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## Heart attack misdiagnosis in women



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A woman attending one of my heart health presentations told me of her recent trip to the Emergency Department of our local hospital, and an overheard conversation between the (male) doctor and the (male) patient in the bed next door beyond the curtain:

*“Your blood tests came back fine, your EKG tests are fine – but we’re going to keep you for observation just to rule out a heart attack”.*

**A male patient is thus admitted to hospital for observation in spite of ‘normal’ cardiac test results – as current treatment guidelines require.** But I and countless other females in mid-heart attack are being sent home from Emergency following ‘normal’ test results like his, and with misdiagnoses ranging from indigestion to anxiety or menopause. Why is this?

Women (especially younger women) with heart disease are *far more likely than men to be misdiagnosed*. Research on cardiac misdiagnoses reported in the *New England Journal of Medicine* looked at more than 10,000 patients (48% women) who went to their hospital Emergency Departments with chest pain or other heart attack symptoms. Investigators found that **women younger than 55 were seven times more likely to be misdiagnosed than their male counterparts**. The consequences of this were enormous: being sent away from the hospital doubled the risk of dying.(1)

**Dr. Jerome Groopman’s** book, *How Doctors Think* (<http://myheartsisters.org/2010/01/27/18-second-rule/>), helps to explain why these misdiagnoses happen in the first place:

*“Specialists in particular, are known to demonstrate **unwarranted clinical certainty**. They have trained for so long that they begin too easily to rely on their vast knowledge and overlook the variability in human*

*biology."*

This so-called "*disregard for uncertainty*" was what I faced with that Emergency Department physician in 2008 who sent me home from hospital with a misdiagnosis of **GERD** (*gastroesophageal reflux disease*), despite the fact that I'd just presented with textbook heart attack symptoms like chest pain, nausea, sweating, and pain radiating down my left arm. His emphatic but unwarranted clinical certainty:

*"You're in the right demographic to be having acid reflux!"*

A PERSONAL ASIDE: as if being misdiagnosed in mid-heart attack wasn't bad enough, the ER nurse that fateful morning came up to my bedside at one point after the physician had moved on to the next patient, and warned me sternly that I'd have to stop asking questions of the doctor, adding:

*"He is a very good doctor, and he does NOT like to be questioned."*

The question that I'd just had the temerity to ask him?

*"But doctor, what about this pain down my left arm?"*

The medical error of a **misdiagnosis like mine can include**:

- a complete **failure to diagnose** (totally missing the disease)
- **wrong diagnosis** (for example, diagnosing acid reflux instead of a heart attack)
- **partial misdiagnosis** (diagnosing the wrong subtype of heart disease or the wrong cause of the disease or its complications)
- **delayed diagnosis** (when a doctor does not recognize a disease until long after it should have been identified)

There is also still, amazingly, a [persistent myth that heart disease is a man's disease](http://myheartsisters.org/about-women-and-heart-disease/myths-facts/) (<http://myheartsisters.org/about-women-and-heart-disease/myths-facts/>). Even the name of the type of heart attack I survived (the so-called "**widowmaker**") tells you that semantics reflect the medical profession's historical assumption that this kind of myocardial infarction hits men, not women. It's not, after all, called the "*widowermaker*", is it?

Doctors may actually be reluctant to consider heart disease when a woman has cardiac symptoms, and instead will look for other causes. A 2005 American Heart Association study showed, in fact, that only 8% of family physicians and 17% of cardiologists were aware that **heart disease kills more women than men** each year.

And women themselves are less likely than men to realize how vulnerable they are to heart disease.

