

GRAINS, BEANS, NUTS Gift to Humankind? Preparation is the Key!



We have all witnessed the squirrel digging in the ground to bury its nuts in the dirt for weeks and then dig them up again. Sometimes the nut sprouts into a new tree seedling before the squirrel returns. That is good for the tree. The squirrel has spread the tree's seed around. But why does the squirrel bury its food? Is it hiding its food from competition? Is it storing the nut, to save it till later? The squirrel instinctively knows something that we have forgotten.

Grains, Beans, and Nuts are Seeds

Seeds resist being digested. This allows them to be swallowed by an animal, transported across the countryside and deposited unharmed, where they can sprout and grow. Plants bind up their nutrition in the seed. If you want to eat that seed, you need to trick the seed into thinking it has been planted, so it will release its nutrients, and *then* eat it! The squirrel is “planting” its seed in the moist dark earth where it will sprout.

Whole grains, beans, and nuts are seeds. What protects a seed? They contain phytic acid, especially in the bran or outer hull that is the storage form of phosphorous. Phytic acid serves to inhibit digestive enzymes such as pepsin and trypsin, and prevents absorption of nutrients bound up in the seed. Moreover, phytic acid binds with and chelates important minerals such as calcium, magnesium, iron and zinc. A diet high in phytate-rich grains will result in mineral deficiencies, rickets, osteoporosis, tooth decay, nutrient deficiencies, lack of appetite, and digestive disorders. Ramiel Nagel, in his article “Living with Phytic Acid” notes that if phytic acid is consumed over the long term, the metabolism goes down and the body goes into “mineral-starvation mode” which means it tries to survive with as little of the above minerals as possible:

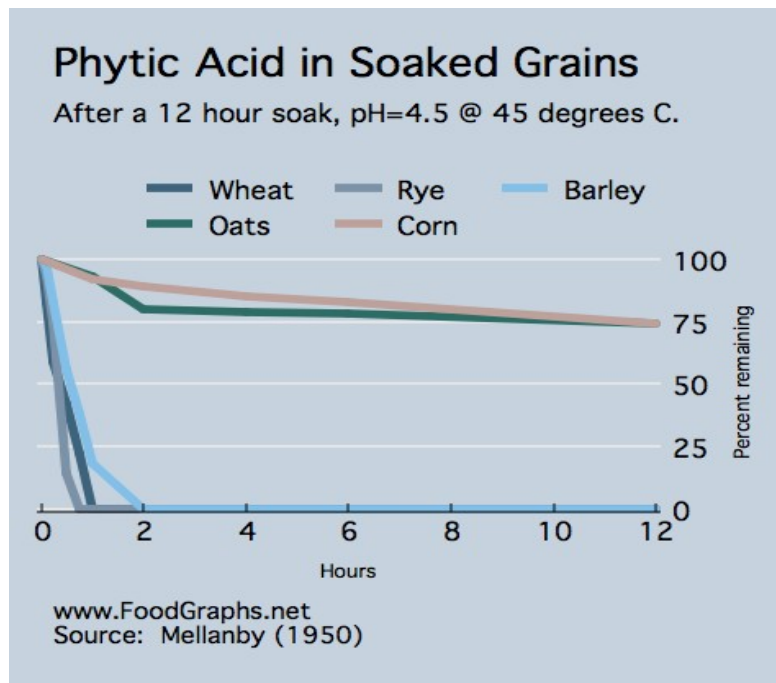
Adults may get by for decades on a high-phytate diet, but growing children run into severe problems. In a phytate-rich diet, their bodies will suffer from the lack of calcium and phosphorus with poor bone growth, short stature, rickets, narrow jaws, and tooth decay; and for the lack of zinc and iron with anemia and mental retardation.

Cultures that thrive on grains, beans, and nuts know how to prepare them in order to render them nutritious and digestible. They follow these simple principles:

1. keep the grain, bean or nut wet
2. keep the grain, bean or nut warm
3. make the grain, bean or nut slightly acidic
4. keep it under those conditions for at least 7 hours
5. cook it slowly for a long time

Weston Price observed that traditional cultures routinely soak, sprout, sour, or leaven their grain before eating it. Peruvians in the Andes believed that quinoa was toxic unless it was soaked for many days before cooking. Other cultures placed grains in baskets in running water for as long as two weeks. In Africa, millet was eaten as a fermented porridge that was very sour. They also usually eat the whole grain, and they grind it fresh before preparation.

