

# Biocare Basics: Neoplasms, Benign or Malignant?

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The breadth of terms in pathology may be confusing to the average reader since many things may be referred to by more than one synonymous name. In descriptions of cancer, multiple terms are often conflated but have slightly different technical meanings.

Cellular proliferation is normally a tightly controlled, cyclical process within the body.<sup>2,6</sup> When this process goes awry, abnormal growths may begin to form from the affected cells.<sup>2,6</sup> These cells, known as neoplastic cells, divide and proliferate in an unregulated manner and may lose their specialized function and appearance, forming a mass or lump of tissue that does not function as normal tissue otherwise would.<sup>1,2</sup> The technical term for this state of unregulated growth is neoplasia from the Greek roots *neo*, meaning “new,” and *plasia*, meaning “formation.”<sup>1</sup> The physical mass that is formed is called a neoplasm, more commonly referred to as a tumor.<sup>1,2</sup>

Such abnormal growths are not necessarily cancerous. Neoplasms can be either benign or malignant, depending on their behavior and characteristics.<sup>6</sup> If the neoplasm is considered benign, it means it will not invade other unrelated tissues in the body.<sup>1</sup> Benign neoplasms, also known as benign tumors, are typically slow-growing, localized, and often do not cause any harmful symptoms.<sup>1,2</sup>

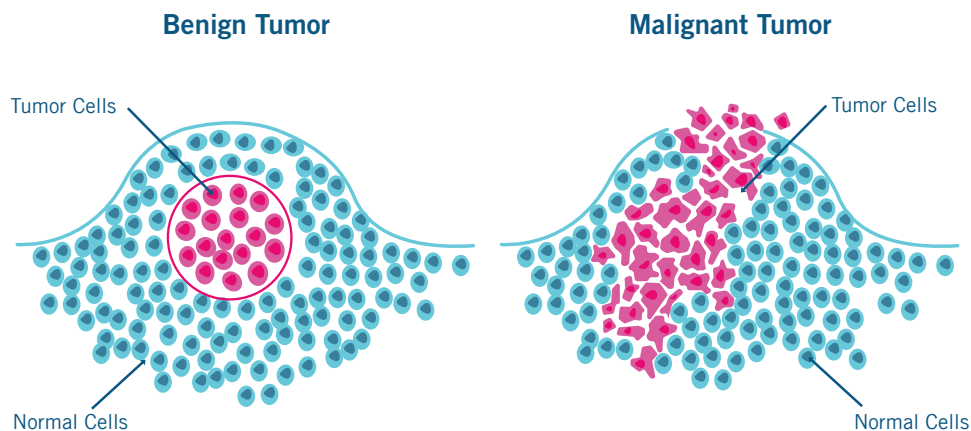
Lipomas are a well-known example of benign neoplasia.<sup>5</sup> Lipomas are benign tumors formed from adipocytes, also known as fat cells.<sup>5</sup> These fatty tumors can appear anywhere in the body where normal fat cells are present, making them one of the most common neoplasms found in humans.<sup>5</sup> Most lipomas are removed purely for cosmetic reasons, as they are not generally considered to be a health risk.<sup>5</sup>

However, some neoplasms may exhibit aggressive, invasive behavior and have the potential to spread to other parts of the body.<sup>1</sup> In this case, the growth is referred to as a malignant neoplasm, malignant tumor, or, by its common name, cancer.<sup>1</sup> The word cancer comes from the Latin word for crab, as malignant neoplasms were first described in historical accounts as having a crablike appearance.<sup>1</sup>

Malignant neoplasms pose a more serious threat to health, as they can invade nearby tissues and organs, causing damage and dysfunction.<sup>1,6</sup> Malignant cells can break away from the primary tumor and spread to other parts of the body via the bloodstream or lymphatic system, forming secondary tumors called metastases.<sup>1,6</sup>

Immunohistochemistry (IHC) markers may provide clinicians with valuable information to assist in differentiating benign and malignant neoplasms. For example, the markers MDM2 and CDK4 may guide the differentiation between benign lipomas and malignant liposarcomas, cancerous tumors of fatty tissue.<sup>3,4</sup> More recently, p16 has been suggested as a marker to aid in this differentiation as well.<sup>3,4</sup>

## Tumor Cell Illustration



To learn more about the markers listed above, please visit our website at [biocare.net](https://www.biocare.net) or call 1-800-799-9499, option #3

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