NUTRITION 101

A Guide to Healthy Eating

Eating well is essential for a healthy, happy life. This guide will help you make informed choices for a balanced diet and improved health and well-being. Please note...this is for informational purposes only. Please consult with your Doctor or registered Dietician for any perscriptive plans on proper diet and overall medical care.

The Building Blocks of Nutrition

1. Macronutrients

These are your body's primary energy sources and consist of Carbohydrates, Fats and Proteins.

CARBOHYDRATES

Carbohydrates are made of carbon and water, hence the two parts of the word: "carbo-" and "-hydrate." They can be found in grains, fruits, and vegetables. Carbohydrates, in the form of glucose, provide a quick source of fuel for our bodies. In the form of Fiber, carbohydrates can help ensure regular elimination of waste and support the health of our microbiome (the body is home to trillions of microorganisms known as the microbiome).

Figure 1 -- Carbohydrate examples

There are two types of carbohydrates: Simple Carbohydrates (primarily sugars and sugar alcohols) and Complex Carbohydrates (starches and soluble and non-soluble fibers). Understanding these types of carbohydrates and the impacts each can have on our bodies is an important step in understanding proper nutrition and maintaining a healthy diet. In general, when combined with proper intake of fats and proteins, carbohydrates can provide health benefits and are an important part of a well-balanced diet.

FATS

Fats are found in nuts, oils, and dairy products. They are crucial for numerous body functions, can help improve the taste and enjoyment of food, can help regulate the speed we digest food, and are an important source of high caloric energy that is ideal for long, low-intensity activity.

Figure 2 -- Examples of Fats

There are three "classes" of Fat (or fatty acids): Saturated Fat, Monounsaturated Fat, and Polyunsatruated Fat. Two subsets of Polyunsaturated Fats include Omega 3's and Omega 6's -- both of which are talked about often in conversations around healthy diets. Each of these fats serves a purpose and when consumed in moderation—and in combination with Carbohydrates and Proteins—play an important part in a healthy diet.

PROTEINS

Proteins are found in meat, fish, dairy and legumes and are used to help form or build tissues, organs, nerves, muscles, and more. Proteins are also an essential building block of enzymes, antibodies, hemoglobin, and peptide hormones -- each of which are important to the proper function of our bodies.

Figure 3 -- Protein Examples

While there are some healthy plant proteins, high-quality, humanely-raised, and properly prepared protein from animal sources include all 9 of the essential amino acids necessary for human health. Good sources of protein include wild-caught seafood, meat from grass-fed or pasture-raised animals, pasture-raised poultry and eggs, and organic, non-GMO soybeans.

The Building Blocks of Nutrition (Continued)

2. Micronutrients

These are essential for various bodily functions. The two primary classes of Micronutrients are Vitamins and Minerals.

VITAMINS

Though they only account for less than 1% of the human body, vitamins play many crucial roles in health and growth. They act as cofactors (or "helpers") in metabolic processes and they support tissue growth, digestion, elimination, and immune function. They also help prevent diseases such as scurvy, pellagra, and rickets. Below is a list of primary vitamins and some examples of foods where they can be found.

VITAMIN A

Vitamin A (retinol, retinoic acid) is a nutrient important to vision, growth, cell division, reproduction and immunity. Vitamin A also has antioxidant properties.

Foods with

Vitamin A


Cantaloupe


Spinach


Carrots


Chicken Liver

VITAMIN B

There are eight (8) different types of B vitamins: B1 (thiamine), B2 (riboflavin), B3 (niacin), B5 (pantothenic acid), B6 (pyridoxal phosphate), B7 (biotin), B9 (folic acid or folate), and B12 (cobalamin). These are often referred to as B Complex vitamins. B Complex vitamins help form red blood cells and work with enzymes to make energy from food.

