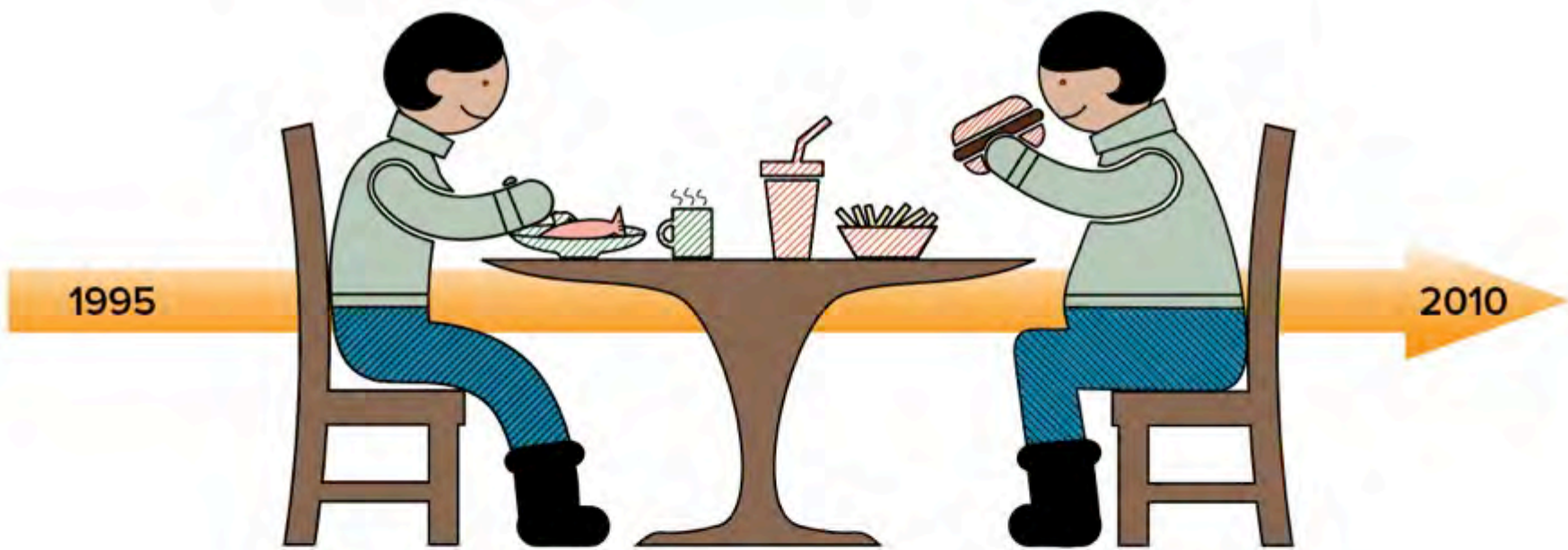


A Changing  
Picture....





**136% increase in diabetes** in Alaska Native people.<sup>(2)</sup>





# Helping Ourselves to Health: Addressing Factors that Contribute to Obesity Among Alaska Native People

Tim Gilbert, MPH  
Desiree Jackson RD, LD  
Gary Ferguson BS, ND

This research was supported by the National Research Initiative of the USDA National Institute of Food and Agriculture, grant #2007-55215-17923



- **Dietary patterns and nutritional adequacy among rural Yup'ik women in western Alaska**
  - The majority of women (90-100%) fell below the recommendations for dietary fiber, vitamin D, vitamin E and calcium. More than 50% of women fell below the recommendations for vitamin A and more than one-third were below for zinc, and vitamins C and B-6
  - Store-bought foods, such as juices/pop and coffee, were the most frequently reported food items. Sweetened beverages and pop were the main contributors to energy, carbohydrate and sugar intake
  - Traditional foods provided 34% of protein, 27% of iron, 23% of vitamin A, 21% of zinc, 6% of carbohydrate intake and <5% of total energy intake

Dietary Adequacy among Rural Yup'ik Women in Western Alaska  
Sangita Sharma, Erin Mead, Desiree Simeon, Gary Ferguson, and Fariba Kolahdooz

Journal Of The American College Of Nutrition Vol. 34 , Iss. 1,2015

## Declines in traditional marine food intake and vitamin D levels from the 1960s to present in young Alaska Native women

Diane M O'Brien <sup>(a1)</sup> <sup>(a2)</sup>, Kenneth E Thummel <sup>(a3)</sup>, Lisa R Bulkow <sup>(a4)</sup>, Zhican Wang <sup>(a3)</sup> ... 

DOI: <https://doi.org/10.1017/S1368980016001853> Published online: 28 July 2016

### Abstract

To measure the trends in traditional marine food intake and serum vitamin D levels in Alaska Native women of childbearing age (20–29 years old) from the 1960s to the present. We measured a biomarker of traditional food intake, the  $\delta^{15}\text{N}$  value, and vitamin D level, as 25-hydroxycholecalciferol (25(OH)D<sub>3</sub>) concentration, in 100 serum samples from 20–29-year-old women archived in the Alaska Area Specimen Bank, selecting twenty-five per decade from the 1960s to the 1990s. We compared these with measurements of red-blood-cell  $\delta^{15}\text{N}$  values and serum 25(OH)D<sub>3</sub> concentrations from 20–29-year-old women from the same region collected during the 2000s and 2010s in a Center for Alaska Native Health Research study. The Yukon Kuskokwim Delta region of south-west Alaska. Alaska Native women (*n* 319) aged 20–29 years at the time of specimen collection. Intake of traditional marine foods, as measured by serum  $\delta^{15}\text{N}$  values, decreased significantly each decade from the 1960s through the 1990s, then remained constant from the 1990s through the present ( $F_{5,306}=77.4$ ,  $P<0.0001$ ). Serum vitamin D concentrations also decreased from the 1960s to the present ( $F_{4,162}=26.1$ ,  $P<0.0001$ ). Consumption of traditional marine foods by young Alaska Native women dropped significantly between the 1960s and the 1990s and was associated with a significant decline in serum vitamin D concentrations. Studies are needed to evaluate the promotion of traditional marine foods and routine vitamin D supplementation during pregnancy for this population.

