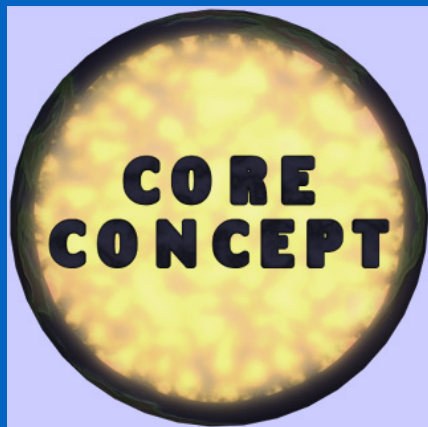


# Ch. 13

Section 13.3 – 13.4

# How Is the Biomedical Approach Used to Treat Psychological Disorders?



Biomedical therapies seek to treat psychological disorders by changing the brain's chemistry with drugs, its circuitry with surgery, or its patterns of activity with pulses of electricity or powerful magnetic fields.

# Drug Therapy

- *Antipsychotic Drugs*
  - e.g., chlorpromazine (Thorazine), haloperidol (Haldol), & clozapine (Clozaril)
  - Usually affect dopamine pathways
  - May have side effects
    - *tardive dyskinesia*: incurable disorder of motor control resulting from long-term use of antipsychotic drugs

# Drug Therapy

- *Antidepressant Drugs*
  - Three major categories:
    - tricyclic compounds (e.g., Tofranil & Elavil)
    - SSRIs (e.g., Prozac)
    - Monoamine oxidase (MOA) inhibitors & lithium carbonate (effective against bipolar disorder)
- *Mood Stabilizers*
  - e.g., Lithium and Depakote: effective for bipolar disorders

# Drug Therapy

## *Ø Antianxiety Drugs*

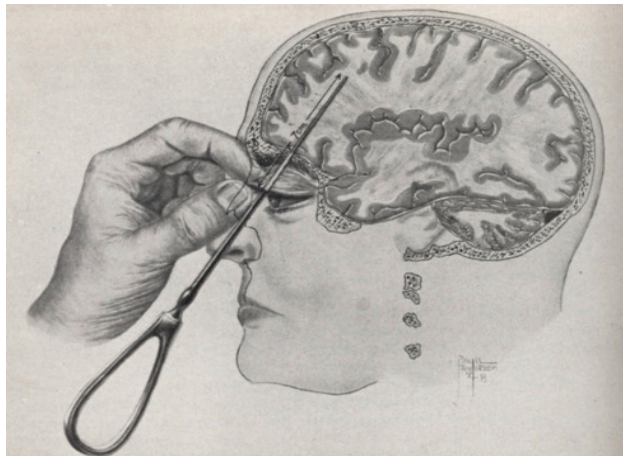
- Barbiturates & benzodiazepines
- May include some antidepressant drugs that work on certain anxiety disorders
- Should not...
  - ... be used to relieve the ordinary anxieties of everyday life
  - ... be taken for more than a few days at a time
  - ... be combined with alcohol

# Drug Therapy

- *Stimulants*  
(e.g., caffeine, nicotine, cocaine)
  - Produce excitement or hyperactivity
  - Suppress activity level in persons with attention-deficit/hyperactivity disorder (ADHD)
  - Controversy exists concerning the use of these stimulants for children.
    - side effects
    - growth slowed
    - concern regarding overdiagnosis of ADHD

# Psychosurgery

- The general term for surgical intervention in the brain to treat psychological disorders
  - prefrontal lobotomy - no longer performed.
  - Severing the corpus callosum - reduce seizures.



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# Brain-Stimulation Therapies

Used to treat severe depression

## *Ø Electroconvulsive Therapy (ECT)*

- Apply an electric current to temples briefly
- Patient is put to “sleep.”
- Memory deficits are a side effect.

