

Integument

“Skin”



The integument of horses includes the hair, the outer skin layer known as the epidermis, the underlying layer known as the dermis, and the hypodermis which is a layer of loose connective tissue that allows for movement and contains subcutaneous fat for insulation.

Function:

The integument has several functions. The first is to protect the horse from sun, wind, disease, and physical harm. Skin varies with breed, age, and sex. Skin can kill surface bacteria with their naturally acidic pH value and is responsible for waste product excretion. It is also a thermoregulator that helps a horse sense the outside temperature.

Another function of the integumentary system that is often overlooked is its role in communication. Horses are sensitive to touch due to all the touch receptors they have in their follicles. Horses can communicate through touch as well as smell. The skin can produce and release chemicals that can attract other horses, especially the opposite sex.

Details:

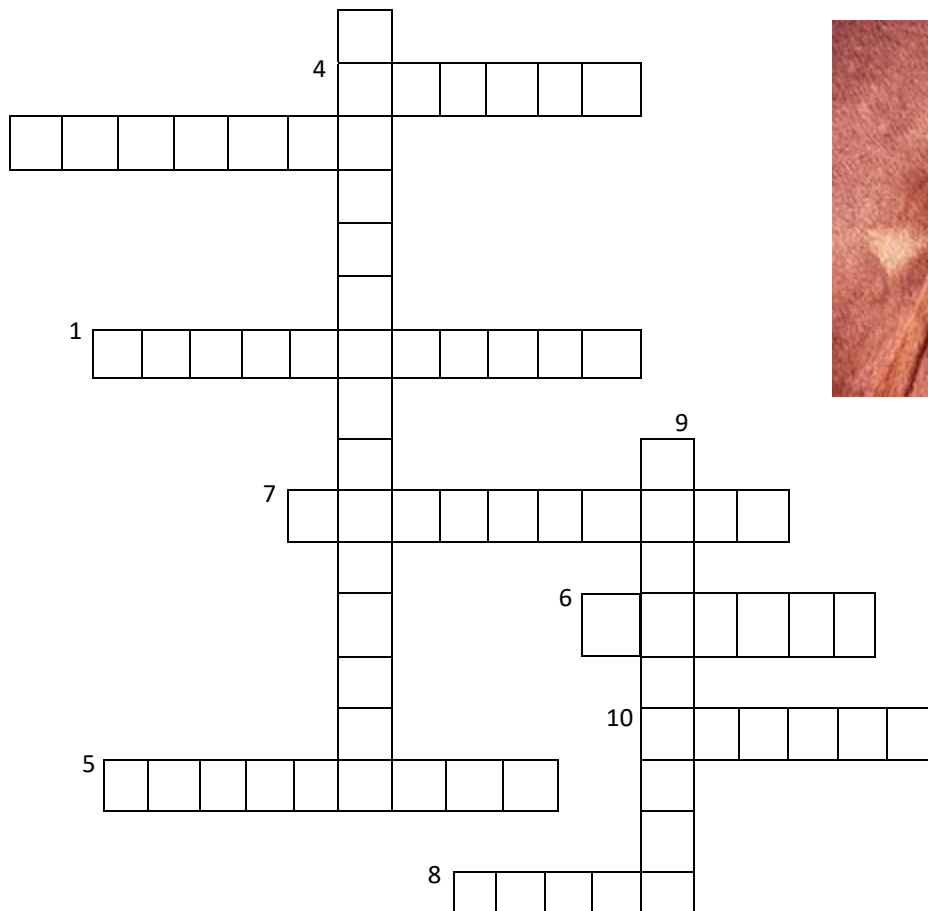
A horse has three types of hair on its body; one is the hair that covers the entire body known as the undercoat. A horse also has eyelashes, tail, and mane hair that are permanent hair. The third type are the tactile hairs that are on a horse's muzzle and are used to estimate how close an object is. Hair helps with body regulation of heat as well as protection of the skin and eyes. Hair can come in a variety of colors based on a horse's genetics.

The deep inner skin layer is known as the dermis, which is attached to a sheet of skeletal muscle. The skin contains all the things that make the skin fully functional for the horse. It contains the blood transporters, veins and arteries, it also contains nerves, sebaceous glands, and sweat glands to help with the regulation of body temperature, as well as the hair follicles where a horse's hair grows. Sebaceous glands are attached to follicles and contain a mixture of fats, cholesterol, proteins, salts, and

pheromones called sebum. This will cover hair on the body to prevent excessive evaporation of water, preventing dryness.

