

# Q&A

## Pharmacogenomics: Gene-Powered Prescriptions

The Pharmacogenomics Clinic at NorthShore's Mark R. Neaman Center for Personalized Medicine offers genetic testing and interpretation to help deliver the right drug, at the right dose, the first time. Clinic Director Mark Dunnenberger, PharmD, BCPS, and Psychiatrist Laura Parise, MD, team up to answer key questions about pharmacogenomics and how it helps deliver better outcomes for patients.

**Q** What is pharmacogenomics, exactly?

**A (Dr. Dunnenberger):** Pharmacogenomics relies on genetic testing to study genes specifically involved in metabolizing and transporting drugs throughout the body. Our clinic is the first of its kind in the country focused on how an individual's DNA influences their response to medications. If we find something different from what's most commonly seen in the majority of the patient population, then we need to think differently about certain medications.

**Q** It sounds like this information is helpful to physicians as much as the patient, right?

**A (Dr. Dunnenberger):** Absolutely. Our physicians now have a powerful clinical decision-making tool within NorthShore's secure Electronic Medical Record (EMR) system with built-in alerts and practical applications to help them deliver individually tailored drug therapy to their patients. Traditionally, physicians used evidence-based information on which medication is most likely to work and prescribe it on a trial-and-error basis. With pharmacogenomics, they now have more personalized data to better choose the best drug therapy the first time for a patient with a particular condition.

**Q** As a psychiatrist, how do you use pharmacogenomics to treat depression and mental health issues?

**A (Dr. Parise):** Using DNA as a tool to choose medication helps reduce side effects, as we're able to determine if someone is highly sensitive to a specific medication—especially if they're new to treatment. We also can better treat patients with mood and anxiety disorders, depression, and addiction by using their pharmacogenomics profile to identify medications that are more suitable for their needs based on how their body uniquely responds to the drug.

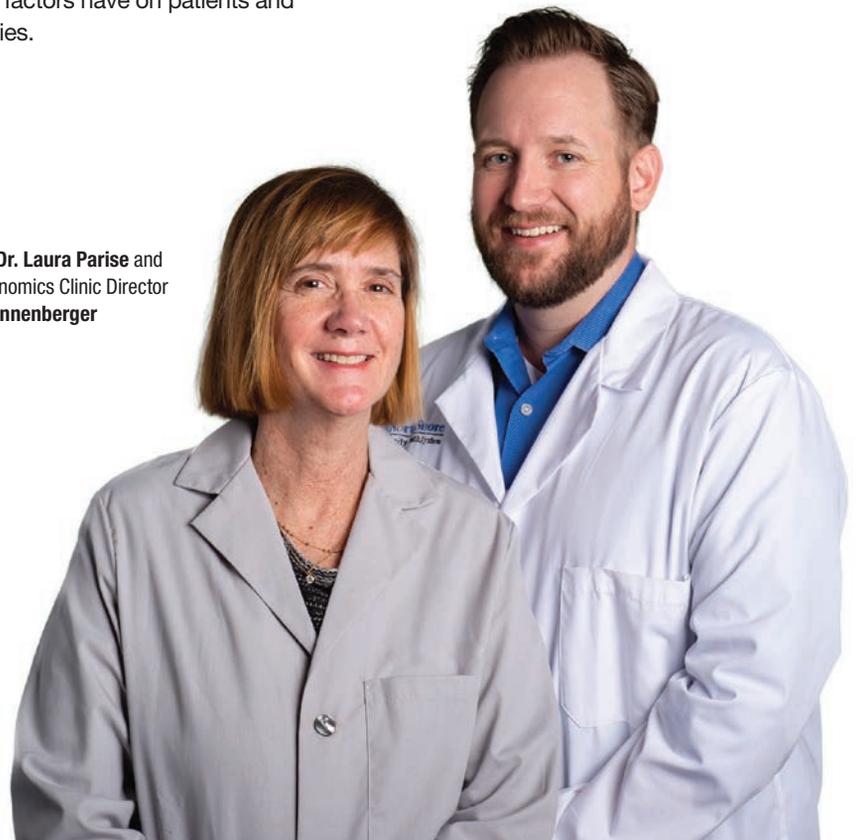
**Q** Do patients benefit more quickly through pharmacogenomics-based prescribing?

**A (Dr. Parise):** In many cases, yes, since we can target treatments more efficiently and effectively. The more tools we have, the more forward-thinking we can be in terms of faster and better treatments. By focusing earlier on beneficial medications, we have the potential to diminish the effect that mental health and other factors have on patients and their families.

### Precision Healthcare

Through Advanced Primary Care at NorthShore, our primary care physicians integrate genetics as part of each patient's care plan with the most advanced screenings. We can identify the best medication choices through pharmacogenomics and confirm DNA risk factors for disease at its earliest, most treatable stage. Connect to smarter healthcare at [northshore.org/b6](http://northshore.org/b6), or to make a clinic appointment, please call **(847) 492-5700 (Ext. 1282)**.

Psychiatrist **Dr. Laura Parise** and Pharmacogenomics Clinic Director **Dr. Mark Dunnenberger**



**Q** Can you give an example of how pharmacogenomics helped a patient?

**A** (Dr. Parise): I treated a patient who had been taking a certain medication for years and whose depression was in partial remission. But because they weren't feeling 100%, they began drinking alcohol excessively and this went on for years. When the patient entered our program, we discovered that their body didn't tolerate a certain class of antidepressants. Based on pharmacogenomics, we switched to another drug and subsequently both their depression and substance use disorder achieved remission.

(Dr. Dunnenberger): I'd like to add that surveys of our patients with a pharmacogenomic screening show they're more likely to take their prescribed medication. So, if we can help increase their adherence, the more likely we're able to improve their health.



## Tailored Treatment

When it comes to medications, one size does not fit all. Tune in to a podcast featuring Mark Dunnenberger, PharmD, to better understand the science of pharmacogenomics at [northshore.org/b8](http://northshore.org/b8).



## Connect to Convenience

Enjoy the ease of NorthShoreConnect to manage your healthcare. Download our mobile app at the Apple iTunes Store or Google Play to chat with physicians, make appointments, check lab results and more. Sign up today at [northshore.org/b9](http://northshore.org/b9).



## The Power of Pharmacogenomics

Through the Neaman Center for Personalized Medicine, NorthShore can help you assess how your body might process certain medications based on your unique DNA. Get started today by talking with your primary care physician about placing an order for the pharmacogenomics test, with a \$125 out-of-pocket cost for patients.

Your clinical results will be integrated with your medical history housed in NorthShore's Electronic Medical Record (EMR) system, allowing all your physicians to access your results and get you the right drug, at the right dose, the first time. Tune in to an animated video that explains the power of pharmacogenomics at [northshore.org/b7](http://northshore.org/b7).

## You Can Help

Shape the next generation of medicine by participating in NorthShore's Genomic Health Initiative. Adult patients donate a small blood sample to allow our researchers to study your DNA for any genetic variations that contribute to disease, in combination with research data obtained through NorthShore's Electronic Medical Record (EMR) system. All samples are de-identified and kept strictly confidential. Participants receive a Starbucks eGift card as a thank-you. Call (847) 492-5700 (Ext. 1283), or sign up online at [northshore.org/b10](http://northshore.org/b10).