
Psychoactive substances and drugs. Antidepressants

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Overview

- 10700 y.a. – The betel nut was chewed in Thailand
- 7000 y.a. – Coca was being used in the Andes
- Before European contact – Native Americans used tobacco



Legality

The resolution of the government of Russian Federation N 681 (30.06.1998)

- 1) list I: mescaline and its derivatives, hashish, heroin, marijuana, methadone, MDMA, opium, psilocybin, psilocin, ephedrine, etc.
 - 2) list II: codeine, cocaine, morphine, ethylmorphine, omnopon, fentanyl, promedol, etc.
 - 3) list III: barbital, nitrazepam, diazepam, taren, etc.
 - 4) list IV: ephedrine, pseudoephedrine, acetone, sulphuric acid, hydrochloric acid, potassium permanganate, acetic acid, etc.
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Mechanisms and effects

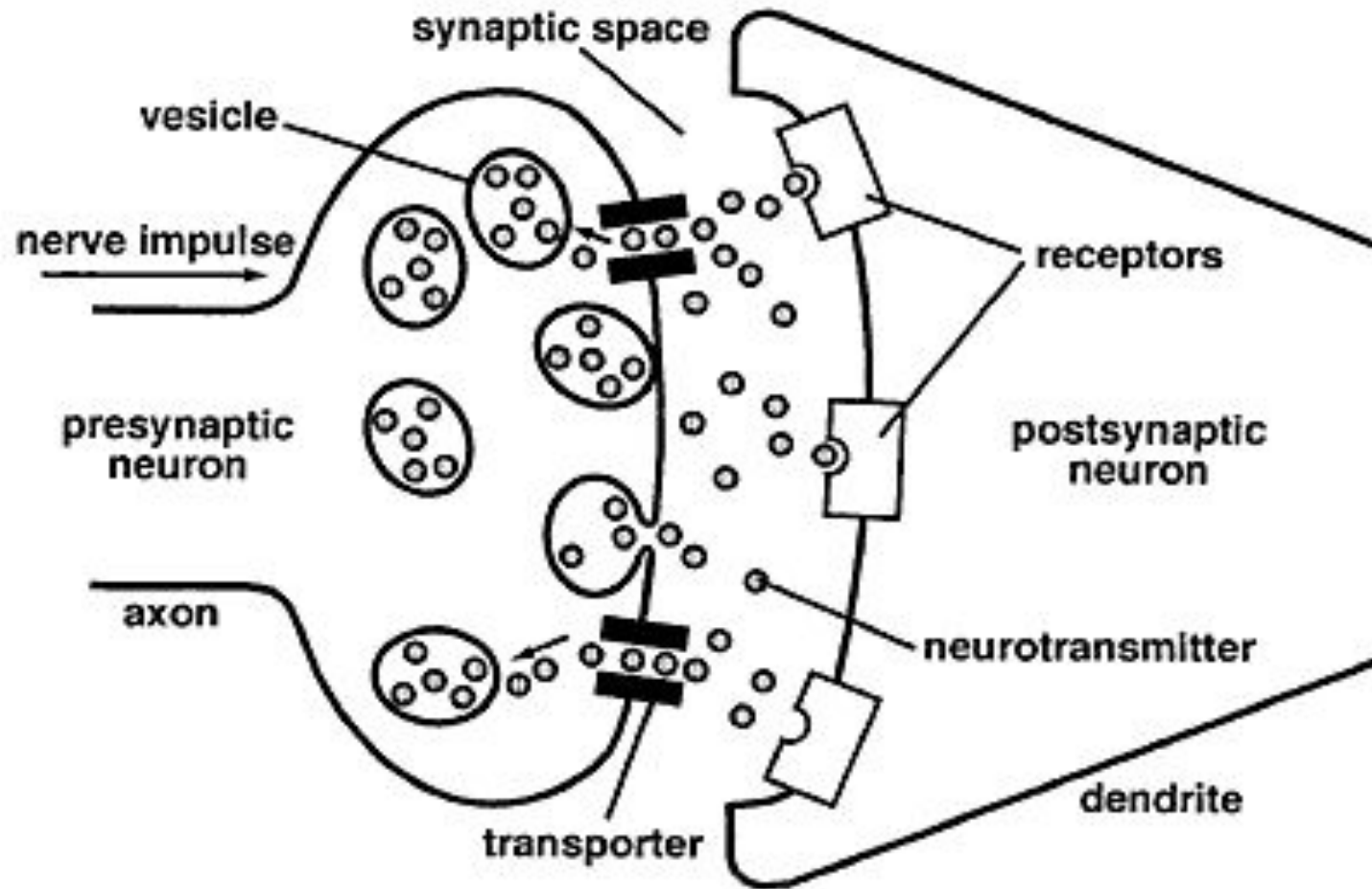
Agonists:

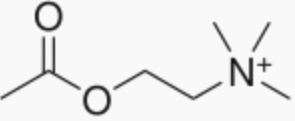
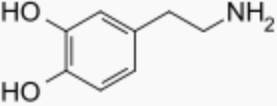
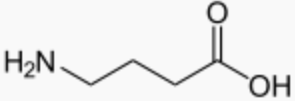
- increasing the synthesis of one or more neurotransmitters
- reducing its reuptake from the synapses
- mimicking the action by binding directly to the postsynaptic receptor

Antagonists:

- interfering with synthesis
 - blocking postsynaptic receptors
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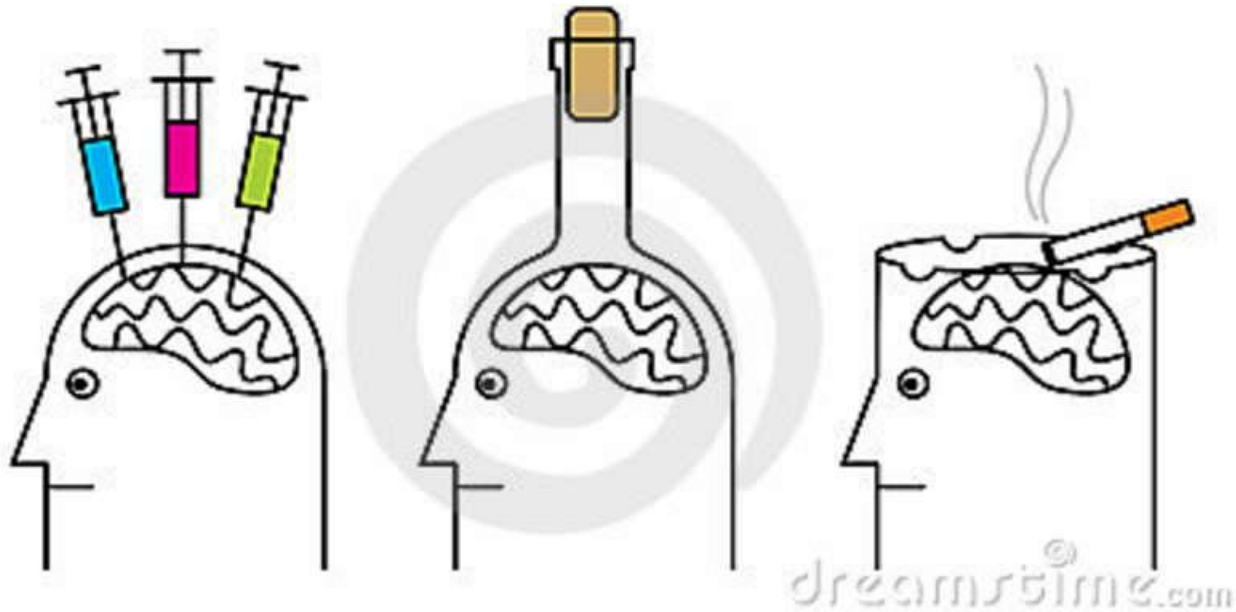
Mechanisms and effects