Foods with

Vitamin B

B1

Pork

B2

Skirt Steak

B3

Yellowfin Tuna

B5

Shiitake Mushrooms

B6

Chickpeas

B7

Eggs

B9

Edamame
(Soy Beans)

B12

Clams

VITAMINS (cont'd)

VITAMIN C

Vitamin C (ascorbic acid) is a nutrient your body needs to form blood vessels, cartilage, muscle and collagen in bones. It is vital to your body's healing process and is helpful in protecting and keeping cells healthy. Fruits and vegetables are good sources of Vitamin C. Below are some examples:

Foods with

Vitamin C

Bell Peppers

Oranges

Strawberries

Broccoli

VITAMIN D

Vitamin D is a nutrient your body needs for building and maintaining healthy bones. Vitamin D also has anti-inflammatory, antioxidant and other protective properties that support immune health, muscle function and brain cell activity. It can be made in the skin when exposed to sunlight and can diminish during winter months or in climates where exposure to sunlight is more limited.

Foods with

Vitamin D

Salmon

Crimini Mushrooms

Eggs

Trout

VITAMIN E

Vitamin E is a nutrient that is important to vision, reproduction, and the health of your blood, brain and skin. It also has anti-oxidant properties which some research suggests might help your body defend against certain diseases and ailments.

Foods with

Vitamin E

Almonds

Avocados

Spinach

Butternut Squash

VITAMIN K

Vitamin K is found throughout the body including the liver, brain, heart, pancreas, and bones. It helps make various proteins that are needed for blood clotting and the building of bones.

VITAMINS (cont'd)

VITAMIN K (cont'd)

Foods with

Vitamin K

Kale

Brussels Sprouts

Cabbage

Kiwi Fruit

MINERALS

Minerals act like the body's "spark plugs," helping facilitate enzyme reactions and the transfer of nutrients across cellular membranes, regulating the proper pH of the blood, and maintaining proper nerve conduction. They also help contract and relax muscles, regulate tissue growth, and provide structural and functional support. Out of the 118 elements on the periodic table there are 15-20 native elements that are considered nutritionally helpful or beneficial. These are broken down into two categories: Macrominerals vs. Microminerals (which are sometimes also referred to as Trace Minerals). You only need small or "trace" amounts of Microminerals and they include boron, chromium, copper, germanium, iodine, iron, lithium, manganese, molybdenum, rubidium, selenium, silicon, vanadium and zinc.

MACROMINERALS

Minerals that are considered more vital to our health have higher daily requirements. These minerals and a sample food that contains each are listed below.

Ca Calcium	Cl^- Chloride	Mg Magnesium	Na Sodium	S Sulfur	P Phosphorous	K Potassium
						
Tofu	Tomatoes	Spinach	Dill Pickle	Cauliflower	Chicken	Bananas

Keys to Nutritional Success

1. Try to Maintain a Balanced Diet

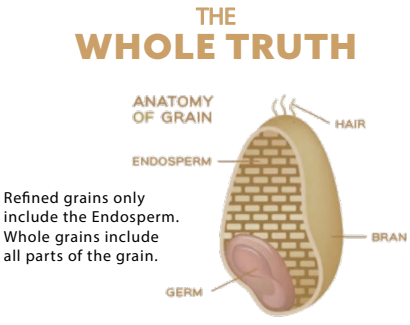
A well-balanced diet provides the energy you need to remain active throughout the day and will also help provide the nutrients you need for growth, repair, and the ability to stay strong and healthy. A balanced diet may also help you prevent some illnesses and ailments. And, when combined with movement and exercise, a balanced diet can also help you achieve and maintain a healthy weight.

FRUITS AND VEGETABLES

It's important to eat an ample quantity and wide variety of fruits and vegetables to obtain the diverse micronutrients our bodies need. Focus on low-glycemic options and—when possible—make organic, local, and in-season choices. For vegetables, focus on leafy greens and as many colors as possible and be mindful of starchy vegetables like corn or potatoes. Your goal should be to eat at least five servings of fruits and vegetables per day.

GRAINS

Grains are important sources of many nutrients, including complex carbohydrates, dietary fiber, B vitamins, and minerals (iron, magnesium, and selenium). Any food made from wheat, rice, oats, cornmeal, barley, or another cereal grain is a grain product. For maximum nutritional value, try eating whole grain options whenever possible.



