### Vegetarian Diets

<table>
<thead>
<tr>
<th>Type</th>
<th>Animal Foods Included</th>
<th>Foods Excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-vegetarian</td>
<td>Dairy, eggs, chicken, fish</td>
<td>Red meat</td>
</tr>
<tr>
<td>Pesco-vegetarian</td>
<td>Dairy, eggs, &amp; fish</td>
<td>Beef, pork</td>
</tr>
<tr>
<td>Lacto-ovo vegetarian</td>
<td>Dairy and eggs</td>
<td>Any animal flesh</td>
</tr>
<tr>
<td>Ovo-vegetarian</td>
<td>Eggs</td>
<td>Milk, animal flesh</td>
</tr>
<tr>
<td>Lacto-vegetarian</td>
<td>Dairy</td>
<td>Eggs, animal flesh</td>
</tr>
<tr>
<td>Vegan</td>
<td>None</td>
<td>Anything with eyes</td>
</tr>
<tr>
<td>Fruitarian</td>
<td>None</td>
<td>All foods except raw fruits, nuts, green foliage</td>
</tr>
</tbody>
</table>

### Vegetarian food pyramid

- Weekly
- Daily
- At every meal

### Protein Catabolism

- Amine Group
- Carbon Skeleton
- e.g. alanine
- e.g. glutamate
- e.g. leucine
- e.g. lysine
- e.g. methionine
Protein Metabolism

Protein synthesis

DNA → transcription → RNA → translation → protein

- AA essential?
  - yes: available from dietary protein?
    - yes: no problem, get it!
    - no: break down body protein
      OR stop protein synthesis
  - no: make it OR get it from dietary protein

Making nonessential amino acids

NH₃ → "transamination"

Overconsumption

Carbohydrate → Fat → Protein

- Storage stimulated (Insulin ON)
- Breakdown inhibited (Glucagon OFF)

Glycogen stores refilled
AA pool refilled, proteins made; lose N in urea
FAT STORAGE

Carbs used for energy; minimal fat burning; promotion of fat storage
Protein Metabolism

**Short-term fasting**

- **Storage OFF**
  - Breakdown ON
  - Glucagon: liver glycogen
  - Epinephrine: muscle glycogen
  - Cortisol: amino acid breakdown

- **Maintain blood glucose levels**
- **Fatty acids burned for fuel**
- **Gluconeogenesis** also helps maintain blood glucose levels

**Prolonged fasting**

- **Fuel priority**
  - Glucose for the brain
  - Fat for energy and fatty acids
  - Protein breakdown supplies glucose for brain function
  - Protein breakdown also provides amino acids
  - As fat stores are used, protein breakdown accelerates

- **Graph**
  - Quantity of stored fuel over weeks of intervention