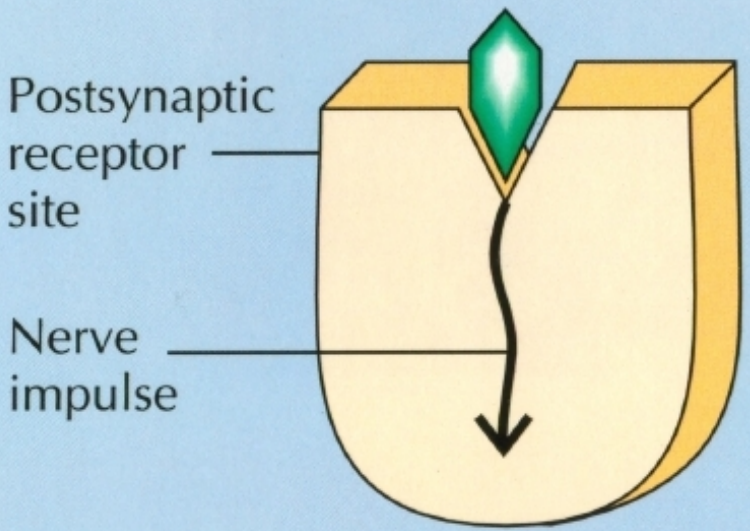
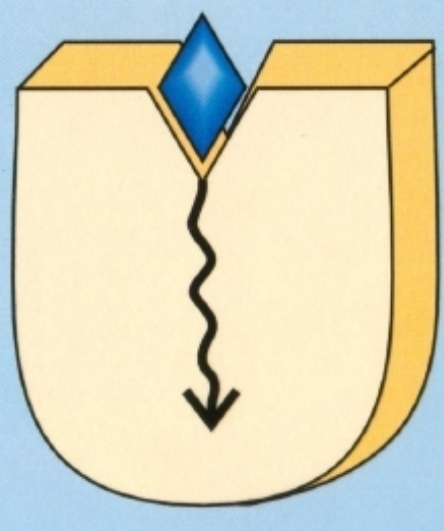


# Drug Action

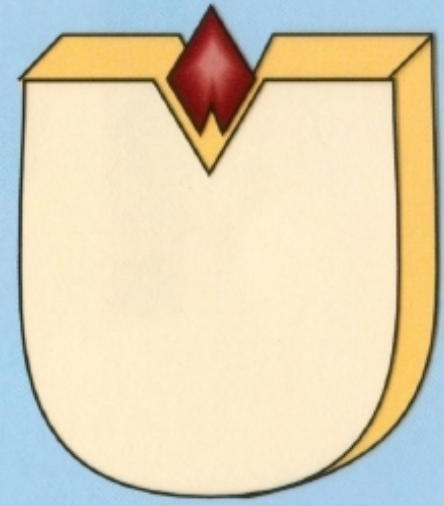
Normal Neurotransmitter Activation



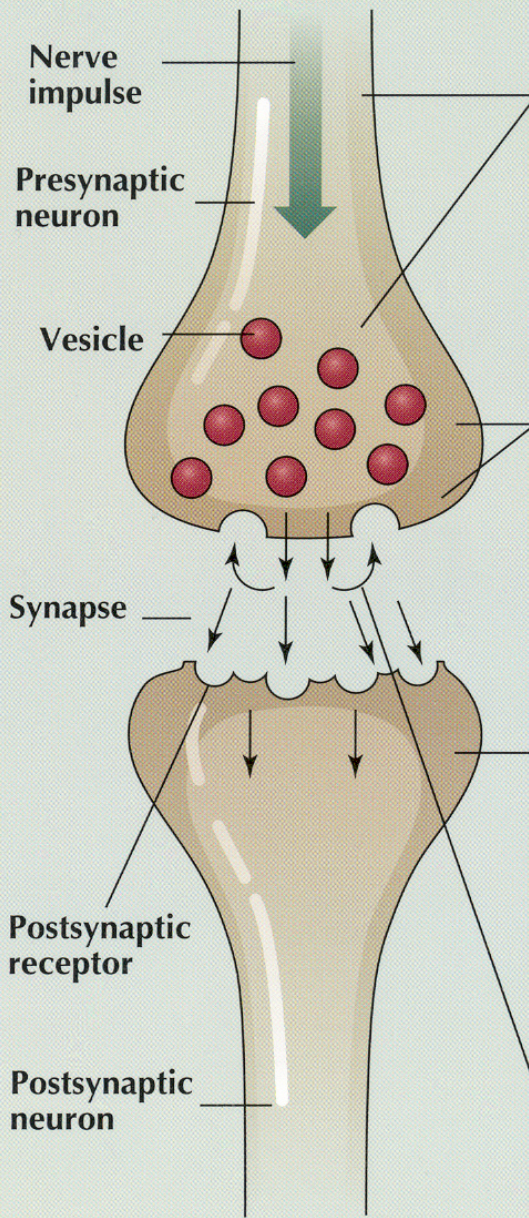
Agonistic Drug "Mimics" Neurotransmitter



Antagonistic Drug Fills Receptor Space and Blocks Neurotransmitter







**How neurotransmitters work**

**Agonist drugs (mimics neurotransmitter effects)**

**Antagonist drugs (blocks neurotransmitter effects)**

**(Step 1) Production**

(1) Neurotransmitter is produced.

Drug serves as a precursor for neurotransmitter synthesis (e.g., L-DOPA is used to make dopamine).

Drug blocks production.

**(Step 2) Storage and release**

(2) Neurotransmitter is stored in vesicle. When impulse arrives, neurotransmitter is released.

Drug increases the release of neurotransmitter (e.g., black widow spider venom increases acetylcholine release).

Drug blocks neurotransmitter storage and/or release.

**(Step 3) Reception**

(3) Neurotransmitter binds to postsynaptic receptors and activates them.

Drug attaches to receptors and activates them (e.g., Nicotine activates acetylcholine receptors and morphine activates endorphin receptors).

Drug blocks neurotransmitter by filling receptor space but doesn't activate the neuron (e.g., drugs for schizophrenia block dopamine).

**(Step 4) Inactivation**

(4) Excess neurotransmitter is deactivated by reuptake or enzymatic breakdown.

Drug blocks inactivation of neurotransmitter leaving more in the synapse to stimulate receptors (e.g., cocaine and nicotine block reuptake of dopamine and norepinephrine).

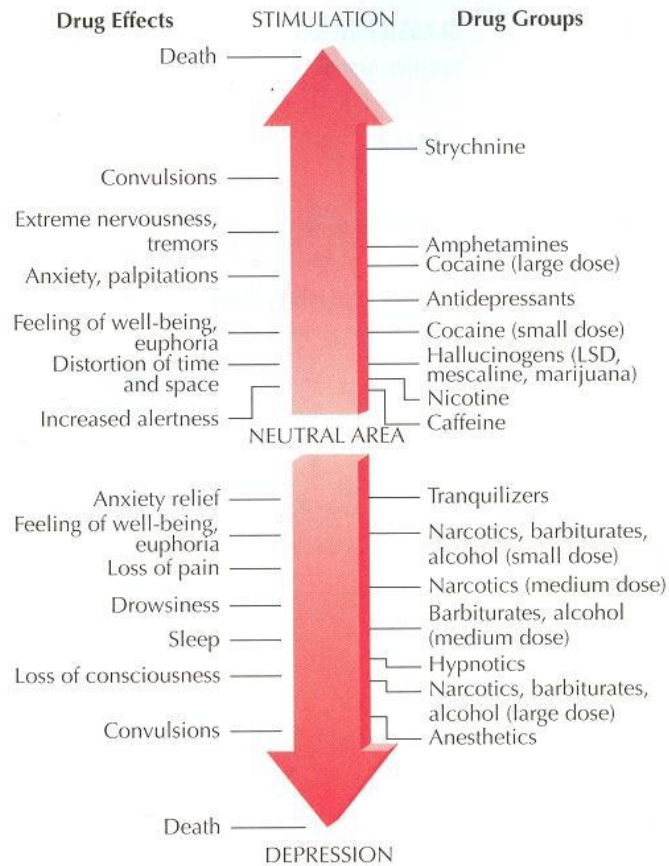


Table 15.2

## DRUG THERAPY

Type of Drug	Psychological Disorder	Chemical Group	Generic Name	Brand Name	
Antidepressant drugs	Severe depression (with suicidal tendencies)	Tricyclic antidepressants	Imipramine	Tofranil	
			Amitriptyline	Elavil	
		MAO inhibitors	Phenelzine	Nardil	
			Second generation antidepressants	Tranylcypromine	Parnate
			Fluoxetine	Prozac	
Antianxiety drugs	Anxiety disorders	Benzodiazepines	Chlordiazepoxide	Librium	
			Diazepam	Valium	
		Glycerol derivatives	Meprobamate	Miltown Equanil	
Antipsychotic drugs	Schizophrenia	Phenothiazines	Chlorpromazine	Thorazine	
			Fluphenazine	Prolixin	
			Thioridazine	Mellaril	
		Butyrophenones	Haloperidol	Haldol	
			Dibenzodiazepine	Clozapine	Clozaril
Mood stabilizer drugs	Bipolar disorder	Antimanic	Lithium carbonate	Lithonate Lithane Eskalith	

# Psychoactive Drugs



Spectrum and continuum of drug action. Many drugs can be rated on a stimulation-depression scale according to their effects on the central nervous system. Although LSD, mescaline, and marijuana are listed here, the stimulation-depression scale is less relevant to these drugs. The principal characteristic of such hallucinogens is their mind-altering quality.