Soaking and sprouting works to release an enzyme in the seed called phytase which hydrolyzes and neutralizes the phytic acid in the seed. However not all grains or seeds contain the same amount of phytase enzyme. Oats, corn, rice, and millet are low in the phytase enzyme.



The chart above shows that the phytic acid in wheat, rye, and barley is reduced to zero after 2 hours through soaking, while corn and oats still remain high in phytic acid after 12 hours.

Amanda Rose recommends that we soak grains low in the phytase enzyme together with about 10% of a grain high in phytase such as wheat (gluten) or buckwheat (gluten-free):

The method for soaking grains with a complementary high phytase grain is simple: add some fresh ground wheat or buckwheat to your oats. Studies of complementary soaking have made recipes where the high phytase grain was 10% of the recipe and it was effective in breaking down phytic acid. That might be high for your homemade oatmeal, but do what you can while still preserving a decent oatmeal experience. Fresh ground wheat [gluten] or buckwheat [gluten-free] are your best bet — fresh ground grain is highest in the enzyme phytase. **Tip:** If you don't own a grain mill, put a tablespoon or two of wheat berries (kernels) in your coffee mill to add to your oatmeal.

Phytic acid can be reduced from brown rice with a sourdough-like fermentation soak. See <http://www.kitchenstewardship.com/2010/04/01/phytic-acid-in-rice-reduced-96-with-accelerated-fermentation> for instructions.

We have been told that whole wheat bread, all-bran breakfast cereals, and brown rice are important sources of nutrients and better for us than their 'white' hulled counterparts. Unfortunately, we are not taught how to prepare them! If you do not soak or sprout the whole grain, it will do more harm than its hulled counterpart, which is one reason why white rice is commonly consumed in the Asia. In fact, Nigel Ramiel suggests that white rice is always the healthier alternative than brown rice and that traditional people used to pound the rice up with a mortar and pestle and then sift out the bran, making the available minerals more absorbable once the phytic acid in the bran is removed. See <http://butterbeliever.com/brown-rice-vs-white-rice-which-is-healthy> for a discussion of this argument.

Phytic acid is a mineral inhibitor. Iron absorption is the most striking example. In Rebuild From Depression, Amanda Rose points out that when you remove phytic acid from grains, you improve your iron absorption three times in the case of rice and nearly twelve times in the case of wheat. See <http://www.rebuild-from-depression.com/soaking-grains> for more information. Whole grains can be a nourishing and economical food IF you treat them like the seeds that they are.

Some examples of seeds used as staple foods in traditional cultures are: wheat, corn, rye, oats, rice, quinoa, barley, millet, amaranth, wild rice, sorghum, teff, and buckwheat. Some examples of dishes prepared in the traditional manner include:

Sourdough (Europe, Middle East, USA) – wheat, rye, or spelt flour moistened and a starter added

Ogi (Nigeria) – millet soaked for 2 days, ground and fermented another day in warm air
[http://en.wikipedia.org/wiki/Ogi_\(cereal_ferment\)](http://en.wikipedia.org/wiki/Ogi_(cereal_ferment))

Tsampa (Tibet) – barley soaked overnight in warm water and sprouted on cloth, roasted and ground
<http://en.wikipedia.org/wiki/Tsampa>

Tamales (Mesoamerica), <http://en.wikipedia.org/wiki/Tamale>
Gv-no-he-nv or Hominy (Cherokee), <http://en.wikipedia.org/wiki/Hominy>
Pozole (Iroquois), <http://en.wikipedia.org/wiki/Pozole>

These are all dishes made with maize soaked in lime water to release B vitamins which prevents deficiency diseases

Steamed rice, commonly hulled and white (China, Bangladesh, India, Indonesia, Taiwan, Vietnam, Thailand, Myanmar, Philippines, Japan, Brazil, Korea,) http://en.wikipedia.org/wiki/Steamed_rice

Idli (India) – savory cake of fermented black lentils and rice, <http://en.wikipedia.org/wiki/Idli>

