1) What does DNA testing do and can it help me find my family roots?

Part A

II. Family Tree DNA Company

(Text sourced from www.familytreedna.com)

Have you hit a brick wall? Can't find any documents for that elusive ancestor?

Searching for your ancestor's homeland? Wondering if you are related to another family with the same surname? Adopted?

Family Tree DNA is the pioneer and the world's largest DNA Company in the new field of genetic genealogy.

Omon used to dream about what his dad was like. He'd be big and strong and look just like him, but with a beard and an older face. He'd buy him a Game Boy and take him places. The old man called once, when Xavier was in fourth or fifth grade, and promised to visit. Omon says he never heard from him again.

Omon has struggled to fit in. He was one of just three African-American kids at Beatrice High School in south-eastern Nebraska, and freshman year, he says he was called the N-word. "Honestly," he said, "I beat the hell out of the kid. It never happened again." He lost two brothers by the time he was 15 and never knew his biological father.

So for nearly 26 years, Xavier Omon felt as if he had half of a life.

Then a message came that changed everything. It started, of all places, on Facebook. Deloris Omon, Xavier's mom, was catching up with an old acquaintance on the computer last winter. The man informed her that Chris Nwagbuo, Xavier's biological father, had died in 2004, and that one of his sons -- a half-brother of Xavier's that he'd never met -- just happened to play football, too for the San Diego Chargers. "It was crazy," Xavier Omon said. "It's like a movie."

Omon and Nwagbuo underwent DNA testing to confirm that they are siblings. Bennett Greenspan, president of Family Tree DNA, said one test confirmed that they share the same Y chromosome, which is indicative of having a common male ancestor. Another test showed that they shared an amount of DNA in common consistent with being half siblings. "They are absolutely half-brothers," Greenspan said.

Many individuals who were adopted are searching for information about their biological parents or general information about their family origins.

With the largest Y-DNA and mtDNA databases in the world, Family Tree DNA gives you the best chance to find relevant information about your family.

Here is what Family Tree DNA can provide for you:

1) What does DNA testing do and can it help me find my family roots?

III. Males can test their Y-DNA to:

Trace the paternal line. Determine possible original surnames. Connect with genetic cousins. Learn about your suggested geographic origins. Find your deep ancestral ethnic origins

IV. Both males and females can test their mtDNA to:

Trace the maternal line. Connect with genetic cousins. Learn about your suggested geographic origins. Find your deep ancestral ethnic origins

V. Family Finder-

For males and females - The Family Finder Test helps you find family across all your lines, up to 6 generations back, by checking hundreds of thousands of points in your autosomal DNA, and comparing your results with others in the Family Finder database.

* Aunts & Uncles, Parents and Grandparents

* Half siblings and 1st cousins

* 2nd, 3rd, and 4th cousins

* Possibly 5th cousins and beyond!

VI. So what does DNA testing do?

If two participants closely match on their test results this is an indication that they share a common ancestor. Just how strong this connection is depends on the strength of the DNA match. It will give you a ROUGH idea of how far back your common ancestor lived .This also depends on the strength of the DNA match plus the paper trails. It can provide evidence that suspected lines are connected and provide proof that two individuals or suspected lines are NOT connected. No matter how good the paper trail may be, if there are too many DNA mutations, they cannot be related.

When it comes to DNA testing for your genealogy, you don't want to spend your money without fully understanding what you are getting for your dollars, and who's behind the company that is servicing you.

Since May 2000, when Family Tree DNA and the Arizona Research Labs pioneered the use of DNA testing for genealogy purposes, other companies have entered this

market and others will come. Therefore, when choosing a company that will handle your DNA, these are the questions one should ask before making a decision:

1. Do I need to know who is performing my test?
2. Who are the scientists behind the company that is offering the tests?
3. How do I know when more markers do not mean better results?
4. How reliable are my results?
5. What do I get with my results?
6. How far will the company go in helping me understand my results?

Family Tree DNA's lab is the Arizona Research Lab at the University of Arizona, one of the top genetics labs in the world. In other words, when we extract your DNA you know exactly which institution has it, and better than that, the lab only has your DNA associated to a number and a surname. By doing it this way, they know nothing about you and your privacy is ensured.

