



Gx slim™ Personal Report

Prepared for: **John Smith**



REPORT SUMMARY



WEIGHT LOSS ABILITY

Weight Loss Ability with Diet and Exercise	BELOW AVERAGE	FTO, TCF7L2, MTNR1B, PPARG, BDNF, ABCB11
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FOOD

Protein Utilization	SLIGHTLY ENHANCED	FTO
Fat Utilization	NORMAL	PPARG, TCF7L2, APOA5, CRY2, MTNR1B, PPM1K
Carb Utilization	NORMAL	IRS1



NUTRIENTS

Vitamin B9 – Folate Tendency	NORMAL	MTHFR
Vitamin A Tendency	BELOW AVERAGE	BCMO1
Vitamin B6 Tendency	BELOW AVERAGE	NBPF3
Vitamin B12 Tendency	LOW	FUT2
Vitamin C Tendency	NORMAL	SLC23A1
Vitamin D Tendency	BELOW AVERAGE	GC, NADSYN1, CYP2R1



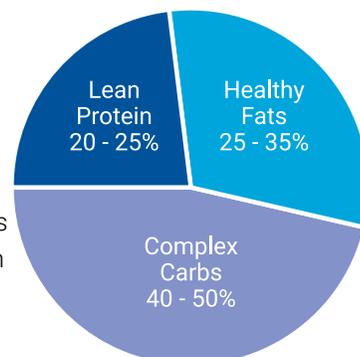
EXERCISE

Fat Loss Response to Cardio	NORMAL	ADRB2, LPL
Fitness Response To Cardio	NORMAL	AMPD1, APOE
Body Composition Response to Strength Training	ENHANCED	NRXN3, GNPDA2, LRRN6C, PRKD1, GPRC5B, SLC39A8, FTO, FLJ35779, MAP2K5, QPCTL-GIPR, NEGR1, LRP1B, MTCH2, MTIF3, RPL27A, EC16B, FAIM2, FANCL, ETV5, TFAP2B
HDL Response to Cardio	BELOW AVERAGE	APOE
Insulin Sensitivity Response to Cardio	ENHANCED	LIPC
Glucose Response To Cardio	NORMAL	PPARG

SUMMARY

What foods do you need to eat?

Your genotype suggests that you may have a better response to a weight-loss diet if daily calories come from the following proportions of fat, carbohydrates, and protein. You can monitor this with a diet log.



Based on your gender, age, height, current weight and current activity level, we recommend a diet of approximately **1,866 calories per day** to lose weight. This number was calculated estimating your total energy expenditure, or the number of calories your body needs each day. Since you are interested in losing weight, you will need to eat fewer calories than your total energy expenditure. We suggest a modest calorie reduction of 20 percent. We have calculated this reduction into our calorie recommendation for you, so if you eat around 1,866 calories per day, you can expect to lose weight. This is not a drastic calorie reduction, so you should not feel hungry or like you are denying yourself food if you eat this many calories.

The amount of exercise you get can change your energy requirements. Therefore, you may need to eat more calories than this is if you are performing 45 minutes or more of moderate-to-high intensity cardio exercise on a daily basis.

Here are suggested macronutrient ranges to follow that may optimize the weight loss from your diet.

RECOMMENDATION	PERCENT	GRAMS	CALORIES
PROTEIN Choose a reduced-calorie diet that is between 15-20% protein from mostly plant food sources.	20% to 25%	93g to 117g	373 to 467
FAT Choose a diet low in fat and saturated fat.	35% to 25%	52g to 73g	467 to 653
CARBOHYDRATES Choose a plant-based diet that is high in complex carbs (veggies, beans, whole grains, etc.), and avoid simple or processed carbs (fries, chips, crackers, etc.).	50% to 40%	187g to 233g	746 to 933

The total number of calories or grams of each macronutrient shown represent a recommended amount to consume each day.

