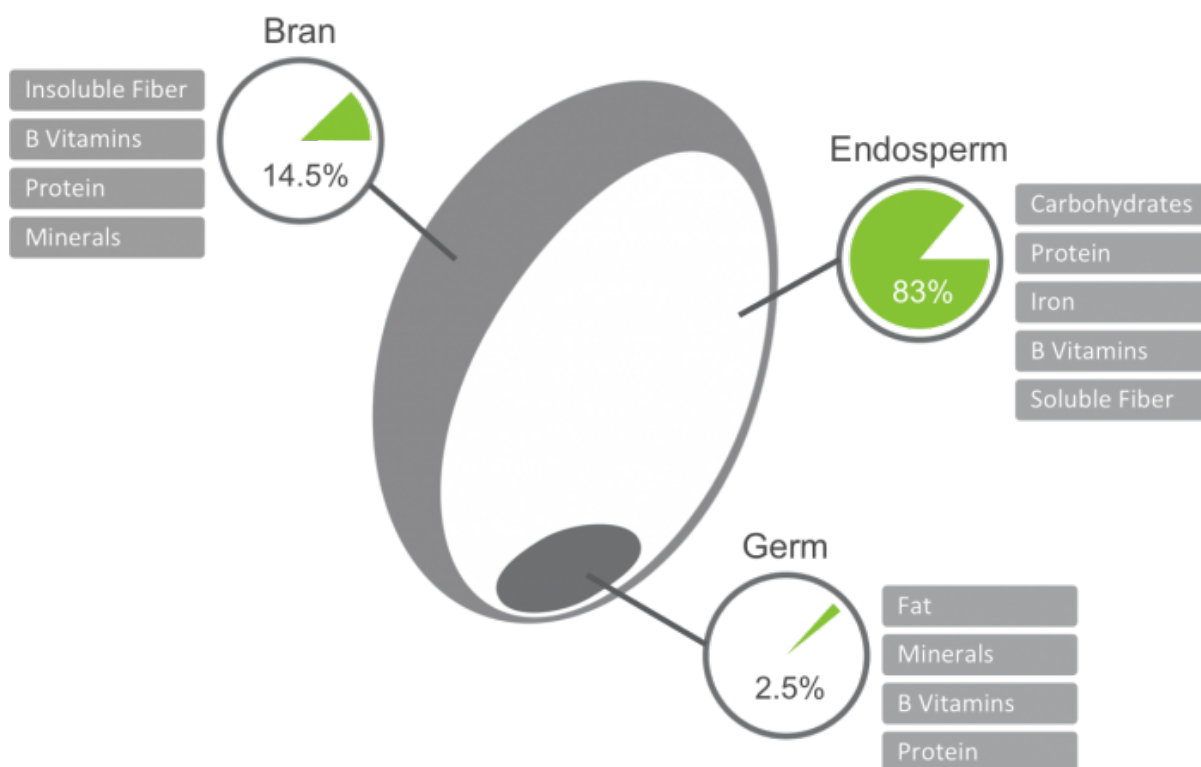


# Understanding Whole Grains

Whether you are buying cereal, bread, granola bars, or any other food that contains grains, you will likely see products with claims on the packaging that highlight the whole grain content of the product. “Whole grain” may even be in the name of the food. But what exactly are whole grains and why do we want to ensure we are eating enough of them?

## Whole Grains 101

Whole grains, as their name indicates, contain the entire grain seed, typically called a kernel. A kernel is composed of bran, germ, and endosperm. Examples of whole grains include brown rice, whole wheat, pop corn, quinoa and oats. If processed (cracked, crushed, flaked, or milled), the the whole grain product must retain the same relative proportions of bran, germ, and endosperm as the original grain. Many, but not all, whole grains are good sources of dietary fiber.<sup>1</sup> Below is a diagram of a whole wheat kernel detailing the relative percentages of bran, germ and endosperm along with the nutrients they provide.<sup>2</sup>

