



SEX AND GENDER

How Being Male or Female Can Affect Your Health

Are you male or female? The answer to this seemingly simple question can have a major impact on your health. While both sexes are similar in many ways, researchers have found that sex and social factors can make a difference when it comes to your risk for disease, how well you respond to medications, and how often you seek medical care. That's why scientists are taking a closer look at the links between sex, gender, and health.

Many people use the words sex and gender interchangeably, but they're distinct concepts to scientists.

DEFINING DIFFERENCES • Sex is biological. It's based on your genetic makeup. Males have one X and one Y chromosome in every cell of the body. Females have two X chromosomes in every cell. These cells make up all your tissues and organs, including your skin, heart, stomach, muscles, and brain.

Gender is a social or cultural concept. It refers to the roles, behaviors, and identities that society assigns to girls and boys, women and men, and gender-diverse people. Gender is determined by how we see ourselves and each other, and how we act and interact with

others. There's a lot of diversity in how individuals and groups understand, experience, and express gender. Because gender influences our behaviors and relationships, it can also affect health.

INFLUENCES ON HEALTH • "Sex and gender play a role in how health and disease affect individuals. There was a time when we studied men and applied those findings to women, but we've learned that there are distinct biological differences between women and men," explains Dr. Janine Austin Clayton, who heads research on women's health at NIH. "Women and men have

different hormones, different organs, and different cultural influences—all of which can lead to differences in health.”

As scientists learn more about the biology of males and females, they’re uncovering the influences of both sex and gender in many areas of health.

For instance, women and men can have different symptoms during a heart attack. For both men and women, the most common heart attack symptom is chest pain or discomfort. But women are more likely than men to have shortness of breath, nausea and vomiting, fatigue, and pain in the back, shoulders, and jaw. Knowing about

such differences can lead to better diagnoses and outcomes.

ATTENTION TO ADDICTION •

Scientists are finding that addiction to nicotine and other drugs is influenced by sex as well. “When it comes to addiction, differences in sex and gender can be found across the board,” says Dr. Sherry McKee, lead researcher at an NIH-funded center at Yale University that studies treatments for tobacco dependence. “There are different reasons men and women pick up a drug and keep using a drug, and in how they respond to treatment and experience relapse. Sex also influences disease risk in addiction. For example, women who smoke are more susceptible to lung and

heart disease than men who smoke.”

AUTOIMMUNE DISORDERS •

Scientists have found sex influences in autoimmune disorders as well. About 80% of those affected are women. But autoimmune conditions in men are often more severe. For instance, more women than men get multiple sclerosis (MS), a disease in which the body’s immune system attacks the brain and spinal cord. But men seem more likely to get a progressive form of MS that gradually worsens and is more challenging to treat.

WOMEN, MEN, AND HEALTH

- Women and men have different symptoms of heart attack.
- Women are twice as likely as men to experience depression.
- Men are less likely than women to admit to negative moods and seek treatment for mental health issues.
- Men are more likely than women to have gout, a type of arthritis. Female risk for gout increases after menopause.
- Osteoporosis is more common in women than men, yet it still poses a risk to men as they age.
- Some medicines affect women and men differently, such as aspirin and some sleep medications.
- Females are more likely to injure their knees playing sports.
- Males are more likely than females to develop autism spectrum disorders and certain other neurodevelopmental conditions.
- Two-thirds of people age 40 and up who are visually impaired or blind are women.
- Pain disorders like chronic TMJ are more common in women.
- Women are often primary caretakers of children, household needs, and aging family members, but they are more likely to delay their own health needs.

