

Body Temperature of Animals

- The body can only work properly at a certain temperature. The animal body maintains itself at a constant temperature, within a small range, in order for the systems to work properly. This normal body temperature is different in different types of animals.
- The temperature of the body, as measured by the clinical thermometer, is not indicative of the total amount of heat being produced; it only reflects the balance (steady state) existing between heat production and heat loss. The temperature of the surface of the body is usually lower than that of the deeper parts. This temperature gradient is important in relation to heat loss.

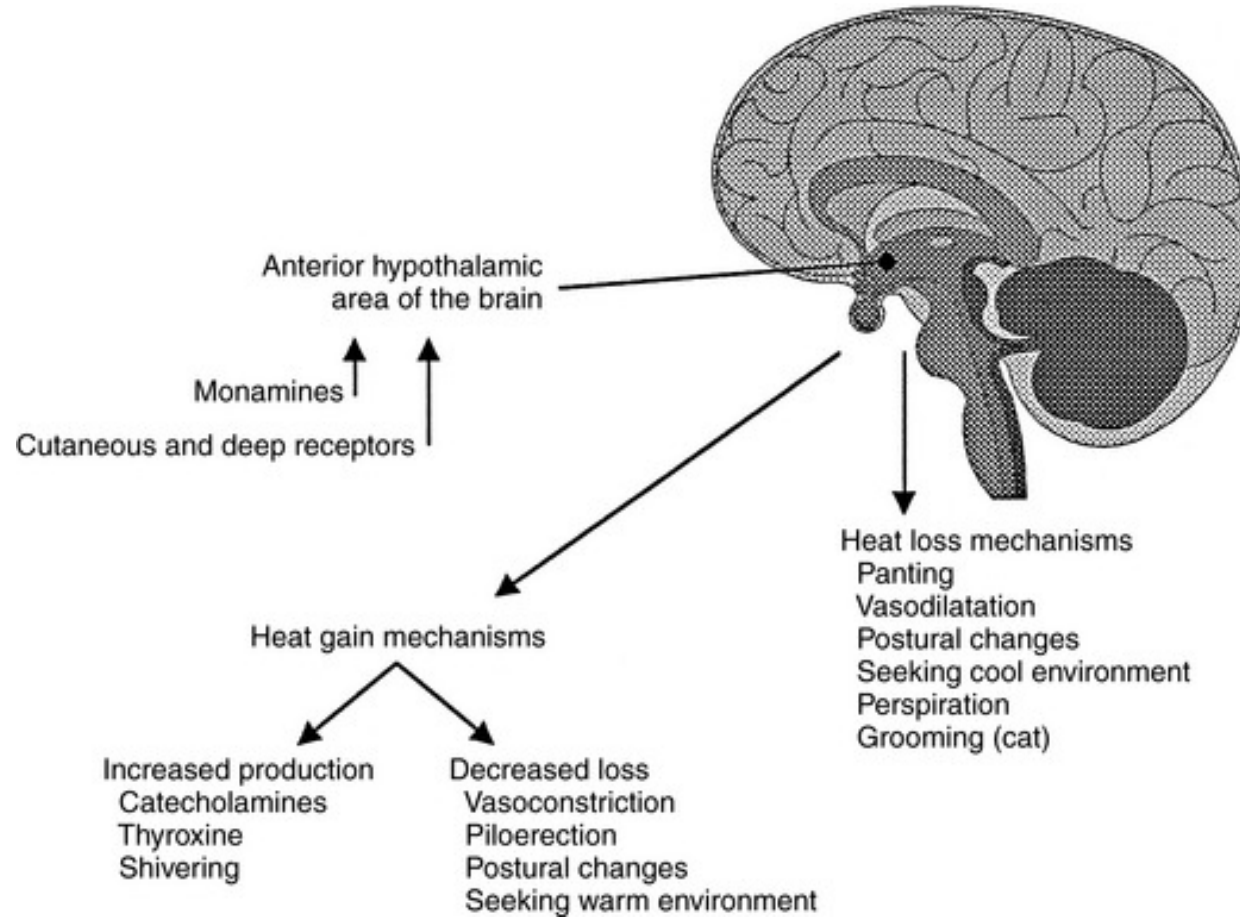
How to take the body temperature of animals

