

# MCM Practice Questions: Lecture Day 4

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## Lecture 14: OxPhos

**1) Why do we need shuttles to transport cytosolic NADH into the mitochondria?**

- (A) The concentration of NADH is too high in the mitochondria
- (B) The concentration of NADH is too low in the mitochondria
- (C) The mitochondrial membrane does not have any transport proteins
- (D) The mitochondrial membrane does not have any NADH transport proteins

**2) An obese patient is watching Dr. Oz when he recommends 2,4-DNP as a miracle drug that will help him lose 20 pounds a week. The patient starts taking it and suffers very adverse health effects. What protein complex of Oxidative Phosphorylation is most affected by 2,4-DNP?**

- (A) ATP synthase
- (B) Complex I
- (C) Complex II
- (D) Complex III
- (E) Complex IV

**3) A tired factory worker parks their car in the garage and forgets to turn the engine off before falling asleep in the drivers seat. A neighbor finds the worker unresponsive the next morning. Paramedics arrive and diagnose CO poisoning. What Oxidative Phosphorylation protein complex is affected?**

- (A) ATP synthase
- (B) Complex I

(C) Complex II

(D) Complex III

(E) Complex IV

**4) An infant is diagnosed with a genetic metabolic disease stemming from a mutation in the infants mtDNA. The infant suffers from lactic acidemia, developmental delays, hypotonia, and seizures. What is the most likely disorder this patient has?**

(A) Fatal Infantile Mitochondrial Myopathy

(B) Leber's hereditary optic neuropathy

(C) Leigh disease

(D) Kearns-Sayre syndrome