

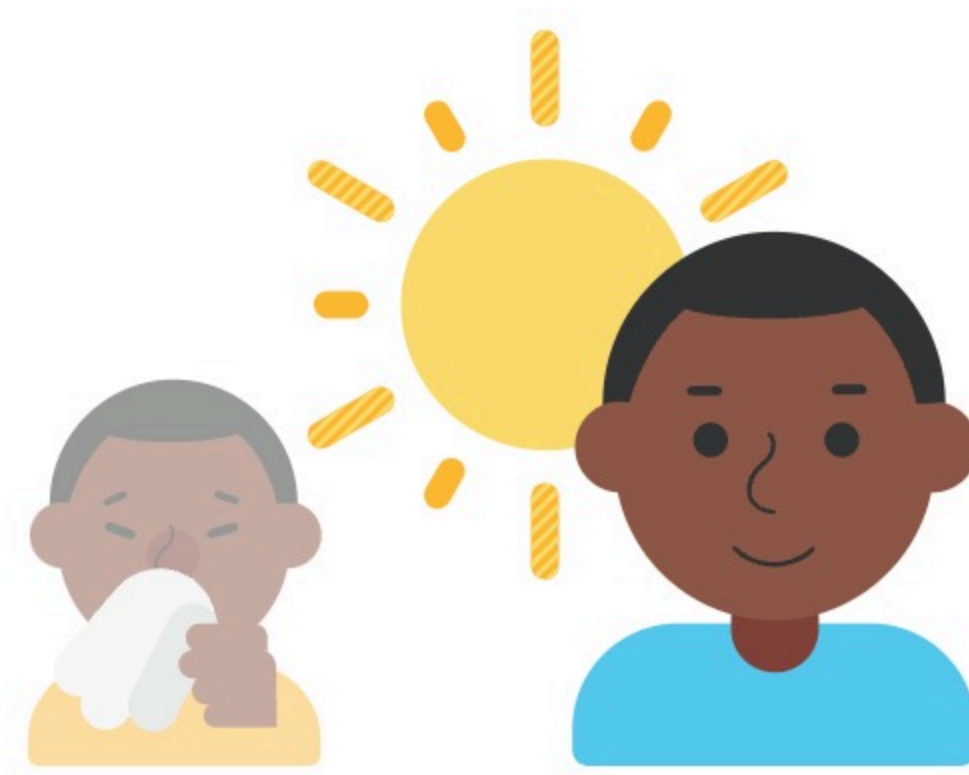
Photic Sneeze Reflex

Overview Scientific Details



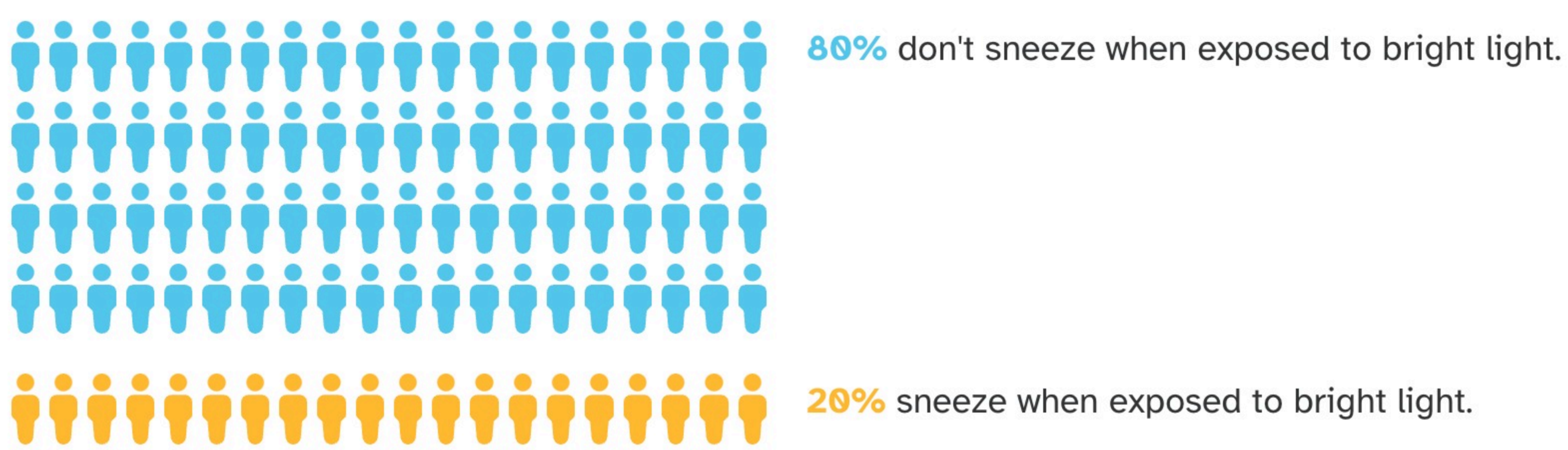
ACHOO!