[Export citation](#)[Request permission](#)

### Keywords:

[Nutrition transition](#) [Rickets](#)[25-Hydroxycholecalciferol concentration](#) [\$\delta^{15}\text{N}\$  value](#) [Stable isotope ratios](#)[Arctic health](#)[Circumpolar health](#)

O'Brien, D.M., Thummel, K.E., Bulkow, L.R., Wang, Z., Corbin, B., Klejka, J., Hopkins, S.E., Boyer, B.B., Hennessy, T.W. and Singleton, R. (2016) 'Declines in traditional marine food intake and vitamin D levels from the 1960s to present in young Alaska Native women', *Public Health Nutrition*, pp. 1–8. doi: 10.1017/S1368980016001853.





American  
Diabetes  
Association

Diabetes Care

[Home](#) | [Current Issue](#) | [Archive](#) | [Contact Us](#) | [Subscribe](#) | [Help](#) | [Alerts](#)

# **Lower Prevalence of Impaired Glucose Tolerance and Diabetes Associated With Daily Seal Oil or Salmon Consumption among Alaska Natives**

1. [Amanda I Adler, MD, PHD,](#)
2. [Edward J Boyko, MD, MPH,](#)
3. [Cynthia D Schraer, MD and](#)
4. [Neil J Murphy, MD](#)

## Researchers identify cause of gastrointestinal disorder affecting Inuit

ANDRÉ PICARD - PUBLIC HEALTH REPORTER  
THE GLOBE AND MAIL.

Last updated Monday, Dec. 01 2014, 6:48 PM EST



Congenital Sucrase-isomaltase Deficiency (CSID)

<http://www.theglobeandmail.com/news/national/researchers-identify-cause-of-gastrointestinal-disorder-affecting-inuit/article21845977/>



A composite image featuring a human silhouette, a blue DNA double helix, and a snowy Arctic landscape. The silhouette is centered, with the DNA helix overlaid on it. The background is a snowy, mountainous landscape under a cloudy sky.

# CPT1A Arctic Variant

Photo Credit: American Renaissance



THE NATION'S NEWSPAPER

**USA TODAY**

NO. 1 IN THE USA

**MILLENNIUM**  
HOTELS AND RESORTS  
You are the Center of Our World.  
millenniumhotels.com

\$1.00



By Sam Emerson, Touchstone Pictures

**Sandra Bullock:** In *The Proposal*, a hit.

## Summer winners, losers in Hollywood

■ The short list of movie standouts includes Reynolds, Bullock, Pine, 1, 3D



## Pursue tarmac liberation

Works for travelers to get off stuck flights, 1-2B

By Jeff Chiu, AP

# seek more gambling

# Obesity is a key link to soaring health tab

## Report: Costs double to \$147B in a decade

By Nanci Hellmich  
USA TODAY





## How Big Business Got Brazil Hooked on Junk Food

As growth slows in wealthy countries, Western food companies are aggressively expanding in developing nations, contributing to obesity and health problems.

[https://www.nytimes.com/interactive/2017/09/16/health/brazil-obesity-nestle.html?emc=edit\\_ta\\_20170917&nl=top-stories&nid=61113591&ref=cta](https://www.nytimes.com/interactive/2017/09/16/health/brazil-obesity-nestle.html?emc=edit_ta_20170917&nl=top-stories&nid=61113591&ref=cta) [NY Times, 09/17/17]







**Fry  
Bread  
and  
Spam**



**By Dr. Sioux**

*Dr. Sioux  
Sioux, July 2012*







# Vis Medicatrix Naturae





“Let foods be your medicine”

-Hippocrates















Badarki Salad :: Traditional Foods, Contemporary Chef :: Aleutians



ANTHCStoreOutside

Subscribe 606

2,277 views

+ Add to Share More

13 0

Published on Nov 22, 2012

[www.youtube.com/anthcstoreoutside](http://www.youtube.com/anthcstoreoutside)



# STORE OUTSIDE YOUR DOOR

HUNT • FISH • GATHER • GROW



Subscribe to us on YouTube!  
[www.youtube.com/anthestoreoutside](http://www.youtube.com/anthestoreoutside)



Like us on Facebook!  
[www.facebook.com/storeoutside](http://www.facebook.com/storeoutside)





SAVE-the-DATE June 21-24, 2015  
Alaska Pacific University, Anchorage, AK



**ALASKAN PLANTS AS FOOD  
& MEDICINE SYMPOSIUM**

*"Coming Together to Promote Traditional Plant Knowledge and Ethical Harvesting"*



*Strengthening Our Roots ~ Growing Our Future*  
www.alaskanplants.org : apfm@anthc.org : 907.729.3639  
Alaska Native Tribal Health Consortium, HPDP Program























KENAITZE  
INDIAN  
TRIBE

[CAREERS](#)

[CULTURE](#)

[PUBLICATIONS](#)

[PRESS](#)

[\(907\) 335-7200](#)



[HOME](#)

[ABOUT](#)

[ASSISTANCE](#)

[DENA'INA WELLNESS CENTER](#)

[PROGRAMS](#)

[CONTACT](#)



[« All Events](#)

DENA'INA PLANTS AS FOOD AND MEDICINE CONFERENCE

**September 17 @ 8:00 am - 3:00 pm**







	<b>SUBSISTENCE</b>
14-1	A RESOLUTION SUPPORTING PROTECTIONS, INCLUDING A COMMUNITY FISHING ASSOCIATION, FOR GULF OF ALASKA FISHERY DEPENDANT COASTAL COMMUNITIES FROM THE NORTH PACIFIC FISHERIES MANAGEMENT COUNCIL AS THE COUNCIL DEVELOPES THE GULF OF ALASKA TRAWL GROUND FISH BYCATCH MANAGEMENT PROGRAM (RATIONALIZATION PROGRAM)
14-2	CALL FOR ALASKA NATIVE SELF-DETERMINATION IN THE MANAGEMENT OF THEIR HUNTING, FISHING, TRAPPING, AND GATHERING RIGHTS AND RESOURCES



