

# Like shark attack and the lottery, unconscious bias influences cancer screening

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What do shark attack, the lottery and ovarian cancer screening having in common? It turns out our judgments about these things are all influenced by unconscious bias.

Humans are prone to overestimating the likelihood of extreme events. Blame it on availability bias—the tendency to judge the frequency of an event by how easy it is to recall examples from memory. Because you've seen *Jaws* and have daydreamed about what you would do with the Powerball jackpot (sure, you'd give half of it to charity...), it's easy to pull up vivid, emotional representations of these events. The availability of these events in your mind overshadows the much more common, much more mundane reality that you have 1-in-292,201,338 chance of winning Powerball, and even among beachgoers, the chance of being attacked by a shark is only about 1-in-11,500,000. Still, availability bias makes you overestimate the likelihood of each, keeping you out of the water and in the corner store buying tickets.

Now a study published in the *Journal of Women's Health* shows that availability bias may thumb the scale of a doctor's [cancer screening](#) recommendations, as well. Survey results from 497 primary care physicians show that [doctors](#) who have had cancer themselves, or experienced cancer with a family member, close friend, or coworker, are 17 percent more likely than doctors without personal cancer experience to act against established guidelines to recommend that low-risk women receive [ovarian cancer](#) screening.

"Most doctors are pretty comfortable with the idea that our personal experience can make a positive impact on our practice—we've known someone and so it gives us insight into how to take care of [patients](#) in similar circumstances. This study helps us realize that sometimes it can go beyond that. Personal [experiences](#) can impact our practice in a variety of ways," says Margaret Ragland, MD, pulmonary critical care specialist at CUHealth University of Colorado Hospital in Aurora, CO.

Screening guidelines are designed to do the most good while causing the least harm. In the case of cancer, this means screening the patients who have the greatest chance of hiding a dangerous cancer at a treatable

stage. Screening routinely saves the lives of high-risk patients. But for low-risk patients, the cost and chance that false-positive results will lead to anxiety and even unnecessary treatments outweigh the minuscule chance of finding a dangerous, treatable cancer. In other words, for a population of low-risk patients, the harm outweighs the good.

"Some people may think, what's the harm in doing testing that's not indicated? I'm going to get a negative test and it'll make my patient feel better. But if you find something, it can lead to further follow up, causing complications, cost, and anxiety," Ragland says.

This is why, for women of average risk, screening for ovarian cancer is not recommended. And yet when presented with a vignette describing a woman of average risk, 31.8 percent of primary care doctors who had personal experience of cancer chose to offer this screening. By comparison, only 14 percent of doctors without personal experience of cancer offered screening.

Results come from survey funded by the Centers for Disease Control (CDC) and managed by study senior author Laura-Mae Baldwin, MD, University of Washington professor of Family Medicine. The survey collected responses from 3,200 randomly sampled physicians who provide [primary care](#) to women, with the goal of discovering characteristics of providers that might be at the greatest risk of recommending care that conflicts with guidelines. Baldwin's goal is to identify and educate these potentially non-compliant doctors to help ensure that patients more uniformly receive the best possible care.

"The reasons that doctors with personal cancer experience may be more likely to not follow screening guidelines are complicated and we don't know all the answers," Ragland says. "But my hypothesis is that a doctor's personal experience may influence their assessment of risk. You see a patient in front of you and you may assess the risk to be higher

than it actually is."

During the Discovery Channel's annual Shark Week, visits to Florida beaches go down. When large Powerball jackpots draw media attention, ticket sales go up (ironically, increasing the chance of a split pot and reducing the expected value of a ticket). And when a doctor's personal cancer experience makes the horror of the disease more available in his or her mind, the doctor may overestimate a patient's cancer risk and over-prescribe unneeded screening.

"We're physicians, but we also have life experiences," Ragland says.

"What this study tells us is that in ways we may not be aware, for better and for worse, our [personal experience](#) may affect our practice."

**More information:** Margaret Ragland et al, Physician Nonprofessional Cancer Experience and Ovarian Cancer Screening Practices: Results from a National Survey of Primary Care Physicians, *Journal of Women's Health* (2018). [DOI: 10.1089/jwh.2018.6947](https://doi.org/10.1089/jwh.2018.6947)

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