VII. Who are the scientists behind the company that is offering the tests?

Now, you would want to know who is performing the test that you have ordered: is it just a commercial lab where this is one of the tests being sold or is it a lab where the science of genetics applied to genealogy and anthropology was born and is in constant development? Look for the other labs' "About" page. Check the faces and the bios of the people behind the company. The scientists behind Family Tree DNA's lab are leading authors or contributors of peer reviewed papers on Y-DNA and mtDNA. Dr. Michael Hammer is one of the top geneticists in the world who created the conditions for this new tool to be available to genealogists. Dr. Bruce Walsh, leading population geneticist, developed and published the calculations to calculate the Time to the Most Recent Common Ancestor which are even used by our competitors. Dr. Alan Reed is the discoverer of many markers used not only in our panels, but have also been adopted by our competitors'. We believe that the fact that these 3U. Of Arizona scientists have a seat on Family Tree DNA's Advisory Board should make you feel comfortable with the science behind your DNA test.

VIII. How do I know when more markers do not mean better results?

This is also an important question. As this field of Genetic Genealogy progresses, more companies will enter the market to offer their services, and some of them may try to focus on the fact that they have more markers. However in science quantity does not necessarily mean quality. The important thing to know about markers is "how volatile are the markers". In essence we focus on better markers rather than more markers. As an example, we have a case of a family that tested with another lab, and then decided to add some of our markers to their results: while we

increased the total number of markers by only 15%, our markers were responsible for an increase of 50% in the number of mutations. Remember this is about quality and volatility not just about "how many markers'.

IX. How reliable are my results?

Reliability of results is the primary concern of Family Tree DNA. We won't release results if we are not 100% sure of them, and we'll error on the side of retesting any sample that doesn't produce a clear and unambiguous result. That might cause a delay in results return, but quality and accuracy are job #1. One of the reasons why we don't ask for the family pedigree is that we want the lab to do a completely blind test, without any information that may "help" solving the puzzle of a hard to read allele length, by comparing the result to someone else that has tested. We'd rather re-run your sample until we get a result in which we feel 100% confident.

X. What do I get with my results?

In addition of knowing that your test was performed by the only lab that discoverers markers and writes Anthropology papers, we offer you to be part of the largest genealogical DNA database in the world. We also have the following unique features, which no other lab in the world offers:

* Comparative database for matching purposes with over 20,000 samples

* Recent Ethnic Origins database where your results are compared to indicate where you ancestors may have come from

* Haplogroup suggestion: based on an algorithm developed by the scientists that work with Family Tree DNA, we can suggest with 92% degree of certainty your Haplogroup - which indicates your deepest ancestral origins

* Haplogroup confirmation test - in case you wish to confirm with 100% certainty yours Haplogroup, only Family Tree DNA offers this type of test

It is also worth mentioning that having performed the largest volume of DNA tests for genealogy purposes; we are now sponsoring the first study of its kind in the world, which is being done by the University of Arizona, which will update mutation rates vs. number of generations. This landmark study will allow our customers to have new parameters to calculate the Time to the Most Recent Common Ancestor between matches and close matches.

XI. How far will the company go in helping me understand my results?

Once you receive your results, you may want some help in understanding their meaning and the different information that we offer at your personal page. We don't have an automated answering service that will ask you questions before you are prompted to leave your message...

During the week our phone calls are answered by our staff - whether it's our President or a Genetic Genealogy Counsellor - and we are fully prepared to answer your questions. If you choose to e-mail us, again, no automated or "cookie cutter" answers. You will receive a personal answer in less than 24 hours, usually 7 days a week.

An important thing to remember is that being the lab that has the science, our answers will be first hand answers, with total understanding of the materials. Don't hesitate to contact us. Whether you have tested or you are just thinking of testing, you are far ahead of everybody else and you are entitled to have answers to your questions. We will be happy to provide those answers to you.

XII. A final word

Family Tree DNA was created in April of 2000 out of a quest to verify if my family in California was related to someone in Argentina. As a genealogist for more than 30 years, I had used all the tools available at that time without being able to remove that brick wall, when I came across a paper lead by Dr. Michael Hammer showing how the Y-DNA could be used to provide an answer to my question. I then contacted Dr. Hammer and the University of Arizona, and together we decided to collaborate in order to make this science available to our genealogical community.

Before offering these tests to the public, several individuals and relationships were tested to confirm that this was indeed a tool that would produce stellar results.

Nothing makes us prouder than the recognition that we have obtained from the genealogical community by making us the world's leading provider of genetic genealogy tests. Thank you!

