



# Hawai'i Physical Activity and Nutrition Plan 2030



Aloha kākou,

I am pleased to present the Hawai'i Physical Activity and Nutrition Plan 2030 (PAN Plan 2030), which identifies priority objectives to integrate physical activity and nutrition into the daily lives of the people of Hawai'i. Physical activity and healthy eating help prevent chronic diseases like obesity, diabetes, cardiovascular disease, asthma, and some cancers. The nineteen objectives in the PAN Plan 2030 will create environments and policies that ensure daily physical activity and healthy eating become the norm for Hawai'i residents.

Healthy eating and physical activity are protective behaviors from weight gain and chronic diseases. While considerable work has been done since the first (2007–2012) and second (2013–2020) editions of the PAN Plan, data show there is much more work to do. About one in three of Hawai'i's children entering kindergarten and more than half of all adults are overweight or obese in Hawai'i.<sup>1,2</sup> In 2009, the state's medical cost related to obesity was 470 million dollars, and this figure continues to rise.<sup>3</sup> As many as one in three adults could have diabetes by 2050 if current trends continue. These staggering statistics illustrate the need for this plan to become a top priority for our state.

The PAN Plan 2030 is the work of a large and diverse group of stakeholders, including representatives from public health, community organizations, healthcare professionals, businesses, city planners, school educators and administrators, and many others. It is intended to provide a collaborative, strategic approach to reach shared goals that were created and adopted by partners across the state. Implementation of the plan will require strong and consistent collaboration and partnerships to reach the stated objectives. I thank our partners and welcome others in working toward achieving the vision of "Healthy People, Healthy Communities, Healthy Hawai'i."

*'A'ohe Hana Nui Ke Alu 'Ia  
No task is too big when done together by all*



**Elizabeth A. Char, M.D.**

*Director, Hawai'i State Department of Health*



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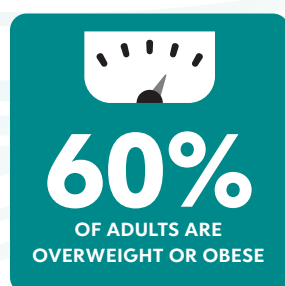
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*The PAN Plan 2030 represents the collaboration of numerous individuals who devoted their time and effort to the creation of this plan. This endeavor could not have happened without the hard work and commitment of community and state partners who represent the diverse perspectives of organizations positively impacting physical activity and nutrition in Hawai'i. The development of this plan demonstrates that improving and maintaining the health of Hawai'i's children and adults is a top priority to individuals, employers, educators, healthcare systems and providers, policy makers, community organizations, and state and county agencies. The Department of Health (DOH) appreciates the contribution of those who worked on the implementation of the previous PAN Plans and would like to thank everyone who participated in the development of this plan. For a full list of partners, contributors, and participants, please see page 38.*



# INTRODUCTION

In Hawai'i and the rest of the United States (U.S.), the majority of adults, adolescents, and children do not engage in regular physical activity or practice healthy eating. In 2017, more than 75% of adults in Hawai'i did not meet the recommended guidelines for physical activity.<sup>4</sup> Additionally, 85% of Hawai'i high school students and 80% of middle school students did not get the recommended amount of physical activity (sixty or more minutes per day) for youth.<sup>5</sup>



Hawai'i is viewed as a healthy state when compared to other states on many indicators of morbidity and mortality. However, obesity rates are rising sharply statewide, with high rates of obesity in most population groups.

Nearly one third of children entering kindergarten are already overweight or obese, and the rates remain similarly high among students enrolled in public secondary schools.<sup>1</sup> The rates of overweight among adults are much higher, with over half of adults (60%) in Hawai'i considered overweight or obese.<sup>2</sup>

Rates of fruit and vegetable consumption are also far below recommended amounts. Recent data shows that only 20% of adults and only 14% of high schoolers ate five fruits and vegetables a day.<sup>5,6</sup> Insufficient physical activity combined with unhealthy eating can substantially increase the risk of health problems such as obesity, high blood pressure, heart disease, diabetes, cancer, and arthritis. In 2018, almost 25% of Hawai'i adults were considered obese



**Fewer than 1 in 5** middle and high school students meet physical activity recommendations



**14% of high school aged-youth** eat the recommended amount of fruits and vegetables

and only 38% had a healthy body weight.<sup>2</sup> Native Hawaiians and Other Pacific Islanders had the highest obesity rates, both over 41%.

Now more than ever, the importance of health, including a healthy immune system, is amplified due to the COVID-19 pandemic. Those with chronic diseases are experiencing higher risk of COVID-19 illness and death; emergency food sources are in great demand and more limited; and people are searching for ways to exercise and commute safely. With policies, systems and environments that support healthy eating and active living, communities can be more resilient.

Hawai'i can significantly increase physical activity and improve nutrition through collaborative and coordinated efforts to implement this updated PAN Plan. Over 150 stakeholders from across the state provided guidance, expertise, and input for this plan. It focuses on policy, systems, and environmental change that will transform our communities, schools, work places, and health care systems so the healthy choice will be the easy choice.









## VISION

We envision a future for Hawai'i in which all residents are physically active, eat healthy foods, and live in healthy communities.

## GOAL

Through healthful eating and regular physical activity, Hawai'i residents will:

- » Reduce their burden of disease;
- » Increase years of healthy life;
- » Increase their resilience to deadly viruses; and
- » Reduce health disparities.





# ABOUT THE HAWAI'I PHYSICAL ACTIVITY AND NUTRITION PLAN 2030

## Purpose of the Plan

The PAN Plan 2030 is a guide to strengthen collaboration and prioritize resources across the state to support the health and well-being of Hawai'i residents. The plan describes objectives to increase physical activity and healthy eating, with long-term goals of reducing overweight, obesity, and chronic disease. Its purpose is to provide a framework for policy makers, public and private organizations, and community members to work together to educate and advocate for policies that enable residents to embrace a physically active and nutritionally sound lifestyle.

### **PAN Plan 2030 was created to address physical activity and nutrition in the following ways:**

- » Provide information to guide evidence-based decision-making for physical activity and nutrition policies and practices.
- » Provide direction for work on sustainable changes so that daily physical activity and healthy eating become the norm for every Hawai'i resident.
- » Increase awareness among key decision-makers at the state and local levels of statewide obesity trends, and physical activity and nutrition behaviors.
- » Provide baseline measures for health-related objectives to measure and evaluate progress towards stated goals.
- » Serve as a resource for developing action plans to address physical activity and nutrition at the state, county, and local levels.
- » Strengthen multi-sectoral funding at the state, county, and local levels.





**The PAN Plan 2030 is the result of lessons learned**

from the implementation of the previous PAN Plans, reflects milestones achieved, and is based on well-established research available on effective policies and best practices for improving physical activity and nutrition. Many experts from health, science, economic and social study fields have concluded that without comprehensive policy, systems, and environmental change, efforts to normalize healthy eating and active living and reverse the obesity epidemic cannot succeed. Therefore, the plan's objectives are multi-sectoral and are meant to work in alignment with other strategic plans for the state, specifically the following:

- Healthy Hawai'i Strategic Plan 2030
- Hawai'i Asthma Plan 2030
- Hawai'i Cancer Plan 2030
- Hawai'i Diabetes Plan 2030
- Hawai'i Heart Disease and Stroke Plan 2030
- Hawai'i Tobacco Prevention and Control Plan 2030



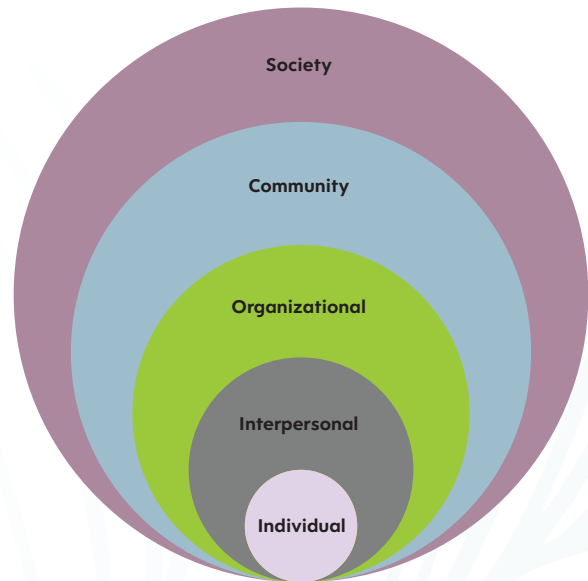


# Plan Framework

The PAN Plan 2030 incorporates principles of the Social Ecological Model and is organized into four sector areas: Community Design and Access, Education, Health Care, and Worksite. The plan prioritizes goals, objectives, and strategies that lead to policy, systems, and environmental change. Objectives were developed using current data, best practices, and evidence-based science, and reflect one or more cross-cutting themes.\*

## » SOCIAL ECOLOGICAL MODEL

To align with national priorities and work in conjunction with other chronic disease plans for the state, the PAN Plan 2030 relies on the Social Ecological Model. This model recognizes the interwoven relationship that exists between the individual and their environment. While individuals are responsible for maintaining a healthy lifestyle, behavior can be largely determined by the environment in which they live through social norms, attitudes, and public policies. Effective chronic disease prevention programs should address multiple levels of the model with attention on policy, systems, and environmental change.



