TOPIC 8: Psychological Problems

LI: How do antidepressants work?

Starter – Retrieval Quiz

1. Define unipolar depression.	
2. What 'N' is the name of tiny chemicals in the brain that send messages around the brain and body?	
3. According to biology, a lack of **what** causes depression?	
4. What does 'reductionist' mean when evaluating?	
5. What did brain scans tell us about the brains of depressed people?	

Academic Vocabulary

Antidepressants
Neurotransmitters
Serotonin
SSRIs
Neuron
Synapse
Excite
Synaptic cleft
Receptors
Reuptake
Placebo
Vesicle
Reductionist/Holistic

TOPIC 8: Psychological Problems

LI: How do antidepressants work?

Starter – Retrieval Quiz

1. Define unipolar depression.	A mood disorder that causes a person to feel constantly sad, lose interest and enjoyment and to have reduced energy levels.
2. What 'N' is the name of tiny chemicals in the brain that send messages around the brain and body?	Neurotransmitters
3. According to biology, a lack of **what** causes depression?	Serotonin
4. What does 'reductionist' mean when evaluating?	Too simple
5. What did brain scans tell us about the brains of depressed people?	They had a lack of serotonin

Academic Vocabulary

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TOPIC 8: Psychological Problems

LI: How do antidepressants work?

Negative stigma around anti-depressants

Let's clarify something about antidepressants by getting some advice from a doctor...

https://www.youtube.com/watch?v=5T8hjy03PZQ

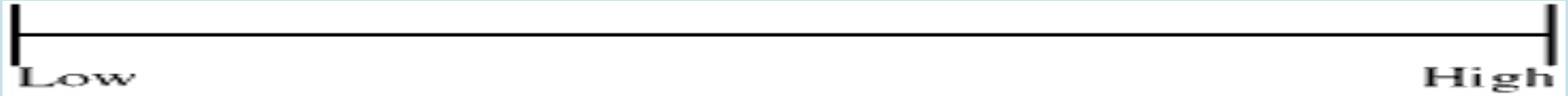
Anti-depressants are much better than they used to be! They do not turn people into mindless spaced out zombies anymore!

Learning Intentions

4/5 (All) – Outline the synapse and the role of neurotransmitters.

6/7 (Most) – Explain the role of antidepressants on the synapse.

8/9 (Some) – Evaluate antidepressants as a treatment for depression.



What is your initial confidence towards the LIs?

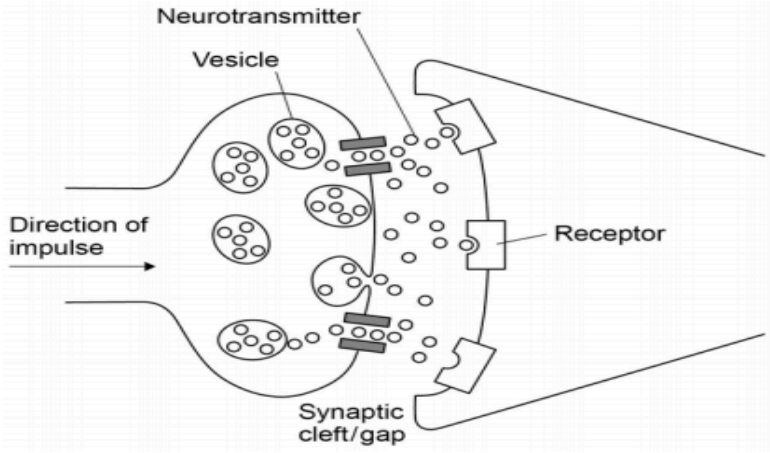
How do antidepressants work?

You know that, according to biology, depression is due to a lack of serotonin in the synapses between neurons... so what do the antidepressants do?

For this to make sense online, I'm going to need to give you a brief run down of the synapse which we learn about in Topic 7: The Brain.

If you can get the basics of how this works, that will be amazing and we will do it in more detail back at school.

The picture on the right is a synapse.

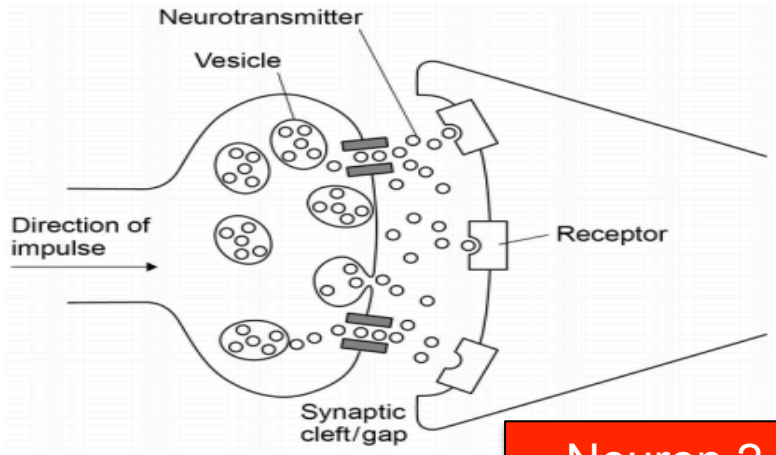


The Synapse

In our brain, we have lots and lots of **neurons** that fire electrical signals around our brain and then around our body.

These neurons never actually touch each other. They are incredibly close, but never touch.

So, in order to pass a signal from one neuron to the next, they must fire some **neurotransmitters** across the tiny '**synaptic gap/cleft**'.



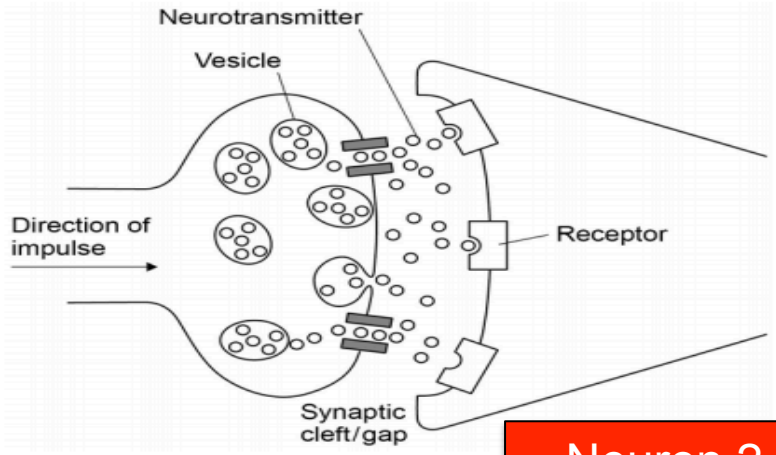
The Synapse

So, if our brain wants us to be happy, it will tell all of the neurons to pass a happy message around the other neurons in the brain.

This means that all of the neurons will release their serotonin into the next neuron.

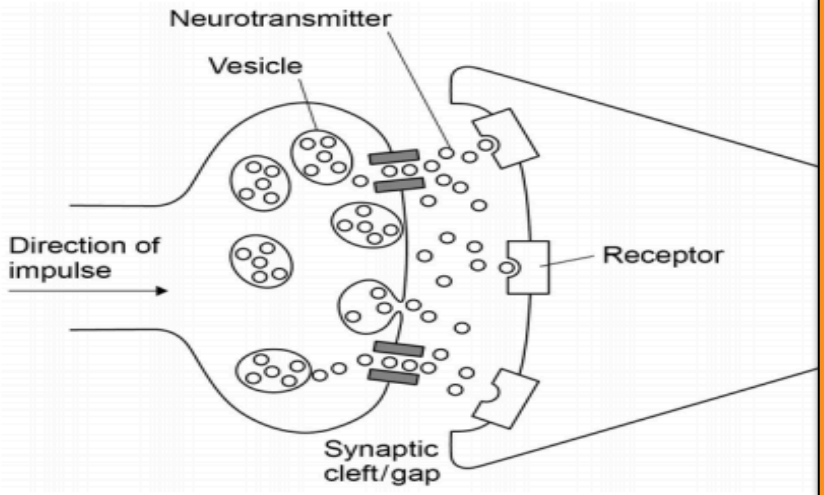
Lots of serotonin will make us really happy!

