



# COMMONWEALTH of VIRGINIA

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### Office of Integrated Health Health & Safety Alert/Information

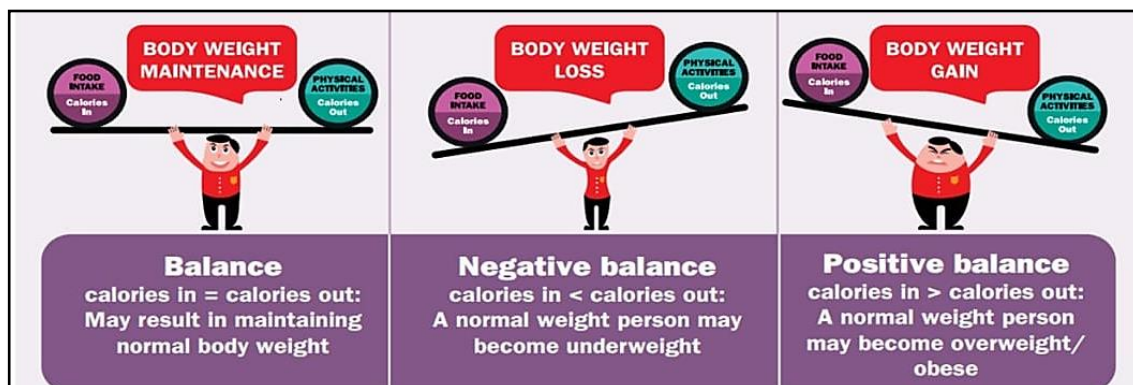
## Basic Nutrition Health & Safety Alert

### Basic Nutrition Introduction

Human nutrition is a health science which involves food choices related to social behaviors. The foods a person chooses to eat directly affects their body's energy level (calories). It is in this way, foods rich in nutrients form a foundation for good physical health. Choosing healthy foods in the right amounts on a daily basis is key to having enough energy for activities, maintaining a healthy body weight, and reducing the chances of developing long term health condition (21) (4) (14).

### Food = Calories and Calories = Energy

Calories are the measurement of energy from foods and drinks, which are consumed. There are caloric units of energy found in every food we eat and most beverages we drink, except water (14). Water has no calories, but is a nutrient required for bodily functions. The amount of calories each person's body requires is based on their height, weight, age, physical activity level, and gender. If an individual needs to gain weight, they should consume more calories, and maintain their current activity level. If an individual needs to lose weight, they should consume less calories, and/or increase their current activity level. Therefore, a physically active person needs to consume more calories than someone who is less active, because they are burning more calories. In order to maintain your weight, the calories you consume, should be equal to the calories your body uses (23).



Energy in versus Energy out – Balance Scale

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## Nutrients

Nutrients are the chemical building blocks for healthy cells in the body and are also contained within foods and beverages. Examples of nutrients the body needs on a regular basis are:

- Proteins
- Fats
- Carbohydrates
- Water
- Vitamins
- Minerals (14).



## Nutritional Guidelines

The U.S. Department of Agriculture (USDA) and the U.S. Department of Health & Human Services (HHS) have published Dietary Guidelines for Americans 2020 – 2025, in which they completely and thoroughly review all nutritional requirements for health eating and drinking habits for individuals at any age.

The guideline suggestions are to:

- Develop health eating patterns at each stage of life.
- Choose a nutrient dense diet of foods and beverages, which aligns with each individual's food preferences, culture and budget.
- Select fruits, vegetables, whole grains, dairy, protein and fats to build a meal with adequate nutrients for good health and the correct calorie intake equal to energy output.
- Reduce the consumption of foods high in saturated fats, salt, and added sugars (23).

Some highlights from the guidelines are on page 13, and include instructions for the use of “My Plate”, which can help plan balanced meals. A review of nutritional facts, with a comparison of nutrient dense versus nutrient empty calorie food/drink choices are on page 48. Chapters 4 & 6 cover nutritional requirements for adults.

