

Weight and Wellness Profile

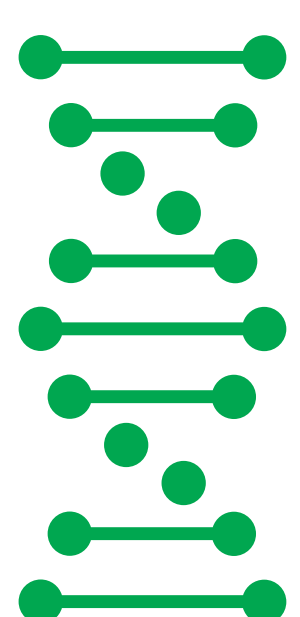
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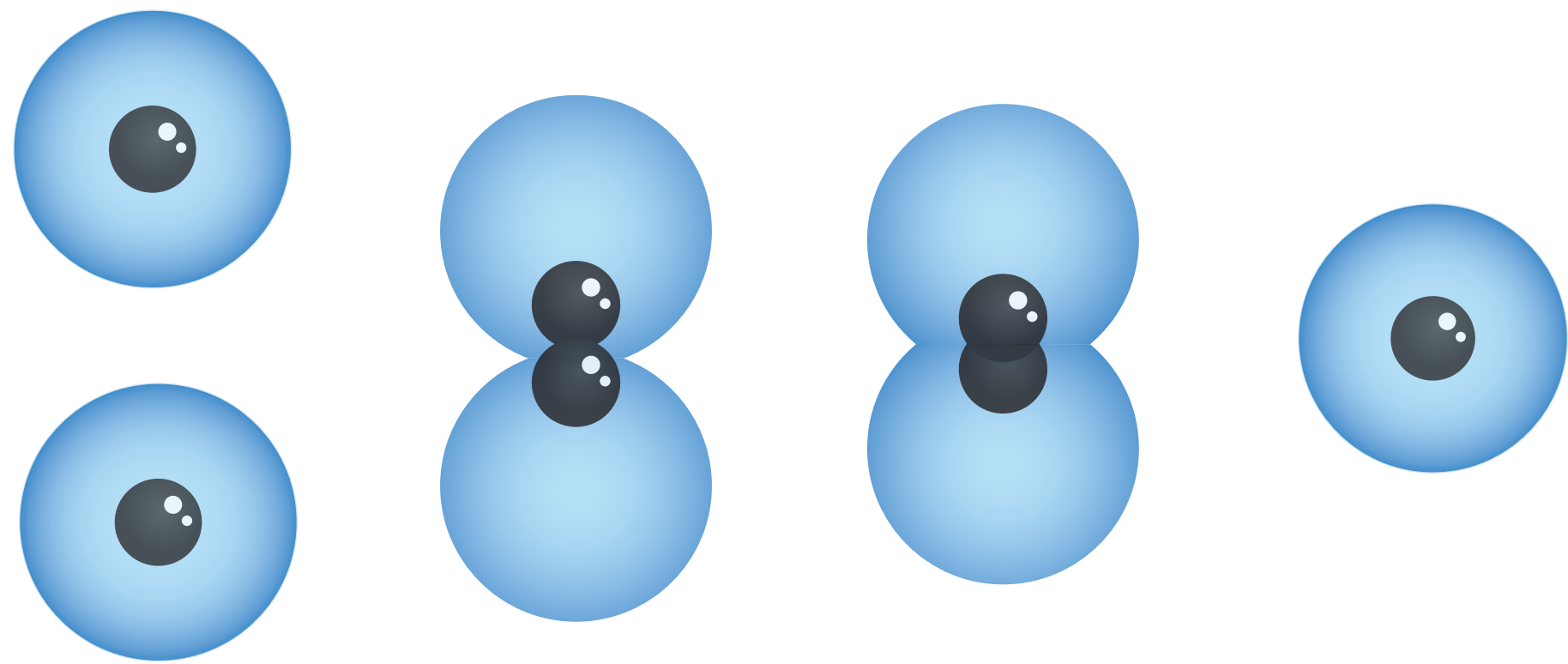
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 This genetic profile contains information about the specific genetic material your cells contain. Remember that even though your genetic material influences how your body responds to your world, it is only one part of that response. For example, you may have a genetic tendency toward high blood pressure, but your blood pressure is normal. On the other hand, you may not have a genetic tendency toward high cholesterol, but your cholesterol levels may still be elevated. Your genetic material is just one piece of the puzzle—definitely an important piece, but one that is influenced by many other factors. Some of these factors, like diet, exercise, and how you respond to cravings, you are able to control. Others may not be controllable, but understanding why you are the way you are can help.

