Orthotopic or orthotropic?

The words *orthotopic* and *orthotropic* look similar, but in cancer research and care, *orthotopic* is usually the correct choice.

*Orthotopic* means "of or relating to the grafting of tissue in a natural position."¹ In *orthotopic* transplantation, an organ or tissue is transplanted into the normal location in the body. In an *orthotopic* tumor model, tumor cells are implanted in the relevant organ of an animal.

**Examples:**

The patient underwent orthotopic liver transplantation, in which his liver was removed and replaced with a donor's.

Cell lines derived from human breast cancer specimens can be injected orthotopically into mouse mammary glands to create tumors that mimic human breast cancer.

The word *orthotropic* is more common in other fields. In botany, it refers to a
vertical direction of plant growth. In materials science, it refers to the orientation of materials: "... relating to properties (such as strength, stiffness, and elasticity) that are symmetric about two or three mutually perpendicular planes". Finally, Orthotropics has been trademarked as a branch of dentistry involving guidance of facial growth.

Caution: The Microsoft Word spellchecker defaults to changing orthotopic to orthotropic. In most cases, you want to ignore that suggestion. Instead, add orthotopic to your Word dictionary.

References

--Sunita Patterson

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