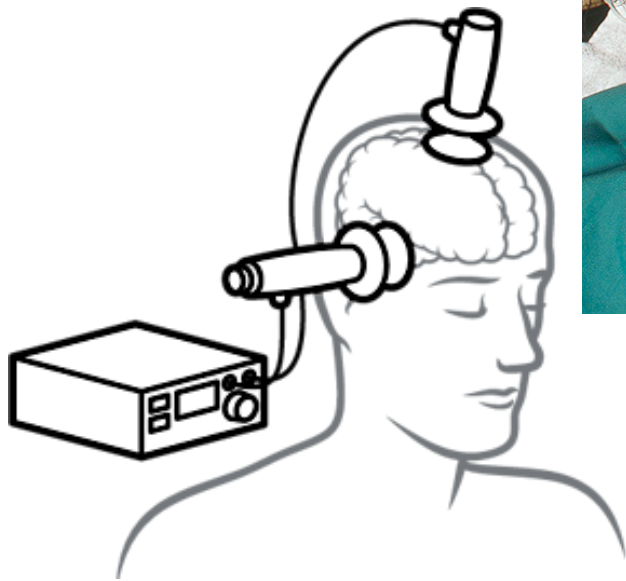
## *Ø Transcranial Magnetic Stimulation (TMS)*

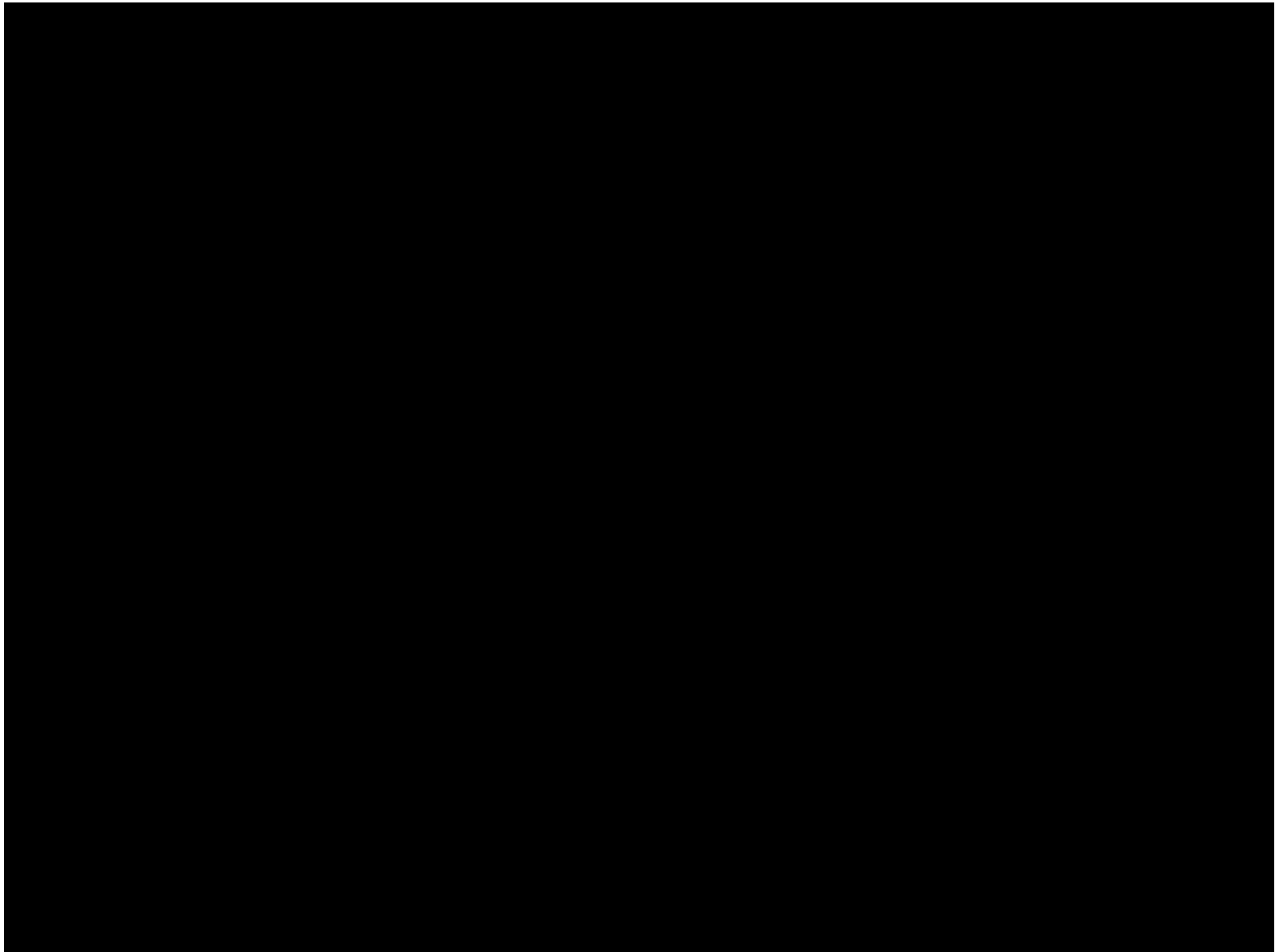
- High-powered magnetic stimulation to the brain
- Also effective for bipolar disorder