**Psychoactive drug** A substance capable of altering attention, memory, judgment, time sense, self-control, mood, or perception.

**Stimulant** A substance that increases activity in the body and nervous system.

**Depressant** A substance that decreases activity in the body and nervous system.

**Physical dependence** Physical addiction, as indicated by the presence of drug tolerance and withdrawal symptoms.

**Withdrawal symptoms** Physical illness and discomfort following the withdrawal of a drug.

**Drug tolerance** A reduction in the body's response to a drug.

**Psychological dependence** Drug dependence that is based primarily on emotional or psychological needs.



## Caffeine Content of Common Dietary and Medicinal Sources

Source	Standard Amount (mgs)
<b>Beverages:</b>	
Rockstar - Punched (16 oz)	120
Red Bull (12 oz)	115.5
Rockstar (16 oz)	80
Jolt (12 oz)	72
Mountain Dew (12 oz)	55
Diet Coke (12 oz)	45
Dr. Pepper (12 oz)	41
Coca-Cola Classic (12 oz)	34
<b>Coffee (8 oz):</b>	
Brewed	80-135
Instant	65-100
Decaf Brewed	3-4
<b>Tea (8 oz):</b>	
Ice tea	47
Brewed	40-60
Instant	30
Green tea	15
<b>Chocolate:</b>	
Hot cocoa (8 oz)	14
Chocolate milk (6 oz)	4
Chocolate bar (1 oz)	3-6
<b>Medications (per tablet):</b>	
Vivarin	200
No-doz	100
Midol - Maximum Strength	65
Anacin	32
Dristan	30

