

Tumors of the Brain and Spinal Cord

RTS 6

Introduction:

Gliomas are tumors of the brain and spinal cord. Three out of ten diagnosed brain tumors are gliomas. There is no known or specific cause. There are 3 main types: Astrocytoma, Ependymoma, and Oligodendroglioma.¹⁻² See Figures 1-3.

Imaging Modalities:

Imaging modalities used to diagnosis gliomas include computed tomography (CT), magnetic resonance imaging (MRI), functional MRI (fMRI), MRI spectroscopy, MRI perfusion, positron emission tomography (PET) scans, and biopsies.³ A functional MRI scans look for tiny blood flow changes in an active part of the brain by having a patient perform specific tasks. Doctors can find out what part of the brain handles different functions such as speech, thought, sensation, or movement and areas to avoid during surgery.⁴

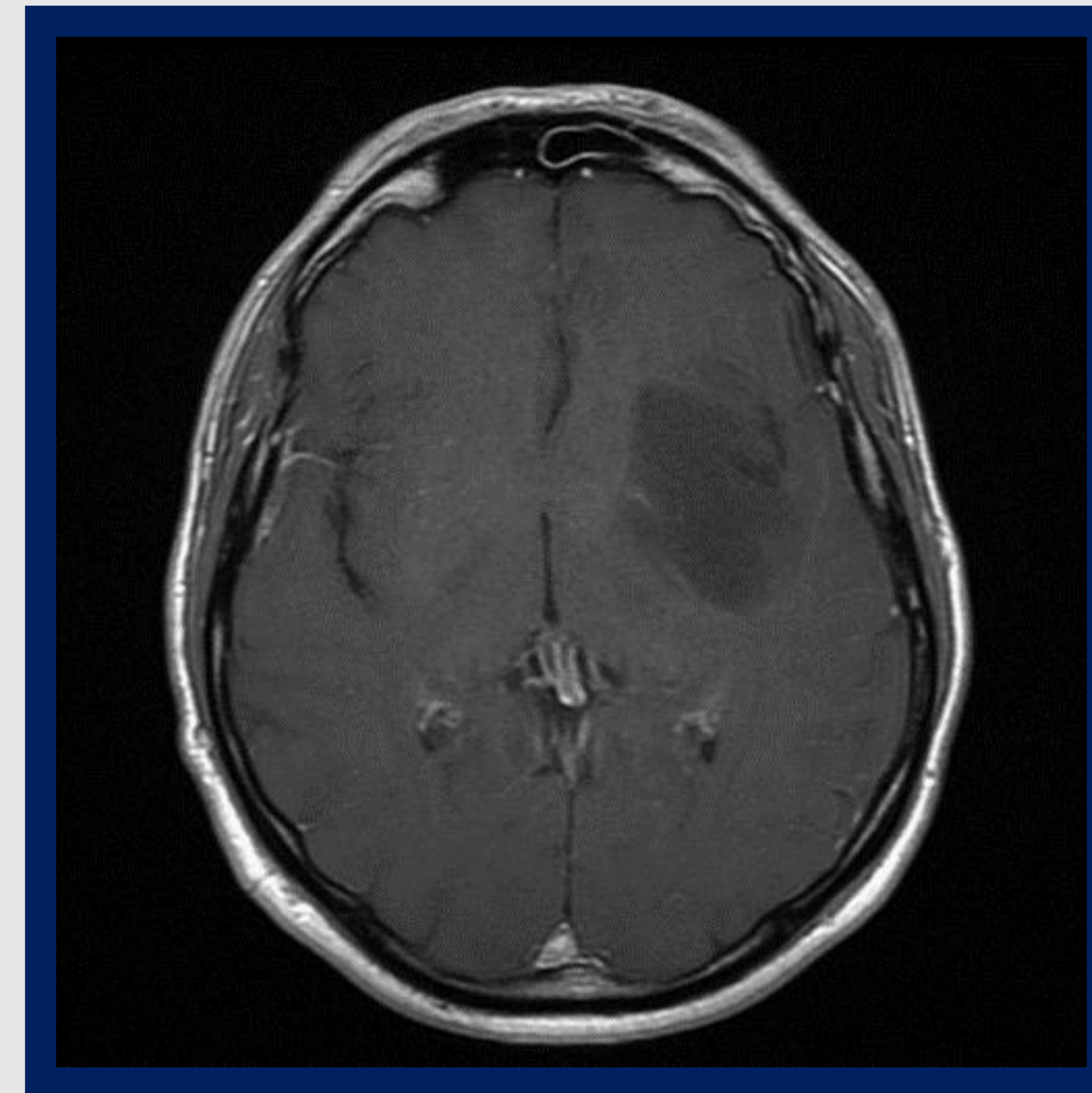


Figure 1. Astrocytomas start in brain cells called astrocytes and represent 2 out of 10 tumors.⁵



