Previous studies have suggested that exposure to artificial lighting at night (ALAN) may increase the risk of developing hormone-mediated cancers, such as breast cancer. Exposure to ALAN disrupts the production of melatonin, a sleep-promoting hormone that is produced in nighttime darkness and has been shown to slow breast cancer tumor growth. For this study, data on light pollution in Kentucky for the year 2013 was gathered from the NOAA.

According to the CDC, the risk for developing breast cancer increases with age. Specifically, the CDC warns that most breast cancers are diagnosed after age 50. Data on the median female age in Kentucky counties for the year 2013 was gathered from the United States Census.

The CDC specifies that women who are overweight or obese have a higher risk of developing breast cancer. Data on the prevalence of female obesity in Kentucky for the year 2013 was gathered from the CDC.

It was found that 73 out of 120 counties had a median female age that was above the average of all Kentucky counties. Of these 73 counties, 28 also had an above average incidence of breast cancer.

It was found that 59 out of 120 counties had a female obesity prevalence that was above the average of all Kentucky counties. Of these 59 counties, 23 also had an above average incidence of breast cancer.

It was found that 38 out of 120 counties had a light pollution level that was above the average of all Kentucky counties. Of these 38 counties, 29 also had an above average incidence of breast cancer. Based on the results, light pollution appears to be more strongly associated with breast cancer incidence at the county level than obesity or age.