

# CVS-Biochemistry

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Archive

Lecture 1

Biochemistry of cardiac  
muscle-1

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# CVS-Biochemistry **Lecture 1**

1. Creatine kinase is important in phosphocreatine production, what statements are correct?

- A. CK not associated with myofilaments
- B. isozyme is found in mitochondria (mi-CK) and accounts for more than 50%
- C. The mi-CK isoform is coupled to the outer membrane
- D. replenishing ATP in ATPase active sites, such as myosin heads.
- E. low Ck/ATP not fatal

Answer : D

2. Phosphorylation/dephosphorylation in PDH is regulated by kinase and phosphates, what is correct?

- A.  $Mg^{++}$  and  $Ca^{++}$  activate inhibiting enzyme
- B. low ATP/ADP and decrease acetyl CoA/CoA inhibit inhibiting enzyme
- C. low NADH/NAD and decrease pyruvate concentration activate inhibiting enzyme
- D. Increased ATP/ADP and increased CoA/acetyl CoA inhibit activating enzyme

Answer : D

3. Which of the following correctly describes phosphorylation/dephosphorylation of PDH ?

- Low ATP/ADP and Low acetyl CoA/CoA inhibits the inhibiting enzyme

4. An explanation for the no changes in mechanical capacity of heart even with increased oxygen consumption during utilization of fatty acids

- Increased oxidative stress caused by oxidation of fatty acids

5. Pyruvate dehydrogenase multienzyme complex is a key regulatory enzyme in glucose utilization: it can be inhibited by all of the following except?

- a. ATP/ADP
- b.  $NADH+H^+$ /NAD
- c. Acetyl CoA/CoA
- d. Citrate/pyruvate
- e.  $NADPH+H^+$ /NADP

Answer : E

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6. PFK-1 is catalyzing the conversion of fructose 6-phosphate into fructose 1,6-bisphosphate, all of the following can inhibit this enzyme except? Select one: a. decrease ADP/ATP ratio b. increase NADH+H<sup>+</sup>/NAD ratio c. decrease Activity of PI3 kinase d. increase Activity of electron transport chain e. decrease Activity of PFK-2

Answer : C

7. In the high altitude, you stayed for an hour, the following changes will happen in metabolic pathways of your cardiomyocytes except? Select one :

- a. increase Glycolysis
- b. decrease  $\beta$  oxidation of fatty acids
- c. increase production of phosphocreatine
- d. Accumulation of NADH+H and lactic acid
- e. decrease Oxidative electron transport chain activity

Answer : C

