*Use the information in Chapter 40 (p. 868-872) to answer the following questions. You may also want to watch the following Bozeman podcasts:* [*Life Requires Free Energy*](http://www.bozemanscience.com/012-life-requires-free-energy)*.*

**Concept 40.4: Energy requirements relate to animal size, activity, & environment.**

Draw a diagram that summarizes the fate of the organic molecules obtained in food after entering an animal’s body.

Explain why both oxygen consumption AND heat loss are able to accurately measure the metabolic rate of an organism?

*Complete the chart to organize information about the metabolic rates of endo/ectotherms.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Minimum Metabolic Rate** | **Endotherm or Ectotherm** | **Definition** | **Kcal/day** |
| Basal Metabolic Rate (BMR) |  |  |  |
| Standard Metabolic Rate (SMR) |  |  |  |

Compare the basal metabolic rate, oxygen consumption, heartbeat, and food consumption of an elephant vs. a mouse.

*Compare and contrast the following two methods of energy conservation.*

|  |  |  |
| --- | --- | --- |
| **Torpor** | **Both** | **Hibernation** |
|  |  |  |