## Physical Activity & Nutrition Interventions Based on the Social Ecological Model

LARGEST IMPACT	<b>Society</b> Federal, state, and local policy, systems, and environmental levels		<b>Public Health Interventions:</b> Advocacy and legislation that creates statewide policy and environmental changes to support healthy eating and active living
	<b>Community</b> Neighborhoods, cities, and counties		<b>Public Health Interventions:</b> Advocacy, policy, and legislation that supports healthy food access and improved connections (ex: sidewalks, bike lanes, trails) to places where people live, learn, work, and play
	<b>Organizational</b> Schools, health care systems, businesses, government and community-based organizations		<b>Public Health Interventions:</b> Public health education and the creation of organizational policy and environmental change that encourage physical activity and healthy eating
	<b>Interpersonal</b> Relationships including those with family, friends, co-workers, support groups, social and cultural networks		<b>Public Health Interventions:</b> Public health education that involves changing people's awareness, knowledge, values, beliefs, attitudes, and preferences, in particular, health education that emphasizes behavior change through social support, for example walking groups
SMALLEST IMPACT	<b>Individual</b> Individual attitudes, beliefs, knowledge, and behaviors		<b>Public Health Interventions:</b> Public health education that involves changing people's awareness, knowledge, values, beliefs, attitudes, and preferences around healthy eating and active living

\*Additional information on the plan framework can be found at the following website: [www.HHSP.hawaii.gov](http://www.HHSP.hawaii.gov)

## » POLICY, SYSTEMS AND ENVIRONMENTAL CHANGE

Integral to the framework and design of the PAN Plan 2030 is the focus on policy, systems, and environmental change. The plan's long-term goals, objectives, and strategies were developed to align with national guidelines and recommendations and to reflect or lead to policy, systems, or environmental change.

### POLICY

**Policies at the legislative or organizational level.**

Institutionalizing new rules or procedures as well as passing laws, ordinances, or resolutions are examples of policy changes.

### SYSTEMS

**Changes made to rules within an organization.**

Systems change and policy change often work hand-in-hand. Often systems change focuses on changing infrastructure within a school, park, worksite, or health setting.

### ENVIRONMENTAL

**Changes that are made to the physical/built environment.**

Physical (structural changes or programs or service), social (a positive change in attitudes or behavior about policies that promote health) and economic factors (presence of financial disincentives or incentives to encourage a desired behavior).





## » CROSS-CUTTING THEMES

After review of evidence-based practices for chronic disease prevention, program staff and partners identified six cross-cutting themes to recur frequently throughout the plan.

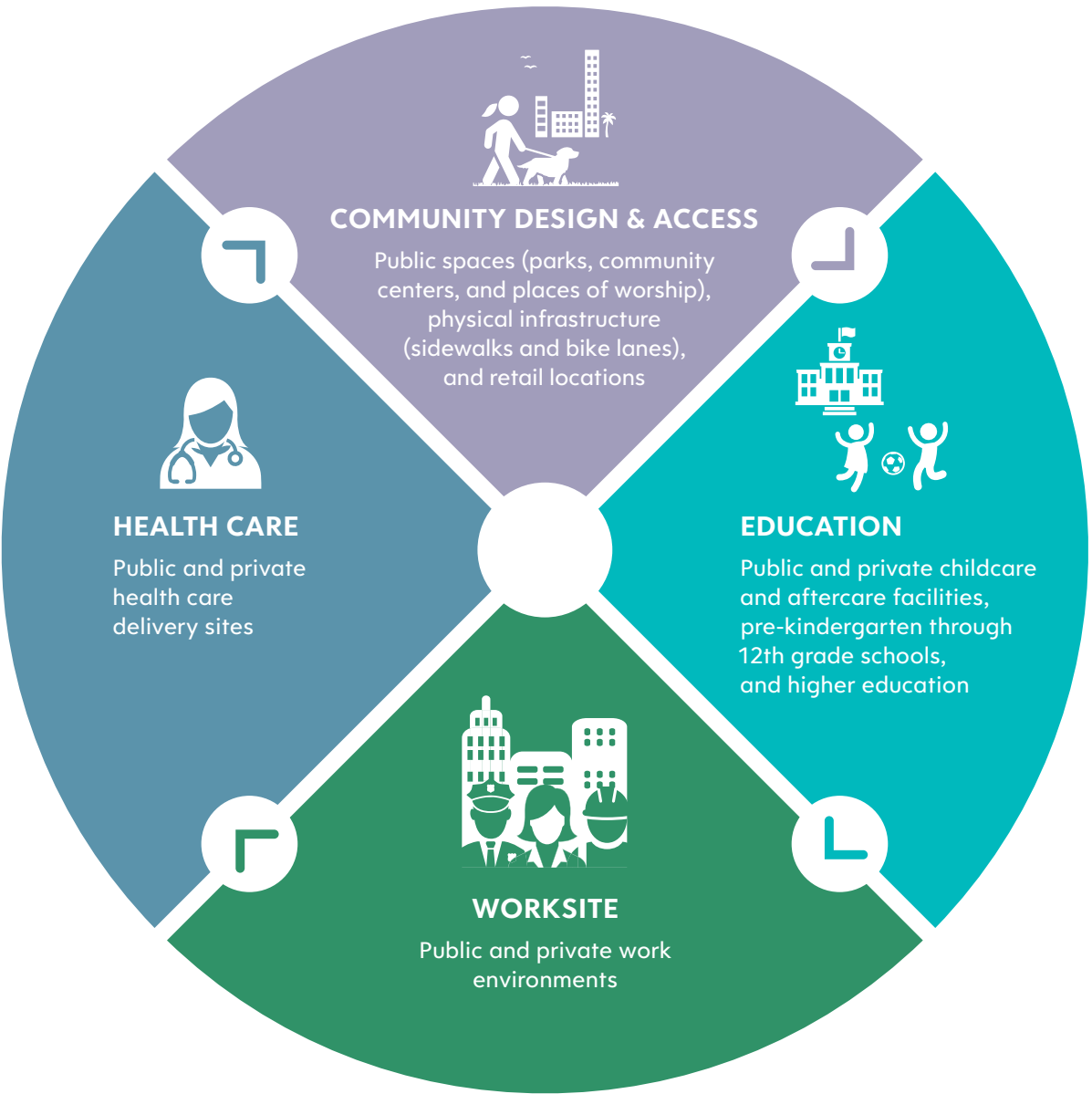
Objectives in the PAN Plan 2030 were developed to reflect one or more of these cross-cutting themes:

<b>Epidemiology, Surveillance, and Evaluation</b>	Epidemiology, surveillance, and evaluation should be used to understand the effectiveness and progress in achieving a plan's goals and objectives. Data should be utilized to monitor progress, address gaps in health improvements, and prioritize next steps.
<b>Quality of Life</b>	Quality of life can encompass many areas of life, such as psychological well-being, social life, support system, health status and function, and functional or career well-being.
<b>Community Clinical Linkages</b>	Community clinical links help ensure that people with or at high risk of chronic diseases have access to the resources they need to prevent or manage these diseases. Improved links between the community and clinical setting offer community delivery of proven programs that clinicians can refer patients to.
<b>Health Equity</b>	Health disparities exist when there is a major difference in a health outcome between population groups. Chronic disease prevention and management plans should recognize the importance of addressing health equity and prioritize population groups more likely to experience poor health outcomes.
<b>Public Education and Communications</b>	Public education and communications can be used as strategic tools to influence people, places, and environmental conditions. Public education and communications can be prioritized to advance the goals and objectives of each chronic disease prevention and management plan.
<b>Coordination</b>	A coordinated approach and common vision are essential to achieving the goals and objectives of this framework. Cross-coalition collaboration, greater information sharing, and the leveraging of resources will provide a more effective approach to implementing the policy, systems, and environmental change necessary to support healthy lifestyles and reduce premature death due to chronic disease.



