

Name: Key

Fed State (Hepatocyte) + O <sub>2</sub>	Increasing	Decreasing	N/A
Blood [glucose]	X		
Blood [Insulin]	X		
Insulin Receptor Signal	X		
Blood [Glucagon]		X	
Glucagon Receptor Signal		X	
[cAMP]		X	
Flux through GLUT2	X		
Flux through GLUT4			X
PFK-2/F-2,6-BPase Phosphorylation		X	
Flux through hexokinase			X
Flux through glucokinase	X		
Flux through glucose-6-phosphatase		X	
PFK-1 activity	X		
PFK-2 activity	X		
F-1,6-BPase activity		X	
F-2,6-BPase activity		X	
[F-2,6-BP]	X		
Pyruvate kinase phosphorylation		X	
Pyruvate kinase activity	X		
Flux through glycolysis	X		
Flux through gluconeogenesis		X	
[lactate]	X		X

1. How many ATP equivalents (ATP + GTP) does a cell gain from converting glucose to 2 pyruvates via glycolysis?

2

2. How many ATP equivalents (ATP + GTP) does a cell burn from converting 2 pyruvates to glucose via gluconeogenesis?

~~6~~ -6

3. If a cell did not regulate flux through glycolysis and gluconeogenesis, what would be the effect on the cell's ATP equivalents (ATP + GTP) each time a glucose molecule completely passed through glycolysis and was recreated by gluconeogenesis?

~~4~~ -4