- Control the animal and move the tail to the side.
- Put the thermometer gently into the anus, as far as possible.
- Hold the thermometer at an angle so that it touches the wall of the rectum. Keep a firm grip on the thermometer, if the animal defecates or coughs the thermometer could come out or go into the rectum.
- Hold the thermometer in place for half a minute. If you do not have a watch count slowly up to 30
- Remove the thermometer and wipe it if necessary and read it. Do not touch the bulb as this could change the reading.

NORMAL BODY TEMPERATURES

Animal	Normal Temperature °C	Animal	Normal Temperature °C
Cattle	38.5	Calf	39.5
Buffalo	38.2	Goat	39.5
Sheep	39.0	Camel*	34.5-41.0
Llama, alpaca	38.0	Horse	38.0
Donkey	38.2	Pig	39.0
Chicken	42.0	Piglet	39.8

NORMAL THERMOREGULATION



From Miller JB: Hyperthermia and fever of unknown origin. In Ettinger SJ, Feldman EC, editors: Textbook of veterinary internal medicine, ed 6, St Louis, 2005, Saunders.

HYPERTHERMIA

- *Hyperthermia* is the term used to describe any elevation in core body temperature above the accepted normal range for that species. When heat is produced or stored in the body at a rate greater than it is lost, hyperthermia results.
- The term *fever* is reserved for those hyperthermic animals in which the set point in the AH has been reset to a higher temperature. In hyperthermic states other than fever, temperature elevation is not a result of the body attempting to raise its temperature but is due to the physiologic, pathologic, or pharmacologic changes that cause heat gain to exceed heat loss.

TRUE FEVER

True fever is a normal response of the body to invasion or injury and is part of the “acute phase response. Other parts of the acute phase response include increased neutrophil numbers and phagocytic ability, enhanced T and B lymphocyte activity, increased acute phase protein production by the liver, increased fibroblast activity, and increased sleep. Fever and other parts of the acute phase response are initiated by exogenous pyrogens that lead to the release of endogenous pyrogens.

- *Simple fever.* The temperature rises, remains high with variations of less than 1°C (2°F) for several days, and then falls as the animal recovers or collapses prior to death. When the fever subsides within about 24-48 hours after its development it is described as transient (ephemeral), as in bovine ephemeral fever.
- *Continuous fever.* The temperature remains high (plateau temperature) for a longer period than in a simple fever. This form of fever is characteristic of tick-borne fever.
- *Remittent fever.* The temperature rises and falls by more than 1°C (2°F) at short and irregular intervals.
- *Intermittent fever.* There are short attacks of fever lasting for 2-3 days, interspersed with non-febrile intervals, usually forming a regular pattern.
- *Recurrent fever.* This takes the form of relatively prolonged attacks of fever with non-febrile periods of about similar duration.
- *Atypical fever* runs an irregular course. This is by far the commonest type of fever seen in animals, and it occurs in a great variety of febrile diseases. The form of the fever takes a biphasic pattern in some diseases, e.g. canine distemper, louping ill, strangles and swine erysipelas.

Classification of Hyperthermia

- **True Fever**
 - Production of endogenous pyrogens
- **Inadequate Heat Dissipation**
 - Heat stroke
 - Hyperpyrexia syndromes
- **Exercise-Induced Hyperthermia**
 - Normal exercise
 - Hypocalcemic tetany (eclampsia)
 - Seizure disorders
- **Pathologic or Pharmacologic Origin**
 - Lesions in or around the anterior hypothalamus
 - Malignant hyperthermia
 - Hypermetabolic disorders
 - Monoamine metabolism disturbances

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