## 2014 AFN Convention Resolutions

14-6	TO SUPPORT THE SWIFT ENACTMENT OF REGULATIONS GOVERNING THE PROCEDURES FOR THE FEDERAL SUBSISTENCE BOARD TO DETERMINE RURAL/TRIBAL COMMUNITY STATUS UNDER TITLE VIII OF THE ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT
14-41	SUBSISTENCE RIGHTS PRIORITY OVER COMMERCIAL AND SPORTS USES FOR FISH AND GAME
14-42	PROTECTION OF ALASKA NATIVE TRADITIONAL RESOURCE MANAGEMENT PRACTICES
14-43	RE-ESTABLISH INDIGENOUS SUBSISTENCE RIGHTS IN ALASKA



# Decolonizing Healthcare





# Traditional Foods Infant Feeding




Patti Kanayurak and her boy Connor (Barrow, Alaska). Photo used with permission.



## ELECTRONIC ARTICLE

### Prenatal and Postnatal Flavor Learning by Human Infants

Julie A. Mennella, PhD, Coren P. Jagnow, MS, Gary K. Beauchamp,  
PhD

 Author Affiliations

#### ABSTRACT

**Background.** Flavors from the mother's diet during pregnancy are transmitted to amniotic fluid and swallowed by the fetus. Consequently, the types of food eaten by women during pregnancy and, hence, the flavor principles of their culture may be experienced by the infants before their first exposure to solid foods. Some of these same flavors will later be experienced by infants in breast milk, a liquid that, like amniotic fluid, comprises flavors that directly reflect the foods, spices, and beverages eaten by the mother. The present study tested the hypothesis that experience with a flavor in amniotic fluid or breast milk modifies the infants' acceptance and enjoyment of similarly flavored foods at weaning.

[◀ Previous](#) | [Next Article ▶](#)  
[Table of Contents](#)

#### This Article

PEDIATRICS Vol. 107 No. 6 June 1,  
2001  
pp. e88  
(doi: 10.1542/peds.107.6.e88)

- [▶ Abstract Free](#)
- [Full Text](#)
- [Full Text \(PDF\)](#)

#### - Article Type

- ELECTRONIC ARTICLE

#### - Services

- [Email this article to a friend](#)
- [Alert me when this article is cited](#)
- [Alert me if a correction is posted](#)
- [Alert me when eletters are published](#)
- [Similar articles in this journal](#)
- [Similar articles in PubMed](#)
- [Add to My File Cabinet](#)
- [Download to citation manager](#)
- [Request Permissions](#)











# Traditional Food Guide

---

FOR ALASKA NATIVE  
CANCER SURVIVORS

---



Alaska Native Tribal Health Consortium  
Cancer Program









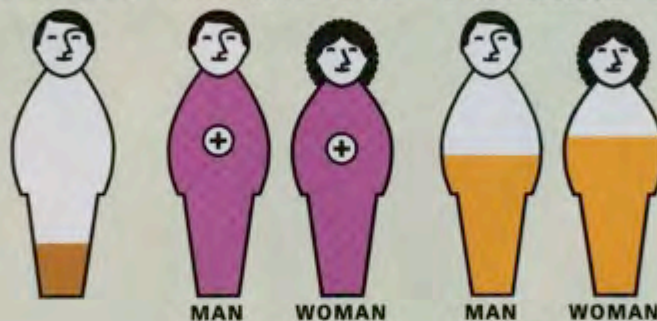


## FIREWEED NUTRITION INFORMATION

Fireweed is an excellent source of Vitamins A & C, and a good source of fiber



### FIBER VITAMIN A VITAMIN C



### HEART FRIENDLY

- Fat free
- Very low in sodium

### NUTRITION INFORMATION

Per serving - 1 cup: raw

Calories	24
Protein	2 g
Carbohydrate	3 g
Fat	0
Calories from fat	0 %
Saturated fat	NT*
Dietary Fiber	3 g
Cholesterol	NT*
Sodium	28 mg
Vitamin A	3146 IU
Vitamin C	55 mg
Iron	1 mg

\*Not Tested



# PLANTS THAT WE EAT



*Nauriat  
Nigiñaqtuat*



From the traditional  
wisdom of the  
Iñupiat Elders of  
Northwest Alaska



**Anore Jones**



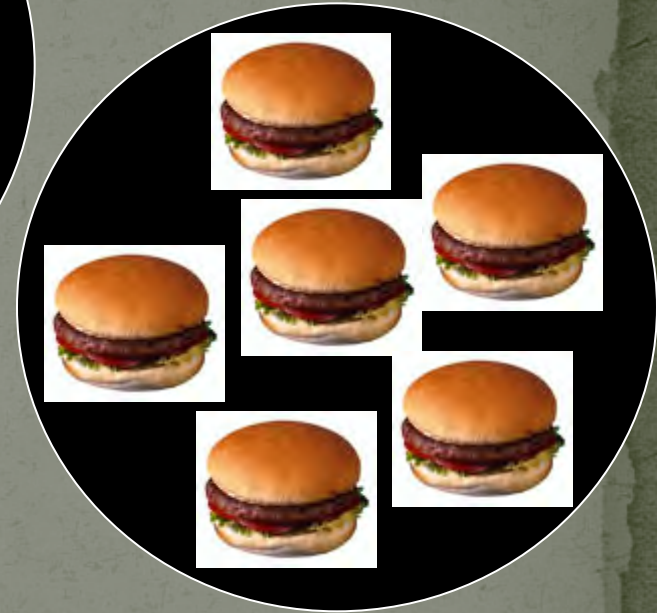
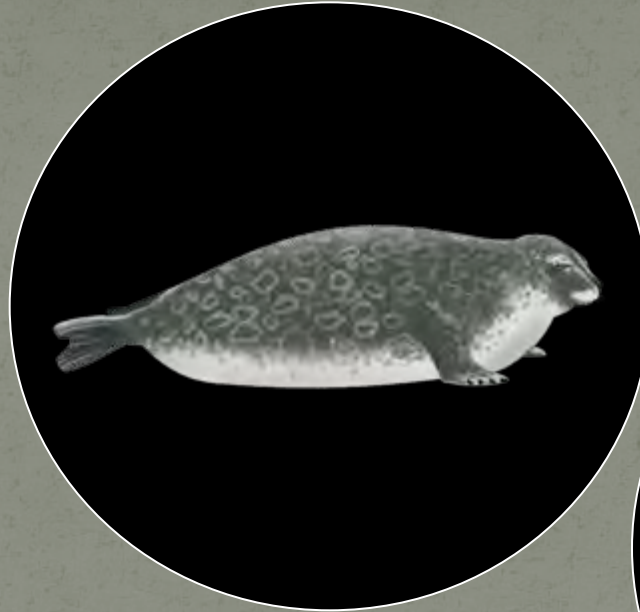