GENETICS 101

DNA is the genetic material in our cells that makes us who we are. You inherit this genetic material, half from your mother and half from your father. It determines your physical appearance, like your hair and eye color.



You get half of your DNA from your mother and half from your father.

It can also influence how your body functions, such as whether you are able to process fat efficiently or tend to have high blood pressure. Knowing what your individual genetic profile says can help you understand your body, recognize your deficiencies, and possibly overcome any negative genetic tendencies.

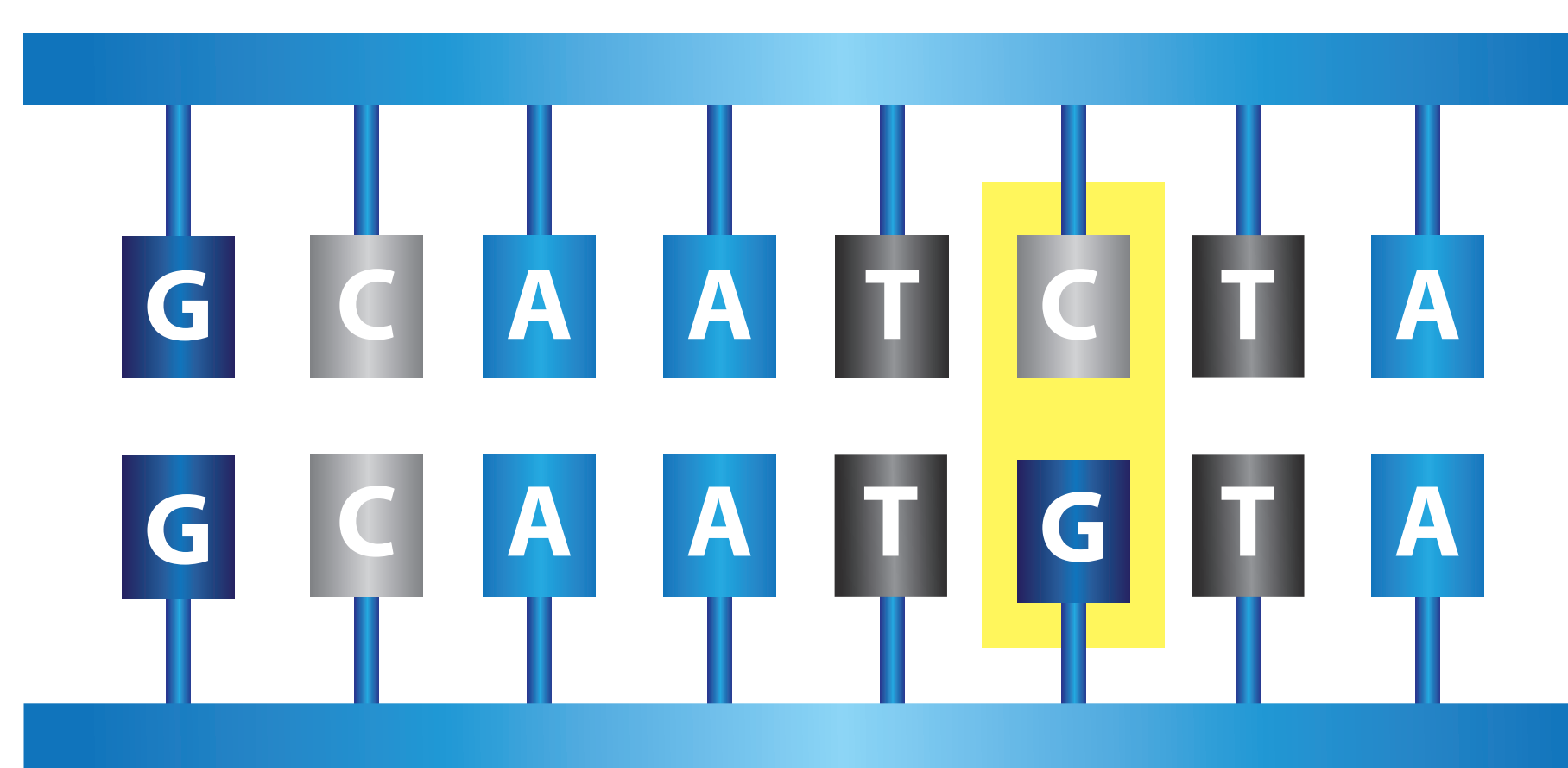
Your genotype is your genetic makeup, your actual strands of DNA comprised of a 3 billion base strand in which each individual base is one of four possible molecules. The four types of bases are: adenine (A), thymine (T), guanine (G), and cytosine (C). These bases form long, twisted-chains of DNA, and a piece of DNA containing millions of base pairs packed tightly is called a “chromosome.”



