Common Sense Nutrition for Primary Care: A Plant Based Approach

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Western Diet (Meat-Sweet Diet)

- Components of the Western Diet
  - Large amounts of protein and fat
    - Red meat
    - Pork
    - Processed meat (lunch meats, sausage, hot dogs, etc.)
    - Eggs
    - Dairy products
  - Large amounts of simple carbohydrates
    - High fructose corn syrup
    - Cane and beet sugar
    - Fruit juice concentrate
  - Large amounts of salt
  - Large amounts of processed foods
  - Lacking in fruits, vegetables, whole grains, and legumes
Western Diet

- DD Bacon, Egg, and Cheese on Bagel
  - Calories 460
    - 100 calories from fat
  - Fat: 11 g (17%)
    - Saturated fat 4.5 (23%)
  - Cholesterol 70 g (23%)
  - Sodium: 1200 mg (50%)
  - Protein 23 g
  - Carbohydrates 67 g
    - Fiber: 4 g
Western Diet

- 8 oz of 2% Milk
  - Calories: 122
  - Fat: 5 g (7%)
    - Saturated: 3 g (15%)
  - Cholesterol: 20 mg (7%)
  - Sodium: 20 mg
  - Carbohydrate: 12 g
    - Fiber 0 g
  - Protein: 8 g
  - Calcium: 286 mg
Western Diet

- 8 oz Beef Top Sirloin
  - Calories 490
  - Fat: 28 g
    - Saturated Fat 13
  - Cholesterol: 120 mg
  - Sodium: 115 mg
  - Carbohydrates: 0 g
    - Fiber 0 mg
  - Protein: 45 g
Western Diet

- Lays Potato Chips (10oz)
  - Calories: 1600
  - Total fat: 100 g
    - Saturated fat: 15 g
  - Cholesterol: 0 mg
  - Sodium: 1700 mg
  - Carbohydrate: 150 g
    - Fiber: 10 g
Diseases Associated with the Western Diet

- **Vascular:**
  - Heart disease
  - Peripheral Vascular Disease
  - Stroke
  - HTN
- **Endocrine:**
  - Diabetes
  - Dyslipidemia
- **Gastrointestinal:**
  - Colon cancer
  - Diverticulosis
  - Fatty liver disease
- **Ophthalmologic:**
  - Macular Degeneration
- **Renal:**
  - Kidney stones
- **Rheumatologic:**
  - Gout
  - Osteoporosis
- **Pulmonary:**
  - OSA
- **Neurologic:**
  - Dementia
- **Genitourinary:**
  - Breast cancer
  - Prostate cancer
Moving Toward A Plant Based Diet
## ANDI Score: Nutrient Density Per Calorie