A meta-analysis combining results from studies conducted in the U.S., the United Kingdom, and Scandinavian countries (which included health information from over 786,000 individuals), found that people who ate 70 grams/day of whole grains—compared with those who ate little or no whole grains—had a 22% lower risk of total mortality, a 23% lower risk of cardiovascular disease mortality, and a 20% lower risk of cancer mortality. [1]

1. Zong G, Gao A, Hu FB, Sun Q. Whole Grain Intake and Mortality From All Causes, Cardiovascular Disease, and Cancer: A Meta-Analysis of Prospective Cohort Studies. Circulation. 2016;133:2370-80.

Keys to Nutritional Success

1. Try to Maintain a Balanced Diet (Cont'd)

PROTEINS

As discussed in the previous section on The Building Blocks of Nutrition, Proteins play an important part of a healthy diet. Proteins are made up of chemical 'building blocks' called amino acids. Your body uses amino acids to build and repair muscles and bones and to make hormones and enzymes. Also keep in mind that eating enough of the right kinds of protein isn't enough; you also need to have a healthy digestive system to actually absorb it. Maintaining a balanced diet will help with this.

COMPLETE PROTEINS

Some proteins found in food are "complete," meaning they contain all nine of the essential amino acids we need to acquire from food sources.


Salmon


Chicken


Quinoa


Beef


Pork


Buckwheat

2. Manage Portion Sizes

A serving is an exact amount of food. A portion, on the other hand, is the amount of food you put on your plate. So, your portion could be multiple servings. The lack of understanding on this topic drives many to eat more than they should. In addition, research shows that most people will almost always eat more food when they are offered larger portion sizes. Learn to understand what a proper portion size is to better control food intake. For example, an every day object -- like a tennis ball -- is a fair approximation of a proper serving size of fruit. When preparing foods you can also use containers, bowls, or plates that allow you to control portion size.

Did you know?...

- 72% of Americans snack between meals and 41% of these people snack until they feel full.
  --International Food Information Council
- The U.S. discards nearly 80 Billion pounds of food every year. That equates to 219 pound of waste per person each year.
  --Source: Environmental Protection Agency

Understanding proper portion sizes and what you can and should eat with each meal is an important part of finding nutritional success.

Containers with appropriate serving sizes can help prepare foods using suggested serving sizes.

Keys to Nutritional Success

3. Hydration

It is difficult to understate the importance of water to our bodies. Indeed, some refer to it as the most important nutrient. Water is found in every single tissue in the body and makes up the bulk of all body fluids, including saliva, blood, lymph, intracellular fluid (the fluid within cells), and extracellular fluid (the body of fluid outside cells). It helps deliver nutrients and oxygen to cells and transport waste away from cells and out of the body. It helps cushion and lubricate our joints, absorb shocks to the body, and prevent tissues from sticking. Water also moistens oxygen for easier breathing, helps regulate body temperature, and improves the communications between cells.

Most of the water we use or need on a daily basis comes from the food and liquids we ingest. On average, over 60% of our water intake comes from the liquids we drink while food accounts for nearly 30%, and metabolic processes make up less than 10%. To meet the needs our bodies require, we must focus on consuming enough water every day. While the exact amounts vary by person and environmental conditions, there are some helpful tips to ensuring we all consume enough water and in helpful ways.

NOTES ABOUT WATER AND WATER CONSUMPTION

To maximize success, avoid sodas and sugary drinks and follow some of the tips below:

- **Sip, don't chug**. The body can only process a limited amount of water at a time. You will be able to absorb and utilize the water you drink more efficiently if you take small sips over a longer period of time.
- **Drink Clean Water.** Get your water from clean, reliable sources and use a good water filter system for water that you drink or bathe in.
- **Don't Drink Too Much**. Drinking too much water can be just as problematic as not getting enough. As a general rule, try to follow your thirst but avoid drinking more than 1 gallon (3.8 liters) per day.
- **Drink most water away from meals.** Try to drink most of your water between meals to avoid diluting stomach acid and negatively impacting digestion.

4. Nutrient Timing

If you want to have success on your nutritional journey it is also important to know when and what to eat. There is no great science here, but some very basic thoughts that help drive results.

