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Disclaimer: Do not misuse drugs. Do not use drugs for fun. Take drugs exactly as prescribed by a trustworthy doctor, and do not fear necessary prescription drugs because of terrible side effects on this chart (which, by the way, may be inapplicable or extremely rare in your case and have been considered by your doctor). This chart provides a rough overview of some common recreational drugs. This chart is an oversimplification, it has omissions, and it may have blatant inaccuracies due to ongoing scientific debate or the writer's ignorance. Important note: All of these drugs are dangerous, but none of these drugs is The Devil in Powdered Form. Every one of these drugs has been used with no visible detrimental effect by some lucky people, but every one of these drugs could also destroy your life. Why would you take the risk?

Chart compiled by Zak Fallows

Please ask questions, make comments, point out errors, and give suggestions by sending email to
pharmacology@mit.edu.

Drug class:	Specific drugs:		Mechanism:	Major effects:	Side effects:	Any medical use:
	Subgroup:	Examples:				
Sedatives	Benzodiazepines	Diazepam (Valium), clonazepam (Klonopin), lorazepam (Ativan), temazepam (Restoril), flunitrazepam (Rohypnol), triazolam (Halcion), alprazolam (Xanax)	Agonist at benzodiazepine site on the GABA-A receptor	Calm, relaxed muscles, sleepy	Drowsiness, falls, impaired coordination, impaired memory, dizziness	Anxiety, insomnia, epilepsy, many other diseases
	Benzodiazepine agonists	Zolpidem (Ambien), eszopiclone (Lunesta), zopiclone, zaleplon (Sonata)	Same as above	Mainly just sleepy, sometimes hallucinations and sleep-like states	Same as benzodiazepines	Insomnia
	Barbiturates	Phenobarbital, pentobarbital, thiopental (sodium pentothal, sodium amytal), secobarbital	Agonist at barbiturate site on the GABA-A receptor	Calm, euphoric, sleepy	Same as benzodiazepines, plus breathing suppressed, terrible withdrawal, death	Epilepsy, other diseases in the past and more rarely today
		Alcohol	Opens BK potassium channels (hyperpolarizing neurons), closes SK potassium channels in reward center of brain (causing DA release), probably other effects	Calm, euphoric, loss of inhibitions (facilitates socializing, talking, singing, sex), relaxed	Same as benzodiazepines, plus nausea, vomiting, breathing suppressed, terrible withdrawal (including psychosis and seizures), brain damage, various diseases, death	Alcohol withdrawal
		Gammahydroxybutyrate (GHB), GBL, 1,4-butanediol	Agonist at GHB receptor (may desensitize it or inhibit GABA), agonist at GABA-B receptor	Euphoric, energetic, sleepy, calm (mix of stimulant and sedative effects)	Same as benzodiazepines, plus nausea, vomiting, breathing suppressed, psychosis, seizures, death	Narcolepsy (improves cataplexy, not simply a sleep aid)