Adapted from: Center for Science in the Public Interest



# DOCTOR FUN

4 Apr 97

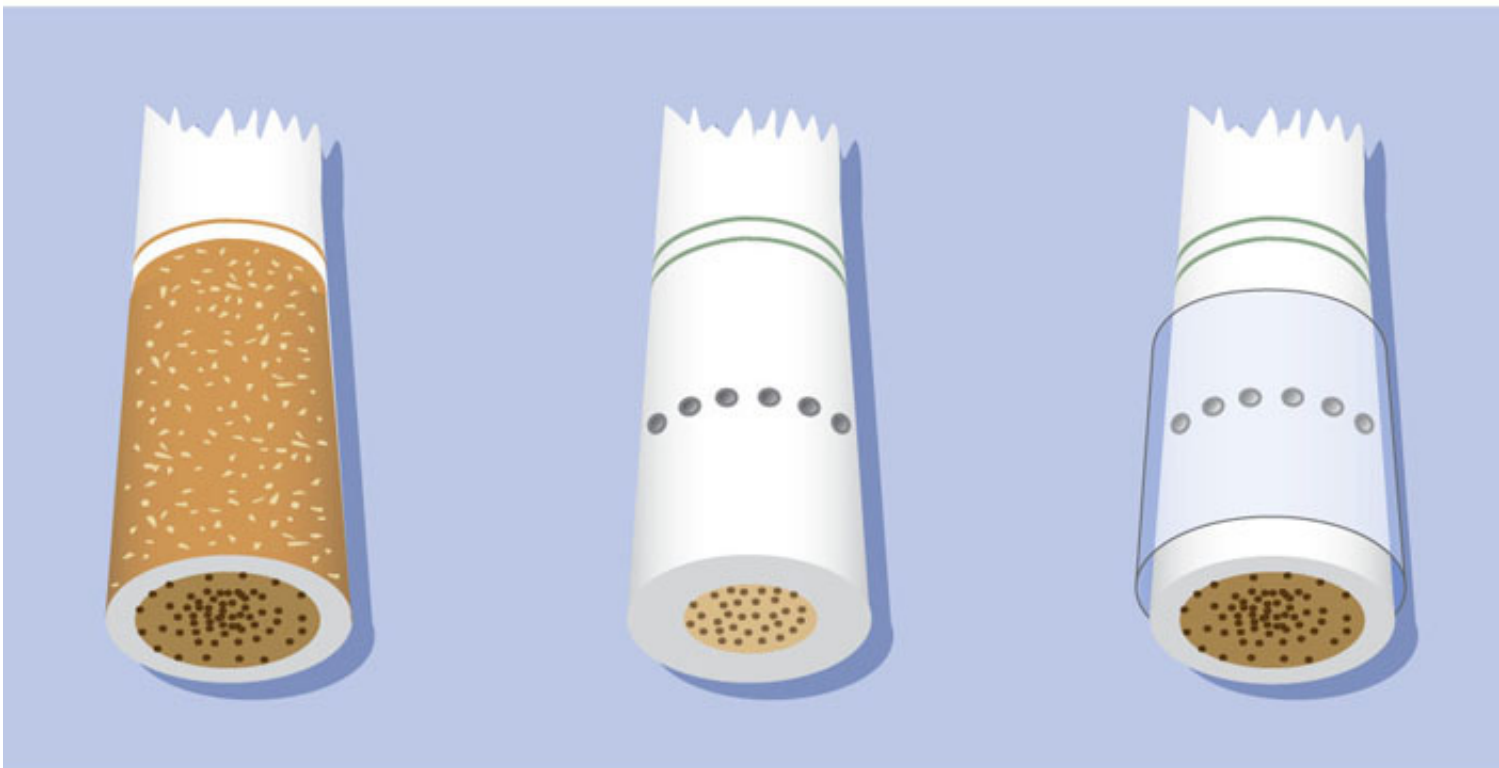
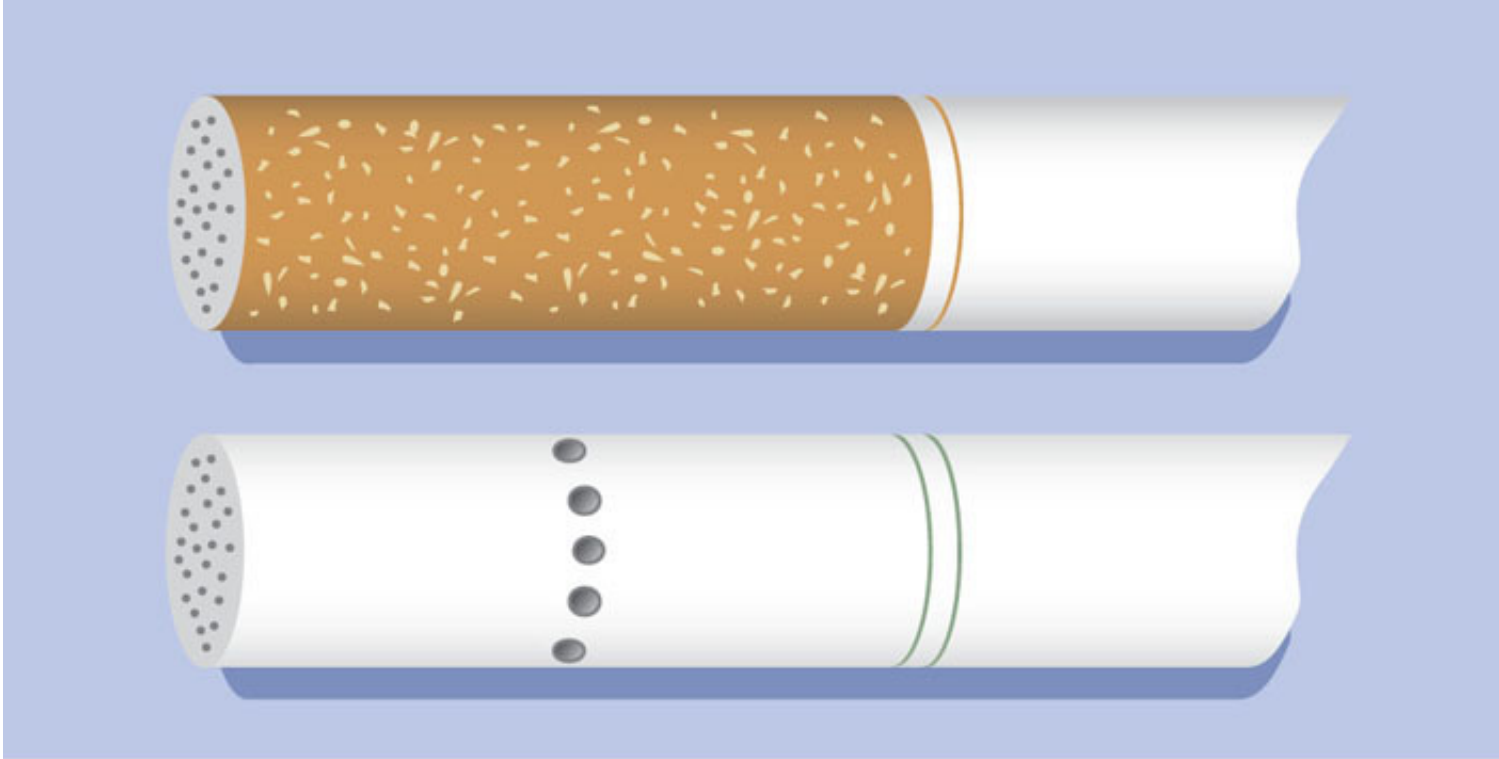


