The Kick Diabetes Cookbook is Out!!!

The Kick Diabetes Cookbook by Brenda Davis and Vesanto Melina (publisher – Book Publishing Company) is available now. This book provides a tested plan for managing and reversing type 2 diabetes. With over 100 recipes and step by step guidelines, it will serve as an invaluable resource. All the recipes included are sugar-free, oil-free and meet the guidelines for <1500 mg sodium per day. The are based on whole, plant foods and help you to maximize the most protective components in the diet, while minimizing those found to be the most pathogenic. You will love how easy they are to prepare.

Dr. Michael Greger (founder of nutritionfacts.org and author of How Not to Die) says, "If you intend to reverse diabetes or support someone in this process, get a copy of The Kick Diabetes Cookbook and make it your constant companion."

Dr. John Kelly (founding president of the American College of Lifestyle Medicine) says, "Properly selected and prepared plant foods can reverse insulin resistance and type 2 diabetes. Reverse your diabetes and enjoy full remission using the nutritional approach so enjoyably presented in The Kick Diabetes Cookbook."

Dr. Wes Youngberg (assistant clinical professor at Loma Linda University, founder of Diabetes Undone and author of Goodbye Diabetes) says, "I've been helping patients reverse diabetes for nearly 20 years. There is no one I would trust more to give me nutritional advice than Brenda Davis. Using this cookbook is your best bet for reversing diabetes."

Julieanna Hever (co-author of Plant-based Nutrition Idiot's Guide and The Vegiterranean Diet) says, "With the

unprecedented rise of type 2 diabetes, there has been increasing confusion surrounding diet-related treatments. The Kick Diabetes Cookbook is a welcomed solution packed with simple advice, detailed charts and guidelines and delicious, easy recipes.”

Check out the recipe section for recipes featured from the book!

FIGHTING DISEASE WITH YOUR FORK

LEGUMES vs MEAT

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10 Ways to Lose Weight

Methionine- Restricted Diet… Who needs it?

Methionine is an essential amino acid – one of the building blocks of protein that cannot be produced by the human body so must come from our food. It is one of two sulfur-containing amino acids (the other is cysteine). Methionine is an intermediary in the synthesis of cysteine, carnitine, taurine, and other compounds. It protects liver cells, and helps to prevent lipid peroxidation, and possibly atherosclerosis and elevated cholesterol. Although methionine is essential to human life, some people benefit by limiting, but not eliminating methionine in their diets. For such individuals a methionine-restricted diet may be advised.

Should I be on a methionine-restricted diet?

Some individuals need to restrict methionine due to inherited disorders that affect methionine metabolism. There is growing interest in methionine restricted diets for those who are unaffected by these genetic metabolic disorders. Evidence suggests that such diets could enhance longevity and help to prevent or treat certain chronic health conditions. The most common indications for a methionine-restricted diet are:

i) MTHFR variants. MTHFR gene mutations can lead to elevated homocysteine. Methionine restriction is commonly recommended to help reduce homocysteine accumulation.

ii) Cancer. While human studies are sparse, there is some evidence that cancer cells grow less robustly, and sometimes undergo apoptosis (cell death) when deprived of methionine.

iii) Depression. High methionine intakes can elevate homocysteine levels and risk of depression.

iv) Lifespan extension. Low methionine diets increase metabolic flexibility and overall insulin sensitivity and improve lipid metabolism while decreasing systemic inflammation.

v) Insulin resistance. Methionine restriction has been shown to reduce adiposity and improve insulin sensitivity.

vi) Homocystinuria. This inherited disorder of metabolism often requires a low methionine diet.

If methionine-restriction may help kill cancer cells and increase longevity, shouldn’t everyone be on a methionine-restricted diet?

