

DEMONSTRATING OBJECTIVE AND SCIENTIFIC EVIDENCE OF BRAIN INJURY WITH qDTI

If your client is suffering from brain injury symptoms for months or years after an accident, the following circumstances are no longer reason to stop developing your case:

- Your client didn't notice or report brain injury symptoms right after an accident.
- A doctor described your client's injury as "mild."
- A radiologist's report determined that your client's routine CT or MRI results are "within normal limits."

Today we know that conventional CT and MRI exams aren't sensitive enough to show a brain injury. Instead, you may need a sophisticated level of advanced analysis and expertise that relies on quantitative, objective methods. The Concussion Group offers advanced brain exams based on quantitative Diffusion Tensor Imaging (qDTI) which goes beyond the DTI you may have learned about previously.

qDTI Provides Objective Data About an Injury While Other DTI Imaging Methods Are Subjective or Data Deficient

Our test begins with data collected from your client's 30-minute brain imaging scan. Next, we compare measurements and values from that exam to the largest neurotypical control group available today. We strongly believe the proprietary Quantify™ database provides the most scientifically valid normative database for individual comparison. Other databases lack volume and integrity. Our large dataset allows individual exam results to be matched to a subset of age and sex-matched control subjects. This level of quantitative comparison provides increased sensitivity over other analysis methods and produces statistically sound results. As a result, any abnormal findings provide objective evidence of axonal injury, its location and its severity — helpful information for you and your client's neurologist, neuropsychologist, neurosurgeon or psychiatrist. You won't have to rely on a single expert's visual subjective interpretation of images for your case.

Quantify™ analyses were developed by MINDSET Consulting Group in collaboration with attorneys who are experts in the admissibility of scientific evidence and neuroscientists who are experts in neuroimaging data analysis and neurobiology. Quantitative analysis of Fractional Anisotropy and comparison to large normative databases is now considered the gold standard in clinical and experimental research studies funded by the National Institutes of Health.



qDTI Relies on 1,200+ Control Datasets Across 107 Brain Regions and 48 Fiber Tracts

For qDTI exams, we incorporate imaging sequences that collect high-resolution MRI data across the entire brain. The qDTI algorithms then extract detailed measurements of your client's brain. Quantify™ organizes the gray matter data measurements into 107 recognized brain regions and measures the integrity of 48 major white matter fiber tracts interconnecting different regions.

A Volumetric Analysis studies the gray matter made up of cell bodies that act as the brain's processing motors. A qDTI analysis studies the white matter fiber tracts that connect cell bodies and enable communication across brain regions.

qDTI Relies on Control Datasets From Calibrated Scanners

Each of the 1,200+ sets of brain measurements in the control group were collected on the same MRI scanner and with the same protocols. A unique scaling method calibrates the machine used for your client to the one that obtained the control dataset, thus eliminating the contentious issues of variability between individual scanners, manufacturers, and generic normative datasets.



BEWARE OF DTI METHODS THAT CAN COMPROMISE YOUR CASE

Reject Mesmerizing DTI Tractography:

Visual inspection of white matter fiber tracts by a neuroradiologist for pre-surgical planning is not useful for evaluating TBI. The examiners use their subjective judgement to determine if tracts look abnormal and typically provide no quantitative analysis. The tracts are subjectively “drawn” and frequently by MRI technologists.

Asymmetry Analyses Are Faulty:

These analyses are based on the principle that the brain demonstrates a high level of bi-fold symmetry and that injury causes asymmetry. Unfortunately, injuries can result in bilateral damage. Looking for Asymmetrical Fractional Anisotropy (FA) values does not provide normative data points for comparison.

FA Values Published in Journals Are Inadequate:

We don't recommend comparing your client's FA values to the various FA values that have been published in a variety of journals. In this scenario, your provider may try to determine whether your client's FA values are normal based on data released in multiple peer-reviewed publications over time. Unfortunately, these data can vary widely based on MRI field strength, hardware, software, and sources for patient studies.

Avoid Comparisons With a Small Collection of Data:

Make sure your provider doesn't attempt to compare your client's FA values to the collective FA values of too few control subjects, without narrowing the comparison group to match your client's age range and gender. Inevitably, these small datasets are statistically weak and provide insufficient power to support conclusions about an injury.



Count on the Concussion Group at Every Step

- ✔ It all starts with complimentary consultations with experienced qDTI radiologists as well as board-certified and a fellowship-trained neuroradiologist who can help you determine whether qDTI will benefit your litigation.
- ✔ Scheduling is easy. We can arrange a single appointment directly with your client.
- ✔ After the appointment, our experts will provide a complimentary report review by phone or video conference. We'll make technical language understandable for your client's medical and legal team.
- ✔ Final reports are signed by an MD who is a board certified and a fellowship-trained neuroradiologist.
- ✔ Attorneys have convenient access to our experts for additional personal consultations throughout the months or years of your litigation. And you'll have fast access to our experienced experts who are ready for your depositions and trials.