Copyright © 1997 David Farley, d-farley@tezcat.com  
<http://sunsite.unc.edu/Dave/drfun.html>

This cartoon is made available on the Internet for personal viewing only.  
Opinions expressed herein are solely those of the author.

Bees that drink decaf







# THE GENTEEL DRUNKARD

SEPTEMBER 11, 1909

THREE CENTS THE COPY



Saucy Trollops  
Illustrated For  
Your Pleasure!

WHY BLENDING WHISKEYS WILL LEAD TO ANARCHY  
BAN THE HATCHET! SAVE THE NATION!  
SHOULD THE DRINKING AGE BE RAISED TO 13? NO!  
JULES HOLLIS HANGING FROM A TRESTLE? YES!

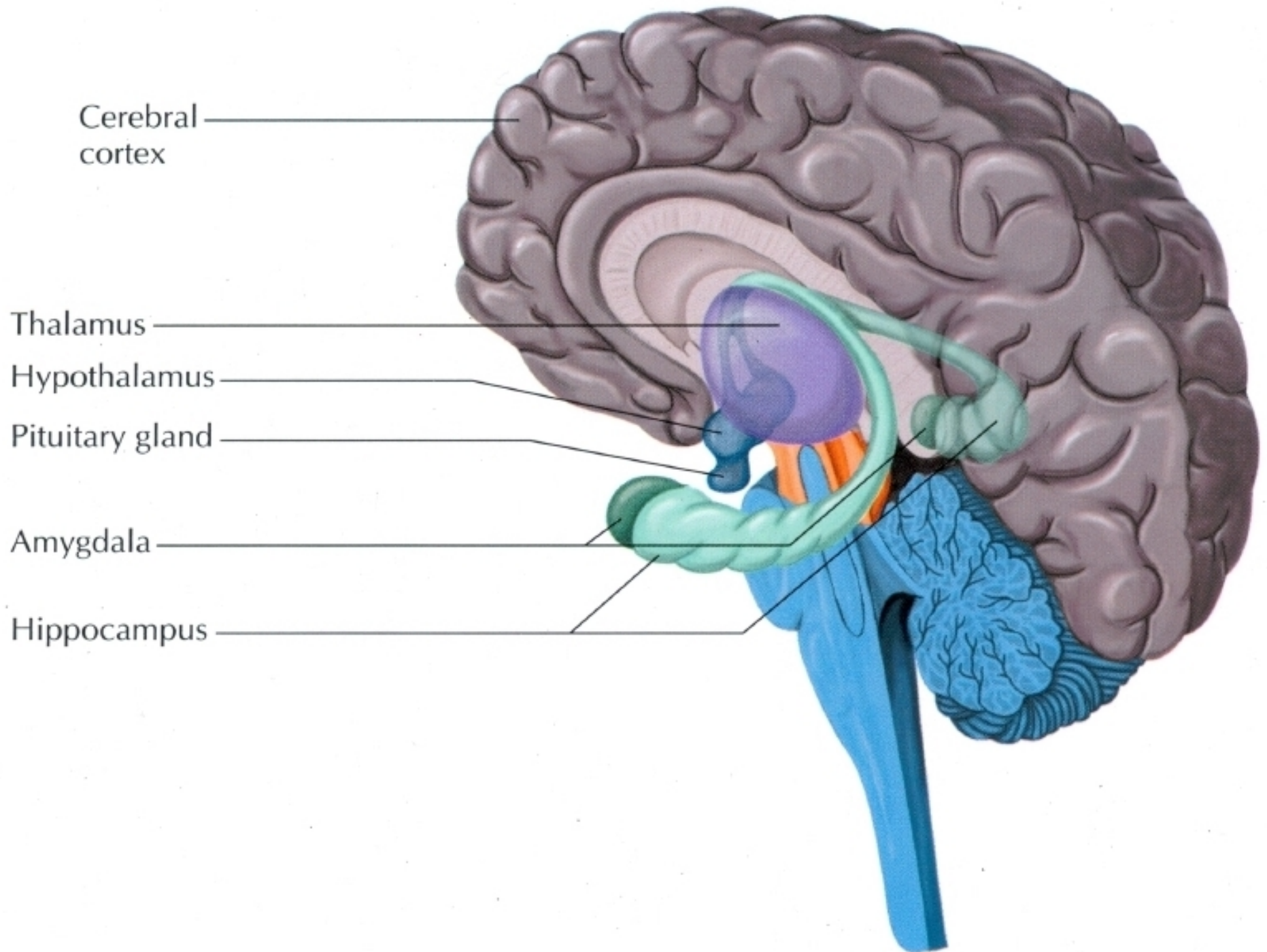


## > TABLE B-1 THE BEHAVIORAL EFFECTS OF BLOOD-ALCOHOL LEVELS

Levels of Alcohol in the Blood	Behavioral Effects
0.05%	Feels good; less alert
0.10%	Is slower to react; less cautious
