Nutrition and Energy Conversion

Whole Grains
ATP source over sustained activity

Carbohydrate Breakdown
Fat Breakdown
Protein Breakdown

Energy from Food
• Macronutrients as fuel
• Mechanical processing
• Chemical processing
• Distribution to cells

Conversion Analogy

Energy Flow and Chemical Cycling
• Sunlight > Heat
• Trap energy
• Conversion of sugars
• Harvest energy
• Generate ATP
• Cellular work

Fatty Acids Breakdown and Ketones

Breathing and Cellular Respiration
• Oxygen diffuses across lungs and into blood stream
• Oxygen delivery to cells
• Co2 from cells to lungs
• Diffuses across lung lining

Nitrogen Intake and Balance

Agriculture

Photosynthesis