

What Imaging Techniques are Used to Diagnose Traumatic Brain Injury?

Source: Produced by Victoria Tilney McDonough and Brian King

Video Link: <http://www.brainline.org/content/multimedia.php?id=3214>

Dr. Deborah Little: For diagnostic purposes, and even for characterization of the extent of injury, we predominantly rely upon magnetic resonance imaging. This is our standard imaging modality. With an MRI our standard measures are good at characterizing whether there's been blood, whether there's been a contusion or a bruise to the brain, or whether there is significant damage to axons that actually result in lesions that we characterize in the brain. It's also of course very good at tumor, at stroke, at ischemic damage.

The advanced applications are really where we're going to see development in brain injury, and these include looking at blood flow and getting blood to regions of the brain, that's called MR perfusion or arterial spin labeling, which is a different technique which looks at how much blood is taken up into the tissue. But beyond that there are applications such as MR spectroscopy. So magnetic resonance spectroscopy is still not a reimbursable type of scan. MR spectroscopy is not an imaging technique. It actually looks at the biochemistry of tissue. So it allows us to look at neuronal integrity, or axonal integrity, or the amount of pathology that's present.