We don’t know for sure, but it is an option for those who are interested in employing a novel dietary strategy for disease risk reduction. While severe methionine restriction is rarely

advised, a moderate methionine restriction may be beneficial. The most concentrated methionine sources are animal products such as meat, poultry and fish. You will see from the table below that the eating pattern that is lowest in methionine is a purely plant-based diet or vegan diet. Other vegetarian or near-vegetarian diets are lower in methionine than omnivores diets, but not as low as vegan diets. For most people, simply eating a plant-based diet is likely sufficient for reducing methionine intake. Those with metabolic disorders or other conditions that may warrant methionine restriction can further restrict methionine by limiting high methionine plant-based foods.

If a methionine restricted diet is indicated for me, how much methionine should I be eating each day?

The RDA (recommended dietary allowance) for methionine + cysteine (adults 19 yrs+) is 19 mg/kg/day, while the EAR (estimated average requirement) is 15 mg/kg/day. People should not dip too much below these levels as they represent the lower end of what is needed for human health. Methionine-restricted diets allow 800-1200 mg methionine per day for most adults. For methionine alone, 15 mg/kg is thought to be a reasonable lower limit. So, if a therapeutic, methionine-restricted diet is indicated for you, multiply your healthy body weight by 15 to find a level of methionine intake that is appropriate. Let’s say your healthy body weight is 60 kg, you would need 900 mg methionine per day.

Are there any downsides to severely restricting methionine?

Absolutely. There is some evidence that a lack of methionine could reduce levels of S-Adenosylmethionine or SAM-e increasing risk of depression. A lack of methionine has also been linked to senile graying of hair. When you restrict

methionine you are naturally restricting protein, at least to some degree. Ensuring sufficient protein is essential to health. Protein is necessary for building, strengthening and repairing body tissues, for making antibodies, hormones, enzymes and other compounds that are critical to every body process. A lack of protein can result in muscle loss, increased risk of bone fractures and undesirable changes in hair and skin. Seniors tend to absorb protein less efficiently, so they may need to consume 15-25% more protein than other adults in order to absorb the same amount. So while methionine restriction can be beneficial, it is important that we meet our needs for methionine, and for protein.

METHIONINE IN COMMON FOODS

(SOURCE: THE USDA NUTRIENT DATABASE RELEASE 28)

Methionine (mg/serving)
0-50 mg
51-100 mg
101-150 mg
151-200 mg
201-250 mg
251-300 mg
301+ mg

Vegetables	Weight	Measure	Methionine (mg)
Asparagus, cooked	180 g	1 cup	50
Green beans, cooked	125 g	1 cup	29
Yellow beans, cooked	135 g	1 cup	24
Beets, cooked, sliced	170 g	1 cup	32
Broccoli rab, raw, chopped	40 g	1 cup	19
Broccoli, raw, chopped	91 g	1 cup	35
Burdock root, raw	118 g	1 cup	11
Cabbage, chinese, cooked, shredded	179 g	1 cup	15
Cabbage, cooked	150 g	1 cup	9
Carrots, raw, chopped	128 g	1 cup	26
Cauliflower, raw, chopped	107 g	1 cup	21
Celery, raw, chopped	101 g	1 cup	5
Chard, swiss, raw	36 g	1 cup	7
Chard, swiss, cooked	175 g	1 cup	35
Collards, raw	36 g	1 cup	12
Collards, cooked	170 g	1 cup	68
Cucumber, raw	104 g	1 cup	6
Eggplant, cooked	99 g	1 cup	9
Endive, raw	50 g	1 cup	8
Kale, raw, chopped	67 g	1 cup	18
Kale, cooked	130 g	1 cup	23
Kohlrabi, raw	135 g	1 cup	18
Leeks, cooked	124 g	1 leek	12
Lettuce, raw, shredded	36-47 g	1 cup	6-7
Mountain yam, cooked	145 g	1 cup	33
Mushrooms, cooked	156 g	1 cup	34