<table>
<thead>
<tr>
<th>ANDI Scoring System: Sample Scores</th>
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<tbody>
<tr>
<td>Kale 1000</td>
</tr>
<tr>
<td>Collards 1000</td>
</tr>
<tr>
<td>Bok Choy 824</td>
</tr>
<tr>
<td>Spinach 739</td>
</tr>
<tr>
<td>Broccoli Rabe 715</td>
</tr>
<tr>
<td>Chinese/Napa Cabbage 704</td>
</tr>
<tr>
<td>Brussel Sprouts 672</td>
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<tr>
<td>Swiss Chard 670</td>
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<tr>
<td>Arugula 559</td>
</tr>
<tr>
<td>Cabbage 481</td>
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<tr>
<td>Romaine Lettuce 389</td>
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<tr>
<td>Broccoli 376</td>
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<tr>
<td>Carrot Juice 344</td>
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<tr>
<td>Cauliflower 295</td>
</tr>
<tr>
<td>Green Peppers 258</td>
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<tr>
<td>Artichoke 244</td>
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<tr>
<td>Carrots 240</td>
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<tr>
<td>Asparagus 234</td>
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<tr>
<td>Strawberries 212</td>
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<tr>
<td>Pomegranate Juice 193</td>
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<tr>
<td>Tomato 164</td>
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<tr>
<td>Blueberries 130</td>
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<tr>
<td>Iceberg Lettuce 110</td>
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<tr>
<td>Orange 109</td>
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<tr>
<td>Lentils 100</td>
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Joel Fuhrman, M.D.
<table>
<thead>
<tr>
<th></th>
<th>100 g</th>
<th>Salmon</th>
<th>Chicken</th>
<th>B. Rice</th>
<th>Beans</th>
<th>Spinach</th>
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<tbody>
<tr>
<td>Calories</td>
<td></td>
<td>206</td>
<td>165</td>
<td>112</td>
<td>140</td>
<td>23</td>
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<tr>
<td>Fat</td>
<td></td>
<td>12 g</td>
<td>4 g</td>
<td>1 g</td>
<td>1 g</td>
<td>0 g</td>
</tr>
<tr>
<td>(2.5 g sat)</td>
<td></td>
<td>(1 g sat)</td>
<td>(0 g sat)</td>
<td>(0 g sat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td></td>
<td>22 g</td>
<td>30 g</td>
<td>2 g</td>
<td>8 mg</td>
<td>3 g</td>
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<tr>
<td>Fiber</td>
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<td>0 g</td>
<td>0 g</td>
<td>2 g</td>
<td>11 g</td>
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<tr>
<td>Chol</td>
<td></td>
<td>63 mg</td>
<td>85 mg</td>
<td>0 mg</td>
<td>0 mg</td>
<td>0 mg</td>
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<tr>
<td>Vit A</td>
<td></td>
<td>50 IU</td>
<td>21 IU</td>
<td>0 IU</td>
<td>0 IU</td>
<td>9376 IU (188%)</td>
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<tr>
<td>Vit C</td>
<td></td>
<td>3.7 mg</td>
<td>0 mg</td>
<td>0 mg</td>
<td>0.9 mg</td>
<td>28.1 mg (47%)</td>
</tr>
<tr>
<td>Vit E</td>
<td></td>
<td>0 mg</td>
<td>0.3 mg</td>
<td>0 mg</td>
<td>0 mg</td>
<td>2 mg (10%)</td>
</tr>
<tr>
<td>Vit K</td>
<td></td>
<td>0 mg</td>
<td>0.3 mcg</td>
<td>0 mg</td>
<td>0.6 mg</td>
<td>483 mcg (604%)</td>
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<td>Salmon</td>
<td>Chicken</td>
<td>B. Rice</td>
<td>Beans</td>
<td>Spinach</td>
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<tr>
<td>Calcium</td>
<td>15 mg</td>
<td>15 mg</td>
<td>10 mg</td>
<td>69 mg</td>
<td>99 mcg (10%)</td>
<td></td>
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<tr>
<td>Iron</td>
<td>0.3 mg</td>
<td>1 mg</td>
<td>0.5 mg</td>
<td>2.4 mg</td>
<td>2.7 mg (15%)</td>
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<tr>
<td>Magnesium</td>
<td>30 mg</td>
<td>29 mg</td>
<td>44 mg</td>
<td>53 mg</td>
<td>79 mg (20%)</td>
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</tr>
<tr>
<td>Potassium</td>
<td>384</td>
<td>256</td>
<td>79 mg</td>
<td>389 mg</td>
<td>558 mg (16%)</td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td>0.4 mg</td>
<td>1 mg</td>
<td>0.6 mg</td>
<td>1 mg</td>
<td>0.5 mg (4%)</td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td>0 mg</td>
<td>0 mg</td>
<td>0.1 mg</td>
<td>0.2 mg</td>
<td>.1 mg (6%)</td>
<td></td>
</tr>
<tr>
<td>Manganese</td>
<td>0 mg</td>
<td>0 mg</td>
<td>1.1 mg</td>
<td>0.5 mg</td>
<td>0.9 mg (45%)</td>
<td></td>
</tr>
<tr>
<td>Selenium</td>
<td>41.4 mcg</td>
<td>28 mcg</td>
<td>0 mcg</td>
<td>2.9 mcg</td>
<td>1 mcg</td>
<td></td>
</tr>
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</table>
Whole Foods

- Whole foods, “they are what they are.”
  - No ingredient list is needed to explain what you’re eating
    - An apple is an apple.
    - Applesauce and apple juice however are processed.
  - Foods that you may think are “whole” but are actually processed:
    - Nut butters
    - Seed pastes (e.g. sesame paste or tahini)
    - Oils (even olive oil)
    - Pasta
    - Breads
    - Fruit / vegetable juices
    - Tofu
Low Fat is Essential

