



NATUROPATHIC TREATMENT MODALITIES

NUTRITION

Alternatives to Wheat Flour

Flour can be made from starchy vegetables (carrots, parsnips, turnips, squash), legumes, nuts and roots.

What Happens to Wheat Flour When it's Refined?

- 93% of the fiber is removed
- 50% of the essential fatty acids are lost
- 22 minerals and vitamins are reduced by 20%
- most of the vitamin E is removed
- it is bleached which strips the remaining nutrients

Helpful Hints...

- The best flour comes from stone-ground mills that do not overheat the flours, thereby retaining the nutrients
- Flours should be bought from a store that has a high turnover and refrigerates their flour
- To store, remove flour from its original package and refrigerate in a glass, airtight container
- Purchase small amounts at a time and use it quickly, since flour does have limited shelf life of 1-2 months

Non-wheat grains: amaranth, buckwheat, quinoa, bean flours (soy, chickpeas), *corn, rye, oats, barley, millet, rice, teff, kamut, spelt*

Italics = related to wheat

Flour	Comments	Nutritional Qualities	Flour equivalent to 1 cup white/ whole wheat flour
*Amaranth flour	-strong, distinctive flavour -best combined w/ other flours that contain gluten or have more cohesion (arrowroot, tapioca, bean) -add to baked goods, pancakes/waffle recipes	-gluten-free	1 cup
*Arrowroot Starch	- superior replacement for corn starch ; add 1tbsp to an equal parts of cold water before adding to dishes as a thickener -combines well w/ non-gluten flours to give them cohesion	-gluten-free	½ cup
Barley flour	-makes a sticky bread -has a sweet, malty flavour	-low in gluten	1 cup
*Bean flour		-gluten-free	¾ cup



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*Brown rice flour	-yields a sweeter, smoother bread -use w/ other flours, use 20% of brown rice flour in recipe	- gluten-free	
Buckwheat flour	-makes a dark, heavy bread -use w/ rice flour	-the kernels contain an outer hull which is high in the essential amino acid, lysine; the ground into the flour, the darker and more nutritious	7/8 cup buckwheat (1 cup minus 2 tbsp)
Chestnut flour	-used to sweeten baked goods -adds lightness and creaminess -use alone or mix w/ other flours		
*Chickpea flour	-used in East Indian culture to make flatbread called papadam, Italy for pauelle (chickpea wafers), and in southern France for socca (chickpea wafers) -too dense and rich to use on its own	- gluten free	7/8 cup (1 cup minus 2 tbsp)
*Cornmeal	-makes a light bread -mix w/ equal parts of cold water before adding as a thickener -best combined w/ small amounts of other flours	-stone ground is more nutritious	1 cup
*Cornstarch	- thickener	- gluten-free	¾ cup 1 cup corn flour
*Garbanzo flour	-good in sauces, pancakes -use alone or mix w/ other flours	- gluten-free	
Kamut flour	-light texture -rich, buttery flavour -use in baking	- excellent substitute for wheat sensitive people	1 cup
Kudzu Starch	-noxious weed in southern US - excellent substitute for arrowroot or tapioca starch ; it will thicken a sauce as it cools, whereas arrowroot becomes thinner		
*Millet flour	-always combine w/ other flours	- gluten-free	1 cup



