

2009

CrossFit Strong

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[CROSSFIT NUTRITION GUIDE]

Provide a guide to the development of all athletes for healthy nutrition and give an overview of Zone calculations, reason for the zoning, and our human interaction with food.

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Where are we now?

The Western Diet: For several decades now, bad science and bad politics have joined hands to produce what is arguably the most costly error in the history of science—the low-fat diet. This fad diet has cost millions of people unnecessary death and suffering from heart disease, diabetes, and a host of different cancers and other chronic and debilitating illnesses.

You hear everyone saying oh the western diet will kill you. Eating high intakes of red meat, sugary desserts, high fat and refined grains can't be good. It also typically contains high-fat dairy products, high-sugar drinks, and saturated fats. Eating this way is definitely not a healthy way of life.

The heart risk, spread over five continents, is 30% higher for those who eat a Western diet, the study shows, than for those who adhere to a “prudent diet,” or one rich in fruits and vegetables.”

One Harvard Study – USDA vs. Zone – less chronic disease and less heart disease. As a whole, the US is sicker than anybody else in the world.

Mislead by Government and Bad Science

We can get into a lot of discussion about the USDA and the recommended diet and how the rest of the world followed suit with us and are now facing the same chronic disease problems.

For decades the USDA had encouraged people to eat a diet rich in carbohydrates and poor in fats and proteins. Many experts agree that the USDA Food Pyramid is wrong and has been proven a dangerous and misleading dietary guide, contributing to the generally poor state of American nutrition. The USDA food pyramid has been guided by lobbyists from the meat, dairy and sugar industries which all have underlying reasons for pushing their products to the masses. These industries are driven by profits with little regard to human health and its consequences to society.

Between 1996 and 1998, the total cost to treat condition of obesity was 47 Billion dollars and has continued to rise.

What are we about?

CrossFit's philosophy about the way we should eat was instilled upon us by the Caveman and Dr. Sears. There are 2 main focuses- **What we eat-** the *Paleolithic Diet (Paleo)* and **How we eat-** *The Zone*. It breaks down to this: If you eat organic foods that the cavemen had access to thousands of years ago in correct portions as to ensure hormonal balance, then your body will run more efficiently, you will have more energy and many medical problems prevalent in the typical Western diet will be held at bay.

Paleoic Man Vs. Modern Man

Human DNA has not changed much over the last 100,000 years, yet our eating habits have. In the prehistoric era, the human being ate fruit and meat, a diet rich in proteins and fats, and poor in carbohydrates. As a result of the industrial revolution, food processing, preservatives, antibiotics, coupled with sedentary lives, we are getting sicker and fatter every year. just look at our children.

The 2007 Texas Youth Risk Behavior Survey administered to high school students showed the following:

Obesity

16% of the population was considered obese.

In Texas alone, 32% of its high school students were obese or overweight

Unhealthy Dietary Behaviors

83% ate fruits and vegetables less than five times per day during the 7 days before the survey.

38% drank a can, bottle, or glass of soda or pop (not including diet soda or diet pop) at least one time per day during the 7 days before the survey.

Physical Inactivity

55% did not meet recommended levels of physical activity. (2)

48% did not attend physical education classes. (3)

59% did not attend physical education classes daily. (4)

39% watched television 3 or more hours per day on an average school day.

24% played video or computer games or used a computer for something that was not school work for 3 or more hours per day in an average day.

In the past 30 years, the occurrence of obesity in children has doubled and it is now estimated that one in five children in the US is overweight.

Eat what a caveman would! In a nutshell, Eating Paleo comes down to this:

Eat lean meats and vegetables, nuts and seeds, some fruit, little starch and no sugar. If man has his fingers in it or it has a label, stay away.

