



Light trespass and pollution have a variety of important effects on human health, some barely noticeable and some life-altering or even terminating.

Humans tend to think of light as health-giving and, to a very great degree, it is. However, humans have a long history of living in darkness at night, a fact that the human body has adapted to over the millions of years we have been on this planet. It is only within the last century that humans have begun to live in an environment that has seen increasing amount of light at night, an incredibly short period of time for our bodies to adjust to this new nighttime environment. Our bodies act according to a very ancient cycle known as the circadian rhythm, a cycle in which our bodies sleep and produce various chemicals to help us survive. One such chemical is melatonin, a cancer-fighting chemical that is best produced in the darkness of night.

Research indicates that reductions in the levels of melatonin appear to reduce the body's ability to fight cancers such as breast and prostate cancer, both of which have seen tremendous increases in industrialized nations that use night lights. CBC News has reported "The Danish government has begun to compensate women who developed breast cancer after long spells of working night shifts.

The American Medical Association recently accepted a proposal for an anti-light pollution policy and passed it unanimously. Resolution 516 asked the American Medical Association to: (1) advocate that all future outdoor lighting be of energy efficient designs to reduce waste of energy and production of greenhouse gases that result from this wasted energy use; (2) support light pollution reduction efforts and glare reduction efforts at both the national and state levels; and (3) AMA support efforts to ensure all future streetlights be of a fully shielded design or similar non-glare design to improve the safety of our roadways for all, but especially vision impaired and older drivers. (Dr. Mario Motta, MD – sponsor) According to Dr. Motta, *"Numerous papers over the past 15 years have led medical researchers to conclude that night light increases the incidence of certain cancers, most notably breast cancer. In fact, researchers now estimate that up to 30% of breast cancers may be due to light at night suppressing circadian rhythm."* *"...the World Health organization recently declared circadian-rhythm disruption to be a class 2A carcinogen — placing it on the same level of severity as the effects of tobacco smoke on lung cancer."* *"Repeated exposure to light at night markedly suppresses melatonin production. Previous research has shown that this hormone helps the immune system suppress the development of several types of cancers."*



The Danger in the Light:

Considering the results of recent research, there appears to be far more danger in the light that trespasses on our properties than that which lies in the darkness of night.

As our bodies need sunlight for health, so too do they need the darkness to complete our circadian rhythms.

[ADSA has approached the Canadian and Alberta Medical Association to adopt the same policies in dealing with light and its effects on the human and natural night environment.]

2010 estimates from the Canadian Cancer

Society indicate 2,500 men will contract prostate cancer, and 2,100 women will suffer from breast cancer in Alberta. For Canada, the estimates are 23,300 breast cancers in women with 100 for men. 24,600 men will contract prostate cancer. For 2010 it is also estimated that 440 men will die of prostate cancer while 420 women will die of breast cancer in Alberta. In Canada the estimate is that there will be 4,300 deaths from prostate cancer while 5,300 women and 50-100 men will die of breast cancer.

No costs are available for the distress caused by the other light-caused illnesses, but these costs must run into the millions per year in Alberta alone, not to mention losses due to time off and secondary illnesses and their treatments.

Light-Efficient Communities (LEC's) help to make our environment more healthy by reducing the total amount of light being wasted while placing the light where it is needed, when it is needed by efficient, effective light fixtures.

Our communities should become more healthy if we are not bombarded by unwanted light trespass and are not exposed to the degree we were previously. This should reduce the amount of breast and prostate cancer in our society.

By advocating *Light-Efficient Communities (LEC's)* each of us supports more healthy living in a higher-quality environment. In doing this each of us strives to eliminate the loss of loved ones as well as the pain and suffering, not to mention the increased health costs of fighting cancers and other nightlight-induced illnesses.

Light pollution affects each living thing in our environment in a multitude of ways. For human beings, the personal costs may be extremely high. For the Alberta government, cancer-care costs were approximately \$200 Million for 2007 and steadily increasing.

It is time to take action against the waste and trespass of nightlight and in doing so protect ourselves, our loved ones and our environment from the danger in the light!

