

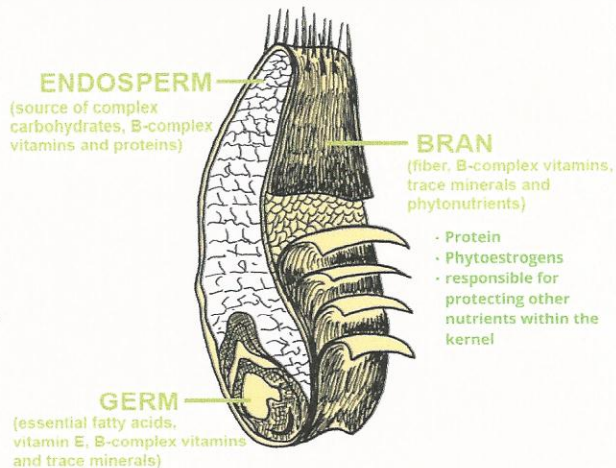
Grains



Different grains include:

- Wheat
- Rice
- Barley
- Oats
- Corn

The Whole Grain Kernel



Processing and Storing



History:

- Stone Grinders
- Millstones
- Steel Rollers

Stone ground

- Less likely to overheat the grain
- Overheating destroys niacin and thiamin

All grains, meals, flours, pasta should be kept:

- Dry
- Cool
- Covered
- Away from direct sunlight
- B vitamins are light-sensitive and degrade over time

More processing = less likely to become rancid

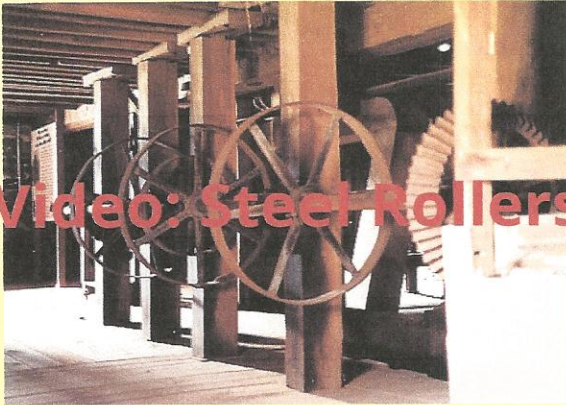
Whole grains

- Less stable due to oils in germ and bran
- Contain more nutrients

Video: Millstones



Video: Steel Rollers



Wheat



Wheat forms:

- Wheat berries (whole)
- Cracked
- Bulgar
- Semolia
- Farina
- Wheat flours



Wheat Provides:

- Soluble & Insoluble Fiber
- Iron
- Protein
- B Vitamins
- Folate
- Phosphorus
- Zinc
- Magnesium

Rice

3 types:

- Long
- Medium
- Short grain



Brown vs. White:

- Dietary fiber
- + nutrients

Vitamins/minerals in rice include:

- Thiamin
- Niacin
- Vitamin B6
- Copper
- Zinc
- Magnesium



Corn



Starch OR Grain

- Dietary Fiber
- Niacin
 - Unless the corn is prepared with acid, the body cannot absorb the niacin.



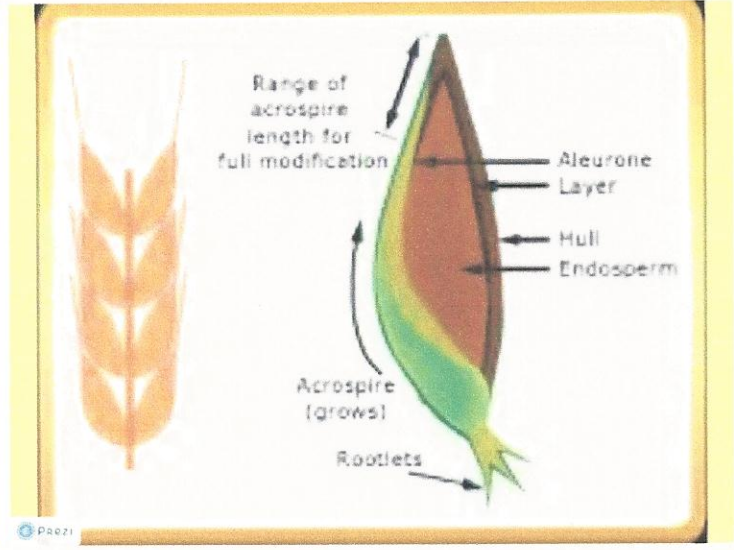
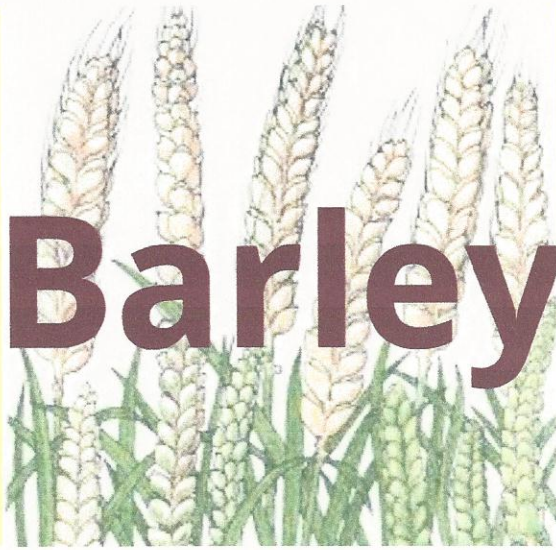
Hominy = hulled and degerminated kernels
(Grits are ground hominy)

Cornmeal = ground hulled kernels

Masa = processed with lime to remove the hull

Cornstarch = finely ground hulled and degerminated kernels

Barley



- **Pearl barley (right)**
 - Grain kernels are polished



- **Scotch or pot barley (left)**
 - Unpolished.
 - Barley meal is made of these kernels

Barley provides:

- Iron
- Selenium
- Niacin
- Fiber
- Thiamin
- Vitamin B6

Oats



Oats retain most of their nutrients after **hulling** because the germ and bran are not removed



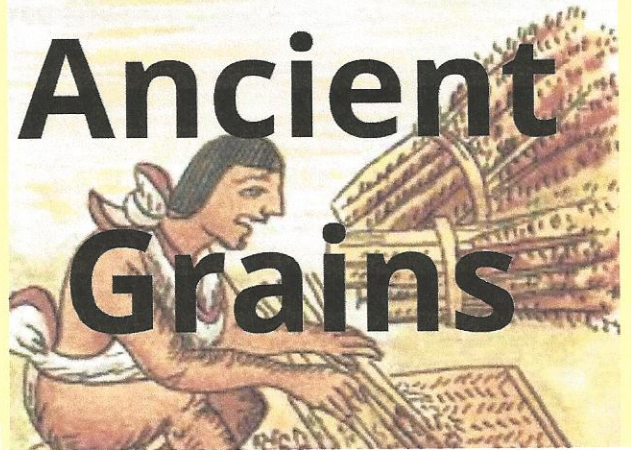
They can be left whole (groats) or processed to oatmeal or oat bran

Oats provide:

- Protein
- Thiamin
- Iron
- Selenium
- Soluble Fiber
- Saponins
- Regulate blood flow



Ancient Grains



• Quinoa

• Amaranth →

• Spelt

• Kamut →



“Ancient”

• unchanged for millennia

By contrast,

- Corn
- Rice
- Modern varieties of wheat
 - bred selectively over thousands of years to look and taste much different from their distant ancestors



Other Grains

- Miller
- Quinoa
- Rye →
- Buckwheat



- Complex Carbohydrates
- Fiber
- B-vitamins