- **Breakfast is important.** Kickstart your day with a balanced breakfast to get things started right. This will help you control cravings and put you in the right frame of mind for the day.
- **Snack smart.** If you do need to snack, choose something that will be satisfying and somewhat healthy. Nuts, yogurt, an apple, an orange—or any other fruit or vegetable—are all solid choices.
- **Bedtime is not snacktime.** Try not to eat too late at night. Eating late at night hinders success.

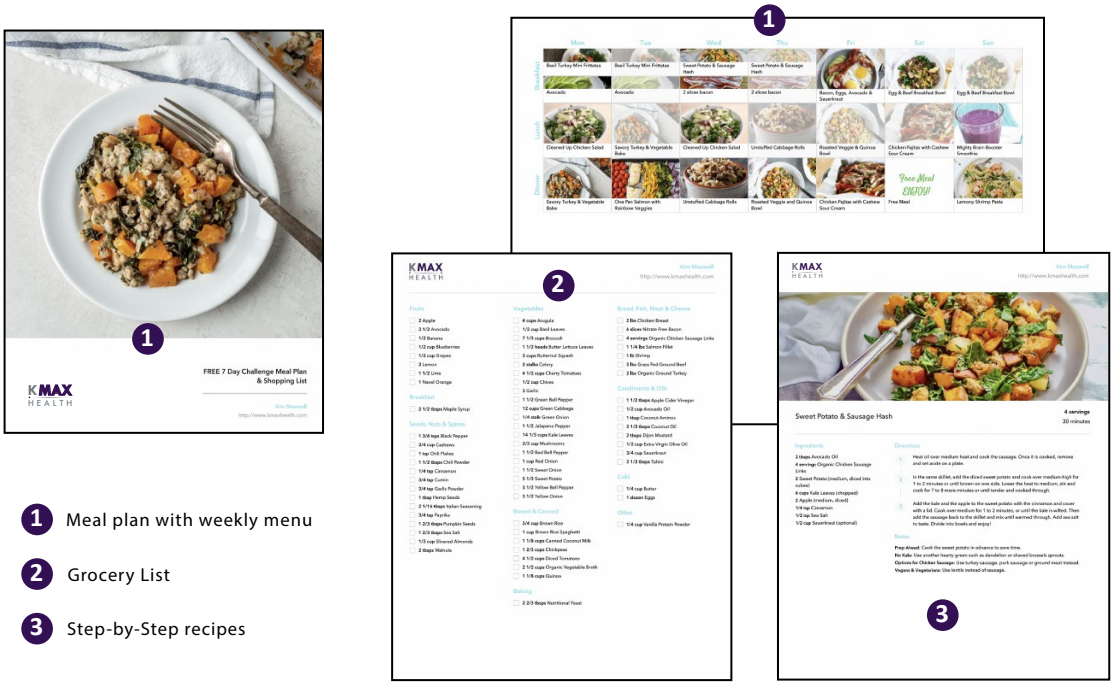
Keys to Nutritional Success

5. Plan for Success

When it comes to nutritional success, having a plan is an important step. This is especially true if you are looking to change a habit — to eat better, to eat at the right times, to eat the right things, etc. The old "5P" rule — Proper Preparation Prevents Poor Performance — can certainly apply here. Taking the time to make and execute against a plan will bring focus and commitment to your efforts and will, in time, help formulate a sustainable habit of healthy eating.

For many, the idea of planning out meals, shopping for those meals, and then repeating that process can seem daunting. Or, perhaps you don't know where to start. If you are in that group, a registered Dietician can help. There are also a number of on-line resources that can help you get started...just be sure you're dealing with a reputable group so you're not led astray. Since you're now familiar with some of our work, you can also sign-up for the KMax Health Free 7-day Challenge, which will give you some basic toolsets to get you started. Or, if you prefer to have on-going support, try out the KMax Health Insiders Membership. $20 per month gets you meal plans, grocery lists, workouts, nutrition challenges, and a recipe vault featuring hundreds of searchable and sortable recipes to help you find success.