It's tough to keep track of this simply by reading food labels. That's because most foods contain a combination of the macronutrients. A food item usually contains either protein and fat (such as meat), carbohydrates and fat (such as oil-saute'd vegetables or French fries), or protein, carbohydrates and fat (beans, nuts and seeds, a chicken salad or a hamburger with a bun). It's not easy to know how much of any one macronutrient you are getting or if you are achieving your macronutrient goals simply

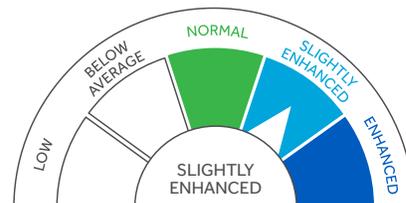
SUMMARY

by looking up the content of one food item. To determine your percentages of macronutrients, such as the fat or protein content of ALL the foods you eat in a day, you'll need to use a dietary app or online food log. You input what you eat and it will assess your overall macronutrient breakdown at the end of each day. We provide you with sample menus that can give you an idea of what a menu with your recommended macronutrient ranges will look like. But the only way to really know if you are reaching the suggested ranges for each macronutrient is to keep track by entering what you eat into a food log online or on an app.

PROTEIN UTILIZATION

WHAT YOUR GENES SAY ABOUT YOU:

Your genetic profile indicates that your response is **SLIGHTLY ENHANCED** utilization of protein. Your score reflects the fact that your genotype does include one of the allele combinations that lost slightly more weight when including a higher percentage of protein. Studies that investigated this genotype found that a diet consisting of 25% of protein resulted in optimal weight loss. However, people with this allele also lost more lean body mass compared to those without this



Your genetic profile indicate that your response is **SLIGHTLY ENHANCED**.

This indicates you may respond more favorably to a diet if you eat a moderate percentage of protein. Aim for 25% of the total calories in your diet to come from plant or animal-based protein

genotype. This suggests that the amount of weight or body fat that you lose from a diet may be increased by eating a moderate, instead of a low, percentage of protein, but that you may lose more muscle mass along with it.

Since this genotype also suggests that you may lose more muscle mass when you are dieting compared to others with a different genotype, it is recommended to include resistance training in your exercise routine to prevent or minimize muscle loss that may come with weight loss.

SUCCESS STRATEGIES

Consuming a diet that is moderate-to-high in protein and including a balanced exercise routine that includes resistance training may help you to optimize your weight loss.

RELATED GENES / SNPS

FTO

The gene and associated SNP included in this category has consistently been shown to be associated with body fat mass and BMI. One large study found that people with the unfavorable genotype who dieted lost more weight, body fat and fat in the torso if they ate a moderate-to-high protein diet (25% of total daily calories) compared to a lower protein diet (15% of total daily calories), regardless of fat and carbohydrate distribution. However, they also lost more non-fat mass—which includes muscle—with the weight loss.

Our analysis of your genes investigated which genotype for this SNP was present in your DNA. Your rating of either **NORMAL**, **SLIGHTLY ENHANCED** or **ENHANCED** reflects whether your genotype included those alleles that exhibited protein sensitivity because their presence resulted in increased weight and fat loss on a moderate-to-high protein, reduced-calorie diet.

PROTEIN UTILIZATION

DIET

Protein in your foods should contain all of the essential amino acids, since your body requires these to produce proteins, as well as the other amino acids it uses to make compounds such as enzymes, hormones and tissues in your body. Animal foods contain all of the essential amino acids in one food item, such as meat, fish or dairy products. But if your genetic analysis for the other macronutrients suggests that you should reduce your intake of total fat or saturated fat, choose leaner versions of animal foods or, better, opt for plant-based protein foods.

You can obtain all of the essential amino acids in many single plant foods, including grains such as quinoa, seeds such as shelled hemp hearts (hemp seeds), and beans such as edamame or tofu. Or you can consume several complementary plant foods in the same day and obtain the essential amino acids your body needs (brown rice and black beans; nuts, grains and beans; veggies, beans and grains, etc.)

It's a good idea to get a sense of how much protein you are getting by recording your food intake for at least a week and entering it into a diet app or online nutrition log that can calculate the percentage of each of the macronutrients that you eat. Then you can tweak your menu as needed to obtain your recommended percentage of protein.

EXERCISE

Since this SNP is also associated with reduced lean body mass from dieting, which can include the loss of muscle tissue, it is recommended that you include exercise, especially heavier weight training, as part of your plan when you are losing weight. This may help minimize or prevent the loss of lean body mass that can occur with weight loss. Study your results for your genetic analysis for exercise-related genes for a more specific exercise prescription. But for optimal muscle strengthening, you should do exercises with weights targeting your major muscle groups. On two to three, non-consecutive days per week, do three sets of 12 reps with weight heavy enough to feel "hard" or "very hard" by the end of each set.