To review the Dietary Guidelines for Americans 2020 – 2025, in its entirety, the publication is free for download at [https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary\\_Guidelines\\_for\\_Americans\\_2020-2025.pdf](https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf)

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## Disparity and Inequity Related to Nutrition

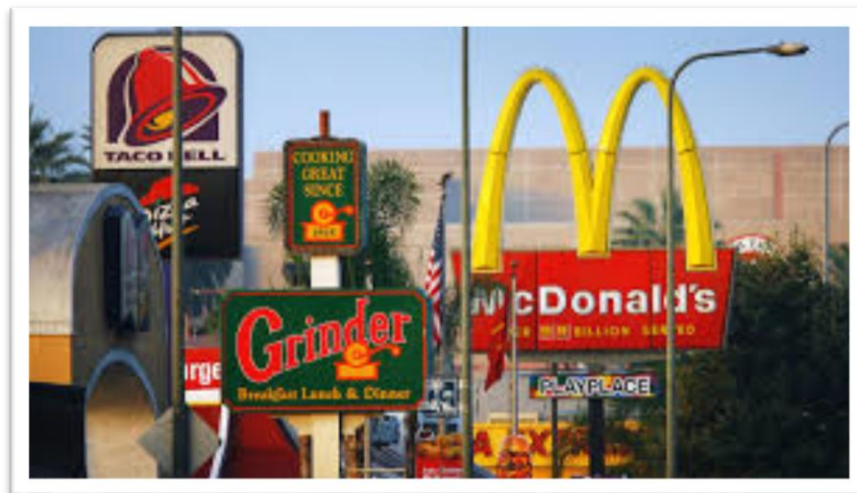
The availability of healthy food/drink sources vary widely between communities. Higher income, mostly white communities, have been found to have more grocery stores, farmers markets and access to restaurants which offer fresh food/drink options.

In comparison, lower income communities of non-whites, have been found to have more fast food restaurants and convenience stores, which offer less healthy food/drink options (16) (13).

As a result of the food/drink disparities and inequity in the United States, some lower income communities, which lack availability of healthy food/drink choices are now being referred to as “Food Deserts” (13).

The over saturation of a community with convenience food/drink offerings are now being referred to as “Food Swamps” due to the over availability of foods/drinks high in saturated fats and added sugars, which are swamped/drowned out by healthier food/drink options, making them harder to locate (13).

The availability and accessibility of healthy foods and drinks directly impacts the overall health and wellbeing of everyone in the community. Food Deserts and Food Swamps in lower income communities are being directly connected to the increased numbers of individuals with chronic health conditions related to nutrition in those communities (16) (13).



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## **Nutrition and Individuals with Intellectual and Developmental Disabilities (I/DD)**

Individuals with I/DD are at higher risk for obesity, and obesity-related diseases than the general population partly because of their nutritional intake. However, obesity among individuals with I/DD often directly relates to where the individual resides, the cause and/or severity of the intellectual and/or developmental disability, mental illness and the administration of multiple medications (polypharmacy) or psychotropic medications side-effects (19) (12).

When individuals with I/DD resided in an institutional setting, meals were planned by registered dietitians well educated in caloric requirements and nutritional needs. In community settings, individuals with I/DD are dependent on their caregivers and direct support staff for assistance with their food/drink choices, menu planning, grocery shopping, and food preparation, who may lack training in meal planning and nutrition. A current review of individuals in community settings revealed many individuals with I/DD consume high amounts of processed foods, due to the convenience factor, and overall nutritional intake was poor (17).

As a result, many individuals with I/DD are not getting enough essential nutrients in their daily diets. Very few individuals with I/DD are consuming the recommended 5 servings of fruits and vegetables per day, increasing their risk for chronic medical conditions (18).