Neurotransmitter/receptor	Classification	Examples
 <p data-bbox="170 376 363 408"><u>Acetylcholine</u></p>	<u>Cholinergics</u> (acetylcholine receptor agonists)	<u>arecoline, nicotine, piracetam</u>
	<u>Muscarinic antagonists</u> (acetylcholine receptor antagonists)	<u>scopolamine, benztropine, dimenhydrinate, diphenhydramine, atropine, quetiapine, olanzapine, most tricyclics</u>
	<u>Nicotinic antagonists</u> (acetylcholine receptor antagonists)	<u>memantine, bupropion</u>
 <p data-bbox="189 868 343 899"><u>Dopamine</u></p>	<u>Dopamine</u> reuptake inhibitors (DRIs)	<u>cocaine, bupropion, methylphenidate</u> , and certain <u>TAAR1 agonists</u> like <u>amphetamine, phenethylamine, methamphetamine</u>
	Dopamine releasers	<u>agomelatine</u> and certain <u>TAAR1 agonists</u> like <u>amphetamine, phenethylamine, methamphetamine</u>
	Dopamine receptor agonists	<u>pramipexole, Ropinirole, L-DOPA (prodrug), memantine</u>
	Dopamine receptor antagonists	<u>haloperidol, droperidol</u> , many <u>antipsychotics</u> (e.g. <u>risperidone, olanzapine, quetiapine</u>)
	Dopamine receptor partial agonists	<u>LSD, aripiprazole</u>
 <p data-bbox="48 1386 363 1418"><u>gamma-Aminobutyric</u></p>	GABA reuptake inhibitors	<u>tiagabine, vigabatrin</u>
	GABA receptor agonists	<u>ethanol, barbiturates, diazepam, clonazepam, lorazepam, temazepam, alprazolam</u> and other <u>benzodiazepines, zolpidem, eszopiclone, zaleplon</u> and other <u>nonbenzodiazepines, muscimol</u>
	GABA receptor antagonists	<u>thujone, bicuculline</u>

Addiction

- psychological dependence
- physical dependence



Usage

- Anxiolytics

Example: Benzodiazepine

- Euphoriant

Example: MDMA (Ecstasy), MDA, 6-APB, Indopan

- Stimulants ("uppers")

Examples: amphetamine, caffeine, cocaine, nicotine

- Depressants ("downers"), including sedatives, hypnotics, and narcotics.

Examples: ethanol (alcoholic beverages), opioids, barbiturates, benzodiazepines

- Hallucinogens, including psychedelics, dissociatives and deliriant

Examples: psilocybin, LSD, Salvia divinorum and nitrous oxide

Ritual and spiritual



Recreation

- alcohol –in most areas of the world it is legal for those over a certain age
 - tobacco – a legal drug
 - cannabis
 - caffeine - a legal drug, contained in coffee, tea, energy drinks, and some soft drinks
 - MDMA
 - cocaine
 - amphetamines – prescribed for ADHD
 - psilocybin mushrooms
 - LSD –banned in October 1968 by US President Lyndon B Johnson.
 - opiates and opioids – available by prescription.
 - tranquilizers – barbiturates, benzodiazepines - commonly prescribed for anxiety
 - nitrous oxide - legal
 - ketamine – used by paramedics in emergency situations for its dissociative and analgesic qualities
 - amyl nitrite – a vasodilator (legal)
 - other drugs (antidepressants, tranquilizers, analgesics, etc)
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Pharmacotherapy

- Anesthesia
- Pain management
- Mental disorders



Depression and Antidepressants

Key facts:

- Depression is a common mental disorder. Globally, more than 350 million people of all ages suffer from depression
 - Depression is the leading cause of disability worldwide, and is a major contributor to the global burden of disease
 - More women are affected by depression than men
 - At its worst, depression can lead to suicide
 - There are effective treatments for depression
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Drugs used for the treatment of depression:

- Selective serotonin reuptake inhibitors (SSRIs)
 - Serotonin/norepinephrine reuptake inhibitors (SNRIs)
 - Atypical antidepressants
 - Tricyclic antidepressants (TCAs)
 - Monoamine oxidase inhibitors (MAOIs)
 - St. John's wort (*Hypericum perforatum*)
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Selective serotonin reuptake inhibitors, SSRIs

- Citalopram (Celexa)
- Escitalopram (Lexapro)
- Fluoxetine (Prozac)
- Paroxetine (Paxil)
- Sertraline (Zoloft)
- Vilazodone (Viibryd)
- Vortioxetine (Brintellix)



inhibitors, SNRIs



- Desvenlafaxine (Pristiq)
- Duloxetine (Cymbalta)
- Venlafaxine (Effexor, Effexor XR)
- Levomilnacipran (Fetzima)