Stimulants	Amphetamines	Amphetamine (Adderall), methamphetamine (Desoxyn), methylphenidate (Ritalin), phentermine, 4-methylaminorex, phenmetrazine (Preludin), methcathinone, fenfluramine (Pondimin, Fen-Phen), dexfenfluramine (Redux), pseudoephedrine (Sudafed), ephedrine, phenylpropanolamine (old Triaminic), phenylephrine (Sudafed PE), phenethylamine, tyramine	Increase release and inhibit reuptake of 5-HT, DA, and NE.	Euphoric, energetic, able to work, concentrate, stay awake. Reduces appetite.	Anxiety, paranoia, psychosis, high blood pressure, heart attack, stroke, brain damage when used excessively	ADHD, narcolepsy, obesity, rarely depression
		MDMA (ecstasy), MDA, MDEA	Like above, but releases a lot more 5-HT	Euphoric, energetic, deep and unusual thoughts, perceived inspiration and novelty, enhances sex, dancing, music, art, touch and senses. Contentment. Connection to other people, strong emotions.	Same as amphetamine, plus brain damage, confusion, agitation, frequently death due to hyperthermia, heart attack, water intoxication, and other problems.	None
		Cocaine	Inhibits 5-HT, NE, and DA reuptake, blocks voltage-gated sodium channels	Same as amphetamine (above)	Same as amphetamine, plus a worse risk of heart attack	Local anesthesia and bleeding control, diagnostic tests
Narcotics	Full opioid agonists	Morphine, heroin (diacetylmorphine), hydrocodone (Vicodin), oxycodone (Percocet, Oxycontin), fentanyl, Demerol, codeine, opium, hydromorphone (Dilaudid), oxymorphone (Opana), methadone	Activate all opioid receptors completely. Reduce NE release.	Euphoric, pain relief, calm, relaxed, sleepy, appetite suppression	Nausea, constipation, vomiting, drowsiness, breathing suppressed	Pain relief, rarely depression and diarrhea
	Partial, selective, or mixed opioid agonists	Buprenorphine (Suboxone), pentazocine, nalbuphine, tramadol (Ultram), tifuladom	Only activate certain subtypes of opioid receptors, and/or do not activate them fully, and/or block certain subtypes.	Pain relief, not quite as euphoric or relaxing as full agonists (above)	Nausea, constipation, vomiting, drowsiness	Pain relief, rarely depression, opioid addiction
Cannabis	Active ingredient is mostly tetrahydrocannabinol, some other active ingredients like cannabidiol in smaller quantities		Agonist at cannabinoid receptors	Unusual thoughts and feelings, sometimes calm, happy, hungry, enhanced appreciation of art	Memory, thinking, reflexes, and coordination are impaired. May contribute to psychosis in the long term.	Might relieve nausea, vomiting, and neuropathic pain. Pills already legal, other forms under investigation.

Psychedelics	Phenethylamines	Mescaline (peyote cactus), 2C-series drugs (2C-B, 2C-I, 2C-C, 2C-T-7), 3C-E, 4-MTA, PMA, DO-series drugs (DOC, DOB, DOI, DOM)	Partial agonist at 5-HT ₂ receptors (2A and possibly 2C). This receptor is mostly excitatory, but it is inhibitory in certain parts of the brain dealing with perception.	Feeling of novelty, inspiration, reverence. Fast, disordered thoughts, trances. Perceptual anomalies: patterns move, colors brighter, seeing sounds, smelling colors. Crazy ideas and beliefs.	Anxiety, insomnia, paranoia, temporary psychosis. May contribute to psychosis in the long term, or cause "flashbacks" (HPPD). Some cause nausea, increased body temperature, tremors.	None
	Tryptamines	Psilocybin and psilocin (both in mushrooms), bufotenin (in toads), DMT (in plants), 5-MeO-DMT (in plants), 5-MeO-DiPT, DET, AMT, 4-HO-DiPT				Psilocybin and LSD have been tested for the treatment of cluster headaches
	Ergolines	Lysergic acid diethylamine (LSD), LSA (ergine, in plants)				Other ergolines are used for many diseases but are not psychedelic.
Dissociative anesthetics	Phencyclidine (PCP), dextromethorphan, ketamine		NMDA (glutamate receptor) antagonists	Feeling of distance from reality and body, numbing of sensations and pain. Convincing and absorbing hallucinations.	Nausea, vomiting, coma, violence, extreme confusion, temporary psychosis. PCP causes brain damage.	Anesthesia. A related drug, memantine, is used in Alzheimer's disease, and these could be used in stroke sufferers.
Deliriants	Scopolamine and atropine (in plants), diphenhydramine (Benadryl), dimenhydrinate (Dramamine)		Muscarinic (ACh receptor) antagonists	Loss of memory, convincing and absorbing hallucinations.	Extreme confusion, temporary psychosis, hot, dry skin, dry mouth, huge pupils, fast heartbeat, death	Many legitimate uses
Inhalants	Diethyl ether (starter fluid), chloroform, toluene, gasoline, glue, paint, xenon, cyclopropane, freon, halothane, sevoflurane		Unknown, probably multiple mechanisms	Calm, relaxed, euphoric, pain relief, hallucinations, strange sensations (different inhalants cause different effects from this list)	Many diseases, death, nausea, vomiting, accidental asphyxiation, falls, varies depending on particular drug	General anesthesia
	Nitrous oxide		Unknown, but opioid pathways are necessary	Calm, euphoric, pain relief, memory loss, unconsciousness	Similar to above	General or partial anesthesia
	Nitrites	Isoamyl nitrite, isobutyl nitrite	Stimulate NO system (NO is a neurotransmitter)	"Head rush", muscle relaxation, dizziness	Dangerously low blood pressure, fainting	Heart conditions