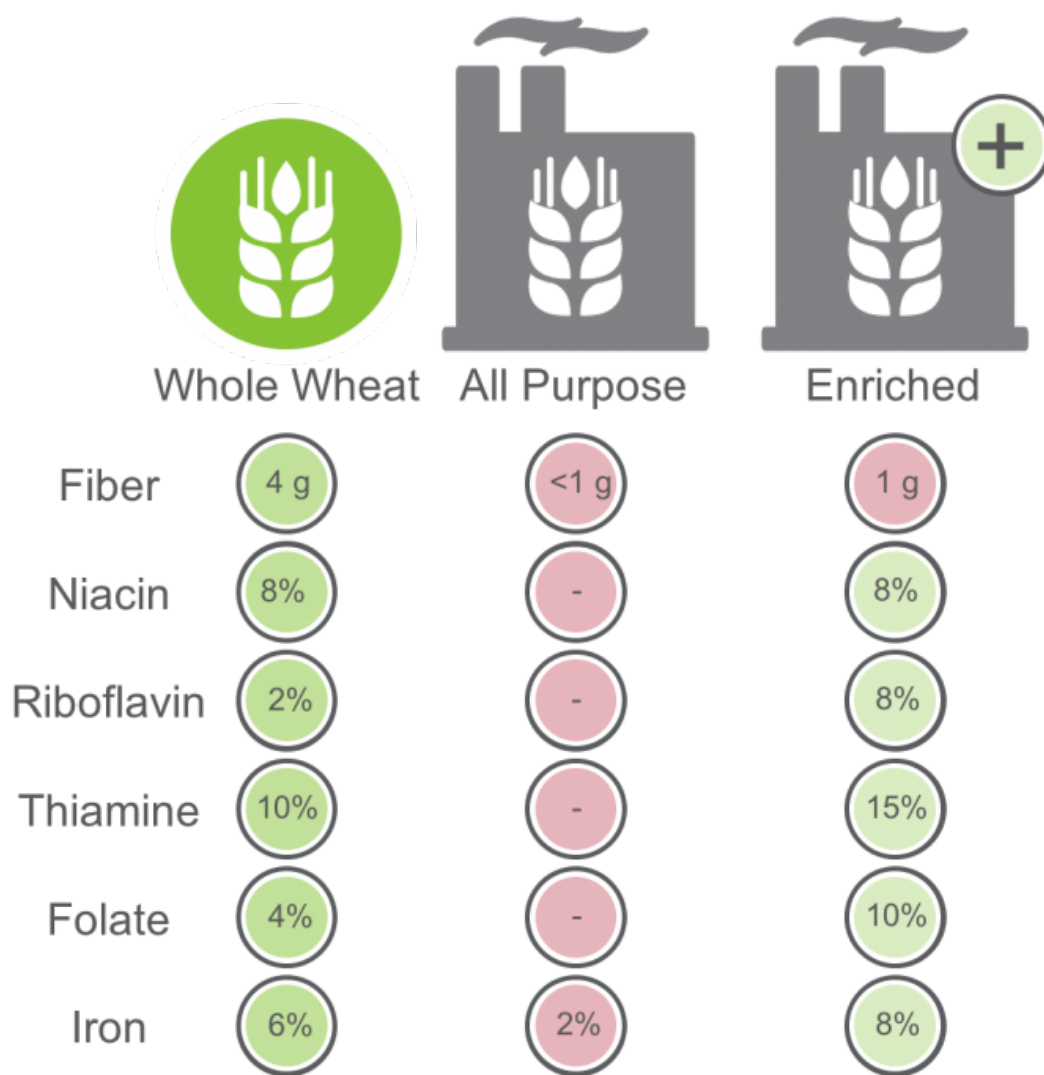


*Diagram of a wheat kernel (percentages indicate % kernel weight).*

## Refined Grains

When a grain is refined, the germ and bran are removed leaving only the starchy endosperm, significantly reducing the fiber and vitamin content of the grain (see table below).<sup>3,4</sup> This removal of

fiber causes our body to rapidly digest the remaining starchy carbohydrates, resulting in a higher glycemic response that is similar to the glycemic response from consuming table sugar.<sup>5,6</sup> Habitual consumption of too many refined grains can make you more prone to obesity, heart disease, and type 2 diabetes.<sup>6</sup> It is because of these health consequences that the 2015-2020 Dietary Recommendations for Americans recommends a shift to whole grains from refined grains.<sup>7</sup> However, the US Dietary Guidelines do not recommend eliminating all refined grains from our diet for one simple reason: refined grains are typically fortified (or enriched) with key vitamins and minerals and there is concern that nutrient shortfalls could result without consumption of some fortified grains.<sup>1</sup>



*Comparison of Whole Wheat Flour<sup>3</sup>, All Purpose Flour<sup>4</sup>, and Enriched All Purpose Flour<sup>3</sup> (per 30 grams)*