- **Cholesterol Goals**
  - **Total Cholesterol:** 150 mg/dl or lower
    - Dr. Colin Campbell, PhD (China Study)
    - Dr. Caldwell Esselstyn, Jr., MD (Prevent and Reverse Heart Disease)
    - Dr. Dean Ornish, MD (Dr. Dean Ornish's Program for Reversing Heart Disease)
  - **Avoid**
    - Animal products
    - Added oils (even olive oil)
    - Nuts (except walnuts)
    - Avocados
    - Coconuts
Concerns About Plant Based Nutrition

- Will I get enough protein?
- Will I get enough B12?
- Will I get enough calcium?
- Will I get enough vitamin D?
- Will I become anemic?
How much protein do we really need?
- The average adult needs about 50 grams of protein per day
- A plant based diet can deliver all of the essential amino acids in a nutrient dense, low fat, low cholesterol and low calorie package.

Plant Based Sources of Protein
- Beans and legumes
  - 1 can of beans (black, white, garbanzo) has about 24 grams of protein
- Tofu (minimally processed)
  - 14 oz block has about 40 grams of protein
- Whole grains
  - 1 cup cooked brown rice has 5 grams of protein
  - 1 cup of cooked oatmeal has 6 grams of protein
  - 1 cup of cooked quinoa (keen-wa) has 11 grams of protein
- Nuts and seeds
  - ¼ cup walnuts has 4 grams of protein
  - ¼ cup almonds has 6 grams of protein
Vitamin B12

- **Sources of B12**
  - Beef, poultry, pork
  - Dairy
  - Eggs
  - Seafood

- **Who needs to supplement?**
  - Vegetarians who still consume dairy products and eggs **do not** need to supplement
  - Vegans should take a B12 supplement (1000 mcg daily) as there are no reliable plant based sources.
The average adult needs about 1000 – 1200 mg/day of calcium

Plant Based Sources of Calcium

- Green vegetables:
  - Collard greens cooked: 1 cup has 357 mg calcium
  - Broccoli cooked: 1 cup has 62 mg calcium
  - Spinach cooked: 1 cup has 291 calcium
  - Kale cooked: 1 cup has 179 mg calcium

- Dried Fruits:
  - Small box of raisins has 20 mg calcium

- Beans:
  - Soy beans: 1 cup has 339 mg calcium
  - Tofu: 1/4 block has 300 mg calcium
  - Navy Beans: 1 cup 126 mg calcium

- Nuts:
  - Almonds: 1 ounce (24 almonds) has 75 mg calcium

- Grains:
  - Brown Rice: 1 cup cooked has 20 mg calcium
  - Quinoa: 1 cup cooked has 31 mg calcium
  - Instant fortified oatmeal: 1 packet has 100 mg calcium

- Fortified plant based products: soy milk, almond milk, etc.
  - Soy milk fortified: 1 cup has 300 mg of calcium
Osteoporosis

- Calcium and Vitamin D Supplementation for the Prevention of Fractures:
  - **USPSTF:**
    - Concludes that the current evidence is insufficient to assess the balance of the benefits and harms of combined vitamin D and calcium supplementation for the primary prevention of fractures in premenopausal women or in men.
    - Concludes that the current evidence is insufficient to assess the balance of the benefits and harms of daily supplementation with greater than 400 IU of vitamin D₃ and greater than 1,000 mg of calcium for the primary prevention of fractures in noninstitutionalized postmenopausal women.
    - Recommends against daily supplementation with 400 IU or less of vitamin D₃ and 1,000 mg or less of calcium for the primary prevention of fractures in noninstitutionalized postmenopausal women.
Calcium Intake and Prevention of Osteoporosis

- The relationship between calcium consumption and osteoporosis is not what you may think.
  - A strong body of evidence exists that demonstrates an increased risk of osteoporosis in people who consume large amounts of calcium.
  - Many populations (Japan, India, Peru, Hong Kong, Singapore) ingest much less calcium (<600 mg) than the populations United States or Europe and have much lower incidence of hip fractures.
- Resources:
  - China Study
  - Harvard School of Public Health
    - Calcium and Milk: What’s Best For Your Bones and Health?
Vitamin D

