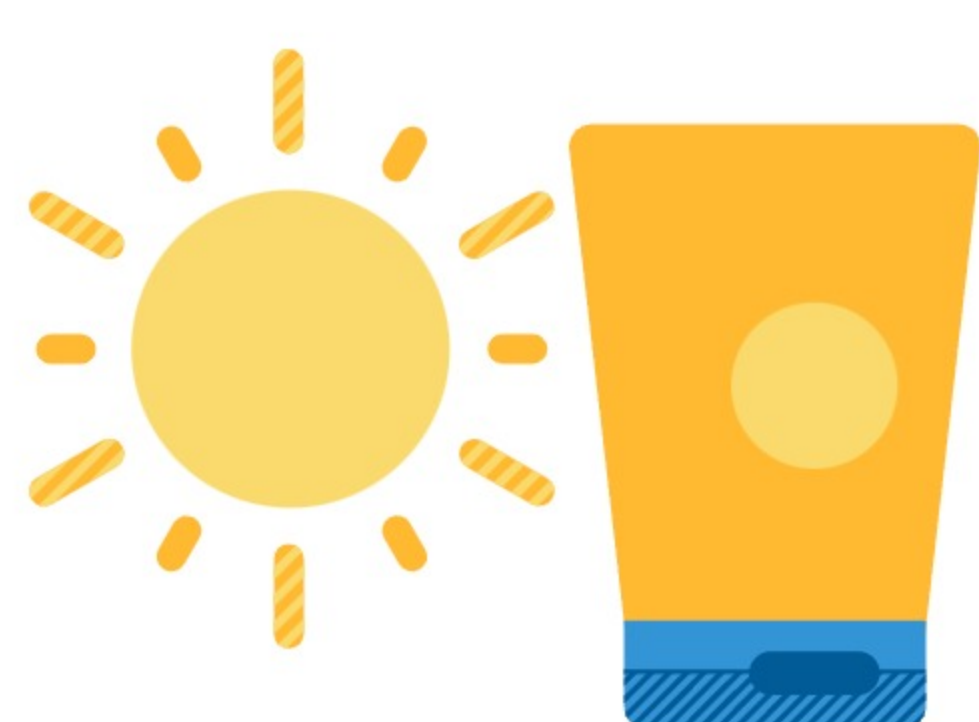


Skin Pigmentation

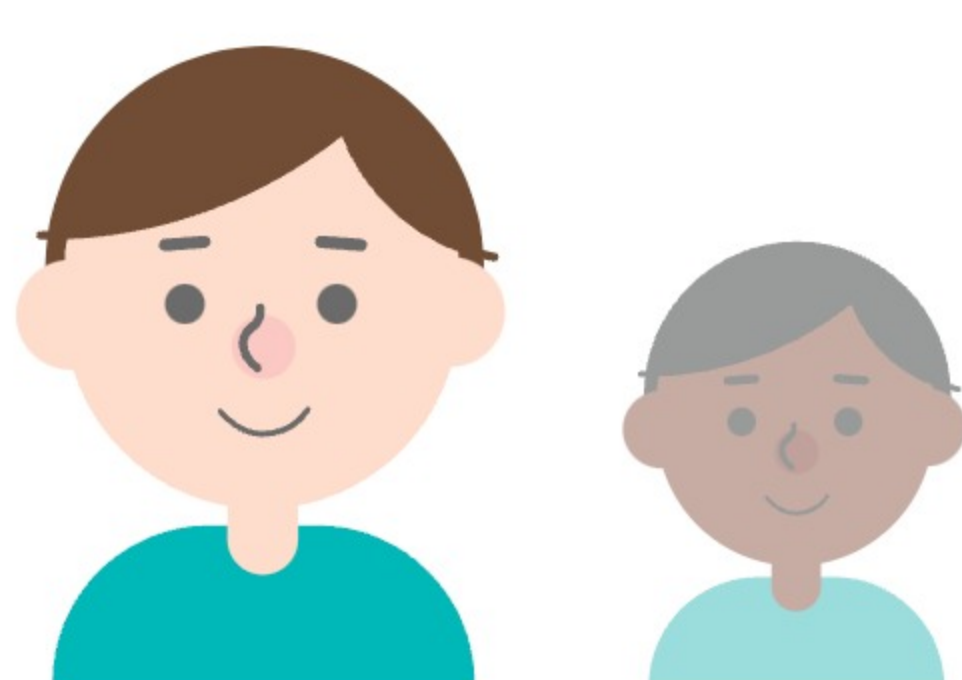
Overview

Scientific Details



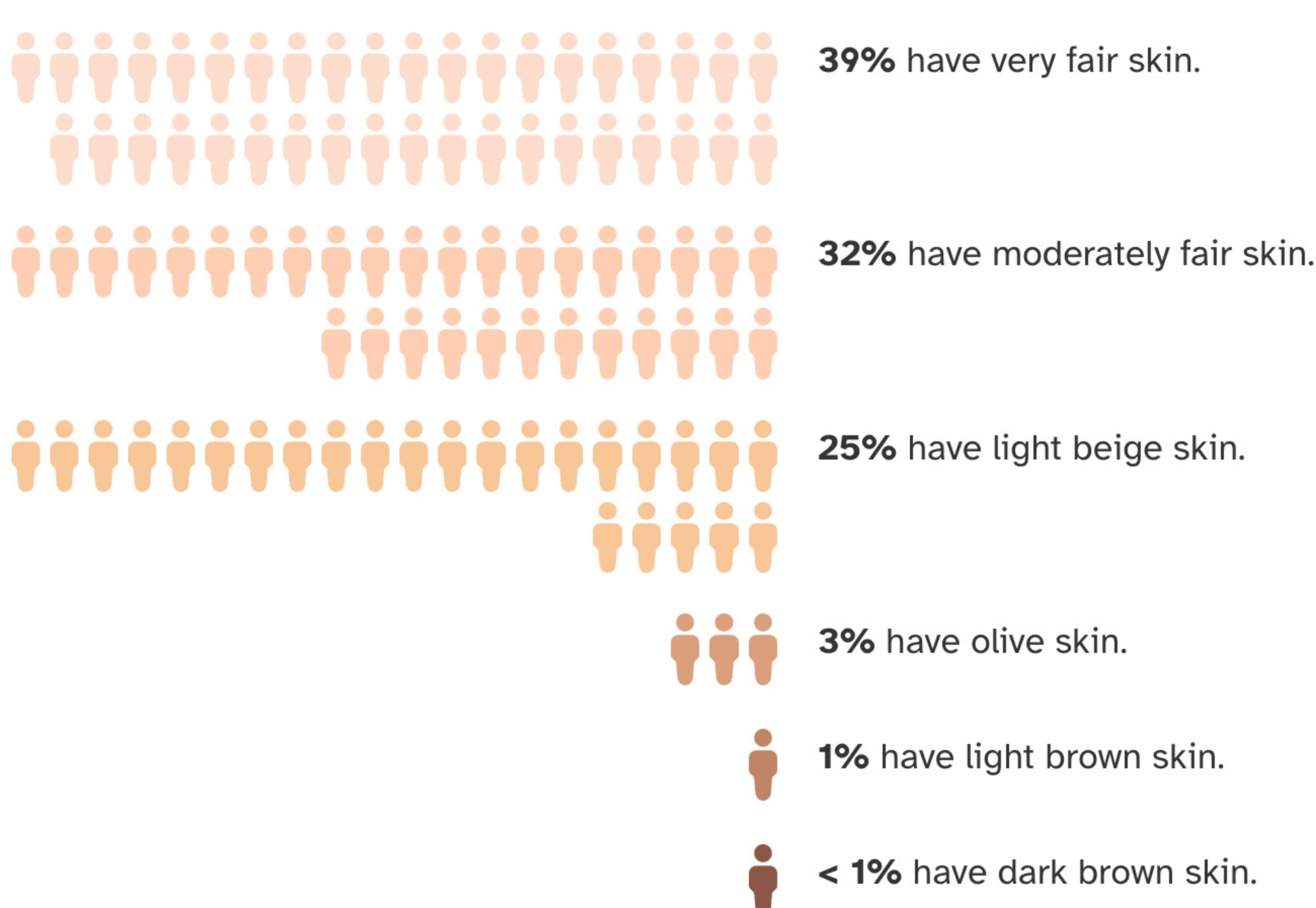
