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# Measuring Access to Healthful, Affordable Food in American Indian and Alaska Native Tribal Areas

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## What Is the Issue?

American Indian and Alaska Native (AIAN) tribal populations experience about twice the rate of nutrition-related health problems—including cardiovascular disease, diabetes, and obesity—than most Americans. Prior studies cite limited access to supermarkets and other sources of affordable and nutritious foods as contributing to less healthful food choices by consumers. In many AIAN tribal areas, relatively low population density and limited incomes create disincentives for the entry of large grocery stores and supermarkets. Smaller grocery stores, convenience stores, and other retail outlets—though more prevalent in AIAN tribal areas and more accessible—are less likely to offer comparable foods. Healthy eating can be especially challenging for the poorest tribal area households. Although many are eligible for assistance through the Supplemental Nutrition Assistance Program (SNAP), limited access is also reported for supermarkets authorized for the program. Access measures are also reported for outlets used by the Food Distribution Program on Indian Reservations (FDPIR), an alternative program that provides healthful foods where SNAP-authorized food stores are limited. This study's findings contribute to a better understanding of differences in access to healthful, affordable food by researchers and policymakers charged with improving the nutrition and health status of tribal area populations.

## What Did the Study Find?

Both American Indian and Alaska Native tribal area populations are mostly rural; as a result, only 25.6 percent of all tribal area populations were 1 mile or less from a supermarket (defined as walking distance), compared with 58.8 percent of the U.S. population. Measured by population percentiles, the median distance to the nearest supermarket was 0.8 mile for all Americans, compared with 3.3 miles for all tribal area individuals. Although the 20th percentile of the population among tribal area and all U.S. individuals were both within walking distance, at the 80th percentile tribal area individuals were 13.2 miles from a supermarket, compared with 2.2 miles for all Americans. Almost one-half of all tribal area individuals had incomes at or below 200 percent of the Federal Poverty Level (FPL). Of those, 27.8 percent lived in walking distance from a supermarket, compared with 63.6 percent of low-income individuals nationwide.

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The shares and population percentiles corresponding to SNAP-authorized supermarkets and FDPIR outlets were separately measured to better account for access by low-income individuals, children, the elderly, and households without a vehicle—those more likely to rely on food assistance benefits. Among the three tribal area types studied—American Indian Tribal Areas, Oklahoma Tribal Statistical Areas, and Alaska Native Village Statistical Areas—the fewer numbers of supermarkets that are authorized for SNAP resulted in an often smaller share of low-income individuals within walking distance and a greater share more than 10 miles distant compared with the shares for all supermarkets.

Because FDPIR outlets provide an alternative to SNAP participation in areas where access to SNAP-authorized food stores is often limited, they are typically located within the tribal areas they serve. The share of low-income individuals within walking distance varied by tribal area type, ranging from 7.1 percent in Oklahoma Tribal Statistical Areas to 39.4 percent in Alaska Native Village Statistical Areas.

In tribal areas where both FDPIR and SNAP are available, the selection of the nearest of either outlet—a hypothetical outlet type—resulted in a greater share of low-income individuals within walking distance and a greater share between 1 and 10 miles driving distance relative to those same shares for SNAP-authorized supermarkets or FDPIR outlets alone. When the shares of walking distance and driving distance between 1 to 10 miles are combined, their shares ranged from 83.9 percent in American Indian Tribal Areas to 97.4 percent in Alaska Native Village Statistical Areas.

## **How Was the Study Conducted?**

This study uses spatial analysis of the locations of tribal area populations, large grocery stores, supermarkets and supercenters, SNAP-authorized supermarkets, and FDPIR outlets to measure differences in access to healthful, affordable foods. Population and population subgroup characteristics for American Indian and Alaska Native tribal areas were obtained from the 2010 Census of Population and the 2006-2010 American Community Survey (ACS) 5-year summary. The 2006-2010 ACS summary file was chosen to allow comparisons with national results reported in Ver Ploeg et al. (2012). The locations of large grocery stores, supermarkets, and supercenters (herein referred to as supermarkets) are from a 2010 ERS directory developed by the same authors. The locations of SNAP-authorized supermarkets and FDPIR outlets were obtained from USDA, Food and Nutrition Service, and are based on 2010 data.

Geographic Information System (GIS) methods were used to compute the number and percentage of populations and population subgroups in 545 American Indian and Alaska Native tribal areas by nearest distance to each of four outlet types. Each individual tribal area was divided into 1/2-kilometer square grids, and distances to the nearest outlet type were computed for each grid-cell population and population subgroup. These results were then aggregated to obtain access measures for American Indian Tribal Areas (AITAs), Oklahoma Tribal Statistical Areas, and Alaska Native Village Statistical Areas. Two methods were used to measure tribal access. The first reports the number and share of tribal area populations by walking (1 mile or less) and driving (more than 1 mile) distance. The second method reports distance to outlet type for the 20th, 50th (median), and 80th percentile of population. A Statistical Supplement, available along with the report on the ERS website, provides tables with access measures for each of the 545 individual tribal areas.