



Contents lists available at ScienceDirect

Advances in Integrative Medicine

journal homepage: www.elsevier.com/locate/aimed



Case report

Metabolic syndrome reversal through nutrition: A case report

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ARTICLE INFO

Article history:

Received 25 June 2016

Accepted 6 July 2016

Keywords:

Metabolic syndrome reversal

Diabetes reversal

Nutrition intervention

Functional medicine

Diet

Paleo diet

ABSTRACT

Metabolic syndrome (MetS) is epidemic in the United States with over 34 percent of all U.S. adult population estimated to have MetS in 2011 – females and those over the age of 60 have a much higher prevalence. This reports on the successful treatment of MetS in an individual patient, a 66-year-old Latin American female using nutritional support. This patient continued conventional MetS treatment while beginning functional nutrition therapy guided by laboratory testing from her physician. After six months of a whole food diet with a 'low glycemic load through paleolithic principles' (LGLPP) this patient was off medication; follow-up laboratory studies revealed successful reversal of MetS her blood pressure was normal, her Type 2 diabetes was reversed and her hyperlipidemia was resolving.

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1. Introduction

A 66-year-old Latin-American female patient presented to an integrative medicine clinic in September 2015 with T2DM, hypertension, hypercholesterolemia, and hypertriglyceridemia seeking nutrition advice on lowering HbA1C and cholesterol. Her history was significant for cholecystectomy, chronic fatigue, frequent urination, increased bruising, slow wound healing, and blurry vision. Her current medications included atorvastatin, lisinopril, ASA, and metformin. Patient was diagnosed with T2DM in July 2015. Prior to this, she has suffered from hypercholesterolemia for five years and hypertension for 30 years. The patient diagnosis and treatment are outlined in the timeline.

2. Patient case

This 66-year-old female came in with Type 2 diabetes, hypertension and hyperlipidemia. Her past medical history was significant for cholecystectomy, chronic fatigue, frequent urination, increased bruising, slow wound healing, and blurry vision. She also had a 30-pack year history of smoking with successful cessation in 2006.

At the time of her first visit this patient was prescribed Atorvastatin, Lisinopril and Metformin, all of which she was taking as directed. She had a high glycemic diet and her medication was not adequately controlling her medical problems and she was willing to make dietary changes. The patient was evaluated at an integrated nutrition programme that used a functional medicine approach guided by laboratory testing and a Low Glycemic Load Paleo Protocol (LGLPP) intervention (see [Appendices A and B](#)). She came in for follow-up visits every three months over a six months period. Initial laboratory testing and anthropometrics assessment revealed elevated HbA1C, hyperlipidemia and high blood pressure and (See Timeline – [Table 1](#)). In December 2015, during the three month follow-up visit her laboratory testing and anthropometric assessment showed improvement and she elected to discontinue her medications the concurrence of her physician and continue with the dietary intervention. In March 2016, without lisinopril, metformin or atorvastatin her blood pressure and HbA1C were normal and her hyperlipidemia was under control.

3. Patient perspective

"I come from a farming community in Ecuador, my parents lived into their late 90s and my aunt is still alive at 99. They were never on medications and lived very happy lives. Since moving to America and especially the last 15 years my health has severely declined. I have not felt well at all since I have been on the medication and decided I wanted to change my life so I do not have to be on them". I do not like the side effects and I

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Table 1

Nutritional visit timeline (with diagnostic evaluation and interventions).

Past medical history: chronic fatigue, frequent urination, increased bruising, slow wound healing, blurry vision. Cholecystectomy (1999). 30 pack year smoking history – quit in 2006. Current history: type 2 dm, hypertension and hyperlipidemia			
Three visits over six months	Nutritionist visit dates		
	9/20/15	12/20/15	3/20/16
Medications			
Atorvastatin	10 mg QD	10 mg QD	No medications
Lisinopril	10 mg QD	10 mg QD	No medications
Metformin	500 mg QD	500 mg QD	No medications
ASA	75 mg QD	75 mg QD	No medications
Dietary recommendations			
LGLPP	LGLPP	LGLPP	LGLPP
Dietary supplements			
CoQ10: 200 mg QD	Yes	Yes	–
Magnesium (chelate): 300 mg QD	Yes	Yes	–
Buffered ascorbate: 1500 mg QD	Yes	Yes	Yes
Krill oil: 800 mg QD	–	Yes	Yes
Fractionated lipid concentrate 250 mg QD (18-HEPE/17-HDHA)	–	Yes	Yes
Arthroben: 11 g QD (Cox 2 inhibitor)	–	Yes	Yes
Lifestyle recommendations			
Metabolic syndrome reversal program (MSRP)	MSRP	MSRP	MSRP
High intensity interval training (HIIT)	HIIT	HIIT	HIIT
Sleep hygiene (SH)	SH	SH	SH
Laboratory biomarkers			
Glucose	154	–	–
HA1C	6.9	5.6	5.6
Cholesterol	266	125	174
Triglycerides	410	213	228
LDL	160	55	93
VLDL	68	35	48
HDL	38	35	33
Chol/HDL	7	4	5
Vital signs			
Blood pressure	138/90	125/75	116/66
Height	5'1"	5'1"	5'1"
Weight (pounds)	143.2	136.4	135.8
BMI	27.91	23.99	22.89
Off medications with resolution of metabolic syndrome with MSRP			

have been having a lot of them on these medications, severe muscle fatigue, low energy, tingling in my extremities, and pain in my joints, especially my hands. After hearing about the MSRP and the diets from several of my friends that have done it with great results I decided to do it. Within 6 months I am no longer taking my medication, feel so much better and I cannot thank these clinicians enough. It is true, food is healing"