Figure 2. See what I did for Figure 1 and model it

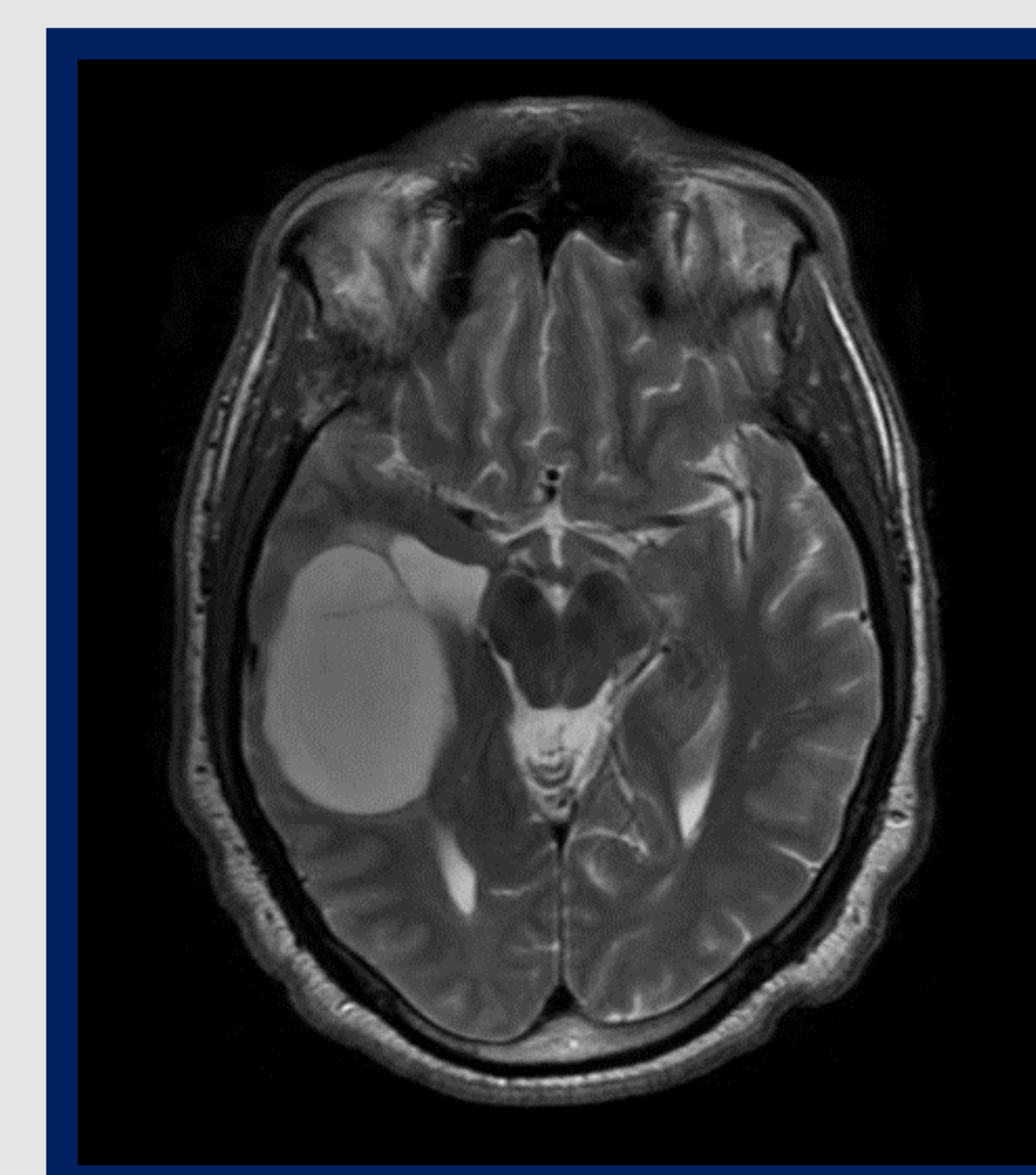


Figure 3. See what I did for Figure 1 and model it

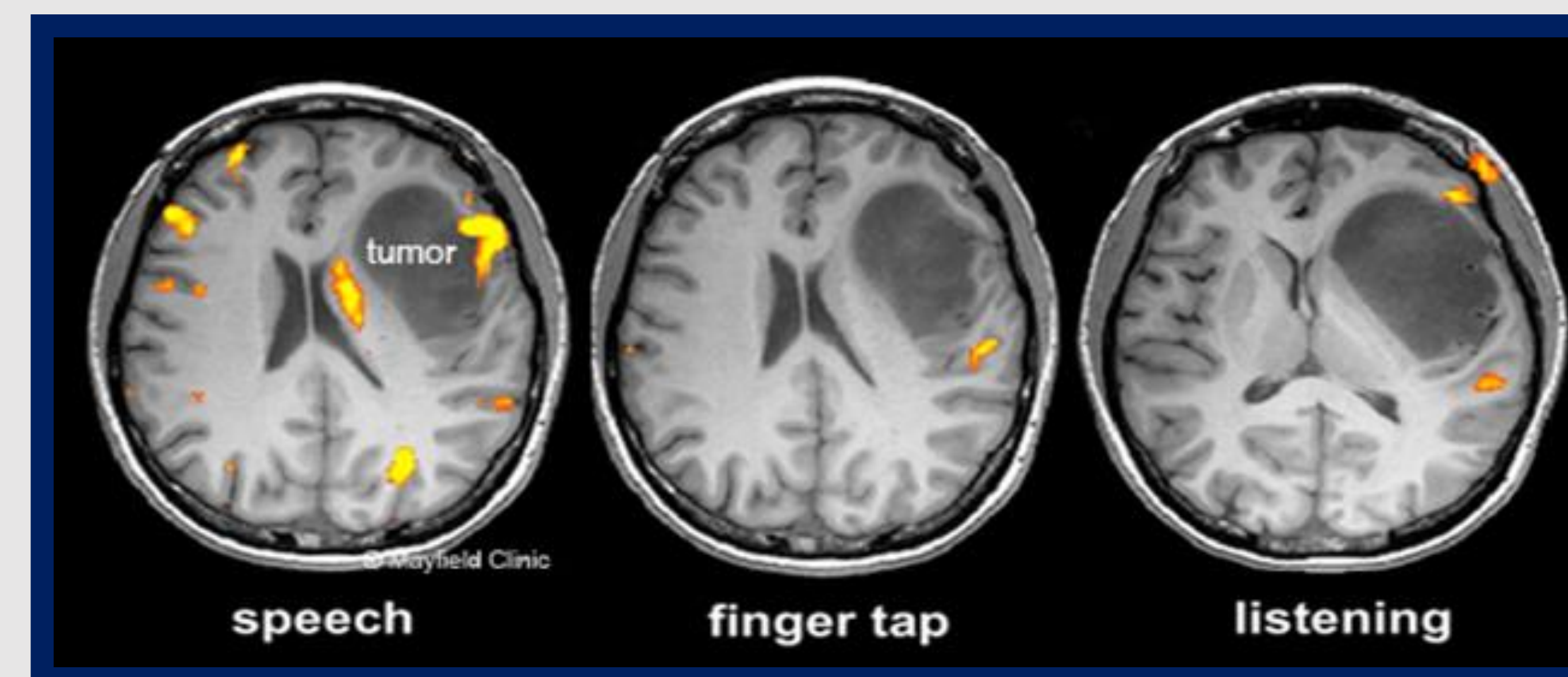


Figure 4. Example of a functional MRI⁸

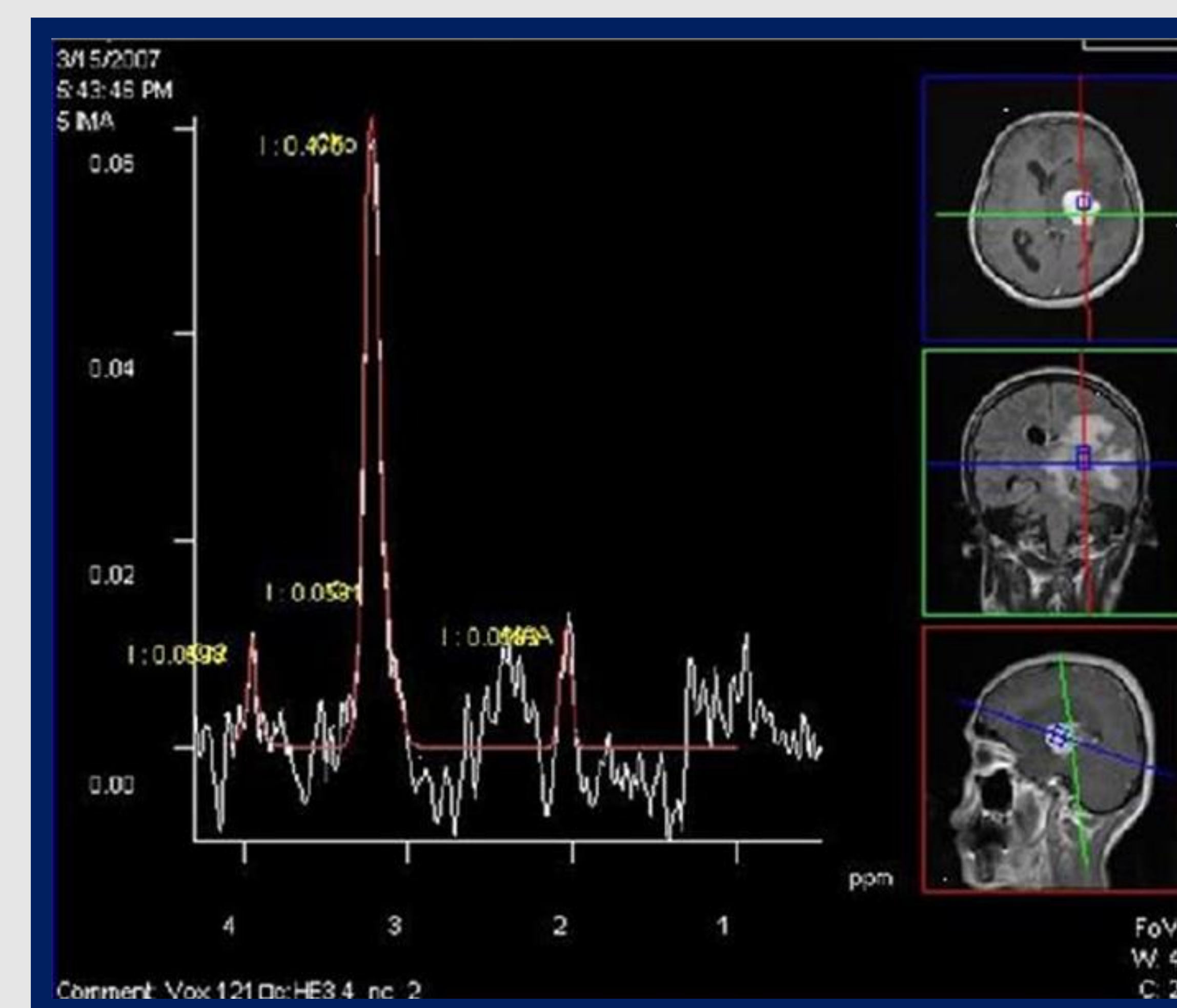


Figure 5. Example of MRI Spectroscopy⁹

Imaging Modalities Continued:

An MRI spectroscopy measures biochemical changes in an area of the brain and displays the results in charts called spectra. The test compares the charts and it can determine the type of cancer or tumor the patient may have⁴

Treatment:

Treatments for gliomas include radiation therapy, chemotherapy, removal by surgery, or a combination of any of these three³

References:

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