# IRON



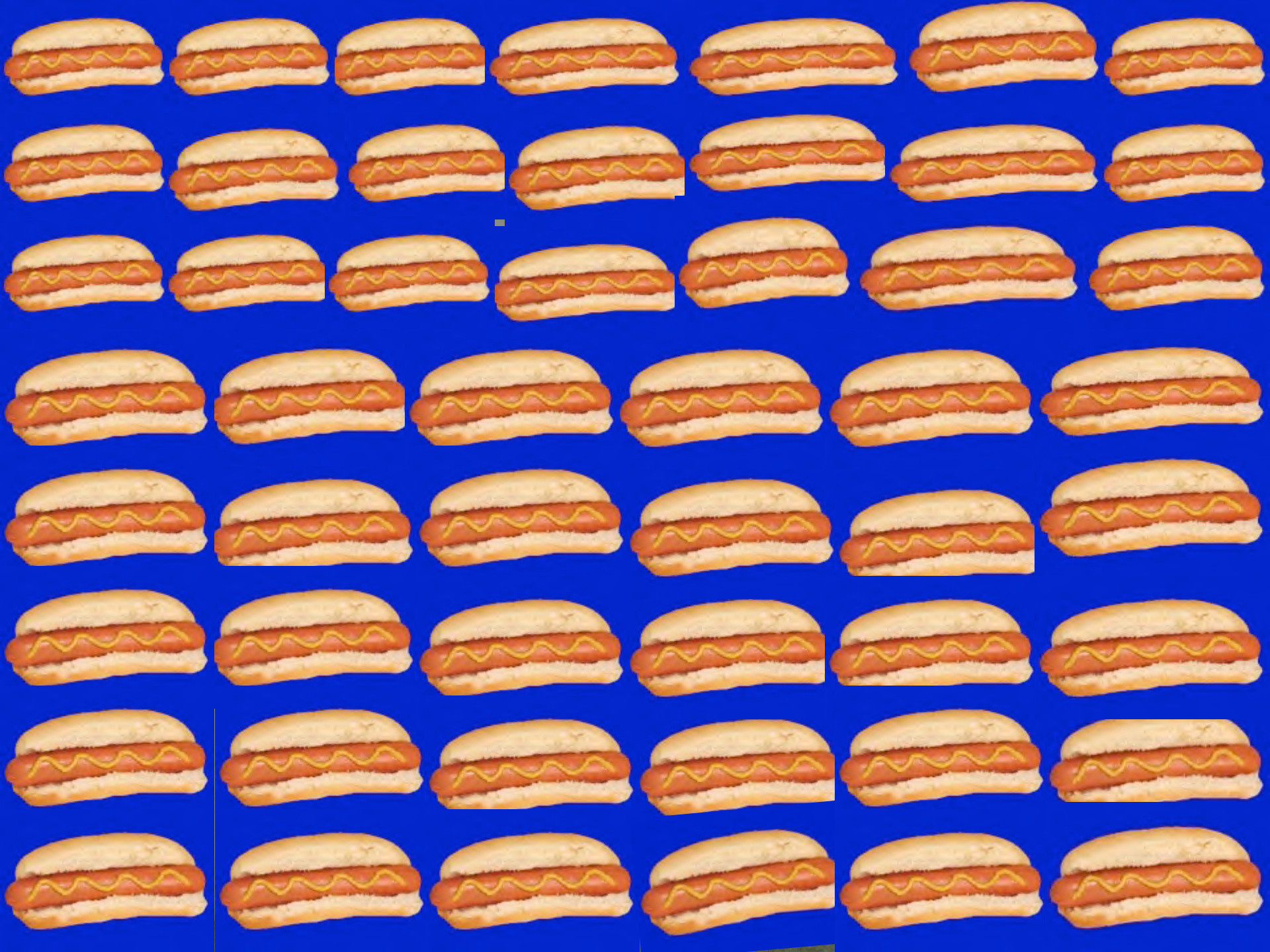
IRON....



how many hotdogs?

Country food is good for you and your family



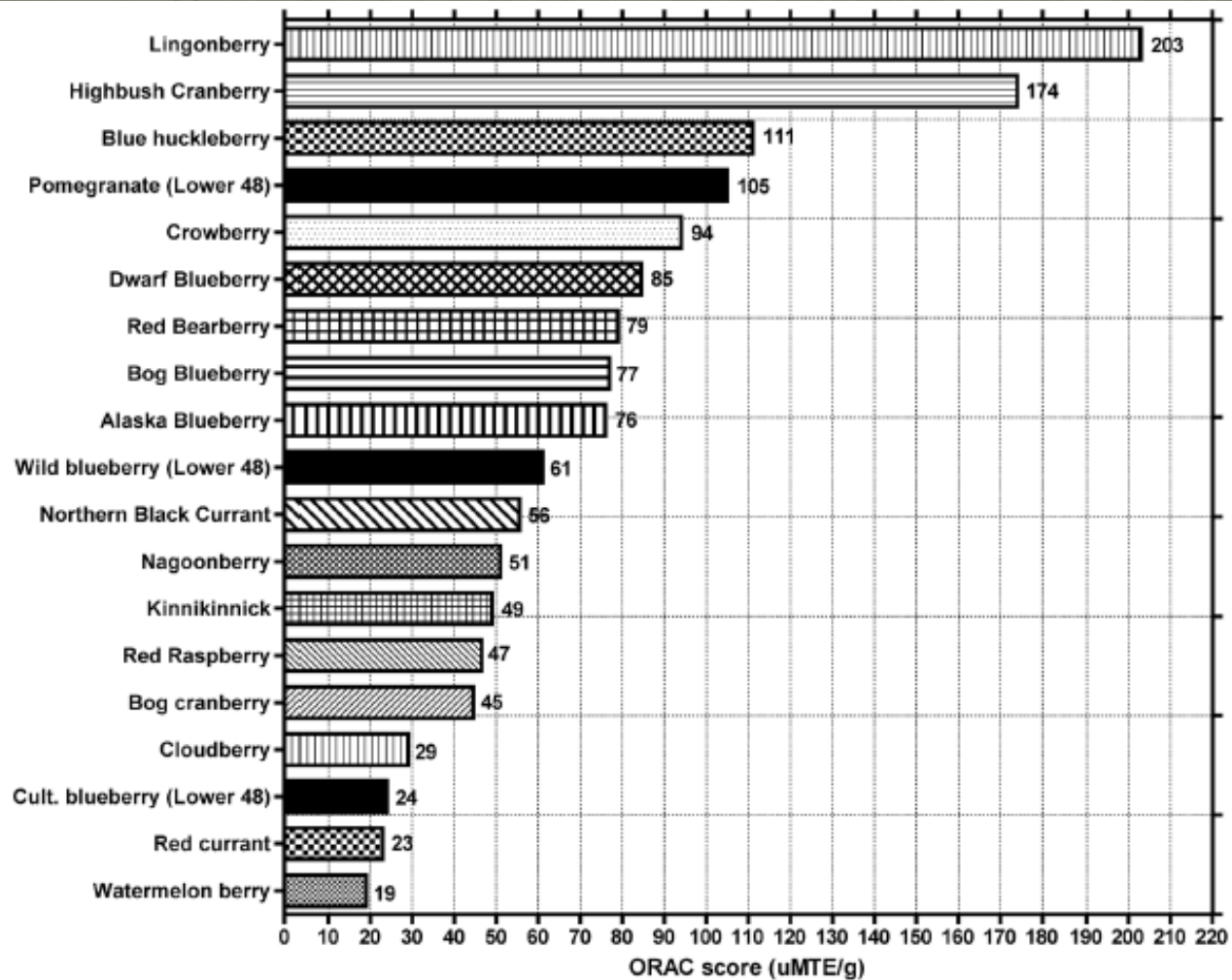








# Comparison of berries







PART IV

## TRADITIONAL FOODS IN NATIVE AMERICA

A compendium of traditional foods stories  
from American Indian and Alaska Native communities



<https://www.cdc.gov/diabetes/ndwp/pdf/part-iv---traditional-foods-in-native-america.pdf>





## Traditional Foods Program and Map

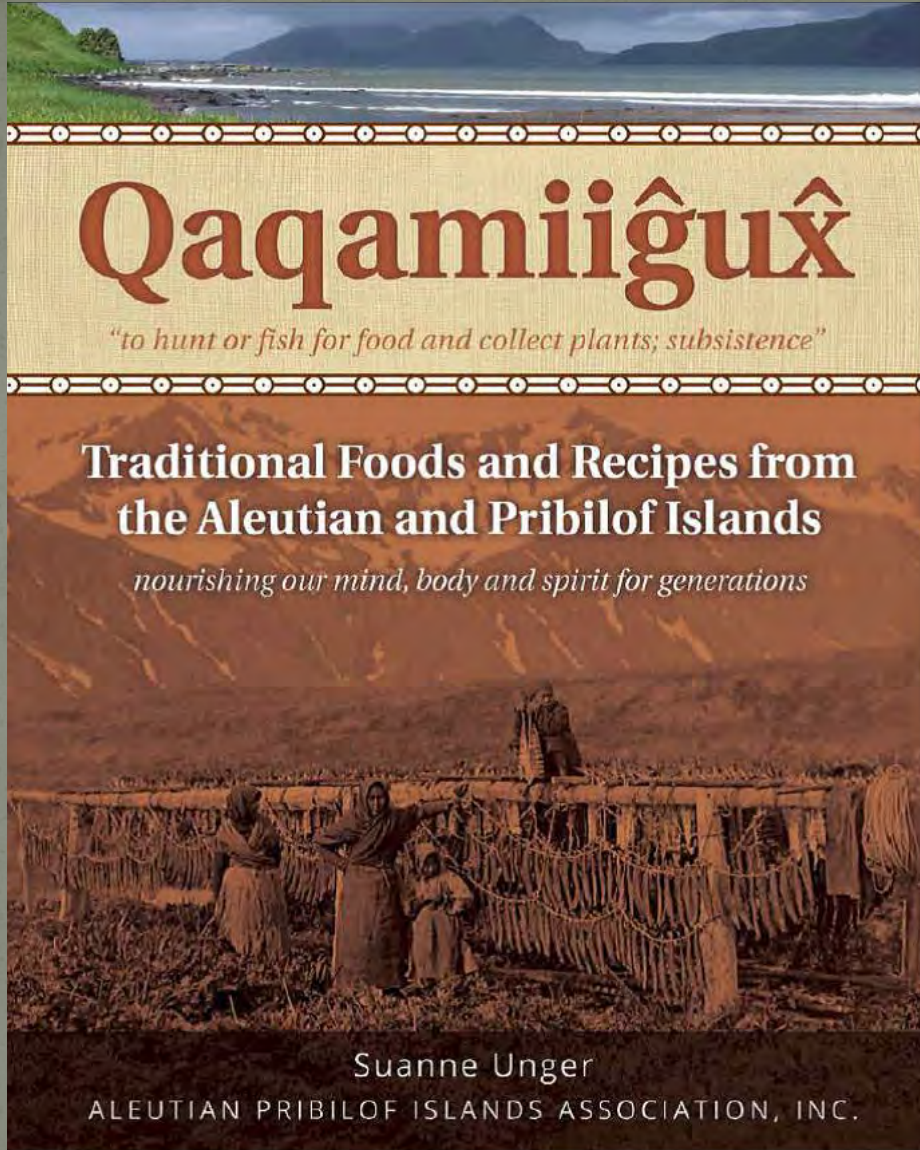
The stories here highlight the CDC NDWP Traditional Foods Program grantee partner programs. These communities represent diverse cultures and geographies across Indian Country.

