

Nutrition Tip of the Week: Whole Grains

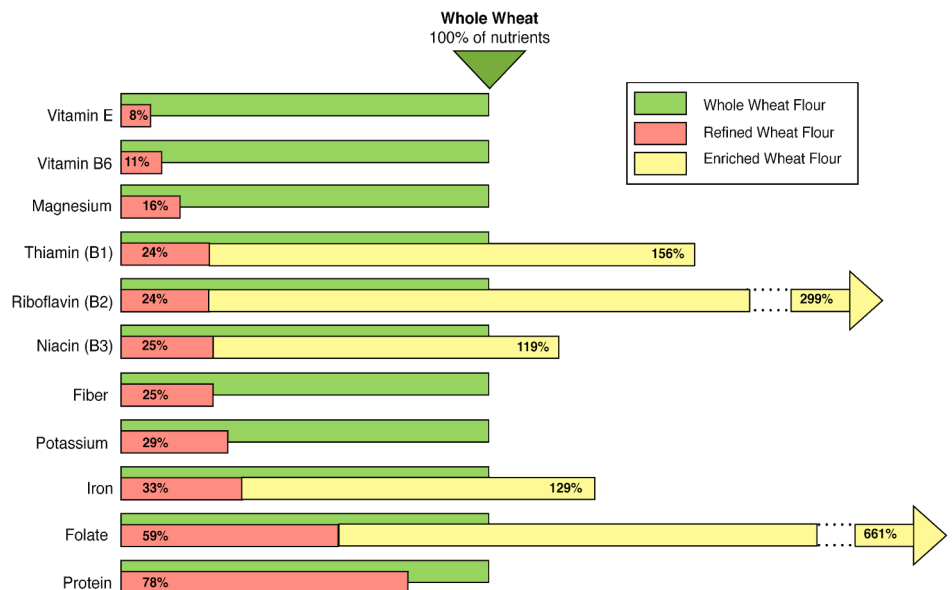
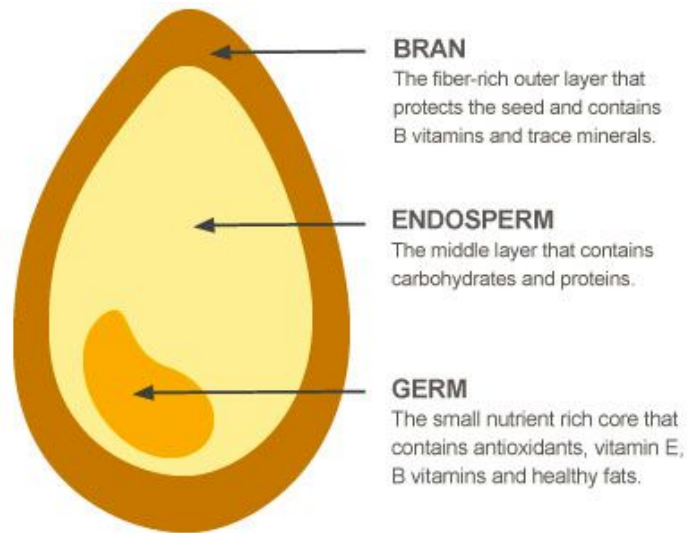


Hello CSUSM Athletes!

This week we are discussing what a whole grain vs refined grain is, how they can benefit your performance, and how to distinguish between 100% whole grain sources.

A grain is the seed (also called the “kernel”) of a plant that grows in fields. All grains start their lives as a whole grain. A **whole grain** is made up of three edible parts (see photo on the right)- the *bran*, the *endosperm* and the *germ*- which are all protected by an inedible husk that prevents the kernel from assaults by pests, the sunlight, disease and water. A grain is considered to be a whole grain as long as all three original parts are still present in the same proportions as when the grain was growing in the fields. There are a wide variety of whole grains (see below), all of which contain fiber, B vitamins and minerals such as iron, zinc and magnesium), phytochemicals, and complex carbohydrates. These nutritional properties make grains an ideal food because they give you sustained energy and keep you fuller for longer so you can keep working hard and not run through your energy stores as quickly as you would with processed grains.

Refined grain is a term used to refer to grains that are not whole, because they have been processed and stripped of one or more of their three key parts, and only contain the *endosperm*. Grains are refined for several reasons such as for their digestibility, shelf life, high calorie content and for their accessibility. Most of the grains around the world have been eaten as refined grains since the late 1800s. However, this led to



big nutritional crises, such as deficiency diseases like beri-beri and pellagra. Governments responded to this crisis by requiring that refined grains, grain products, and flours be “**enriched**”. Enrichment means that essential missing nutrients that are lost during refinement processing, (such as B vitamins, protein and minerals), are added back into the product. However the proportions of nutrients that are added back in are commonly different than the whole grain’s original state. For example, the chart above compares the nutritional differences between a whole wheat flour, refined wheat flour, and enriched wheat flour. Use the infographics below to help you identify whole grain products on your next grocery trip!

