The Type of Climate You Live in May Increase Your Risk of Cancer

Cancer rates are much higher in cold, wet regions than hot, dry areas.

December 27, 2019 By Alicia Green

Although research has shown that increased exposure to the sun's ultraviolet rays ups our risk of developing skin cancer, new findings published in the journal Environmental Engineering Science report a link between wetter and chillier climates and an increased risk of several other cancers, reports Medical News Today.

Scientists aimed to look for a relationship between cancer rates, precipitation and climate zone (a variable that combines temperature and moisture level in a given area). They collected data on breast, ovarian, lung, colorectal and prostate cancer while also accessing county-level data regarding cancer incidence, climate and demographics.

For their analysis, researchers examined 15 states at random: Arizona, Arkansas, California, Connecticut, Georgia, Iowa, Massachusetts, New York, New Jersey, Oklahoma, South Carolina, Texas, Utah, Washington and Wisconsin.

After adjusting for several factors, they determined that areas with increased precipitation had a higher incidence of all cancers; they also noted that climate zone also significantly affected cancer outcomes. These incidence rates were much higher than those in hot, dry climates. But findings also showed that there were some exceptions—for example, lung cancer was most prevalent in hotter, drier regions.

So how might cold, rainy weather affect cancer risk? The study's authors have a few hypotheses. On the East Coast, more rainfall removes alkaline elements such as magnesium and potassium from soil, making the soil more acidic. In this type of soil and in colder regions, ammonia-oxidizing bacteria are more common. These bacteria convert ammonia to nitrites, which under more acidic conditions may change to nitrous acid, a carcinogen released into the atmosphere.

Additionally, increased rainfall means less vitamin D from the sun. Some experts believe that vitamin D deficiency may be a risk factor for certain cancers. Another theory is colder climates put the body under metabolic stress as it attempts to maintain its temperature. Such a strain may also increase cancer risk.

To be sure, the research is quite preliminary, so don’t pack the moving van just yet. Scientists noted that their investigation had several limitations. For one, the study looked only at 15 states, so the findings may not be true for all states or even other countries. Also, they didn’t account for all cancer types. Different cancer types may not follow the patterns found in this analysis. Much more research is needed before a definite determination can be made on these findings and possible causes behind them.

For related coverage, read “Why is My Insomnia Worse in Winter? Your Cold-Weather Sleep Questions Answered” by Cancer Health blogger Michael Breus, PhD.

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