The original sunscreen

Though skin pigment is what gives us our diverse range of skin colors, it's not just a matter of appearances: the real job of skin pigment is to protect us from the sun's UV rays.



Jamie, your genetics make you **most likely to have lighter skin.**

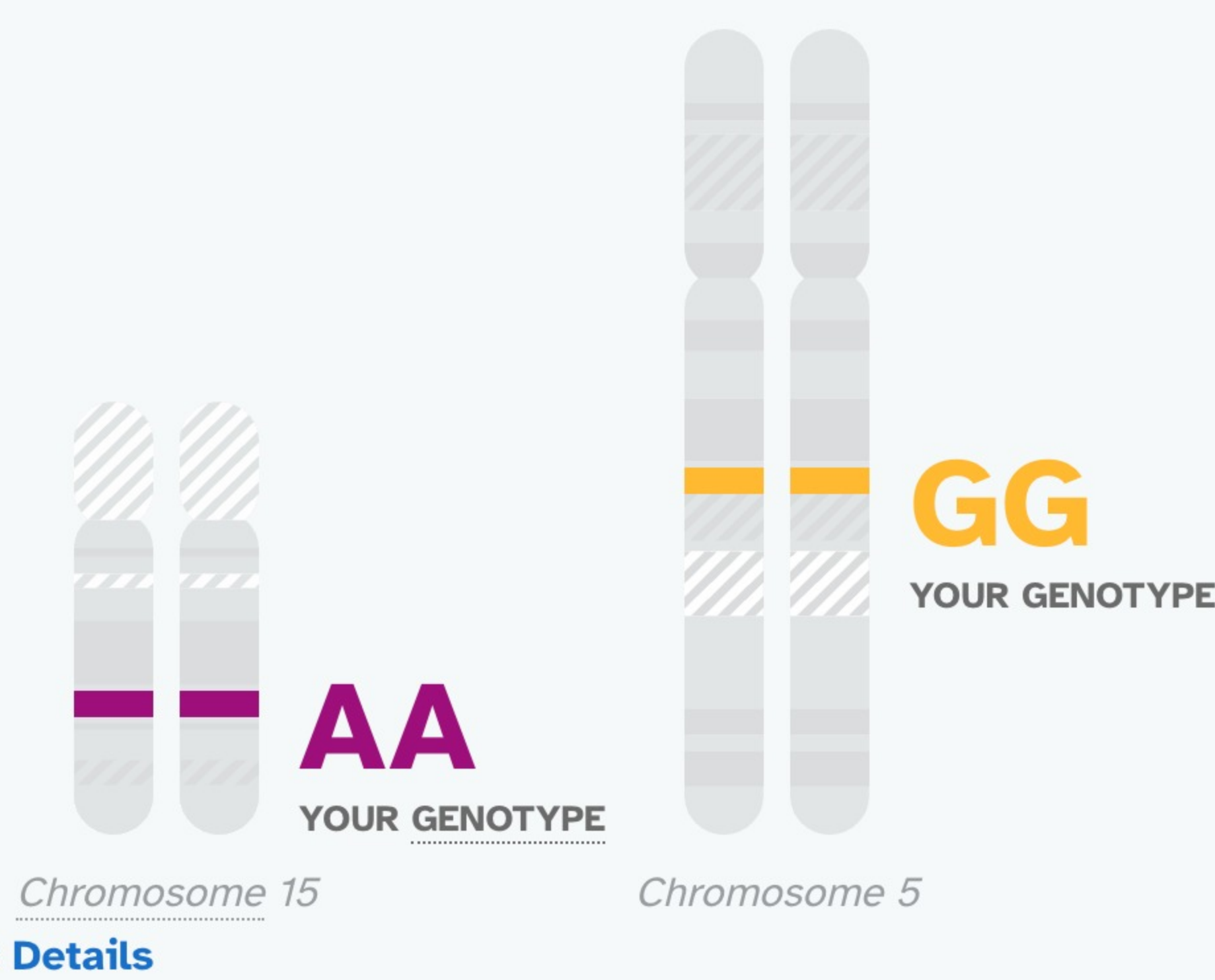
Of 23andMe research participants with genetics like yours:



→ What color is your skin?

How did we calculate your result?

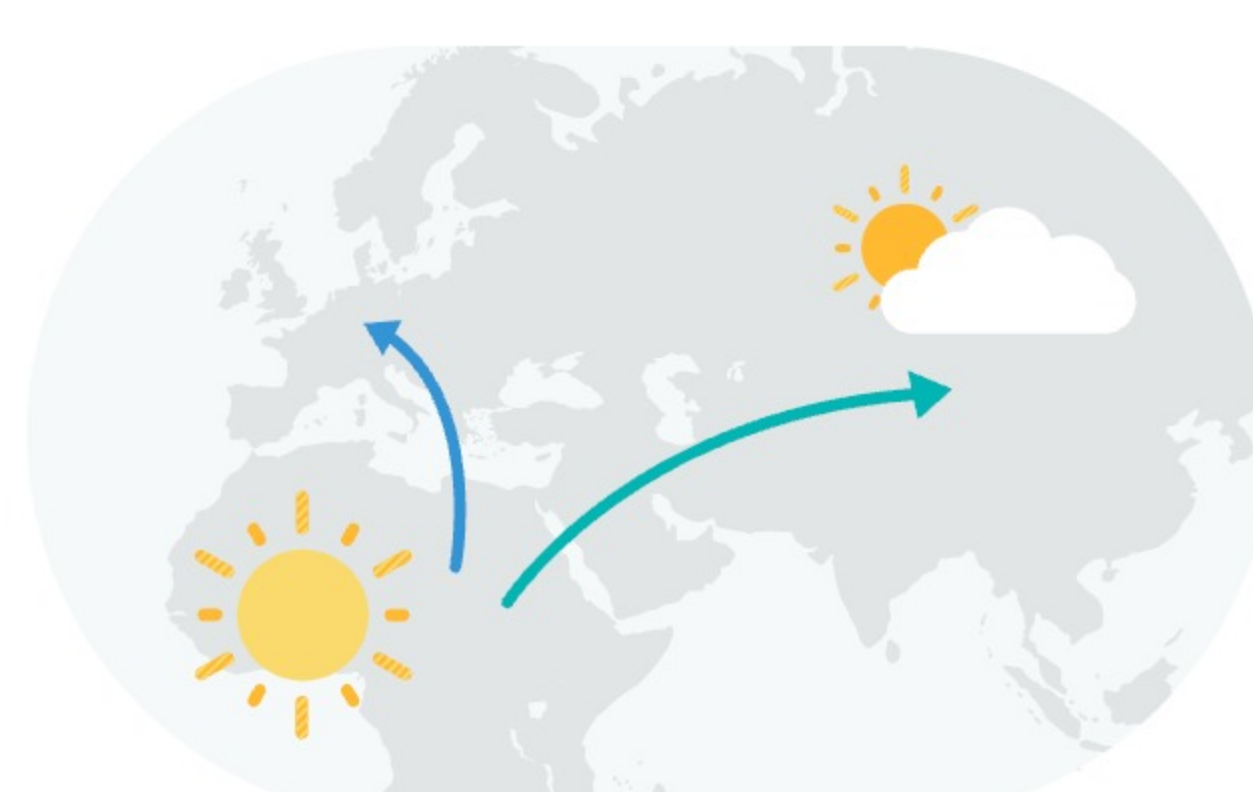
We looked at two places in your DNA (genetic markers) that affect your chances of having lighter or darker skin. Your combination of variants at these markers is usually found in people with lighter skin.



