Alpha-ketoglutarate Challenge
For Anxiety

"Chill Out" we may silently (or verbally) say to an anxious person. However, chilling out is not as easy for some as it is for others.

For some, the cause of anxiety is a defect in the conversion of the excitatory neurotransmitter glutamate into the inhibitory neurotransmitter GABA.

GABA is produced in the citric acid cycle in a pathway known as the "GABA shunt." The process initially creates alpha-ketoglutarate, which converts to excitatory glutamate, which is then converted into the inhibitory neurotransmitter GABA.

When you cannot adequately convert glutamate into GABA, there is a build up of excitatory glutamate and a deficiency in calming GABA. This is a recipe for anxiety.

Several mechanisms can inhibit the body's ability to convert glutamate into GABA, including:

1. Genetic polymorphism
2. Mitochondrial defect (often from environmental damage)
3. Severe anemia
4. GAD antibodies (autoimmune process again glutamic acid decarboxylase (GAD-65), the enzyme that converts glutamate to GABA).

INSTRUCTIONS
The alpha-ketoglutarate (AKG) challenge can be used to check for such a defect. Take 3000 mg of alpha-ketoglutarate and monitor symptoms of excitation and anxiety.

If you cannot convert glutamate to GABA, you will have increased symptoms of excitation from the build-up of glutamate that is not being converted.

FOLLOW-UP
If the challenge produces anxiety, GAD-65 antibodies should be tested for. If positive, address as an autoimmune process. Also, consider the likelihood of other autoimmune processes like Hashimoto's and Type I diabetes.

If the GAD-65 antibodies are negative, support should focus on improving mitochondrial function, identifying anemia and supporting GABA receptor sites with Apex's GABAtone (K39).

Those testing positive on the AKG challenge may need GABA support for the rest of their lives as in the case when the mechanism is a genetic polymorphism.

Another consideration is that those testing positive for GAD-65 will also most likely react negatively to MSG.