

Surviving and Avoiding Adverse Conditions

Surviving Adverse Conditions

Many environments vary beyond tolerable limits for normal (high) metabolic activity.

Two strategies

1. Survive adverse conditions
2. Avoid adverse conditions

1. Surviving Adverse Conditions

Organisms survive by **reducing metabolic rate (dormancy)** during a period when the costs of normal metabolic activity would be too high.

Dormancy **saves energy** for the organism .

Dormancy is visible through lower heart rate, breathing and body temperature.

Three types of dormancy

1. Hibernation

Reduced metabolic rate when **temperatures are too low /winter** .

2. Aestivation

Reduced metabolic rate during **droughts/very high temperatures**

3. Daily torpor

Period of reduced metabolic activity in some animals with high metabolic rates.

Predictive/Consequential Dormancy

1. Predictive

Dormancy occurs **before** onset of adverse conditions.

2. Consequential

Dormancy occurs **after** onset of adverse conditions.

2. Avoiding Adverse conditions Strategy

Migration **avoids metabolic adversity by expending energy to relocate** to a more suitable environment.

Disadvantage of Migration

Costs energy to relocate.

Migration: Innate & learned components

1. Innate—instinctive ability to migrate/born with ability to migrate.
2. Learned component—gained by previous experiences such as direction of travel/where to stop flying etc.

Specialised techniques are used to study long distance migration such as **satellite tracking** and **leg rings**.