Other	Salvinorin A (salvia divinorum)	Selective agonist of the kappa opioid receptor	Convincing, absorbing hallucinations, visionary states, pain relief	Dysphoria, panic, headache, inability to talk, falls, sweating, persisting anxiety	Theoretically similar to pain relievers (pentazocine)
	Muscimol (amanita muscaria)	GABA-A agonist	Vaguely like a hallucinogen	Nausea, other side effects	Useful in research
	Nicotine (tobacco)	Nicotinic acetylcholine receptor agonist	See Wikipedia, PubMed, Google		
	Caffeine (coffee, tea, other plants)	Adenosine receptor antagonist, inhibits some PDE enzymes causing increased cAMP signaling	Alertness, wakefulness, energy, appetite suppression, headache relief	Insomnia, anxiety, headaches on withdrawal, diuresis	Headaches
	Methaqualone (Quaalude, Sopor), thalidomide, meprobamate (Miltown), carisoprodol (Soma), glutethimide, chloral hydrate (knockout drops, Micky), ethchlorvynol (Placidyl), methyprylon, primidone	Various mechanisms, mostly related to GABA, similar to barbiturates	Depending on the drug: Calm, sleepy, euphoric, relaxed muscles, pain relief, nausea relief	Falls, poor coordination and memory, coma, other side effects vary from drug to drug	Anxiety, depression, insomnia, pain, anesthesia, epilepsy, muscle relaxation, nausea
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Neuro-transmitter:	ACh Acetylcholine	NE Norepinephrine	DA Dopamine	5-HT Serotonin	Glu Glutamate	GABA	Opioids	Cannabinoids	Histamine
Effects:	↓Heart rate ↑Secretions (sweat, saliva) ↑Memory ↑Muscle contractions	↑Heart rate ↑Alertness ↑Happiness ↓Blood circulation ↓Pain	↑Alertness ↑Happiness ↓Hunger	↑Happiness ↑Fullness ↓Pain	The most common excitatory neurotransmitter	↑Sleepiness ↓Anxiety ↓Alertness ↓Memory ↓Muscle tension	↑Sleepiness ↓Anxiety ↓Pain	↑Hunger	↑Wakefulness ↑Stomach acid ↑Itchiness ↓Hunger
Drugs that increase or mimic:	Nicotine, muscarine, Chantix, nerve gases (VX, Sarin), Alzheimer's drugs (Aricept, Exelon), physostigmine, Tensilon, pilocarpine	Amphetamine, cocaine, SNRIs (Effexor, Cymbalta), tricyclic antidepressants, MAOIs, Wellbutrin, LSD, pseudoephedrine (Sudafed), albuterol, pyridostigmine	Amphetamine, cocaine, Parkinson's drugs (levodopa, bromocriptine), benzotropine, MAOIs, Wellbutrin, LSD	Amphetamine, cocaine, LSD, psychedelics (mushrooms, mescaline), SSRIs (Prozac, Zoloft), tricyclic antidepressants, MAOIs, BuSpar, triptans (sumatriptan, for migraines)	D-cycloserine, domoic acid (shellfish)	Alcohol, barbiturates (phenobarbital), benzodiazepines (Valium), GHB, baclofen, neurosteroids (alphaxolone), muscimol	Morphine, heroin, fentanyl, hydrocodone (Vicodin)	THC (marijuana, hashish), nabilone	Opiates, betahistine
Drugs that decrease or block:	BZ, atropine, scopolamine, benztropine, biperiden, curare, Botox, mecamlamine, α-bungarotoxin	Propranolol, clonidine, phentolamine, reserpine, AMPT	Antipsychotics (Haldol), reserpine, tetrabenazine, AMPT	Atypical antipsychotics (Risperdal, Seroquel), Zofran, reserpine, TPH inhibitors, tryptophan-depleted drink	PCP, ketamine, Namenda (for Alzheimer's), dextromethorphan (Robitussin), dizocilpine	Flumazenil, bicuculline, bemegrade, Ro 15-4513, phaclofen	Naloxone, naltrexone	Rimonabant	Benadryl, antipsychotics, Tagamet, Zantac
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