» **SECTOR AREAS**

The PAN Plan 2030 utilizes a framework of four sectors: Community Design and Access, Education, Health Care, and Worksite. This approach acknowledges the complexity of disease origins and promotes strategies that occur in multiple settings, e.g., where people live, learn, work, and play. Policy, systems, and environmental change in each of these settings will allow healthy options to become the easiest choice for Hawai'i residents.



**SECTOR AREAS**

Places (both physical & virtual) where policy, systems, and environmental change can be established to support the formation and maintenance of healthy behaviors, achieving health equity, and maximizing chronic disease prevention, management, and treatment.







# Definition of the Problem

Physical inactivity and poor nutrition are the most common behavioral risk factors associated with obesity and many other chronic diseases. Individuals who are at a healthy weight are less likely to:

- » Develop chronic disease risk factors, such as high blood pressure and dyslipidemia
- » Develop chronic diseases, such as type 2 diabetes, heart disease, osteoarthritis, and some cancers
- » Experience complications during pregnancy
- » Die at an earlier age<sup>7,8,9</sup>

# OVERWEIGHT AND OBESITY

The impact of overweight and obesity is significant. Approximately two thirds of the U.S. adult population are overweight or obese.<sup>10</sup> During the past 20 years, there has been a dramatic increase in obesity in the U.S., and rates remain high. Recent estimates conclude that almost 42% of U.S. adults and 19% of children and adolescents (age 2–19 years) are obese.<sup>11,12</sup>

The national medical care costs of obesity are staggering. In 2009, the state’s medical cost related to obesity was 470 million dollars, and this figure continues to rise.<sup>13</sup> In 2014, the annual medical spending attributable to an obese individual was \$1,901, accounting for about \$149 billion.<sup>14</sup> Additionally, annual nationwide productivity costs due to obesity-related absenteeism range between \$3.38 billion (\$79 per obese individual) and \$6.38 billion (\$132 per individual with obesity).<sup>15</sup>

Weight that is higher than what is considered a healthy weight for a given height is described as overweight or obese.<sup>16</sup> Obesity is defined as having an excessive amount of body fat and is known to increase a person’s risk for chronic diseases. Body Mass Index (BMI)<sup>\*</sup> is often used as a screening tool for overweight or obesity.<sup>16</sup> Having a BMI greater than, or equal to, 30 in adults is associated with obesity. Obesity in children is not directly comparable with the BMI range for adults. In children, a BMI greater than or equal to the age- and sex-specific 95th percentiles found in the Centers for Disease Control and Prevention (CDC) growth charts corresponds with obesity.<sup>17</sup>

Regular physical activity and good nutrition can significantly reduce the risk of obesity. It is critical that people have access to healthy food and environments that support active living. For children, establishing healthy habits early in life can support the maintenance of a healthy weight throughout adulthood.

## BMI Categories

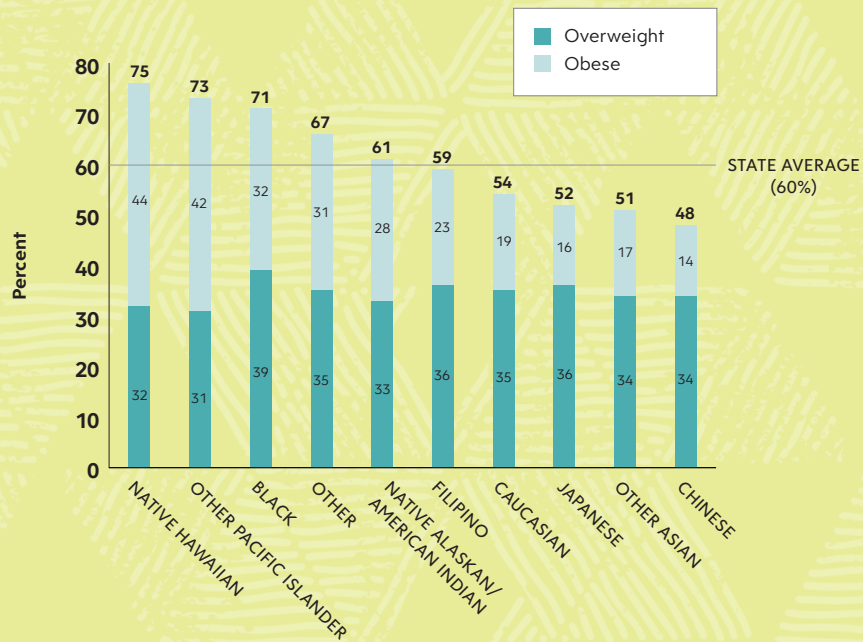
WEIGHT STATUS CATEGORY	BMI RANGE, ADULTS	BMI PERCENTILE, 2-19 YEARS OLD
Underweight	Less than 18.5	Less than the 5th percentile
Normal or Healthy weight	18.5 – 24.9	5th percentile to less than the 85th percentile
Overweight	25 – 29.9	85th to less than the 95th percentile
Obese	30 and higher	95th percentile and higher



<sup>\*</sup>BMI is calculated as a person’s weight in kilograms divided by height in meters squared: (Weight (kg) / [Height (M)]<sup>2</sup>).<sup>2</sup> To use pounds and inches: BMI = (Weight (lbs) / [(Height (in))<sup>2</sup> x 703].



## Adults Who are Overweight or Obese by Race/Ethnicity

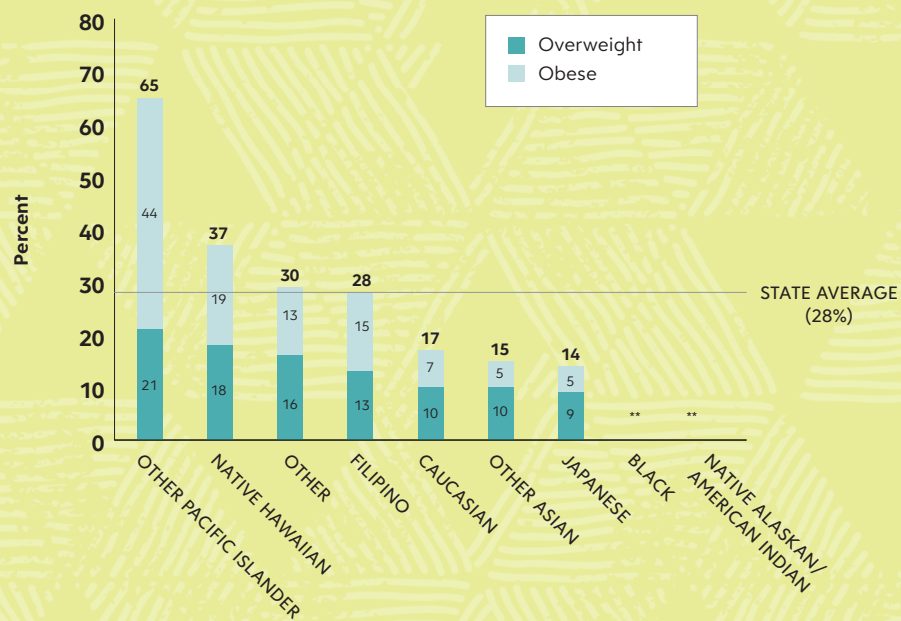


Source: BRFSS, 2018

Footnote: \*Data have been rounded to the nearest whole number.

Overweight and obesity estimates may not sum to the total due to rounding.

## High School Students Who are Overweight or Obese by Race/Ethnicity



Source: YRBS, 2017

Footnote: \*Data have been rounded to the nearest whole number.

Overweight and obesity estimates may not sum to the total due to rounding.

Middle School data are not available

\*\*Not enough data

## BMI Data in Hawai‘i

### » ADULTS

Nearly 60% of Hawai‘i adults are overweight or obese. Almost 25% are obese, and roughly 35% are overweight. Over 67% of males are overweight or obese compared to nearly 50% of women. Japanese residents have the lowest obesity rate at 16%, followed by Other Asians (17%) and Caucasians (19%). Native Hawaiians have the highest obesity rate at 44%, followed closely by Other Pacific Islanders at 42%. Overweight/obesity affects over 70% of adults in both of these groups.

