

Happiness in a pill or a mystery?

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The most commonly used antidepressants in Sweden today are called SSRI, SNRI and TCA. How these medicines affect our brains and how the antidepressant act is not entirely known. More research about depression and antidepressants are definitely important to get a better understanding about mental illness, and to develop better medicines. Why people get depressions is unclear but scientists today believe one reason may be an unbalance in the substances in brain signaling, especially the ones called serotonin, noradrenaline and dopamine. These substances control things such as mood, sleep, and reward. Today antidepressants work by raising the levels of these substances in the brain.

SSRI, SNRI and TCAs all work by preventing one or several signaling substances of serotonin, noradrenaline or dopamine, to be taken back up. They do this by binding to the transporters that take up the substance into the cell. This

Brain signaling

Brain cells are called neurones, these send and receive signals in the brain. The signal passes through neurons to the area the signal will affect. Each signaling substance is used for different kinds of signals. After the signal is done, the signaling substance is taken back up into the cell by a transporter molecule.

results in longer and stronger brain signals. There are two theories on how the transporters are blocked. The first theory is that the antidepressants lower the amount of the transporters. The second theory is that the antidepressants result in less of the signaling substance binding to the transporter, meaning less of the substance get transported back into the cell. When using antidepressants, the effect can not be seen until after a couple of weeks. It remains unknown why, but according to the first theory it could be because lowering the amount of the transporters takes time. In the second theory it could be because changing the amount of binding places on the transporters molecule would take time.

It is hard to say which of the antidepressants that is the best, since every depression is different and the medicines work differently for everyone. TCAs are stronger than both SSRI and SNRI, and are often used to treat depressions with psychoses. TCAs also have bigger side effects because they bind to other receptors than only the transporters. The side effects can often be weight gain, tiredness, or blurred vision. The use of SSRI often results in the side effect of a lowered libido. This might be because use of SSRI sometimes has been seen to lower the concentrations of dopamine, which controls libido. That the dopamine concentrations are lowered it is a fairly new discovery that has not yet been studied extensively, so why we do not know.

So, much more research is needed on antidepressants and how they work. And why it takes time before we see effect. When we know more about our antidepressants we could develop better medicines with higher efficacy and less side effects. Since depression is such a big problem today, and many use antidepressants, we should know about the medicines we use.