

Reducing blood glucose levels (and the insulin response to it) is now considered to be directly related to slowing the aging process and the many diseases associated with aging. The effect a food has on your blood sugar level is considered the food's glycemic index. Carbohydrates have more of an effect on your blood sugar levels than do proteins or fats.

The first rule of "low carb" eating is to avoid foods made with sugar and flour. The primary purpose is to reduce the amount of glucose (sugar) that would be absorbed into the bloodstream. Grinding whole grains into flour is the first step in processing grains. The second step is separating out the bran (outer layer) which contains fiber, vitamins and minerals, and the germ which contains quality fat, vitamin E, B vitamins and minerals. White flour is made from the starch that is left. It contains 70-75% of the protein in the grain but more than half of the vitamins and minerals in the whole kernel and most of the fiber (roughage) is lost. Iron and a few vitamins are added back to the flour. It should be noted that removing the fat-containing germ extends shelf life at the expense of nutritional quality.

The basic nutritional principle involved in human use of grains is: The less processing, the better. Less processing means more nutrients, more fiber and a slower rise in blood sugar. Bread made from flour containing the bran and germ will raise blood sugar less than white flour, but more than eating the grain itself. Rough breads, those made with oatmeal, cracked wheat, rye meal, etc. will lead to a slower release of glucose.

From the nutritional standpoint, the best way to eat grain is to eat the whole kernel. Even then, processing affects glucose response. Steel cut oats (oat kernels cracked in order to cook more quickly) will raise blood sugar the least. Regular oats are next, followed by "instant" oatmeal. The benefits of adding whole grains to your diet is that they increase fiber, B vitamins, magnesium, vitamin E and trace minerals. They will also decrease your risk of getting certain cancers, heart disease, and bowel problems.

## HOW DO I Add WHOLE GRAINS to MY Diet?

Cracked wheat, bulgur wheat (pre-cooked), steel cut oats, barley, brown rice, cracked corn, and millet are the foods to learn about and begin adding to your meals. An easy way to start using them is simply add  $\frac{1}{4}$  c -  $\frac{1}{2}$  c when making soup. If you are making canned soup, simply pre-cook the grains, then add them. If you make bread, including quick breads, soak the grains until soft, then add  $\frac{1}{4}$  -  $\frac{1}{2}$  cup of cracked wheat, steel cut oats, regular oats, or millet to the dough.

To cook 1 cup of brown rice, steel cut oats, or cracked wheat, boil 2 cups water or 3 cups water if you are cooking barley, millet, or wild rice, then add the grain and simmer 30-60 minutes. Each grain cooks at a different rate. Bulgur wheat is precooked and can be prepared by pouring 2 cups boiling water over 1 cup bulgur and allowing to set 20-30 minutes.

Of all the grains, current research indicates that barley raises blood sugar the least. Here are two barley recipes. The soup is simple and quick. The pudding requires more work but is a very satisfying breakfast or dessert.

### **Barley-Vegetable Soup** (makes 5-6 cups)

|                          |                               |
|--------------------------|-------------------------------|
| ½ pound ground beef      | ½ cup pearled barley          |
| ½ c chopped onions       | 1 Tbsp olive or other oil     |
| ½ c diced carrots        | 2 tsp caraway seeds           |
| ½ c diced potatoes       | 4 cups unsalted chicken stock |
| ½ c chopped cabbage      | salt and pepper to taste      |
| 2 cloves garlic, smashed |                               |

Brown ground beef and set aside.

Sauté onions, carrots, potatoes cabbage, garlic, barley and caraway seeds in oil about 5 minutes

Add chicken stock, salt, pepper and cooked ground beef. If using salted chicken stock, omit added salt

Simmer about 20 minutes, adjust seasoning and serve

Top with fresh chopped parsley

### **Barley and Fruit “Pudding”**

|                                   |                                        |
|-----------------------------------|----------------------------------------|
| 1 cup pearled barley              | ¼ tsp ground cloves                    |
| 4 cups water                      | 1 tsp ground cinnamon                  |
| ¼ cup raisins                     | 2 Tbsp honey                           |
| ½ cup pitted prunes, cut in half  | 2 Tbsp frozen orange juice concentrate |
| ½ cup dried apricots, cut in half | 1 Tbsp butter                          |
| 2 tsp dried orange peel           |                                        |

Preheat oven to 350<sup>0</sup> F and oil the bottom and sides of a 2 qt baking dish.

Crack barley in blender by running blender for one minute.

Bring water to boil, add barley, cover pot, and simmer 15 minutes.

Add all ingredients except butter. Spoon into baking dish and bake for 40 minutes.

Remove from oven, stir once and dot with butter.

Bake additional 15 minutes.

Serve warm with milk. This needs some fat for balance. If using low fat/skim milk, consider adding a pat of butter to each serving. For special occasions, try cream instead of milk.