

# Starvation



This exercise investigates the metabolic response to complete cessation of caloric intake. If the metabolic substrate is not coming from food intake, where is it coming from? We need to keep an eye on these sources of fuel:



Metabolism / Liver Glycogen



Body Composition / Adipose Tissue Lipids



Cell Composition / Cell Protein

We can arbitrarily divide the body's response into acute (a few hours), intermediate (a few days), and long-term (a few weeks) responses.

## The Starvation Protocol

Begin by clicking Restart to reset the model's variables to their initial values. Record control values. Click  and set carbs, fat and protein intake to 0. Advance the solution and record the data.



Liver Glycogen Mass (G)



Adipose Lipid Mass (G)

Cell Protein Mass (G)

Plasma [Ketoacids] (mG/dL)  
Plasma [Glucose] (mG/dL)

Brain Ketoacid Use (mG/Min)  
Brain Glucose Use (mG/Min)

Skeletal Muscle Glucose Use (mG/Min)  
Skeletal Muscle FFA Use (mG/Min)

Plasma [Insulin] (uU/mL)  
Plasma [Glucagon] (pG/mL)

Time	0	6	1	2	1	2	3
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		Hrs	Day	Days	Wk	Wks	Wks
Liver Glycogen							
Adipose Lipid							
Cell Protein							
Plasma [KA]							
Plasma [Glu]							
Brain KA Use							
Brain Glu Use							
Musc. Glu Use							
Musc. FFA Use							
[Insulin]							
[Glucagon]							

