Marijuana contains substances that continue to intrigue medical scientists and that clearly can reduce pain and suffering in some patients, but it also remains an open question about what advantages, if any, marijuana has over conventional drugs.

"There's no question that there are clear therapeutic indications for medical marijuana," said Steven Childers, a pharmacologist at Wake Forest University School of Medicine and a member of an Institute of Medicine panel that reviewed medical use of marijuana in 1999. "The big issue is whether the current legal drugs are better or worse than medical marijuana."

Few researchers have tried to compare marijuana head-to-head with conventional drugs ---- an expensive and complicated task.

Scientists know marijuana can reduce the nausea associated with chemotherapy, for example, but they don't know whether it is any better than conventional treatments. And it is known to elevate mood and relieve anxiety, but it's not clear whether it is more reliable or effective than other drugs now on the market.

There's a long list of diseases for which marijuana might be useful, said Billy R. Martin, chairman of pharmacology at Virginia Commonwealth University and another member of the Institute of Medicine panel. Almost all of those diseases involve symptoms that could be helped by mood elevation, appetite stimulation and pain relief, he said.
Those symptoms apply to patients undergoing chemotherapy, those with AIDS and people suffering pain of unknown origin, Martin noted. Reports also suggest that marijuana can ease the symptoms of multiple sclerosis.

"What's been difficult has been to get a precise answer [to questions of efficacy] when you're studying a plant material," Martin said. Different plants may have different potencies and smoking is an inexact method of drug delivery that makes many doctors uncomfortable.

Many patients receive morphine for pain, for instance, "but virtually no one smokes opium for that purpose," Childers said.

But simply extracting the Delta-9-THC, one of the active ingredients in marijuana, has its own problems, said Dr. Donald I. Abrams, a pioneering AIDS practitioner and medical marijuana researcher at the University of California, San Francisco. It is just one of about 400 components of marijuana smoke and "if you just remove the Delta-9-THC ... you do get different effects."

The effects of smoked marijuana can kick in within minutes, compared to hours required by a THC pill ---- marketed as Marinol -- Abrams said. And the ingested form is more psychoactive, which can result in unwanted hallucinations.

Childers said some chemotherapy patients who get no relief from Marinol do get help from smoking marijuana.

Efforts are under way in Martin's lab and elsewhere to produce THC that can be inhaled using a nebulizer, allowing it to reach the brain faster. The molecule isn't water soluble, so attempts to turn it into a mist can result in "gloppy gunk," Childers said.

One good thing, he said, is that "there's more to medical marijuana than just marijuana." Pharmaceutical companies are striving to learn some of the tricks of the plant and use them to develop more effective synthetic drugs.

The French pharmaceutical firm Sanofi-Aventis, for instance, has developed a drug called rimonabant that blocks cannabinoid receptors in the brain. The effect on appetite is the exact opposite of marijuana; rather than making a patient ravenous, it suppresses appetite. Sanofi says it hopes to begin marketing it as an obesity drug early next year.
The Supreme Court decision yesterday that said patients who use marijuana can be prosecuted under federal law even in states where it's been legalized has no effect on scientific studies. Licensed institutions, funded by either federal or state agencies, routinely study marijuana.

"I don't think there's going to be any impact from the Supreme Court on the science," Abrams said.

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