Mustard greens, cooked	150 g	1 cup	32
Okra, cooked	160 g	1 cup	32
Onions, cooked	210 g	1 cup	23
Parsley, fresh, chopped	60 g	1 cup	25
Pepper, sweet, raw, chopped	149 g	1 cup	9
Pumpkin, cooked, mashed	245 g	1 cup	20
Radicchio, raw	40 g	1 cup	3
Radishes, raw	116 g	1 cup	12
Seaweed, laver, raw	26 g	10 sheets	38
Spinach, raw	30 g	1 cup	16
Squash, summer, cooked	180 g	1 cup	23
Squash, winter, cooked	205 g	1 cup	23
Taro, cooked, sliced	132 g	1 cup	9
Tomatoes, fresh	149 g	1 cup	9
Tomato sauce	245 g	1 cup	17
Turnip greens, cooked	144 g	1 cup	37
Turnips, cooked, cubes	156 g	1 cup	14
Watercress, raw	34 g	1 cup	7
Yam, cooked	136 g	1 cup	27
Yardlong bean, cooked	104 g	1 cup	37
Zucchini, raw, chopped	124 g	1 cup	22
Brussels sprouts, cooked	155 g	1 cup	54
Hearts of palm, canned	146 g	1 cup	61
Potatoes, white + skin	148 g	1 med	56
Spinach, cooked	180 g	1 cup	99
Sweet potato, cooked	200 g	1 cup	74
Corn, sweet, cooked	165	1 cup	112
Peas, cooked	160 g	1 cup	130

Peas, raw	145 g	1 cup	119
Fruits			
Apples, raw, sliced	125 g	1 cup	1
Apricots, dried	65 g	0.5 cup	10
Apricots, raw	155 g	1 cup	9
Bananas, raw, mashed	225 g	1 cup	18
Blueberries, raw	148 g	1 cup	18
Cherimoya, raw	160 g	1 cup	34
Cranberries, raw, chopped	110 g	1 cup	3
Dates	147 g	1 cup	32
Figs, raw	64 g	1 large (2.5″)	4
Gogi berries, dried	28 g	5 Tbsp	24
Grapefruit sections	230 g	1 cup	12-18
Grapes, fresh	92 g	1 cup	19
Guava, fresh	165 g	1 cup	26
Kiwi, raw, sliced	180 g	1 cup	43
Limes, raw	67 g	1 fruit	1
Mango, raw	165 g	1 cup	13
Melon, cantaloupe, raw	177 g	1 cup	21
Melon, honeydew, raw	170 g	1 cup	8
Nectarines, raw, sliced	143 g	1 cup	8
Olives, ripe, jumbo	15 g	1	2
Orange, raw, sections	180 g	1 cup	36
Papaya, raw	145 g	1 cup	3
Peach, raw	154 g	1 cup	15
Pear, Asian, raw	122 g	1 fruit	7
Pear, raw, slices	140 g	1 cup	3
Persimmons, raw	25 g	1 fruit	2

Pineapple, raw, chunks	165 g	1 cup	20
Plantains, raw, sliced	148 g	1 cup	25
Plums, raw, sliced	165 g	1 cup	13
Plums, dried	174 g	1 cup	28
Raisins, seedless	165 g	1 cup	35
Strawberries, raw	152 g	1 cup	3
Tangerines, raw, sections	195 g	1 cup	4
Watermelon, raw, balls	154 g	1 cup	9
Avocado, raw, cubes	150 g	1 cup	57
Figs, dried	149 g	1 cup	51
Jackfruit, raw	165 g	1 cup	56
Legumes			
Black-eyed peas, cooked	165 g	1 cup	74
Hummus, homemade	60 g	1/4 cup	48
Miso	17 g	1 Tbsp	22
Okara	122 g	1 cup	50
Soy sauce (tamari)	18 g	1 Tbsp	30
Soy sauce (wheat and soy shoyu, low Na)	14 g	1 Tbsp	13
Soy milk, fortified	243 g	1 cup	39
Fava beans, cooked	170 g	1 cup	105
Lentils, sprouted, raw	77 g	1 cup	81
Lima beans, cooked	170 g	1 cup	116
Pigeon peas, red gram	168 g	1 cup	128
Soybeans, sprouted, cooked	94 g	1 cup	84
Tofu, soft	120 g	2.5 x 2.75 x 1″	101
Tofu, regular (medium firm)	124 g	0.5 cup	134

