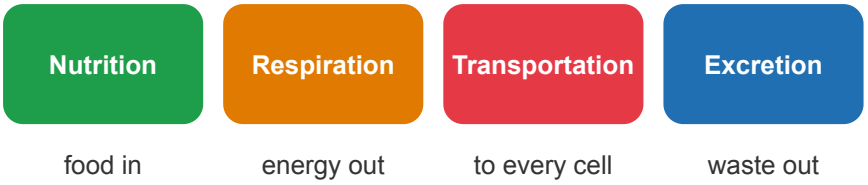
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Life Processes: Chapter Introduction

1. Resting, but not stopped

Even when you sit still or sleep, your heart beats, you breathe and food is digested. Living things must keep **maintaining** themselves (repair, upkeep), and that needs **energy** all the time. The processes that together maintain life are called **life processes**.

2. The four life processes



Process	What it does	Example in humans
Nutrition	Takes in food (energy and raw materials)	Eating, digestion
Respiration	Breaks down food to release energy	Glucose + O_2 → CO_2 + H_2O + energy, in mitochondria
Transportation	Carries food, oxygen and wastes	Blood pumped by the heart
Excretion	Removes harmful metabolic wastes	Kidneys make urine

3. Autotrophs and heterotrophs

Autotrophs make their own food from simple substances (green plants, by photosynthesis). **Heterotrophs** depend on food made by others (humans, animals, fungi).

Solved example

Q. Why does a person need energy even while sleeping?
A. Maintenance goes on all the time: the heart pumps, breathing continues, cells are repaired. These processes need energy, which comes from respiration of food.

Practice questions

1. (MCQ) Which is NOT a life process? (a) nutrition (b) respiration (c) evaporation (d) excretion
2. (Very short) Name the organelle where aerobic respiration releases energy.
3. (Short) Distinguish between autotrophs and heterotrophs.

4. (Short) What is excretion? Name the main excretory organ in humans.
5. (Short) Why is transportation needed in multicellular organisms?
6. (Very short) Which organ pumps blood?

Answer key

1. (c).
2. Mitochondria.
3. Autotrophs make their own food (green plants); heterotrophs take food made by others (humans).
4. Removal of harmful metabolic wastes; the kidneys.
5. Cells deep inside the body cannot get food and oxygen directly, so a system must carry materials to every cell.
6. The heart.

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