0.15%	Reaction time is much slower
0.20%	Sensory-motor abilities are suppressed
0.25%	Is staggering (motor abilities severely impaired); perception is limited as well
0.30%	Is in semistupor
0.35%	Is at level for anesthesia; death is possible
0.40%	Death is likely (usually as a result of respiratory failure)

Source: Data from *Drugs, Society, and Human Behavior*, 3d ed., by Oakey Ray, 1983, St. Louis, MO: The C. V. Mosby Co.

# The Forebrain and Limbic System





# DOCTOR FUN

10 Sept 97

FARLEY



Copyright © 1997 David Farley, d-farley@tezcat.com  
<http://sunsite.unc.edu/Dave/drfun.html>

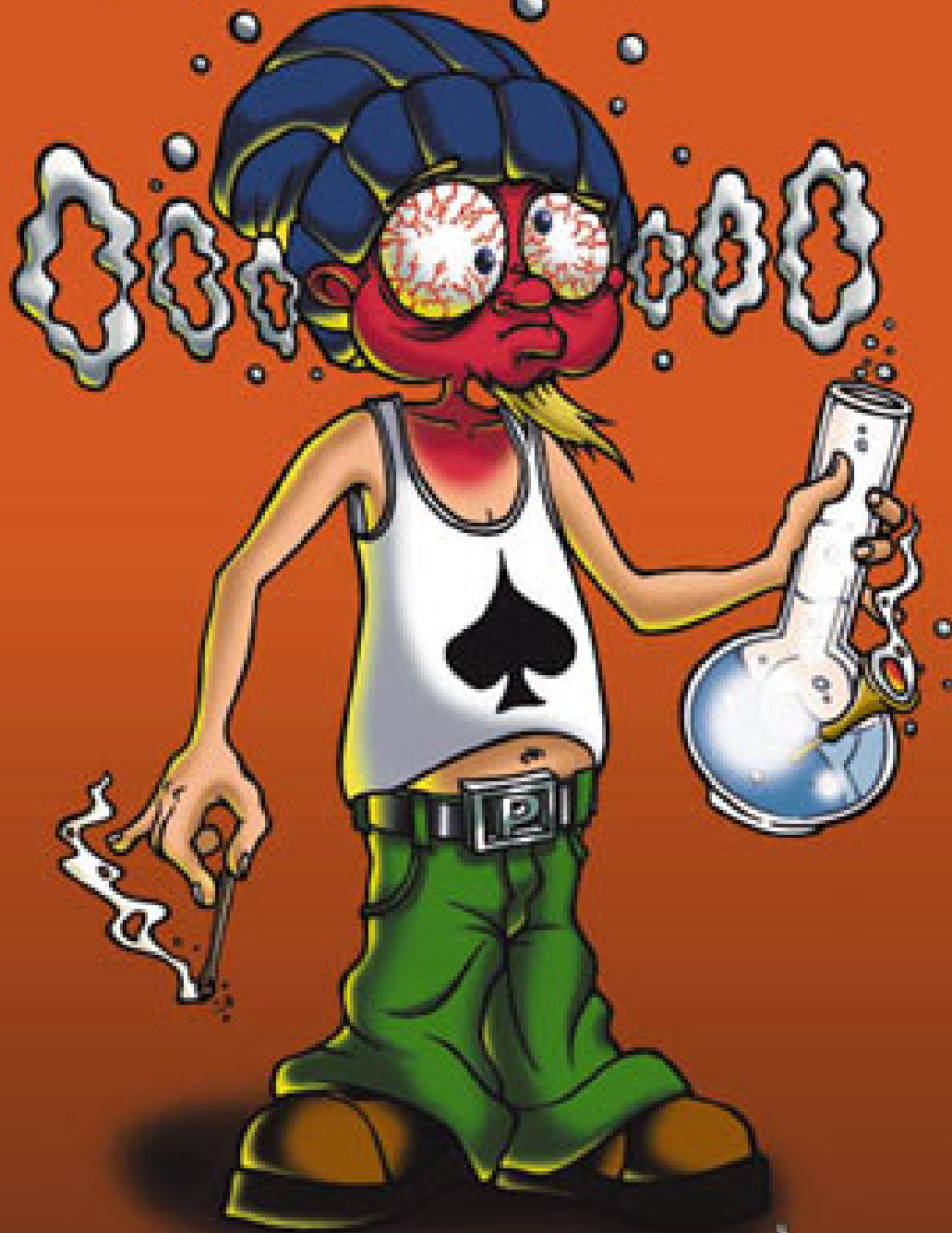
This cartoon is made available on the Internet for personal viewing only.  
Opinions expressed herein are solely those of the author.

