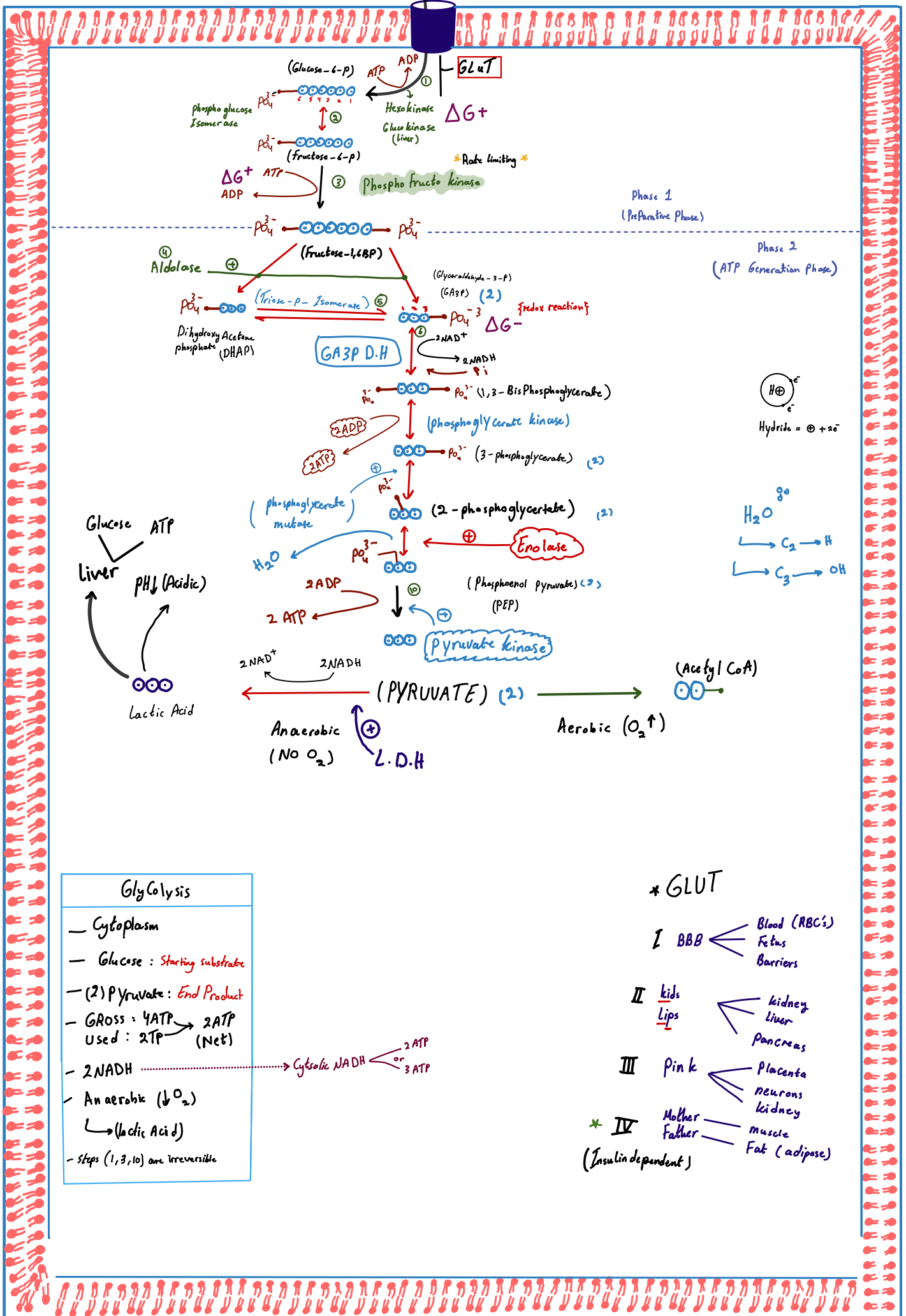


# Glucose



**Glycolysis**

- Cytoplasm
- Glucose : Starting substrate
- (2) Pyruvate : End Product
- GROSS : 4ATP → 2ATP (Net) Used : 2ATP
- 2NADH → Cytosolic NADH (2ATP or 3ATP)
- Anaerobic (↓ O<sub>2</sub>) → Lactic Acid
- Steps (1, 3, 10) are irreversible

**\* GLUT**

- I BBB ← Blood (RBC's), Fetus, Barriers
- II Kids Lips ← kidney, liver, pancreas
- III Pink ← placenta, neurons, kidney
- \* IV Mother/Father ← muscle, Fat (adipose) (Insulin dependent)

# Regulation

Glucose  
○○○○○○



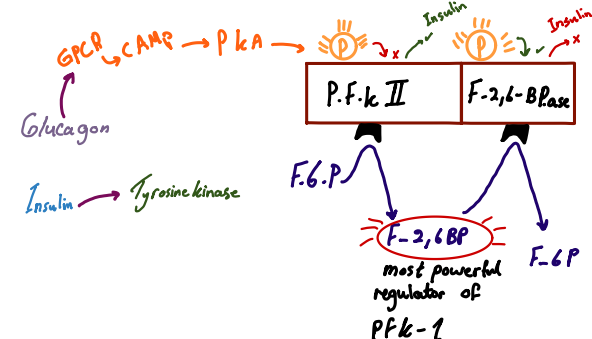
\*Rate limiting\*  
Phospho fructo kinase

Regulation  
 (+) Allosteric  
 (+) active site  
 (-) control 3D structure  
 Hormonal  
 more in terms with +P -P

Glucokinase  
 (+) Glucose (-) Fructose-6-P  
 Hexokinase  
 (+) Glucose (-) Glucose-6-P

(H) Insulin → stimulate enzymes (↑ Glucose) + amount increasing  
 Glucagon (↓ Glucose) Inhibit enzymes

Phospho-Fructo-kinase -1  
 (-) ATP, Citrate, H+  
 (+) AMP, F-2,6-BP



Pyruvate kinase

(-) ATP, Alanine  
 (+) Fructose-1,6 Bisphosphate (Feed forward)

(H) Glucagon  
 phosphorylates the enzyme inhibiting it...

Insulin  
 stimulating this enzyme by  
 - increasing it into larger amounts.  
 - dephosphorylation