DNA is made up of billions of base pairs.

The base pairs of DNA give instructions to the body to perform certain actions. For example, some base pairs contain instructions on making enzymes to digest food. The base pairs may give very specific instructions, too, such as telling only certain skin cells to make hair while other skin cells do not.

Sometimes, when DNA is being copied to make new cells, “mistakes” are made in the copying of bases. These variations are called **SNPs** or single-nucleotide polymorphisms. For example, in a series where the original base says “AATC,” the copied base may say “AATG.”



Sometimes mistakes called SNPs occur in our DNA.

This mistake, like a typo or a mistake in a computer program, can change the instructions the DNA gives to the

body. The change may be minor or not have any noticeable effect. Or it may be a major change that affects the body significantly, such as failing to make a protein that leaves the body susceptible to disease.

The other genes you have and your environment determine how your body responds to the SNPs that you have. For example, you may have other genes that compensate for the “mistake” in the copying. Or you may have compensated for the error by eating (or not eating) certain foods. You and another person may have the same SNP but respond to it differently and thus have different phenotypes.

This genetic report contains information about your genetic profile or genotype. It tells you what SNPs you have, or where alterations happened in copying your genetic material. Understanding the potential issues your personal genotype contains will help you deal with and possibly even overcome the way those genes may be expressed. This report gives you practical suggestions to potentially improve your phenotype, or the expression of your genetic material, and potentially live a healthier lifestyle.

TERMS YOU SHOULD KNOW

DNA (DeoxyriboNucleic Acid): A nucleic acid that carries genetic information contained in each cell

Genotype: The genetic makeup of an organism

Phenotype: The expression of a certain trait based on genetic and environmental influences

SNP (Single-Nucleotide Polymorphism): A commonly found change in a single nucleotide base in a DNA sequence