## *Ø Deep Brain Stimulation*

- Surgical implants of a micro electrode directly in the brain
- Still highly experimental









## Deep brain stimulation

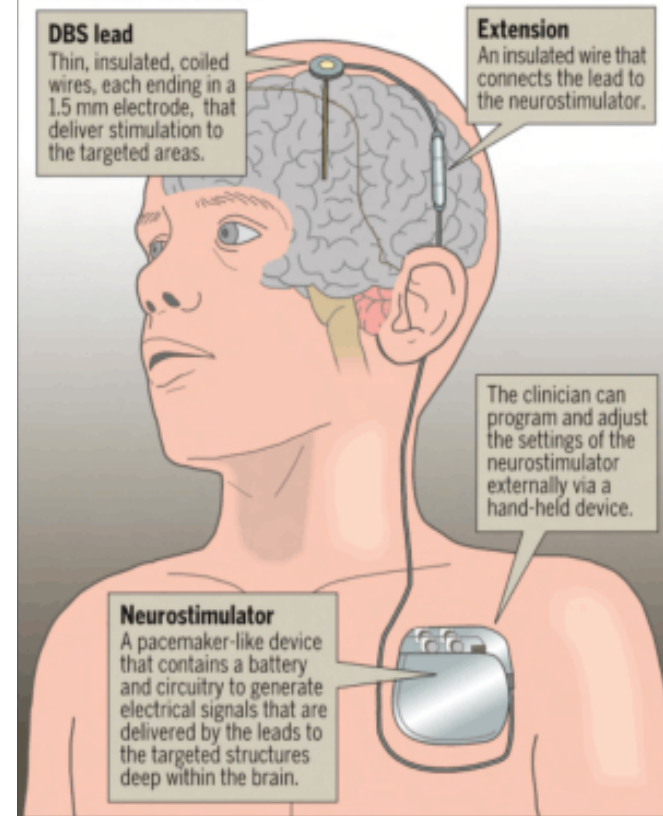
The Deep Brain Stimulation (DBS) system is used to help control tremors and chronic movement disorders. Tiny electrodes are surgically implanted in the brain and are connected via a subcutaneous wire to a neurostimulator (or two, for some diseases) implanted under the skin near the clavicle.

### DBS lead

Thin, insulated, coiled wires, each ending in a 1.5 mm electrode, that deliver stimulation to the targeted areas.