What is Food? Fuel, Food or Drug

Typically, we think of food as fuel. We don't eat food as a source of fuel, but more for other emotional, social, convenience reasons without thinking about it. But we still think of food as fuel. We should be thinking of it as a drug. This is because food affects our bodies and hormones the same as if we introduced drugs into our system. We need to take food in the right doses and times. As in the zone, get into a hormonal balance with our body controlling our insulin spikes as a result of high-glycemic carbohydrate intake.

Break It Down

Macro Nutrient – something that is of significant source of calories in a diet.

Protein (7g = 1 block)

Essentially anything that comes from an animal will be considered a protein, you should only eat lean proteins and only consider products from grass fed animals if plausible. For simplicity and our accounting, we will only consider animal meats as sources of protein and should account for 30% of your caloric intake.

Proteins has had a bad rap primarily based on red meats and dairy products that contain excessive amounts of saturated fats, which can be unhealthy. We cannot associate all proteins to these two.

Carbohydrates (9g = 1 block)

Carbohydrates are your body's main source of energy. You couldn't live or work without them. Your body needs a lot of carbohydrates – around 40% of your intake should be from carbohydrates.

Carbohydrates are built up of simple sugars linked together including glucose. Most people say Carbs are sweets and pastas, what about vegetables or fruit? The body requires a continual intake of carbohydrates to feed the brain, which uses glucose (a form of sugar) as its primary energy source.

Fat (1.5g = 1 block)

Good fats are what we are searching for that includes monosaturated. These types can include almonds, avocados, and olives. Fat is a damper on the whole process of converting carbohydrates into glucose, it slows the absorption of this glucose and smoothes the effects of high glycemic carbs.

How our body Reacts?

Any carbohydrate not immediately used by will be stored in the form of glycogen, as long string of glucose molecules. Remember that carbohydrates are converted into glucose. The body has two storage sites for glycogen, the liver and muscles. The glycogen in the muscles are inaccessible to the brain and only glycogen in the liver can be broken down and sent back to the blood stream as glucose.

The liver's capacity to store carbohydrates is limited and depleted in 10 to 12 hours. Our body's total ability to store carbohydrates is quite limited. 300 to 400 grams of carbohydrates in the muscles and 60 to 90 grams in the liver. That is equivalent to 2 cups of pasta or 3 candy bars. This is the total reserve amount to keep the brain working properly.

Excess carbohydrates just have one fate, to be converted into fat and stored in fatty tissue. The big problem is that any meal or snack high in carbohydrates will generate a rapid rise in blood glucose. To adjust to this, the pancreas secretes the hormone insulin into the blood stream. Insulin is created by the pancreas as a storage hormone to lower the blood glucose and put aside excess carbohydrate calories in form of fat in case of future famine.

Too many carbohydrates tell the body to store fat and also not to release any fat already stored in fatty tissue. So we just get fatter and fatter. The key to all of this is the speed at which carbohydrates are entered into the bloodstream which will control the rate of insulin secretion.

(Summary)

Both sugars and starches are broken down by the body into the simple sugar, glucose. Glucose molecules then circulate in the bloodstream, supplying cells with fuel on an as-needed basis. Extra glucose is converted into glycogen, which is stored in muscles and the liver. If the body is already storing enough glycogen, glucose gets changed into fat. Your body prefers to burn glucose or glycogen for energy, but when these reserves are depleted it draws on fat, the reserve fuel. Carbohydrates are an important part of the diet, since your body needs energy to grow, to work, and to repair itself.

The Deadly Quartet

1. Hyperinsulism
2. Hyper Triglycerides
3. Obesity
4. Hypertension (bp)

The cluster of hypertriglyceridemia, hyperinsulinemia, obesity, and hypertension markedly increases the risk of coronary artery disease. Although no treatments target this syndrome specifically, treatment of each aspect of the cluster is important. Prevention- weight loss and physical activity- is key.

