

Depression Treatment

by Richard H. Hall, 1998

Pharmacological

Pharmacological treatment often makes up a big part of the treatment regimen for persons suffering from major depression. Just as with Schizophrenia, the history of the discovery and evolution of antidepressant drugs is quite interesting. The first class of drugs to be used regularly to treat depression were **MAO inhibitors**. MAO is an enzyme that deactivates the monoamines (i.e., Dopamine, Norepinephrine, Epinephrine, and Serotonin). Thus, drugs that inhibit MAO act as potent monoamine agonists, increasing the effect of these neurotransmitters. Although these drugs are generally effective in treating depression in many cases, MAO inhibitors have a number of side effects, the most dramatic of which is the so-called **cheese effect**. Persons who are taking MAO inhibitors can experience a severe reaction when consuming certain foods such as cheeses with a kind of sympathetic arousal that can cause a significant increase in blood pressure, which can even result in intracranial bleeding or cardiovascular collapse.

After MAO inhibitors, a second class of drugs, **Tricyclic Antidepressants** were introduced, which were at least as effective in treating depression without as many side effects, such as the cheese effect. Tricyclic antidepressants are more specific in that they inhibit the reuptake of Norepinephrine and Serotonin (5-HT), but do not effect the other monoamines. Most recently even more specific antidepressants with even fewer side effects have been introduced, and these are often referred to as **Selective Serotonin Reuptake Inhibitors (SSRIs)**, the most well-known example of these is *Prozac*. (Figure 1 illustrates the effect of SSRIs on 5-HT.) As their name implies these drugs block the reuptake of 5-HT leaving the neurotransmitter in the synapse longer, and amplifying its effect.

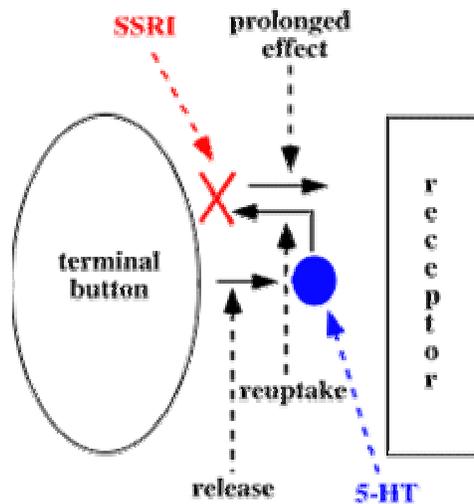


Figure 1. The Effect of SSRIs on 5-HT

Other Treatments

A more dramatic, less common, and very powerful treatment for depression is electroconvulsive therapy (ECT). Practitioners also began to use ECT as the result of the observation that Epileptics tended to be unusually calm following seizures. From this observation, and a series of subsequent experiments, ECT came to become the bottom line of defense for the most unresponsive and severe cases of depression. Those suffering from major depression often do not respond to pharmaceutical treatment for a few weeks. However, the effects of ECT are immediate and powerful in most cases. It is normally used in cases where the depression is so severe that suicide is a distinct possibility, or when patients don't respond to any other sort of treatment. Of course, as you might suspect, there can be side effects with ECT including memory impairment. However, when the depression is extremely severe and suicide is a clear possibility, ECT becomes a much more viable option.

A final, and surprisingly effective, treatment for depression is sleep deprivation. Sometimes the treatment consists of the specific deprivation of REM periods. Depression is often associated with abnormal EEG patterns during sleep especially REM. Further, many antidepressant drugs inhibit REM. Total sleep deprivation is sometimes used as well, and this generally has even more dramatic (but more short-lived effects). To get some very general idea of how this might work, you might think of a time that you've stayed up all night, and the unusual feeling of elation that you have in the morning.