



Precision Medicine



WHAT YOU NEED TO KNOW

THE PRACTICE OF MEDICINE CAN BE PRETTY "ONE SIZE FITS ALL."

THE GUIDELINES SAY *EVERYONE* WITH HEART DISEASE SHOULD TAKE THIS PILL.

PRECISION MEDICINE IS AN APPROACH THAT FACTORS IN PEOPLE'S GENES, ENVIRONMENT, AND LIFESTYLE.

HOW DID WE GET HERE?

THIS KIND OF MEDICAL THINKING ISN'T NEW. FOR EXAMPLE, *BLOOD TRANSFUSIONS* MATCH FOR BLOOD TYPES (RATHER THAN EVERYONE GETTING THE SAME BLOOD).

A B AB O

THE *FRAMINGHAM HEART STUDY*, A LONG-TERM RESEARCH PROJECT, HAS BEEN LOOKING AT GENES, ENVIRONMENT, AND HEART HEALTH SINCE 1948.

OUR UNDERSTANDING OF GENETICS WAS INCREASED IMMENSELY BY THE *HUMAN GENOME PROJECT* (1990-2003).

PERSONALIZED MEDICINE IS AN OLDER TERM FOR THE CONCEPT (AND IS SOMETIMES STILL USED).

IT'S A COMBINATION OF:

- KNOWLEDGE ABOUT GENETICS
- POWERFUL COMPUTER PROCESSING
- BEING ABLE TO STORE HUGE AMOUNTS OF HEALTH DATA

THIS LETS RESEARCHERS FIND INSIGHTS ABOUT TREATING SPECIFIC TYPES OF PEOPLE AND CONDITIONS.

AHA! THE DRUG WORKS FOR HEART DISEASE AND *THIS* GENE MUTATION ...

BUT NOT THIS OTHER ONE!

THE FIELD IS STILL NEW. DATA IS STILL BEING GATHERED, ANALYZED, AND SHARED BY COMPANIES, NON-PROFITS, AND GOVERNMENT AGENCIES.

MOST FINDINGS SO FAR INVOLVE GENETICS, ESPECIALLY AROUND TREATING CANCER AND AROUND HOW GENES AND MEDICATIONS INTERACT (PHARMACOGENOMICS).

Genetics + Medication = ?

HOW YOU CAN HELP PATRONS

CAN PRECISION MEDICINE HELP ME?

INFORMATION

WHILE YOU CAN'T GIVE MEDICAL ADVICE, YOU CAN HELP PATRONS TO FIGURE OUT EXACTLY WHAT THEIR QUESTIONS ARE AND TO FIND EVIDENCE-BASED RESOURCES.

ADVISE THEM TO ASK THEIR DOCTOR OR NURSE. SOME PROVIDERS CAN ALSO MAKE REFERRALS TO GENETIC COUNSELORS.

RESOURCES FOR PATRONS

Genetics Home Reference
for easy-to-understand information about human genetics
ghr.nlm.nih.gov

MedlinePlus
for health information you can trust
medlineplus.gov

SHOULD I PARTICIPATE IN ONE OF THOSE RESEARCH PROJECTS?

IT USUALLY INVOLVES GIVING BLOOD, TAKING PHYSICAL MEASUREMENTS, AND ANSWERING SURVEYS.

IT'S VOLUNTARY. CHOOSING NOT TO PARTICIPATE WON'T AFFECT SOMEONE'S MEDICAL CARE.

THE GENETIC INFORMATION NON-DISCRIMINATORY ACT OF 2008 PROTECTS PEOPLE FROM BEING DENIED HEALTH INSURANCE OR JOBS BASED ON THEIR GENES.

BENEFITS

I'M HELPING TO INCREASE MEDICAL KNOWLEDGE.

I'M HELPING PEOPLE LIKE ME GET COUNTED WHEN IT COMES TO MEDICAL TREATMENT.

CONCERNS

IS MY DATA REALLY SECURE?

MEDICINE HAS A HISTORY OF TAKING DATA AND SAMPLES FROM SOME COMMUNITIES AND NOT GIVING ANYTHING BACK.