Tofu, firm (with calcium sulfate and nigari)	126 g	0.5 cup	139
Veggie sausages	50 g	2 links	126
Adzuki beans, cooked	230 g	1 cup	182
Chickpeas, cooked	164 g	1 cup	190
Cowpeas, cooked	171 g	1 cup	188
Kidney beans, cooked	177	1 cup	200
Lentils, cooked	198	1 cup	152
Lupins, cooked	166 g	1 cup	183
Mung beans, cooked	202 g	1 cup	170
Refried beans, canned reduced sodium	238 g	1 cup	155
Split peas, cooked	196 g	1 cup	167
Black turtle beans, cooked	185 g	1 cup	228
Black beans, cooked	172 g	1 cup	229
Cranberry beans, cooked	177 g	1 cup	248
Edamame, cooked	155 g	1 cup	215
Great Northern beans, cooked	177 g	1 cup	221
Navy beans, cooked	182 g	1 cup	201
Pink beans, cooked	169 g	1 cup	230
Small white beans, cooked	179 g	1 cup	242
Veggie burgers or soyburgers	70 g	1 patty	204
Tempeh	166 g	1 cup	290
Tofu, firm (prepared with calcium sulfate)	126 g	0.5 cup	266
White beans, cooked	179 g	1 cup	261
Soybeans, mature, cooked	172 g		385
Soy nuts, dry roasted	93 g	1 cup	497

Grains			
Hominy, yellow	160 g	1 cup	50
Tapioca, uncooked	38 g	0.25 cup	1
Noodles, japanese, soba, cooked	114 g	1 cup	82
Barley. cooked	157	1 cup	68
Buckwheat groats, cooked	168 g	1 cup	74
Cornmeal	39 g	0.25 cup	64
Pasta, wheat, cooked	124 g	1 cup	79
Pasta, gluten-free, cooked, corn and quinoa	166 g	1 cup	98
Pasta, gluten-free, cooked, corn	140 g	1 cup	77
Sorghum grain, uncooked	48 g	0.25 cup	81
Triticale, uncooked	48 g	0.25 cup	98
Rice, white, long grain	158 g	1 cup	100
Amaranth, uncooked	48 g	0.25 cup	109
Millet, cooked	174 g	1 cup	122
Oats, uncooked	39 g	0.25 cup	122
Oat bran, cooked	219 g	1 cup	109
Pasta, gluten-free, cooked, brown rice	169 g	1 cup	134
Pasta, gluten-free, cooked, corn and rice	141 g	1 cup	102
Rice, brown, long grain	202 g	1 cup	117
Spelt, uncooked	44 g	0.25 cup	112
Wheat bran	58 g	1 cup	136
Wheat, hard, uncooked	48 g	0.25 cup	111
Wheat, sprouted	108 g	1 cup	125
Quinoa, cooked	185 g	1 cup	178

Kamut, cooked	172 g	1 cup	167
Wild rice, cooked	164 g	1 cup	195
Teff, uncooked	48 g	0.25 cup	207
Teff, cooked	252 g	1 cup	315
Nuts			
Acorns, dried	28.35 g	1 ounce	39
Almonds	28.35 g	1 ounce	44
Almond butter	16 g	1 Tbsp	20
Cashew butter	16 g	1 Tbsp	50
Chestnuts, dried, European	28.35 g	1 ounce	33
Coconut, fresh, shredded	80 g	1 cup	50
Coconut, dried, shredded	28.35 g	1 ounce	37
Coconut water	240 g	1 cup	31
Macadamia nuts	28.35 g	1 ounce	7
Coconut milk, canned	240 g	1 cup	86
Hazelnuts	28.35 g	1 ounce	63
Pecans	28.35	1 ounce	54
Pine nuts	28.35 g	1 ounce	59
Peanuts, dry roasted	28.35 g	1 ounce	82
Walnuts, English	28.35 g	1 ounce	67
Cashews	28.35 g	1 ounce	103
Pistachio nuts	28.35 g	1 ounce	102
Brazil nuts	28.35 g	1 ounce	319
Seeds			
Tahini (sesame seed butter), raw	15 g	1 Tbsp	88
Flaxseeds	28.35	1 ounce	105
Sunflower seeds	28.35 g	1 ounce	119
Chia seeds	28.35 g	1 ounce	167

