

Sources of free radical

→ Ionizing radiation - X-ray & UV → OH⁻ radical

→ Transition metal form - Cu⁺, Co²⁺, Ni²⁺, Fe²⁺ → OH⁻ radical

→ Nitric oxide → OH⁻ radical

→ Activated macrophage → Respiratory burst oxidase (NADPH oxidase)

↑ oxygen utilization

↓ free radical & oxidize NADPH

↓
↑ glucose utilization by Hmp shunt
↓ reduce NADPH to NADPH

→ Mitochondrial oxidation of reduced flavins →