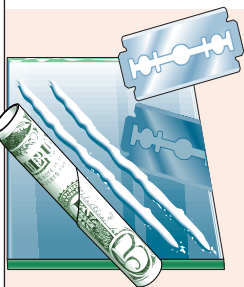


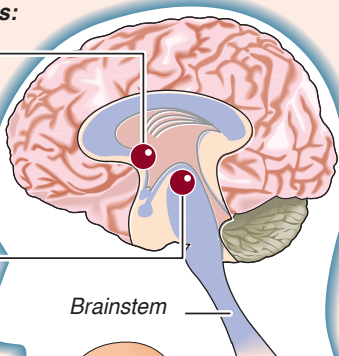
# Anatomy of cocaine addiction

A single recreational dose of cocaine can overexcite a key brain circuit for up to 10 days and may prime the brain for addiction. The drug hijacks a neural “reward pathway” in a part of the brain responsible for our most basic emotions and behaviours, including feeding, fighting and sex



**Nucleus Accumbens:**  
Reward centre

**Midbrain Tegmentum:**  
Developed in our mammalian ancestors more than 100 million years ago



**Reward pathway:** Cocaine stimulates neurons linking **Midbrain Tegmentum** and **Nucleus Accumbens**

**Neuron:** Transmitter nerve cell

Nerve signal

Synapse

**Neuron:** Receiver nerve cell

Receptors

**Dopamine:**  
Neurotransmitter

Dopamine from transmitter cell binds to receptors on receiver cell. Transmitter recharges by taking up dopamine from receptors

Chemical stimulus from dopamine fires nerve signal in receiver cell

**Cocaine blocks uptake of dopamine**

**Build-up of dopamine in synapse causes excessive stimulation**

Sources: Nature, Scientific American

© GRAPHIC NEWS