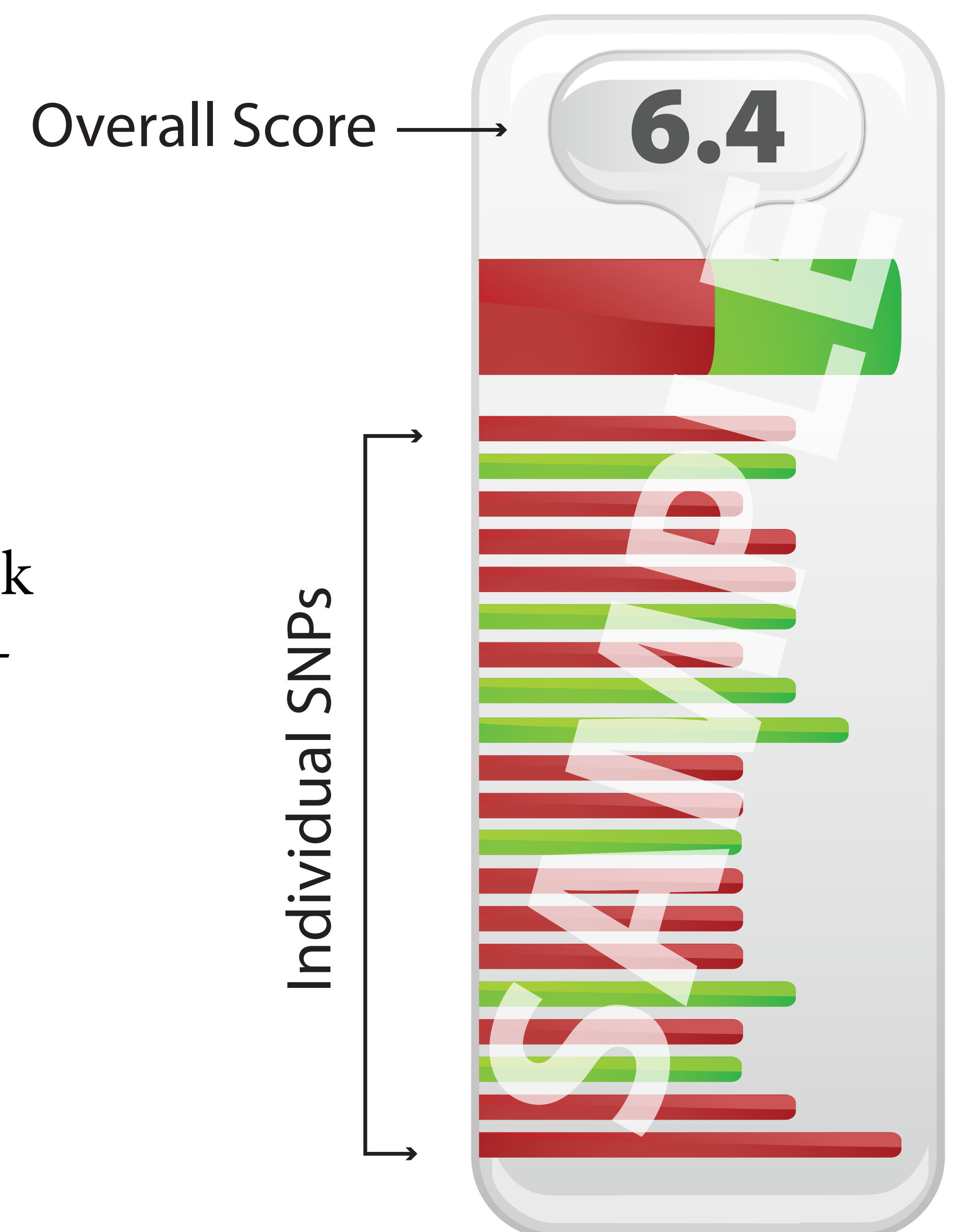
HOW TO READ THIS REPORT

This report details the findings from an analysis of 48 SNPs of your genetic material. (For more info about basic genetics and definitions of unfamiliar terms, see Genetics 101.) The first section, Personal Genetic Profile is a summary of the most significant findings from the areas examined:

- Your General Obesity Index
- Your Food Choices
- Your Exercise and Activity
- Your Health
- Your Behavior
- Vitamins & You

The first section shows your overall score on a “general obesity index.” This score evaluates 22 SNPs that have been studied and shown to be related to a genetic risk of obesity. Each green (positive) or red (negative) bar shows a SNP and how it relates to your personal risk of obesity. These findings are weighted and calculated to give you an overall score.

The rest of these two pages gives you a quick overview of positive (green), negative (red), and neutral (grey or yellow) findings along with action items—what you can do to work with the genes you’ve got. The sections that follow each give further details on one of the above-listed categories. They show the following:



ITEMS YOU SHOULD KNOW

All possible genotypes

Your particular genotype

The gene and SNP location

The impact of the genotype

AA AT TT

FTO rs9939609

BENEFIT FROM LOW-FAT DIET

33

This gene is associated with increased obesity and an influence on appetite regulation in a study of nearly 5,000 people. People with certain associated genotypes should avoid fats and increase physical activity.

People with your genotype benefit from a low-fat diet.

Specific action items

What the study said

The reference number of the validating scientific study (references are at the end of the report)

SAMPLE

You may have some conflicting genetic information, which is normal. For example, you may have some SNPs that show that you have no increased risk of obesity, while other SNPs show that your obesity risk is increased. Remember that many factors contribute to the effect your genes have on your health, including foods you eat, your exercise level, and other environmental factors. **Knowing your genotype gives you the power to control many of these environmental factors and improve your overall health.**

PERSONAL GENETIC PROFILE

Summary of YOUR Most Significant Findings

Welcome to your genetic wellness profile! **This report is tailored to you, based on your individual and unique DNA.** Using the latest discoveries in genetic research, we've analyzed how *your* genes impact *your* health and wellness. More importantly, we've highlighted the steps you can take to achieve optimal health, by taking advantage of your genetic strengths and countering your genetic weaknesses. By following the guidelines we provide you can reach your full wellness potential!

