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Uses and Effects of Selective Serotonin Reuptake Inhibitors (Antidepressants) on Felines

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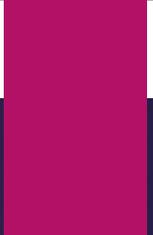
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Uses and effects of Selective Serotonin Reuptake Inhibitors (antidepressants) on Felines

BY: GEMA HERRERA AND DANIELLE OUTLAW

Comparing Uses of SSRIs

Humans

- ▶ Anxiety (chronic feelings of fear)
- ▶ Depression (chronic feelings of sadness)
- ▶ Obsessive compulsive disorder (OCD)

(Pugh, 565).

Felines

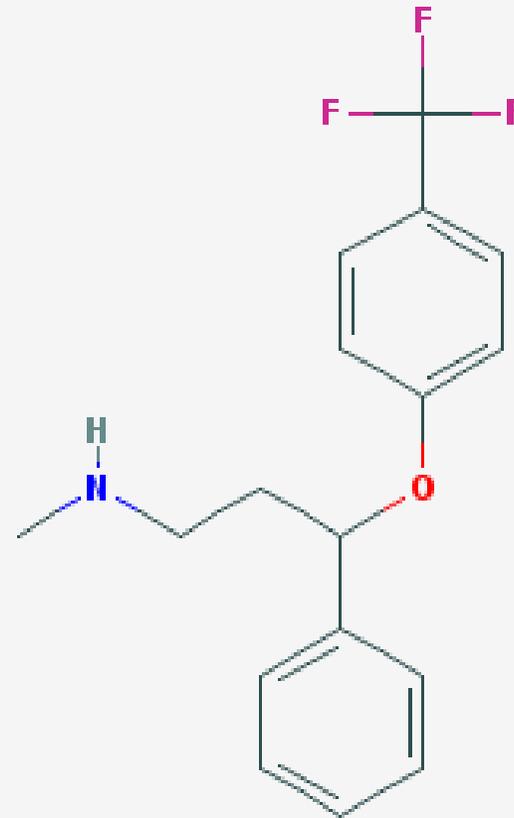
- ▶ excessive anger (excessive hissing or growling)
- ▶ Spraying (marking territory in unwanted places)

(Pugh 565).

Structure of Fluoxetine (Prozac)

This is a structure of a common drug known to treat mental disorders, especially anger in Felines (Pubchem 3386).

("Pubchem 3386")



Serotonin can affect the body in a variety of ways such as :

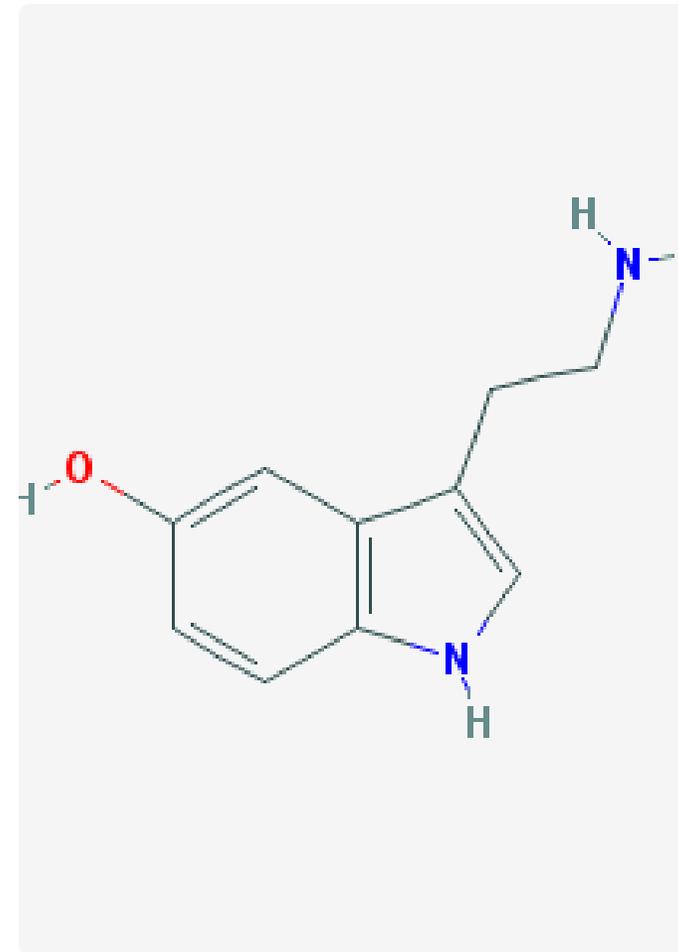
- Constriction of blood vessels
- Blood clotting
- Muscle contractions

It is also important for:

- Attention span
- How the brain responds to pain
- Coordination

(Pugh 565-566).