Before making his triumphant comeback, Frosty had to admit that he had a massive anti-freeze problem.





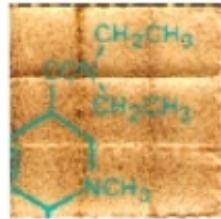
PsykeMan.



# LSD Blotter Art



52y Front



52y Back



Ha



Beavis & Butthead Acid



Alice Back



Alice Front



Bill and Opus



Misc Blotter



Chill Pill



Cycles



Daffy



Grateful Dead



Explorers



Hofmann



Daffy



Blotter



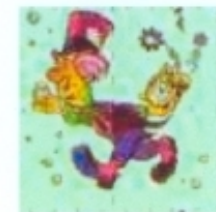
Blotter



Blotter

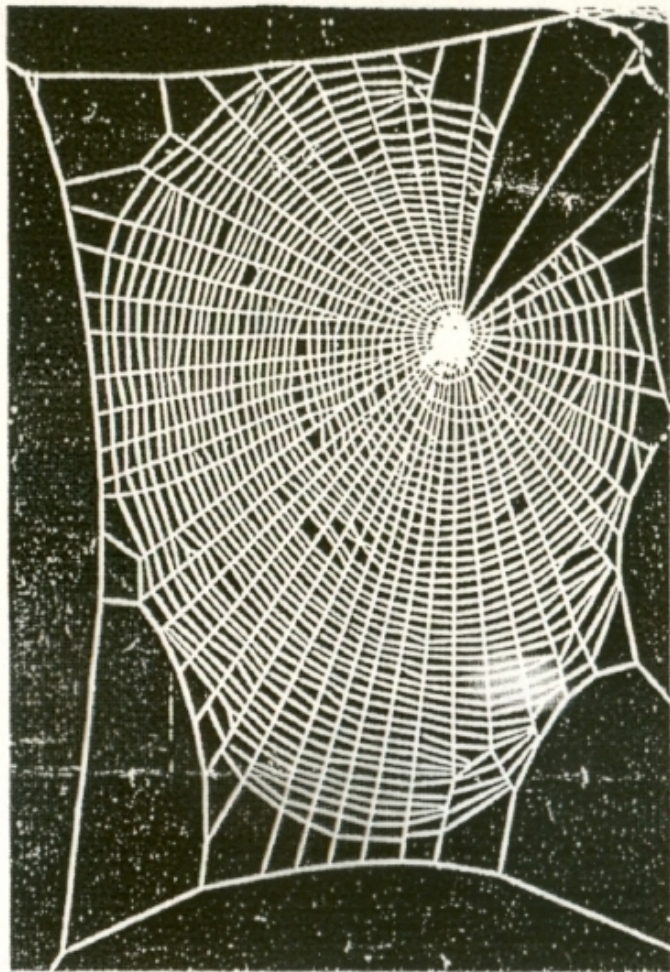


Blotter



Mad Hatter





*Die Wirkung von Substanzen auf den Netzbau der Spinne als biologischer Test (Peter Witt, Berlin, 1956)*

*Normal net of Zilla-x-notata Cl. Nets made by this spider after consuming drug-dosed flies appear opposite.*

