Breast Cancer Cells Spread During Sleep

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Circulating tumor cells (CTCs) are more likely to be active at night in women with breast cancer, recent research shows. These cells can seep into the bloodstream, travel to other parts of the body and grow into a new tumor, a process known as metastasis.

The body's circadian rhythms have long been thought to play a role in cancer. Nicola Aceto, PhD, of the Swiss Federal Institute of Technology, and colleagues first observed tumors in mice, finding that CTC levels varied based on when their blood was drawn. The researchers then studied 30 women hospitalized with breast cancer, collecting blood samples at 4 a.m. and again at 10 a.m. Almost 80% of detected CTCs were in samples taken very early in the morning, when the women had been resting. Turning back to mice, which are nocturnal, they found that CTC levels were up to 88 times higher during the resting period.

This study shows that "tumors wake up when patients are sleeping," Aceto told Nature.

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