4. Discussion

Increasing rates of obesity in children and adults will result in more insulin resistance and all of the associated atherogenic components of the MetS such as glucose intolerance, diabetes mellitus, dyslipidemia, hypertension, vascular inflammation, oxidative stress and prothrombotic risk. Complications such as coronary heart disease, myocardial infarction, congestive heart failure, stroke and renal disease will increase in proportion to the incidence, duration and severity of the MetS. Patients with MetS are generally prescribed several types of medication and many can be classified as a polypharmacy patient.

This case report outlines how an integrated individually designed whole food diet –Low Glycemic Load through palaeolithic

principles – (LGLPP) and supplementation supports the treatment and in this case reversal of MetS and its associated conditions [7–14]. Different criteria are used evaluate and interpret the clinical data, diagnosis and treatment of MetS; however, they all conclude that lifestyle modification programmes (LMP) are an integral component of reversing this condition [2–6].

5. Conclusion

Without medication this patient sustained normal blood pressure and HgA1C and her hyperlipidemia had improved since her first visit. In this patient a low glycemic load nutritional intervention was associated with improvement and reversal in her metabolic syndrome.

Acknowledgements

This case report followed the CARE guidelines for case reports. Dana Filatova and Oscar Coetzee are doctoral students in clinical nutrition at the Maryland University in Integrative Health in Laurel, Maryland. The authors wish to acknowledge David Riley for his support and help in assembling this case report.

Appendix A

Paleolithic Protocol

Please consult with your physician before you use this dietary protocol. This protocol is not intended to diagnose, cure or treat any disease; it is for informational and educational purposes only. Natural Healthcare Center strongly recommends anybody participating in any dietary protocol to present a copy of it to their physician if they are concerned about the health risks.

Despite what appears to be a lack of agreement in the nutritional world on what's best to eat, particularly if you spend your time at the local bookshop or following what the media, the top nutritional scientists actually agree on what's best to eat. The consensus is that we should be eating the foods that have long shaped our genetic makeup as we evolved and the template is very simple; eat all the **lean** (a very key word) meats, poultry, fish, and seafood you can eat along with all the non-starchy vegetables (not tubers such as potatoes, sweet potatoes, and yams) and fruits (except dried fruits) you can eat. This diet is also known as the Paleo Diet as it is the diet that our Paleolithic ancestors ate. Although it surprises some people, you should be avoiding or at least limiting cereals, grains, legumes and dairy products as they are **NOT** the nutritional bonanzas that some people would have you believe. If you were offered the choice of a \$100 bill or a \$10 bill, there is no doubt that you'd take the \$100. We need to start adopting this thought process when it comes to food and, once you do, it will soon be recognized **that nothing can hold a candle to vegetables and fruits as a carbohydrate or to lean animal foods for your best source of protein and healthful fats.** If you analyze a diet consisting of LEAN protein, vegetables, fruits, nuts and seeds and then analyze it again after substituting in any of either cereals, legumes, dairy products and/or processed foods, the nutritional composition will be diminished EVERY time – this is easy to demonstrate. So treat your body as a temple and only feed it \$100 bills!

In summary ... EAT

- All the lean meats, poultry, fish, and seafood you can eat
- All the non-starchy vegetables (not tubers such as potatoes, sweet potatoes, and yams) and fruits (except dried fruits) you can eat along with some nuts and seeds
- You may add avocado or guacamole to any meal or snack
- Limit or eliminate cereals and grains (rice, wheat, barley, etc.)
- Limit or eliminate legumes
- Limit or eliminate dairy products
- Limit or eliminate processed foods
- Do not consume coffee or black tea. Herbal teas are allowed. Coffee and black tea affect blood sugar regulation and cause energy fluctuations, this is why they are not to be consumed. Teas you may consume besides green tea: Oat straw, Rooibos, Peppermint, Detox, Milk Thistle, White Tea etc.- regular or decaf

By following this simple template of eating lean protein, vegetables, fruits, nuts and seeds, you will:

- **Eat** a relatively high amount of animal protein compared to that in the typical American diet;
- **Eat** fewer carbohydrates than most modern diets recommend, but eat lots of good carbohydrates - from fruits and vegetables, not from grains, starchy tubers, and refined sugars;
- **Eat** a large amount of fiber from non-starchy vegetables and fruits;
- **Eat** a moderate amount of fat, with the right amount of monounsaturated, polyunsaturated and saturated fats, and nearly equal amounts of omega 3 and omega 6 fats;
- **Eat** foods with a high potassium content and a low sodium content;
- **Eat** a diet with a net alkaline load; and
- **Eat** foods rich in plant phytochemicals, vitamins, minerals, and antioxidants.

As a result your body will return to its natural healthy balance. You don't have to think about doing each of these criteria, if you follow the template it will automatically happen.

Water. You should consume a minimum of half your body weight (in lbs.) in ounces of water on a daily basis. 25% of this volume should be consumed immediately upon rising to hydrate the body. For example, an individual weighing 200 pounds should consume 100 ounces of water daily (200/2) and 25 ounces (100/4) should be consumed upon rising.

