

Chapter 1

CANCER OVERVIEW

Cancer is the term given to a group of diseases caused by an uncontrollable growth and spread of abnormal cells. These abnormal cells do not conform to any rules of regular cell growth; they clone each other, and grow or spread without regard to the needs of the body. In this chapter, we will take a brief look at the basics of cancer and the terms that will be used throughout the book.

Definitions

The original tumor is called the *primary tumor*. It is a term you will hear frequently when working with cancer patients. Usually internal tumors that are fixed within an organ are not seen on the skin. However, unusual bumps or swellings in the skin can be seen or felt. Information on the types of things that estheticians need to pay attention to when providing esthetic treatments will be discussed in this section.



With regard to skin cancers, these are primary tumors located on the skin and are often caused by ultraviolet (UV) radiation. Many

of them are seen or felt as bumps, areas of discoloration, rough skin or sores. Since diagnosing is not permitted under the scope of an esthetic license, the client needs to be referred to a physician for any unusual bumps and lesions that are visible during an esthetic treatment.

1. ***Carcinoma in situ (CIS)***. This is the early stage of cancer that has not invaded organs or the basement membrane. The basement membrane attaches the epithelial cells to the loose connective tissue underneath and it functions as a barrier to prevent malignant cells from invading deeper tissues. The various cells of the epidermis, such as the stratum corneum, are epithelial cells.

The term *in situ*, for purposes of esthetics, refers to cancer cells that exist in the top layer of the skin and DO NOT have access to the blood vessels or lymph channels of the dermis; therefore, no risk of metastasis can occur.

2. ***Metastasis***. This is the spreading of tumor cells beyond the primary tumor. This can occur in three ways: Direct invasion where the tumor cells invade nearby tissue or organs; lymphatic spread where the tumor cells spread to local or distant lymph nodes via lymphatic drainage; or hematologic spread where tumor cells are carried to distant sites through blood flow.

Metastasis describes cancer that has spread from a part of the first organ to part of a second organ, or from one organ to another.

Cell Characteristics

Differentiation is the process of normal cells going through physical and structural changes to develop and form different tissues in the body.

The cancer cell's structure and function are different from that of the originating parent tissue. The more closely a cancer cell looks and acts like a normal cell from the parent tissue, the more differentiated the cell.

There are a few differences between cancer cells and normal cells:

1. Cancer cells have uncontrolled, rapid growth rates while normal cells have controlled growth rates.
2. Cancer cells have a larger nucleus than normal cells.
3. Cancer cells lack the ability to adhere and are not inhibited by crowded conditions which contribute to migration of cancer cells, whereas normal cells adhere to their space.

The degree to which malignant cells lose the ability to differentiate varies in the different types of tumors.

Tumors are classified as either *benign* (noncancerous) or *malignant* (cancerous). Both types of tumors involve abnormal cell growth. Cancer cells, also known as malignant cells, are cells that have been genetically altered to look and function differently than normal cells. Cancerous cells have gone through a series of mutations in the genetic makeup or DNA within the cell.

Carcinogenesis

Carcinogenesis is the process by which a normal cell is transformed into a malignant one. Skin cancer lesions (or tumors) can be seen more frequently by estheticians in their line of work since they deal primarily with the face, neck and décolleté area.

What Causes Cancer?

Cancer's origin continues to be a mystery and is being studied by many scientists, but no one quite knows the exact cause yet. Smoking, diet, excessive drinking, excessive UV radiation, exposure to toxic chemicals, genetic makeup, and a compromised immune system have been shown to raise the risk of getting cancer.