



# The healthy aging Corner

Part of Parke County's Healthy Aging and Cancer Preventive Initiative

## No Bull: Making Sense of Health Risks

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*It's time for the public to better understand the risky business of better health*

It's a sun-filled morning and someone stops you on the street with some news. A recent study shows that people who wear red are 5 times more likely to be trampled by a bull than those dressed in other colors. It just so happens that you're wearing a red jacket today. But, like most of us, you don't hang out with bulls very much. Wearing red doesn't seem all that dangerous, or does it?

Later that afternoon, you read a news report that says taking a calcium supplement can decrease the risk of developing colon cancer by 25%. Your uncle and grandfather both died of colon cancer and this variety of cancer strikes more than 150,000 people annually in the U.S. It's only a 25% decrease, compared to the 400% increase in the bull story you heard earlier in the day, but calcium supplements might really save lives – maybe even your own.

That evening, you are trying to make sense of the two bits of news that flashed across your world. Should you start popping calcium? Should you ever wear red again? To confidently act on these questions, you need to have an understanding of how health risks are communicated.

Which of the two risks carries the biggest impact? It's natural to focus on the more impressive number – 400% is much larger than 25% – and assume that bigger numbers mean a more dramatic difference. But do they? In terms of *relative* difference, the answer is surely yes. But what about *absolute* difference? That answer strongly depends on how likely it is that the outcome in question will come down the pike. Conditions like colon cancer, heart attacks, and diabetes occur frequently in adults. In contrast, bull trampling falls into the category of not-so-frequent conditions. If one out of every 10 million people were expected to suffer bull trampling this year, and widespread wearing of red clothing increases that risk 5-fold, then red clothes would spell the demise of an additional 4 souls per 10 million. But if 5,000 out of every 10 million people are going to be diagnosed with colon cancer this year, then doing something that would reduce that risk by even just 25% would put 1250 people out of harm's way. This illustrates the difference between *relative risk* and *absolute risk*. Savvy consumers of health news always keep the difference between these two in mind when they are interpreting stories they hear.

Over the years, scientists like us have learned that whenever there are two kinds of something, look around and you'll find a third. This maxim holds true for communicating health risk. The third variety of risk is called PAR, yet it has nothing to do with getting a little white ball into a hole. PAR stands for *population attributable risk*, which is the percentage of disease cases that can be blamed on a single risk factor, for example the percentage of lung cancer cases that can be blamed on smoking. PAR provides valuable information because it tells us the number of lung cancers that could be prevented if smoking was eliminated. For smoking and lung cancer, PAR is quite high, perhaps as high as 85%. However, most health outcomes are multifactorial – no single risk factor is responsible for the lion's share of cases. The implications are this: For risk factor-disease combinations that have a high PAR, taking steps to eliminate the risk factor can mean great strides toward preventing disease. High PAR can steer us to the places where we can have the most impact, like smoking cessation.

Time to summarize. By paying closer attention to how risk is communicated, you can beef up your understanding of the newest advances and substantially reduce your health risk. On the other hand, if you ignore risk, you remain more or less in the dark about your health. That's a risk you should be unwilling to take ... and that's no bull.

The Healthy Aging Corner is prepared by health professionals and researchers at the Gerald P. Murphy Cancer Foundation in West Lafayette, IN. Look for The Healthy Aging Corner to provide a glimpse at the most recent research exploring ways we can live longer and healthier lives. Supported by the Parke County Cancer Prevention Fund of the Murphy Cancer Foundation.