9.5

YOUR GENERAL OBESITY INDEX

Your Obesity Index is a number, between 1 and 10, calculated by examining 22 base pairs in your DNA that have been associated with weight issues including BMI, waist circumference, and body fat percentage.

Your score is 9.5, which indicates a very high genetic propensity for obesity. Your genes are working against you, but several studies have demonstrated that a healthy diet and exercise can counter genetic tendencies.

See the other panels for specific steps you can take to reduce your obesity risk.



YOUR FOOD CHOICES

✓ MONITOR TOTAL FAT INTAKE

Your genotype shows an association between fat intake and BMI and waist and hip circumference. Even more than most people, you will benefit from a very low-fat diet.

Monitor total dietary fat intake

MODERATE FAT INTAKE FOR INCREASED HDLS

The amount of dietary fat that you consume will have a greater impact on your HDL (good) cholesterol levels than it does for those with a different genotype.

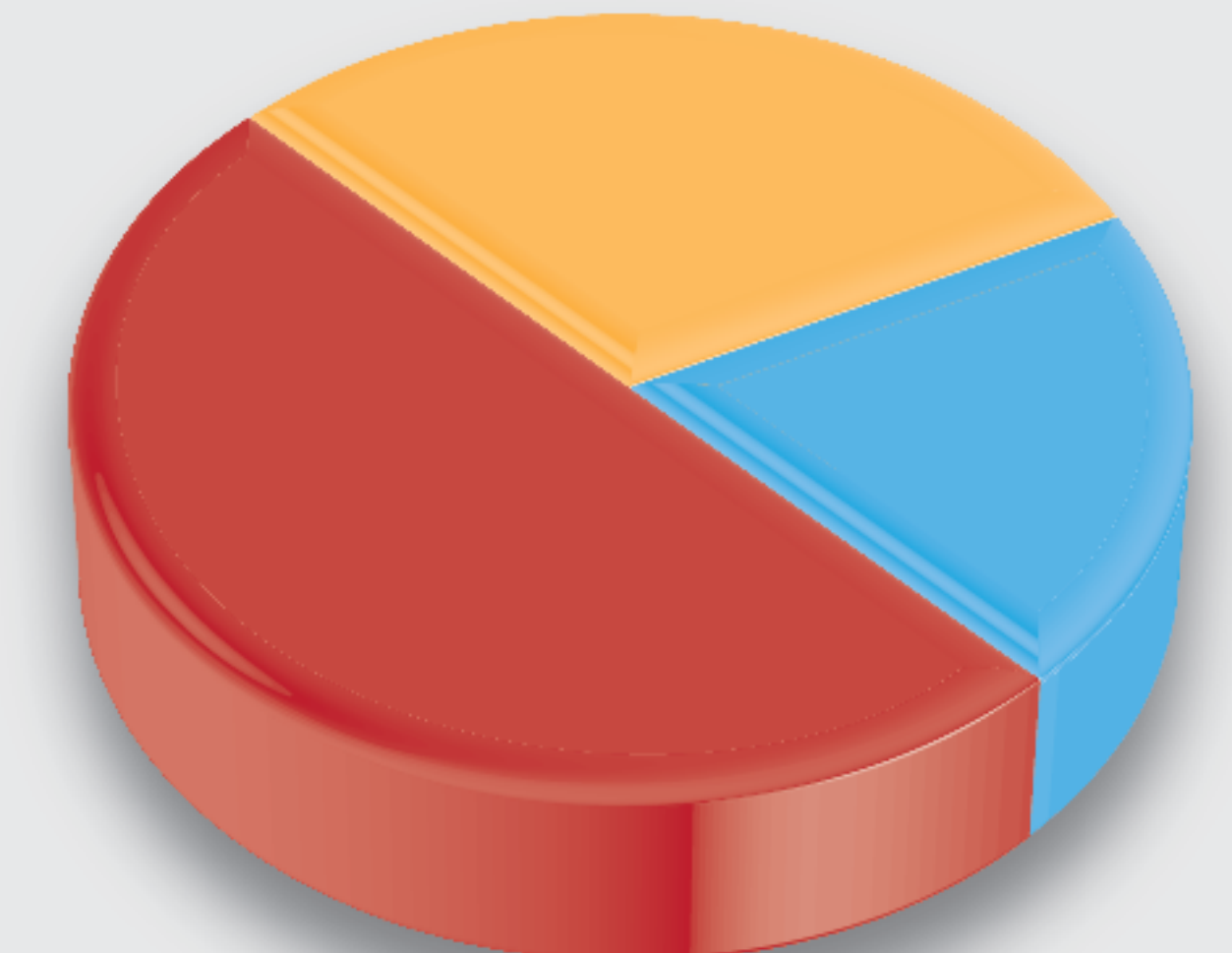
You may see improvements in your HDL cholesterol by avoiding high dietary fat intake.

