

Scratching (mice)

Behavior name: Scratching

Description of behavior:

The scratching behavior in mice is a repetitive fast up and down movement of the hind foot rubbing and scratching the side of the body, the neck or the face. The scratching movement is one of the fastest movements made by the mouse and can exceed frequencies of 20 Hz.

During a scratching episode the frequency is relatively constant and is dependent on the mouse between 14 and 26 Hz. In between the scratching movements, the mouse might be gnawing and licking on the hind foot.

The scratching occurs mostly in a sitting position and can be very short (0.3 seconds) to more than 2 seconds of consecutive scratching. Specific drug induced scratching can even occur for much longer periods of time.

Sometimes the mouse is also rubbing the head or neck with the fore paws. However, this behavior is generally considered to be part of the grooming repertoire.

Context to other behaviors

The scratching behavior often occurs together with grooming behavior, licking or biting of the fur and paws.

The scratching and grooming behaviors are normally separated in time.

For more information on grooming refer to the description of grooming.

Pharmacological relevance:

Background scratching is an important component of human atopic dermatitis. The duration of scratching determines the extent of skin damage and thus the rash. Measurement of the duration of scratching and the number of scratching episodes is important to make objective assessments of the factors that may cause the itch and also the efficacy of antipruritic drugs.

In laboratory tests the scratching is often evoked using the compound 48/80 that is administered intradermally in the back of the mice. Other compounds leading to increased scratching or itch in mice are histamine, substance P and serotonin.

Applications are the evaluation of potential mediators and/or mechanisms of itching to be used in the treatment of dermatitis, psoriasis and eczema and other chronic skin diseases.

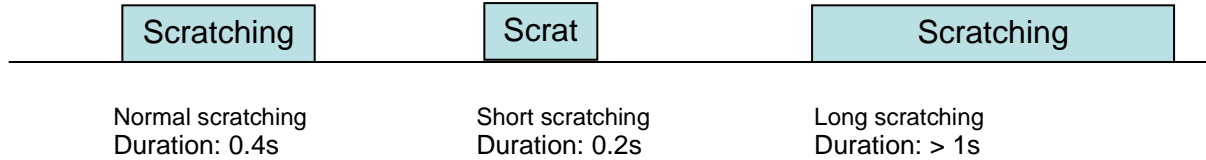
Postural patterns



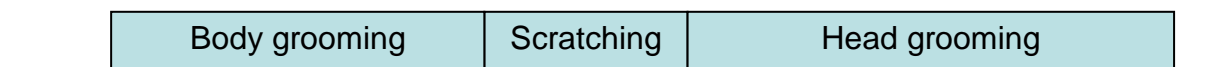
Fast up and down movement of the hind foot, rubbing the side of the body, neck and face.

Temporal patterns

Isolated scratching



Scratching + grooming



Example of scratching in between two types of grooming
Tot. Duration: > 2 second