Injera (Ethiopia) – flat bread made of teff flour fermented with a sourdough starter, <http://en.wikipedia.org/wiki/Injera>

Llymru (Wales) – fermented porridge made from 3 day old soaked oatmeal water, <http://www.celt.net.org.uk/recipes/cym/fetch-recipe.php?rid=cym-llymru>

Chicha (Peru, Ecuador, Bolivia, Columbia) – fermented quinoa drink,

<http://en.wikipedia.org/wiki/Chicha>, <http://www.thenourishinggourmet.com/2012/01/basic-quinoa-soaked.html>

The Staff of Life

Any discussion of grains, beans, legumes and nuts begs a discussion of agriculture. The eight so-called “Neolithic founder crops” of agriculture were first emmer and einkorn wheat, then hulled barley, peas, lentils, bitter vetch, chick peas, and flax.

It comes as a surprise to many that these foods are not essential to our health. Jessica Prentice, in Full Moon Feast, points out that a hunter-gatherer diet is our 'natural' diet. If the last 100,000 years of humankind's history were a 24 hour day, agriculture would have begun only in the last 5 minutes of that 24 hour period. In A 24-hour clock on which one hour represents 1000,000 years Jared Diamond speculates that agriculture was adopted by primitive people when they had to feed growing populations. Archeological evidence reveals that the overall health of people declined as a result. It seems we traded in quality for quantity. The skeletons of people who began intensive maize farming in 1150 AD show a 50% increase in tooth enamel defects (indicating malnutrition), a fourfold iron deficiency, a threefold increase in bone lesions that reflect infectious diseases, and an increase in degenerative spinal conditions, probably from hard labor. Nevertheless, grains, nuts, and beans have become a staple in most cultures' diet, more easily available, economical and convenient than meat, fats, dairy, or fresh fruits and produce.

Some researchers also speculate that agriculture introduced hierarchical social structures as 'masters' needed slave labor to work the land. Yet Weston A. Price found many examples of traditional, pre-industrial societies that grew grain in substantive quantity and were egalitarian, spiritually connected to the land, and well nourished. Examples include the Swiss in the Leotchtal Valley who made sourdough rye bread; the Gaels in Scotland who grew oats; various African tribes who grew millet and sorghum; and people in the Andes who ate parched corn. Pre-industrial farmers in the United States traditionally helped one another at harvest time, sharing the work and forming bonds of friendship and community.

Since World War II, traditional farming has given way to industrial agriculture with its dependence on petroleum products. Today the family farm that values sustainability, community, crop rotation, and an interdependence between land and animals, is struggling to hold on. Family farms are marginally viable, comparable to homesteads, with a few exceptions. Instead, we have a glut of “corn” (due to government subsidies for industrial agriculture) that provides cheap feed for cattle, cheap sweeteners for industrially processed foods, cheap oils to replace nutrient dense traditional fats, and cheap grain exported to third world countries that replace local heirloom varieties. The result is that food does not taste as good, is no longer as nutritious, and ancient culinary traditions are wiped out in one generation! Not to mention the health hazards that have been introduced through chemicals in the industrial food chain and GMO grain crops. Moreover, we no longer do the physical labor required to burn off the amount of carbohydrates that we eat, which then get stored as fat (fat is a much more efficient source of energy!). Our peasant ancestors labored the fields. We spend too much time on the couch, in the car, on a tractor, and in front of a television or a computer.

Breakfast Cereals

Boxed breakfast cereals, commonly consumed today by children, are a product of the industrial processing of foods. They are made by “extrusion”, a process of putting the grain under 1500 pounds per square inch of pressure and then releasing it in different shapes. Organic cereals in health food

stores are often made in the same factories as the non-organic cereals sold in supermarkets. Organic grains contain more protein than non-organic grains, which means that the health food store cereals will probably contain more toxic protein fragments than supermarket versions. The cereal industry has convinced the FDA that extruded grains are the same as non-extruded grains, however unpublished animal studies indicate that extruded grains are toxic to the nervous system.