### » YOUTH

There is no ongoing surveillance of overweight and obesity among elementary school students in Hawai‘i, but a 2007–08 study revealed that 29% of students were overweight or obese at kindergarten entry.<sup>1</sup>

Slightly more than 14% of Hawai‘i high school youth (middle school data are not available) are considered obese, and another 14% are overweight. Males are nearly twice as likely to be obese as females (18% versus 10%). Obesity and overweight vary greatly by race/ethnicity: 44% of Other Pacific Islanders are obese, followed by 19% of Native Hawaiians, and 15% of Filipino youth. In contrast, only 7% of Caucasians and 5% of Japanese youth are obese.

The statistics above underline the prevalence of obesity and overweight status in Hawai‘i. These two conditions are complex and largely preventable through access to a healthy diet and regular physical activity.



Nearly 60% of Hawai‘i adults are overweight or obese. Almost 25% are obese, and roughly 35% are overweight.

**\$470 million**

state medical cost attributable to obesity

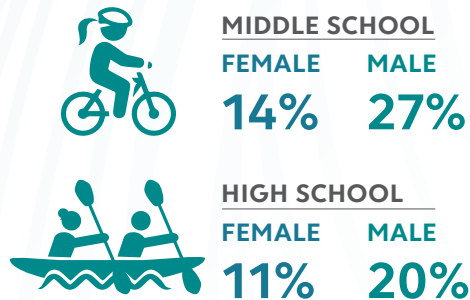


# PHYSICAL ACTIVITY

Regular physical activity is vital for health and well-being. Among adults, being physically active can lower the risk of premature death, chronic disease, some forms of cancers, and falls and associated injuries. It can also positively impact mental health and immune system function, and provide important health benefits for people with chronic disease.

For children and adolescents, physical activity can improve bone health, cardio-respiratory fitness and muscle strength, reduce body fat, and help manage symptoms of depression. For older adults, staying active is especially important for maintaining bone health and cognitive function. For people who are inactive, even small increases in physical activity are associated with health benefits.

## Youth Meeting Physical Activity Recommendations by Sex



Source: BRFSS, 2017

According to the U.S. Department of Health and Human Services' *Physical Activity Guidelines for Americans*, it is important for adults to get at least 150 minutes per week (a half hour, 5 times a week) of moderate-intensity aerobic activity or 75 minutes per week of vigorous aerobic activity, or a combination of both, preferably spread throughout the week.<sup>18</sup> Additionally, moderate- to high-intensity muscle-strengthening activity (such as resistance or weights) should be included at least 2 days per week. Children need at least 60 minutes per day of moderate- to vigorous-intensity physical activity, mostly aerobic, that includes muscle and bone strengthening activities at least 3 days per week.

## Physical Activity Data in Hawai'i

### » ADULTS

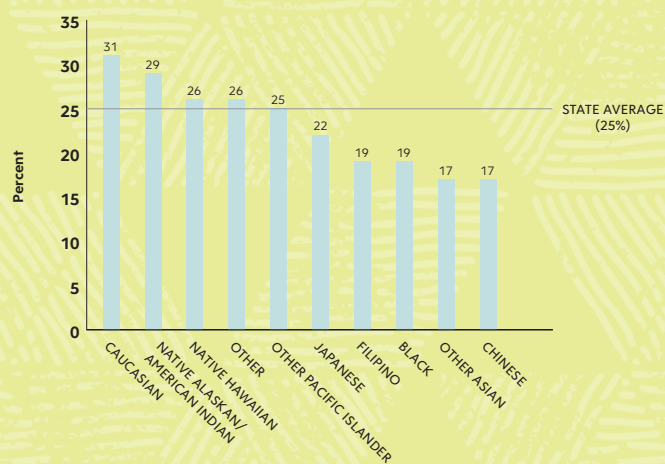
Nearly 60% of Hawai'i adults meet the aerobic physical activity guidelines and 35% meet the guidelines for muscle strengthening, but when these two are combined, less than one quarter (25%) meet the recommended guidelines for physical activity, which includes muscle strengthening activities. Males are more likely (30%) to meet the recommended guidelines than females (20%). By race/ethnicity, over 30 percent of Caucasians meet the guidelines, followed by 26 percent of Native Hawaiians, and less than a quarter of Other Pacific Islanders (25%).

### » YOUTH

Only 20% of Hawai'i middle school youth and 15% of Hawai'i high school youth get the recommended amount of physical activity, including muscle-strengthening activities. Males are nearly twice as likely as females to meet recommendations for both middle and high school youth. For middle school youth, Native Hawaiians (25%) are the most physically active, and Other Asians (10%) are the least physically active. For high school youth, Caucasians (19%) are the most physically active, while Other Asians (8%) are the least physically active.

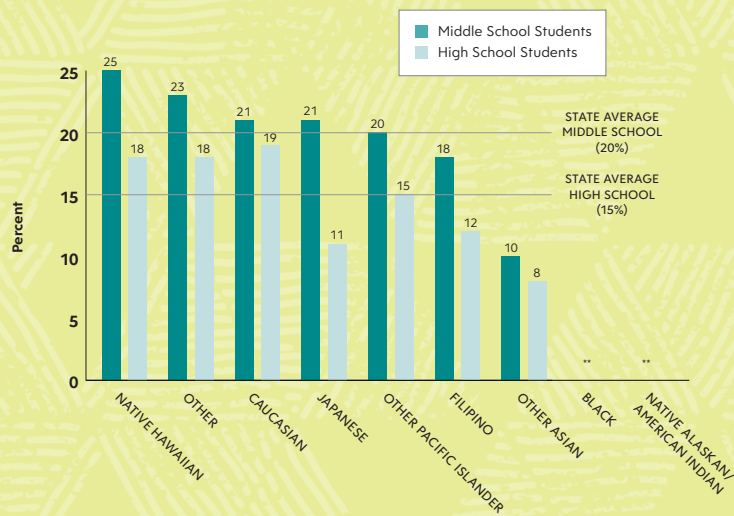


## Adults Meeting Physical Activity Recommendations by Race/Ethnicity



Source: BRFSS, 2017

## Youth Meeting Physical Activity Recommendations by Race/Ethnicity



Source: YRBS, 2017

Footnote: \*\*Not enough data

## Physical Activity Recommendations



### PRESCHOOL-AGED CHILDREN (3-5 YEARS)

90-120 minutes or more of active play daily

Active play through a variety of enjoyable, developmentally appropriate physical activities

Developmentally appropriate physical activities that develop gross motor skills include:

- Hopscotch
- Playground play
- Dancing
- Catch or Kickball
- Tag
- Swimming



### CHILDREN AND ADOLESCENTS (6-17 YEARS)

60 mins (1 hour) or more of moderate-to-vigorous intensity physical activity daily

A variety of enjoyable physical activities

As part of the 60 minutes, on at least 3 days a week, children and adolescents need:

- Vigorous activity such as running or soccer
- Activity that strengthens muscles such as climbing or push ups
- Activity that strengthens bones such as gymnastics or jumping rope



### ADULTS (AGES 18-64 YEARS)\*

At least 150 minutes a week of moderate intensity activity such as brisk walking

At least 2 days a week of activities that strengthen muscles

*\*Aim for the recommended activity level but be as active as one is able*



### OLDER ADULTS (65 YEARS AND OLDER)\*

At least 150 minutes a week of moderate intensity activity such as brisk walking

At least 2 days a week of activities that strengthen muscles

Activities to improve balance such as standing on one foot

*\*Aim for the recommended activity level but be as active as one is able*

Source: Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Early Care and Education Programs; Physical Activity Guidelines for Americans, 2nd edition.



# NUTRITION

Good nutrition is important for everyone throughout all stages of life. Forming healthy eating habits at a young age helps prevent chronic diseases like obesity, type 2 diabetes, and hypertension, and can lead to a lifetime of wellness. A nutritious diet is the foundation of overall health, providing the body nutrients it needs to thrive.

A healthful diet includes a variety of nutrient-dense foods, especially fruits, vegetables, whole grains, low-fat or fat-free dairy, seafood, lean meats, legumes, and other protein sources.<sup>19</sup> A healthy eating pattern also includes limiting saturated fats, trans fats, added sugars (especially from sugary beverages), and sodium.