Pumpkin seeds	28.35 g	1 ounce	171
Sesame seeds	28.35 g	1 ounce	159
Hempseeds (about 3 Tbsp)	28.35 g	1 ounce	264
Animal products			
Eggs	33 g	1 large	132
Cheese, brie	28.35	1 ounce	168
Cheese, gouda	28.35	1 ounce	204
Milk, 1%	245 g	1 cup	215
Milk, 3.25%	244 g	1 cup	203
Yogurt, low fat, fruit	170	6 ounces	219
Cheese, parmesan, hard	28.35	1 ounce	272
Yogurt, plain, skim milk	170	6 ounces	287
Beef, lean, cooked	85 g	3 ounces	648
Chicken breast, cooked	85 g	3 ounces	675
Crab, cooked	134 g	1 leg	730
Fish, cod	85 g	3 ounces	448
Fish, salmon	85 g	3 ounces	640
Fish, tuna, canned	85 g	3 ounces	733
Ham, cooked	85 g	3 ounces	435
Lobster, cooked	145 g	1 cup	689
Pork, cooked	85 g	3 ounces	609
Shrimp, cooked	85 g	3 ounces	565
Turkey, roasted	85 g	3 ounces	670

NOTES:

1. These figures in this table were sourced from the USDA National Nutrient Database for Standard Reference Release 28. http://ndb.nal.usda.gov/ndb/nutrients/index

2. The chart is set up using food groups (e.g. vegetables, fruits, legumes, etc.). Within each group, you will notice a variety of colors which represent different categories of methionine concentration (see key that precedes the chart). Within each color category, foods appear in alphabetical order.

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Defeating Type 2 Diabetes

"The diabetes time bomb has been ticking for 50 years, and it's been getting louder. Despite the warning, successive generations of world leaders have largely ignored the threat."

International Diabetes Federation (IDF) President-Elect Martin Silink

According to the Centers for Disease Control and Prevention, one in eight American adults had diabetes in 2014. If the current trends continue, they estimate that as many as 1 in 3 adults will have diabetes by 2050. The rate of diabetes has increased from 0.9 percent in the late 1950s to 9.3 percent in 2014 (12.3% in those over the age of 20 years). The figures are even more staggering among American seniors (those aged 65 years or more) – over 25% have type 2 diabetes, and over 50% have prediabetes. While statistically, diabetes is the 7th leading cause of death in the United States, this figure belies the fact that most people *with* diabetes do not die *of* diabetes: they die heart disease, kidney failure, and other complications. Globally, diabetes has become the 21st century plague, crippling rich and poor nations alike.

Diabetes Statistics in the United States 2010

Diabetes rate among the entire population: 9.3%

Diabetes rate among Americans over 20 years of age: 12.3%

Diabetes rate among Americans over 65 years of age: 25.9%

Estimated prediabetes rate among the entire population over 20 years of age: 35%

Estimated prediabetes rate among the American population over 65 years of age: 50%

What is Diabetes?

Diabetes is a metabolic disorder that diminishes the body's ability to usher glucose into cells so it can be used for energy. Glucose is the primary source of energy for the body, and in order for glucose to enter our cells a "gatekeeper" called insulin must let it in. People with diabetes either do not produce any insulin, do not produce enough insulin, or have become "resistant" to the insulin that they produce. This means insulin cannot do its job and blood glucose levels begin to rise. When blood glucose is elevated over time, body tissues become awash in sugar and health tumbles down a rather predictable slippery slope.

