23andMe

Linda Avey
Co-founder
23andMe

Personal Genome Service™

- Holistic genetic exploration of you
  - Ancestry and health are inter-related
- Dynamic, interactive
  - Monthly updates, new content
  - Sharing widely adopted

Enabling Consumer Access to Research Knowledge

- 2008--A watershed year in GWAS
- Transparent criteria for reporting
  - ER (25) vs PR (53)
- Regular updates as they emerge
  - Risk profiles could change with new discoveries
- New definitions needed for genetic information (not a “diagnostic” or a “test”)

Gene Journal

my gene journal

Intended for research and educational purposes. Not for diagnostic use.

Get your data and see how it relates to ongoing research in health and physical traits.

★★★★ **Established Research** is widely accepted by the scientific community.
★★★ **Preliminary Research** has been published in peer-reviewed journals but may not yet be fully accepted.

Browse and Search Topics (78)

View: All Topics Search: Go Show All Topics

☑ Show Established Research first.

Prev | **1** 2 3 4 | Next

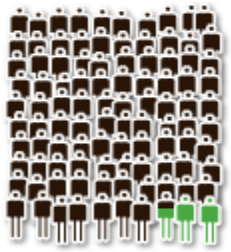
Name ▲	Research Confidence	Last Updated
Age-related Macular Degeneration	★★★★	May 21, 2008
Alcohol Flush Reaction	★★★★	Dec 19, 2007
Bitter Taste Perception	★★★★	Nov 19, 2007
Breast Cancer	★★★★	Dec 17, 2007
Celiac Disease	★★★★	Apr 16, 2008
Colorectal Cancer	★★★★	Jan 24, 2008
Crohn's Disease	★★★★	Nov 19, 2007

Psoriasis Gene Journal

Your Genetic Data

Show information for Lilly Mendel (Mom) assuming European ethnicity and an age range of 0-19

Where's mine?



Lilly Mendel (Mom)

2.7 out of 100

people of European ethnicity who share Lilly Mendel (Mom)'s genotype will get Psoriasis between the ages of 0 and 19.

Average

2.3 out of 100

people of European ethnicity will get Psoriasis between the ages of 0 and 19.

What does the Odds Calculator show me?

Use the ethnicity and age range selectors above to see the estimated incidence of Psoriasis due to genetics for someone with **Lilly Mendel (Mom)**'s genotype. The 23andMe Odds Calculator assumes that a person is free of the condition at the lower age in the range. You can use the name selector above to see the estimated incidence of Psoriasis for the genotypes of other people in your account.

The 23andMe Odds Calculator only takes into account effects of markers with known associations that are also on our genotyping chip. Keep in mind that aside from genetics, environment and lifestyle may also contribute to one's chances of developing psoriasis.

Genes vs. Environment

66-80 %
Attributable to Genetics

Twin studies have estimated that the heritability of psoriasis is 66-80%. This means that genes contribute more to individual differences in risk of psoriasis than environmental factors do. Known environmental risk factors for psoriasis include stress, obesity, smoking, and the presence of infections with HIV, strep throat, or other contagious illnesses. (sources)

Psoriasis Gene Journal

Marker Effects

What does this chart show?

The chart shows the approximate effects of the selected person's genotype at the 3 reported markers. Higher, red bars indicate increased risk from the average, while lower, green bars indicate decreased risk from the average. The light gray bars show the maximum possible effects for the possible genotypes at the marker.

HLA-C

Marker: rs10484554

The HLA (Human Leukocyte Antigen) is a stretch of DNA that contains many genes involved in the immune system's recognition of invaders. Different versions of these HLA genes help determine what kinds of proteins immune cells treat as foreign invaders.

The HLA region (specifically the version of the HLA-C gene called HLA-Cw*0602) was the first genetic marker to be associated with psoriasis. The SNP rs10484554 is closely linked to HLA-C. The T version of this SNP is associated with an increased risk of psoriasis.

Citations

Liu et al. (2008) . "A genome-wide association study of psoriasis and psoriatic arthritis identifies new disease loci." *PLoS Genet* 4 (3):e1000041.

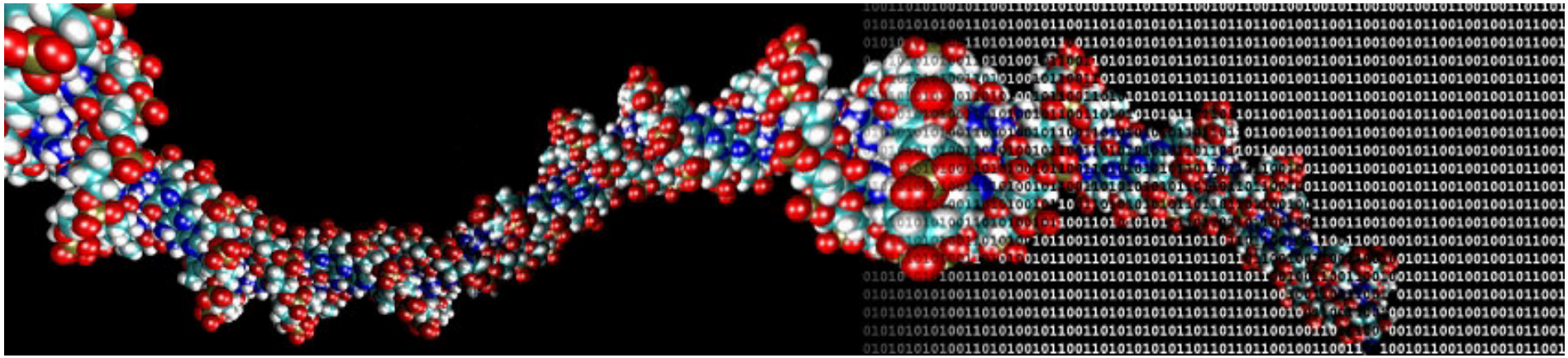
Data Security

- Security is built into our development process starting from the design stage. Regular audits by white hat experts.
- All sensitive data including genotypes are always encrypted at rest, with the encryption keys also encrypted.
- The main genotype data repository is secured and separated from other environments such as the web application, analytics, and research. Nothing accesses it directly.
- Account, genotype, and phenotype data are stored separately in a de-identified manner, and require additional steps to link them together while the user is logged in.


23andWe

Research 2.0

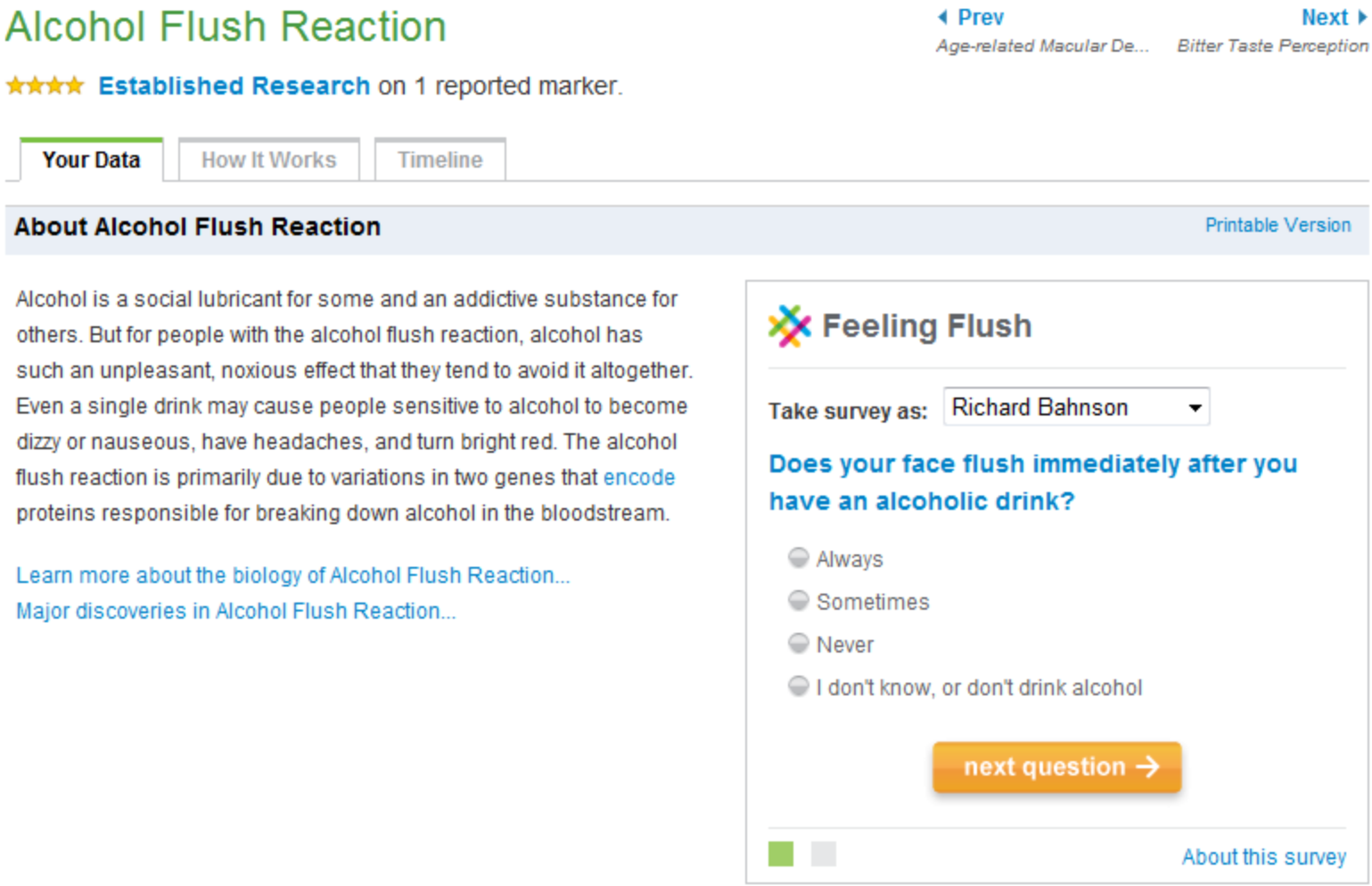
- Built on genetics platform
- ‘Human subjects’ are real, living people
- Individuals engaged in the process and realize their impact
- Results, both negative and positive, are shared
- Individuals get their data