EXAMPLE: A Done-For-You Plan



1. Meal plan with weekly menu
2. Grocery List
3. Step-by-Step recipes

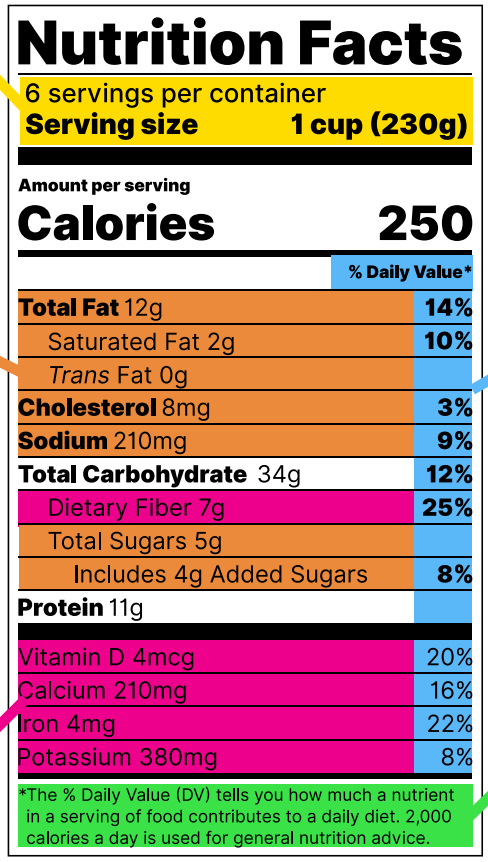
This is an example of the plans built out for KMax Health Insiders. Whether you choose to implement your own plan or use a plan that is done for you, the key is to have a plan and execute against it.

Nutrition Tips for Long-Term Success

Understanding Labels

Nutrition Facts labels can be very helpful, but it's important to know what they are saying. It's also important to point out that the percentages of daily values shown below are based on a 2,000 calorie diet. For actual guidance on how these impact you specifically, you should consult with a Dietician or your Doctor on what is right for you. That said, there are some general guidelines that can be helpful.

Serving Size vs Portion Size. If you recall the conversation on a previous page, this is where Portion Control becomes important. If you eat half of the container of this particular item, you will be eating three servings and all the details below would need to be tripled. If you are going to care about and monitor these labels, stick to the serving size.



Nutrition Facts

6 servings per container
Serving size **1 cup (230g)**

Amount per serving
Calories **250**

	% Daily Value*
Total Fat 12g	**14%**
Saturated Fat 2g	**10%**
Trans Fat 0g	
Cholesterol 8mg	**3%**
Sodium 210mg	**9%**
Total Carbohydrate 34g	**12%**
Dietary Fiber 7g	**25%**
Total Sugars 5g	
Includes 4g Added Sugars	**8%**
Protein 11g	
Vitamin D 4mcg	20%
Calcium 210mg	16%
Iron 4mg	22%
Potassium 380mg	8%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

As a general comment, try to limit these items.

As a general comment, try to get enough of these items.

Daily Value (DV)

If something is 20% or more, that is considered high in DV.

If something is 5% or less, that is considered low in DV.

As stated above, the figures on this label are based on a 2000 calorie-per-day diet. You may need to consult with a Physician on what is right for your specific health.

Nutrition Tips for Long-Term Success

Understand Labels (Continued)

SUGARS

The Food and Drug Aministration suggests the daily allotment for Sugars is 50g. However, the American Heart Association suggests 24g for adult women and 36g for adult men. No matter the suggestion, according to the World Population Review, the average American consumes 126g of sugar per day. And, a significant amount of that comes from sugar that is added to the products we consume. With Diabetes and obesity rates at all-time highs, it is important to understand and control sugar intake to improve and maintain nutritional health. In addition to understanding Nutrition Labels, it's also important to spot and understand how sugars show up in ingredient lists on the products we buy.

Nutrition Facts Labels -- Added Sugars

Pay particular attention to the "Added Sugars" listing. For visual purposes, 4 grams of sugar is the same as one teaspoon. So, in the example at the right, this paricular product has one teaspoon PER SERVING added to it. If there are 6 servings in this container, the entire package has 24 grams of sugar or six teaspoons of sugar added.