After a few seconds, the serotonin goes back to where it came from. This is called **reuptake** as the neurotransmitters go back home (to their **vesicle**) to be used again later.



Antidepressants – how do they work?

Selective Serotonin Reuptake Inhibitors (SSRI)



Antidepressant drugs are called SSRIs.

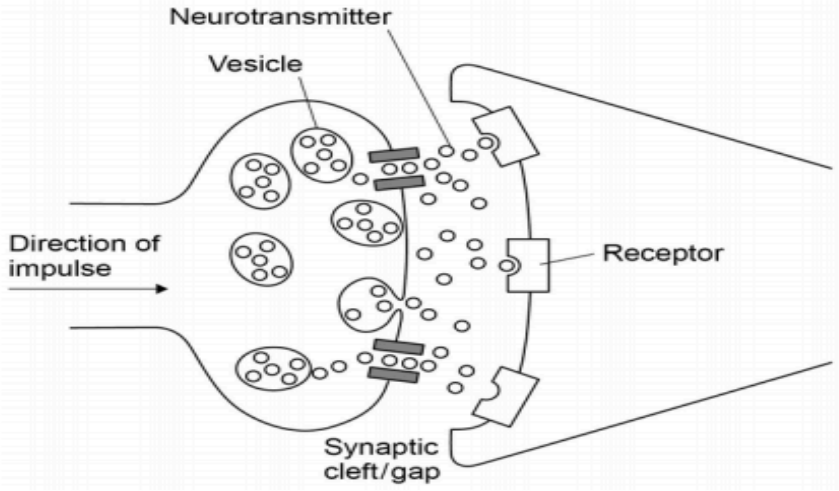
Some people get depressed as they have a lack of serotonin.

It is impossible to make more serotonin, but we can make the serotonin we have work harder to make us more happy.

How could we do that?

Antidepressants – how do they work?

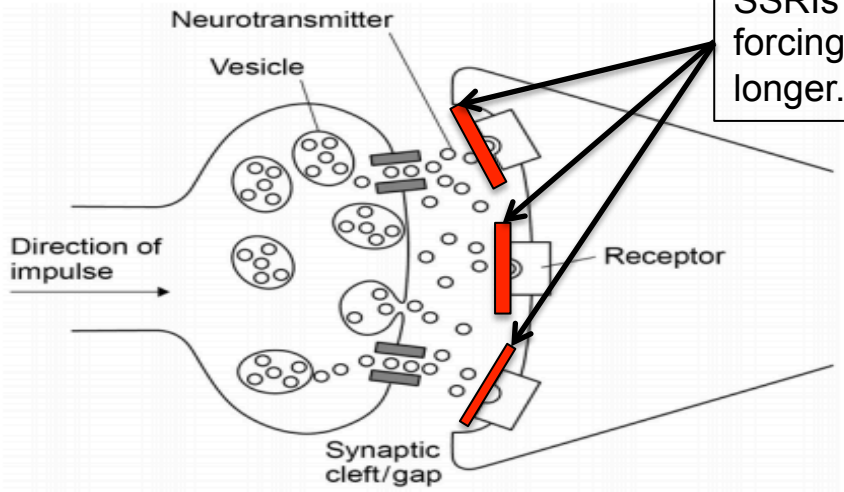
Selective Serotonin Reuptake Inhibitors (SSRI)



When you take the antidepressant, the SSRI molecules block the reuptake transporters to stop the serotonin from going back to the vesicle resulting in the serotonin working for longer and making the neurons happier.