Day 1

Upon rising:

Drink 25% of daily water consumption with ¼ fresh lemon pinched

Breakfast: Vegetable and Turkey Omelet

1 T coconut oil, butter or ghee
¼ - ½ medium red onion, diced
½ medium red bell pepper, diced
1 handful of spinach
½ medium tomato, diced
2 – 3 oz. turkey breast, chopped
2 eggs
Lemon pepper or cracked pepper to taste
1 cup green tea
8 oz. or more of water with ¼ pinched lemon

Snack:

1 cup of seedless grapes;
8 oz. or more of water with ¼ pinched lemon

Lunch: Green Salad with Chicken

2 handfuls of butter lettuce
½ medium cucumber, sliced and quartered
½ medium avocado, diced
1 medium tomato, diced
2 oz. of pine nuts
4 – 6 oz. of grilled chicken breast, sliced
Dressing – olive oil and lemon juice
Lemon pepper or cracked pepper to taste
8 oz. or more of water with ¼ pinched lemon
1 cup green tea

Snack:

Medium apple
1 T of nut butter of choice (not peanut);
8 oz. or more of water with ¼ pinched lemon

Dinner: Salmon and Roasted Vegetables

3 – 4 oz. of salmon, baked or grilled
Season with – olive oil, lemon juice, lemon pepper or cracked pepper, and paprika.
Optional: use Cayenne pepper for spice
4 – 6 asparagus spears
1 red bell pepper, coarsely sliced

Procedure:

Preheat oven to 400 degrees. Toss the vegetables in olive oil, salt, and pepper. You may add additional herbs and spices if desired. Roast for 20 - 30 minutes.

8 oz. or more of water with ¼ pinched lemon
1 cup green tea

Bedtime:

8 oz. or more of water with ¼ pinched lemon

In addition:

Drink more water, if needed, to consume half body weight in ounces

Day 2

Upon rising:

Drink 25% of daily water consumption with ¼ fresh lemon pinched

Breakfast: Berry Salad with Walnuts

1 cup of mixed berries of choice
2 oz. of walnuts
8 oz. or more of water with ¼ pinched lemon
1 cup green tea

Snack:

1 cup of seedless grapes
8 oz. or more of water with ¼ pinched lemon

Lunch: Mixed Greens Salad with Beef (grass--fed) or other lean protein

2 handfuls of mixed greens
½ handful of red cabbage, shredded
½ handful of carrots, shredded
1 celery stalk, diced
½ handful of grape tomatoes
3-4 oz. of grilled beef, sliced
Dressing – olive oil and lemon juice, salt
Lemon pepper or cracked pepper to taste
8 oz. or more of water with ¼ pinched lemon
1 cup green tea

Snack:

1 handful of nuts and seeds, mix of choice
2 oz. of dried cranberries
8 oz. or more of water with ¼ pinched lemon

Dinner: Paleo Chicken "Pot Pie(less)"

1 – 2 chicken breasts, roughly chopped
1 medium yellow onion, halved then sliced
3 celery stalks, chopped
2 carrots, halved lengthwise then sliced
Season with olive oil, salt and lemon pepper or cracked pepper

8 oz. or more of water with 1/4 pinched lemon
1 cup green tea

Bedtime:

8 oz. or more of water with 1/4 pinched lemon

In addition:

Drink more water, if needed, to consume half body weight in ounces

Day 3

Upon rising:

Drink 25% of daily water consumption with 1/4 fresh lemon pinched

Breakfast: California “Grab ‘n Go”

1 hard-boiled egg,
2 – 4 oz. of turkey breast
1/2 avocado
8 oz. or more of water with 1/4 pinched lemon
1 cup green tea

Snack:

1 orange or 2 clementines;
8 oz. or more of water with 1/4 pinched lemon

Lunch: Spinach salad with shrimp

2 handfuls of spinach, finely chopped
1 tomato, finely chopped
1 cucumber, finely chopped
5 large grilled shrimp
Season with olive oil, lemon juice, salt and lemon pepper or cracked pepper
8 oz. or more of water with 1/4 pinched lemon
1 cup green tea

Snack:

1 handful of raw almonds;
8 oz. or more of water with 1/4 pinched lemon

Dinner: White Fish with Steamed Vegetables

1 crown of broccoli, steamed
2 vine ripened tomatoes, chopped, steamed on top of broccoli
1/2 handful of sun--dried tomatoes, sliced julienne
3-4 oz. of baked white fish, tilapia, flounder or cod
Season with olive oil, salt, lemon juice and dill and mustard
8 oz. or more of water with 1/4 pinched lemon
1 cup green tea

Bedtime:

8 oz. or more of water with 1/4 pinched lemon

In addition:

Drink more water, if needed, to consume half body weight in ounces

Day 4

Upon rising:

Drink 25% of daily water consumption with 1/4 fresh lemon pinched

Breakfast: Fruit Smoothie

1/2 cup of fresh or frozen strawberries
1/2 cup of fresh or frozen raspberries
1 large banana
4 oz. of coconut or almond milk
Add water and ice for desired consistency
8 oz. or more of water with 1/4 pinched lemon
1 cup green tea

Snack:

1 pear;
8 oz. or more of water with 1/4 pinched lemon

Lunch: Romaine Salad with Tuna

2 handfuls of romaine salad
1/4 cucumber, sliced
1/2 green bell pepper, diced
1/2 handful of grape tomatoes
4 – 6 oz. of tuna; mix with olive oil and mustard;
Season with lemon juice, salt and lemon pepper or cracked pepper
8 oz. or more of water with 1/4 pinched lemon
1 cup green tea

Snack:

1 large celery stalk
2 T of nut butter
8 oz. or more of water with 1/4 pinched lemon

Dinner: Chicken and Vegetable Curry

3 – 6 oz. chicken breast (1 inch cubed)
1/2 small crown of cauliflower
1/2 yellow bell pepper, diced
1/2 yellow onion, diced
1 handful of parsley, coarsely chopped
1/2 small can of water chestnuts
Curry powder to taste

Procedure:

In a large pan, sauté onions and parsley in coconut oil and cracked pepper. Add the cubed chicken on top. Add curry powder (or curry sauce). Add remaining vegetables and add more curry powder. Cover and cook for 20 – 30 minutes.

8 oz. or more of water with $\frac{1}{4}$ pinched lemon
1 cup green tea

Bedtime:

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

In addition:

Drink more water, if needed, to consume half body weight in ounces

Day 5

Upon rising:

Drink 25% of daily water consumption with $\frac{1}{4}$ fresh lemon pinched

Breakfast: 8 oz. Fresh Vegetable Juice

4 $\frac{1}{2}$ oz. carrot juice
3 $\frac{1}{2}$ oz. celery juice
1 T Superfood
8 oz. or more of water with $\frac{1}{4}$ pinched lemon
1 cup green tea

Snack:

1 banana
Small handful of pecans;
8 oz. or more of water with $\frac{1}{4}$ pinched lemon

Lunch: Pumpkin Soup

1 - 15 oz. can of pure pumpkin
1 orange bell pepper, diced
4 plum tomatoes, diced
1 red onion, diced
 $\frac{1}{2}$ a bunch of green scallions
1 T curry powder
Season with salt, lemon pepper, cracked pepper, parsley, and paprika
8 oz. or more of water with $\frac{1}{4}$ pinched lemon
1 cup green tea

Snack:

10 baby carrots
1 T sunflower butter;
8 oz. or more of water with $\frac{1}{4}$ pinched lemon

Dinner: Chicken and Vegetables

3-6 oz. chicken breast, cut into 1 inch cubes
1 crown of broccoli
1 red bell pepper, cut into lengthwise strips
2 vine-ripened tomatoes, coarsely diced
 $\frac{1}{2}$ large red onion, diced
8 oz. or more of water with $\frac{1}{4}$ pinched lemon
1 cup green tea

Bedtime:

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

In addition:

Drink more water, if needed, to consume half body weight in ounces

Day 6

Upon rising:

Drink 25% of daily water consumption with $\frac{1}{4}$ fresh lemon pinched

Breakfast: Egg, Turkey and Vegetable Scrambler

1 scrambled egg
2 - 3 oz. turkey meat (turkey breast or sliced from deli – Boar's Head)
1 vine-ripened tomato, sliced
1 handful of spinach, sautéed in coconut oil with onions
 $\frac{1}{4}$ red onion, finely diced
 $\frac{1}{2}$ avocado
8 oz. or more of water with $\frac{1}{4}$ pinched lemon
1 cup green tea

Snack:

1 pear;
8 oz. or more of water with $\frac{1}{4}$ pinched lemon

Lunch: Vegetable Soup – Yields 10 servings

2 T coconut oil
4 garlic cloves, minced
2 onions, diced
2 quarts vegetable broth
2 celery stalks, diced
2 carrots, diced
4 tomatoes, peeled and diced
2 cups broccoli, chopped
1 cup asparagus
 $\frac{1}{4}$ cup fresh basil
 $\frac{1}{4}$ cup fresh parsley Herbs
and spices to taste

1 cup zucchini

Procedure

Heat oil and add garlic and onion, sauté for 1 minute.

Add remaining ingredients, except zucchini, and simmer, covered, for 10 minutes. Stir until al dente.

Add zucchini and cook for 2 minutes. Season with lemon and pepper or other herbs/spices to taste.

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

1 cup green tea

Snack: 1 handful of nuts and seeds mix of choice

2 oz. of dried cranberries;

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

Dinner: Salmon with Sautéed Spinach and Mushrooms

3 - 4 oz. of Salmon, baked or grilled

Season with olive oil, lemon juice, salt, lemon pepper or cracked pepper, and paprika.

Optional: use cayenne pepper for spice

1 bag of spinach, sautéed in coconut oil with salt, garlic and cracked pepper

4 White mushrooms, sliced, add to spinach sauté

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

1 cup green tea

Bedtime:

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

In addition:

Drink more water, if needed, to consume half body weight in ounces

Day 7

Upon rising:

Drink 25% of daily water consumption with $\frac{1}{4}$ fresh lemon pinched

Breakfast: Fruit Salad with Pecans

1 banana (sliced)

$\frac{1}{2}$ cup of blueberries

1 handful of pecans

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

1 cup green tea

Snack:

Apple

2 T nut butter (not peanut)

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

Lunch: Vegetable Soup from day 6

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

1 cup green tea

Snack:

Carrots and celery

1 small handful of cashews

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

Dinner: Turkey Breast with Roasted Vegetables

4 – 6 oz. lean turkey breast, roasted

5 Brussels sprouts, halved

2 medium carrots, chopped

1 parsnip, chopped

$\frac{1}{2}$ crown cauliflower

Procedure:

Preheat oven to 400 degrees. Toss the vegetables in olive oil, salt, and pepper. You may add additional herbs and spices if desired. Roast for 30 minutes.