The United States Department of Agriculture (USDA) dietary guidelines have changed over time. However, one recommendation has remained constant: a person's diet should be rich in fruits and vegetables. Most fruits and vegetables are naturally low in calories and are high in essential nutrients. A diet lacking in fruits and vegetables impacts the body's ability to function optimally and diminishes overall well-being. Currently, USDA recommendations for fruit and vegetable consumption are based on age, gender, and physical activity level, varying from two to five cups per day. In Hawai'i, surveys of fruit and vegetable consumption show that the majority of residents are not eating enough fruits and vegetables.



## Fruit and Vegetable Consumption Data in Hawai'i

### » ADULTS

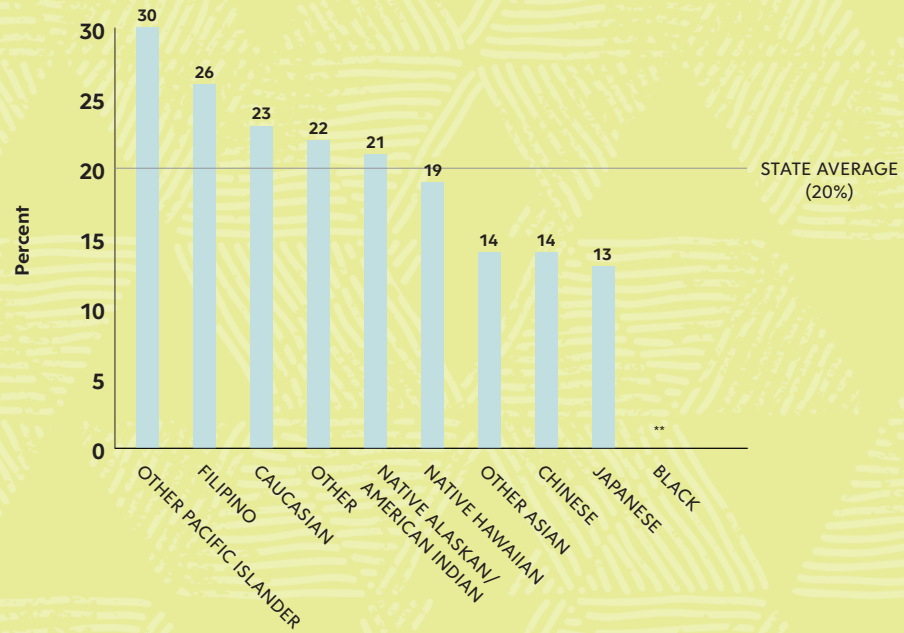
Only 20% of Hawai'i adults eat at least five fruits and/or vegetables per day. More females (23%) eat 5-a-day than males (17%). Nearly 30% of Other Pacific Islanders eat five fruits and/or vegetables per day, followed by Filipinos (26%), Caucasians (23%), Native Alaskan/American Indian (21%), Native Hawaiians (19%), Other Asian (14%), Chinese (14%), and Japanese (13%).

### » YOUTH:

Very few youth eat the recommended amount of fruits and vegetables per day. Less than 15% of Hawai'i high school youth (middle school data are not available) eat 5 or more fruits and/or vegetables per day. One in eight females and less than one in six males meet the recommendations. Almost one in four Other Pacific Islanders eat 5-a-day compared to nearly one in twelve Japanese youth.



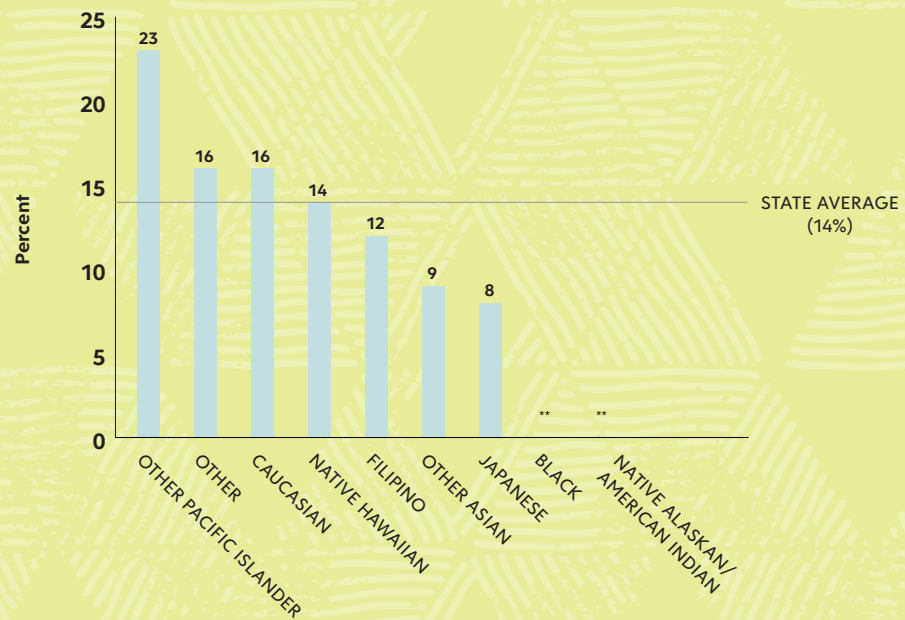
### Adults Eating Five or More Fruits and Vegetables per Day by Race/Ethnicity



Source: BRFSS, 2015

Footnote: \*\*Not enough data

### High School Students Eating Five or More Fruits and Vegetables per Day by Race/Ethnicity



Source: YRBS, 2017

Footnote: Middle School data are not available.

\*\*Not enough data



# Priority Populations

Health disparities exist when a health outcome is seen to a greater or lesser extent between population groups. Identity factors, such as race and ethnicity, gender, gender identity and sexual orientation, age, disability, and social determinants like educational attainment, socioeconomic status, worksite, and geographic location all contribute to an individual's ability to achieve good health. It is important to acknowledge and strive to understand these health disparities and to prioritize vulnerable populations whose access to physical activity and healthy food is compromised by environmental and policy gaps.

The relationship between historically marginalized communities and active transportation is complicated and intersectional, and the study of transportation equity in the public health context is still emerging. According to the CDC, major areas of opportunity for advancing transportation equity include improving the community engagement processes, developing more inclusive design decision-making, addressing funding limitations to support underserved communities, and accounting for the potential displacement effects of infrastructure improvements.<sup>20</sup>

This plan prioritizes the following groups:

- » Keiki and Youth
- » Kūpuna
- » Low-income Populations



## » Keiki and Youth (0–18 years old)

Good nutrition is vital for infants to grow and properly develop. Breastfeeding provides optimal nutrition for infants, including short- and long-term health benefits for baby and mother. Hospital maternity care practices that support breastfeeding after delivery can affect initiation and duration of breastfeeding.<sup>21</sup> The 2011 CDC Surgeon General's Call to Action to Support Breastfeeding identified the Ten Steps to Successful Breastfeeding (Ten Steps) as the standard of care for maternity care practices in hospitals. As Hawai'i's maternity care hospitals have worked towards implementing the Ten Steps, the statewide prevalence of early exclusive breastfeeding in hospitals increased from 59% (2008) to 79% (2015).<sup>21</sup>

In Hawai'i, 89% of mothers initiate breastfeeding, but only 57% are still exclusively breastfeeding at 3 months.<sup>22</sup> Disparities in breastfeeding rates occur across racial/ethnic groups and socioeconomic status. Culturally appropriate practices and resources are necessary to support breastfeeding in hospitals, communities, and workplaces.