SUGGESTED PROTEINS

suggested servings contain listed grams of protein

Chicken Breast (3oz) - 25g

Ground Turkey (3oz) - 22.5g

Lean Beef (3oz) - 22g

Broiled Fish (3oz) - 20g

Lentils/Black Beans (1/2c) - 9g

Tofu (1/2c - 4.4oz) - 11g

Turkey (3oz) - 24g

Pork/Lean Ham (3oz) - 18g

Lamb (3oz) - 21g

Quinoa (1/2c) - 12g

Mixed Nuts (1/4c) - 5g

GxSlim Food Section Also Includes...

 FOOD

FAT UTILIZATION



 FOOD

CARB UTILIZATION





SUMMARY

What nutrients do you need?

NUTRIENTS	TENDENCY	GOOD SOURCES INCLUDE
Folate	NORMAL	Pinto Beans, Asparagus, Broccoli
Vitamin A	BELOW AVERAGE	Carrots, Kale, Tuna
Vitamin B6	BELOW AVERAGE	Pistachios, Watermelon, Potatoes
Vitamin B12	LOW	Lean meat, Seafood, Fortified Dairy Product
Vitamin C	NORMAL	Red Bell Peppers, Strawberries, and Oranges
Vitamin D	BELOW AVERAGE	Salmon, Egg Yolks, Fortified Dairy Milk

HOW DO MICRONUTRIENTS AFFECT MY BODY WEIGHT?

Micronutrients have not been shown to have a direct effect on body weight or body fat. So why are they included in this genetic analysis?

The vitamins tested play important roles in a variety of functions in the body that may affect your body weight—or your ability to manage it.

Many micronutrients are involved in the body’s metabolism of fat, carbohydrates and protein. When you are eating and exercising, you want your metabolism to function smoothly. The body does find ways to cope when some nutrients are not available. But for optimum performance and energy, you’ll do best when your body has all it needs to work properly.

Some nutrients such as vitamin C and vitamin D may not affect body weight directly, but they play a role in bone health, inflammation and healing. The stresses you put your body under when exercising may be bolstered if you are well nourished in these nutrients.

DO MY RESULTS SHOW THAT I AM LOW IN NUTRIENTS?

If you scored **LOW** or **BELOW AVERAGE**, your genotype results show that you may have a higher risk for having blood levels of certain nutrients that may be in the lower end of the normal range. For a few nutrients, such as vitamin B12, it may be optimal to be in the mid range of normal, or higher. This genotype risk assessment is based on studies where study participants with certain genotypes for the various nutrients tested were shown to be more likely to be in the lower end of the normal range for a nutrient.

Be careful of assuming these results indicate you are low, or deficient in a certain nutrient. The only way to know for sure if you are in the low end of the normal range for a nutrient, or if you are actually deficient, is to consult with your physician and get a specific blood test designed to assess a specific nutrient. This genetic test can only assess your risk; the blood test is what can assess your actual levels.



SUMMARY

WHICH FOOD CHOICES FOR CERTAIN MACRONUTRIENTS ARE THE BEST FOR ME?

Our genetic testing analyzes your genotype and assesses your potential levels of macronutrients. This testing does not test your individual sensitivity or response to certain foods that may contain these macronutrients. You may have other individualized responses that are not detected in the genetic tests. For example, you may be allergic to the proteins in dairy foods. Or you may have a negative response to the lactose sugars in dairy products. This report cannot inform you about these reactions. Any food recommendations that are suggested to help you obtain certain nutrients should be modified based on other factors that you may already know about.

HOW CAN I MONITOR MY NUTRIENT INTAKE?

Your body absorbs a certain amount of nutrient as food or supplements are digested. Then your body uses or stores the nutrient as needed. There are many factors that affect how much of a nutrient you take in, how much of a nutrient is absorbed and used by your body, and whether your body stores are in the normal range.

Your genotype for certain nutrients can indicate that you may be at risk for having lower levels of certain nutrients. But since the genotype analysis is not measuring what you eat, the supplements you take, or actually measuring levels in your blood or tissues, the genotype analysis alone cannot relate your true status.

People who are low or deficient in a nutrient may absorb more from food than someone who is not deficient. A person who needs more of a certain nutrient may absorb more of it from a food than someone who has normal levels. There are also other factors that can affect absorption positively or negatively, and that can affect how your body uses what you take in.