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

1 cup green tea

Bedtime:

8 oz. or more of water with $\frac{1}{4}$ pinched lemon

In addition:

Drink more water, if needed, to consume half body weight in ounces

Appendix B

Glycemic Index Protocol

This dietary protocol is not intended to diagnose, cure or treat any disease; it is for informational and educational purposes only. Natural Healthcare Center strongly recommends anybody participating in any dietary protocol to present a copy of it to their physician if they are concerned about the health risks.

The glycemic index (GI) is a ranking of carbohydrates on a scale from 0 to 100 according to the extent to which they raise blood sugar levels after eating. Foods with a high GI are those which are rapidly digested and absorbed and result in marked fluctuations in blood sugar levels. Low-GI foods, by virtue of their slow digestion and absorption, produce gradual rises in blood sugar and insulin levels, and have proven benefits for health.

Why eat low GI? Low GI diets have been shown to improve both glucose and lipid levels in people with diabetes (type 1 and type 2). They have benefits for weight control because they help control appetite and delay hunger. Low GI diets also reduce insulin levels and insulin resistance. Recent studies from Harvard School of Public Health indicate that the risks of diseases such as type 2 diabetes and coronary heart disease are strongly related to the GI of the overall diet. In 1999, the World Health Organization (WHO) and Food and Agriculture Organization (FAO) recommended that people in industrialized countries base their diets on low-GI foods in order to prevent the most common diseases of affluence, such as coronary heart disease, diabetes and obesity.

How do I eat low GI? The basic technique for eating the low GI way is simply a "this for that" approach - ie, swapping high glycemic carbs for low glycemic carbs. **You don't need to drive yourself crazy counting numbers or do any sort of mental arithmetic to make sure you are eating a healthy, low GI diet.** Below are a few general guidelines to keep in mind when making food choices:

- Reduce the amount of white potatoes you consume; you may replace them with sweet or purple potatoes
- Eliminate corn
- Enjoy all types of fruit and vegetables and eat plenty of salads
- Use brown, red, green, black or wild rice
- Do not consume coffee or black tea. Herbal teas are allowed. Coffee and black tea affect blood sugar regulation and cause energy fluctuations, this is why they are not to be consumed. Teas you may consume besides green tea: Oat straw, Rooibos, Peppermint, Detox, Milk Thistle, White Tea etc.- regular or decaf

In addition to the glycemic index color chart, you may visit www.glycemicindex.com. Click on "database" on the left and type in the food you are looking for. You will be looking for the GI #.

Key Points for GI 30+ and Low GI Diets

1. All salads are made with olive oil and vinegar dressing - raw apple cider vinegar or lemon juice is preferred.
2. Between meals only water with freshly squeezed lemon
3. All foods should be made from ground up, no canned fruits or vegetables
4. Try to use mostly organic products
5. No white flour/sugars other than natural sugars (fruits)
6. For meals with no measurements (-), you may have an unlimited amount
7. If there is something that you don't like, you may replace it with something comparable on the low GI list.
8. After the first week, you will pick your favorite breakfasts, lunches and dinners to consume the next three weeks, you cannot eat steel cut oats more than 3 times a week or have it on the day you consume pasta.
9. Feel free to add avocado to any salad, soup, chili or burger.
10. Authorized cooking oils should be solid and include coconut oil, grass fed butter and ghee. Liquid oils are to be used for dressings or finishing a dish only. Do not cook with these.
11. Lastly, do not eat anything after 9:00pm. If you are a shift worker, this can be modified.

DAY 1:

Approximate Glycemic Index

Upon rising drink 8 oz. water with ¼ lemon, pinched

5

Breakfast: Vegetable Omelet (no bread)

15

2 large eggs

½ C vegetables of your choice (ie: peppers, onions, mushrooms, etc)

Green Tea

8 oz. water with ¼ lemon, pinched

5

Snack:

One apple

38

Lunch: Large Green Salad

15

- 2-3 handfuls *Dark Leafy Greens*
- 6-8 cherry tomatoes
- ½ medium cucumber, sliced
- 2-3 medium carrots, sliced
- 6-8 olives
- 4 oz. Tuna
- Olive Oil and Vinegar Dressing

Snack:

Mixed bag of seeds, nuts dried fruit approximately. 4 oz

35

Preferably hulled, raw and unsalted (ex: pumpkin, sunflower, walnuts and raisins)

Dinner: Fish and Vegetables

Small salad (*dark leafy greens*, vegetables of your choice)

4 oz - Fish - any kind (not fried)

Steamed Vegetables - any combination and as much as you like

15

8 oz. water with ¼ lemon, pinched juice

5

Drink more water in addition to suggestions during the day.

DAY 2:

Approximate Glycemic Index

Upon rising drink 8 oz. water with ¼ lemon, pinched

5

Breakfast:

½ medium grapefruit

25

1 large egg - hard-boiled

Herbal tea

8 oz. water with 1/4 lemon, pinched

5

Snack:

1 Cup of grapes

46

Lunch: Salad and Chicken

10

- 2-3 Handfuls *Dark Leafy Greens*
- 1-2 C your choice of vegetables
- 4 oz. Chicken Breast
- Olive Oil and Vinegar Dressing

8 oz. water with 1/4 lemon, pinched

5

Green tea

Snack:

Nuts and seeds with dried fruit - 4 oz.