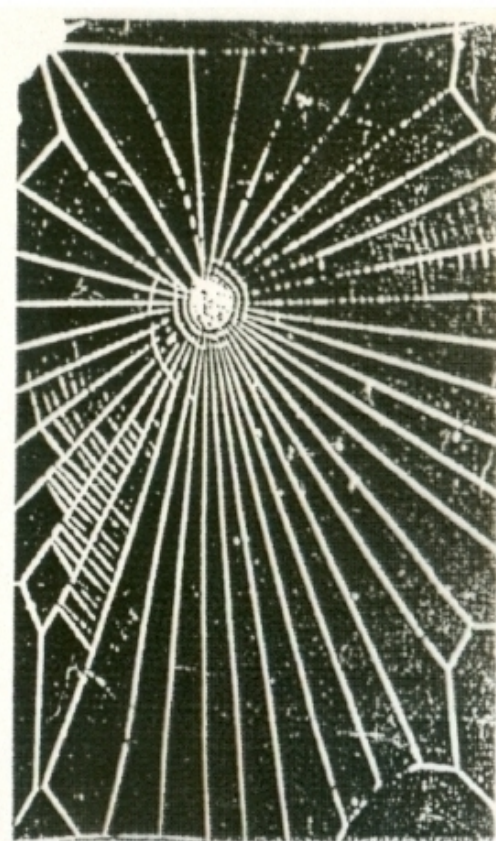
that is only sometimes prompted by LSD. Shulgin remarks that under mescaline "There is a benign empathy shown to both inanimate and living things, especially to small things." Allen Ginsberg and others have suggested that mescaline—more than other psychedelics—produces a state of mind very receptive to the complex of benevolent attitudes expressed in Wordsworth's nature poems.

There haven't yet been any studies comparing effects from mescaline with those from peyote. The Church of the Awakening used both fairly extensively and characterized mescaline effects as "identical with those we had obtained through the use of peyote itself" (in John Aiken's words).

There are many reports about the effects of peyote and mescaline coming from people who have used these substances in remarkably different ways and in a multitude of settings: from use in experimental laboratories to



*Typical hashish-inspired net.*



*Net after about 0.04 mcg. LSD*



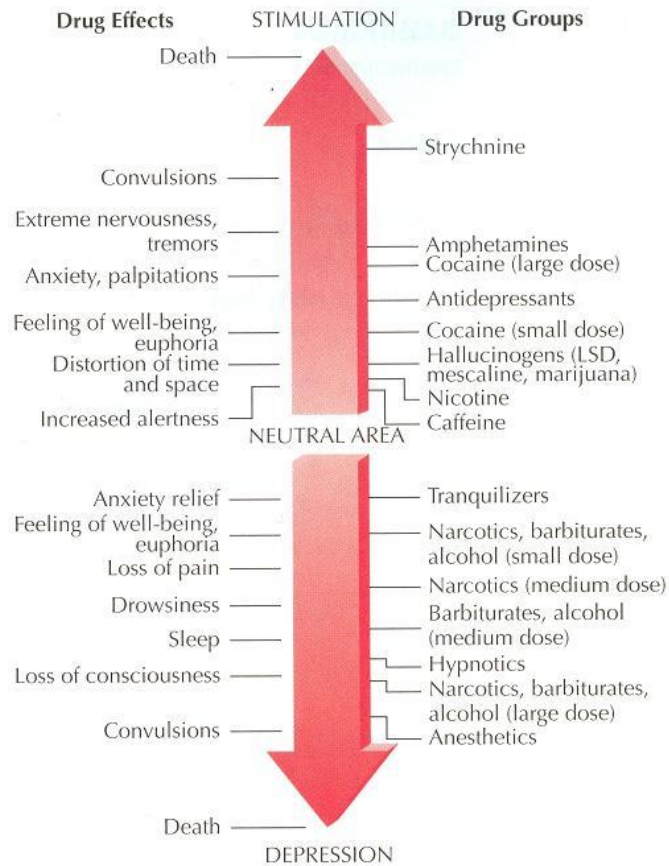
*Net after a high caffeine dose.*



*Net after mescaline sulfate dose.*



# Psychoactive Drugs



Spectrum and continuum of drug action. Many drugs can be rated on a stimulation-depression scale according to their effects on the central nervous system. Although LSD, mescaline, and marijuana are listed here, the stimulation-depression scale is less relevant to these drugs. The principal characteristic of such hallucinogens is their mind-altering quality.

**Psychoactive drug** A substance capable of altering attention, memory, judgment, time sense, self-control, mood, or perception.

**Stimulant** A substance that increases activity in the body and nervous system.

**Depressant** A substance that decreases activity in the body and nervous system.

**Physical dependence** Physical addiction, as indicated by the presence of drug tolerance and withdrawal symptoms.

**Withdrawal symptoms** Physical illness and discomfort following the withdrawal of a drug.

**Drug tolerance** A reduction in the body's response to a drug.

**Psychological dependence** Drug dependence that is based primarily on emotional or psychological needs.