### Traditional Foods Partners



<https://www.cdc.gov/diabetes/ndwp/traditional-foods/index.html>  
CDC Native Diabetes Wellness Program





# Qaqamiigûx

*"to hunt or fish for food and collect plants; subsistence"*

## **Traditional Foods and Recipes from the Aleutian and Pribilof Islands**

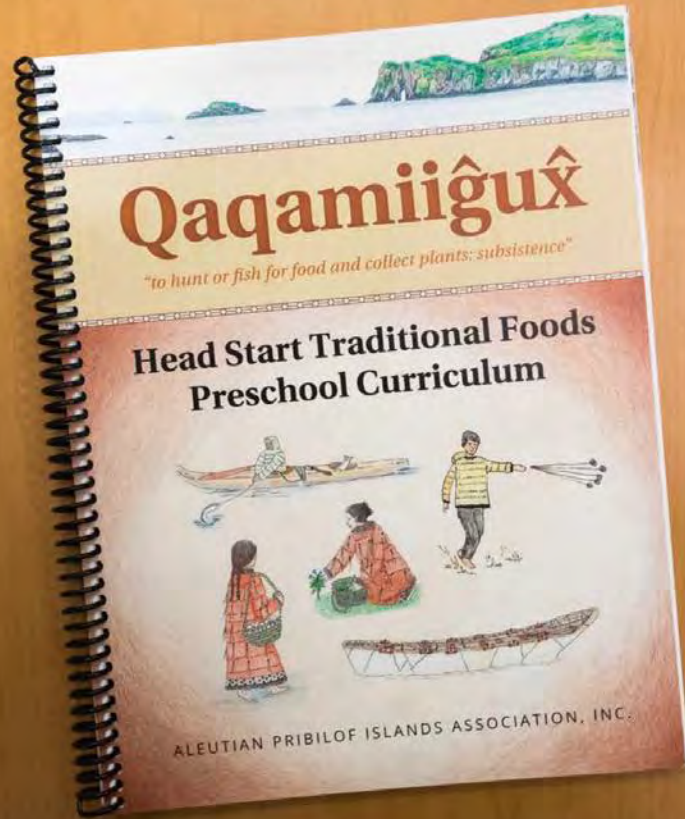
*nourishing our mind, body and spirit for generations*

Suanne Unger

ALEUTIAN PRIBILOF ISLANDS ASSOCIATION, INC.

<http://www.apiai.org/product/traditional-foods-recipes/>





The Head Start Traditional Foods Preschool Curriculum, prepared by the Aleutian Pribilof Islands Association, is being used starting this month in communities in the Unangax region from Sand Point to St. Paul. (Loren Holmes / Alaska Dispatch News)





## Igiugig residents take on 6-week traditional food challenge as a health experiment

Every month in 2017 they have taken their weight, blood pressure, blood sugar and heart rate. They will compare the results from before and after the challenge.

ADN.COM





[Live Science](#) > [Health](#)

## Yes, Your Diet Can Raise (or Lower) Your Risk of Colon Cancer

By Sara G. Miller, Staff Writer | April 5, 2017 03:25pm ET

 928

 31



MORE ▾

Health without the hype:  
Subscribe now to stay in the know.

Subscribe to  
LiveScience >







# HHS Public Access

Author manuscript

*Nat Commun.* Author manuscript; available in PMC 2015 October 28.

Published in final edited form as:

*Nat Commun.* ; 6: 6342. doi:10.1038/ncomms7342.

## **Fat, Fiber and Cancer Risk in African Americans and Rural Africans**

**Stephen J.D. O'Keefe<sup>1</sup>, Jia V. Li<sup>5</sup>, Leo Lahti<sup>6</sup>, Junhai Ou<sup>1</sup>, Franck Carbonero<sup>7</sup>, Khaled Mohammed<sup>1</sup>, Joram M Posma<sup>5</sup>, James Kinross<sup>5</sup>, Elaine Wahl<sup>1</sup>, Elizabeth Ruder<sup>4</sup>, Kishore Vippera<sup>1</sup>, Vasudevan Naidoo<sup>8</sup>, Lungile Mtshali<sup>8</sup>, Sebastian Tims<sup>6</sup>, Philippe G.B. Puylaert<sup>6</sup>, James DeLany<sup>3</sup>, Alyssa Krasinskas<sup>2</sup>, Ann C. Benefiel<sup>7</sup>, Hatem O. Kaseb<sup>1</sup>, Keith Newton<sup>8</sup>, Jeremy K. Nicholson<sup>5</sup>, Willem M. de Vos<sup>6</sup>, H. Rex Gaskins<sup>7</sup>, and Erwin G. Zoetendal<sup>6</sup>**

<sup>1</sup>Department of Medicine, Divisions of Gastroenterology, University of Pittsburgh, PA, USA

<sup>2</sup>Pathology, University of Pittsburgh, PA, USA <sup>3</sup>Endocrinology, University of Pittsburgh, PA, USA

<sup>4</sup>Sports Medicine and Nutrition, School of Health and Rehabilitation Sciences, University of Pittsburgh, PA, USA <sup>5</sup>Department of Surgery and Cancer, Imperial College London, UK

