**WHAT DOES IT MEAN?**

Personalized Medicine is all about customizing each patient’s care and treatment based on his or her unique genetic characteristics and health history. It is through Personalized Medicine, also known as Precision Medicine, that physicians are now able to better predict, prevent and treat various diseases and conditions.

At the NorthShore Center for Personalized Medicine, we are transforming the way we practice medicine and care for our patients.

**PERSONALIZED MEDICINE**

The Future of Medicine

**CHROMOSOME**

Organized structures found in the nucleus of a cell that contain DNA.

Humans have 46 chromosomes; 23 from your father, 23 from your mother. There may be hundreds or thousands of genes on one single chromosome.

**GENE**

Physical unit that determines inherited traits found on chromosomes.

**DNA**

deoxyribonucleic acid

Molecule that is responsible for carrying genetic/biological instructions. It consists of two strands that wind around each other to form a double helix.

There are four DNA bases that make up your unique genetic code – adenine (A), cytosine (C), guanine (G) and thymine (T).

**GENOME**

The complete set of genetic code found in a cell.

The human genome is remarkably similar for everyone. In fact, we are all more than 99% identical.

**OTHER HEALTH PROBLEMS**

Your family health history may include specific diseases and conditions, but there are many other factors that can influence and impact your risk of future medical concerns. These include:

- Diet
- Environmental factors
- Age
- Body Mass/Weight

While some things are out of your control, leading a healthy lifestyle complete with exercise and a nutritious diet may be your best bet for staying well.

**THE RIGHT MEDICINE:**

**PHARMACOGENOMICS**

Genetic testing helps identify changes in our genome that can influence risk for a disease. The study of Personalized Medicine is rapidly evolving.

Learn more about NorthShore’s Center for Personalized Medicine by visiting northshore.org/personalized-medicine or by calling 847.570.GENE.

**OPTIONS**

SOURCES

- northshore.org
- phgfoundation.org
- cdc.gov
- sciencedaily.com
- genome.gov
- kidshealth.org
- mayoresearch.mayo.edu
- University Press

**WHAT IS PHARMACOGENOMICS?**

The study of how our genetic makeup influences our response to different medications. Its focus is on providing safe & effective medications.

Applying Pharmacogenomics can be especially useful in treating the following conditions:

- + Right Drug
- + Right Dose
- First Time
- Poor Drug Response
- Discontinue use due to partial response, no response or adverse reaction
- Good / Average Drug Response
- Reduce, maintain or increase dosage

**SPECIFIC BIOMARKERS, TARGETED THERAPIES**

- ALK in lung cancer
- K-ras in colorectal
- HER-2/neu in breast cancer
- BRCA1/2 in breast and/or ovarian cancer
- APOE in Alzheimer’s
- PSEN1, PSEN2 APP in early-onset Alzheimer’s
- BRAF in melanoma

**OPTIMAL RESULTS**

When we consider the right gene, the right medication and the correct dosage, we can provide the best possible care.