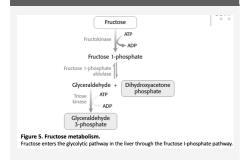
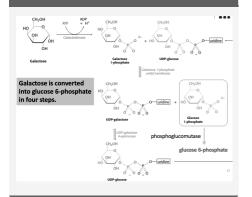


# Glycolysis2 Cheat Sheet by rhettbro via cheatography.com/133961/cs/27537/

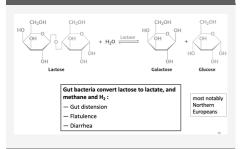
#### Fructose metabolism



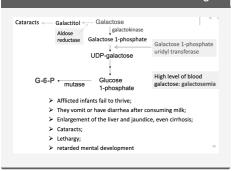
#### Galactose metabolism



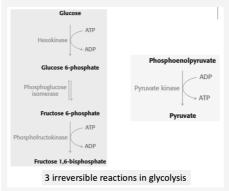
#### Deficient in Lactase (Lactose intorlerant)



#### Galactose Is Toxic If Transferase Missing



## The Glycolytic Pathway Is Tightly Controlled



#### **Key Enzymes**

- 1. Hexokinase
- 2. Phosphofructokinase-1
- 3. Pyruvate kinase

# Methods of regulation

- 1. allosteric regulation
- 2. covalent modification

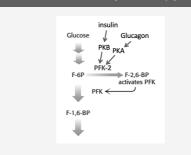
## Phosphofructokinase-1 (PFK-1)

the key point for regulation of glycolysis allosteric activator : AMP; F-2,6-BP (in the liver)

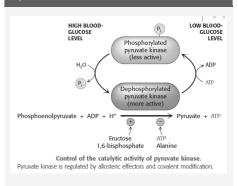
allosteric inhibitor: ATP; citrate

In high concentrations, fructose 6-phosphate (F-6P) activates the enzyme phosphofructokinase (PFK) through an intermediary, fructose 2,6-bisphosphate (F-2,6-BP).

## F-6P to PFK if too many Glucose(by insulin)



## Pyruvate kinase



#### Hexokinase

Hexokinase is suppressed by its product G-6-P

Glucokinase in liver, is not inhibited by G-6-P.

Glucokinase phosphorylates glucose only when glucose is abundant

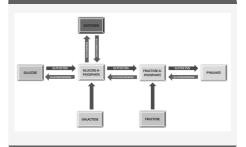
The role of glucokinase is to provide G-6-P for the synthesis of glycogen and for the formation of fatty acids.

Gives the brain and muscles first call on glucose when its supply is limited, and it ensures that glucose will not be wasted when it is abundant.

# Glucose Transporters(GLUTs)

Name	Tissue location	$K_{\mathrm{M}}$	Comments
GLUT1	All mammalian tissues	1 mM	Basal glucose uptake
GLUT2	Liver and pancreatic $\boldsymbol{\beta}$ cells	15-20 mM	In the pancreas, plays a role in the regulation of insulin In the liver, removes excess glucose from the blood
GLUT3	All mammalian tissues	1 mM	Basal glucose uptake
GLUT4	Muscle and fat cells	5 mM	Amount in muscle plasma membrane increases with endurance training
GLUT5	Small intestine	_	Primarily a fructose transporter

# Glycolysis and Gluconeogenesis back and forth



By **rhettbro** 

cheatography.com/rhettbro/

Published 14th April, 2021. Last updated 14th April, 2021. Page 1 of 2. Sponsored by **Readable.com**Measure your website readability!
https://readable.com



# Glycolysis2 Cheat Sheet by rhettbro via cheatography.com/133961/cs/27537/

# from Noncarbohydrate Precursors to

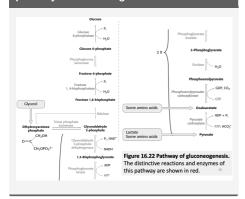
The gluconeogenic (糖異生) pathway converts pyruvate into glucose.

Gluconeogenesis is not a reversal of glycolysis

Noncarbohydrate precursors are first converted into pyruvate, oxaloacetate, dihydroxyacetone phosphate.

Noncarbohydrate Precursors: lactate, amino acids, and glycerol.

## pathway of Gluconeogenesis





By **rhettbro** cheatography.com/rhettbro/

Published 14th April, 2021. Last updated 14th April, 2021. Page 2 of 2. Sponsored by **Readable.com**Measure your website readability!
https://readable.com