

For Immediate Release

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### Food Nutrient Density

The Christmas and New Year holidays means parties with lots of food. Have you ever been to a party and you just cannot stop eating even though you are full (stuffed is more like it)? Why do we keep eating? It may be because our bodies are looking for certain foods with essential nutrients that are lacking in our diet. That “hidden hunger” often makes us over eat even though we do not need the extra calories. Pregnant women have urges for different foods to fulfill their bodies demand for essential nutrients needed to produce a healthy baby. In third world countries, some women consume soil (clay) to get iron or other micronutrients missing in their diet. Either their food diet is low in some essential nutrient (low nutrient density) or they just do not have access to foods that have the right essential elements.

Several decade long studies indicate that the nutrient density of the food we eat today is declining. A key finding is that you would have to eat 2X as much meat, 3X more fruit, and 4-5X as much vegetables today to get the same amount of mineral nutrients as food in the 1940's according to David Thomas, 2003. The mineral depletion in 27 vegetables (1940-1991) was 76% for copper, calcium (46%), iron (27%), magnesium (24%) and potassium (16%). The mineral depletion in 10 types of meat (1940-1991) was copper (24%), calcium (41%), iron (54%), magnesium (10%) and potassium (16%). Copper is an important element in vitamins and enzymes that keep people healthy. This nutrient density decline is important because it takes more food to get the same nutrient content leading to excess consumption of empty calories and obesity.

A Kushi Institute study with a shorter time frame (1975-1997) found similar results. In 12 fresh vegetables, calcium declined 27%, iron (37%), Vitamin A (21%), and Vitamin C (30%). Iron in 15 meat dropped 47%, milk 60%, and eight cheeses and creams (50%). Milk lost 2% of its calcium and 21% of its magnesium. A Scientific American study concluded that today one would have to eat 8 oranges to get the same Vitamin A (Not Vitamin C) as our grandparents did in 1940. While crop yields have greatly increased in the last 70 years, food nutrient density has declined.

One simple explanation is that soil microbes in healthy soils produces healthy plants and animals and a healthy diet produces healthy people. Starting in the 1940's after World War II, farmers

started using commercial nitrogen fertilizer which greatly improved crop yields. Plants utilize the synthetic nitrogen from commercial fertilizer instead of amino acids and proteins processed from soil microbes but this was not energy efficient for the plant. The plant needed more energy and essential nutrients to make amino acids and plant proteins, so while yields may have increased, the nutrient density and the protein content of foods started decreasing.

Our soil biology has changed greatly in the last 70 years due to increased soil tillage and 50-60% less soil organic matter (SOM). Cattle in the 1940's grazed healthy plants from pastures and soil that had less tillage and more SOM so the meat and the milk was more nutrient dense. Today, livestock (chickens, hogs, cattle) receive most of their food from tilled soils with less SOM. Tilled soils have more bacteria and less beneficial fungi like mycorrhizae to transport back essential nutrients (macro and micro nutrients) to the plant. The SOM is a storehouse for many essential soil nutrients that is needed for a healthy diet. In healthy soils, the mycorrhizae fungi supply the plant with many essential micronutrients needed to produce proteins and enzymes for healthy plants, animals, and people.

To quote microbiologist Dr. Elaine Ingham: "We know more about the stars in the sky than about the soil under our feet." As we move into a new decade, we are starting to unravel the secrets of the soil to produce healthier food. Food nutritionists suggest eating 30-40 different foods each week to get the essential nutrients we need to have a healthy diet. Promoting healthy soil to produce healthy food may make you healthier and help you shed a few pounds. Most doctors agree, you are what you eat!