There are two main types of diabetes: type 1 and type 2. Type 1 diabetes is characterized by lack of insulin production by the pancreas, and it is generally regarded as an autoimmune disease. It occurs suddenly, and most often affects children and adolescents. Type 2 diabetes is distinguished by the preservation of insulin production, but faulty insulin action. Essentially the product of diet and lifestyle, type 2 diabetes is an insidious disease, often going undetected for many years. Globally, type 2 diabetes accounts for over 90 percent of all diabetes cases. The rise in diabetes runs roughly parallel that of overweight and obesity, with risk doubling in those who are overweight and tripling in those who are obese. While excess body fat plays a strong role in this disease, the way the fat is distributed is perhaps even more significant. Weight concentrated around the abdomen and in the upper part of the body (apple-shaped) increases risk far more than weight that settles around the legs and hips (pear-shaped). Fat that collects in and around vital organs (visceral fat) is far more damaging than fat that accumulates close to the skin's surface (subcutaneous fat). Type 2 diabetes was once referred to as "adult-onset diabetes" because it was a disease rarely occurred in people under 50 years of age. Today, type 2 diabetes is seen in young adults, teens, and even children.

Untreated or poorly controlled type 2 diabetes is a leading cause of blindness, premature heart attack and stroke, kidney failure, nerve damage, and amputations.

Diabetes is defined as fasting blood glucose of at least 126 mg/dl (7.0 mmol/L), while pre-diabetes occurs when blood glucose reaches at least 110 mg/dl (6.1 mmol/L). Pre-diabetes is often manifested as “metabolic syndrome”, a cluster of risk factors characterized by elevated blood glucose, abdominal obesity, elevated blood pressure, elevated triglycerides, and low HDL-cholesterol levels. A cascade of problems ensues that commonly results in full-blown type 2 diabetes.

The Luck of the Draw?

Some people believe that type 2 diabetes is more a matter of bad genes than bad habits. While it is true that some populations have a greater susceptibility to the disease, genes serve primarily as a loaded gun; it is almost always diet and lifestyle that pull the trigger.

The people of the Marshall Islands provide a poignant example. The Marshall Islands are a group of islands about 2300 miles southwest of Hawaii with a total population of about 60,000 people. In the Marshall Islands, an estimated 28 percent of those over 15 years of age and 50 percent of those over 35 years of age have type 2 diabetes. Sixty years ago, diabetes was virtually unheard of in the Marshall Islands. While changes in genes were negligible during those few decades, changes in diet and lifestyle were profound. Sixty years ago the Marshallese were slim, physically active, and lived off the land and the sea. The diet consisted of edible plants such as coconut, breadfruit, taro, pandanas and leafy greens, and fish and other seafood. All of these foods were acquired through physical work. Today, the Marshallese diet consists

primarily of imported, processed foods, and the Marshallese people have become largely sedentary. A typical breakfast consists of cake donuts or sweet pancakes and coffee. The first foods of the day for children are often popsicles, chips, soda pop, or dry ramen noodles with dry Kool-Aid powder sprinkled on top. Lunch and dinner feature sticky white rice with meat or fish. Favorite meats are Spam, canned corned beef, chicken, and variety meats such as turkey tails or pig's intestines. The meal is predictably washed down with a sweet beverage. It would be difficult to design a diet that could more efficiently induce type 2 diabetes than the diet that has been adopted by the Marshallese people.

In a laudable effort to reverse the Marshallese diabetes epidemic, Canvasback Missions Inc. (a Christian, non-profit organization, specializing in medical missions to remote South Pacific islands), in partnership with Loma Linda University and the Marshall Islands Ministry of Health, launched a lifestyle-based diabetes research study in 2006. Brenda Davis was hired to serve as lead dietitian; to design and implement the diet portion of the treatment program. For each intervention, approximately half of the qualified participants were assigned to an intervention group and half to a control group. Intervention participants received diet and lifestyle instruction over a 3-6 month period, while the control group received the "usual care" (advice from a physician and/or other health care worker to exercise, eat more healthfully and take the appropriate medication). Control group participants were guaranteed a place in the intervention group once their six-month control period had been completed (although their data could not used be used in the analysis). The two key elements of the lifestyle intervention were diet and exercise. The primary objective of treatment was to overcome insulin resistance and to restore insulin sensitivity as much as was physiologically possible. The diet was designed to support blood glucose control, reduce inflammation, reduce oxidative stress and restore nutritional status.. To accomplish this

task, the dietary parameters were set as follows:

- Whole foods, plant-based diet
- Generous servings of non-starchy vegetables and legumes
- Controlled portions of intact (whole) grains, starchy vegetables fruits, nuts and seeds
- Minimal refined carbohydrates
- Minimal ground grains (e.g. flour)
- Very high fiber (40-50+ grams per day)
- High viscous fiber foods (flax, oats, barley, beans, guar gum, psyllium)
- Moderate fat from healthful sources such as nuts and seeds (20-25% fat)
- Low saturated fat (<7% of calories)
- Zero trans fatty acids
- Sufficient omega-3 fatty acids
- High phytochemical and antioxidant foods
- Low dietary oxidants
- Low glycemic load
- Moderate sodium (Less than 2300 mg/day)

In addition to a highly therapeutic diet, participants received daily education about nutrition and lifestyle. PowerPoint presentations, practical workshops, dine-outs, shopping tours, and spousal cooking classes were all fundamental components of each intervention. To help increase access to affordable produce, participants were taught how to grow their own vegetables. Soil and gardening experts were brought in to conduct workshops, and participants were taken on agricultural field trips. Daily exercise including twice daily walks, aerobic classes, strength and flexibility exercises were all integral parts of therapy. The program results were remarkable during the first 2 to 4 weeks of the program. Typical reductions in fasting blood glucose were in

the 50-75 mg/dL (3-4 mmol/L) range; and weight loss averaged approximately 2 pounds (1 kg) per week. Total and LDL-cholesterol, triglycerides and blood pressure plummeted. Participants consistently reported dramatic reductions or complete disappearance of pain in the legs, arms and joints. Many noted increased energy, improved mental clarity, fewer nightly trips to the bathroom, and rapid relief of chronic constipation. The majority of participants stopped taking diabetes medications. After 12 weeks, progress varied according to the participant's commitment to the program. Those who stuck to the program continued to see improvements. Some reversed their disease, eliminating the need for medication, and experiencing blood glucose levels well within the normal range.

Could It Work at Home?

Some people ask if the kind of program we use in the Marshall Islands could work in North America and other developed parts of the world. If the impoverished people of the Marshall Islands can succeed with the enormous barriers they face, it should be a relative breeze at home. The Marshallese have somehow managed to overcome seemingly insurmountable mountains of Spam, donuts, ramen noodles, and sweet drinks.They have put together low cost, healthful meals despite the high cost and poor quality of their produce, their infertile soils, and their lack of resources. They have managed with little education and marginal English skills. They have succeeded with few gyms, no hiking trails, and a cultural taboo against women wearing pants, shorts or other fitness wear. Their example inspires hope for everyone, everywhere.

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Plant-based Diets and Gout

Gout has long been known as the “disease of kings” as it is most common in overweight or obese men who consume rich foods, and excessive alcohol. It is also associated with hypertension and renal impairment. Diet can help to reduce the incidence of gout, and can play an important role in the treatment of gout.

Generally, with active disease, dietary purines are restricted. In the body, purines are metabolized to uric acid. Purines can elevate uric acid in the blood. Although normal levels of uric acid can assist in scavenging free radicals, higher levels increase risk of gout. The richest dietary sources of purines are organ meats and small fish (internal organs are eaten with the fish). Diets rich in plant foods are not associated with increased risk of gout, even when higher purine plant foods are consumed. Generally, plant foods are less concentrated in purines than meat and seafood. Dairy products are low in purines and have not been found to increase risk, although high fat dairy products may contribute to cardiovascular disease and diabetes, so low or skim milk

products are preferable to higher fat options.

Common Myth – Beans and Gout

It is commonly believed that beans are high purine foods and should be avoided by people who are at risk for gout, have high uric acid levels, or who have active gout. This is because most tables listing the purine content of foods list the amount of purines found in 100 grams (just over a half cup) of dried beans. When 100 grams of beans are cooked, the yield is about 1 1/2 cups of beans. A typical serving of cooked beans is about a half cup, thus the figures shown in most tables are triple the usual serving size. Using a one-half cup serving size, the purine content of beans ranges from about 20-75 mg per serving. See the chart below for the purine content of specific legumes.

Dietary Guidelines for Gout Prevention and Treatment

1. Avoid very high purine foods and limit high purine foods to not more than a serving per day (see chart below). Avoid meat extracts, broths, bouillon and gravy.
2. Avoid rich, high-fat, meat-centered meals. Rely on plant foods as your primary sources of protein.
3. Eat several servings of fiber-rich plant foods such as whole grains, vegetables, fruits, each day.
4. Minimize intake of refined carbohydrates, including both starches (white flour products) and sugar. Concentrated fructose can increase uric acid levels and increase insulin resistance.

5. Drink 2-3 L of fluids each day. Most of this should be water.
6. Avoid alcohol, as it tends to interfere with uric acid excretion.
7. Maintain a healthy body weight. If you are overweight, aim for a slow gradual weight loss of ½-1 kg (1-2 lbs) per week. Rapid weight loss from fasting or severely calorie-restricted diets is not recommended as this can raise uric acid levels and aggravate gout.
8. Increase your physical activity. (Check with your doctor first if you are currently not active).

Purine Content of Common Foods

Avoid very high purine foods (>200 mg purine per serving)
Minimize high purine foods (>100 mg purine per serving)
Moderate medium purine foods (50-100 mg/serving)
Enjoy low purine foods (< 50 mg/serving)

Food	Serving Size	Purines (mg)
Anchovies, fresh	100 g (3.5 oz)	411
Sardines, canned	100 g (3.5 oz)	399
Herring, canned	100 g (3.5 oz)	378
Sardines, fresh	100 g (3.5 oz)	345
Kidney, pig	100 g (3.5 oz.)	334
Anchovy fish, canned	100 g (3.5 oz.)	321
Liver (pork)	100 g (3.5 oz.)	289
Salmon, fresh	100 g (3.5 oz)	260

Mackerel, canned	100 g (3.5 oz)	246
Liver, chicken	100 g (3.5 oz.)	243
Red fish (ocean perch)	100 g (3.5 oz.)	241
Chicken heart	100 g (3.5 oz)	223
Mackerel, fresh	100 g (3.5 oz)	194
Shrimp, brown	100 g (3.5 oz.)	147
Tuna, canned	100 g (3.5 oz.)	142
Clams, fresh	100 g (3.5 oz)	136
Squid, fresh	100 g (3.5 oz)	135
Chicken meat	100 g (3.5 oz.)	130
Lamb	100 g (3.5 oz)	128
Steak, broiled	100 g (3.5 oz.)	121
Haddock, broiled	100 g (3.5 oz.)	119
Pork	100 g (3.5 oz)	119
White fish	100 g (3.5 oz)	116
Lentils, cooked	½ cup (99 g)	74
Oats, dry	½ cup (78 g)	73
Great northern beans, cooked	½ cup (88.5 g)	71
Small white beans, cooked	½ cup (89.5 g)	68
Tofu	100 g (3.5 oz)	68
Split peas, cooked	½ cup (196 g)	64
Soybeans, cooked	½ cup (172 g)	64
Pinto beans, cooked	½ cup (85.5 g)	57
Red beans, cooked	½ cup (85.5 g)	55
Select fruits and vegetables*	100 g (3.5 oz)	51-81

Large lima beans, cooked	½ cup (94 g)	49
Sunflower seeds	28 g (1 oz)	40
Flaxseeds	28 g (1 oz)	28
Peanuts	28 g (1 oz)	22
Garbanzo beans, cooked	½ cup (82 g)	19
Almonds	28 g (1 oz)	10
Yogurt (dairy)	4 oz (113 g)	9
Walnuts	28 g (1 oz)	7
Most other vegetables and fruits	100 g (3.5 oz)	10-49

* Fruits and vegetables with moderate purine content: broccoli, peas, artichokes, apricots, mushrooms, spinach, bananas and green peppers.