In Fighting the Food Giants, Paul Stitt describes a study where four sets of rats were given special diets. One group received plain whole wheat, water, vitamins and minerals; a second group received Puffed Wheat, water and some nutrient solution; a third group received water and white sugar; a fourth group received nothing but water and chemical nutrients. The rats that received the whole wheat lived for a year. The rats with water and vitamins lived about 8 weeks. The rats on white sugar and water died in a month. However, the rats that received water, vitamins and Puffed Wheat died in two weeks! The results suggested that there was something toxic in the Puffed Wheat. Proteins are similar to certain toxins in their molecular structure, and the extrusion process may produce chemical changes which turn a nutritious grain into a poisonous substance.

In another study, described in Nourishing Traditions by Sally Fallon, researchers at the University of Michigan in 1960 divided 18 rats into three groups. One group received cornflakes and water; a second group received the cardboard box that the cornflakes came in and some water; the control group received rat chow and water. The rats in the control group remained healthy. The rats that received the box became lethargic and eventually died of malnutrition. But the rats that received the cornflakes developed schizophrenic behavior, threw fits, bit each other and went into convulsions. Autopsy revealed dysfunction of the pancreas, liver and kidneys, and degeneration of the spinal nerves, all signs of insulin shock. The study concludes that there is more nourishment in the box the cold breakfast cereal came in, than in the cereal itself!

A nourishing breakfast can be anything that you normally eat. The notion of a special breakfast food is a marketing strategy. If you want a “cereal” in the morning, try a “three-seed porridge” as an alternative to oatmeal, with ginger and blueberries, from the Nourished Kitchen -- <http://nourishedkitchen.com/three-seed-porridge/>.

The staff of life? A gift to humankind? It's all in the preparation! Grains, beans, and nuts must be processed according to the basic traditional principles of soaking, sprouting, germinating, and slow cooking, in order for us to assimilate the nutrients that are bound up in them.

Preparing Whole Grains

Combine 1 cup whole grain of your choice, 1 cup filtered water, and 2 tablespoons of whey, yogurt or lemon juice in a mason jar. Cover and let sit at room temperature at least 24 hours, or as long as several days.

Properly sourced grains are great for sprouting, which makes them even more digestible than grains that have merely been soaked. Sprouting produces greatly enhanced vitamin content and many beneficial enzymes. [Www.SproutPeople.org](http://www.SproutPeople.org) lists whole grains that have not been treated with substances to keep them from sprouting. Authentic sourdough is the best bet for bread. Even white sourdough bread will have less impact on blood sugar than regular whole wheat sandwich bread! Sprouted-grain bread is another healthy alternative.

Many people have difficulty digesting grains, especially children with immature digestive systems. Some people with gluten sensitivities can tolerate properly made sourdough bread. The lack of correct processing, industrial pesticides, and GMO grains will compound the difficulties of a person with a compromised digestive system. Those with digestive issues may be better off without grains in their diet at all and a baby's first foods should be animal foods and fats, not cereal. Nuts usually do not present as much of a problem but still need to be soaked. A healing protocol like the GAPS diet has helped many address issues of gut dysbiosis, autism, learning disabilities, attention deficit disorders, depression, celiac disease, or irritable bowel syndrome. It is outlined by Dr. Natasha Campbell-McBride in Gut And Psychology Syndrome and gapsdiet.com. The goal of such a protocol is to heal the gut and reintroduce grains, starches, and legumes after a few years of healing rather than to be "gluten free" for life. A hunter-gatherer type diet can also help stabilize blood sugar and lose weight.

Preparing Beans

Beans and legumes contain phytic acid. Some, like black beans, have very difficult-to-digest carbohydrates (insoluble fiber). All beans should be soaked in water for 24 hours with some whey or lemon juiced added (1-2 tsp per cup of beans). Sprouting renders beans even more digestible and nutritious, and they will cook more quickly. See www.SproutPeople.org for resources. See <http://harmoniousbelly.com/2010/02/sprouting-lentils/> for simple instructions on soaking lentils.

Soy beans and soy products are exceptionally high in phytic acid as well as phytoestrogens (plant estrogens). Soy foods are also goitrogenic (suppress thyroid function). Well-fermented, traditional soy foods (miso, tempeh, natto, soy sauce, tamari) will be easier to digest but still have goitrogenic and estrogenic properties. Babies, children, individuals with thyroid issues or hormonal imbalances should avoid soy foods. Only healthy individuals should eat natural soy products like tofu or edamame. Industrially processed soy (soybean oil, soy protein isolate, soy milk) should never be consumed.

