

## What is Diffuse Axonal Injury?

**Source:** Produced by Victoria Tilney McDonough and Brian King

**Video Link:** <http://www.brainline.org/content/multimedia.php?id=3212>

**Dr. Deborah Little:** In diffuse axonal injury, the connections between these areas of the brain, they are being connected by these tracks, are interrupted. This is where the axons are sheared, or damaged, and so the electrical transmissions that allow our different areas of the brain to communicate, are interrupted and this can manifest itself in a variety of ways from... behavioral changes down to kids needing a little bit more time to accomplish the same task. So the common issue we have is you generally won't see the deficits unless you put a time limit on it. So things like the SAT is where a lot of this comes into play.

For us the purpose of imaging in diffuse axonal injury isn't necessarily for clinical management, it's more education of the parent, education of the physicians, and education of the patients themselves; understand that the changes they're seeing are biologic, there's a reason for them, because a lot of times these children are going to end up in the school systems and they're going to be diagnosed as attention deficit disorder, or conduct disorder. That's not brain injury, and it's important to understand the difference between those. And so in some cases it's more education.

Hopefully we'll translate that into clinical service, and that will be used to help characterize disability, and be implemented into programs; and also be used to help engage and incorporate more rehabilitation and intervention services. But that's our hope for what we're going to be doing with this.