

# DNA Testing And Ancestry



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DNA testing helps us reveal everything from our ancestry, how our bodies work or if we have a severe illness, to name a few. Today, people are curious about finding out their roots and desire to understand their DNA history better, but with today's busy lifestyles only a few individuals have the luxury of going to the lab and taking a DNA test.

DNA testing has progressed significantly, and in today's day and age, you have access to order at-home DNA testing kits online to find out the answers to your most important health questions with a personalized report in just a few days.

Today, we sat down for an interview with Dr. Charles Sailey, MD, MS, FCAP, FASCP, the Laboratory Director at Molecular Testing Labs. Molecular Testing Labs prides itself on providing innovative and timely, high quality, comprehensive and personalized health care services through genetic, toxicology, and infectious disease testing services to physician clients and individual patients.

The Company's commitment and the continuous goal is to empower every medical professional and individual patient with specific knowledge to properly treat, prescribe, and dose symptoms and conditions through the provision of these services. With such expertise, Molecular Testing Labs has and continues to be at the forefront of developing innovative, direct-to-consumer at-home health testing products. The results of these at-home health testing products have the same, or better, sensitivity and specificity of tests performed at a clinical reference laboratory.

Dr. Charles Sailey, obtained dual Master Degrees in Cell Biology and Biotechnology before medical training. After earning his Medical Degree from Ross University School of Medicine, he completed residency training in Anatomic & Clinical Pathology at the University of Maryland, followed by training in Molecular Genetic Pathology at the University of North Carolina. Dr. Sailey has over 40 peer-reviewed publications, book chapters, and presentations, including data presented at national conferences.

Dr. Sailey, explained with great detail as to what a home DNA kit is and what to expect from the results.

### **1. What exactly does your at-home health testing kit, Molecular Fitness, do?**

It's a genetic test that analyzes single polymorphisms (called SNPs, pronounced "snips") on your genes which affect how you respond to various exercises and patterns of nutrition/dieting, revealing what works best for your body.

### **2. How does Molecular Fitness work? What's it like to get a genetic test? Do you give a saliva sample, blood sample, or both?**

We isolated genomic DNA from cheek swabs, which collect cells from your mouth. With a package that you receive at home and with easy to follow directions, you rub a cotton-headed tip (swab) on the inside of your cheek. You mail the swabs back to the laboratory in a provided envelope. Once in the lab, we extract your genomic DNA from the cells and analyze SNPs. This excludes the need for blood or saliva collections.

### **3. How accurate can these results be?**

The accuracy of genomic DNA testing is very high, and our method is equal to, and in most cases better than, testing performed within a medical clinic. We are CLIA-certified, and a CAP (College of American Pathologists) accredited laboratory that performs high-complexity testing for physicians, and these accreditations are considered the gold standard for laboratories all over the world. Our laboratory has undergone several inspections and competencies to maintain the highest standard available for a clinical laboratory. As a result, our interpretations are based only on the highest level of evidence published in peer-reviewed articles and clinical studies.

### **4. How to Use Genetic Testing to Personalize Your Workout and Diet?**

What works for your friend may not work for you. Ever wonder why people can do the same workout and have drastically different results? However, why some people can eat whatever they want and never gain an ounce? Genetic information can tell you what is most important to focus on for you. We all know that a diet high in sugar and fried food is not good for us but for some individuals, certain aspects of a bad diet will be more detrimental due to their DNA. Knowing your genetics can help you make lifestyle changes that really make a difference. For example, if someone has a high risk of inflammation, they can avoid dietary factors that promote inflammation by limiting or eliminating fried foods and eating more fish, nuts, and seeds that are high in omega-3 fats. In addition, if someone has an increased propensity for fat loss with resistance training, they can add weight training to their regime, or try Pilates or yoga instead of extra time on the treadmill. The report is personalized for each individual, describes what works or what doesn't work for their body type, and guides them to make essential changes in their diet and exercise.

### **5. With DNA-based fitness analyses, how can consumers be sure that the testing mechanisms and/or results are accurate?**

We highly recommend that consumers research and look for what kind of accreditations a testing lab has obtained. In the US, CLIA is standard, and CAP accreditation adds several additional layers of scrutiny. An accredited laboratory is required to undergo rigorous inspections and competency of tests, with ongoing quality assurance for every result that is reported. Molecular Testing Labs has all such required certifications. Also, any consumer purchasing a test like this should research who the minds are behind the test. We have a team of MDs, PhDs, and PharmDs who have put in thousands of hours of research to ensure that the interpretations for our tests match the latest research and clinical standards.