Dinner: Vegetable Stir-fry With Tofu and Green Salad

45

- 1-2 T Coconut Oil
- 1 clove garlic, minced
- 1 medium carrot, sliced
- 1 handful broccoli, chopped
- 1 handful spinach
- 4 oz. tofu, firm (you may cube or put in a food processor)
- Sea salt and black pepper
- Additional herbs and spices, if desired
- 1 small green salad

Procedure:

Heat oil over med-high heat. Sauté garlic for 1-2 minutes. Add carrots and sauté for 5 minutes. Add broccoli; sauté for another 5 minutes. Add spinach and tofu and sauté until wilted and heated through. Add sea salt and pepper to taste

4 oz. glass of red wine

Drink more water in addition to suggestions during the day.

Day 3:

Approximate Glycemic Index

Upon rising drink 8 oz. water with ¼ lemon, pinched

5

Breakfast:

Bowl of Steel Cut Oatmeal (No sugar or fruit)

55

1 tsp. 100% pure maple syrup (Organic)
8 oz. water with ¼ fresh lemon, pinched
Green Tea

Snack:

1 medium citrus fruit

50

8 oz. water with ¼ fresh lemon, pinched

Lunch: Soup and salad

45

10 servings

- 2 T coconut oil
- 4 garlic cloves, minced
- 2 medium onions, diced
- ½ can tomato paste
- 2 qt vegetable broth
- 2 celery stalks, diced
- 2 medium carrots, diced
- 4 tomatoes, diced
- 2 C broccoli, chopped
- 1 C green beans
- ¼ C basil, fresh
- ¼ C parsley, fresh
- 1 C zucchini
- Additional desired herbs and spices

Procedure:

Heat oil. Add garlic and onion. Add next 10 ingredients, simmer covered for 10 minutes. Stir until all vegetables are al dente, approximately 7 min. Add zucchini; cook 2 minutes. Season with lemon and pepper to taste. Top with avocado, if desired.

8 oz. water with ¼ fresh lemon, pinched

1 cup Green Tea

Snack:

1 Apple and 1 T Nut Butter

Dinner: Fish and Vegetables

4-5 oz. Fish of your choice

2 cups Steamed vegetables of your choice

Seasonings of your choice

4 oz. glass of red wine

Drink more water in addition to suggestions during the day.

DAY 4:

Approximate Glycemic Index

Upon rising drink 8 oz. water with ¼ lemon, pinched

5

Breakfast: Eggs and Sausage

2 large eggs, hard-boiled

1 serving turkey sausage

8 oz. water with ¼ fresh lemon, pinched

5

1 cup Green Tea

Snack:

One piece of fruit of any kind

36-50

8 oz. water with ¼ fresh lemon, pinched

5

Lunch: Pasta with Meat Sauce

½ - 1 cup spaghetti squash, zucchini noodles (you may substitute 2 oz. of rice pasta instead)

0-15

¼ to ½ C Meat Sauce (preferably homemade)

8 oz. water with ¼ fresh lemon, pinched

5

1 cup Green Tea

Snack:

Vegetable snack raw (Carrot sticks and celery)

25

8 oz. water with ¼ fresh lemon, pinched

5

Dinner: Chili With Beans, salad and vegetables

25

2 Servings

- | | | |
|--------------------------------|----------------------------|----------------------------|
| • 1 tsp coconut oil | • 1 tsp cumin, ground | • 8 oz. canned black beans |
| • ½ C onion, chopped | • ½ tsp oregano, dried | • 1 medium tomato, diced |
| • ½ C red bell pepper, chopped | • 2 cloves garlic, minced | • 4 oz. vegetable broth |
| • 1 tsp chili powder | • ½ minced med green chili | • 2 tsp Cilantro, chopped |
| | • 1/8 C water | |

Optional:

½ lb. lean ground beef, sautéed and drained

Procedure:

Heat oil. Sauté pepper and onion for 3 minutes. Add next 5 ingredients and sauté for 5 minutes. Add next 4 ingredients (if using beef add in here). Bring to a boil. Reduce heat and cover; simmer 20 minutes. Stir in cilantro.

Top with avocado if desired and serve.

8 oz. water with ¼ fresh lemon, pinched

5

1 cup Green Tea

Small Green Salad with olive oil and vinegar dressing

Steamed Vegetables

4 oz. glass of red wine

Drink more water in addition to suggestions during the day.

DAY 5:

Approximate Glycemic Index

Upon rising drink 8 oz. water with ¼ lemon, pinched	5
Breakfast:	
1 medium grapefruit	50
8 oz. water with ¼ fresh lemon, pinched	5
1 cup green tea	
Snack:	
1 Apple OR Pear and 1 T Nut Butter OR KIND bar	40
8 oz. water with ¼ fresh lemon, pinched	5
Lunch: Grilled Chicken over Salad	10
<ul style="list-style-type: none"> 2-3 Handfuls <i>Dark Leafy Greens</i> 1-2 C your choice of vegetables 	<ul style="list-style-type: none"> 4 oz. grilled chicken breast Olive oil and vinegar dressing
8 oz. water with ¼ fresh lemon, pinched	5
1 cup Green Tea	
Snack: 1 Apple OR Pear and 1 T Nut Butter OR KIND bar	40
8 oz. water with ¼ fresh lemon, pinched	5
Dinner: Animal protein, Vegetables and Rice	60
4 oz. Fish, Veal or Lean Red Meat	
4 oz. Brown Rice (cooked)	
2 cups steamed vegetables of choice	
8 oz. water with ¼ fresh lemon, pinched	5
1 cup Green Tea	

Drink more water in addition to suggestions during the day.

