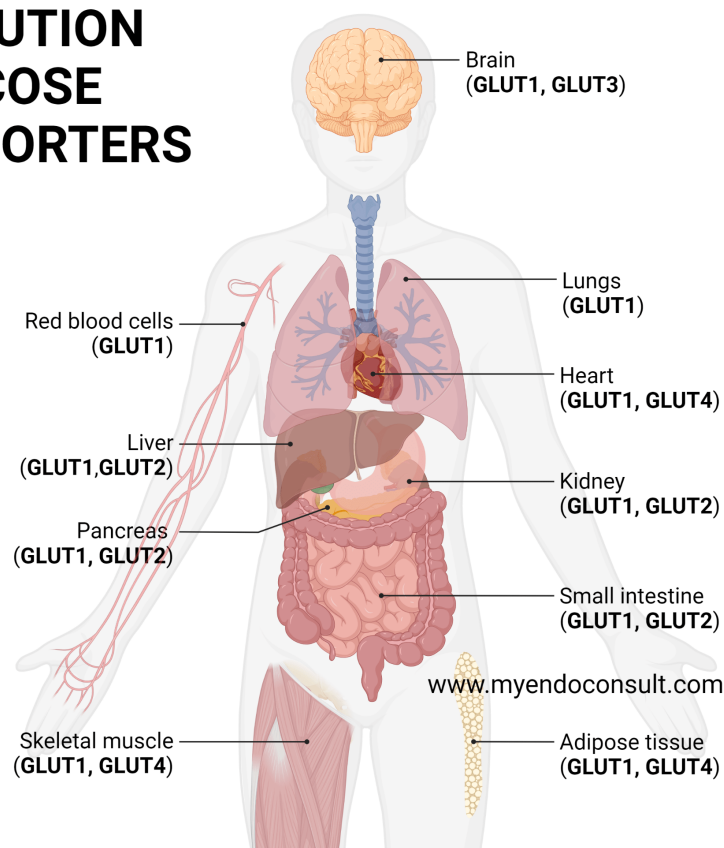


Glucose Transporters

Glucose transporters are required from shuttling glucose from the extracellular to intracellular compartment. Insulin by binding to the tyrosine kinase insulin receptor present on target cells promotes the translocation of various sodium glucose transporters from the Golgi apparatus to the cellular membrane.

DISTRIBUTION OF GLUCOSE TRANSPORTERS



Location of Glucose Transporters

The distribution of glucose transporters varies significantly between various tissues. Insulin is not required for the expression of all glucose transporters. For example, GLUT-2 transporters present in pancreatic islet (beta) cells and hepatocytes are insulin independent. On the other hand, GLUT-4 transporters present in striated muscle and adipose tissues, are insulin dependent and are induced in response to the

presence of insulin.

Glucose Transporter	Location	Comments
GLUT-1	Erythrocytes, blood-brain barrier	Low level of basal glucose uptake required to sustain cellular respiration
GLUT-2	Beta cells, renal tubular cells, liver, intestinal epithelial cells	
GLUT-3	Neurons and placenta	
GLUT-4	Striated muscle and adipose tissue	ONLY insulin-regulated GLUT : It is responsible for insulin mediated glucose uptake

We found this detailed lecture by AK Lectures (on YouTube) very helpful. Watch this video if you are interested in learning more about the properties of Glucose Transporters.