Childhood development is an important determinant of health over a person's lifetime.<sup>23</sup> Early developmental opportunities can provide a foundation for children's academic success, health, and general well-being.<sup>24</sup> Obesity prevalence among two- to five-year-olds in the U.S. is 14% and 18% among six- to eleven-year-olds.<sup>15</sup> Over 29% of keiki entering kindergarten (4-5-years-old) in Hawai'i are overweight/obese, suggesting a strong need for focused interventions for obesity prevention in early childhood care and education (ECE) settings to instill positive lifelong behaviors in our youngest keiki.<sup>1</sup>



In Hawai‘i, 28% of high school students are overweight or obese and vast differences can be seen across population subgroups.<sup>5</sup> Almost 65% of Other Pacific Islanders and 37% of Native Hawaiians high schoolers are overweight or obese, compared to only 14% of Japanese high schoolers.<sup>5</sup>

It is not surprising with high rates of overweight and obesity, there are also low rates of healthy eating and physical activity among Hawai‘i’s youth. Only 14% of high school students ate the recommended amount of fruits and vegetables, and only 6% of high school students attended daily Physical Education classes when they were in school.<sup>5</sup> Furthermore, only 15% of high school and 20% of middle school students met the federal guidelines for physical activity.<sup>5</sup>

According to the CDC, travel to and from school by bicycle has been associated with increased cardiorespiratory fitness levels among students.<sup>25</sup> While state level data is limited, the proportion of students across the U.S. in grades K–8 who walk or bike to school fell from 48% in 1969 to only 13% in 2009.<sup>26</sup>

Healthy behaviors are not only important for long-term good health but are also associated with academic success. Higher levels of protective health behaviors and lower levels of health risk behaviors have been associated with higher academic grades among high school students.<sup>27</sup> Health risks such as unhealthy dietary choices and inadequate physical activity have a significant impact on how well students perform in school.<sup>28,29,30,31,32</sup> It is vital that all keiki and youth have the opportunity to develop healthy eating habits and live active lifestyles to achieve academic success and long-term good health.

**21% of Hawai‘i’s population is under 18**



**56% of infants are exclusively breastfed at 3 months**

**High school aged-youth eating enough fruits and vegetables**



**14%**

**29%**

**of keiki entering kindergarten are overweight or obese**

**28% OF HIGH SCHOOL AGED-YOUTH ARE OVERWEIGHT OR OBESE**



**6% of high school aged-youth attend Physical Education classes daily**

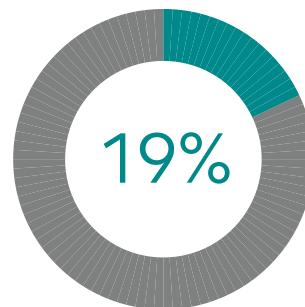
## » Kūpuna (65+)

Overall, 19% of the population in Hawai‘i are over the age of sixty-five, and Hawai‘i has the longest life expectancy (81.3 years of age) in the U.S.<sup>33,34</sup> While Hawai‘i’s older adults enjoy long lives, 53% are either overweight or obese and 21% have diabetes.<sup>2</sup> With high rates of chronic disease, it is not surprising that over 75% of older adults do not eat five or more servings of fruits and vegetables per day or meet the federal guidelines for physical activity.<sup>4,6</sup> This indicates a strong need for obesity prevention interventions for kūpuna as well.

As the older adult population grows, the need and opportunities for initiatives that support the health and well-being of our kūpuna also increases. For example, walkable communities that support the safety and mobility of our kūpuna, and increased access to healthy foods through nutrition assistance programs can help Hawai‘i’s older adults to age well and in place.

The CDC’s recommendations for promoting physical activity in older populations focus strongly on active living.<sup>35</sup> Active living means integrating physical activity into everyday routines and includes bicycling, walking, taking transit, engaging in hobbies like gardening, and taking stairs rather than elevators.

The way our cities and neighborhoods are designed greatly impact physical activity and opportunities for active living. Hawai‘i’s geography and climate are ideal for active transportation, but, as in many places across the U.S., decades of underinvestment and automobile-centered development has led to inconsistent, inequitably distributed, and poorly maintained supportive infrastructure. Adults over the age of fifty were nearly three times more likely to be struck and killed while walking in Hawai‘i than people under fifty.<sup>36</sup> Additionally, Hawai‘i has the most pedestrian deaths in the U.S. for people over age sixty-five. Therefore, it is vital that environmental changes are made that specifically support older adults’ ability to maintain a safe and active lifestyle.



**19% OF  
HAWAI‘I’S  
POPULATION  
IS OVER 65**

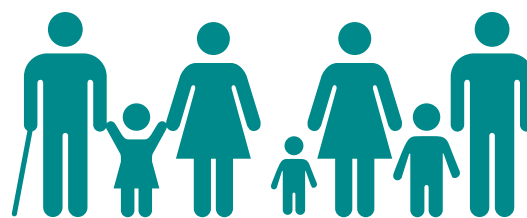
**53%** of kūpuna are  
overweight  
or obese

Over **75%** of older adults  
**do not** eat enough fruits  
and vegetables, or get  
enough physical activity





41% of Hawai'i's population is considered low-income



62% OF LOW-INCOME ADULTS ARE OVERWEIGHT OR OBESE



Almost **80%** of low-income adults **do not** eat five or more servings of fruits and vegetables per day or meet the guidelines for physical activity

## » Low-income Population

(<185% Federal Poverty Line)

In Hawai'i, 41% of the population falls under 185% of the Federal Poverty Line (FPL).<sup>2</sup> Hawai'i has the highest cost of living of all states, with food costs 61% higher than the rest of the country. The accessibility, availability, and affordability of healthy and varied food options in the community increases the likelihood that residents will have a balanced and nutritious diet.<sup>37</sup> Access to grocery stores varies by state counties: 13% of Hawai'i, 11% of Kauai, 8% of Maui, and 5% of Honolulu county populations live in a low-income, low-access<sup>†</sup> census tract.<sup>38</sup> People who live farther away from grocery stores are less likely to regularly access healthy food and are more likely to consume foods readily available at convenience stores and fast food outlets.

Poor nutrition increases risk for chronic diseases like obesity, which is more prevalent among low-income adults (62%) than the general population.<sup>2</sup> Obesity is also disproportionately concentrated in Native Hawaiian (44%) and Other Pacific Islander (42%) populations that also show substantial income disparities.<sup>2</sup> Additionally, low-income adults are more likely to have low rates of fruit and vegetable consumption (79%), more likely to consume sugar-sweetened sodas (17%), and less likely to engage in the recommended amount of physical activity (79%) than those with higher incomes.<sup>4,6</sup> Many known factors contribute to these inequities, including disparities in built environment, access to safe recreational space, as well as time and resources for structured physical activity like gym and sports league participation.

<sup>†</sup> Low access is defined as more than one mile from a supermarket or large grocery store if in an urban area, or more than 10 miles from a supermarket or large grocery store if in a rural area.









# Objectives and Strategies

The PAN Plan 2030 objectives strive to create sustainable change that will transform our communities, schools, health care, and worksites to increase physical activity and healthy eating, with long-term goals of reducing overweight, obesity, and chronic disease among all Hawai'i residents. Stakeholders developed the PAN Plan 2030 objectives to shape policy, systems and environmental change in the four sector areas: Community Design and Access; Education; Health Care; and Worksite. The objectives are showcased by sector area and include key strategies, baseline, and target measures. The PAN Plan 2030 is meant to be a living document that is reviewed and updated throughout the plan's timeframe. Implementation of the plan will be a collective effort by individuals and organizations across the state.

Additional background information, including definitions of some terminology used in the objectives and strategies, can be found at the following website: [www.HHSP.hawaii.gov](http://www.HHSP.hawaii.gov)



Objectives with this icon are being worked on by multiple program areas.



## Community Design and Access Sector Objectives

**GOAL >>** All of Hawai'i's people will live in communities that have access to healthy food choices and physical activity opportunities, and minimal exposure to unhealthy options through policy, programs, communications, and environmental supports.