("Pubchem 5202")



5-HT_{1A} receptors

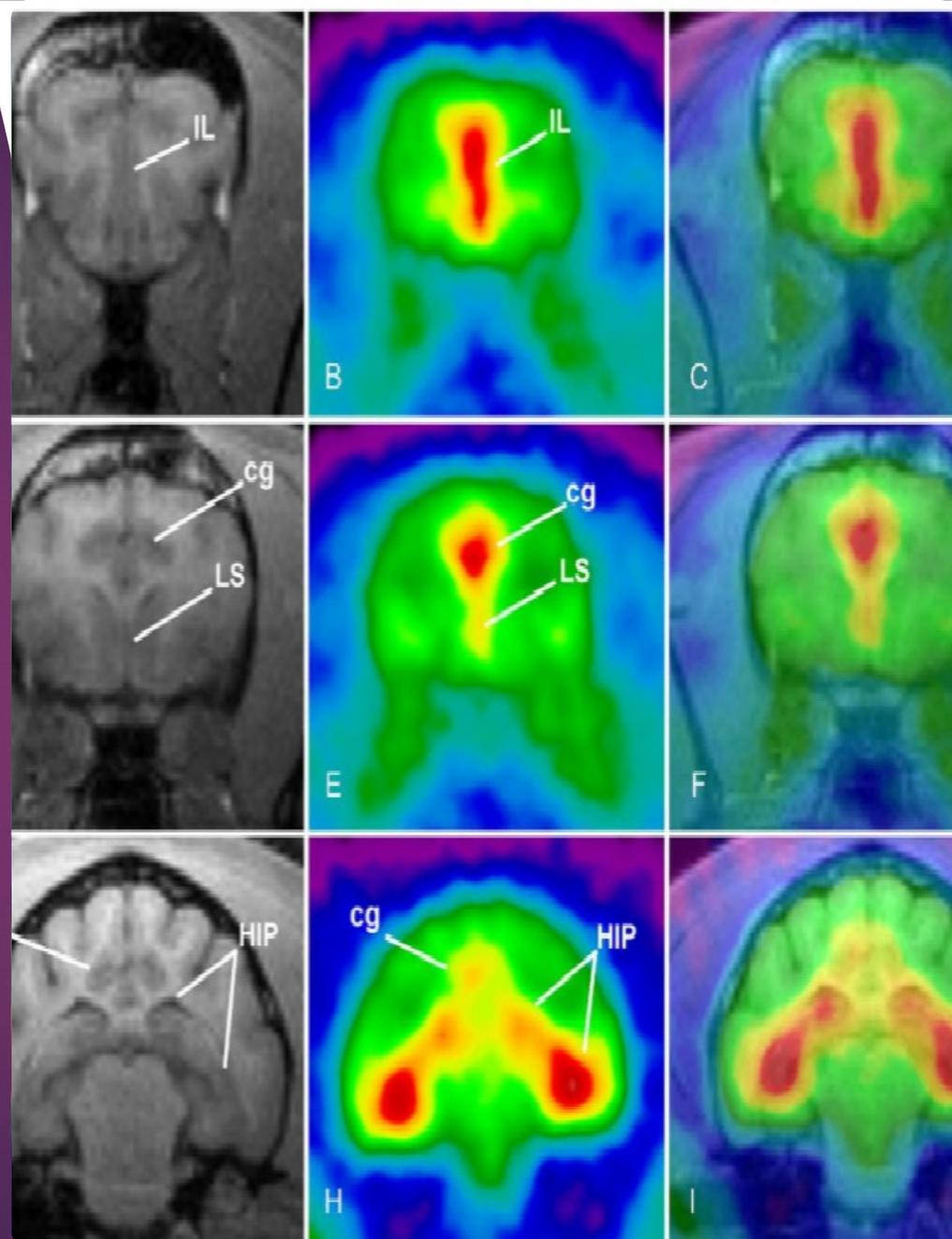
- ▶ These receptors are important in combination with SSRIs
- ▶ These work by binding to another serotonin receptor in order to halt the neuron from firing which is what promotes a response in the brain.
- ▶ SSRIs used in treating mental disorders in both animals and humans help to regulate the amount of serotonin to improve behavior

(Aznavour 834-835).

