**Biomedical Therapies**

Biomedical therapies include those that directly affect the nervous system. These include drug therapies, electroconvulsive therapy and psychosurgery.

***Drug Therapy***

**Psychopharmacology**is thestudy of the effects of drugs on mind and behavior. These studies use the double-blind technique (recall notes from unit 1) that incorporates the use of a placebo in an attempt to rule out the "placebo effect". The **placebo effect** has been known for centuries as the ability of some treatments with no medical value to have a positive effect on a person's health so long as they **believe**that the treatment**does** have value. This effect has been proven time after time and confirms the healing power of positive expectations.

**Antianxiety drugs:**

* *Valium and Librium* are the most commonly prescribed antianxiety drugs.
* These drugs work by depressing central nervous system activity.
* They reduce tension and anxiety without causing drowsiness and in combination with psychotherapy (such as systematic desensitization) can help a person with phobias and other fear triggering stimuli (obsessive compulsive disorders).

**Antidepressant drugs:**

* Most of these drugs work to increase the availability of the neurotransmitters*norepinephrine and serotonin*. These chemicals elevate mood and appear to be at abnormally low levels during depression.
* *Prozac, Zoloft and Paxil* are the most widely prescribed antidepressants and act as *selective serotonin-reuptake-inhibitor (SSRI)* drugs. There are also *tricyclic*antidepressant drugs that are no longer as popular as the SSRIs. you should know both types for this course.
* Studies have shown that there can be a partial placebo effect to taking antidepressants as well. For depression, cognitive therapy, in combination with these drugs has shown great success.
* *Bipolar disorder:* patients have had success with the mood stabilizer called*Lithium*, a cheap simple salt discovered in the 40s and found to work in 7 out of 10 people with this disorder.

**Antipsychotic drugs:**

* *Thorazine* is a popular drug used in the treatment of the positive symptoms of schizophrenia (hallucinations, delusions, etc.)
* *Antipsychotic* drugs are similar enough to the neurotransmitter *dopamine*to occupy its receptor sites and block its activity and thereby reducing the symptoms.

**Electroconvulsive Therapy (ECT)**

* This type oftherapy has been used for the *severely* *depressed*in which a brief electric current is sent through the brain of an anesthetized patient. It is quick and usually has a successful result.
* There is no definitive answer as to why it works. ECT may increase the release of norepinephrine, the neurotransmitter known to elevate mood.

**Psychosurgery**

* This is surgery that allows one to remove or destroy brain tissue in an effort to change behavior.
* *Lobotomy:* Anow-rare psychosurgical procedure once used to calm uncontrollably emotional or violent patients. During this procedure the nerves connecting the frontal lobes to the emotion-controlling centers of the brain are cut. There is usually drastic permanent results (see pg. 511 in Myers 5th edition)
* In extreme cases of seizures, neurosurgeons may cut the *corpus callosum*(band of fibers connecting the two hemispheres). This surgical procedure is usually successful in preventing further seizures in that area of the brain but results in "split-brain" personalities (recall notes in unit 2)