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Nuts/Seeds	-use ground		½ cup
Oat Bran		-binds cholesterol	
Oat Flour	-light texture -adds moisture to baked goods -best combined w/ corn or rice flours, use only 20% oat flour in recipe -contains a natural antioxidant, therefore retains its freshness longer than wheat		1 1/8 cup flour 1 1/3 cup rolled oats
*Potato Flour/Starch	-best combined w/ other flours -thickener	-gluten-free	5/8 cup flour ¾ cup starch
*Quinoa flour	-best combined w/ other flours	-gluten-free	
*Rice flour		-gluten-free	7/8 cup (1 cup minus 2 tbsp)
Rye flour	-makes a sticky, dense bread -knead dough well	-low in gluten	1 ¼ cup
*Soy flour	-makes bread or baked goods more moist and smooth - best if add small amounts to other flours; use only 20% soy flour in recipe, decrease temperature by 25 degrees	-gluten-free	¾ cup
Spelt flour		-excellent substitute for wheat sensitive people	1 cup
*Tapioca Starch	-made from cassava root -excellent substitute for arrowroot or corn starch -thins if reheated -combines well w/ non-gluten flours to give them cohesion, thickener	-gluten-free	1 cup
*Teff flour	-used by Ethiopians to make a large flatbread -do not add to yeast breads because it has its own symbiotic yeast	-gluten-free	



Wheat Bran	-the whole wheat berry has 6 fibrous layers known as bran -indigestible, therefore adds bulk and fiber -add small amounts to baked goods		
Wheat Flour	-variety of forms: durum, semolina, unbleached, bleached, whole wheat, pastry -stone ground is best -store in refrigerator because it has a short shelf life	-high in gluten	

*=gluten-free

Flour Combinations: equivalent to 1 cup of white or whole wheat flour

- ½ cup rye flour + 1/3 cup potato flour
- 1/3 cup rye flour + 5/8 cup rice flour
- 1/3 cup rye flour + 1/3 cup oat flour + 1/3 cup barley flour
- ½ cup potato flour + 1/2 cup rye/spelt flour
- 1/3 cup potato flour + 2/3 cup rye/spelt flour
- 1 cup soy flour + 1/4 cup potato starch
- ½ cup soy flour + ½ cup potato starch
- 5/8 cup rice flour + 1/3 cup potato/rye/spelt flour
- ½ cup corn starch + ½ cup rye/rice/potato flour
- ½ cup arrowroot + ½ cup rye flour
- ½ cup arrowroot + ½ cup potato flour

Tips for substituting for wheat flour:

- do not be concerned if batter appear thinner than wheat batters, this is common
- add 1/2 tsp baking powder per cup of substitute flour; add just before cooking because it loses its potency when mixed w/ liquid and allowed to sit
- refrigerating dough 1/2 hour helps improve texture
- don't bake anything thicker than 4 inches
- when baking, lower the temperature a little
- baking time is usually longer, especially if egg or milk is eliminated from the recipe

For thickening, the following quantities equal 1tbsp of wheat flour:

- Arrowroot 1 tbsp = 2 tbsp wheat flour
- Barley flour 1 tbsp
- Corn starch 1 tbsp
- Oatmeal flour 1 tbsp
- Potato flour/starch ½ tbsp
- Rice flour ½ tbsp
- Tapioca flour ½ tbsp

**Sour cream alternative:**

4-6 oz soft tofu, drained

2 tsp vinegar

¼ tsp sea salt

1 tsp arrowroot/kudzu

plain soy milk

Blend well in a food processor, pour mixture into a saucepan and thicken over medium heat

Egg alternatives: equivalent to 1 egg

1. 2 tbsp water + 1 tbsp oil + 2 tbsp baking powder

2. 1 tbsp ground flax seed simmered in 3 tbsp water

3. 2 tbsp water + 2 tsp baking powder

4. ¼ cup of tofu

5. 1 egg white = dissolve 1 tbsp plain unflavoured gelatin in 1 tbsp water; whip, chill and whip again

Vinegar alternatives:

1. Lemon juice, lime juice, or unsweetened cranberry juice

2. Dilute 1 tsp vitamin C in ¼ cup of water

Resources

McLaren, Tannis. *Simply Healthy Cookbook*. UofT Press Inc. Toronto. 2002.

Pitchford, Paul. *Healing with Whole Foods*, 3rd ed. North Atlantic Books, Berkely, CA. 2002.

Handout on *Alternatives to Wheat Flour* from Choices Market, Vancouver, BC.