What is the cause? Eating too much dietary carbs causes elevated insulin levels. An example would be perfume. When you walk into a perfume store, the smell can be

overwhelming, if you stay for a while, you get accustomed to it and after a while you can't smell it at all. If you then leave the store and come back you can smell it again. When you lose the ability to smell perfume your olfactory receptors perform a down regulation in response to the external variable- in this case, the perfume.

A similar process with insulin can happen within your body. The insulin receptors, which can be found in every cell within your body, have the task of receiving insulin. If we get exposed to too much insulin, over time, we lose the sensitivity to the insulin as it is released into our bodies. The body's ability to combat high blood sugar decreases which leads to storing excess glucose as fats in our body. If we can minimize our exposure to these blood sugar spikes and insulin response releases, then our bodies maintain the ability to regulate it efficiently.

Obesity is one of the biggest generators of silent inflammation (which we will talk about later). Since nearly two-thirds of Americans are now overweight, this means that the epidemic of silent inflammation is also out of control. By the same token, America's diabetes epidemic has grown by 33 percent in the last decade. These diseases are connected with a condition known as insulin resistance which occurs when your cells become less responsive to the actions of insulin, forcing your pancreas to continuously produce more insulin to drive glucose into cells.

Almost all diseases can be traced back to hyperinsulism.

What do we do to not be sick?

Eat meat and vegetables, nuts and seeds, some fruit, little starch and no sugar. Keep intake to levels that will support exercise but not body fat. Practice and train major lifts: Deadlift, clean, squat, presses, C&J, and snatch. Similarly, master the basics of gymnastics: pull-ups, dips, rope climb, push-ups, sit-ups, presses to handstand, pirouettes, flips, splits, and holds. Bike, run, swim, row, etc, hard and fast. Five or six days per week mix these elements in as many combinations and patterns as creativity will allow. Routine is the enemy. Keep workouts short and intense. Regularly learn and play new sports. ~Greg Glassman (CrossFit Founder)

Sugars

Sugar is a drug. You can teach the body to get its glucose from other sources besides refined sugars or high glycemic carbs which is a huge step towards being and staying healthy.

There is a singular measure of carbohydrate called the glycemic index. Glycemic index is simply a measure of a food's propensity to raise blood sugar. Avoid high-glycemic-index foods and you'll avoid many, if not most, of the ills associated with diet.

Excessive consumption of high-glycemic carbohydrates is the primary culprit in nutritionally caused health problems. High glycemic carbohydrates are those that raise blood sugar too rapidly. They include rice, bread, candy, potato, sweets, sodas, and most processed carbohydrates. Processing can include bleaching, baking, grinding, and

refining. Processing of carbohydrates greatly increases their glycemic index, a measure of their propensity to elevate blood sugar