More about skin pigmentation

Why do people have different skin colors?

All early humans had dark skin. Genetic variations causing lighter skin probably appeared at least twice in human history, during two separate migrations out of Africa: one to Europe, and one to Asia. This is likely because higher amounts of pigment make darker skin more effective at sun protection, but less efficient at using sunlight to make vitamin D. As people began living in northern latitudes, having lighter skin helped them make more vitamin D using less sunlight.



Two migrations out of Africa

Health tradeoffs of light and dark skin

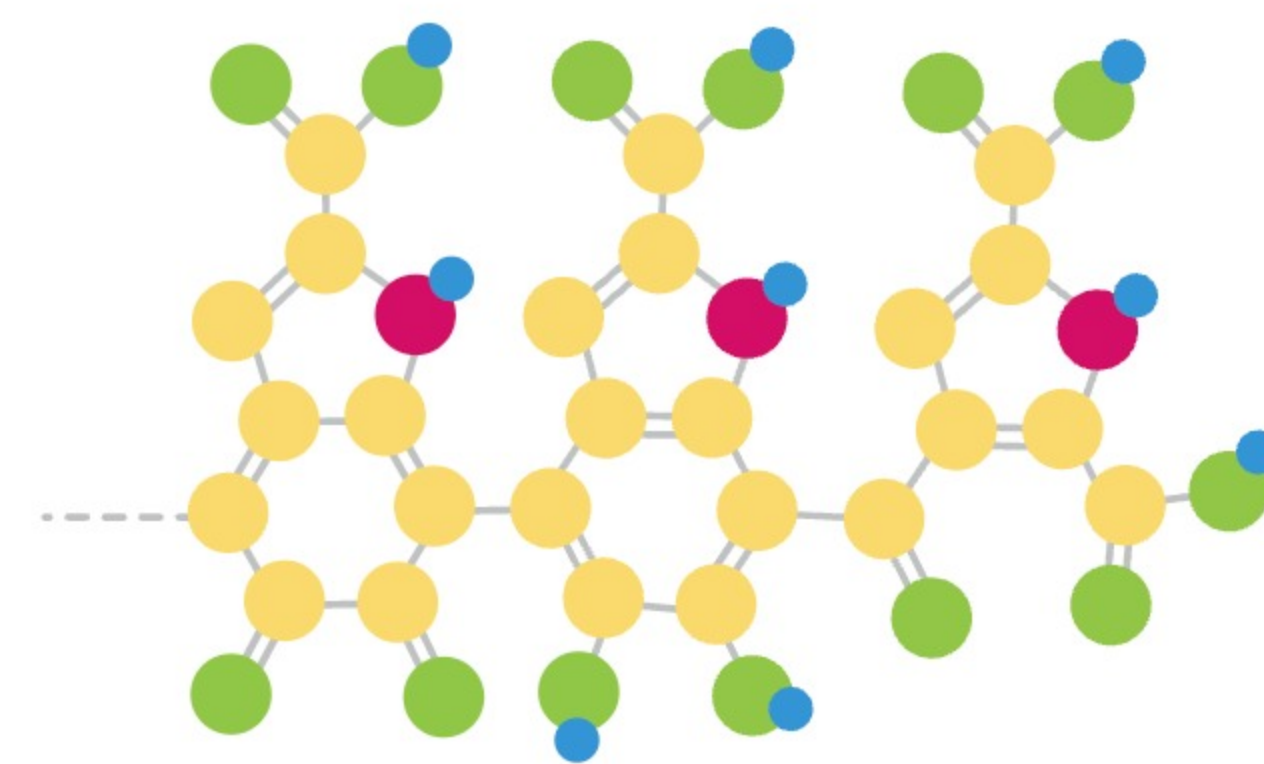
It's important to both protect your skin from the sun and to get adequate vitamin D. But the lighter your skin is, the more important it is to protect your skin from even brief sun exposure to reduce the risk of skin cancer. And if you have darker skin and live in northern latitudes where there is less sun, you may have more trouble getting enough vitamin D. That makes it especially important to get plenty of vitamin D from dietary sources like fish and fortified dairy.



