

What is Magnitude:

Magnitude is used in this analysis system instead of power because most neurofeedback practitioners work with magnitude. We feel it is important that they be able to easily refer to their statistics and see what the actual microvolt value is when an area is indicated as high on the map. Magnitude is merely the average amplitude over time. The magnitude values in this map are based on a statistical sample in addition to being cross validated with the major databases. We have also made adjustments, so they vary with the TOVA and the ISI more accurately. (It is our clinical experience that many of the databases overvalue or undervalue different component bands.) The meaning of high or low magnitudes varies with location and distribution. Learning to interpret their meaning takes considerable experience. The dashboards in this analysis system are designed to help you interpret the map information and these dashboards indicate potential problems that may be present when magnitudes are high or low.

What is Connectivity:

Connectivity is how much one part of the brain is talking to another part. If areas have high coherence, they are over-communicating (like a traffic jam) and if they have low coherence, they are under-communicating. In both cases plasticity and function suffer. For instance, high or low coherence between F3 and F4 would likely indicate a problem in the short-term memory networks of the frontal lobes (for more information regarding functional connectivity and brain locations based on the 10-20 system see my book *Doing Neurofeedback*). The more disordered a brain is, the more extreme its coherence readings become. In more technical terms coherence is how consistent the phase relationship is between two locations. Many maps provide coherence readings between regions with little functional connectivity. The NeuroMap analysis provides coherence readings only between locations that have strong functional connectivity and that will likely be clinically meaningful.

What is Dominant Frequency:

This is drawn from the modal frequency data. This measure indicates whether the frequency in a specific component band has slowed down or sped up. For instance, alpha in a healthy person should average between 9.5 and 10.5 hz. If the dominant alpha frequency drops below 9.5 hz then it is likely a problem exists. Slowed alpha is often an indicator of depression or physical problems such as hypothyroid. In this case the modal frequency would be low, and you may see more 8-10hz in the subcomponent analysis.

What is Asymmetry:

There has been considerable research done by Richard Davison regarding EEG asymmetry and its relationship to mood and anxiety. Most databases today do not reflect this research very well, but clinicians find it an important source of information. This analysis system has been set up so that you can easily read the asymmetries present and compare them to problems your client is reporting. More alpha on the left than the right side usually indicates depression is present. More beta on the right side than the left usually indicates anxiety is present. If theta is unusually high and dominates on the left side it usually indicates a problem with organization. When theta dominates on the right side it usually indicates a problem with impulsivity.