

## BIOLOGICAL THERAPIES (DRUGS AND ECT)

### Introduction

The biological approach argues that because abnormalities have **physical causes**, then **physical treatments** are the best way to deal with them. Collectively, biological approaches to treatment are called **somatic therapies**. They include **psychosurgery**, the use of **psychotherapeutic drugs**, and **electroconvulsive therapy**. Only the last two will be dealt with here.

### **Psychotherapeutic drugs**

The use of psychotherapeutic drugs to treat abnormalities was the result of an accidental discovery by French researchers in the 1950s that certain kinds of drugs were able to calm down violently psychotic individuals. Since these drugs lessened the need for physical restraint (such as straightjackets), they were seen as a great advancement in treatment.

We do not need a detailed knowledge about the various drugs that are used to treat abnormalities. However, we do need to know that different kinds of drugs are used with different kinds of abnormality. All of them affect brain biochemistry in some way. For example, it is widely believed that schizophrenia is a result of an excess of the neurotransmitter dopamine. Therefore, drugs to treat schizophrenia work by blocking the action of dopamine.

There are 4 main categories of psychotherapeutic drug:

(1) **Neuroleptics**: These are used to treat psychotic conditions such as schizophrenia. They are also known as **anti-psychotics** or **major tranquillisers**. An example is *Thorazine*.

(2) **Anti-depressants**: These are used to treat depression, and affect the neurotransmitter **serotonin**. An example is *Prozac*.

(3) **Anti-manics**: These are used to treat mania and bipolar disorder. They are believed to affect **serotonin** and **noradrenaline**. An example is *Piradel*.

(4) **Anxiolytics:** These are used to reduce anxiety and tension in people whose disturbances do not warrant hospitalisation. An example is *Valium*.



### Evaluating the use of psychotherapeutic drugs

One of the strengths of psychotherapeutic drugs is all of them are highly **effective** in treating the mental disorders they are used for. Another strength is that understanding how the drugs work has helped us to understand the possible **causes** of mental disorders.

However, one of the weaknesses is that some mental disorders **do not respond to drug therapy**, and drugs **do not address the social and environmental factors** that can cause abnormalities. A good example here would be anti-depressants, which are effective at altering mood, but do not address the thing that caused mood to change in the first place.

Another weakness is that drugs **do not cure** disorders, but merely *mask* their symptoms. For example, whilst anti-psychotics are effective at reducing the hallucinations and delusions that occur in schizophrenia, those symptoms return if the drugs are discontinued.

All drugs are associated with unpleasant **side effects** which, in some cases, can be permanent. An example here is some of the anti-psychotic drugs used to treat schizophrenia, which can lead to side-effects that are very similar to the symptoms seen in *Parkinson's disease*. Some psychotherapeutic drugs also cause **physical dependence (addiction)**, **tolerance**, and **withdrawal**. An example of this is the anxiolytic drugs, which also produce what is called a 'rebound' effect. This means that when the drugs are discontinued, the anxiety returns but in a more severe form, which leads the affected person to resume taking them.



Finally, the use of psychotherapeutic drugs raises serious **ethical questions**. For example, many critics question whether the drugs are being used to treat people or merely to 'keep them quiet'. In other words, some of the drugs are used as **agents of social control** rather than as a treatment.

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"Could we up the dosage? I still have feelings."

## ECT (Electroconvulsive therapy)

The idea of 'shocking' the brain as a way of treating abnormalities is not new, and in the early part of the twentieth century many unusual approaches were tried. Using **electricity** to shock the brain originated in the 1930s when it was believed that schizophrenia and epilepsy were *biologically incompatible*. What this means is that psychiatrists believed that if a person was a schizophrenic, s/he could not simultaneously be an epileptic. So, the idea was to induce an epileptic fit in order to 'drive out' the schizophrenia and so cure the disorder.

Early forms of ECT involved passing an electric current through the brain in order to induce the epileptic fit. However, this procedure did not use muscle relaxants, and so the body convulsed violently. Nor was a general anaesthetic administered, and so the person was conscious when the

electricity was passed through the brain. Nowadays, ECT is administered somewhat differently:

### **The procedures used in ECT**

The person undergoes a full physical examination, because heart conditions can be accentuated by ECT. Psychological preparation is given in order to reduce anxiety about the treatment.

Atropine sulphate is given 45-60 minutes before ECT to prevent cardiac arrhythmia. An anxiolytic may also be given to further reduce anxiety.

A short-acting **general anaesthetic** is administered, so that the person is not conscious during the treatment. A **muscle relaxant** is given. This greatly reduces the convulsion, and so does not require the person is to be physically restrained.

Oxygen is then administered and a mouth gag applied. In **bilateral ECT**, electrodes are attached to the left and right temples. In **unilateral ECT**, two electrodes are attached to either the left or right temple.

An electrical current is then applied for around 0.5-4 seconds. The current is around 200 milliamps at 110 Volts. The fit is indicated by a slight twitching of the eyelids, facial muscles and toes. A 'good' convulsion lasts for around 120 seconds.

At the end of the end of the convulsion, Oxygen is given until breathing resumes unaided. The person is carefully observed until the anaesthetic and muscle relaxant have worn off.

Typically, a number of treatments over several weeks will be administered, the total number being gauged by the person's response.

### **Evaluating the use of ECT**

Originally, ECT was used to treat schizophrenia. However, it was rarely effective with that disorder. The main strength of ECT is that it is highly effective in treating **depression**, when other treatments have failed or an

immediate change in mood is required. Thus, ECT is particularly useful with people who are suicidal because its effects *are* immediate. Anti-depressant drugs take around ten to fourteen days to bring about a change in mood, which may be too late for a person who is suicidally depressed.

Whilst ECT's effectiveness in treating depression is beyond dispute, its use has been questioned on the grounds that it is not known why its beneficial effects occur. The main **side effect** of ECT is *amnesia*, and it has been suggested that this is why ECT is effective (the person 'forgets' s/he is depressed). However, since amnesia is much less likely with unilateral ECT, and because it is also effective in reducing depression, this theory is unlikely to be true.

What is more likely is that ECT produces a biochemical change in the brain which is greater than the changes produced by anti-depressant drugs. However, we do not know this for certain, and critics of ECT argue that a therapy should not be used unless it is precisely known what it is doing to the brain. Supporters of ECT argue that it doesn't matter that we don't know how it works - the fact that it saves lives by preventing severely depressed people from committing suicide is reason enough to justify its use.

Yet whilst ECT is considered to be a 'low risk' procedure, it has been argued that brain damage does occur following its administration. By its very nature, it is a therapy that raises many ethical questions, especially when it is used with children.



Although effective in treating depression, ECT has a negative public image