HOW CAN WE KNOW IF IT'S ACTUALLY WHOLE GRAIN?

Look for the Whole Grain Stamp

With the Whole Grain Stamp, finding 3 servings of whole grains is easy! Choose three foods with the 100% Stamp or 6 foods with ANY Whole Grain Stamp.



The 100% Stamp is used for products where ALL of its grain ingredients are whole grain. Minimum requirement: 16g whole grain per serving (a full serving of whole grain)



The 50%+ Stamp is used for products where at least 50% of the grain ingredients are whole grain. Minimum requirement: 8g whole grain per serving (1/2 serving of whole grain)



The Basic Stamp is used for products whose ingredients contain whole grains, but may contain more refined grain. Minimum requirement: 8g whole grain per serving (1/2 serving of whole grain).

WHAT IF THERE IS NO WHOLE GRAIN STAMP?

Words Listed on the Package

- whole grain [name of grain]
- whole wheat
- whole [other grain]
- stoneground whole [grain]
- brown rice
- oats, oatmeal (including old-fashioned oatmeal, instant oatmeal)
- wheatberries

Their Meaning

YES!

Contains all parts of the grain, so you’re getting all the nutrients of the whole grain.

- wheat
- semolina
- durum wheat
- organic flour
- stoneground
- multigrain (may describe several whole grains or several refined grains, or a mix of both)

MAYBE

These words are accurate descriptions of the package contents, but because some parts of the grain MAY be missing, you are likely missing the benefits of whole grains.

- enriched flour
- wheat flour
- degerminated (on corn meal)
- bran
- wheat germ

NO

These words never describe whole grains.

CHECK THE INGREDIENTS LIST

As a general rule, the less ingredients, the better and it usually signifies that the product is made from whole ingredients, rather than refined and enriched.

Look for the term “whole grain” when reading the ingredients—especially the first few. Ingredients are listed in the proportions that they are added, starting with the first ingredient as the highest quantity in the product.

If the first ingredient listed contains the word “whole” (such as “whole wheat flour” or “whole oats”), instead of “whole grain”, then it is likely – but not guaranteed – that the product is predominantly whole grain.

If there are two grain ingredients and only the second ingredient listed is a whole grain, the product could contain as much as 1% or nearly half 49% of whole grain).

Gluten, Celiac Disease, Non- Celiac Gluten Sensitivity & Wheat Allergies

Gluten is the name for proteins found in in barley, rye, wheat (wheatberries, durum, emmer, semolina, spelt, farina, farro, graham, KAMUT® khorasan wheat and einkorn), and triticale- a cross between wheat and rye. Gluten helps foods maintain their shape, acting as a “glue” that holds foods together. It is almost impossible to go to the store these days without encountering the phrase “gluten-free” on many products. Despite fad diets and nutrition pop-culture that plays a heavy role in confusing and misinforming consumers, these products are created for people with medical conditions (which are not self diagnosed) such as **celiac disease, non-celiac gluten sensitivity (NCGS)**, and **wheat allergies**.

Those who have these medical conditions can still consume a wide variety of whole grains that don’t include wheat or gluten. It is important to consume a variety of safe whole grains, nuts, seeds or consuming supplements because many gluten-free products are often higher in refined grains/carbohydrates and lack important nutrients such as vitamin D, vitamin B12, calcium, magnesium, iron, zinc and fiber. For these reasons, only consuming refined gluten-free products can alter the health of your gut microbiome. It’s health is important to maintain because it helps destroy harmful bacteria, controls the immune system, and aids in digestion. See the graph and infographics below to compare the differences between these medical conditions and different varieties of whole grains.