### Extension

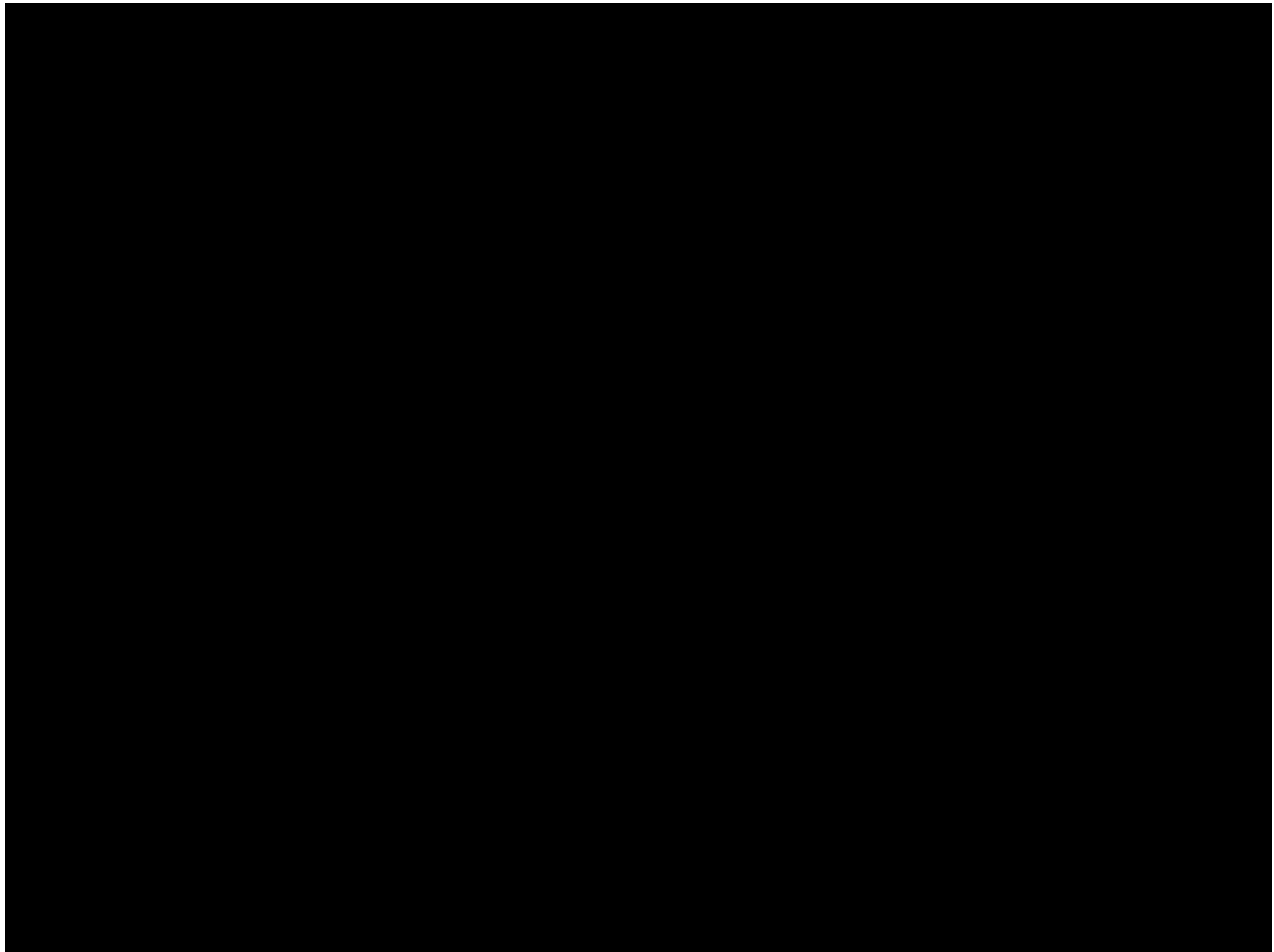
An insulated wire that connects the lead to the neurostimulator.