Dietary sources of Vitamin D

Genetics

The genetic variants in this report, in two genes named SLC45A2 and SLC24A5, are associated with variation in skin color in people of European and African descent. These variants affect how much of a brown/black pigment, called eumelanin, is produced by your skin cells. But there are likely different genetic variants that help explain skin color variation in people of Asian and Native American descent.



Structure of eumelanin

Keep exploring your Traits results.

Contribute

Join the research effort and contribute to new discoveries.

Compare

Compare your results to your family and friends.

Discuss

Join the discussion with other 23andMe customers interested in Traits.

Did you find this interesting?

Yes No



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- Family Tree
- Your Connections
- GrandTree
- Advanced DNA Comparison

Skin Pigmentation

Overview

Scientific Details

We use one of two different methods to calculate your trait results.

Statistical Model

Most traits are influenced by many different factors, including genetics, lifestyle, and environment. Usually, a statistical model using many factors provides better predictions than looking at single factors by themselves. To develop our models, we first identify genetic markers associated with a trait using data from tens of thousands of 23andMe customers who have consented to research. Then, we use statistical methods to generate a "score" for that trait using your genotype at the relevant genetic markers as well as your age and sex. We predict your likelihood of having different versions of the trait based on the survey responses of 23andMe customers with similar scores. These predictions apply best to customers who are of the same ethnicity as the people whose data contributed to the model. The accuracy of these predictions varies from trait to trait.



[Read more about our statistical methodology](#)

Curated Model

For some traits, just a few genetic markers can strongly predict whether a person will have a particular version of the trait. For curated models, we first evaluate published scientific studies to identify genetic markers with well-established associations with the trait. Then, we look at genetic and survey data from tens of thousands of 23andMe customers who have consented to research. We estimate your likelihood of having different versions of the trait based on survey responses from customers who are genetically similar to you at those markers. These results apply best to customers who are of the same ethnicity as the people whose data contributed to the predictions.

About your Skin Pigmentation result

Your result for this trait was calculated using a **curated model**.

Variants Detected		View All Tested Markers	
Marker Tested	Genotype*	Additional Information	
A111T Gene: SLC24A5 Marker: rs1426654	A Variant copy from one of your parents	 A Variant copy from your other parent	<ul style="list-style-type: none"> Biological explanation Typical vs. variant DNA sequence(s) Percent of 23andMe customers with variant References [1, 3, 9, 10]
L374F Gene: SLC45A2 Marker: rs16891982	G Variant copy from one of your parents	 G Variant copy from your other parent	<ul style="list-style-type: none"> Biological explanation Typical vs. variant DNA sequence(s) Percent of 23andMe customers with variant References [1, 4, 9, 10]

*This test cannot distinguish which copy you received from which parent. This test also cannot determine whether multiple variants, if detected, were inherited from only one parent or from both parents. This may impact how these variants are passed down.

23andMe always reports genotypes based on the 'positive' strand of the human genome reference sequence (build 37). Other sources sometimes report genotypes using the opposite strand.

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Change Log

Your report may occasionally be updated based on new information. This Change Log describes updates and revisions to this report.

Date	Change
Dec. 15, 2017	Skin Pigmentation report updated with revised content and design.
June 22, 2017	Skin Pigmentation report separated from the Skin report.
May 12, 2016	Customers with a "Not Determined" genotype for a genetic marker used for Skin Pigmentation previously received a result based on the typical genotype for that marker. These customers will now receive a "Not Determined" result.
Oct. 21, 2015	Skin report created.



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