Medical Condition	About	Symptoms
Celiac Disease	<p>Genetic autoimmune disease where gluten triggers antibodies to attack the small intestine. Even one crumb of gluten that is inhaled or ingested (20 parts gluten per million) will produce symptoms.</p> <p>Diagnosed with a blood test or biopsy to detect antibodies produced in an autoimmune response.</p> <p>*Symptoms are similar to those that have celiac disease and can last hours or days. Autoimmune markers will remain elevated in the blood for weeks.</p>	<p>Abdominal pain Anemia Bloating Chronic fatigue Depression Diarrhea Difficulty & pain during bowel movements “Foggy mind” Headaches Inflammation Intestinal cell damage Joint pain Low vitamin D and B12 Psychiatric disorders Cavities</p>
Non-Celiac Gluten Sensitivity (NCGS) AKA: (Gluten Intolerance/Sensitivity)	<p>Not an allergy or autoimmune disorder. It’s cause is not fully understood.</p> <p>Diagnosed by ruling out celiac disease and wheat allergies with a blood test or endoscopy.</p> <p>**Symptom duration and intensity varies depending on the individual, frequency and amount of gluten consumed.</p>	<p>Abdominal pain Bloating Depression Difficulty with bowel movements Diarrhea Fatigue “Foggy mind” Headaches Joint pain</p>
Wheat Allergy	<p>A type of food allergy in which the immune system overreacts to a particular food causing symptoms that are potentially serious or life-threatening.</p> <p>Diagnosed by an allergist or immunologist through a skin-prick test and blood testing.</p> <p>**Symptoms begin shortly after ingestion of food (a few minutes to an hour).</p>	<p>Anaphylaxis Dizziness Hives Lightheadedness Shortness of breath Swelling of throat, tongue, lips or face Vomiting</p>

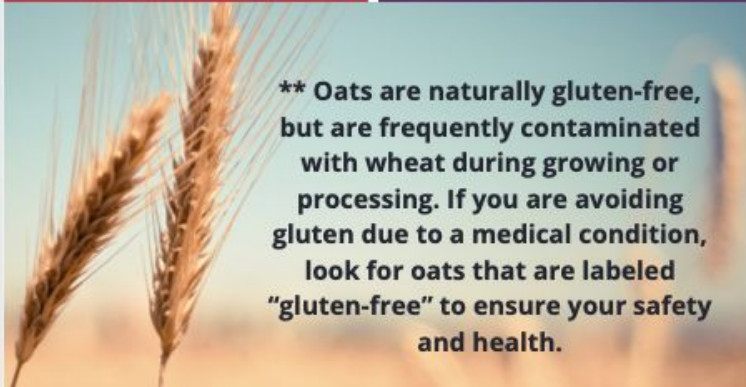


GLUTEN

VERSUS

GLUTEN FREE

- Barley
wheat,
including
varieties
like spelt,
kamut,
farro and
durum; and
products
like bulgur,
semolina
- Rye
- Triticale
- Oats**
- Amaranth
- Buckwheat
- Corn,
cornmeal
(polenta),
popcorn &
maize
- Millet
- Quinoa
- Rice
- Sorghum
- Teff
- Oats**



**** Oats are naturally gluten-free, but are frequently contaminated with wheat during growing or processing. If you are avoiding gluten due to a medical condition, look for oats that are labeled "gluten-free" to ensure your safety and health.**

Stuffed Bell Peppers

Prep time: 10 minutes

Cook time: 40 minutes

Servings: 2

Serving size: 1 stuffed pepper

Ingredients:

- 2 bell peppers (any color), tops and seeds removed (any color)
- 1 tablespoon olive oil
- ½ cup cooked brown rice, quinoa, or a mixture of both
- ¼ of a medium onion, chopped
- 1-2 cloves of garlic, minced
- ½ a package of 3-grain or 5-grain tempeh, crumbled
- ⅓ cup of tomato sauce
- ½ teaspoon dried oregano
- ½ teaspoon dried basil
- ½ teaspoon red pepper flakes
- 1 tablespoon of parsley, finely chopped



Directions:

1. Preheat the oven to 350 degrees. In a large skillet, heat oil in a pan and add the onion, garlic, and crumbled tempeh. Sauté for 5 minutes.
2. Add the brown rice and/or quinoa, tomato sauce, parsley, oregano, basil, and red pepper flakes. Cook for 2 minutes then remove from heat.
3. Fill each bell pepper with the mixture and place in a baking dish. Cover the baking dish with foil.
4. Bake for 35 minutes. Let cool for a few minutes before serving.

These delicious stuffed bell peppers are packed with nutritious whole grains, which is perfect to fuel your workout! Additionally, these stuffed peppers contain protein, which can help the body repair after a workout. The best time to consume this meal is 2-3 hours before training, or anytime after training. Brown rice and quinoa are high in manganese, which helps blood sugar regulation, wound healing, bone development, and nerve function. Quinoa is also a good source of protein, which is beneficial for muscle building and maintaining a healthy immune system. Tempeh is a good source of protein and prebiotics. Prebiotics help keep the beneficial bacteria in the gut healthy. 3-grain or 5-grain tempeh contains all the benefits of normal tempeh, with further benefits from the whole grains as well! If desired, you can add cheese on top of the bell pepper. After the initial 35 minutes, simply remove the foil, top with cheese, and bake for an additional 5 minutes. Recipe adapted from: <https://simple-veganista.com/vegan-stuffed-peppers/>