Antidepressants – how do they work?

Selective Serotonin Reuptake Inhibitors (SSRI)



SSRIs blocking reuptake, forcing the serotonin to stay longer.

Copy the diagram on the left with my additional annotations.

Evaluating Antidepressants

Positive or negative evaluation for the treatment?

Side effects – all drugs have side effect such as nausea, dizziness, insomnia, weight loss/gain, anxiety etc

They are really cheap and not a big cost for society

People can become addicted or overdose on drugs

Some research suggests that the drugs don't work – people who take a *placebo* pill sometimes improve just as well as those on antidepressants! It may all be psychological.

Challenge evaluation

Explain if this treatment is **reductionist** or **holistic**. Explain why and what this means.

Evaluating Antidepressants

Challenge Answer

It is a very **reductionist** approach − it ignores the fact that other factors play a role in depression.

Reductionist − ignores all other factors and explains something based on just one factor.

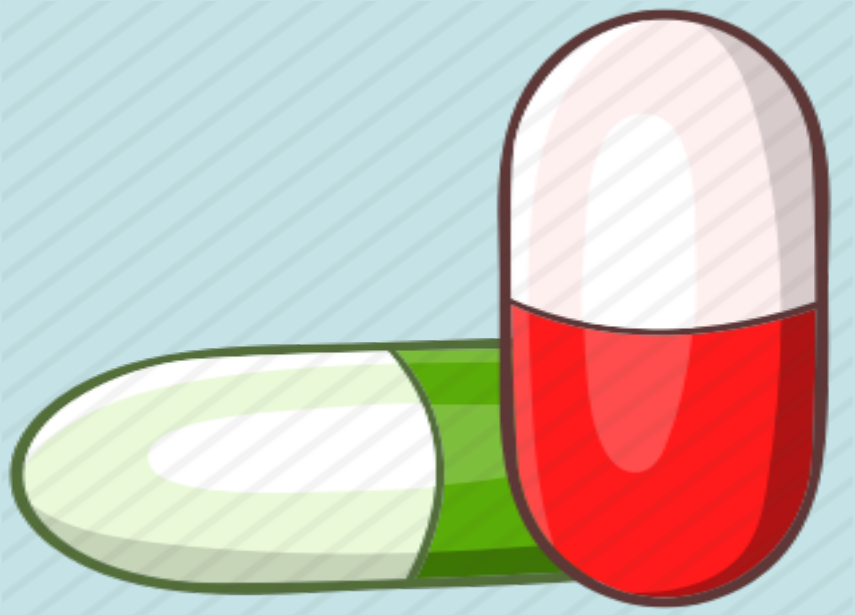
Holistic − tries to explain behaviour based on lots of factors and taking into account everything that plays a role.

Understanding Antidepressants

Draw a picture of a green and red medicinal drug and label it with how antidepressants work.

Label the green drug with some positive points.

Label the red drug with some negative points.



Exam Questions

1. *Explain how antidepressants work. (3)*

2. *Outline and evaluate the use of antidepressants to treat depression. (6 or 9)*

Learning Intentions

4/5 (All) – Outline the synapse and the role of neurotransmitters.

6/7 (Most) – Explain the role of antidepressants on the synapse.

8/9 (Some) – Evaluate antidepressants as a treatment for depression.

What is your new confidence towards the LIs?

TOPIC 8: Psychological Problems

LI: How do antidepressants work?

Consolidation

Define your academic vocabulary from memory (box on the right).

Academic Vocabulary

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TOPIC 8: Psychological Problems

LI: What is the biological explanation of depression?

Consolidation:

Finish creating your consolidation poster on ‘Depression’

<u>You’ve now read everything the exam could ask you about depression:</u>

- Types of depression and symptoms
- The biological explanation
- The psychological explanation
- Two depression treatments