The food/drink choices of individuals with I/DD are typically high in:

- **Saturated fats** found in frozen pizzas, chicken nuggets, hamburger helper, lunchmeat, and hotdogs.
- **Refined carbohydrates** found in white bread, breakfast cereals, and boxed cookies.
- **Sodium** from canned vegetables, chips, ramen, and frozen dinners.

Their nutritional choices were typically low in:

- **Vitamin A** found in leafy green vegetables, orange and yellow vegetables, tomato products, and fruits.
- **Fiber** from whole grains, brown rice, whole-wheat breads, and pasta.
- **Folate** found in dark green leafy vegetables such as turnip greens, spinach, romaine lettuce, asparagus, Brussels sprouts, and broccoli.
- **Iron** from beans and lentils, tofu, baked potatoes, dark green leafy vegetables, fortified breakfast cereals, whole-grain and enriched breads.

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## Autism Spectrum Disorder (ASD)

Individuals diagnosed with ASD may have a lack of vital nutrients in their diet due to delays in feeding skills sensitivity to textures, fear of new foods, poor oral motor skills and difficulties metabolizing various amino acids and long-chain fatty acids (fats) (7) (19) (20).

It is fairly common for individuals with ASD to have underlying genetic, metabolic and/or neurologic disorders, such as Prader-Willi syndrome, Fragile X, Phenylketonuria or cerebral palsy, which can impact their nutritional status significantly (7).

Due to these underlying problems with metabolism associated with genetically linked I/DD syndromes, some individuals may require a much higher fat/caloric intake, while others may require a much lower fat/caloric intake. Always check with the individual's primary care physician (PCP) before making any dietary changes.

Individuals with ASD may face the following nutritional challenges:

- Poor nutritional intake and/or metabolism of essential nutrients.
- Insufficient physical energy.
- Medication affecting appetite.
- Picky eaters (brands, packaging, smell, color)
- Issues with food textures.
- Overstimulating environment.
- Fixation on favorite foods/drinks.

Caregivers providing support to individuals with ASD may need to consider involving a dietician, an occupational therapist and/or a behaviorist for recommendation on oral sensory and dietary issues (3).

## Down's syndrome

Being overweight and obese is prevalent in individuals diagnosed with Down's syndrome, due to their lower activity levels and slowed metabolism. Their reduced physical energy makes it difficult for them to maintain a healthy body weight (9).

Down syndrome individuals who experience early onset dementia, constipation, celiac disease and/or general decreased muscle tone are at increased risk for developing a poor appetite (19).

Caregivers who provide care to Down's syndrome individuals should seek medical advice before adding interventions such as exercise, nutritional changes, and behavioral management to an individual's plan, which has been shown to be effective for these individuals (9).

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## Prader Willi Syndrome

Prader Willi syndrome can cause failure to thrive at infancy due to a poor suck reflex (19).

Obesity can start to occur in early childhood and is related to extreme food-seeking behavior and hyperphagia also known as excessive eating (19) (5).

Poor health outcomes for these the individuals can be related to obesity and chronic health conditions (10). Individuals with Prader Willi syndrome have also been known to have a high incidence of Pica, which is a disorder which compels them to seek out and consume nonfood items (19).

Due to the continuous and unending hunger which drives individuals with Prader Willi, it is not recommended for caregivers providing support to use food as a reward for behavior management (10).

## Impact of Nutrition on Chronic Health Conditions

Best practice research has shown eating at least 5 servings of vegetables and fruits daily lowers the risk of developing chronic health conditions. Individuals who consume diets which are both high in whole foods and are plant based, full of vegetables and fruits, have improved overall physical health, reduced effects of aging and are able to maintain appropriate body weight (21) (6).

Nutritional scientists have connected the overeating of foods high in salt, added sugars, and saturated fats, in addition to **not** consuming enough essential nutrients can lead to the development of chronic health conditions (2) (15) (21) (4).

