



# 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	- <b>superior replacement for corn starch</b> ; add 1tbsp to an equal parts of cold water before adding to dishes as a <b>thickener</b>  -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



## Alternatives to Wheat Flour

<b>*Brown rice flour</b>	-yields a sweeter, smoother bread  -use w/ other flours, use 20% of brown rice flour in recipe	- <b>gluten-free</b>	
<b>Buckwheat flour</b>	-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)
<b>Chestnut flour</b>	-used to sweeten baked goods  -adds lightness and creaminess  -use alone or mix w/ other flours		
<b>*Chickpea flour</b>	-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	- <b>gluten free</b>	7/8 cup  (1 cup minus 2 tbsp)
<b>*Cornmeal</b>	-makes a light bread  -mix w/ equal parts of cold water before adding as a <b>thickener</b>  -best combined w/ small amounts of other flours	-stone ground is more nutritious	1 cup
<b>*Cornstarch</b>	- <b>thickener</b>	- <b>gluten-free</b>	¾ cup  1 cup corn flour
<b>*Garbanzo flour</b>	-good in sauces, pancakes  -use alone or mix w/ other flours	- <b>gluten-free</b>	
<b>Kamut flour</b>	-light texture  -rich, buttery flavour  -use in baking	- <b>excellent substitute for wheat sensitive people</b>	1 cup
<b>Kudzu Starch</b>	-noxious weed in southern US  - <b>excellent substitute for arrowroot or tapioca starch</b> ; it will thicken a sauce as it cools, whereas arrowroot becomes thinner		
<b>*Millet flour</b>	-always combine w/ other flours	- <b>gluten-free</b>	1 cup



## Alternatives to Wheat Flour

<b>Nuts/Seeds</b>	-use ground		½ cup
<b>Oat Bran</b>		-binds cholesterol	
<b>Oat Flour</b>	-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
<b>*Potato Flour/Starch</b>	-best combined w/ other flours <b>-thickener</b>	<b>-gluten-free</b>	5/8 cup flour ¾ cup starch
<b>*Quinoa flour</b>	-best combined w/ other flours	<b>-gluten-free</b>	
<b>*Rice flour</b>		<b>-gluten-free</b>	7/8 cup (1 cup minus 2 tbsp)
<b>Rye flour</b>	-makes a sticky, dense bread -knead dough well	-low in gluten	1 ¼ cup
<b>*Soy flour</b>	-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	<b>-gluten-free</b>	¾ cup
<b>Spelt flour</b>		<b>-excellent substitute for wheat sensitive people</b>	1 cup
<b>*Tapioca Starch</b>	-made from cassava root  <b>-excellent substitute for arrowroot or corn starch</b>  -thins if reheated  -combines well w/ non-gluten flours to give them cohesion, <b>thickener</b>	<b>-gluten-free</b>	1 cup
<b>*Teff flour</b>	-used by Ethiopians to make a large flatbread  -do not add to yeast breads because it has its own symbiotic yeast	<b>-gluten-free</b>	



<b>Wheat Bran</b>	-the whole wheat berry has 6 fibrous layers known as bran  -indigestible, therefore adds bulk and fiber  -add small amounts to baked goods		
<b>Wheat Flour</b>	-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*, 3<sup>rd</sup> ed. North Atlantic Books, Berkely, CA. 2002.

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