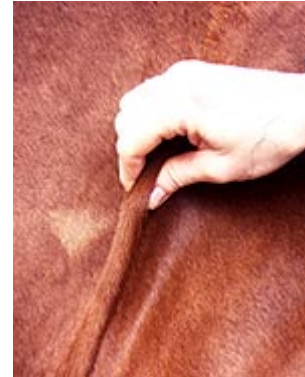
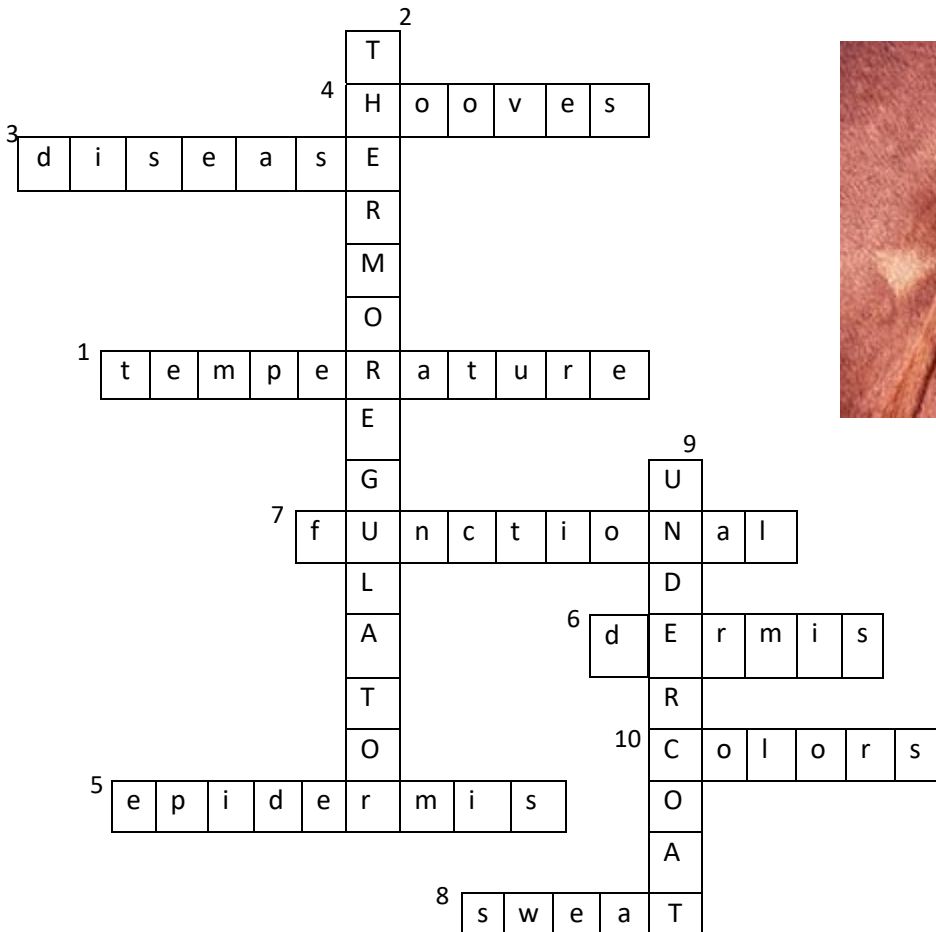
The hypodermis allows for movement of the skin. It is a layer of loose connective tissue and includes storage of subcutaneous fat. This acts as a cushion between the muscle and the dermis and provides insulation. The muscle under the skin can be stimulated by the nerves and touch receptors of the hair and can cause twitching. Twitching occurs when the muscle contracts in the area that was stimulated. However, this muscle is not present on the neck or lower than the hocks, that is why horses are not bothered by flies on those areas as much. If they are irritated, you would not see twitching but you would see head shaking or foot stomping.

Integument Game



1. Integument helps the horse sense the outside _____.
2. Therefore, integument is considered a _____.
3. One of its functions is to protect the horse from the sun, wind, _____, and physical harm.
4. The _____ are also a part of the integument which helps protect the sensitive structures of a horse's foot.
5. The outer skin layer is known as the _____.
6. The deep inner skin layer is known as the _____.
7. Without the integument, the horse would not be fully _____.
8. It contains the blood transporters, veins and arteries, it also contains nerves and _____ glands to help temperature regulation.
9. The hair type that covers the entire body is known as the _____.
10. Hair can come in a variety of _____ based on genetics.

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