



GLUTATHIONE & ANXIETY

Glutathione plays a critical role in brain health and can indirectly influence anxiety by modulating oxidative stress, neuroinflammation, and neurotransmitter balance.

- **Oxidative Stress & Neuroinflammation:** Anxiety disorders are often linked to increased oxidative stress and neuroinflammation, both of which glutathione helps counteract by neutralizing free radicals and reducing neurotoxic damage.
- **Glutamate & GABA Balance:** Glutathione is involved in regulating glutamate, the brain's primary excitatory neurotransmitter. Excess glutamate can contribute to anxiety, while a healthy balance supports calmness.
- **Mitochondrial Function & Energy Production:** Anxiety-prone individuals often have mitochondrial dysfunction, leading to fatigue and heightened stress responses. Glutathione protects mitochondria, ensuring optimal energy metabolism.
- **HPA Axis & Cortisol Regulation:** Chronic stress and anxiety dysregulate the hypothalamic-pituitary-adrenal (HPA) axis, increasing cortisol levels. Glutathione helps maintain cellular resilience to stress, potentially mitigating excessive cortisol production.

While direct studies on glutathione and anxiety are limited, its overall neuroprotective, anti-inflammatory, and detoxifying properties suggest a beneficial role in mental health support. Many clinicians use nutraceuticals that raise glutathione levels in anxiety and mood disorders.