Other Antidepressants

- Bupropion (Wellbutrin)
- Mirtazapine (Remeron, Remeron SolTab)
- Trazodone (Desyrel, Oleptro)



Tricyclic antidepressants, TCAs

- Amitriptyline (Elavil)
- Desipramine (Norpramin)
- Imipramine (Tofranil)
- Clomipramine (Anafranil)
- Nortriptyline (Pamelor)
- Protriptyline (Vivactil)
- Doxepin (Sinequan, Silenor)
- Trimipramine (Surmontil)
- Amoxapine



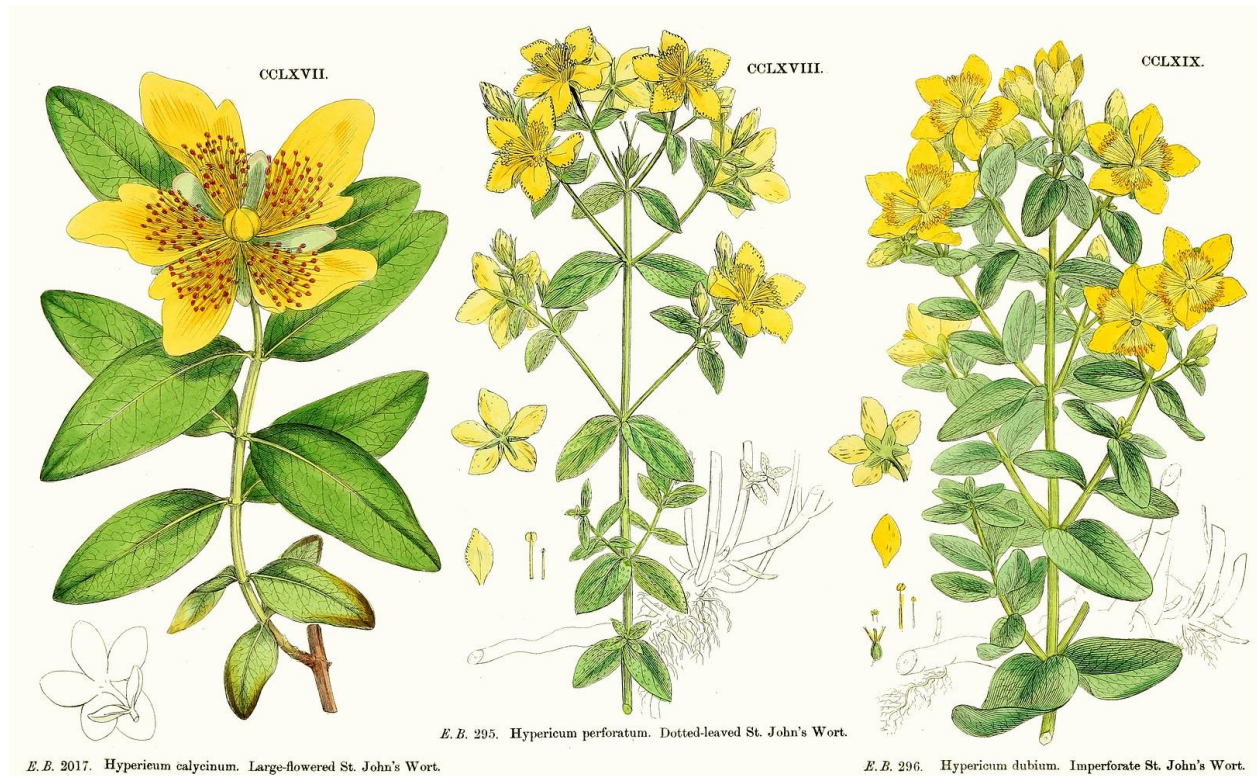
Monoamine oxidase inhibitors, MAO Is

- Selegiline transdermal patch (Emsam)
- Tranylcypromine (Parnate)
- Phenelzine (Nardil)
- Isocarboxazid (Marplan)



Herbals

- Hypericum perforatum (St John's Wort)



The End