Nutrition Facts

6 servings per container

Serving size	**1 cup (230g)**
Amount per serving	
Calories	**250**
	% Daily Value*
Total Fat 12g	**14%**
Saturated Fat 2g	**10%**
Trans Fat 0g	
Cholesterol 8mg	**3%**
Sodium 210mg	**9%**
Total Carbohydrate 34g	**12%**
Dietary Fiber 7g	**25%**
Total Sugars 5g	
Includes 4g Added Sugars	**8%**
Protein 11g	
Vitamin D 4mcg	20%
Calcium 210mg	16%
Iron 4mg	22%
Potassium 380mg	8%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Ingredient Labels -- keep an eye on the hidden sugars

Serving size	**1 Bar (37g)**
Total Sugars 13g	
Incl. 12g Added Sugars	**24%**

12 grams of sugar found here

Food manufacturers call sugar by more than 60 different names. The first ingredient on an ingredient label has the item that is the highest percentage of the product. By changing the name and make-up of the sugars in a product, these sugars can "hide" within the ingredients list so you don't see "sugar" at the top.

INGREDIENTS: CRUST: WHOLE GRAIN OATS, ENRICHED FLOUR (WHEAT FLOUR, NIACIN, REDUCED IRON, VITAMIN B_1 [THIAMIN MONONITRATE], VITAMIN B_2 [RIBOFLAVIN], FOLIC ACID), SOYBEAN OIL, WHOLE WHEAT FLOUR, SUGAR, DEXTROSE, FRUCTOSE, CALCIUM CARBONATE, VEGETABLE GLYCERIN, INVERT SUGAR, WHEY, SOLUBLE CORN FIBER, SALT, WHEAT BRAN, CELLULOSE, NATURAL FLAVORS, POTASSIUM BICARBONATE, MONO- AND DIGLYCERIDES, SOY LECITHIN, WHEAT GLUTEN, NIACINAMIDE, VITAMIN A PALMITATE, CARRAGEENAN, ZINC OXIDE, REDUCED IRON, GUAR GUM, VITAMIN B_6 (PYRIDOXINE HYDROCHLORIDE), VITAMIN B_1 (THIAMIN HYDROCHLORIDE), VITAMIN B_2 (RIBOFLAVIN), **FILLING:** INVERT SUGAR, CORN SYRUP, BLUEBERRY PUREE CONCENTRATE, VEGETABLE GLYCERIN, SUGAR, MODIFIED FOOD STARCH, SODIUM ALGINATE, NATURAL FLAVORS, CITRIC ACID, SODIUM CITRATE, VEGETABLE JUICE FOR COLOR, METHYLCELLULOSE, DICALCIUM PHOSPHATE, MALIC ACID, APPLE JUICE CONCENTRATE.
CONTAINS WHEAT, MILK AND SOY INGREDIENTS.

The names for sugar range from terms like sugar cane crystals to sorghum syrup, maltodextrin and dextrose. Ingredients ending in "-ose" on an ingredient list are typically forms of sugar and include names like sucrose, fructose, maltose and dextrose. You will also see more traditional terms like: brown sugar, agave nectar, raw sugar, corn syrup, confectioners powdered sugar, honey, and maple syrup.

Nutrition Tips for Long-Term Success

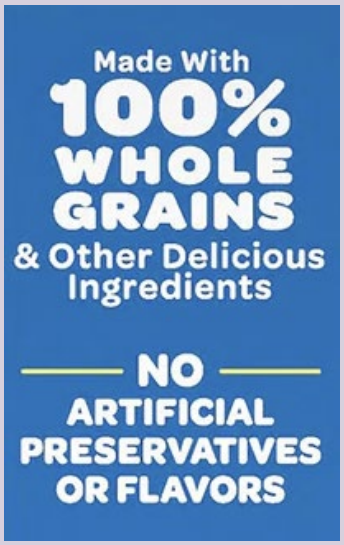
Understand Labels (Continued)

Pay Attention to the Side of the Box...

Food companies are excellent at marketing. They will put all manner of things on thier packaging to help market their products and make them seem more nutritious or perhaps even good for you. A good rule of thumb when evaluating the nutritional value of a product is to pay attention to the side of the box...not the front or back of the box.

The images below are taken from the packaging of a popular snack bar found at nearly every grocery store in the U.S.

