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Metabolic Typing

Excerpt from *Winning By Losing* Jillian Michaels

You may be thinking that as long as you stay within your caloric range for the week, you can eat whatever you want. Although it's true that at a basic level weight loss is simple math, there is more to losing weight and getting healthy than just numbers. As you restrict your caloric intake, it is absolutely essential that you eat the right kinds of food to build muscle, strengthen your immune system, and stay energized throughout the process. Sounds simple, right? It would be, except that the way to do this is different for everyone.

DETERMINING YOUR METABOLIC TYPE

For many years nutritional science has taken a generic, overly standardized approach to health and weight loss. This is why there is no one diet that works for everyone. There was all that hype about the Atkins diet, but Kelly, one of my contestants on *The Biggest Loser*, lost just one pound in a month of sticking to Atkins. Because I know that we are all different and need to diet according to our specific body's characteristics, I was able to coach her to lose fifty-five pounds in three months. We were working together on the show, and she lost thirty-five more after that.

Why? Inherited genetics make each one of us unique, from the color of our hair right down to the way our organs function. This uniqueness extends to the way our cells convert nutrients into energy. In order to know how to get the most nutritional bang for your calorie buck, you need to understand your unique metabolic type. Once you do, you can begin to custom design your new dietary lifestyle around the foods that will help you achieve and maintain your ideal weight while also optimizing your physical energy, strength, and mental clarity.

Metabolic typing is really just fancy talk for figuring out how your body processes what you eat—more specifically, how your body deals with the three basic macronutrients in food: carbohydrates, proteins, and fats. Imagine that you are a furnace: your body takes the food you eat and burns it with oxygen to convert its caloric content into energy. This process is known as oxidation, and it's how the carb content in your food gets turned into glucose and released into the blood. When glucose is released into the blood, the pancreas is cued to release insulin to “clean” your blood of any sugar that is not being used by the body as energy and carry it to your cells, where it gets stored as fat. The fact that we all oxidize the nutrients in our food in different ways is the reason why a particular diet will work for one person and not for another. If you know more about how the nutrients in your food act on your system, you can avoid a lot of unnecessary pitfalls and really maximize your results as you continue on your journey toward total health.

Although rates can vary a lot from one person to the next, most people can be classified according to three basic groups:

1. Fast oxidizers
2. Slow oxidizers
3. Balanced oxidizers

Fast oxidizers burn through the nutrients in their food very rapidly, with the consequence that the carb content is broken down to glucose and released into the blood almost at once. This sudden increase in blood sugar triggers a rapid release of large amounts of insulin to clean away excess sugar, which is stored as fat in your cells. The more carb content in your food, the more energy will be available to your body right away, and the greater the chance that it will not be needed and get stored as fat. Insulin is a quick and effective blood-cleaner, and the dramatic leaps and falls in blood sugar levels that result from fast oxidation lead to the sugar crash effect. For a fast oxidizer, foods with high carb ratios cause fatigue and carb cravings as well as promote fat storage.

Fast oxidizers should eat foods with more proteins and fats in order to slow down their rate of oxidation and insulin release, and to better promote stable blood sugar and sustained energy levels. Slow oxidizers burn through the nutrients in their food slowly and do not release the glucose from carbohydrates into the blood quickly enough, which means that they do not get converted into glucose, and energy production and availability are delayed. A slow oxidizer should eat foods with higher ratios of carbs, since protein and fat slow the rate of oxidation and energy production even further. Balanced oxidizers fall right in between the two. They require foods that have equal quantities of protein, fat, and carbs in order to optimally process, produce, and use the energy from their food.

Now that we have defined the different metabolic types, you're probably wondering how you're supposed to know what's happening in your blood every time you have a snack. Don't worry—there's a test, and you can take it right now, *and* all you need is a pencil and paper. The test is made up of a series of detailed questions that bear on everything from the foods you crave to the dryness of your skin. These questions cover such a wide range of physical attributes because scientists now believe that metabolic type, i.e., the way in which your body processes nutrients, is wired right into a part of your central nervous system that controls a host of other functions within your body. Consequently, if you take a closer look at some of the peripheral functions in your own body, they will shed light on your particular oxidative type and help you pinpoint your specific nutritional needs.