Preparing Nuts & Seeds

Nuts and seeds contain phytic acid, just like whole grains and beans. Soak nuts for 24 hours in salty water. Dehydrate at low temperature (150 degrees or less) in a dehydrator or in the oven (leave the oven door open if necessary to control the temperature). See Sally Fallon's Nourishing Traditions for recipes, as the amount of salt varies for different varieties of nuts. You can purchase soaked/dehydrated organic nuts and seeds from www.WildernessFamilyNaturals.com. Nuts and seeds can also be sprouted. See www.SproutPeople.org for instructions, and for nuts and seeds that have not been treated with substances to prevent sprouting.

Recommended Reading

Nourishing Traditions, Sally Fallon and Mary Enig

Full Moon Feast, Jessica Prentice

Wholesome Home Cooking: Preparing Nutrient Dense Foods, Lancaster County Recipes compiled by Katie Stoltzfus (this is an Amish cookbook based on Weston Price Principles)

Local Bread, Daniel Leader

Cure Tooth Decay, Ramiel Nagel

Rebuild From Depression, Amanda Rose

Gut and Psychology Syndrome, Natasha Campbell-McBride, MD

<http://www.westonaprice.org/faq/faq-grains-seeds-nuts-beans>

<http://www.westonaprice.org/beginner-videos/proper-preparation-of-grains-and-legumes-video-by-sarah-pope>

<http://www.westonaprice.org/food-features/be-kind-to-your-grains>

<http://www.westonaprice.org/food-features/living-with-phytic-acid> (Ramiel Nagel)

<http://www.westonaprice.org/digestive-disorders/going-with-the-grain>

<http://www.rebuild-from-depression.com/soaking-grains>

<http://www.kitchenstewardship.com/2010/04/01/phytic-adic-in-rice-reduced-96-with-accelerated-fermentation/>

Local Resources

Moss Hollow Market, Lake Ariel, PA

<http://www.mosshollowcountrymarket.com/>

Grass fed meats, raw milk and cheeses, gluten-free products, organic produce

Sourdough bread by special order, locally made by a family with their 7 year starter

Ingredients: Fresh ground organic whole grain winter wheat, Organic unbleached non-bromated non-enriched white wheat flour, Water, Kosher salt, and Organic extra virgin olive oil. The leavening is achieved by the use of wild yeast obtained from the skins of organic red grapes cultivated into a sourdough starter. The starter contains wild yeast, water, and white flour. These home crafted artisan breads are all natural. No additives, no preservatives and no commercial funny business. It takes two days to make a loaf of bread due to the special process used to develop flavor in the dough and crust. The breads are steam baked and are best consumed within 24 hours unless frozen or refrigerated.

Hungry Ghost Bread, North Hampton, MA

<http://hungryghostbread.com/>

The Little Red Hen: restoring wheat in the Pioneer Valley

Bread Alone Bakery, Boiceville & Woodstock

<http://www.breadalone.com/>

Recipes

Amish Sourdough Starter with Kefir

from Wholesome Home Cooking: Preparing Nutrient Dense Foods

Lancaster County Recipes compiled by Katie Stoltzfus

length of time: a few days

1 cup kefir

1 cup flour (wholewheat, spelt, rye)

Mix together kefir and flour. Then stir in enough warm water to make it pancake batter consistency. Cover with cloth and let sit 3-4 days at room temperature, stirring it a few times. It will become bubbly, rising to three times the volume.

When ready to use starter, reserve 1/3 cup for future starter. Feed the reserved starter with 3/4 cup kefir, 3/4 cup flour, and a little water. Put it in a covered container and let set at room temperature until it starts to bubble. Refrigerate and stir occasionally. Warm the starter to room temperature before using. If you don't use your starter for more than 2 weeks, pour half away and replenish with kefir, flour and water. Let it set until it bubbles, then refrigerate again.

Sandor Katz's Sourdough Starter

adapted from [Wild Fermentation](#)

Length of time: about a week

flour

water

organic plums, grapes, or berries (optional)

1. In a jar or bowl, mix 2 cups (500 milliliters) each of unchlorinated water and flour. Starchy water from cooking potatoes or pasta is rich in nutrients that yeasts like can be used (cooled to body temperature) instead of plain water. I generally use rye flour because I love all-rye bread but the flour of any grain will do.
2. stir the mixture vigorously. One effective technique for speeding up the introduction of wild yeasts into your sourdough starter is to drop a little unquashed whole fruit into it. Often on grapes, plums, and berries you can actually see the chalky film of yeast (the bloom) that is drawn to their sweetness. These and other fruits with edible skins (not bananas or citrus) are great for getting sourdoughs bubbling. Use organic fruit to avoid antimicrobial compounds from chemical agriculture.
3. Cover the jar with cheesecloth or any porous material that will keep out flies but allow the free circulation of air.
4. Store your batter in a warm place (70 to 80 F / 21 to 27 C is ideal but work with what you have), with good air circulation. Visit your batter as often as you think of it, at least daily, and stir it vigorously. Agitation distributes yeast activity and stimulates the process.
5. After some number of days you will notice tiny bubbles releasing at the surface of the batter. That is how you can tell the yeast is active. Note that the action of stirring the batter may create some bubbles. Do not confuse these with the bubbles the batter produces when you are not actively introducing air into the mixture. The number of days it will take for yeast to become active in your batter will depend upon environmental factors. Every ecosystem has its own unique microorganism populations. This is why sourdoughs from specific locations can be so distinctive.
6. Many cookbooks recommend starting a sourdough with a pinch of packaged yeast to get the process going more quickly. It is gratifying to watch the magic of wild yeast finding their way into the dough without any yeast. If you do not find bubbles forming after 3 or 4 days, try to find a warmer spot. Or add a commercially available sourdough starter or a pinch of packaged yeast.
7. Once yeast activity is evident, strain out the fruit. Add 2 or 2 tablespoons (15-30 milliliters) more

flour to the mixture each day for 3 or 4 days, and continue stirring. You can add any kind of flour, leftover cooked grains, rolled oats, or whole grains. You are not feeding the sourdough. The batter will get thicker, and start to rise, or hold some of the gas the yeast releases, but you want it to remain essentially liquid in form. Add more water if the sourdough gets so thick that it starts to cross over into solidity.

8. Once you have a thick, bubbly batter, your starter is ready to use. When you use it, pour out what you need and be sure to save some of the starter in the jar to keep the sourdough going. All you need is a little; what remains on the edges of the jar will suffice. To replenish the starter, add water roughly equal to the volume you removed for bread (2 cups/500 milliliters for most recipes) and the same volume of flour. Stir well and leave it in a warm place to bubble.

Keep it going by feeding it a little flour every day or two if you are baking at least weekly. If you use it less frequently you can refrigerate it (thus slowing down the yeast's activity). It is best to refrigerate sourdough after the replenished starter has had at least 4 to 8 hours of active bubbly fermentation. A refrigerated starter still needs to be fed once a week or so. A day or two before you plan to bake, move the starter from the fridge to a warm location and feed it, to warm it up and get the yeast active again.

9. Your sourdough starter can live forever, given regular attention. Replenish it with water and flour every time you use it. Feed it a little fresh flour every day or two. If you go away, feed your sourdough, let it ferment for a few hours, then cover and refrigerate. Sourdough can be stored in the fridge for several weeks, or frozen for longer periods. If you neglect your sourdough, it may get very acidic, then eventually putrid. Up to a point, sourdoughs can be easily revived by feeding them fresh flour. Other organisms dominate after the yeast has consumed all its nutrients. But the yeasts remain present and can usually return to dominance when nourished.

10. Use Recycled Grains: Sandor Katz loves recycling food and letting nothing go to waste. This leads him to make his breads mostly from leftover grains! Bread can incorporate a great variety of leftovers, not only grains but vegetables, soups, dairy products, and more. Be creative and daring in your food recycling!

11. Measuring: Katz says he never measures anything when he bakes bread. He finds appropriate proportions through texture. He offers the above measurements to guide the novice but take them with a grain of salt (or two). The descriptions of consistency and texture are more important than the quantities. Proper proportions of water and flour can vary, depending on humidity.