### **Current Intake of Whole Grains is Far Below Recommended Levels**

The average intake of whole grains across the entire US population is far below the current recommended levels, with most Americans consuming less than one 1-oz serving per day and children consuming only a half of a 1-oz serving per day.<sup>7,8</sup> The most recent assessment of What We Eat in America (WWEA, a national food survey) found that nearly 100% of all Americans did not meet the

goal for daily whole grain intake.<sup>1</sup> This shortfall is not a result of eating too few grains, it is because we are eating predominantly refined grains. In fact, 70% of the US population exceeded the daily recommended intake of refined grains in this survey.<sup>1</sup>

## Recommended Servings of Whole Grains

Both the US Dietary Guidelines for Americans and Health Canada's Eating Well with Canada's Food Guide recommend consuming at least half of our daily grain intake as whole grains.<sup>7,9</sup> For most people, this means eating at least three 1-oz servings of whole grains a day. The American Heart Association adds to this recommendation by including that the whole grains should be fiber rich, where there is 1.1 grams of fiber for every 10 grams of carbohydrates.<sup>10</sup>

What does one serving (1-oz) of a whole grain food look like?

- ½ cup cooked brown rice
- ½ cup cooked 100% whole wheat pasta
- 1 slice 100% whole grain bread
- ½ cup cooked oatmeal
- 3 cups popcorn

It would be easy to meet the daily whole grain recommendation if our three daily meals each contained one serving of whole grains.

## Health Benefits of Whole Grains

There is consistent epidemiological evidence that consuming whole grain foods substantially lowers the risk of chronic diseases such as coronary heart disease, diabetes, and cancer and can also play a role of body weight management and digestive health.<sup>11</sup> It is important to note that these conclusions are based on observational studies focused on healthful diets high in fiber rich foods such as whole grains, fruit and vegetables, and not on whole grain consumption alone.

In addition to the above mentioned observational studies, there is significant clinical evidence demonstrating that soluble fiber (found in oats, barley, fruits, vegetables, and legumes) can markedly reduce serum total cholesterol and LDL cholesterol and reduce the risk of heart disease.<sup>12,13</sup> The American Heart Association states that “dietary fiber from whole grains, as part of an overall healthy diet, may help improve blood cholesterol levels, and lower risk of heart disease, stroke, obesity and type 2 diabetes.”<sup>14</sup> The FDA even allows **Health Claims** to be included on product packaging of any food provided that it contains sufficient soluble fiber and meets other dietary requirements.<sup>15</sup>

# How to Identify Whole Grains ?

There are currently no requirements to label the whole grain content of a food on its packaging. However, in a recent report, the Institute of Medicine recommended the FDA begin to require labeling whole grain content to enable people to better meet their recommended daily intake of whole grains.<sup>8</sup> Until clearly labeled, there are four ways to identify whole grains:

1. Product packaging contains the Whole Grain Council stamp<sup>16</sup>



2. Product packaging states “may reduce risk of heart disease” or “can help lower cholesterol” health claims<sup>15</sup>

3. Check the Nutrition Facts for dietary fiber content. Whole grain wheat, oats and other grains will contain at least 1 gram of dietary fiber per 10 grams of carbohydrates

4. Read the Ingredients. Look for “whole wheat flour” instead of “wheat flour” or “enriched flour,” both of which are refined flour

## Conclusion

Replacing the refined grains we typically eat with whole grains is one simple way that we can improve the healthfulness of our daily diet. And given our current whole grain consumption, there is a lot of room for improvement in our daily diets. Assess where you are today and look to make incremental changes in the foods you eat. Switch to 100% whole wheat pasta if you are currently eating regular pasta. Switch to brown rice if you normally eat white rice. Switch to a predominantly whole wheat bread (it will have whole wheat as the first ingredient on the ingredient list). Do you eat **breakfast cereal** in the mornings? Start reading the labels and choose an option that contains predominantly whole grains.

How do I ensure my family is eating enough whole grains? We love to snack on popcorn and our go to crackers contain at least some whole wheat. The pasta and rice I cook are almost always whole wheat or brown, respectively. And unless it is a birthday or special occasion, I use whole wheat flour when I bake. **Pancakes, chocolate chip cookies**, muffins, and **carrot cake** are surprisingly adaptable to being made with 100% whole wheat. My family doesn't notice the difference and it is a good way to ensure they are eating more whole grains.

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