OXIDIZER TEST

For each of these questions, circle the response that best applies to you. You may not know the answer right off the bat—it may take a couple of days if you have to see a pattern, but really think about these questions and analyze how different foods affect your body and your moods. The better you know yourself, the greater your odds of achieving exactly the results you want.

In the morning, you

- A. Don't eat breakfast.
- B. Have something light like fruit, toast, or cereal.
- C. Have something heavy like eggs, bacon or steak, and hash browns.

At a buffet, the foods you choose are

- A. Light meats like fish and chicken, vegetables and salad, a sampling of different desserts.
- B. A mixture of A and C.
- C. Heavy, fatty foods like steak, ribs, pork chops, cheeses, and cream sauces.

Your appetite at lunch is

- A. Low.
- B. Normal.
- C. Strong.

Your appetite at dinner is

- A. Low.
- B. Normal.
- C. Strong.

Caffeine makes you feel

- A. Great—it helps you focus.
- B. Neutral—you can take it or leave it.
- C. Jittery or nauseous.

The types of foods you crave are (sugar is not listed because everyone craves sugar when they are tired or run-down)

- A. Fruits, bread, and crackers.
- B. Both A and C.
- C. Salty foods, cheeses, and meats.

For dinner you prefer

- A. Chicken or fish, salad, and rice.
- B. No preference—choice varies daily.
- C. Heavier, fatty foods like pastas, steak, and potatoes.

After dinner you

- A. Need to have something sweet.
- B. Could take dessert or leave it.
- C. Don't care for sweets and would rather have something salty like popcorn.

The types of sweets you like are

- A. Sugary candies.
- B. No preference.
- C. Ice cream or cheesecake.

Eating fatty foods like meat and cheese before bed

- A. Interferes with your sleep.
- B. Doesn't bother you.
- C. Improves your sleep.

Eating carbs like breads and crackers before your bed

- A. Interferes with your sleep, but they're better than heavier foods.
- B. Doesn't affect you.
- C. Is better than nothing, but you sleep better with heavier foods.

Eating sweets before bed

- A. Doesn't keep you from sleeping at all.
- B. Sometimes makes you feel restless in bed.
- C. Keeps you up all night.

Each day, you eat

- A. Two or three meals with no snacks.
- B. Three meals with maybe one light snack.
- C. Three meals and a lot of snacks.

Your attitude toward food is

- A. You often forget to eat.
- B. You enjoy food and rarely miss a meal.
- C. You love food and it's a central part of your life.

When you skip meals, you feel

- A. Fine.
- B. You don't function at your best, but it doesn't really bother you.
- C. Shaky, irritable, weak, and tired.

Your attitude toward fatty foods is

- A. You don't like them.
- B. You like them occasionally.
- C. You crave them regularly.

When you eat fruit salad for breakfast or lunch, you feel

- A. Satisfied.
- B. Okay, but you usually need a snack in between meals.
- C. Unsatisfied and still hungry.

What kind of food drains your energy?

- A. Fatty foods.
- B. No food affects you this way.
- C. Fruit, candy, or confections, which give you a quick boost, then an energy crash.

Your food portions are

- A. Small—less than average.
- B. Average—not more or less than other people.
- C. Large—usually more than most people.

How do you feel about potatoes?

- A. You don't care for them.
- B. You could take them or leave them.
- C. You love them.

Red meat makes you feel

- A. Tired.
- B. No particular feeling one way or the other.
- C. Strong.

A salad for lunch makes you feel

- A. Energized and healthy.
- B. Fine, but it isn't the best type of food for you.
- C. Sleepy.

How do you feel about salt?

- A. Foods often taste too salty.
- B. You don't notice one way or the other.
- C. You crave salt and salt your food regularly.

How do you feel about snacks?

- A. You don't really snack, but you like something sweet if you do.
- B. You can snack on anything.
- C. You need snacks but prefer meats, cheeses, eggs, or nuts.

How do you feel about sour foods like pickles, lemon juice, or vinegar?

- A. You don't like them.
- B. They don't bother you one way or the other.
- C. You like them.

How do you feel about sweets?