<sup>6</sup>Laboratory of Microbiology, Wageningen University, The Netherlands <sup>7</sup>(LL and WMdV also affiliated with Department of Veterinary Bioscience, University of Helsinki, Finland; WMdV also with the Department of Bacteriology and Immunology, University of Helsinki, Finland); University of Illinois at Urbana-Champaign, USA <sup>8</sup>University of KwaZulu-Natal, Durban, South Africa



# Lifestyle | Health and Fitness

Body | Mind | Nutrition

🏠 > Lifestyle > Health and Fitness > Nutrition

## What's so healthy about a Mediterranean diet?








Follow all of ScienceDaily's **latest research news** and **top science headlines!**

## Science News

*from research organizations*

 Print  Email  Share

### Extra-virgin olive oil preserves memory, protects brain against Alzheimer's

*Date:* June 21, 2017

*Source:* Temple University Health System

*Summary:* The Mediterranean diet is associated with a variety of health benefits, including a lower incidence of dementia. Now, researchers have identified a specific ingredient that protects against cognitive decline: extra-virgin olive oil. In a new study, the researchers show that consumption of extra-virgin olive oil protects memory and learning ability and reduces the formation of amyloid-beta plaques and neurofibrillary tangles in the brain -- classic markers of Alzheimer's disease.

Share:      

### Most Popular

*this week*

#### RELATED TOPICS

#### FULL STORY

#### HEALTH & MEDICINE

Health & Medicine



**Cocoa and Chocolate Are Not Just Treats -- They Are Good for Your Cognition**





# NATIVE VOICES



EXHIBITION

INTERVIEWS

TIMELINE

RESOURCES

VISIT

Search...



Timeline / Renewing Native Ways / 1991: Waianae Diet promotes Native Hawaiian culture, well-being



Gathering taro and taro leaves in the Waipo Valley on the Big Island, Hawaii. Taro is a staple of the traditional Hawaiian diet.

Courtesy Karen Kasmauski/Science Faction/Corbis

## 1991: Waianae Diet promotes Native Hawaiian culture, well-being

The Waianae Diet is based on the traditional Hawaiian diet, which is high in complex carbohydrates and fiber and low in fat. A study published in the *American Journal of Clinical Nutrition* in 1991 involves 19 Native Hawaiians, who had an average weight loss of 17 pounds after three weeks on the diet. Other benefits noted in the study include decreases in cholesterol and blood sugar after using Native Hawaiian foods and ancient Hawaiian cooking methods. Participants are taught by Native Hawaiian healers about practices that promote well-being.

The principle foods in the diet are taro, poi, sweet potatoes, yams, breadfruit, greens, seaweed, fruit, and small amounts of fish cooked using ancient cooking methods. Cooking includes steaming, though most foods are served raw. A major motivation for people who use this diet is the revival of Native Hawaiian culture.





Emi-no-Mise's choju-zen (longevity dish) | STEPHEN MANSFIELD

LIFESTYLE

## Food for thought: A traditional Okinawan diet may help prolong life

BY STEPHEN MANSFIELD

SPECIAL TO THE JAPAN TIMES



**There are too many people  
counting calories  
and not enough people  
counting chemicals.**







## Food preservatives linked to obesity and gut disease

Mouse study suggests that emulsifiers alter gut bacteria, leading to the inflammatory bowel condition colitis.

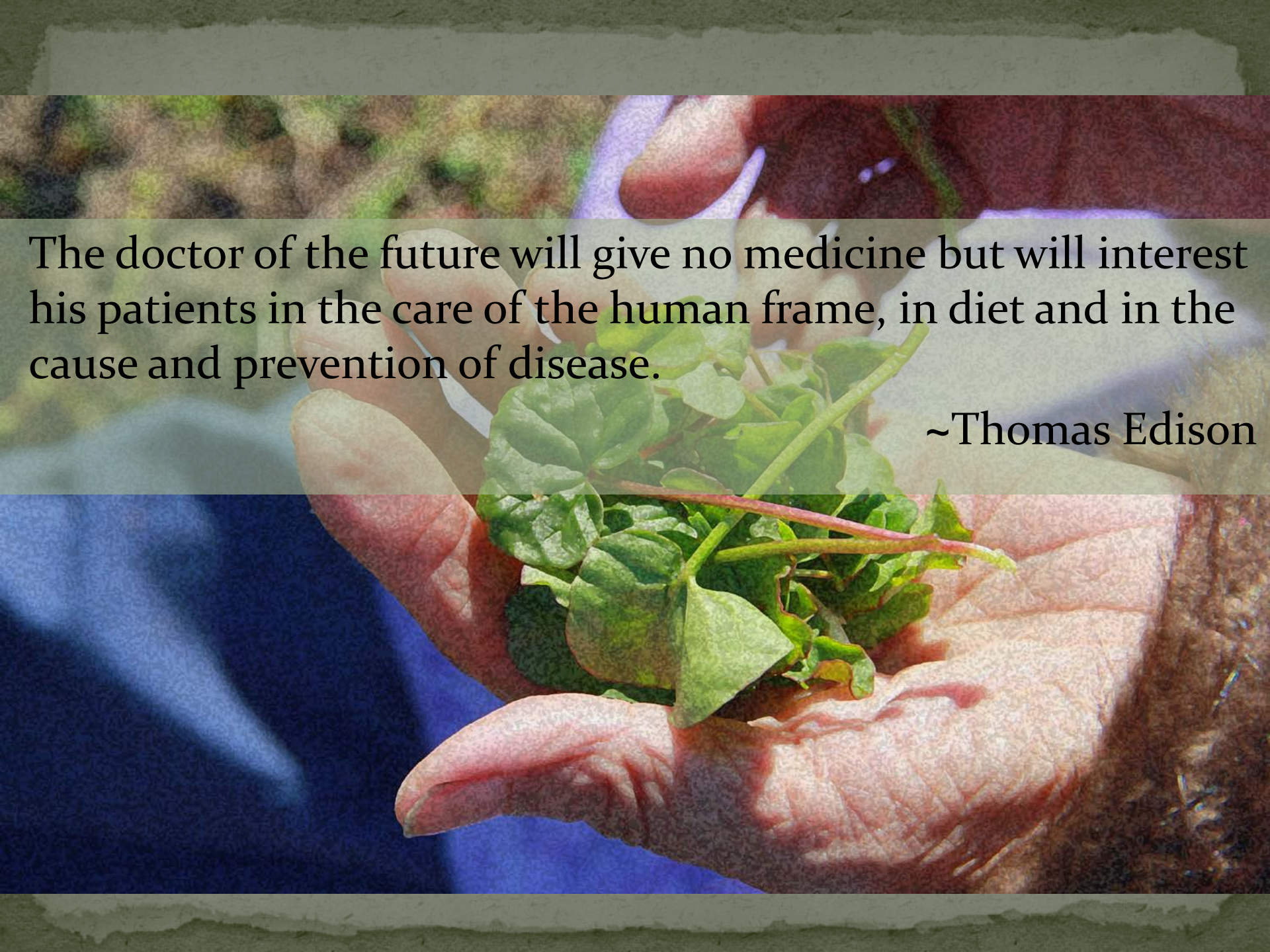
[Sara Reardon](#)