Affects of different Carbohydrates in our Bloodstream

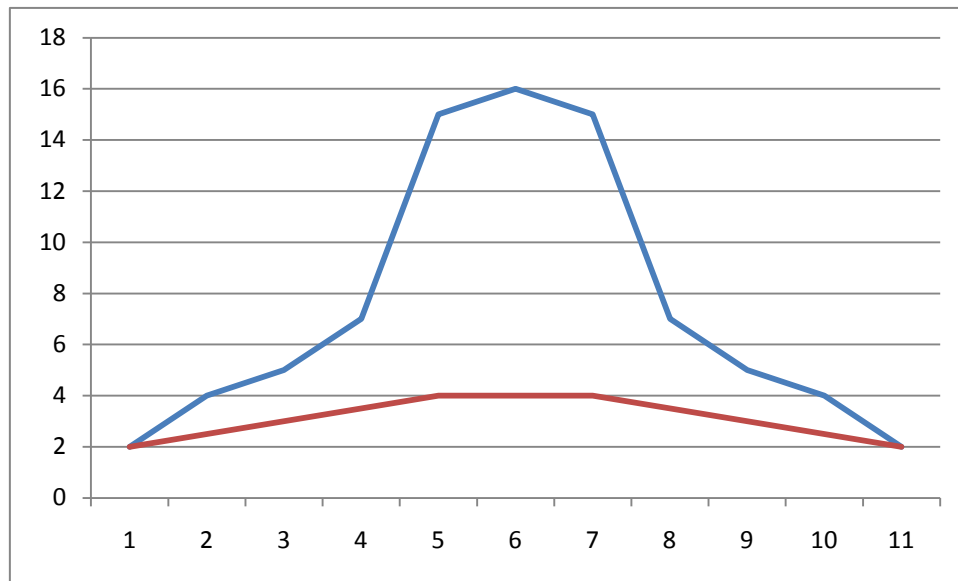


Table: (Representation) Blue Line 100 Calories of White Bread; Red Line 100 Calories of Broccoli. Notice that are blood sugar levels spike greatly with different types of Carbs and insulin levels would spike respectively.

High threshold values of glucose and insulin have a negative effect on the walls of the blood vessels leading to vascular disease. We can avoid this with low glycemic index foods.

Glucagon – is an important hormone involved in carbohydrate metabolism. It is released by the pancreas in response to low glucose levels. It has the opposite effect of insulin which instructs the body's cells to take in glucose from the blood. It is also release into the body when we eat protein. So if we eat protein with are carbs, glucagon also stimulates the release of insulin, which helps reduce the toxic effects of the high sugar peaks.

Another study shows that kids eating high carb, low protein and fat breakfast such as bowls of cereal get hungry faster, snack more often and ingest more calories through the course of the day.

Just eating Carbohydrates causes your glucose to go up and down. A symptom of low glucose is hunger. When we are hungry, we want to eat again to satiate the appetite, giving us a pattern of blood sugar spiking. By choosing to eat Paleo in Zoned proportions, we are looking to balance our meals throughout the day in order to control those levels of blood sugar spiking and insulin response.

Quality Vs. Quantity

Quality – We tie this to the Paleo Diet and eating quality foods in any amounts. If a caveman could eat it, we eat it. You can do this by remembering these points.

1. Shop on the outside areas of the supermarket
2. If man has his fingers in it, then probably not good
3. Your food should be perishable
4. If it comes from a window, then avoid it!

The concern with just eating quality foods in any amount is eating too many calories throughout the day- it will turn to fat. We are looking at roughly 500 calories per meal. So an elite level athlete would need 3000 calories per day eating in 5 to 6 meals. Remember: Calories in = Calories out. Too much you gain weight; too little, you lose weight.

Quantity – The Zone Diet approach use the quantity and quality for your diet. We want to eat enough high quality calories per day to feed our lean body mass and not the excess fat that may be accumulated. Most importantly, we want to ensure a timely introduction of glucose into the body.

How to Get Started

Nice and easy - Go Paleo: Eliminate all refined foods from your diet. Base your diet on garden vegetables, especially greens, lean meats, nuts and seeds, little starch, and no sugar. Skip bread, rice, potatoes and other carb-heavy foods. Don't eat anything that originated in a factory. If a cave man wouldn't have had access to it, don't eat it.

Challenge Me - Dialed-In Paleo: Calculate your Zone prescription, and try to get your Paleo diet to conform to Zone proportions as much as possible. Strict weighing and measuring isn't necessary -- just become more aware of portion sizes and the approximate number carb/protein/fat blocks you're consuming. NO DAIRY.

I am Hard Core - Paleo+Zone: Go 100% Paleo using correct Zone proportions. Calculate your Zone prescription and weigh and measure everything to make sure you're in the Zone for the entire challenge. This is by far the most difficult diet program to implement. Even the most zealous dieter will find it challenging to stick with this -- so make sure you're serious before you commit!

What is right for you?

You will not make any progress to wellness or fitness if you don't make these adjustments in nutrition. Eating the western diet has the body looking for quick energy. Some might call it Carb Loading. It works, it gives you quick energy, but processed sugars were not available in Paleolithic times. Our bodies are genetically programmed to process carbs, proteins and fats to get the energy we need. Anything else, will put us into the 'fat storage' mode.