✗ REDUCE TOTAL FAT AND SATURATED FAT INTAKE

Your genotype is associated with extremely efficient fat processing, leading to an average increase in BMI of 6.2%. This means that, more than others with a different genotype, your body quickly and efficiently processes and stores fat.

Emphasize plant-sourced fats and keep animal fats at a minimum. Be especially cautious with saturated fat intake

Genetically Optimized Diet Plan



30% FAT

20% CARBS

50% PROTEIN





YOUR EXERCISE & ACTIVITY

✓ EXERCISE TO INCREASE GOOD CHOLESTEROL

You will have a significantly greater increase in high-density lipoprotein (HDL or good cholesterol) with endurance exercise than people with a different genotype.

Make endurance/aerobic exercise a part of your health routine; this type of exercise will have a positive impact on HDL levels and reduce your risk of heart disease.

✓ USE FAST-TWITCH MUSCLES

You share a genotype with many world-class athletes. Your body uses alpha-actinin-3 protein more efficiently to provide a boost to fast-twitch muscle fibers that generate force at high velocity.

Discover your abilities by exploring activities that use fast-twitch muscle fibers, such as weight training, sprinting, jumping, and other explosive activities.



YOUR HEALTH

✓ POSSIBLE DECREASE IN CHOLESTEROL

Men with your genotype may have a decreased risk of cardiovascular disease because of a genetic tendency toward decreased cholesterol.

Monitor cholesterol levels anyway to take advantage of your genetic tendency.

✓ INCREASE ENDURANCE EXERCISE

You may experience enhanced effects from exercise, such as lower cholesterol levels and better insulin sensitivity.

Though anyone will benefit from exercising to increase stamina and endurance, your genotype has been associated with enhanced benefits from this type of exercise.

EXERCISE TO REDUCE BLOOD PRESSURE

Your genotype indicates that your blood pressure will tend to be high, but exercise will lower your blood pressure more effectively than for others with a different genotype.

Make regular exercise a normal part of your health routine. Any sort of exercise will help to reduce blood pressure and associated risks.



YOUR BEHAVIOR

✗ POSSIBLE TENDENCY TO OVEREAT

Your genotype shows that if you are female, you may be prone to overeating because of a genetic tendency toward disinhibition.

Watch portion sizes and stop eating after a reasonable amount.

✗ BE AWARE OF FOOD CRAVINGS

You are more drawn to pleasurable activities than people with a different genotype and may seek favorite foods for the effect they have on mood and brain chemistry.

When you find yourself craving food, focus on other activities that increase dopamine levels in the brain, such as moderate exercise (a brisk walk) or conversation with a loved one.



VITAMINS & YOU

✗ POSSIBLE VITAMIN D DEFICIENCY

Your genotype indicates that you may be prone to Vitamin D deficiency.

Consider Vitamin D (cholecalciferol) supplementation and regular serum 25-hydroxy Vitamin D testing, especially if you live in a northern climate.

✗ POSSIBLE VITAMIN E DEFICIENCY

Your genotype indicates that you may be prone to Vitamin E deficiency.

Consider supplementing with all four tocopherol isomers of Vitamin E.

✗ POSSIBLE FOLATE DEFICIENCY

Your genotype indicates that you may be prone to folate deficiency.

Consider supplementing with 5-methyl tetrahydrofolate.

✗ POSSIBLE VITAMIN B12 DEFICIENCY

Your genotype indicates that you may be prone to Vitamin B12 deficiency.

Consider B12 supplementation (as methylcobalamin) and H. pylori testing.