A number of studies report that women are [more likely to delay seeking treatment](http://myheartsisters.org/2014/11/30/downplaying-heart-attack-symptoms/) (<http://myheartsisters.org/2014/11/30/downplaying-heart-attack-symptoms/>) even when they experience serious cardiac symptoms. A 2009 survey, for example, suggests that only half of women indicated they would call 911 if they thought they were having a heart attack (and that's down from 80% just five years earlier!) and few were even aware of women's most common heart attack symptoms. And those symptoms can be more vague and atypical compared to men's '*Hollywood Heart Attack*' symptoms. See also: [How women can tell if they're headed for a heart attack](#)

[\(http://myheartsisters.org/2012/08/27/prodromal-symptoms-pre-heart-attack/\)](http://myheartsisters.org/2012/08/27/prodromal-symptoms-pre-heart-attack/)

Even first-responders like **ambulance paramedics** are less likely to provide standard levels of care to women who call 911 with cardiac symptoms compared to their male counterparts, according to the disturbing results of a [study \(http://myheartsisters.org/2012/11/15/getting-heart-patients-past-gatekeepers-of-emergency-medicine/\)](http://myheartsisters.org/2012/11/15/getting-heart-patients-past-gatekeepers-of-emergency-medicine/) at the University of Pennsylvania.

Researchers found significant differences in both aspirin and nitroglycerin therapy offered to women vs. men. In fact, this study showed that of the women transported to hospital by ambulance who were suffering from heart attacks, **not one was given aspirin** by paramedics en route. See also: [How Can We Get Heart Patients Past the E.R. Gatekeepers? \(http://myheartsisters.org/2012/11/15/getting-heart-patients-past-gatekeepers-of-emergency-medicine/\)](http://myheartsisters.org/2012/11/15/getting-heart-patients-past-gatekeepers-of-emergency-medicine/)

Once women do arrive at hospital, both nurses and physicians working in Emergency Departments report a bias towards looking for heart attack pain symptoms, even though a majority acknowledge that **women often present with vague, non-chest pain symptoms** during a cardiac event. About 40%, for example, do not have any chest symptoms at all.

**Why don't diagnostic tests pick these up?** Women are less likely than men to receive some cardiac diagnostic tests in the first place, and some tests don't work as well in women. Most tests for diagnosing heart disease have been fine-tuned in studies focused on (white, middle-aged) men.

The **treadmill stress test** (<http://myheartsisters.org/2014/03/01/stress-test-vs-flipping-a-coin/>), for example, has been found to be far less accurate in women than in men, and particularly for identifying **single vessel or non-obstructive heart disease** – which are both more common in women.

Even the standard **EKG** (or *ECG – electrocardiogram*) can be problematic – especially when it's not offered to female patients in a timely manner. A Montreal study, for example, found that women were significantly less likely than men to receive an electrocardiogram within the recommended 10 minutes of arriving in hospital with suspected cardiac symptoms.(2) And even when we do finally get hooked up to a 12-lead EKG in a hospital's Emergency Department, the doctors there **may not be able to correctly interpret the "significant EKG changes"** that identify heart disease. Previous research has reported a disturbing reality about diagnostic EKGs, which is the likelihood that **high-risk EKG abnormalities may NOT be detected by physicians working in Emergency Medicine.**(3) See also: [When Your "Significant EKG Changes" are Missed \(http://myheartsisters.org/2014/03/30/ekg/\)](http://myheartsisters.org/2014/03/30/ekg/)

The gold standard test for diagnosing coronary artery disease in both men and women is the angiogram, but studies also show that **women are less likely than men to be referred for angiography**. And some types of non-obstructive heart disease like Prinzmetal's Angina or coronary spasm (<http://myheartsisters.org/2012/08/15/microvascular-and-spasm-disorders/>) do not show up during angiography unless the spasm happens to actually occur during the procedure. See also: [Misdiagnosed: Women's Coronary Microvascular and Spasm Pain \(http://myheartsisters.org/2012/08/15/microvascular-and-spasm-disorders/\)](http://myheartsisters.org/2012/08/15/microvascular-and-spasm-disorders/)

# IMPORTANT UPDATE:

January 31, 2016: The American Heart Association released its first ever scientific statement on women's heart attacks (<http://myheartsisters.org/2016/01/31/finally-an-official-scientific-statement-on-heart-attacks-in-women/>), confirming that “*compared to men, women tend to be undertreated*”, and including this finding: “*While the most common heart attack symptom is chest pain or discomfort for both sexes, women are more likely to have atypical symptoms such as shortness of breath, nausea or vomiting, and back or jaw pain.*”