DAY 6:

Approximate Glycemic Index

Upon rising drink 8 oz. water with ¼ lemon, pinched	5
7-12PM: Eat only fruit one at a time, with about 1 ½ hours between each	
Example:	
8am: Grapefruit	50
10am: Cup of grapes	32
12pm: Apple	38
2 - 8 oz.glasses water with ¼ fresh lemon, pinched sometime during the morning	5
1 cup green tea	
Lunch: Soup (made day 3) and green salad	15
8 oz. water with ¼ fresh lemon, pinched	5
1 cup Green Tea	
Snack:	
Raw vegetables (carrots, radish, broccoli, celery) with hummus	
8 oz. water with ¼ fresh lemon, pinched	5
Dinner: Steamed vegetables and any 4-5 oz. animal protein	
8 oz. water with ¼ fresh lemon, pinched	5
1 cup Green Tea	

DAY 7:

Approximate Glycemic Index

Upon rising drink 8 oz. water with ¼ lemon, pinched	5
Breakfast: Your choice of eggs, steel cut oatmeal or fruit	0-50
8 oz. water with ¼ fresh lemon, pinched	5
1 cup Green Tea	
Snack:	
Apple	32
8 oz. water with ¼ fresh lemon, pinched	5
Lunch: Vegetable (recipe provided), beef or turkey burger (no bun)	15
Salad	
8 oz. water with ¼ fresh lemon, pinched	5
1 cup Green Tea	
Snack:	
Nuts and dried fruit - 4 oz.	55
8 oz. water with ¼ fresh lemon, pinched	5
Dinner: Seafood and Vegetables	
4-6 oz. Crab, Prawn, or Lobster Vegetables	
of choice, steamed or sautéed Salad with	
olive oil and vinegar dressing	
8 oz. water with ¼ fresh lemon, pinched	5
1 cup Green Tea	

Drink more water in addition to suggestions during the day.

Glossary

Avocado Can be found in all grocery stores. These are a rich and best variety for our purpose is the Haas Avocado because it is most are best if bought when still firm and brought home to ripen. T in a paper bag along with an apple or banana. They're ripe squeeze. To open an avocado, just cut it in half lengthwise halves apart, and then pop the seed out with a spoon or after being cut, so serve them right away or sprinkle slow the discoloration. Don't ever freeze, or cook avocados. If you are only using half at a time, keep the pit in the half you are storing and wrap and refrigerate. This helps slow discoloration. It is easier to slice or dice the flesh while still in the skin (without cutting through the skin) and then scoop out with a spoon. Avocados can be sliced or diced in salads, made into guacamole, or blended with lemon or lime juice and sea salt for a creamy salad dressing.



creamy fruit. The readily available. They ipen quickly when put when they yield to a gentle around the seed, twist the two knife. Avocados darken soon them with lemon or lime juice to



Bok Choy Can be found in produce section of supermarkets. Has crunchy stems and crinkled, spinach-like leaves. It's usually stir-fried with other ingredients, but it can also be steamed or sautéed and served as a side dish. Small heads of bok choy are called baby bok choy (right), and they're more tender than the larger variety.

Dark Leafy Greens Found in most local supermarkets Include: Arugula, Green or red leaf lettuce, young dandelion, escarole, kale, watercress, spinach, etc.



Hummus Can be found in Supermarkets or Costco, BJ's etc. (also spelled hommus, hummos, hummous or humus) A dip or spread made from chickpeas, blended with tahini, olive oil, lemon juice, salt and food in various local forms throughout the Middle East.



hamos, houmous, hommos, cooked, mashed garlic. Hummus is a popular

Mesclun Salad Greens Can be found in supermarkets This is a mix of young salad greens. Commercial mixes usually include arugula, mizuna, tat soi, frisee, oakleaf, red chard, radicchio, mustard greens, and spinach.

Rice – different types

Brown: Can be found in supermarkets, in bulk at Wegman's or health grain brown rice isn't milled as much as white, so it retains the bran and brown rice more fiber-rich, nutritious, and chewy. Brown rice also takes cook.



food stores. Medium germ, that makes about twice as long to



Wild: Can be found in supermarkets or in bulk at Wegman's or health food stores. This isn't a rice, but rather a grass seed. Compared to rice, it's richer in protein and other nutrients and has a more distinctive, nutty flavor. Takes 50-60 min. to cook.