### OBJECTIVE

**BASELINE: 62 TARGET: 93**

### PHYSICAL ACTIVITY AND NUTRITION-01

**Increase by 50%, the number of food outlets that participate in a statewide healthy food incentive program(s).**

### STRATEGIES

- Secure long-term funding for Hawai'i's Double Up Food Bucks program, which matches Supplemental Nutrition Assistance Program (SNAP) food stamp dollars spent on Hawai'i-grown produce
- Implement a statewide Produce Prescription Program, which enables participants to redeem "prescriptions" for produce at participating markets and grocery stores

## OBJECTIVE

BASELINE: 0 TARGET: 2

## PHYSICAL ACTIVITY AND NUTRITION-02

**Enact at least two statewide policies to increase access to healthy food and/or decrease access to unhealthy food/beverages.**

## STRATEGIES

- Enact a fee on sugar-sweetened beverages, where revenue is allocated to obesity prevention initiatives
- Establish long-term, state funding for a Double Up Food Bucks SNAP incentive program

## OBJECTIVE

BASELINE: 0 TARGET: 4

## PHYSICAL ACTIVITY AND NUTRITION-03

**Establish and sustain a funded Food Access Coordinator in each county to facilitate an active coalition.**

## STRATEGIES

- Food access coalitions will create and implement county-level action plans aimed at increasing access to, and consumption of, healthy food
- Secure county funding to support the activities of the coordinator and food access coalition

## OBJECTIVE

BASELINE: 0 TARGET: 1

## PHYSICAL ACTIVITY AND NUTRITION-04

**Establish and sustain a funded, statewide Breastfeeding Coordinator to facilitate efforts supportive of breastfeeding exclusivity and duration.**

## STRATEGIES

- Assess statewide resources and capacity to fund and establish state-level breastfeeding coordinator position
- Develop scope and position description to include knowledge of indigenous cultures and breastfeeding support needs
- Identify gaps and strategically integrate the breastfeeding coordinator position in a way that bridges these gaps

## OBJECTIVE

BASELINE: 0 TARGET: 5

## PHYSICAL ACTIVITY AND NUTRITION-05

**Develop guidelines to promote healthy food donations and purchase of healthy food to be adopted by 100% of Hawai'i food banks.**

## STRATEGIES

- Convene a working group with representation from Hawai'i's foodbank network, to develop guidelines for healthy food donations



**Increase by 50 miles, the total miles of low-stress pedestrian infrastructure including, but not limited to, sidewalks and trails.**

STRATEGIES

- Incorporate the specifications for “desirable” level of service described in the Hawai‘i Department of Transportation’s Pedestrian Toolbox into the development of low-stress pedestrian infrastructure
- Increase Safe Routes to Schools and Safe Routes to Parks programs and projects
- Develop policies to encourage shade tree planting, to increase canopy cover, on high volume pedestrian corridors and trails
- Increase share of state and county transportation budgets dedicated to pedestrian infrastructure
- Implement Vision Zero and Complete Streets policies to increase safety and comfort of pedestrian experience

**Increase by 100 miles, the total miles of low-stress bicycle infrastructure including, but not limited to, protected bike lanes and off-street paths.**

STRATEGIES

- Increase Safe Routes to Schools and Safe Routes to Parks projects
- Develop policies to encourage shade tree planting, to increase canopy cover, on high volume bicycle corridors and trails
- Increase share of state and county transportation budgets dedicated to bicycle facilities
- Implement Vision Zero and Complete Streets policies and projects to increase safety and comfort of bicyclist experience

	BASELINE	TARGET
State	0	1
County	0	4

OBJECTIVE

PHYSICAL ACTIVITY AND NUTRITION-08

**The state and each county will identify and adopt mode-share goals and measurements that prioritize walking and wheelchairs, bicycling, and transit use.**

STRATEGIES

- Develop context-appropriate county-level Transportation Demand Management Plans to establish mode baselines
- Develop more inclusive and comprehensive metrics for measuring active transportation beyond work and school commutes
- Support development of community Safe Routes to School (SRTS) plans, funding of SRTS infrastructure, free transit for minors, etc

## OBJECTIVE

BASELINE: Pending TARGET: Increase by 10%

## PHYSICAL ACTIVITY AND NUTRITION-09

**Increase by 10%, the proportion of existing urbanized land zoned to support walkable communities.**

### STRATEGIES

- Promote Equitable Transit Oriented Development, town centers, mixed-use development, and upzoning for new development and zoning updates
- Adopt parking policy reforms to reduce parking oversupply, unbundle residential parking, reduce or eliminate parking minimums, and/or shift costs
- Change Level-of-Service to Vehicle Miles Traveled in environmental review of new development



## Education Sector Objectives

**GOAL >> All of Hawai'i's educational settings will promote healthy eating and daily physical activity, through programs, policies, environmental supports, and professional development opportunities.**

	BASELINE	TARGET
Health Education courses	0	1
Physical Education courses	0	1

## OBJECTIVE

## PHYSICAL ACTIVITY AND NUTRITION-10

**Adopt at least one policy to require annual courses in Health Education and Physical Education from grades K-8, in the Department of Education, that are aligned with national recommendations for instructional time and teacher licensing.**

### STRATEGIES

- Support a Board of Education policy change to require annual courses in Health Education in grades K-8 in Department of Education (DOE) public non-charter schools
- Support a Board of Education policy change to require annual courses in Physical Education in grades K-8 in DOE public non-charter schools

## OBJECTIVE

BASELINE: 0 TARGET: 1

## PHYSICAL ACTIVITY AND NUTRITION-11

**Develop a system to monitor and support implementation of the Early Childhood Care and Education Wellness Guidelines.**

### STRATEGIES

- Convene both public and private early learning community stakeholders to determine barriers to implementation of Hawai'i's Early Childhood Care and Education (ECE) Wellness Guidelines
- Collaborate with ECE stakeholders to create a physical activity and nutrition ECE setting focused training curricula developed from the Hawai'i ECE Wellness Guidelines
- Partner with leaders in the early learning community to identify and implement incentives to support provider implementation of the ECE Wellness Guidelines



## OBJECTIVE

BASELINE: 30% TARGET: 50%

## PHYSICAL ACTIVITY AND NUTRITION-12

**50% of public non-charter schools participating in the Safety and Wellness Survey will meet at least 90% of the wellness guidelines.**

### STRATEGIES

- Create a toolkit to share with all participating public schools that highlights resources for the four lowest scoring wellness guidelines
- Create a social media campaign to educate families and community stakeholders on the DOE safety and wellness guidelines and opportunities to support wellness in schools
- Conduct a study to evaluate qualities/characteristics/infrastructure/resources that contribute to the schools with the lowest Safety and Wellness Survey (SAWS) score and the highest SAWS score

## OBJECTIVE

BASELINE: 0 TARGET: 1

## PHYSICAL ACTIVITY AND NUTRITION-13

**Establish and sustain a funded statewide Food Systems Education Coordinator position to support 'āina-based education, which promotes healthy eating in preschool through grade 12 (P-12) education settings.**

### STRATEGIES

- Assess statewide resources and capacity to fund and establish a statewide Food Systems Education Coordinator position
- Develop scope and position description to include knowledge of 'āina-based education
- Identify gaps and strategically integrate the Food Systems Education Coordinator position in a way that bridges these gaps



## Health Care Sector Objectives

**GOAL >>** All of Hawai'i's health care systems will promote health equity and maximize utilization of prevention by improving coverage, health information technology, programs, practices, and guidelines.

### OBJECTIVE

**BASELINE:** Pending **TARGET:** Increase by 5%

### PHYSICAL ACTIVITY AND NUTRITION-14

**Increase by 5%, the number of people enrolled in nutrition and physical activity programs that are offered by health system payers.**

#### STRATEGIES

- Expand coverage for Diabetes Prevention Programs (DPPs), or evidence-based DPP-like programs (e.g., Pili 'Ohana Department of Native Hawaiian Health)
- Work with providers, health system payers, and worksites to increase awareness of and referrals to covered PAN programs
- Participate in Health Information Technology workgroup to discuss potential referral options between health care organizations and self-management education programs related to physical activity and nutrition

### OBJECTIVE

**BASELINE:** 0 **TARGET:** 12

### PHYSICAL ACTIVITY AND NUTRITION-15

**Implement a Hawai'i-specific hospital recognition program to incentivize promotion of exclusive breastfeeding through adoption of best practices that 100% of maternity care hospitals will participate in.**

#### STRATEGIES

- Develop a statewide maternity care hospital recognition program, which sets policies and standards to support exclusive breastfeeding
- Convene a Hawai'i hospital recognition program workgroup to create, administer, and evaluate the program

### OBJECTIVE

**BASELINE:** 0 **TARGET:** 6

### PHYSICAL ACTIVITY AND NUTRITION-16

**Establish comprehensive coverage for lactation consultation services and lactation supplies by all health insurance companies in the State of Hawai'i.**

#### STRATEGIES

- Engage lactation consultants and other breastfeeding stakeholders to:
  - Develop reimbursement models for Medicaid and commercial payers
  - Pilot coverage processes





## Worksite Sector Objectives

**GOAL >>** All of Hawai'i's worksites will create a culture of wellness through supportive programs and policies that promote breastfeeding, healthy food and beverage choices, and physical activity and active commuter opportunities.