It could be a case of crossed wires in the brain: for some people, bright sunlight kicks off a round of sneezing.



Jamie, the combination of your genetics and other factors makes you **unlikely to have the photic sneeze reflex.**

Of 23andMe research participants with results like yours:

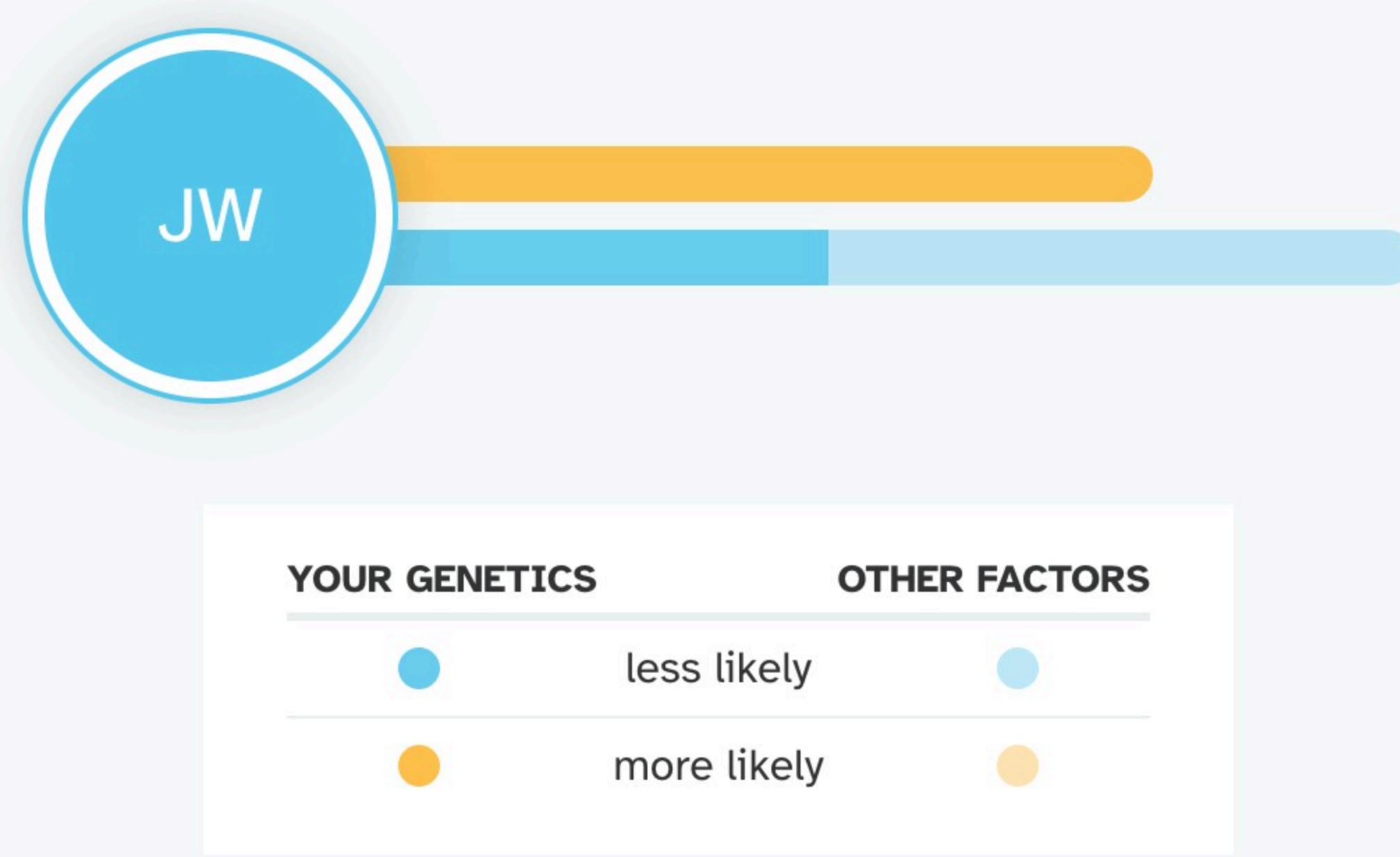


Do you tend to sneeze in bright sunlight?

How did we calculate your result?

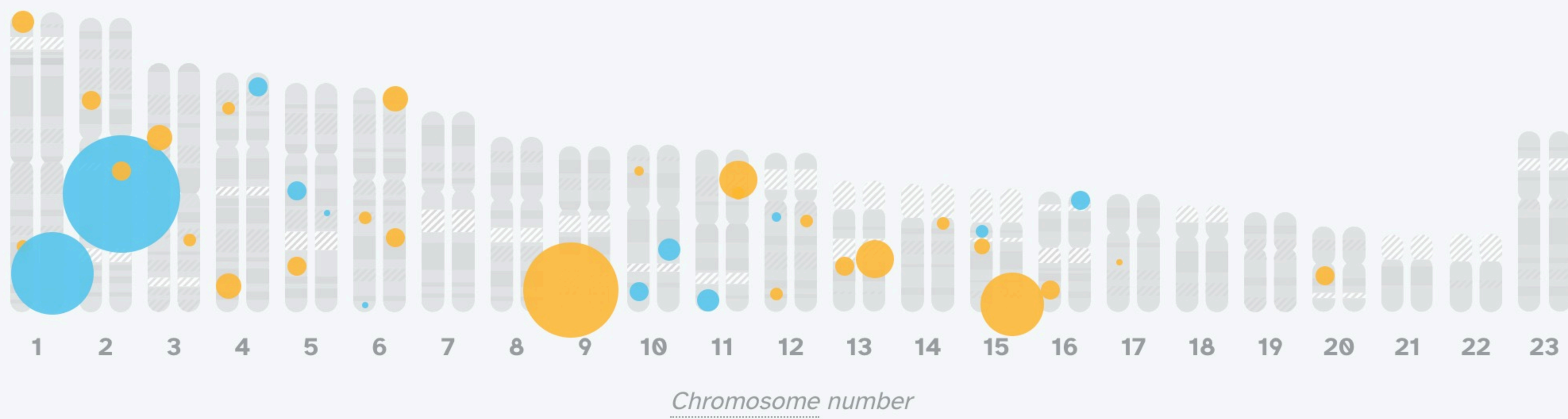
We added up the effect of your genetic variants at 54 places in your DNA (genetic markers) plus the effect of other factors, including your age and sex.

Total effect of your genetics + other factors



Breakdown of your genetics

The bigger the circle, the stronger the effect your variants have on your overall chances.



At 12 of the genetic markers we looked at you have variants that make you less likely to have the photic sneeze reflex, and at 26 you have variants that make you more likely. At 16 of the markers that we looked at, you have variants with no effect either way (not shown).

See Scientific Details

More about the photic sneeze reflex

Why do we sneeze?

Typically people sneeze as a result of irritation in our noses due to things like dust or viruses. In some people, however, sneezing seems to be a reaction to more unexpected stimuli like bright light, having a full bladder or even being very full after eating.



Discoveries in progress

Scientists are still trying to understand why light-induced sneezing happens. But that didn't stop them from coming up with a clever name for it, "Autosomal Dominant Compelling Helio-Ophthalmic Outburst," or "ACHOO Syndrome." Although there is little research on this phenomenon, some studies suggest it runs in families. Research at 23andMe has identified 54 genetic markers associated with this quirky reaction to bright light.



The speed of a sneeze

Each sneeze sprays out thousands of tiny droplets. Studies of sneezing have found that these droplets travel surprisingly far and fast: they can go farther than two and a half feet, and move at speeds of up to 12 mph.