## How to help yourself get an accurate diagnosis:

- Know your symptoms (<http://myheartsisters.org/about-women-and-heart-disease/heart-attack-sign/>)
- Know your facts (<http://myheartsisters.org/about-women-and-heart-disease/test/>)
- Ask clarifying questions if you don't understand what you're being told
- Be specific (<http://myheartsisters.org/2012/02/21/six-rules-doctors-appointment/>)
- Be objective
- Get results

## What to do if you think you've been misdiagnosed:

- Do not feel embarrassed to speak up/ask clarifying questions
- Get more tests/ask for repeat tests
- Get a second opinion
- **Keep going back** until you are diagnosed accurately!

Dr. Jerome Groopman further recommends that you **ask these questions** of your doctor:

- “*What else could it be?*” The cognitive mistakes that account for most misdiagnoses are not recognized by physicians; they largely reside below the level of conscious thinking. When you ask simply: “*What else could it be?*”, you help bring closer to the surface the reality of uncertainty in medicine.
- “*Is there anything that doesn't fit?*” This follow-up should further prompt the physician to pause and let his/her mind roam more broadly.
- “*Is it possible I have more than one problem?*” Posing this question is another safeguard against one of the most common cognitive traps that all physicians fall into: **search satisfaction**. It should trigger the doctor to cast a wider net, to begin asking questions that have not yet been posed, to order more tests that might not have seemed necessary based on initial impressions.

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(1) Pope JH, Aufderheide TP, Ruthazer R, et al. Missed diagnoses of acute cardiac ischemia in the emergency department. *N Engl J Med.* 2000;342:1163-1170.

(2) Roxanne Pelletier et al. Sex-related differences in access to care among patients with premature acute coronary syndrome. *Canadian Medical Association Journal*. (Canadian Medical Association Journal) March 17, 2014. [cmaj.131450](http://cmaj.131450) 10.1503/cmaj.131450

(3) Frederick A. Masoudi et al. (Circulation) Implications of the failure to identify high-risk electrocardiogram findings for the quality of care of patients with acute myocardial infarction: results of the emergency department quality in myocardial infarction (EDQMI) study. *Circulation*. (Circulation) 2006; 114: 1565-1571

**Please note:** (<http://myheartsisters.org/yes-it-s-all-about-me/about-heart-sisters/>) information on this site is not meant as a substitute for medical advice

