How the Food Has Changed

Randy Pendergrass LSN, CSCS, LMT
Top 10 Purchased Items in Grocery Stores

1. Soda
2. Milk
3. Bread
4. Beer
5. Salty Snacks
6. Cheese
7. Frozen entrees
8. Cold cereal
9. Wine
10. Cigarettes

Grocery Store Index 2016
Is There A Difference?

Organic

Conventional
Is There A Difference?

Pastured

Feedlot
Is There A Difference?

Pastured  Caged
Is There A Difference?

Wild

Farmed
Is There A Difference?

The Bread of Yesterday

The Bread of Today
Topsoil

• The soil is everything
• The top 6-12 inches is the topsoil
• It is a living organism
  mycorrhiza (fungus)
  bacteria
• Breaks down decaying matter into usable vitamins and minerals for the soil
• Builds up the plant’s immune system
The New Farm

• Farming techniques
  - chemical fertilizers
  - pesticides
  - genetic engineering
  - polyculture to monoculture
  *government subsidies
GMO (GE) crops

* First introduced in 1996
  • No human studies
  • Corn, soybeans, canola, Sugar beet, alfalfa, cotton are major crops
  • Most GE crops have been modified to be resistant to herbicides like glyphosate or glufosinate
  • Glyphosate disrupts shikimate pathway in plants and bacteria
  • Glyphosate was patented as an antibiotic in 2010
  • Banned in many industrialized countries
  • Patented
• Hybridization
  Breed out characteristics we don’t want (bitterness, seeds, tough skins, etc.) for characteristics we do want (sweetness, size, high yield)

We have bred out many of the beneficial nutrients.
Not Local Anymore

• Harvesting, Storing, and Transportation
  Most produce comes from far away, spending weeks to months in storage, then handled harshly during transportation. This has led to even more hybridization techniques.
Pastured

• You are what you eat and what it eats
• Healthier animals produce healthier dairy and meat
• Grass finished and pastured has more omega 3 fats, vitamins, and antioxidants (carotenoids)
• Grainfeeding herbivores can create health issues in the animal
• Feedlot and confined animals need more antibiotics
Pastured

• Commercial feed has pesticides
• Growth Hormones in cows
• Breeding practices to get more meat, dairy, and eggs
• Organic animal products over organic plant foods?
Farmed fish topped farmed beef in production in 2012
Alaskan over wild over farmed
Farmed fish tend to have fewer omega 3 fats and more omega 6 fats (grain feeding)
Depleting smaller fish like anchovies and sardines
Mercury? Selenium to the rescue
All seafood tends to be mineral dense
Farm Raised

- Higher fat (mostly omega 6), lower protein
- “Wild” labeling is only half truth as many are born and partially raised in hatcheries
- Studies show higher levels of PCB’s (polychlorinated biphenyls) and other contaminants in farmed fish due to fishmeal
- Sea lice treated with pesticides or pressure washing
- GMO fish
Grains and Legumes

- Wheat
- Rice
- Corn
- Barley
- Rye
- Oat
- Soybeans
- Peanuts
## Pros and Cons of Grains and Legumes

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Help build civilization</td>
<td>• Carbohydrate are dense and complex</td>
</tr>
<tr>
<td>• Long storage time</td>
<td>• Mostly omega 6 fat (rancid issue with storing)</td>
</tr>
<tr>
<td>• Calorically dense</td>
<td>• Many are Hybrids or GMO’s</td>
</tr>
<tr>
<td></td>
<td>• Main use is for feed, ingredients in processed foods, and</td>
</tr>
<tr>
<td></td>
<td>ethanol</td>
</tr>
<tr>
<td></td>
<td>• Have to be processed to some degree to get into digestible</td>
</tr>
<tr>
<td></td>
<td>form</td>
</tr>
<tr>
<td></td>
<td>• Very few vitamins, minerals, antioxidants</td>
</tr>
<tr>
<td></td>
<td>• Lots of antinutrients:</td>
</tr>
<tr>
<td></td>
<td>enzyme inhibitors</td>
</tr>
<tr>
<td></td>
<td>phytates</td>
</tr>
<tr>
<td></td>
<td>gluten: gliadin and glutenin</td>
</tr>
<tr>
<td></td>
<td>lectins (wheat germ agglutinin)</td>
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</tbody>
</table>
Gluten

GLUTEN (GLIADIN + GLUTENIN)
• Hybridization:
Scientist Norman Borlaug creates semi-dwarf wheat in 1960’s. Semi-
dwarf wheat has a shorter thicker stalk to support a larger seed head
needed for higher yields. This increased the gluten content over older varieties of wheat.
Preparation Is the Key

- Modern Processing:
  Stone grinding, soaking, and fermenting has been replaced by high temperature drying, chemical extraction, added preservatives, added synthetic vitamins and minerals, and added refined ingredients.
Sourdough Culture
### Bread Comparison

**Sara Lee 100% Whole Wheat**

Whole Wheat Flour, Water, High Fructose Corn Syrup, Wheat Gluten, Sugar, Yeast. Contains 2% or less of each of the following: Soybean Oil, Calcium Sulfate, Salt, Dough Conditioners (May Contain One or More of the Following: Mono- and Diglycerides, Ethoxylated Mono- and Diglycerides, Sodium Stearoyl Lactylate, Calcium Peroxide, Datem, Ascorbic Acid, Azodicarbonamide, Enzymes), Wheat Bran, Guar Gum, Distilled Vinegar, Calcium Propionate (Preservative), Yeast Nutrients (Monocalcium Phosphate, Calcium Phosphate, Ammonium Phosphate), Corn Starch, Vitamin D3, Soy Lecithin, Milk, Soy Flour.

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**Ezekiel 4:9® Sesame Sprouted Grain Bread**

<table>
<thead>
<tr>
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<th>Item #123</th>
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<tbody>
<tr>
<td>100% Flourless, Complete Protein</td>
<td></td>
</tr>
<tr>
<td>Serving Size:</td>
<td>1 Slice (34g)</td>
</tr>
<tr>
<td>Calories:</td>
<td>80</td>
</tr>
<tr>
<td>Carbohydrates:</td>
<td>14g</td>
</tr>
<tr>
<td>Total Fat:</td>
<td>0.5g</td>
</tr>
<tr>
<td>Dietary Fiber:</td>
<td>3g</td>
</tr>
<tr>
<td>Cholesterol:</td>
<td>0mg</td>
</tr>
<tr>
<td>Protein:</td>
<td>4g</td>
</tr>
<tr>
<td>Sodium:</td>
<td>80mg</td>
</tr>
<tr>
<td>Net Wt:</td>
<td>24 oz (680g)</td>
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</tbody>
</table>

Humans are suffering from a wide array of gut problems: IBS, acid reflux, gall bladder disease, SIBO, Celiac, Crohn’s. An impaired gut has a lower tolerance for grains and legumes if not prepared properly.
What To Do

• Buy local
• Choose fresh or frozen
• Choose organic (animal/plant)
• Choose pastured
• Confirm if it is wild
• Proper storing techniques
• Better preparation and cooking techniques