Feline brain imaging

To the right is a MRI and PET imaging scan of feline brain activity that was given fluoxetine treatment (Aznavour 838).

(KEY: cg-cingulate cortex, HIP-hippocampus, LS- Lateral Septum, IL-infralimbic cortex)



("Imaging Study")

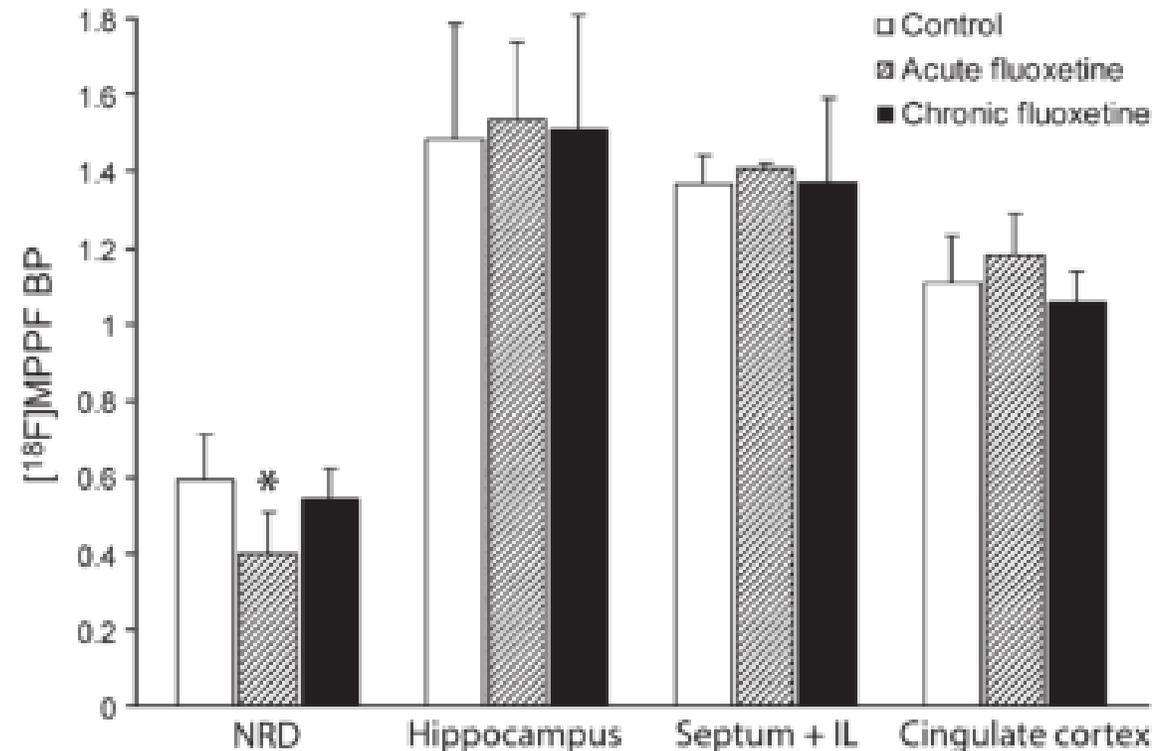
Feline Brain Activity

- ▶ To the right is a graph depicting feline brain activity with no fluoxetine treatment (control), a minor fluoxetine treatment (Acute fluoxetine), and a major fluoxetine treatment (Chronic fluoxetine).
- ▶ Each of the four sections depicts the part of the brain that is labeled.

(Aznavour 839).

("Imaging Study")

N. Aznavour et al. / NeuroImage 33 (2006) 834–842



Feline Accidental Ingestion

- ▶ There has been a study done to determine the toxicity of accidental ingestion of antidepressants that was prescribed for their owners
- ▶ It was found that the domestic short hair felines were affected more than the other breeds
- ▶ Overall, Veterinary care was needed in 20/33 of the patients (felines were given iv fluids for treatment)
- ▶ The most common symptom was sleepiness but some experienced upset stomach and rapid heart rate

(Pugh 567).

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