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



Give the gift of DNA discovery.

Gift a kit

Refer friends, earn rewards.

Get reward

ANCESTRY

- Ancestry Overview
- All Ancestry Reports
- Ancestry Composition
- DNA Relatives
- Order Your DNA Book

HEALTH & TRAITS

- Health & Traits Overview
- All Health & Traits Reports
- My Health Action Plan
- Health Predisposition
- Carrier Status
- Wellness
- Traits

RESEARCH

- Research Overview
- Surveys and Studies
- Edit Answers
- Publications

FAMILY & FRIENDS

- View all DNA Relatives
- Family Tree
- Your Connections
- GrandTree
- Advanced DNA Comparison

Photic Sneeze Reflex

[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 Photic Sneeze Reflex result

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

About the Photic Sneeze Reflex model

Created based on customers of ethnicity: **European**

Number of customers used to create: **110,000**

Number of markers: **54**

Area Under Curve (AUC): **0.64**

Non-genetic factors: **Age, Sex**

Bin #	Photic sneeze reflex	No photic sneeze reflex
1	12.50%	87.50%
2	15.85%	84.15%
3	18.95%	81.05%
4	20.10%	79.90%
JW 5	20.43%	79.57%
6	23.25%	76.75%
7	24.77%	75.23%
8	25.56%	74.44%
9	26.98%	73.02%
10	29.53%	70.47%
11	29.45%	70.55%
12	31.58%	68.42%
13	33.38%	66.62%
14	35.51%	64.49%
15	37.36%	62.64%
16	39.47%	60.53%
17	41.81%	58.19%
18	45.04%	54.96%
19	47.90%	52.10%
20	57.47%	42.53%
Overall European	30.84%	69.16%

References

- [Bhutta MF. \(2015\). "Sneezing Induced by Bladder Fullness." Int J Urol. 22\(2\):239. ↗](#)
- [Dean L et al. \(2012\). "ACHOO Syndrome". ↗](#)
- [Duguid JP. \(1946\). "The size and the duration of air-carriage of respiratory droplets and droplet-nuclei." J Hyg \(Lond\). 44\(6\):471-9. ↗](#)
- [Eriksson N et al. \(2010\). "Web-based, participant-driven studies yield novel genetic associations for common traits." PLoS Genet. 6\(6\):e1000993. ↗](#)
- [Forrester JM. \(1985\). "Sneezing on exposure to bright light as an inherited response." Hum Hered. 35\(2\):113-4. ↗](#)
- [Langer N et al. \(2010\). "When the sun prickles your nose: an EEG study identifying neural bases of photic sneezing." PLoS One. 5\(2\):e9208. ↗](#)
- [Nishimura H et al. \(2013\). "A new methodology for studying dynamics of aerosol particles in sneeze and cough using a digital high-vision, high-speed video system and vector analyses." PLoS One. 8\(11\):e80244. ↗](#)
- [Songu M et al. \(2009\). "Sneeze reflex: facts and fiction." Ther Adv Respir Dis. 3\(3\):131-41. ↗](#)
- [Teebi AS et al. \(1989\). "Autosomal Dominant Sneezing Disorder Provoked by Fullness of Stomach." J Med Genet. 26 \(8\):539-40. ↗](#)

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	Photic Sneeze Reflex report updated with revised content and design. Additionally, as part of regular report review and improvements in data analysis, some customers may see an updated result.
June 22, 2017	Photic Sneeze Reflex report separated from the Physical Responses report.
Oct. 21, 2015	Physical Responses report created.



Give the gift of DNA discovery.

[Gift a kit](#)

Refer friends, earn rewards.

[Get reward](#)

ANCESTRY

Ancestry Overview
All Ancestry Reports
Ancestry Composition
DNA Relatives
Order Your DNA Book

HEALTH & TRAITS

Health & Traits Overview
All Health & Traits Reports
My Health Action Plan
Health Predisposition
Carrier Status
Wellness
Traits

RESEARCH

Research Overview
Surveys and Studies
Edit Answers
Publications

FAMILY & FRIENDS

View all DNA Relatives
Family Tree
Your Connections
GrandTree
Advanced DNA Comparison