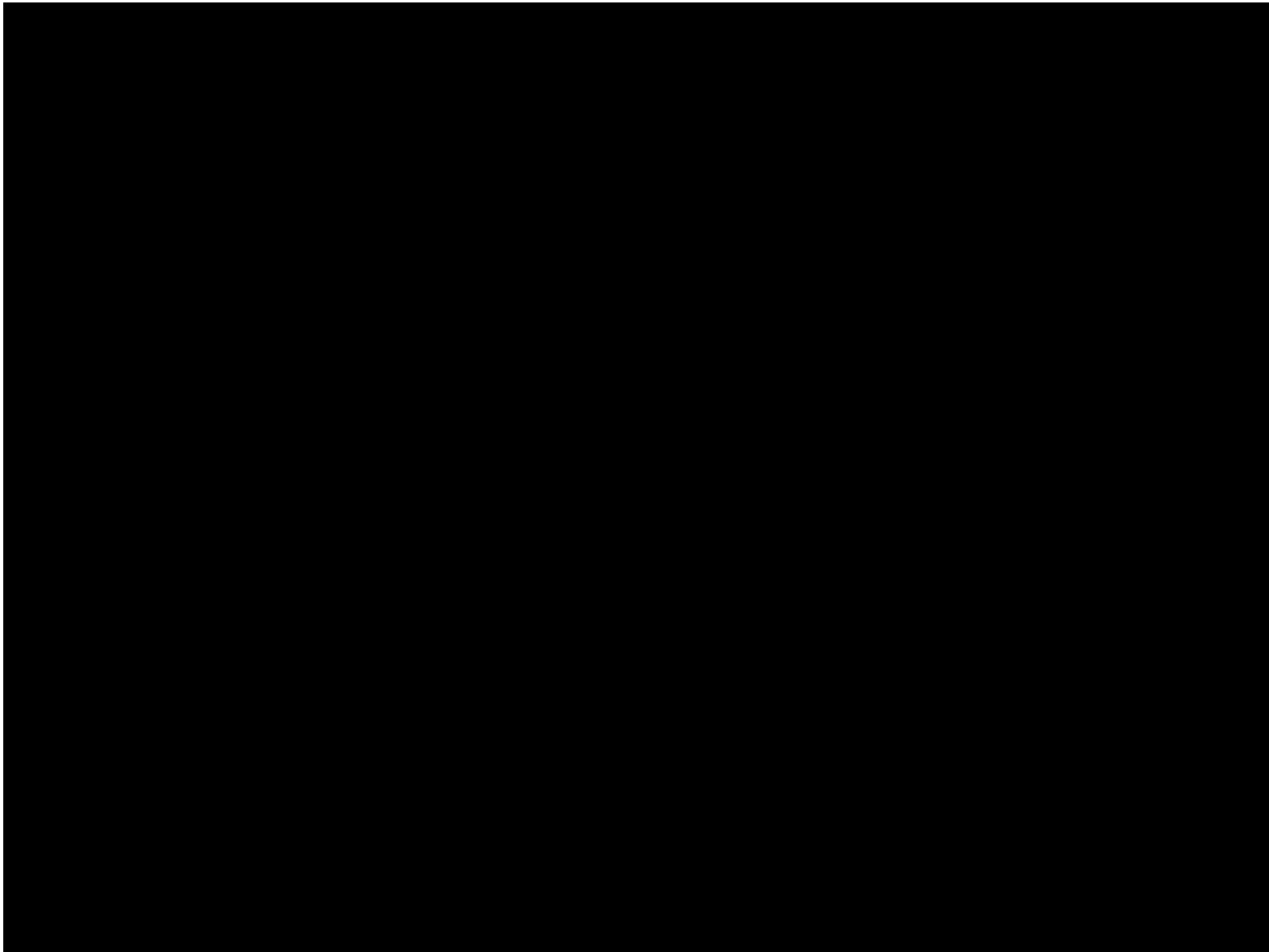


Source: Medtronic Inc.

Steve Greenberg

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# Hospitalization & the Alternatives

## *Ø Therapeutic Community*

- Designed to bring meaning to patients' lives
- Hospital setting to help patients cope with the world outside
- Higher costs

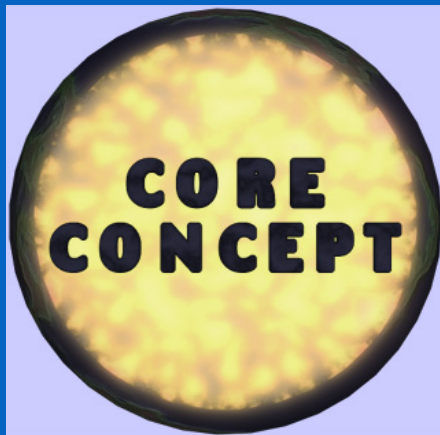
## *Ø Deinstitutionalization*

- Removing patients, whenever possible, from mental hospitals

## *Ø Community Mental Health Movement*

- Effort to deinstitutionalize mental patients and to provide therapy from outpatient clinics

# How do the Psychological Therapies and Biomedical Therapies Compare?



Although a combination of psychological and medical therapies is better than either alone for treating some (but not all) mental disorders, most people who suffer from unspecified “problems in living” are best served by psychological treatment alone.

# Depression

## *Ø Psychological vs. Medical Treatment*

- Both are equally effective ways to treat depression in the short run.
- Cognitive behavioral therapy is more effective in the long run.
- A combination of both is most effective.