

## **Glutathione in Parkinson's disease: a link between oxidative stress and mitochondrial damage?**

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Several links exist between the two mechanisms of neuronal degeneration (i.e., oxygen radical production and mitochondrial damage) proposed to have a role in Parkinson's disease. Indeed, mitochondria are critical targets for the toxic injury induced by oxygen radicals, and experimental evidence suggests that mitochondrial damage may cause an increased generation of oxygen radicals. A potentially important link between these two mechanisms of neurodegeneration is glutathione. Because of the scavenging activity of glutathione against accumulation of oxygen radicals, its decrease in the brains of parkinsonian patients has been interpreted as a sign of oxidative stress; however, this change may also result from or lead to mitochondrial damage. It is conceivable therefore that regardless of whether oxidative stress or mitochondrial damage represents the initial insult, these toxic mechanisms may both contribute to neuronal degeneration via changes in glutathione levels.