Some chronic health conditions which are related to diet and nutritional intake are obesity, type 2 diabetes mellitus, high blood pressure (hypertension), coronary heart disease (CHD), stroke, cancer, chronic inflammatory bowel disease (IBD), rheumatoid arthritis (RA), asthma, chronic obstructive pulmonary disease (COPD), osteoporosis, vision problems, and dementia (2) (15) (4).

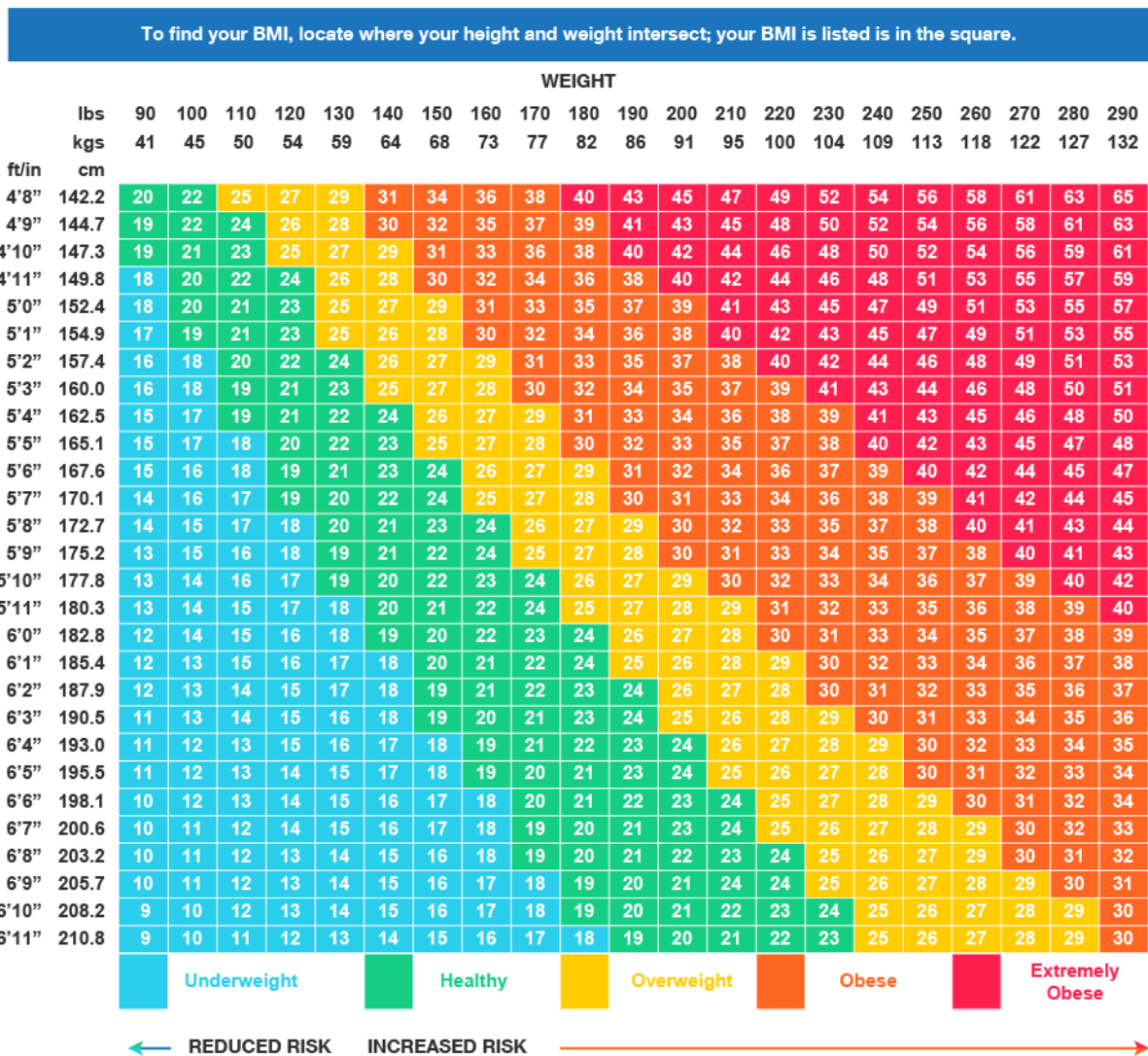
- Heart disease is the leading cause of death in the United States.
  - Cardiovascular disease (CVD) includes coronary heart disease (CHD), hypertension, stroke and peripheral vascular disease (PVD), atherosclerosis, and high blood cholesterol levels (22).
  - Saturated fats are solid at room temperature. They include things like the fat on meat, lard, and butter (15) (4).