How do you know what your true nutritional status is? A blood test is generally the only way to truly test your true nutritional status. What is in the blood when tested may not always reflect what is in the tissues or how much is being used by the body. But at present, this is the measure used for most nutrients. There may also be different blood tests that monitor the same nutrient.

Keep these factors in mind as you interpret your genotype results and the suggestions given. No one result is going to give you all the information you need. But taken together, the results of your genotype analysis, along with a blood test can help you spot potential areas where you can optimize your nutrition.

SHOULD YOU TAKE A SUPPLEMENT?

Most nutritionists recommend that nutrients be obtained first through food. Research studies have tended to show more favorable outcomes when research participants obtained nutrients from food sources rather than from supplements. Nutritional experts vary in their opinions about whether people should take supplements or not.

Most supplements are considered safe. But be cautious with dosing because research on appropriate levels has identified ranges for some nutrients beyond which toxic effects can occur. These ranges are known as the Upper Intake Level, or UL. It is difficult to reach the UL by getting the nutrients from food, but it is easy to reach these high risk levels from supplementation.

If you do choose to supplement, keep track of the nutrients you get from all foods. Read food labels since some foods that you eat may also be fortified in the supplements you are taking. Use dietary software to input what you eat and supplement with so you can keep an estimate of your total nutrient intake and will be less likely to overdose. Also consult with your doctor if needed. Some supplements, including vitamin A and vitamin B6, can interact with medications you may be taking.



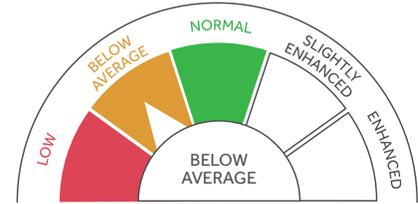
NUTRIENTS

VITAMIN B6 TENDENCY

WHAT YOUR GENES SAY ABOUT YOU:

Our analysis indicates that your genetic profile response is **BELOW AVERAGE**.

Your score reflects the fact that your genotype showed an unfavorable allele combination. This means that there is a risk that your blood levels of Vitamin B6 may be slightly lower than normal. Keep in mind that increased risk does not mean that your blood levels are low. You can only know this by requesting a blood test from your physician or other healthcare provider.



Your genetic profile indicates that your response is **BELOW AVERAGE**.

You may want to get a blood test to check your levels of Vitamin B6. Eat enough Vitamin B6-rich foods and consider supplementing if you are low.



SUCCESS STRATEGIES

Since you are at risk for having lower levels of Vitamin B6 in your blood, make sure you get adequate amounts of this nutrient in your diet. Keep a food log using a dietary app to monitor how much Vitamin B6 you consume.

You may wish to ask your doctor for a blood test. If your blood tests show low levels, obtain more of this nutrient from foods or take a Vitamin B6 supplement. Be sure to avoid high doses of a supplement, as they can cause nerve damage.

RELATED GENES / SNPS

NBPF3

The gene and its associated SNPs included in this category have been shown to have statistically significant associations with a person's blood levels of Vitamin B6. In one large study, people who carried the most unfavorable pairs of genes, or alleles had lower levels of Vitamin B6.

Vitamin B6 is important for nerve cell function, energy metabolism and the production of hormones, such as serotonin and epinephrine. Low levels of B6 are also linked to higher levels of homocysteine, which increases heart disease risk. B6 is found in many foods including grains, legumes, vegetables, milk, eggs, fish, lean meat and flour products.



VITAMIN B6-RICH FOODS TO INCLUDE IN YOUR DIET:

Pistachios, pinto beans, wheat germ, bananas, watermelon, carrots, spinach, peas, squash, potatoes, avocados, yellowfin tuna, sunflower seeds.

GxSlim Nutrients Section Also Includes...



NUTRIENTS

VITAMIN A TENDENCY



NUTRIENTS

VITAMIN B9 – FOLATE TENDENCY



NUTRIENTS

VITAMIN B12 TENDENCY



NUTRIENTS

VITAMIN C TENDENCY



NUTRIENTS

VITAMIN D TENDENCY



EXERCISE

SUMMARY

CARDIO EXERCISE

FREQUENCY (days per week)



INTENSITY



DURATION (minutes per week)



Perform moderate to vigorous intensity cardiovascular exercise 3 days a week for a minimum of 150 minutes per week. You can achieve greater results with increased frequency, intensity and through High Intensity Interval Training (HIIT).