Bennett Greenspan, President and Founder

Family Tree DNA

USA

1) What does DNA testing do and can it help me find my family roots?

XIII. 23andMe

(Text sourced from www.23andme.com)

For those after medical history there is a Company called 23andMe in the USA, which provides you with genetic information, but does not sequence your entire genome or perform predictive or diagnostic tests. Rather, they use currently available technology to examine your DNA sequence at a large number of variable sites called SNPs. Since this SNP information is difficult to interpret on its own, they review the most up-to-date biomedical literature on genetic associations and provide you your genotype information in the context of current scientific knowledge.

While they may be able to tell you that researchers have found your particular genotype to be associated with an increased chance of developing a particular condition, we cannot tell you whether you actually have a specific disease, or whether you will develop a specific disease in the future.

There are several reasons why they cannot provide diagnoses or otherwise assess your health. First, because they don't sequence your entire genome, they may miss a variation that has an impact on your health. Genetic testing services, which restrict themselves to a relatively small set of diseases, provide more exhaustive analysis of the relevant genes.

More importantly, in order to make a diagnosis, your doctor considers not only your genetic information, but also your particular personal and what family history you have and any physical condition, as well as any symptoms you are experiencing. Other confirmatory tests are usually required, since your genotype is only part of the equation. If you learn that your personal genetic information suggests that you have a higher than average chance of developing a particular disease, you may wish to discuss your genetic information with your physician or another medical expert.

2) Genetic Medical Results (from 23andMe)

PART B

This Adopted person was give information from DOCS NSW that has turned out to be incorrect. DOCS provided the adoptee with Medical History supposedly of the birth parents families, which was incorrect and misleading, as the person's birth mother was also adopted. There is evidence to suggest that the birth father is adopted too.

DNA testing can provide information on certain medical conditions, as detailed below

Elevated Risk

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Age-related Macular Degeneration	★★★★	26.6%	7.0%	3.79x
Psoriasis	★★★★	20.2%	10.1%	1.99x
Rheumatoid Arthritis	★★★★	8.2%	4.2%	1.95x
Scleroderma (Limited Cutaneous Type)	★★★★	0.2%	0.2%	1.24x
Alcohol Dependence	★★★			
Bladder Cancer	★★★			
Chronic Lymphocytic Leukemia	★★★			
Dupuytren's Disease	★★★			
Gout	★★★			
Kidney Cancer	★★★			
Kidney Stones	★★★			
Meningioma	★★★			
Narcolepsy	★★★			
Nasopharyngeal Carcinoma	★★★			
Neuroblastoma	★★★			
Parkinson's Disease: Preliminary Research	★★★			
Polycystic Ovary Syndrome	★★★			
Primary Biliary Cirrhosis: Preliminary	★★★			

2) Genetic Medical Results (from 23andMe)

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Research				
Stomach Cancer: Preliminary Research	★★★			
Stroke	★★★			
Thyroid Cancer	★★★			
Cleft Lip and Cleft Palate	★★			
Essential Tremor	★★			
Hashimoto's Thyroiditis	★★			
Sjögren's Syndrome	★★			
Tourette's Syndrome	★			

Decreased Risk

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Type 2 Diabetes	★★★★	14.2%	20.7%	0.68x
Restless Legs Syndrome	★★★★	3.1%	4.2%	0.75x
Alzheimer's Disease	★★★★	3.0%	7.1%	0.42x
Melanoma	★★★★	1.3%	1.7%	0.75x
Parkinson's Disease	★★★★	1.1%	1.6%	0.68x
Exfoliation Glaucoma	★★★★	0.8%	1.0%	0.80x
Type 1 Diabetes	★★★★	0.4%	1.0%	0.40x
Multiple Sclerosis	★★★★	0.4%	0.7%	0.59x
Crohn's Disease	★★★★	0.3%	0.5%	0.69x
Ulcerative Colitis	★★★★	0.3%	0.5%	0.62x
Lupus (Systemic Lupus Erythematosus) ♀	★★★★	0.2%	0.2%	0.76x
Celiac Disease	★★★★	0.1%	0.2%	0.44x

2) Genetic Medical Results (from 23andMe)