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- Low density lipoprotein (LDL) is “Bad” cholesterol which is deposited in the arteries and increase cholesterol levels in the body (15).
  - Trans-fats are a type of saturated fat and are the worst type of fat to eat. Manufactured biscuits, pastries and cakes are foods produced with high levels of trans-fats (15). The USDA has recommended reducing the use of trans-fats in industrial processed food products (23).
  - Eating large amounts of salty foods, and adding salt to food increases blood pressure and can lead to stroke. Foods high in sodium are frozen processed meals, processed meats, and all kinds of chips and some cheeses (15).
  - **Type 2 diabetics’ account for 90-95% of all individuals diagnosed with diabetes.**
    - The goal of diabetic management is to regulate diet and exercise to balance blood sugar levels and insulin (1).
    - Long-term complications can result when a nutritional diet plan is not followed by an individual with diabetes such as retinopathy with partial or total vision loss, kidney failure, increase risk of foot ulcers, amputations, urinary retention from nephropathy, and cardiovascular disease leading to hypertension, atherosclerosis, and peripheral vascular disease (1).
    - 85% of type 2 diabetics are overweight or obese (11).
  - **Overweight & Obesity – Between the years 2017-2018, 73.6% adults’, age 20 and older, were reported to be overweight and/or obese, and 9.2% of adults’ were severely obese in the United States (8).**
    - The Body mass index, or BMI, is defined by a mathematical calculation which uses an individual’s weight and height to determine their body fat. A BMI of 25-29 points is considered overweight and a BMI of 30 or more indicates obesity (11). To calculate your BMI go to [www.mayoclinic.com/health/bmi-calculator](http://www.mayoclinic.com/health/bmi-calculator)
    - Obesity has been medically linked to chronic health conditions such as of type 2 diabetes, all types of heart disease, cancer of the esophagus, pancreas, colon and/or rectum, breast, bladder lining, kidneys, thyroid, gallbladder, and risk for stroke, osteoarthritis, gallstones and asthma (11).
    - Nutritional deficiencies, sometimes called “hidden hunger” which is a type of malnutrition, results when an individual who is considered obese does not consume enough potassium, calcium, vitamin D., iron, or fiber leading to other chronic health complications (21).

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- A waist measurement of greater than >40 inches for men, and >35 inches for women, indicates increased risk for chronic health conditions related to obesity (24).



Anyone with chronic health conditions, which are impacted by nutritional intake should have a thorough nutritional evaluation by their primary care physician (PCP), or a registered dietitian nutritionists (RDN). The assessment should take into consideration the individual's medical diagnoses, medications, food preferences, environmental factors, life-style choices and financial resources (19).