Zone Calculate

Definitions:

LBMI – Lean Body Mass

Activity Level Factor --

Block Calc: (1 block = 1 carb, 1 protein & 1 fat)

LBMI (147*.72) = 105

105x*.6= 63

63/7 = 9 blocks per day.

So this means

1 block = 9g Carb, 7g Protein, 1.5g Fat

9g Carb = ½ Apple, 2 cups of broccoli

7g Protein = 1 ounce of chicken or beef, 1.5 ounce of fish, 1 egg

1.5g Fat = 3 almonds, 1/3 teaspoon of olive oil

So that means you need

To eat 9 blocks in one day. Total

81g Carbs

63g Protein

13.5g Fat

So if you look at your current intake:

You can break it up as follows:

Breakfast Lunch Snack Dinner Snack Total daily blocks Body type

2 2 2 1 2(blocks) 9(total blocks/day) for a Small female

Breakfast: 6:30 am Blocks = 2

Snack: 10 am Blocks = 2

Lunch: 12:00pm Blocks = 2

Snack: 3pm Blocks = 1

Dinner: 7pm Blocks = 2

Variations

As we discuss variations, each of our body types and metabolism rates are different.

Some of us can eat and eat sugars and still not put on fat, but doesn't mean it is not having a drastic effect on our internal organs through insulin spiking. It just means I am burning through those calories faster than some with a lower metabolic rate.

Depending on your need, we can adjust your intake of blocks to accomplish your goals. For elite athletes, we can also dial in our diet as per our needs for our athletic activity.

Fish Oils

Inflammation is the body ways to tell us something is wrong and it usually hurts. There is another kind; Silent inflammation is a condition that occurs when the body's natural immune response goes down and can lead to a continual attack on the heart, brain and immune system. Obesity is one the biggest generators of silent inflammation. Signs of chronic inflammation include being fatigued, being groggy when waking up, brittle fingernails, cravings for carbohydrates, being overweight, needing drugs for lowering cholesterol and needing hypertensive drugs like diuretics or beta-blockers.

The moment one of these invaders slips into our bloodstream; inflammation coordinates an all-out attack that destroys the enemy and any tissue it may have infected.

Inflammation is also the way the body responds to trauma and injury in order to repair itself. Once the healing process begins, inflammation immediately vanishes and the body resumes its normal functioning. Without inflammation, we would be sitting ducks for opportunistic organisms and injuries to our bodies that would never heal.

Sometimes, however, the inflammatory process doesn't shut down when it's supposed to. Inflammation becomes chronic rather than transitory, but now it maintains itself below our ability to perceive it as pain. Chronic silent inflammation is dangerous. This constant generation of silent inflammation may be due to a genetic predisposition or a lifestyle factor like obesity, poor diet, or smoking. Whatever the cause, an increased level of silent inflammation becomes a long-term war that decimates healthy blood vessels, tissues, and cells and sets the state for chronic illness.

Silent inflammation harms the body in a number of ways. Studies have found that it destabilizes cholesterol deposits on coronary arteries. It also attacks nerve cells in the brains and triggers rapid cell division.

How do we combat it? Take your fish oil and a lot of it. The Omega 3 fatty acids found in fish oils has profound anti inflammatory affect. Primarily it reduces/dilutes out any excess toxic fat in the body. Oddly enough, accumulation of excess body fat is your body's initial attempt at protecting you, by encapsulating or trapping the toxic fat in your fat cells. The problem is that the toxic fat doesn't stay trapped forever and starts to spill into the blood stream.

The epidemic of inflammation driven by increasing levels of toxic fat in the blood is a result of the American diet over the past 20 years: increased consumption of refined carbohydrates and vegetable oil along with the decreased consumption of healthy Omega-3 fish oil.

