What is physiology to you?

1.

Homeostasis
- Maintaining constancy of the internal environment.
- Set point
- Integrating centers
- Effectors

Feedback Loops
- Negative Feedback loops -
- Positive Feedback loops -

Regulatory Mechanisms
- Intrinsic
- Extrinsic

Negative feedback control of insulin secretion and blood glucose concentration.

- Eating
- Increase in blood glucose
- Pancreatic islets
- Increase in insulin
- Increase in cellular uptake of glucose
- Decrease in blood glucose

Fig. 1.6
Why know about different pathways of metabolism?

- Glycolysis
- Krebs cycle
- Oxidative phosphorylation

Why do this?

What tissues do this?
The importance of metabolic pathways.

- Glucogenesis
- Glucogenolysis
- Gluconeogenesis

**Figure 5.4**

Glycogenesis & Glycogenolysis

**Figure 5.11**

Conversion of Glucose into Glycogen and Fat

**Figure 5.5**

Cori Cycle

**Figure 5.12**

Divergent Metabolic Pathways for Acetyl Coenzyme A

- Lipogenesis
- Lipolysis

- Bile acids
- Steroids
- Cholesterol
- Acetyl CoA
- Citric acid (Krebs cycle)
- CO₂
- Fatty acids
- Phospholipids
- Triacylglycerol (triglyceride)
The importance of metabolic pathways.

- Transamination
- Oxidative Deamination

Glucose is not the only source that feeds into the kreb cycle.

- See figures 5.16 and 5.17 to get a good overview of all the ways in which the substances you eat are converted into energy.

<table>
<thead>
<tr>
<th>Organ</th>
<th>Glucose</th>
<th>Fatty Acids</th>
<th>Ketone Bodies</th>
<th>Lactic Acid</th>
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<tbody>
<tr>
<td>Brain</td>
<td>+++</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Skeletal Muscles</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>-</td>
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<td>(Resting)</td>
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<tr>
<td>Liver</td>
<td>+</td>
<td>+++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Heart</td>
<td>+</td>
<td>++</td>
<td>+</td>
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