

Antioxidant Balance Across the Adult Lifespan

The body manages oxidative stress through a network of endogenous antioxidant systems, including ubiquinol—the body’s only lipid-soluble endogenous antioxidant—helping cells maintain oxidative balance and support mitochondrial function and cellular integrity.

The efficiency of these systems declines across adulthood, directly affecting how well cells produce energy, protect against oxidative damage, and sustain function over time.

What Is Antioxidant Balance?

Antioxidant balance is the state in which the body’s antioxidant defense capacity keeps pace with the generation of reactive oxygen species (ROS), allowing cells, mitochondria, and tissues to maintain normal function.

When that balance is disrupted—when ROS generation exceeds antioxidant capacity—oxidative stress occurs.

Ubiquinol Plays a Central Role in Oxidative Balance

- The only lipid-soluble antioxidant synthesized in the body¹
- Co-located within the mitochondrial inner membrane
- Active in both cellular energy production and antioxidant defense