**6. Could you give us an example of how someone who was working out or training and not getting satisfactory results obtained their genetic testing data, then changed their workout/training regimen and saw a drastic improvement in results?**

A great example, we'll call her Jodi, who was a 24-year-old female struggling with her weight despite hours at the gym daily. Her routine was to wake up early getting extra cardio before work, spending at least an hour a day on the treadmill or spin bike. She had only coffee for breakfast and consumed her first meal at noon. For dinner, she skipped the carbs, only ate non-starchy vegetables and protein. Chicken breast and broccoli were her go-to meal. Eating a huge plate of it for dinner, often feeling bloated and unsatisfied. Jodi decided to order an at-home health test kit. After receiving her genetic results, she changed both her diet and workout regime with drastic results! Jodi's DNA revealed a high genetic risk for obesity due to impaired regulation of satiety and hunger hormones. She was also at moderate risk for rebound weight gain, having a tendency to go long periods of time without eating, slowing her metabolism even further. Her genetic muscle performance analysis showed that she was a sprinter, with a good propensity for speed and power. Her DNA-based guidance suggested she make several changes. Getting enough sleep and staying hydrated was critical with her impaired regulation of the hormones that affect hunger and satiety (sense of fullness after eating). She slept in an extra hour, skipped the morning cardio and coffee. Instead, she worked out during her lunch break, a 30-minute boot camp style workout with free weights. She ate when she was hungry, a moderate amount of fat, protein, and slow acting carbs with every meal, throughout the day, and for dinner. She discovered that she was not often hungry, felt more focused at work and had a lot more energy throughout the day. She no longer suffered from afternoon sugar and caffeine cravings, her digestion improved, and she spent far less time at the gym. After 6 months, Jodi has not only lost weight, but she looks fabulous with her new muscle tone and great skin.

**7. What is a DNA-based diet, and how prevalent are these diets right now?**

It is personalized health and fitness, with a more meaningful way to create new, healthy eating and exercise habits that will last a lifetime. It is not a fad diet or a quick fix; it's about making sustainable changes that will benefit you for a lifetime. The test results will guide you to make lasting changes in your health and fitness regime. Think of these results as a roadmap that can be used to focus efforts in areas that work for you, rather than following directions that are supposed to fit the entire population.

**8. If a person were to ask you, "So, if I follow a DNA-based diet to the T, is it guaranteed that I will achieve a predetermined result?" how would you respond?**

It is you and your lifestyle that makes a difference! Your environment, fitness level, a current state of health, and degree of motivation will play essential parts in the outcome. This is one big piece of the puzzle, but not the only piece.

**9. Because a DNA-based diet is so precise in measuring which nutrients have the most ideal effect on an individual's body, does that mean that the consequences of straying from that diet are more drastic or detrimental than with a traditional diet?**

Since a DNA-based diet adds another level of personalization, straying from this diet is also expected to have more of a personalized impact, although not necessarily a more detrimental one. It is important to remember that other factors contribute to your overall health as well.

For example, you may have a genetic predisposition for normal vitamin D levels, but you live in a geographical area where you don't get much sunshine. On the other hand, you may have a genetic predisposition to lower Vitamin B6 levels, but you don't because you eat a lot of foods very high in vitamin B6.

**10. How can a gym or fitness center utilize DNA-based diets and genetic fitness testing to improve revenues?**

This DNA-based approach will drive more interest in personalized trainers and fitness groups who have kept up with the advances of sports science, rather than going through trial-and-error approaches on their own. Also, according to feedback comments from customers, knowing your DNA is a great motivator – it keeps members working out, getting results, and sustaining memberships for life.

**11. How prevalent will these “designer” diets and workout plans become over the next five to ten years?**

Consumers might be feeling more confused than ever about all the fitness advice obtained from the Internet with no scientific evidence. Personalized diets and workout plans backed with scientific evidence will definitely gain popularity, especially as DNA testing overall becomes more popular and begins to resonate more with consumers. The evidence is mounting everyday and it takes teams of scientists to stay at the forefront of new research and creative ways to distill that information down to something any consumer can use in everyday life.