- A. Sweets alone can satisfy your appetite.
- B. They don't bother you but don't totally satisfy you.
- C. You don't feel satisfied and often crave more sweets.

When you just eat meat (bacon, sausage, ham) for breakfast, you feel

- A. Sleepy, lethargic, or irritable.
- B. It varies day to day.
- C. Full until lunch.

When you eat heavy or fatty foods, you feel

- A. Irritable.
- B. Neutral—they don't affect you.
- C. Satisfied.

When you feel anxious

- A. Fruits or vegetables calm you down.
- B. Eating anything calms you down.
- C. Fatty foods calm you down.

You concentrate best when you eat

- A. Fruits and grains.
- B. Nothing in particular.
- C. Meat and fatty food.

You feel more depressed when you eat

- A. Fatty or heavy foods.
- B. Nothing in particular.
- C. Fruits, breads, or sweets.

You notice you gain weight when you eat

- A. Fatty foods.
- B. No particular food. You gain weight when you overeat.
- C. Fruits or carbs.

What type of insomnia, if any, applies to you?

- A. You rarely get insomnia from hunger.
- B. You rarely get insomnia, but if you do, you often need to eat something in order to fall back asleep.
- C. You often wake up during the night and need to eat. If you eat right before bed, it alleviates the insomnia.

Your personality type is

- A. Aloof, withdrawn, or introverted.
- B. Neither introverted nor extroverted.
- C. Extroverted.

Your mental and physical stamina are better when you eat

- A. Light proteins like egg whites, chicken, or fish and fruits.
- B. Any wholesome food.
- C. Fatty foods.

Your climate preference is

- A. Warm or hot weather.
- B. Doesn't matter.
- C. Cold weather.

You have problems with coughing or chest pressure.
If yes, "C"; if no, move on to the next question.

You have a tendency to get cracked skin or dandruff
If yes, "C"; if no, move on to the next question.

You have a tendency to get light-headed or dizzy
If yes, "C"; if no, move on to the next question.

Your eyes tend to be

- A. Dry.
- B. Fine.
- C. Teary.

Your facial coloring is

- A. Noticeably pale.
- B. Average.
- C. Pink or often flushed.

Your fingernails are

- A. Thick.
- B. Average.
- C. Thin.

Your gag reflex is

- A. Insensitive.
- B. Normal.
- C. Sensitive.

You get goose bumps

- A. Often.
- B. Occasionally.
- C. Very rarely.

You are prone to

- A. Constipation.
- B. No stomach problems.
- C. Diarrhea.

When insects bite you, your reaction is

- A. Mild.
- B. Average.
- C. Strong.

Your body type is

- A. Short and stocky.
- B. Average.
- C. Tall and thin.

Your nose is

- A. Dry.
- B. Normal.
- C. Runny.

SCORING YOUR METABOLIC TYPING TEST

When you have finished the test, add up the number of A answers, B answers, and C answers you have circled.

A_____ B_____ C_____

If your number of C answers is 5 or more higher than your number of A or B answers, you are a fast oxidizer.

If your number of A answers is 5 or more higher than your number of B or C answers, you are a slow oxidizer.

If your number of B answers is 5 or more higher than your number of A or C answers, *or* if neither A, B, nor C's are 5 or more higher than the other two, you are a balanced oxidizer.

If you've answered this questionnaire and you are still not clear which category is the right one for you, there are two other tests you can take to help clarify your metabolic type. These tests are a little drastic and provocative, and they are only intended for those who truly cannot type themselves using the questionnaire.

Niacin test: Take 50 milligrams of niacin on an empty stomach. If you experience an immediate flush, you are most likely a fast oxidizer. If you experience a moderate flushing effect, you are a balanced oxidizer. If you experience a significantly delayed flushing or nothing at all, you are a slow oxidizer.

Vitamin C test: Take 8 grams of vitamin C in equally divided doses over 8 hours. The fast oxidizer will respond by feeling acidic and uncomfortable, and may even experience other symptoms such as diarrhea, nausea, or increased intestinal gas. A true balanced oxidizer may find that his or her stomach feels less acidic. A slow oxidizer will have no response at all.