No Knead Sourdough

from <http://nourishedkitchen.com/no-knead-sourdough-bread/>

1 cup sourdough starter (*proofed and bubbly*)

3 1/2 cups whole grain or sprouted flour (*double sifted*)

2 teaspoons unrefined sea salt

semolina or corn meal (*for dusting the baking stone*)

1. Pour sourdough starter into a bowl with flour, salt and 1/2 cup filtered water. Mix with your hands to produce a shaggy dough. Cover the mixing bowl with plastic wrap and set it in a warm spot in your kitchen for twelve hours.

2. After twelve hours, scoop the dough from the bottom of the bowl and fold it over on itself twice. Allow it to continue to rise for a further two to four hours, or until doubled in bulk.
3. Flour your hands and your counter top. Plop the dough onto your floured working surface and gently shape it into a boule or a torpedo as it suits you. Keep in mind that the less you handle your dough, the better your loaf will be. Allow the dough to rise until doubled in bulk, about two hours.
4. Set a cast iron pan onto the bottom level of your oven and a baking stone on the middle level of your oven. Preheat the oven to 450 F.
5. Once the oven is preheated, bring one cup water to boil on the stove.
6. Sprinkle the preheated baking stone with semolina or corn meal. Gently place your bread on the baking stone. Pour boiling water in the cast iron pan on the bottom rack. Shut the door to the oven fast and bake for 45 minutes.
7. Allow the bread to cool completely before slicing and serving.

Nutrient Dense Quinoa

A friend who grew up in post-war Japan said that their only source of protein was an egg mixed into a bowl of rice with soy sauce everyday. I adapted this to quinoa. It is one of my girls' favorite dishes.

Soak 1 cup of quinoa in 1 cups of clean water (filtered municipal or rural well) with 2 tbsps whey or lemon juice at least overnight, preferably 24 hours. Rinse and drain. Cook grain in 1 cup chicken/beef stock and 1 cup of water. When it comes to a gentle roll, reduce heat to a simmer and cover pan. Cook till fluffy and dry. Mix into hot grain: 1 or 2 raw eggs, healthy fat (butter, olive oil, coconut oil), salt, vegetables sauteed in lard. Soy sauce (optional).

Water Kefir

1/3 cup of water kefir grains.
1 black mission fig
1/2 lemon sliced up
1/3 cup sugar or sucanat (honey won't work)
1 quart water

Combine all of the above in a half gallon mason jar.
Cover and let sit 24-72 hours

Hannah's Gingerale

1/2 cup fresh ginger root (peeled and grated, lightly packed in measuring cup--make sure the root is moist and aromatic, not dried out)
3-6 tbsps. raw honey (very soft or liquefied but NOT hot; use only 3 tbsps for a less sweet ginger ale)
1/4 cup fresh lime juice (juice from about 2-4 limes, depending on relative juiciness)
2 tbsps. whey
two large pinches unrefined sea salt
enough filtered water to fill the jar

Combine all ingredients in a one-quart glass jar with a screw lid, shake it up to dissolve the honey, and leave at room temperature for 1-2 days. Strain into two 25.3 oz. Pellegrino bottles with screw-on lids (each bottle will be about half full). Top off both with Pellegrino and store in the refrigerator. Drink diluted or full-strength as desired.

*Note: if you are trying to limit consumption of sweeteners, use only 3 tbsp. raw honey. This makes a delicious spicy beverage with a pleasant “burn,” and a mild sweetness. It will have very little effect on blood sugar as compared to using 6 tbsp.; it’s also more appropriate for children. If you choose to ferment the gingerale longer it will become less sweet with time; it will also become less sweet when stored a long time in the fridge due to the probiotic activity (the bacteria are eating up the sugars). Lactofermented ginger ale is a great remedy for upset stomach, and a wonderful hydrating beverage in hot months.

This document was compiled by Lucia Ruedenberg-Wright from the following sources: [Nourishing Traditions](#) by Sally Fallon, [Full Moon Feast](#) by Jessica Prentice, [Wild Fermentation](#) by Sandor Katz, [Rebuild from Depression](#) by Amanda Rose, “Living with Phytates” by Ramiel Nagel, many websites listed in the text, and with the help of Hannah Springer, co-leader of the TNGparentsgroup.org/ and Maria Grimaldi, co-leader of our local WAPF chapter, UpperDelaware-wapf.org.

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