25 February 2015

 [Rights & Permissions](#)







The doctor of the future will give no medicine but will interest his patients in the care of the human frame, in diet and in the cause and prevention of disease.

~Thomas Edison



# Culture is Medicine











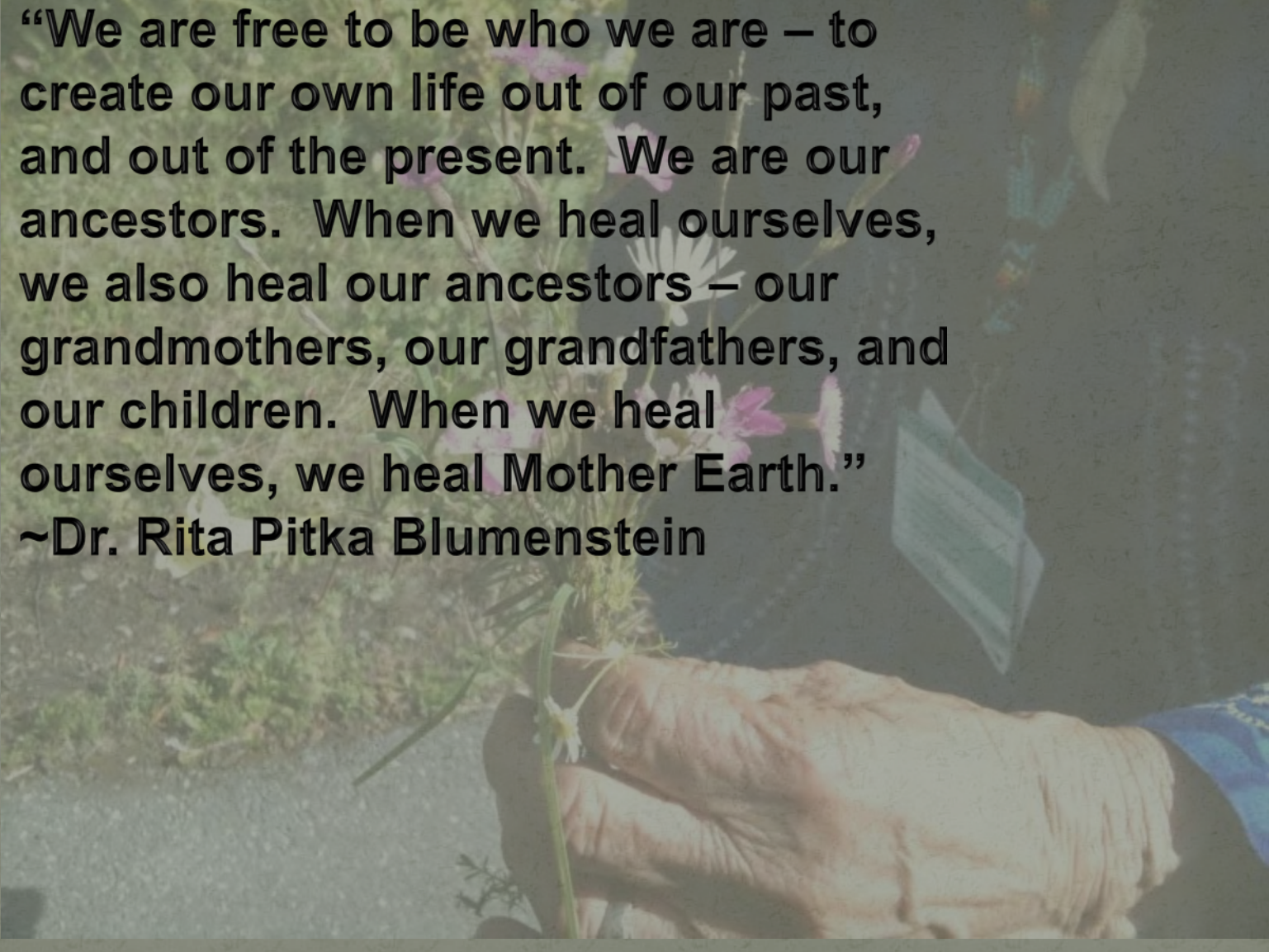












**“We are free to be who we are – to create our own life out of our past, and out of the present. We are our ancestors. When we heal ourselves, we also heal our ancestors – our grandmothers, our grandfathers, and our children. When we heal ourselves, we heal Mother Earth.”**

**~Dr. Rita Pitka Blumenstein**







# Addressing Nutrition Insecurity, Reinforcing Food Sovereignty



Dr. Gary Ferguson, CEO  
Rural Alaska Community Action Program, Inc.  
[gferguson@ruralcap.com](mailto:gferguson@ruralcap.com)

*Healthy People, Sustainable Communities, Vibrant Cultures*