I'm assuming you have now identified yourself somewhere along the fast-slow continuum. Now it's time to get to know more about your type. Read whichever section applies to you to learn the particular foods and eating habits that are right for your type. If you're good to your metabolism, it'll return the favor by working to help you maintain weight loss and good health.

FAST OXIDIZERS

Fast oxidizers

You require foods with higher percentages of protein and fat than carbohydrates. Make sure there is protein in everything you eat including snacks. Your ideal macronutrient ratio is 20 percent carbs, 50 percent protein, 30 percent fat.

Proteins

All proteins are not created equal. The ones that are best for you are high-purine proteins, which are commonly found in fattier meats. This is not to say that you should cut out chicken or fish, but you need the heavier proteins most because they help slow down your rate of oxidation. Choose from this list of proteins when deciding on a meal or snack.

High Purine: organ meats (pâté, liver, etc.), herring, mussels, sardines, anchovies

Moderate Purine: beef, bacon, dark meat chicken, duck, lamb, spareribs, dark meat turkey, veal, wild game, salmon, shellfish (lobster, shrimp, crab), oysters, scallops, octopus, squid, dark tuna

Low Purine: cottage cheese, milk, yogurt, eggs, cheese, white meat chicken, turkey, fish

Carbohydrates

Your metabolism thrives when your carb intake is limited, but there are different kinds of carbs. Some aren't as bad as others. Avoid simple carbs, which convert to sugar quickly in the bloodstream. The carbs you can incorporate into your diet are the complex kind found mostly in nonstarchy vegetables. You can choose from these ideal carbs when deciding on a meal or snack.

Low-Starch vegetables: asparagus, cauliflower, celery, mushrooms, spinach

Fruits: avocado, olives, apples and pears (in limited quantity and never without protein on the side)

Grains: sprouted grain bread only (Ezekiel bread is a well-known brand that is available at supermarkets and health-food stores)

Legumes, tempeh, tofu

Fats

To best support your metabolism, you should be getting roughly 30 percent of your daily caloric intake from natural oils and fats. Choose these ideal fats when deciding on meal or snack preparation.

Nuts/Seeds (listed in order of protein content): walnuts, pumpkin seeds, peanuts, sunflower seeds, sesame seeds, almonds, cashews, Brazil nuts, filberts, pecans, chestnuts, pistachios, coconut, macadamias

Fat/Oils: butter, cream, almond oil, peanut oil, coconut oil, sesame oil, flaxseed oil, sunflower oil, walnut oil

Along with knowing the foods that are ideal for you, it is important to know the foods that are worst for you. You don't always have to eat off the ideal foods list, but the following foods will sabotage your weight-loss efforts.

1. Don't ever eat a meal that is predominantly carbohydrates.
2. Don't drink alcohol. It causes an increase in blood sugar and fat storage, and it will lead to a sugar crash as well as an increased appetite for carbs. If you choose to have a drink, avoid sugary cocktails, beer, and wine. Stick to clear alcohols like vodka or rum with calorie-free mixers like diet or club soda, and you can always just do what I do and drink it all straight.
3. Don't eat carbohydrates that are high on the glycemic load index. The next chapter will tell you everything you need to know about the GLI. For now all you need to know is to stay away from high-GLI foods. It is important for all metabolic types to watch their high-GLI intake, but it is especially crucial for you. If you should happen to eat high-GLI foods, make sure to combine them with a protein in order to slow down the production and release of blood sugar.
4. Don't drink too much caffeine. It is true that caffeine can be used as a fat burner and a performance enhancer when exercising. This is only effective, however, when the caffeine is taken in pill form in conjunction with aspirin. In the forms of coffee, tea, and soda, caffeine gives you short-term energy but does so by getting your adrenal glands to dump adrenaline into your blood like it's going out of style. As a result, when the caffeine leaves your system, your adrenal glands will be depleted for a while, which leaves you feeling weak and tired from substandard blood-adrenaline levels. Caffeine also speeds the rate of oxidation, which is the exact opposite of what you want your nutrients to do. Avoid caffeinated beverages whenever possible and keep your overall caffeine consumption to a minimum.
5. Don't overcook your meat. Avoid overcooked animal products, since heat destroys essential amino acids and valuable enzymes.