### OBJECTIVE

BASELINE: 0 TARGET: 2

### PHYSICAL ACTIVITY AND NUTRITION-17

**Establish at least two statewide policies designed to increase physical activity and/or healthy food options in government worksites.**

#### STRATEGIES

- Establish a comprehensive worksite physical activity policy
- Establish a policy that requires nutrition standards for worksite vending machines and for meetings/events where food is served

### OBJECTIVE

BASELINE: 0 TARGET: 1

### PHYSICAL ACTIVITY AND NUTRITION-18

**Establish at least one statewide policy that supports breastfeeding exclusivity and duration.**

#### STRATEGIES

- Establish a statewide Paid Family Leave policy, which will support mothers' ability to breastfeed by providing leave time for mothers to care for their newborns
- Encourage employers to adopt an Infant at Work policy, which allows employees the option of bringing their infants into the workplace and can support exclusive breastfeeding
- Encourage employers to adopt a Work from Home policy, which provides telecommuting options for breastfeeding mothers

### OBJECTIVE

### PHYSICAL ACTIVITY AND NUTRITION-19

ASTHMA-11 • CANCER-13 • DIABETES-07  
HEART DISEASE AND STROKE-09 • TOBACCO-12

**Implement a statewide, comprehensive worksite wellness recognition program that at least 10 very small-, 15 small-, 10 medium-, and 5 large-employers will participate in.**

#### STRATEGIES

- Identify stakeholders and convene an advisory group to develop a Hawai'i-specific, evidence-based worksite wellness recognition program that includes the following areas:
  - Asthma
  - Cancer
  - Diabetes
  - Heart Disease and Stroke
  - Physical Activity and Nutrition
  - Tobacco
- Pilot the recognition program with a group of diverse employers and modify the program based on their feedback.

#### BASELINE:

very small = 0  
small = 0

medium = 0  
large = 0

#### TARGET:

very small = 10  
small = 15

medium = 10  
large = 5



# HOW THE PLAN WAS DEVELOPED

## PLANNING PROCESS

The process of developing the PAN Plan 2030 began in the Summer of 2018 and built off the foundation set by the two previous PAN Plans. This process involved developing a revised scope of work that included an overarching goal of designing and creating new objectives based on the following principles:

1. Impactful through statewide policy, systems, and environmental change;
2. Measurable through existing tools or impending instruments; and
3. Implementable given capacity and resources in the state.

Twenty-one well-respected experts from across the state were invited to serve on the PAN Plan 2030 Leadership Team in one of the four sector areas:

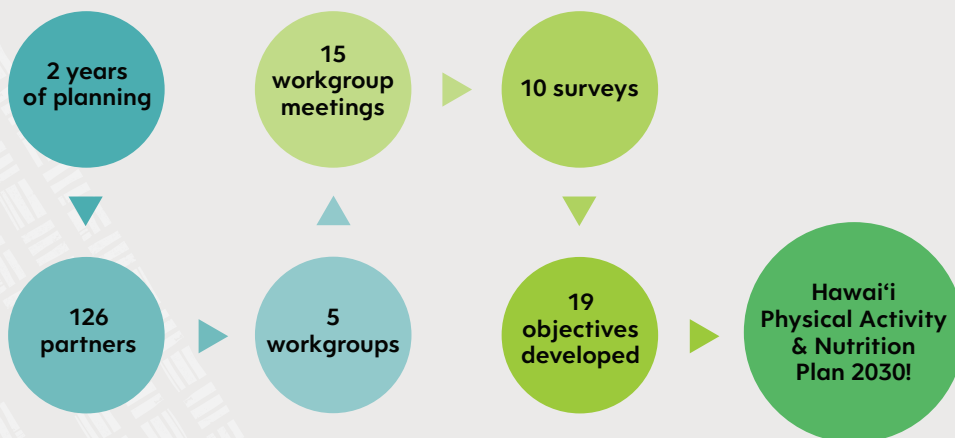
- » community design and access
- » education,
- » health care, and
- » worksite.

In September 2018, community partners were convened to kickstart the development of PAN Plan 2030, present progress on PAN Plan 2020 objectives, identify missing stakeholders through a social network analysis, and encourage partners to participate in a sector Leadership group.

In June–July 2019, sector area workgroups were formed through online sign-ups that were sent to the PAN listserv of over 750 community partners. In addition to the twenty-one Leadership Team members, 126 community partners signed up to participate in one or more of the five workgroups (community design and access, physical activity—53; community design and access, nutrition—58; education—45; health care—36; and worksite—28).

Ultimately, the expertise and guidance provided by sector Leadership and Workgroups proved invaluable to the creation of nineteen PAN Plan 2030 objectives. This collaborative process will help to ensure stakeholder buy-in and support to successfully implement strategies and achieve objectives. The PAN Plan 2030 is a living document and will continue to be updated as progress is made on objectives.

### PAN Plan Process Highlights





# IMPLEMENTATION

The rapidly increasing prevalence of chronic diseases and their associated risk factors in Hawai'i demands effective coordination of chronic disease prevention and management efforts. Statewide collaboration between stakeholders and partners reduces duplication of efforts and leverages resources to effectively address common risk factors through evidence-based policies, programs, and services. The PAN Plan 2030 works in coordination with other chronic disease prevention and management efforts in the state, specifically the Healthy Hawai'i Strategic Plan 2030; the Hawai'i Asthma Plan 2030; the Hawai'i Cancer Plan 2030; the Hawai'i Diabetes Plan 2030; the Hawai'i Heart Disease and Stroke Plan 2030; and, the Hawai'i Tobacco Prevention and Control Plan 2030.

Program area stakeholders continue to meet regularly to implement the PAN Plan 2030 objectives and strategies, and to monitor and evaluate progress. The stakeholder groups will continue to expand membership to include new community representatives and assure an inclusive, community-based participatory approach to realizing the plan's goals. The plan is meant for public dissemination and will be available online at [www.HHSP.hawaii.gov](http://www.HHSP.hawaii.gov).



Statewide collaboration between stakeholders and partners reduces duplication of efforts and leverages resources to effectively address common risk factors through evidence-based policies, programs, and services.

# LONG-TERM MEASURES

The long-term measures were identified to summarize and evaluate progress toward achieving the PAN Plan 2030 objectives. The long-term measures will be monitored throughout the decade to demonstrate improvements in reducing overweight, obesity, and chronic disease among all Hawai'i residents. Long-term measures will be reviewed and updated periodically as changes are made to the PAN Plan 2030.

LONG-TERM MEASURE	BASELINE	TARGET
Adults who eat five or more servings of fruits and vegetables per day	19.8% (BRFSS, 2015)	22.8%
Teens (high school) who eat five or more servings of fruits and vegetables per day	14.2% (YRBS, 2017)	16.0%
Adults who have a healthy body weight (BMI 18.5 - 25.0)	37.9% (BRFSS, 2018)	42.4%
Teens (high school) who have a healthy body weight (BMI 18.5 - 25.0)	71.6% (YRBS, 2017)	80.9%
Adults who meet aerobic PA guidelines (150 minutes per week)	56.5% (BRFSS, 2017)	63.8%
Adults who meet muscle strengthening PA guidelines (2 or more days per week)	35.4% (BRFSS, 2017)	40.0%
Teens (high school) who meet aerobic PA guidelines (60 minutes per day)	19.6% (YRBS, 2017)	30.6%
Teens (high school) who meet muscle strengthening PA guidelines (3 or more days per week)	42.4% (YRBS, 2017)	56.1%
Young teens (middle school) who meet aerobic PA guidelines (60 minutes per day)	27.0% (YRBS, 2017)	30.5%
Young teens (middle school) who meet muscle strengthening PA guidelines (3 or more days per week)	50.6% (YRBS, 2017)	57.2%
Adults who self-reported their health status as 'Good', 'Very Good', or 'Excellent.'	83.7% (BRFSS, 2018)	93.7%
Adults who drink soda (non-diet) at least once/day	11.7% (BRFSS, 2017)	10.2%



LONG-TERM MEASURE	BASELINE	TARGET
Teens (high school) who drink soda (non-diet) at least once/day	11.0% (YRBS, 2017)	9.6%
Infants who were breastfed exclusively at 6 months	30.6% (NIS, 2017)	42.4%
Infants who were breastfed exclusively through 3 months	57.4% (NIS, 2017)	64.9%
Infants who were ever breastfed	89.1% (NIS, 2017)	94.9%
Infants still breastfeeding at 8 weeks	79.4% (PRAMS, 2016)	90.5%



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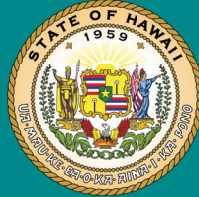
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