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## Caregiver Considerations

- An appointment with a registered dietitian nutritionist (RDN) is recommended as a first step in organizing a healthy meal plan for individuals with I/DD (19).
- It is important for all individuals with I/DD who are struggling with body weight, either to increase or to decrease, to be evaluated by their PCP and a weight management protocol be put into place before direct care staff and/or caregivers make any changes to an individual's meal plan or calorie intake (19).
- A weight management protocol might include a recommended daily activity level, an ideal weight for an individual, prescribed calorie intake, and behavior modifications (19).
- Individuals with I/DD should be assisted by their caregivers to be involved in every aspect of healthy food/drink choices. They should be included in menu planning, grocery shopping, preparing and cooking meals, along with the cleaning up afterwards (17).
- Direct care staff and caregivers attitudes about foods/drinks have an impact on the individuals they support. Education and involvement of the staff in healthy eating strategies improves the wellbeing of both the caregivers and the individuals (19) (17).
- To ensure safety during meals it is recommended a medical professional create an individualized meal time supports protocol for all individuals with I/DD who have difficulty with eating, drinking and swallowing. All protocol must be approved and signed by the individual's PCP prior to starting them (16).
- Any Individual who has been diagnosed with and/or has a history of aspiration or dysphagia should have a meal time protocol for consistent supports by caregivers and/or direct care staff (16).
- Direct care staff and caregivers should be educated on the signs and symptoms of dysphagia, then trained on how to respond if an individual is choking or experiences aspiration of foods/drinks (19).



### Implementation of the *Dietary Guidelines* Through MyPlate

## Using MyPlate as a Guide To Support Healthy Dietary Patterns

The *Dietary Guidelines for Americans* is developed and written for a professional audience. Therefore, its translation into actionable consumer messages and resources is crucial to help individuals, families, and communities achieve healthy dietary patterns.

MyPlate is one example of consumer translation. Created to be used in various settings and adaptable to meeting personal preferences, cultural foodways, traditions, and budget needs, MyPlate is used by professionals across sectors to help people become more aware of and informed about making healthy food and beverage choices over time. More information is available at [MyPlate.gov](http://MyPlate.gov).

Following a healthy dietary pattern from birth through older adulthood can have a profound impact on a person's lifelong health. The *Dietary Guidelines* provides the framework for following such a pattern. However, broad and multisector collaboration is needed to help people achieve that goal. Action on many fronts is needed to ensure that healthy dietary choices at home, school, work, and play are the affordable, accessible norm. Everyone has a role to play in helping all Americans shift to a healthy dietary pattern and achieve better health.

### Try the MyPlate Plan

A healthy eating routine is important at every stage of life and can have positive effects that add up over time. It's important to eat a variety of fruits, vegetables, grains, dairy or fortified soy alternatives, and protein foods. When deciding what to eat or drink, choose options that are full of nutrients. Make every bite count.

Think about how the following recommendations can come together over the course of your day or week to help you create a healthy eating routine:



To learn what the right amounts are for you, try the personalized [MyPlate Plan](http://MyPlate.gov).<sup>2</sup>

Based on decades of solid science, MyPlate advice can help you day to day and over time.



The benefits of healthy eating add up over time, bite by bite. Small changes matter. **Start Simple with MyPlate.**



<sup>2</sup> Available at: [MyPlate.gov/myplate-plan](http://MyPlate.gov/myplate-plan)

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## Resources

**The Office of Integrated Health at DBHDS:** If you have any questions about the information contained in this Health & Safety Alert, or need additional resources or support, please email your questions to the Office of Integrated Health's nursing team at: [communitynursing@dbhds.virginia.gov](mailto:communitynursing@dbhds.virginia.gov)

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**DBHDS Human Rights Department:**

For more information on individuals' human rights in relation to psychotropic medications. <https://dbhds.virginia.gov/quality-management/human-rights>

**The USDA – HHS Dietary Guidelines for Americans 2020 – 2025:**

[https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary\\_Guidelines\\_for\\_Americans\\_2020-2025.pdf](https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf)

**The USDA My Plate:**

<https://www.myplate.gov/eat-healthy/food-group-gallery>

**The USDA Healthy Eating:**

<https://www.nutrition.gov/topics/basic-nutrition/healthy-eating>

**The American Diabetes Association:** <https://www.diabetes.org/>

**World Health Organization/Health Topics/Nutrition:**

<https://www.who.int/health-topics/nutrition>

**BMI calculator:** [www.mayoclinic.com/health/bmi-calculator](http://www.mayoclinic.com/health/bmi-calculator)

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