You will have less physical ailments and feel energized if you eat the foods that contain the ideal macronutrient ratios for your metabolic type. However, these foods are all very high in calories. You must remember to keep within your caloric allowance in order to lose weight.

SLOW OXIDIZERS

In order to best serve your metabolism and feel energized both physically and mentally, you require foods with a higher percentage of carbohydrates. Your ideal macronutrient ratio is 60 percent carbs, 25 percent protein, and 15 percent fat.

Proteins

The best proteins for slow oxidizers are low-purine proteins, which are found in leaner meats. It's not that you can never have steak again, but high-purine, high-fat proteins slow down the rate at which you convert nutrients into energy, which is what you're already doing too slowly, so the less the better. In general, you want to stick to this list.

Low Purine white meat chicken, turkey breast, lean pork, catfish, cod, flounder, perch, sole, trout, white meat tuna, swordfish, low-fat cheese, low-fat cottage cheese, skim milk, low-fat yogurt, egg whites

Carbohydrates

Although your metabolic type is better than the others at processing carbs, you still have to pick and choose carefully. You want to avoid simple carbs, which convert into sugar very quickly in the bloodstream, and choose complex carbs instead. Follow this list of ideal carbohydrates when deciding on a meal or snack.

Vegetables—Low Starch

asparagus, cauliflower, celery, mushrooms, spinach, broccoli, brussels sprouts, cabbage, collard greens, cucumbers, garlic, kale, leafy greens, onions, peppers, scallions, sprouts, tomatoes, watercress

Vegetables—Moderate Starch

beets, eggplant, jicama, okra, yellow squash, zucchini

Fruits apples, berries, cherries, citrus fruits, peaches, pears, apricots, plums, tropical fruits, olives

Grains barley, brown rice, buckwheat, corn, couscous, kasha, millet, oat, quinoa, rye, spelt

Legumes tempeh, tofu (eat sparingly as they are high in purines) beans, peas (should be eaten fresh, never dried)

Fats

You should be on a low-fat diet to keep your metabolism working smoothly. This does not mean no fat—fat is still an essential part of any healthy diet. You should allow 15 percent of your caloric intake to come from fat. You can go over that percentage if you like, but eating foods that are too high in fat content can make you feel lethargic, anxious, and irritable. Choose from

this list of fats when cooking a meal or having a snack.

Nuts/Seeds raw and unsalted only—be very sparing

Fats/Oils vegetable or nut oils such as almond, coconut, flaxseed, olive, peanut, sunflower, walnut

It's not enough to know the foods that are ideal for you—you also have to learn which foods are worst for you. If you find yourself straying from the list of suggestions, remind yourself of these guidelines.

1. Don't eat foods that are fatty or that contain high-purine proteins, such as organ meats and fish such as herring and sardines. Limit your intake of fats and oils, as they will slow down your ability to convert food into energy even further. Avoid red meat or dark white meats, and stay away from high-fat dairy, nut butters, and avocados.
2. Don't drink alcohol. This is less of a concern for you than for fast oxidizers, but at the end of the day alcohol still increases your blood sugar and inhibits fat metabolism.
3. Don't drink too much caffeine. This too is less of a concern for you than it is for fast oxidizers, but caffeine gives you energy by acting on your adrenal glands, causing them to over-produce and flood your system with adrenaline. When the caffeine's effect has worn off, your adrenals are exhausted and you are left with lower-than-normal levels of adrenaline in your system, which makes you feel tired and sluggish.
4. Don't exceed one serving per meal of simple or starchy carbs like potato, pasta, or rice, and always eat them with a lean protein to help stabilize your blood sugar.

Remember to consume your ideal foods in accordance with your caloric allowance; otherwise, you will not lose weight.

BALANCED OXIDIZERS

If you are a balanced oxidizer, your diet is the easiest to follow, since you require an equal percentage of carbs, fats, and proteins. You feel at your best on a diet that incorporates a wide range of foods. Your ideal macronutrient ratio is 40 percent carbs, 30 percent protein, and 30 percent fat.

Proteins

You operate best when you are getting 30 percent of your total calories from protein. Be careful to mix the kinds of protein you eat so that you consume high-fat and high-purine proteins with

low-fat and low-purine proteins. Choose from this list of proteins when deciding on a meal or snack.