### See also:

- [Cardiac Gender Bias: We Need Less TALK and More WALK \(http://myheartsisters.org/2014/03/23/gender-bias-cardiac-study/\)](http://myheartsisters.org/2014/03/23/gender-bias-cardiac-study/)
- [The Sad Reality of Women's Heart Disease Hits Home \(http://myheartsisters.org/2011/10/28/the-sad-reality-of-womens-heart-disease-hits-home/\)](http://myheartsisters.org/2011/10/28/the-sad-reality-of-womens-heart-disease-hits-home/)
- [Misdiagnosis: the Perils of "Unwarranted Certainty" \(http://myheartsisters.org/2012/01/08/unwarranted-certainty/\)](http://myheartsisters.org/2012/01/08/unwarranted-certainty/)
- [Seven Ways To Misdiagnose a Heart Attack \(http://myheartsisters.org/2011/05/09/misdiagnosed-heart-attack/\)](http://myheartsisters.org/2011/05/09/misdiagnosed-heart-attack/)
- [The '18 Second Rule': Why Your Doctor Missed Your Heart Attack Diagnosis \(http://myheartsisters.org/2010/01/27/18-second-rule/\)](http://myheartsisters.org/2010/01/27/18-second-rule/)
- [Six Rules for Navigating Your Next Doctor's Appointment \(http://myheartsisters.org/2012/02/21/six-rules-doctors-appointment/\)](http://myheartsisters.org/2012/02/21/six-rules-doctors-appointment/)
- [Things Your Doctor May Not Know \(http://ethicalnag.org/2011/11/07/what-your-doctor-may-not-know/\)](http://ethicalnag.org/2011/11/07/what-your-doctor-may-not-know/)
- [Experts: Why So Wrong So Often? \(http://ethicalnag.org/2011/04/29/why-experts-wrong/\)](http://ethicalnag.org/2011/04/29/why-experts-wrong/)
- [How to Be a Good Patient \(http://myheartsisters.org/2011/08/09/how-to-be-a-good-patient/\)](http://myheartsisters.org/2011/08/09/how-to-be-a-good-patient/)
- [Seven Ways to Misdiagnose a Heart Attack \(http://myheartsisters.org/2011/05/09/misdiagnosed-heart-attack/\)](http://myheartsisters.org/2011/05/09/misdiagnosed-heart-attack/)
- [What Doctors Really Think About Women Who Are 'Medical Googlers' \(http://myheartsisters.org/2009/08/19/med-google/\)](http://myheartsisters.org/2009/08/19/med-google/)
- [Women's Cardiac Care: is it Gender Difference – or Gender Bias? \(http://myheartsisters.org/2009/08/08/gender-bias/\)](http://myheartsisters.org/2009/08/08/gender-bias/)

♥ This 2009 post still ranked #8 on the list of Top 10 Most-Read Heart Sisters Posts for 2014

Tags: [diagnosing heart attack in women \(http://myheartsisters.org/tag/diagnosing-heart-attack-in-women/\)](http://myheartsisters.org/tag/diagnosing-heart-attack-in-women/), [GERD \(http://myheartsisters.org/tag/gerd/\)](http://myheartsisters.org/tag/gerd/), [heart attack symptoms \(http://myheartsisters.org/tag/heart-attack-symptoms/\)](http://myheartsisters.org/tag/heart-attack-symptoms/), [misdiagnosis \(http://myheartsisters.org/tag/misdiagnosis/\)](http://myheartsisters.org/tag/misdiagnosis/), [misdiagnosis of heart disease \(http://myheartsisters.org/tag/misdiagnosis-of-heart-disease/\)](http://myheartsisters.org/tag/misdiagnosis-of-heart-disease/), [prinzmetal's angina \(http://myheartsisters.org/tag/prinzmetal's-angina/\)](http://myheartsisters.org/tag/prinzmetal's-angina/), [widowmaker heart attack \(http://myheartsisters.org/tag/widowmaker-heart-attack/\)](http://myheartsisters.org/tag/widowmaker-heart-attack/), [women and heart disease \(http://myheartsisters.org/tag/women-and-heart-disease/\)](http://myheartsisters.org/tag/women-and-heart-disease/)

1. **Cohen Jaffe** - August 19, 2015  
[...] HEART SISTERS: ...*in the way male and female patients are treated when they appear with heart attack symptoms. A study published in the New England Journal of Medicine examined the cases of over 10,000 patients who* [...]
2. **Heather Ramsey - ratermob** - December 31, 2014  
[...] HEART SISTERS: .... This often happens to young women with heart disease, who have a seven times greater chance of being misdiagnosed than men of a comparable .... [...]
3. **Christopher Mellino** - December 30, 2013  
[...] as their male counterpart, according to research cited in one heart attack survivor's blog, **Heart Sisters**. That same New England Journal of Medicine study "found that [out of 10,000 emergency room [...]
4. **CreativitytotheMAX** - September 25, 2012  
[...] heart attack symptoms, they found that women under the age of 55 are SEVEN TIMES more likely to be misdiagnosed in mid-heart attack than their male counterparts [...]
5. **Dr. Joe** - August 22, 2011  
[...] under the age of 55 are in fact seven times more likely than men are to be misdiagnosed in mid-heart attack and sent home. About 5% of autopsies find clinically significant conditions that were missed and [...]

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