

Genetic Lifehacks

Learn. Experiment. Optimize.

Hi everyone,

I've spent the past week working on some back-end improvements and new features to come. Thus, I didn't get my latest article on mold genes finished yet.

Instead, I want to feature several articles below that cover some of the phase I detoxification genes. The CYP450 family of enzymes are important for breaking down many common medications. Variants that affect how these enzymes work are fairly common. This is why doctors often say "take this prescription and see how it works for you". Individual differences in the ways that medications work are pretty common. This is referred to as 'pharmacogenetics' - looking at the ways that genetic variants impact pharmaceutical reactions.

Your 23andMe, AncestryDNA, etc data can be a *starting point* for looking at genetic variants that impact medications.

But... always keep in mind that these genotyping tests don't cover all of your genes. If you are needing a more definitive answer on drug metabolism, talk with your doctor about (or Google) pharmacogenetic testing. There are companies that offer clinical-grade, thorough genetic testing to show which drugs may not work for you.

One final thought for this week:

When you sign up with a genetics report company, always read the terms of service carefully. I've been reading through some competitors' TOS this past week in preparation for updating the Genetic Lifehacks' TOS before rolling out new features.

It is eye-opening to see that many companies, who claim that they are all about privacy, spell out in their TOS how many ways they are using your de-identified genetic data. There is an assumption that de-identified genetic data is no longer personal data, and that the company can use it for research or other purposes. But a number of [studies](#) have shown that de-identified data can be readily re-identified when combined with other information. A pretty cool [study](#) published last year looked at the feasibility of using publicly available anonymous genotype data to identify a person via social media photos. The researchers were actually able to match some de-identified genetic data files to the person's photo -- but not at a large scale (yet).

Gratefully yours,

~ Debbie Moon

Thank you for supporting Genetic Lifehacks through your membership! If you ever have a problem or question about your membership, please don't hesitate to email me at [debbie @geneticlifehacks.com](mailto:debbie@geneticlifehacks.com).

Phase I Detoxification

[Overview article](#) that explains how various substances, including drugs, are broken down and excreted.



CYP2B6: Genetic variants

The CYP2B6 enzyme is part of the body's first line of defense in detoxifying and breaking down certain substances. It is one in the family of [CYP450 enzymes](#), and CYP2B6 is important for metabolizing several medications.



CYP2C19 – Metabolizing medications

The CYP2C19 gene is important in how your body responds to medications and breaks down toxins. Important here is that variants in CYP2C19 impact your individual response to medications such as prilosec, Plavix, valium, and certain SSRIs.



CYP2D6 gene and medication reactions

Say you aren't feeling well, have had a cold for a week, and can't sleep. You're just plain miserable! In your sleep-deprived state, you decide to take some Nyquil (or another cough syrup containing dextromethorphan). Some people may get relief and finally get some sleep. Others... well, they may wake up the next morning feeling like they were hit by a truck.

This is just one example, among many, of medications that are metabolized by the CYP2D6 enzyme. There are many genetic variants that impact the function of CYP2D6, causing a wide variety of reactions to some commonly used medications.

[Read the article, view your genes...](#)



CYP2C8: Prescription



CYP2C9 Genetic Variants

medications and arachidonic acid

The CYP2C8 gene is important in the metabolism of several chemotherapy drugs (e.g. Taxol) as well as playing a role in the metabolism of NSAIDs.

The CYP2C9 gene that codes for an enzyme that metabolizes, or breaks down, quite a few medications in the liver.

CYP2C9 also breaks down linoleic acid, arachidonic acid, and serotonin outside of the liver.

Love to read and discuss new studies on genetics?

I've started a [Reddit community for Genetic Lifehacks](#) with the goal of creating a space where members can post and discuss interesting new research.

Genetic Lifehacks

Spring blizzard with zero visibility, MT

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