STRENGTH TRAINING



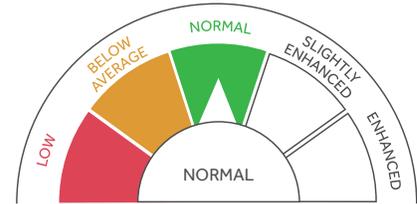
Lift weights 2 to 3 days per week using weights that are heavy enough to challenge you at the end of each of 2 to 3 sets of 8 to 15 reps. If by the end of each set of repetitions, you feel like you could keep performing the exercise, the weight you are using is too light to provide a sufficient muscle-strengthening stimulus. As you near the end of the exercise, you should feel like the last 2 to 3 reps are difficult to complete while maintaining good form.



FAT LOSS RESPONSE TO CARDIO

WHAT YOUR GENES SAY ABOUT YOU:

Our analysis indicates that your genetic profile exhibits a **NORMAL** fat loss response to cardio. Your score reflects the fact that your genotype showed few, if any, of the 'unfavorable' gene combinations. This means that, based on your genes, you likely would not show a reduced fat loss response to a basic cardio exercise program. Thus, you can expect to lose a usual amount of body fat by participating in three days per week of cardio exercise that is of a moderate-to-vigorous intensity.



Even though you may have a normal response to a lifestyle intervention, this doesn't mean that losing body fat and keeping it off will be effortless. Not everyone loses the same amount of body fat when they embark upon an exercise program. Genetic predisposition plays a role in fat loss, but other factors can also affect how much fat you lose. You can experience greater fat loss by exercising longer, more frequently and/or at a higher intensity.

Your genetic profile indicates that your fat loss response to cardio is **NORMAL**.

You should experience fat loss when performing cardio exercise three days per week for a total of 90 to 150 minutes. Examples of what this type of exercise plan would look like are either two Zumba classes and one indoor cycling class per week, or three sessions in a week walking or climbing briskly on a treadmill or elliptical trainer for 30 to 50 minutes.

SUCCESS STRATEGIES

Your genetic profile predicts that you can expect a favorable fat-loss result from doing at least 150 minutes of cardio exercise three days per week, working out at a moderate-to-high intensity.

- If you want to see greater fat loss benefits from exercise, you should increase one or all of the following: the number of days per week you exercise, the length of time of your exercise session, and/or the intensity of your exercise session.

RELATED GENES / SNPS

ADRB2, LPL

The genes and their associated SNPs that are included in this category have been shown in a study to have significant associations with a person's ability to lose fat from a regular program of cardio exercise.

A large study investigating these genes put sedentary men and women on a 20-week endurance exercise program. They exercised on a bike 3 times per week, starting at a moderate intensity for 30 minutes per session over the first few weeks. They built up to a longer, slightly harder workout that lasted 50 minutes for the last 6 weeks. Men in the study did not appear to have a different response based on their genotype. However, women who carried the most 'unfavorable' genotypes



EXERCISE

FAT LOSS RESPONSE TO CARDIO

- Make sure to include muscle-strengthening moves such as squats, lunges and upper body exercises with weight on at least two days per week.

lost fat from the exercise program—but they tended to lose less fat compared to other participants who did not carry the ‘unfavorable’ genotypes.

No matter the genotype, even though some fat loss was seen with the 3 days per week, 90-to-150-minutes-per-week regimen in this study, for dramatic decreases in body fat that also result in weight loss, most people will get better results if they do more exercise per week.

Our analysis investigated which genotype for each of these genes was present in your DNA. Your rating of either **NORMAL**, **BELOW AVERAGE** or **LOW** reflects whether your genotypes included those that carried a risk of reduced fat loss response from a regular program of cardio exercise.

GxSlim Exercise Section Also Includes...



EXERCISE

FITNESS RESPONSE TO CARDIO



EXERCISE

BODY COMPOSITION RESPONSE TO
STRENGTH TRAINING



EXERCISE

HDL RESPONSE TO CARDIO



EXERCISE

INSULIN SENSITIVITY
RESPONSE TO CARDIO



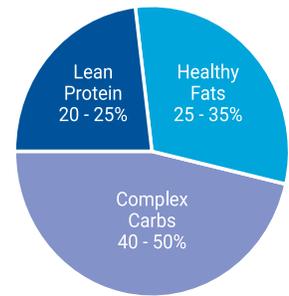
EXERCISE

GLUCOSE RESPONSE TO CARDIO



CUSTOM MEAL PLAN

A MEAL PLAN GENETICALLY DESIGNED JUST FOR YOU



The following custom meal plan was created by combining a variety of healthy recipes with the appropriate macronutrient percentages for your genetic profile. Due to the nature of recipe sizes, the total suggested calories for each day will have some variation above or below the specific number of calories recommended for your diet, but the average daily calories for the week will approximate your suggested daily caloric intake.