Front-of-the-Box Message



Side-of-the-Box Details

INGREDIENTS: Granola (whole grain oats, brown sugar, brown rice crisp [whole grain brown rice flour, sugar, salt], whole grain wheat, soyabean oil, whole wheat flour, baking soda, soy lecithin, nonfat dry milk), corn syrup, brown rice crisp (whole grain brown rice flour, sugar, salt), semisweet chocolate chips (sugar, chocolate liquor, cocoa butter, soy lecithin, vanilla extract), peanut butter spread (peanuts, sugar, palm oil, salt), peanut flavored chips (sugar, palm kernel and palm oil, partially defatted peanut flour, lactose, whey, dextrose, corn syrup solids, soy lecithin, salt, natural flavor), invert sugar, corn syrup solids, glycerin. Contains 2% or less of: calcium carbonate, sorbitol, salt, natural flavor, tocopherols (to preserve freshness).

CONTAINS MILK, PEANUT, SOY AND WHEAT INGREDIENTS.

MAY CONTAIN TRACES OF TREE NUTS.

Nutrition Facts

8 servings per container
Serving size 1 bar (24g)

Amount per serving
Calories 100

	% Daily Value*
Total Fat 3g	4%
Saturated Fat 1g	5%
Trans Fat 0g	
Polyunsaturated Fat 0.5g	
Monounsaturated Fat 1g	
Cholesterol 0mg	0%
Sodium 95mg	4%
Total Carbohydrate 17g	6%
Dietary Fiber 1g	4%
Total Sugars 7g	
Includes 7g Added Sugars	14%
Sugar Alcohol 0g	
Protein 2g	
Vitamin D 0mcg	0%
Calcium 100mg	8%
Iron 0.6mg	2%
Potassium 60mg	0%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

▶ Don't be fooled by front-of-the-box messaging. In this case, the side of the box shows 12 different ingredient listings for sugar and 7 grams of sugar added to a product that is 24 grams in total.

When it comes to ingredients...less is better

At the right is the ingredient detail for another popular snack bar found at most grocery stores in America. When you start to study the side of the box, look for the labels that are simple and small. These are the options that tend to have more nutritional value and are better for you.

INGREDIENTS: DATES, PEANUTS, SEMISWEET CHOCOLATE CHIPS* (UNSWEETENED CHOCOLATE, SUGAR, COCOA BUTTER, VANILLA EXTRACT), SEA SALT.
CONTAINS PEANUT INGREDIENTS.

JUST 4 REAL INGREDIENTS

Less ingredients, less processed, more real food.

Nutrition Tips for Long-Term Success

Nutrition "Quick Hits"

Moderation and Treats

- It is okay to enjoy treats now and then, but everything should be in moderation.
- If you are going to enjoy treats, try to look for healthier "real food" options.
- Remember that balance is the key to long-term sustainable success.

Stay Informed

- Nutrition recommendations can change based on new learning and updated studies.
- Continue to check in with reliable sources and keep up with these details.
- Beware of fad diets, extreme restrictions and easy fixes. Stay sensible and steady.

Listen to Your Body

- If you start to feel "off" or something doesn't seem right, consult with your Doctor.
- If you start to feel great and everything seems better, pay attention to that as well.
- Our bodies are amazing. They will "tell us" what's working if we pause and listen.

Physical Activity is also Key

- When you combine healthy eating with movement and exercise, good things happen.
- You don't need to run 50 miles and lift 500 pounds. Consistent movement works well.
- Physical activity helps with your mindset and mindset does wonders for overall health.

▶ Please remember, everything presented in this document is for informational purposes only and is not meant to be used for medical purposes or to counter the recommendations or direction of your Physician or Registered Dietician.

Kim Maxwell, MS NTP

Kim Maxwell is the Owner and Founder of KMax Health. For over 25 years, Kim has worked in the Fitness and Nutrition industries helping busy women understand and implement strategies to make them feel better. She is a Nutritional Therapy Practicioner, a Certified Culinary Nutrition Expert from the Academy of Culinary Nutrition, and holds her Masters Degree in Clinical Exercise Physiology from Indiana University. She resides in Stillwater, MN with her husband and two children and is eager to work with women everywhere on their wellness journeys.

KMAX HEALTH