Medial forebrain bundle

The medial forebrain bundle (MFB) is involved in the integration of pleasure and reward.

It is a tract containing fibres from the basal olfactory regions, the periamygdaloid region and the septal nuclei, as well as fibres from brainstem regions, including the ventral tegmental area.

The MFB passes through the lateral hypothalamus. It contains both ascending and descending fibres. It also represents a part of the mesolimbic pathway, carrying information between the ventral tegmentum and the nucleus accumbens.

It is commonly accepted that the MFB is a part of the reward system, involved in the integration of reward and pleasure.

Electrical stimulation of the medial forebrain bundle is believed to cause sensations of pleasure. This hypothesis is based upon intracranial self-stimulation (ICSS) studies. Animals will work for MFB ICSS, and humans report that MFB ICSS is intensely pleasurable.

It is possible that the medial forebrain bundle carries some of the input from the ventral tegmental area (VTA) to the nucleus accumbens (NAcc or Acb). The NAcc is a recognized reward center, and activation of the pathway from the VTA to the NAcc is believed to be rewarding, which is why it is sometimes referred to as the hedonic highway.

The MFB also contains serotonergic and noradrenergic fibres.

Medial forebrain bundle Deep Brain Stimulation

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