Day 1

	PROTEIN	FAT	CARBS	CALORIES	* recipe included
BREAKFAST					
*Omelette (1 1/4 Serving)	20g	14g	11g	249	
Mixed berries (1 Cup)	1g	1g	17g	81	
LUNCH					
*Quinoa stuffed tomato (1 1/4 Serving)	13g	13g	58g	393	
DINNER					
Baked Turkey breast (3 3/4 Ounce)	34g	0g	0g	135	
*Side salad #1 (1 1/2 Serving)	6g	5g	23g	155	
Olive oil (3 1/2 Tsp)	0g	18g	0g	158	
Avocado slices (1/4 Cup)	1g	6g	3g	60	
Sweet potato (medium) (1 Each)	2g	0g	24g	104	
SNACK					
Apple (medium) (1 1/4 Each)	0g	0g	41g	165	
Natural peanut or almond butter (1 Tbsp)	4g	9g	3g	109	
Air popped popcorn (1 1/4 Cup)	1g	0g	8g	35	
Pear (medium) (1 Each)	1g	0g	27g	112	
Pea protein (3/4 Scoop)	18g	2g	1g	89	
DAY 1 TOTALS	101g	68g	216g	1845	

Quinoa & Black Bean Salad

makes 6 servings

1 serving = 1 C

Ingredients

1/2 C quinoa

1 1/2 C water

1 1/2 Tbsp olive oil

3 Tbsp lime juice

1/4 tsp cumin

1/4 tsp ground coriander (dried cilantro seeds)

2 Tbsp cilantro, chopped

2 medium scallions, minced

1 can (15 1/2 oz) low-sodium black beans, drained and rinsed

2 C tomato, chopped

1 medium red bell pepper, chopped

1 medium green bell pepper, chopped

2 fresh green chilis (or to taste), minced

Ground pepper to taste

Directions

1. Rinse the quinoa in cold water. Boil 1 1/2 cups water in a saucepan, then add the quinoa. Return to boil, then simmer until the water is absorbed, 10 to 15 minutes. Cool for 15 minutes.
2. While the quinoa is cooking, mix olive oil, lime juice, cumin, coriander, cilantro, and scallions in a small bowl, and set aside.
3. Combine chopped vegetables with the black beans in a large bowl, and set aside.
4. Once the quinoa has cooled, combine all ingredients and mix well.
5. Cover and refrigerate until ready to serve.



CUSTOM EXERCISE PLAN

CARDIO EXERCISE

STRENGTH TRAINING

FREQUENCY

More than or equal to 3 days per week

INTENSITY

Moderate to vigorous

FREQUENCY

2-3 days per week

SETS & REPS

2-3 sets; 15 reps per muscle group

DURATION

More than or equal to 150 minutes per week

MUSCLE GROUPS

Chest, back, legs, shoulders, core (abs and low back), arms

GYM MACHINES

* description included

Day 1

Day 2

Elliptical Trainer - 45 minutes

Weight Machines - 2-3 sets; 15 reps

Day 3

Day 4

Bike - 60 minutes

Day 5

Day 6

* Treadmill Walk HIIT - 45 minutes

Weight Machines - 2-3 sets; 15 reps

Day 7

LINKS TO RELATED STUDIES:

WEIGHT LOSS ABILITY

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Human cardiovascular disease IBC chip-wide association with weight loss and weight regain in the look AHEAD trial

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Gene variants of TCF7L2 influence weight loss and body composition during lifestyle intervention in a population at risk for type 2 diabetes

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Am J Clin Nutr. 2014 Feb;99(2):392-9. doi: 10.3945/ajcn.113.072066. Epub 2013 Dec 11.

Variants in glucose- and circadian rhythm-related genes affect the response of energy expenditure to weight-loss diets <http://www.ncbi.nlm.nih.gov/pubmed/?term=24335056>

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