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Esophageal Squamous Cell Carcinoma (ESCC)	★★★★	0.06%	0.07%	0.80x
Stomach Cancer (Gastric Cardia Adenocarcinoma)	★★★★	0.05%	0.07%	
Asthma	★★★			
Atopic Dermatitis	★★★			
Atrial Fibrillation: Preliminary Research	★★★			
Behçet's Disease	★★★			
Cluster Headaches	★★★			
Follicular Lymphoma	★★★			
Kidney Disease	★★★			
Migraines	★★★			
Osteoarthritis	★★★			
Pancreatic cancer	★★★			
Scoliosis	★★★			
Uterine Fibroids ♀	★★★			
Back Pain	★★			
Intrahepatic Cholestasis of Pregnancy ♀	★			

Typical Risk

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Obesity	★★★★	61.1%	59.0%	1.04x
Coronary Heart Disease	★★★★	19.5%	24.4%	0.80x
Atrial Fibrillation	★★★★	17.2%	15.9%	1.08x

2) Genetic Medical Results (from 23andMe)

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Gallstones	★★★★	12.7%	14.3%	0.89x
Breast Cancer ♀	★★★★	11.1%	13.5%	0.82x
Venous Thromboembolism	★★★★	9.3%	9.7%	0.96x
Lung Cancer	★★★★	6.0%	6.2%	0.97x
Colorectal Cancer	★★★★	4.2%	4.0%	1.05x
Chronic Kidney Disease	★★★★	1.9%	2.2%	0.87x
Primary Biliary Cirrhosis	★★★★	0.3%	0.3%	0.91x
Bipolar Disorder	★★★★	0.1%	0.1%	0.94x
Prostate Cancer ♂	★★★★	0.00%	0.00%	1.00x
Abdominal Aortic Aneurysm	★★★			
Alopecia Areata	★★★			
Ankylosing Spondylitis	★★★			
Bipolar Disorder: Preliminary Research	★★★			
Brain Aneurysm	★★★			
Coronary Heart Disease: Preliminary Research	★★★			
Generalized Vitiligo	★★★			
Hay Fever (Allergic Rhinitis) new	★★★			
Hodgkin Lymphoma	★★★			
High Blood Pressure (Hypertension)	★★★			
Obesity: Preliminary Research	★★★			
Ovarian Cancer ♀	★★★			
Paget's Disease of Bone	★★★			
Progressive Supranuclear Palsy	★★★			
Restless Legs Syndrome: Preliminary	★★★			

2) Genetic Medical Results (from 23andMe)

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Research				
Basal Cell Carcinoma	★★★			Typical
Breast Cancer Risk Modifiers	★★★			Typical
Celiac Disease: Preliminary Research	★★★			Typical
Chronic Obstructive Pulmonary Disease (COPD)	★★★			Typical
Endometriosis ♀	★★★			Typical
Esophageal Cancer: Preliminary Research	★★★			Typical
Glaucoma: Preliminary Research	★★★			Typical
Heart Rhythm Disorders (Arrhythmias)	★★★			Typical
Hypothyroidism	★★★			Typical
Keloid	★★★			Typical
Larynx Cancer	★★★			Typical
Lou Gehrig's Disease (ALS)	★★★			Typical
Nicotine Dependence	★★★			Typical
Oral and Throat Cancer	★★★			Typical
Otosclerosis	★★★			Typical
Peripheral Arterial Disease	★★★			Typical

2) Genetic Medical Results (from 23andMe)

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Sarcoidosis	★★★			Typical
Schizophrenia	★★★			Typical
Selective IgA Deficiency	★★★			Typical
Melanoma: Preliminary Research	★★★			Typical
Squamous Cell Carcinoma	★★★			Typical
Sudden Cardiac Arrest	★★★			Typical
Attention-Deficit Hyperactivity Disorder	★★			Typical
Creutzfeldt-Jakob Disease	★★			Typical
Developmental Dyslexia	★★			Typical
Gestational Diabetes ♀	★★			Typical
Hypertriglyceridemia	★★			Typical
Nonalcoholic Fatty Liver Disease	★★			Typical
Neural Tube Defects ♀	★★			Typical
Placental Abruption ♀	★★			Typical
Preeclampsia ♀	★★			Typical
Tardive Dyskinesia	★★			Typical

The genotyping services of 23andMe are performed in LabCorp's CLIA-certified laboratory. The tests have not been cleared or approved by the FDA but have been analytically validated according to CLIA standards. The information on this page is intended for research and educational purposes only, and is not for diagnostic use.