High Purine organ meats (pâté, liver, etc.), herring, mussels, sardines, anchovies

Moderate Purine beef, bacon, dark meat chicken, duck, lamb, spareribs, dark meat turkey, veal, wild game, salmon, shellfish (lobster, shrimp, crab), oysters, scallops, octopus, squid, dark tuna, eggs, regular-fat cheeses

Low Purine

white meat chicken, turkey breast, lean pork, catfish, cod, flounder, perch, sole, trout, white tuna, swordfish, low-fat cheese, low-fat cottage cheese, skim milk, low-fat yogurt, egg whites

Carbohydrates

With regard to carbs, the real significant difference between balanced, fast, and slow oxidizers is not the types of carbs allowed but the quantity. You should get 40 percent of your nutrients from carbs, but like everyone you should avoid simple carbs and foods that are rated high on the glycemic load index, which we get into in the next chapter. Refined sugars like those found in cookies, sweets, and soda and processed grains like white bread or white rice should be shunned whenever possible, especially on a weight-loss regimen. You do best with a mix of fruits and vegetables from both the fast and slow oxidizers' carb lists.

Vegetables—Low Starch

asparagus, cauliflower, celery, mushrooms, spinach, broccoli, brussels sprouts, cabbage, collard greens, cucumbers, garlic, kale, leafy greens, onions, peppers, scallions, sprouts, tomatoes, watercress

Vegetables—Moderate Starch beets, eggplant, jicama, okra, yellow squash, zucchini

Fruits apples, berries, cherries, citrus fruits, peaches, pears, apricots, plums, tropical fruits
Grains barley, brown rice, buckwheat, corn, couscous, kasha, millet, oat, quinoa, rice, rye, spelt

Legumes/Lentils (all fresh, nothing dried)
tempeh, tofu, beans, peas

Fats

In order to best support your metabolism, you need to be getting roughly 30 percent of your calories from natural oils and fats. Don't eat excessive amounts of fat, but don't specifically restrict your fat intake. You can choose from fats on both the fast and slow oxidizers' lists of permissible fats.

Nuts/Seeds (listed in order of protein content)

walnuts, pumpkin seeds, peanuts, sunflower seeds, sesame seeds, almonds, cashews, Brazil nuts, filberts, pecans, chestnuts, pistachios, coconut, macadamias

Fats/Oils butter, cream, almond oil, peanut oil, coconut oil, sesame oil, flaxseed oil, sunflower oil, walnut oil

Eat the foods that are ideal for you. Also remember these guidelines of what not to do.

1. Don't eat meals made up of just one macronutrient. Make sure you adhere to your ideal ratio of 40 percent carbs, 30 percent protein, and 30 percent fat.
2. Don't drink alcohol. It depletes glycogen storage in the liver, which causes an increase in blood sugar and fat storage. In addition, you will most likely experience a sugar crash, which leads to a heightened ap-petite for carbs and the nutrients you need to metabolize them. If you do have a drink, choose wisely and avoid sugary cocktails, beer, and wine. Opt instead for clear alcohols such as vodka or rum with calorie-free mixers, like club soda diet, light fruit juices or diet Snapple. And there's always straight or on the rocks as well.
3. Don't eat foods that are high on the glycemic load index. (Again, see the next chapter for a full understanding of glycemic load.) If you should happen to eat high-GLI foods, make sure you accompany them with protein in order to show down the rate of oxidation and stabilize blood sugar and energy levels.
4. Don't drink too much caffeine. Caffeine is only effective as a fat burner or performance enhancer when taken in pill form and combined with aspirin. In the forms of coffee, tea, or soda, caffeine gives you short-term energy but does that by signaling to your adrenal glands to dump all of their store out into your blood. When the caffeine wears off, your adrenal glands are so depleted they have to take a break, which means that you feel tired and weak.
5. Don't overcook your meat. Avoid overcooked animal products, since heat destroys essential amino acids and valuable enzymes.

Now that you have your list of foods that are ideal for your metabolic type, you will have more energy and feel better if you eat to support your metabolism. However, many of the foods on your list are high in calories. Your diet should incorporate these types of foods in accordance with your caloric allowance.