Cancer Facts & Stats – by Aaron MacCosham

Skin in the game: melanoma and what you can do to minimize your risk

As we bask in the sun during the summer months, we should take precautions to prevent melanoma of the skin, the 7th most common cancer in Canada in 2018[1]; but what is it exactly? Melanoma is a skin cancer that arises from cells called melanocytes. These cells are responsible for producing melanin, the protein that gives our skin colour – the more melanin, the darker the skin. Melanin protects our skin from ultraviolet (UV) rays, serving as a shield. UV rays that penetrate past our melanin shield can lead to DNA mutations within melanocytes. In other words, the melanocyte blueprint is changed, altering how the melanocyte works. Our cells contain machinery to correct DNA changes and our immune system can remove cells with persistent adverse mutations. However, harmful changes left unchecked can lead to melanoma, the uncontrolled multiplication of melanocytes.

Understanding the risk factors for melanoma can help us appreciate how protective behaviours can prevent its onset. Risk factors include exposure to UV rays, having fair skin, a personal or family history of melanoma, or a weakened immune system. Increased UV ray exposure, from sunlight or tanning beds, leads to more opportunities for changes to the melanocyte blueprint. Fair skinned individuals and those with less melanin are at a higher risk of melanoma. The mechanisms that correct melanocyte blueprint changes are hereditary. Having a personal or family history suggests that an individual may have a blueprint that is more prone to DNA mutations. With a weakened immune system, the body is less capable of removing malignant melanocytes. Irrespective of being at risk, melanoma may occur in anyone and protective behaviours apply to everyone. We can maintain reasonable sun exposure levels and

avoid tanning beds. Also, when we venture outdoors, which we inevitably will, we can protect our skin with clothing or sunscreen.

Melanoma is dangerous because it spreads throughout the body. Despite its dubious distinction as the deadliest dermatological cancer, early detection is key for survival. The relative 5-year survival is 99.0% for melanoma that has not spread, 66.2% if it has spread to nearby lymph nodes, and 27.3% if it reached distant body parts[2]. Regular skin checks, by either yourself or your physician, can lead to earlier detection. The mnemonic **ABCDE is a melanoma self-check aid**, with each letter representing a characteristic. 'A' is for asymmetry. A mole is asymmetric if one half does not match the other. 'B' represents border. The border is concerning if it is irregular or blurry. 'C' corresponds to colour. A mole with more than one colour is a feature of melanoma. 'D' denotes diameter. Moles with a diameter of 6 mm or greater could be melanoma. Lastly, 'E' equates to evolution. An evolving or changing mole is characteristic of melanoma. If concerned, a physician should evaluate the mole. Being mindful of risk factors, protective behaviours, and early detection indicators can help keep your skin protected in the melanoma prevention game.

References

1. Bray F, Ferlay J, Soerjomataram I, et al. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin 2018: 394-424.
2. Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Incidence - SEER 18 Regs Research Data + Hurricane Katrina Impacted Louisiana Cases, Nov 2019 Sub (2000-2017), National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems Branch, released April 2020, based on the November 2019 submission.