Sea salt Can be found in all supermarkets. This salt comes from evaporated contains small amounts of magnesium, calcium, and other minerals. Sea salt saltier flavor compared to table salt. Don't use sea salt for canning or trace minerals may discolor the food. It is a great choice for sauerkraut doesn't have added potassium iodide (table salt) which inhibits the fermentation needed to make sauerkraut.



sea water and has a cleaner, pickling; the because it bacterial

Steel Cut Oats Can be found in supermarkets. Steel cut oats are medium oat groats chopped into smaller pieces. These are the oats that should be used. They take than other varieties.



that have been longer to cook

Sweet Potato Found in all supermarkets - unrefrigerated produce often much confusion between sweet potatoes and yams; the moist-color root vegetable that is often called a "yam" is actually a sweet are attempts to distinguish between the two, such as the mandatory Department of Agriculture that the moist-fleshed, orange-colored sweet labeled as yams also be accompanied by the label "sweet potato," when the term "yam" they usually think of the orange-colored sweet potato as yam, which has a darker skin, white flesh, and is starchier. Nutritionally, an excellent source of vitamin A, and a good source of potassium vitamin copper, pantothenic acid, and folic acid.



section. There is fleshed, orange-potato. While there labeling by the U.S. potatoes that are most people hear opposed to the true sweet potatoes are C, B6, riboflavin,



Tofu Found in refrigerated produce section of most supermarkets tofu is cheap, high in protein, low in fat, and versatile. You can eat it raw or cooked, but it's bland by itself and tastes best if it's allowed to absorb other flavors. There are several varieties of raw tofu, each with different moisture contents. Silken and soft tofu are relatively moist, and best suited for making shakes, dips, and dressings. Regular tofu has some of the moisture drained away, and it's best for scrambling or using like cheese in casseroles. Firm, extra-firm, and pressed tofu's are drier, absorb flavors better and hold their shape in stir-fries.

Additional Recipes

Vegetable Stir-Fry

Ingredients

- 3T Coconut Oil
- ½ tsp ginger, minced
- 2 cloves garlic, minced
- 1-2 medium carrots, sliced
- 1 medium onion, chopped
- 1 cup bok choy, chopped
- 1 cup baby spinach
- 1 cup romaine, shredded
- Sea salt and black pepper
- Sesame oil, if desired

Procedure:

Heat oil over medium heat. Sauté ginger and garlic in pan for one minute. Add carrots and onions; sauté for five minutes. Add greens until bright. Add salt and pepper to taste. Finish with sesame oil, if desired.

Black Bean Burger

Ingredients

- 2 15 oz. can black beans, drained, rinsed, divided
- ½ medium yellow onion, chopped
- 2 T chopped garlic
- 2 T cilantro, chopped
- 2 tsp. parsley, chopped
- 1 egg
- ½ tsp. red pepper flakes
- Salt and fresh ground black pepper
- Toppings – lettuce, tomato, onion

Procedure:

Heat a grill or grill pan over medium-low heat. In a food processor, pulse onion and garlic until finely chopped. Add one can black beans, cilantro, parsley, egg, and red pepper flakes. Pulse to combine.

Transfer mixture to a large mixing bowl; add the remaining can of black beans. Season with salt and pepper, to taste, and mix until well combined. Divide mixture into four patties. Place on hot oiled grill over medium-low heat and cook about six minutes on each until heated through. Top with lettuce, tomato, onion and spicy mustard, if desired.

Southwest Turkey Burger

Ingredients

- 1 ½ pounds ground turkey
- 4 oz. can green chiles, diced, drained
- Salt and pepper (may use cayenne if you like spicy foods)
- Coconut oil
- Romaine Lettuce
- 1 large tomato, sliced
- 1 medium red onion, sliced
- 1 medium avocado, sliced
- ½ cup jalapeños, if desired

Procedure:

In a large mixing bowl, combine ground turkey, green chiles, salt and pepper. Shape into four patties. Heat a large pan on medium heat and melt coconut oil. Add turkey patties to the pan and cook until browned on one side, about four minutes. Flip and reduce heat to low and cover. Cook until juices run pale pink, about four more minutes. Use Romaine lettuce leaves as a bun and add desired toppings.

Roasted Garlic Chickpea Burgers

Ingredients

- ⅓ cup coconut oil, divided
- 1 small onion, finely chopped
- 1 small stalk celery, finely chopped
- 1 T fresh thyme leaves
- Salt and pepper, to taste
- 1 (15-oz) can chickpeas, rinsed and drained
- 1 cup cooked brown rice
- 8 cloves garlic, roasted and peeled
- ¼ cup sesame tahini
- 2 tsp. lemon zest
- ¼ cup finely chopped parsley
- 1 egg

For Serving (optional)

- 2 oz. sprouts
- 1 small cucumber, thinly sliced
- 2 Roma tomatoes, cored and sliced ½" thick
- Spinach
- 1 medium red onion, sliced

Procedure:

Heat 2 T coconut oil in a skillet over medium high heat. Add onions, celery and thyme and cook until soft, about 4 minutes. Transfer to a large bowl and reserve. Wipe skillet clean. Place chickpeas and rice in a food processor, along with garlic, tahini, and lemon zest. Pulse until chickpeas, rice, garlic, tahini and lemon zest until chopped, but not yet a paste, about 8 pulses or 10 seconds. Transfer mixture to the bowl with the onions. Add parsley and egg, season with salt and pepper, and mix well to combine. Divide mixture into six patties. Place on a plate and refrigerate for 20 minutes or until ready to use. Heat 2 T coconut oil in skillet over medium high heat and cook burgers in batches of three, flipping once halfway through until toasted on each side and cooked through, about 2 minutes per side. Repeat with remaining oil and burgers. Top burgers with desired toppings and serve.

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Further reading

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