Why Now?

- Convergence of technologies: Web 2.0 meets DNA analysis tools
- ILMN data quality, flexibility, cost
  - Targeted genomic regions: HLA, cancer, DMET, Mito, Y
- New paradigm for achieving personalized healthcare

Survey Tools

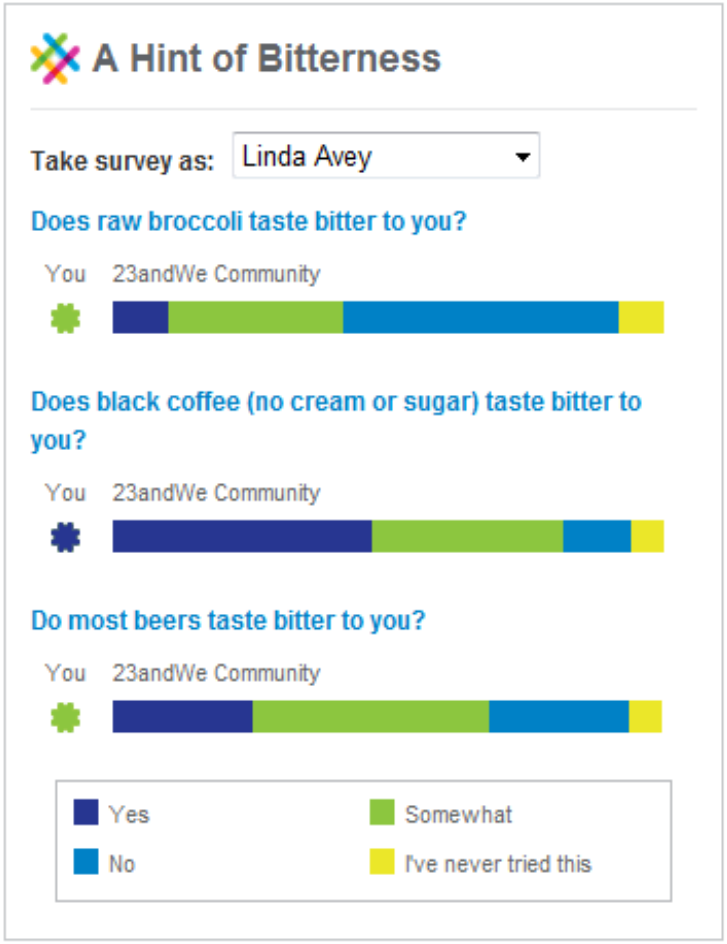


Community Feedback

About Bitter Taste Perception Printable Version

Why do some people seem to enjoy Brussels sprouts, while others can't stand them? The answer may be that genetic variation prevents some people from tasting bitter flavors found in certain vegetables. About 25% of people are unable to taste a chemical called propylthiouracil (PROP) similar to the bitter components found in cabbage, raw broccoli, coffee, tonic water, and dark beers. These people are essentially "taste-blind"—and compared to those who do respond to PROP, taste-blind people find most food and drink to be less bitter, or not bitter at all. It turns out that sensitivity to this kind of taste is due almost entirely to a single gene that encodes receptors in taste buds on the tongue. A SNP in this gene is responsible for whether a person is bitter taste-blind.

Learn more about the biology of Bitter Taste Perception...
Major discoveries in Bitter Taste Perception...



Analysis Flow

- Data stays at 23andMe; customers can share and distribute as they choose
- External researchers can propose surveys or specific queries, after peer review
- Aggregated results published/shared

Translational Goals

- Tying individual responses to clinical outcomes and genetics
- Building evidence base of clinically validated correlations
- Working with all healthcare stakeholders: researchers, physicians, AND the consumer