

Appetite and Nausea Chart
SP.236
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How to read this chart:

Neurotransmitters are in bold.

Drugs are inside a little black box.

Different neurotransmitters are separated by a thicker black line.

This is roughly organized as a spectrum - things on the far left make you hungry, things just left of center tend to relieve nausea, things just right of center make you not hungry, and things on the far right make you nauseous. The ideal diet drug would thus be located purely in the "not hungry" region. Most diet drugs are somewhere between the "not hungry" and the "nauseous" regions, because it is hard to banish hunger without making people feel sick.

Example:

Dopamine is a neurotransmitter, because it is in bold. It makes people not hungry and nauseous, because the "dopamine" box spans those two categories. Apomorphine is a potent D2 dopamine receptor agonist, so it makes people nauseous, and has on occasion been used to induce vomiting. Amphetamines boost dopamine, but are not direct agonists, and thus amphetamines make people less hungry and on occasion nauseous, but amphetamines do not induce nausea nearly as much as apomorphine, and thus the amphetamine box does not span as far to the right. Antipsychotics are in the "dopamine" section because they act via dopamine D2 receptors, but antipsychotics are on the opposite side from dopamine itself. This is because antipsychotics are D2 antagonists, they block the effects of dopamine and thus cause opposite effects from dopamine, i.e. antipsychotics prevent nausea and increase appetite.

Two paradoxes:

Most drugs will be on one side or the other of this spectrum. Two drugs on this chart are paradoxical, though, and appear on both sides of the spectrum.

The first paradox is marijuana, which tends to increase appetite but also causes nausea and vomiting. Marijuana can induce vomiting quite reliably in certain circumstances and certain patients, and marijuana-induced vomiting can be quite severe, often requiring hospitalization and administration of antinausea drugs listed on this chart, and IV fluids. It could be said that marijuana is a cruel joke because it makes you hungry and nauseous.

The second paradoxical drug is amphetamine, which makes people not hungry but also relieves nausea. Amphetamine is especially effective at relieving motion sickness, which is good news for pilots and sailors.

Hungry	Not nauseous	Not hungry	Nauseous
Lack of food	Pepto-Bismol	A big meal	<i>Big Bang Theory</i>

	Dopamine (D2)
Antipsychotics	Apomorphine
Eg. Haldol, Zyprexa	Amphetamines
Metoclopramide	Eg. methamphetamine, Ritalin, Adderall, phentermine

	Serotonin (5-HT3)
Atypical antipsychotics	Chemotherapy
Eg. Zyprexa	Fenfluramine
Ondansetron	MDMA
	Fluoxetine, sibutramine
	Mescaline
	Ethanol

	Acetylcholine
Quitting smoking	Nicotine
Anticholinergics	Cholinesterase inhibitors
Eg. Benadryl, Dramamine, Zyprexa, scopolamine	Eg. nerve gases, physostigmine
	Varenicline (Chantix)

Norepinephrine
Amphetamine
Pseudoephedrine

Hungry	Not nauseous	Not hungry	Nauseous
Lack of food	Pepto-Bismol	A big meal	<i>Big Bang Theory</i>

Opioids
Eg. morphine, heroin

Zyprexa	Benadryl, meclizine	Histamine
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Cannabinoids			...cannabinoids
Marijuana		Rimonabant	Marijuana

	Aprepitant		Substance P
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Insulin
Metformin

Testosterone

Progesterone			
Megestrol		Mifepristone (RU-486)	

Glucocorticoids			
Dexamethasone		Mifepristone (RU-486)	

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