**Sources of Vitamin D**
- Sunlight (brief 15 – 30 minutes exposure a few times per week)
- Seafood (tuna, sardines, salmon)
- Fortified products (milk, soy milk, almond milk)

**Daily Requirements:**
- Institute of Medicine
  - Ages 1 thru 70: 600 IU daily
  - Ages greater than 70: 800 IU daily

**Supplementation:**
- USPSTF concludes that the current evidence is insufficient to assess the balance of the benefits and harms of combined vitamin D and calcium supplementation for the primary prevention of fractures in premenopausal women or in men.
Anemia

- **Daily Requirements of Iron**
  - Men: 8 mg daily
  - Women: 8 - 18 mg daily (depending upon lifecycle stage)

- **Plant Based Sources of Iron**
  - Beans and legumes
    - Soy, white, kidney, lentils, chickpeas: 2.5 to 4.5 mg per ½ cup cooked
  - Leafy green vegetables
    - Spinach: 6.4 mg per 1 cup cooked
    - Kale: 1.2 mg per 1 cup cooked
  - Nuts and seed
    - Pumpkin seeds: 4.2 per 1 oz roasted
  - Whole Grains
    - Brown rice: 1.0 mg per 1 cup cooked
    - Quinoa: 2.8 mg per 1 cup cooked
Whole Food, Low Fat, Plant Based Diet: Personal Experience

Cholesterol Profile

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<tr>
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<tbody>
<tr>
<td>TC</td>
<td>201</td>
<td>185</td>
<td>167</td>
<td>148</td>
<td>127</td>
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<tr>
<td>LDL</td>
<td>125</td>
<td>109</td>
<td>93</td>
<td>73</td>
<td>62</td>
</tr>
<tr>
<td>Trig</td>
<td>48</td>
<td>44</td>
<td>83</td>
<td>67</td>
<td>90</td>
</tr>
<tr>
<td>HDL</td>
<td>66</td>
<td>67</td>
<td>57</td>
<td>61</td>
<td>47</td>
</tr>
</tbody>
</table>

Weight Loss: 20 lbs

Improved sleep, dental health, skin health and GI distress
What Does My Day Look Like?

- **Morning run (5:40 am)**
- **Breakfast (7:15 am)**
  - Oatmeal (steel cut and rolled oat mix) with fresh fruit, raisins, walnuts and cinnamon
- **Snack (11:00 am)**
  - Fruit
- **Lunch (12:30 pm)**
  - Dinner leftovers or
  - Steamed vegetables and beans over brown rice with vinegar and lemon juice
- **Snack (2:00 pm)**
  - Veggie and beans
- **Snack (3:00 pm)**
  - Fruit
- **Snack (6:00 pm)**
  - Vegetables or a handful of nuts
- **Dinner (8:00 pm)**
  - Sunday: summer squash, green bean and tomato stew over brown rice and beans
  - Monday: stewed bell peppers with quinoa and spinach
  - Tuesdays: salads
  - Wednesdays: steamed veggies, beans, brown rice
  - Thursdays: steamed bok choy, beans, brown rice
  - Fridays: greens and marinara over polenta
  - Saturday: broccoli, quinoa, and lentil salad
- **Snack (9:30 pm)**
  - Fruit
How To Get Started!

- Start with a plant based breakfast:
  - Oatmeal (no added sugar, honey, milk, etc.)
    - Fresh fruit
    - Small amount of walnuts
    - Raisins (no Crasins)
    - Cinnamon
- Get rid of dairy products
  - Milk
  - Yogurt
  - Cheese
  - Cottage cheese
  - Ice Cream
- Drink only water
  - Black coffee is OK
- Fruit for all snacks
Hurdles to a Plant Based Diet

- Cost
- Convenience
- Planning
- Unfamiliarity
- Social pressure
Plant Powered!
Resources

- **Cookbooks:**
  - Clean Food by Terry Walters
  - Forks Over Knives Cook Book
  - Moosewood Cooks For Health
  - Moosewood Cooks At Home
  - The New Moosewood Cookbook

- **Literature**
  - The China Study: T. Colin Campbell, PhD
  - Prevent and Reverse Heart Disease: Dr. Essselstyn, Jr., M.D.
  - Engine 2 Diet: Rip Esselstyn
  - Salt Sugar Fat: Michael Moss

- **Web Sites**
  - www.eatwell-livewell.com