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You can take a pill

THE LATEST "magic pill" nearly ready for market is also the public's introduction to a field of neuroresearch so promising that normally staid scientists are calling it huge. But buyers should beware — the experts are still not sure what exactly it does.

This drug, rimonabant, appears to reduce cravings. In large-scale studies, obese people lost an average of 20 pounds in a year and kept it off the next. In another study, 28 percent of smokers quit the habit. Researchers are champing at the bit to try it out on people who need to kick alcohol or cocaine addiction.

How could it be all these things to all these people?

Rimonabant is the first of a new class of drugs on the long path to FDA approval that block messages from traveling along the body's endocannabinoid system.

The *what* system? Endogenous cannabinoids are chemicals that operate as a transmission system throughout the brain and nervous system. These transmitters act somewhat like the better-known endorphins, where blocking the receptor can ease the craving — or feeding the receptor enhances the pleasure (runner's high). They may even be a tool of those other systems; perhaps dopamine, one of the "feel good" chemicals, works by releasing cannibinoids or is triggered via cannibinoids.

Scientists have known about these chemicals (also found in cannabis, better known as marijuana) for about a century. But they have teased out how the network operates just in the past 15 years. Now, the study of cannabinoids fills the bill at certain neurobiology conferences.

A big difference between these cannabinoids and other neural messenger networks is their ubiquity — cannabinoids are scattered through most of the brain, not in specific parts of it as the other systems are. They weave through parts of the brain connected to motor control, emotional responses and "higher-function" thinking, as well as pleasure centers.

That means they probably do a lot more than just induce cravings. And although rimonabant, which tamps down cravings, is being directed first at people fighting obesity, considered a chronic disease for which one might take medicine for the rest of one's life, the question of what else it might "cure" is tantalizing.

Other researchers see promise in drugs that do the opposite — speeding or expanding the waves of messages — to ease the effects of such ills as Lou Gehrig's disease, Huntington's disease, multiple sclerosis, epilepsy, stroke, schizophrenia, anxiety and depression.

But would the medical marijuana (or a lab-created version) a person is taking to ease the pain of her multiple sclerosis cancel out the rimonabant (a blocker) she's using to maintain a healthy weight?

If blocking the craving to eat too much also means blocking the pleasure one derives from food, is it worth it? What if blocking food cravings also means blocking any pleasure — or creativity — or relief from anxiety? What if a drug to treat excessive anxiety also blocks the part of the brain that could have learned calculus?

More research is needed, as the scientists like to say. This is the edge of a wide new field, filled with potential but also with at least a few caveats.

It is unlikely that one drug could block all pleasure, all pain, all anxiety or even all cravings.

Human brains have more than one way to register feeling, as well as systems that can step in if the primary system is out. We won't have a subset of the population made up of skinny but depressed people because of rimonabant, as one researcher has put it.

Sanofi-Aventis, which makes rimonabant, says it will seek FDA approval for the pill next spring.

In the short term, these "brain drugs" could offer great gains to very specific sets of people. But they should be tailored to each potential patient's situation rather than blanketing the market — or blanketing the TV channels.