

Working With Dataset

Visualize the Data

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Exploration Of BP vs Chest Pain Type And Gender

BP vs Chest Pain

High blood pressure can damage your arteries by making them less elastic, which decreases the flow of blood and oxygen to your heart and leads to heart disease. In addition, **decreased blood flow to the heart can cause: Chest pain, also called angina.**

Pressure, fullness, burning, or tightness in your chest. The crushing or searing pain that spreads to your back, neck, jaw, shoulders, and one or both arms. Pain that lasts more than a few minutes, gets worse with activity, goes away and comes back, or varies in intensity. Shortness of breath.

Types of chest pain

It can be difficult to distinguish heart-related chest pain from other types of chest pain.

However, chest pain that is less likely due to a heart problem is more often associated with:

- A sour taste or a sensation of food reentering your mouth
- Trouble swallowing
- Pain that gets better or worse when you change your body position
- Pain that gets worse when you breathe deeply or cough
- Tenderness when you push on your chest
- Pain that persists for many hours

The classic symptoms of heartburn — a painful, burning sensation behind the breastbone — can be caused by problems with the heart or the stomach.

Chest Pain and Gender

While heart disease is still the number one cause of death in men and women, it can develop and present in dramatically different ways across the sexes.

1 – Men and women have differences in biology

Men and women display differences in their anatomy and physiology, from the lungs and brain to muscles and joints. Men and women also have differences in their cardiovascular systems. Compared to men, women have smaller hearts and narrower blood vessels.

And yet, until recently, women with heart disease have been diagnosed and treated like men—with the same tests, same procedures, and same medications.

2 – Men and women experience cholesterol buildup in different areas

A heart attack occurs when cholesterol plaque builds up inside the walls of arteries and causes damage in the major blood vessels.

Men typically develop this plaque buildup in the largest arteries that supply blood to the heart. Women are more likely to develop this buildup in the heart's smallest blood vessels, known as the microvasculature.

Furthermore, heart disease in both sexes is only partly related to the accumulation of cholesterol.

3 – Men and women have different symptoms of a heart attack

A heart attack does not always look or feel the same in women compared to men. Men typically present to healthcare providers with chest pressure.

Women also experience chest pressure (it's still the leading complaint), but they are more likely than men to also report:

Nausea, Sweating, Vomiting, Pain in the neck, jaw, throat, abdomen or back

4 – Women may have diseases that mimic a heart attack

Women are more likely than men to suffer from diseases that mimic a heart attack. For instance, women are more likely to experience:

A coronary spasm: a blood vessel clamps down and mimics a heart attack.

A coronary dissection: the wall of a blood vessel tears.

Takotsubo cardiomyopathy: an inflammatory response that causes the heart to enlarge after an emotional stressor (also called broken heart syndrome).

5 – Men and women may have different risk factors for a heart disease

A woman's reproductive history may affect her risk of developing heart disease. In fact, certain diseases that develop during pregnancy, such as preeclampsia and gestational diabetes, may be powerful predictors of future risk of heart disease.

A 2016 study from investigators at Brigham Health showed that women age 40 or younger with endometriosis were three times more likely to develop heart attack, chest pain, or require treatment for blocked arteries, compared to women without endometriosis in the same age group.

The Cardiovascular Disease and Pregnancy Program at Brigham Health provides specialized care for women with cardiovascular disease before, during and after pregnancy. At the Center, cardiologists and obstetricians collaborate to identify and modify risk factors early to prevent heart disease before it develops.

6 – Men and women require different diagnostic care

When a woman presents to a healthcare provider with signs and symptoms of a heart attack, they may receive different diagnostic care than a man.

For instance, if a heart attack is suspected, both men and women receive a cardiac troponin (cTn) test, which measures circulating levels of troponin. This protein is released in the blood when a heart attack has damaged heart muscle. Higher levels of troponin indicate higher

levels of heart damage. But the clinical threshold that signals a heart attack may differ across the sexes.

Another diagnostic test, cardiac catheterization, has long been the gold standard for diagnosing a heart attack, but this test looks for blockages in large arteries. Since women are more likely than men to experience more plaque buildup in the smallest arteries, this test may not be the most appropriate to diagnose heart disease in women.

At the Center for Cardiovascular Disease in Women, clinicians tailor diagnostic and treatment services toward women. This includes intravascular ultrasound that may better detect heart disease in women. The Center has long been a provider of clinical care, research, patient and provider education, and community outreach and advocacy.

7 – Men and women may require different treatments for heart disease

Medical providers have decades of experience treating the typical cholesterol plaque buildup in largest blood vessels of the heart. But there's a weaker understanding of how to treat plaque in the microvasculature, or inflammation of the heart.

That said, a growing number of clinicians are beginning to approach treatment decisions with the knowledge that women may benefit from treatments that are different from those used in men, from subtle calibrations in pacemakers to variations on angioplasty.

VISUALISATION:



