Pennington Nutrition Series No 80

Healthier lives through education in nutrition and preventive medicine

The Importance of whole grains

Do you know what whole grains are? They are seeds of plants that have all the different layers. See Fig 1.

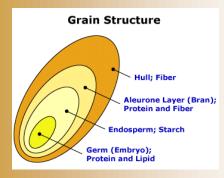


Figure 1. Grain Structure.

Whole grain has the hull, bran, endosperm, and germ layers still intact. Products that say they contain whole grain, are ones that include all the different layers of the grain. It has been ground and used in making of the product. They can be breads, flours, crackers, cereals, cookies, and many other products. Whole grains are one of the healthiest foods around. They give you energy for daily activities and reduce your risk of getting many diseases as you age. They have antioxidants which help to protect you from the damaging effects

of free radicals.

What are free radicals? Free radicals are unstable and chemically incomplete atoms that tend to steal electrons (charge) from other molecules and eventually cause a spoilage of the product.

What in whole grains protects us from free radicals?

Whole grains have phytochemicals, or large molecules that remove free radicals and help preserve products and our cells too.

Whole grains also have fiber. The fiber in whole grains helps your digestive system function better. Eating whole grains

can help lower your chance of heart



disease, cancer, or diabetes. Fiber helps control your blood sugar levels, control your weight and slow the build-up of plaque (a sticky substance formation) within the walls of an artery.

Half of your grains you con-

sume every day should be whole grains. The amount depends on caloric level.

Those that consume 1400-1600 Calories a day should have about 5 ounces of grains, of which 2.5 should be whole grains. Those that consume 1800-2200 Calories a day should consume about 6-7 ounces of grains and 3 to 3.5 ounces should be whole grain products. You may wonder, what is an ounce of grain?



The following each count as 1 ounce-equivalent (1 serving) of grains: 1/2 cup cooked rice, pasta, or cooked cereal; 1 ounce dry pasta or rice; 1 slice bread; 1 small muffin (1 oz); 1 cup ready-to-eat cereal, cooked pasta, rice, or other grain. Examples of whole grain products include: brown rice, oatmeal, popcorn, whole wheat breads and pasta, and whole grain corn or cornmeal.



Pennington Nutrition Series No 80

Authors Beth Kalicki

Heli J. Roy, PhD, MBA, RD

Division of Education

Phillip Brantley, PhD, Director

Pennington Biomedical Research Center

Steven Heymsfield, MD, Executive Director

6/10; Rev. 3/11

Α ٧ Ν M U D F Н K P G N Н J U C F ٧ S Χ Н ٧ R Ε C R Χ Χ Z Ν Υ Q W Т Υ U K P 0 N M K C Χ ٧ Ε W Ε L L Α F Ρ В M U C N ٧ S T D ٧ S G F L 0 P Α Q D S C F C Ε K Р K Υ U 0 Χ D G Q В В L 0 Н D ٧ Χ W P S Ε P F T K D ٧ Τ C Α R D Н Α Υ K Т F J N M N L W Н Χ W R Χ ٧ Κ Υ Н G F C ٧ В Ρ Ε S U K S U 1 L J L Н ٧ D J Κ В S Χ F Р 0 W U Ν В P R G 0 C Υ Р ٧ L ı L M Χ Q Ν N ٧ Ε D S Z Χ ٧ Н Ρ U Υ G P 0 Ν P Ρ F L Χ В Ν M В Ν R C Н ٧ Χ F C Ε Α L F Ε J M 0 P C S U F C C C Υ G Υ F G Т Υ S ٧ D C C В R J ٧ W Н Α Н J K U P Ε Т S F Т ٧ 0 Χ U G Ε D G Н C В Χ Υ M Ν R N Ν C Z Т S Q S C G Υ R ٧ U R Χ Т Α ٧ ٧ U U N L N R N M Υ Ρ ٧ S W G Ν ٧ Χ Α Ε В ٧ Χ Т P I G Н J Χ R F F L C C С Υ 0 U Q F C P 0 C C I ٧ 0 F 0 Τ Ε Z W В K Н L P Т В Ζ Χ Ε S S L W Н Ζ Н 1 Ν U N Χ Χ U G W W Α N J S M W L D J Т Υ G Ρ 0 ١ I ٧ P D Ζ L 0 D D S Ε M G Α Α W W Χ ٧ В J K В D В 0 Χ R Ν M Α W M K Ε N Α L L P C F Q S S Q Т Κ Α Ε U S F L D Α Α J J N L Υ 0 S W K Ρ U Q Ν ٧ В Υ U I N Κ В Q W Χ Ζ R C C R D Ν 0 Ε R Ε R Т C Χ U Υ F 0 0 F D Н Q J Ε Н Α 0 J L Ι Т U Ρ Ε Α G S В Α R Υ Ε R Υ D R C G S U W Н Н J Ν L Υ S F U F Т S Ρ D S S Т C Ε W Κ C L K Ν M G Α Α D S R G Υ P F Q W D Т Н Υ F U 0 Ν G Ε W K W Т Ι Q R O G J F D Т Υ U Н M Ν G Н Κ L 0 P R Α Н ı Α Н D Т Υ Н G Ε S R Ε В G В K 0 Ρ W Χ Н M

WHOLE **GRAINS ANTIOXIDANT** LOWER **HEART PLAQUE EXERCISE**

SERVING SLICE CUP PASTA RICE BREAD CEREAL

INGREDIENTS BUCKWHEAT BARLEY RYE CORNMEAL HEALTHY