Consume ultra-refined EPA/DHA concentrate (super fish oil) as you can. His scale of recommended dosage refers solely to pharmaceutical grade oil and starts with a maintenance dose of 2.5 grams for healthy people, which is 4 capsules of ultra refined pharmaceutical grade oil - equivalent to 8 capsules of health grade oil. And he

recommends more and more depending on the severity of the condition being fought - up to 25 grams per day₁ for serious neurological diseases. CONSULT YOUR DR.

Fish oil -- <http://www.nordicprodirect.com/patie...docid=crossfit>

More on Silent information:

<http://www.zonediet.com/RESOURCES/SilentInflammation/tabid/107/Default.aspx>

Harvard Study – Two groups of pigs. Both on bad diets, but one had lots of fish oil. Both Groups of pigs dies. The first group of pig’s heart looked horrible and the other with fish oil was clean and no buildup.

CrossFitStrong.com

Resources

GI – <http://library.crossfit.com/free/pdf/GlycemicNov02.pdf>

CF -- <http://www.crossfit.com/cf-info/start-diet.html>

CFJ Recipes -- <http://journal.crossfit.com/2004/05/zone-meal-plans-crossfit-journ.tpl>

Recipes -- <http://www.paleoplan.com/>

"Good" Foods Low-Gylcemic

Almonds	Grapes	Pork
Apple	Ground Turkey	Protein Powder
Asparagus	Ham	Salmon
Avocado	Hot Dogs	Salsa
Beef	Kidney Beans	Sauerkraut
Black Beans	Lamb	Shrimp
Blueberries	Lettuce	Soy Beans
Broccoli	Macadamia Nuts	Soy Burgers
Brussels Sprouts	Mayonnaise	Soy Milk
Canned Chicken	Milk	Soy Sausage
Canned Tuna	Mushrooms	Spinach
Cantaloupe	Oatmeal	Spirulina
Carrots	Oil	Strawberries
Cheese	Olives	Swordfish
Chicken	Onion	Tahini
Chickpeas	Orange	Tempeh
Cottage Cheese	Peach	Tofu
Cucumber	Peanut Butter	Tomato
Deli Meat	Peanuts	Tomato Sauce
Dill Pickles	Pear	Tuna Steak
Egg Substitute	Pineapple	Turkey
Eggplant	Plain Yogurt	Turkey Sausage
Eggs	Plum	Water
		Zucchini

"Bad" Foods High-Gylcemic

Acorn Squash	Doughnut	Parsnips
Bagel	English Muffin	Peas
Baked Beans	Fig	Pinto Beans
Banana	French Fries	Popcorn
BBQ Sauce	Fruit Juice	Potato
Beets	Granola	Potato Chips
Biscuit	Grits	Pretzels
Black-eyed Peas	Guava	Prunes

Bread	Honey	Raisins
Bread Crumbs	Hubbard Squash	Refried Beans
Bulgur	Ice Cream	Rice
Butternut Squash	Instant Oatmeal	Rolls
Cereal	Jelly	Saltine Crackers
Chocolate	Ketchup	Steak Sauce
Cocktail Sauce	Lima Beans	Sugar
Cooked Carrots	Mango	Sweet Potato
Corn	Maple Syrup	Sweet Relish
Corn Chips	Melba Toast	Taco Shell
Cornstarch	Molasses	Teriyaki Sauce
Cranberries	Muffin	Tortilla
Croissant	Noodles	Turnip
Croutons	Pancake	Udon Noodles
Dates	Papaya	Vegetable Juice
		Waffle

You may notice that the “good” foods are typically meats, vegetables, fruits, nuts, and seeds, whereas the bad foods include many manmade or processed foodstuffs. There are some notable exceptions, but the trend is certainly instructive. High-glycemic, or “bad foods,” are typically starchy, sweet, or processed foods such as bread, pasta, rice, potato, grains, and desserts.

