

RELEASE IN FULL

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**From:** Sullivan, Jacob J <SullivanJJ@state.gov>  
**Sent:** Tuesday, October 25, 2011 9:29 PM  
**To:** H  
**Subject:** Provigil

So I was wrong that it was invented by the military, but right about military use of/interest in it. Background on the drug below.

#### Provigil (Modafinil)

- Provigil is used to treat excessive sleepiness caused by narcolepsy or shift work sleep disorder (sleepiness during scheduled waking hours among people who work at night or on rotating shifts). It is also often prescribed to treat excessive sleepiness in patients with Parkinson's, Alzheimer's, and multiple sclerosis. Additionally, it has also gained a following among students, truckers, and others who want to stay awake for extended periods of time.
- o Modafinil was developed by the French firm Lafon and was approved by the FDA to treat narcolepsy in 1998. It is now sold under the brand name Provigil by the Pennsylvania drugmaker Cephalon.
- o Modafinil gained attention in the medical community because it is the first effective stimulant with no significant potential for abuse.
- Modafinil is in a class of medications called wakefulness promoting agents; it works by changing the amounts of certain natural substances in the area of the brain that controls sleep and wakefulness.
- o The precise way that modafinil works is unknown: it seems to slow the release a GABA, a sleep promoter in the brain. It may also affect the histamine system, which is connected to sleep regulation.
- o It can be used for two or three day stretches at a time, with few known side effects and little risk of addiction.
- Provigil's impact on the body is different from other pick-me-ups, which tend to be indiscriminate in their function: it confines its activity to the particular neurological processes connected with wakefulness and does not act as a broad stimulant. This is probably why it has not gained popularity as a street drug.
- o Amphetamines, on the other hand, promote wakefulness by causing dopamine to flood to the brain. Dopamine is a "broad hitter;" it sets the heart racing and makes the user feel high, impacting the entire central nervous system. Caffeine affects a different pathway that deals with the neurotransmitter adenosine, and is also a broad stimulant.
- The military, for obvious reasons, is interested in the consequences of prolonged sleep deprivation and has tested modafinil heavily, particularly on pilots.
- o A study carried out by the Air Force Research Laboratory found that fatigued pilots on modafinil maintained flight accuracy within approximately 15-30 percent of baseline levels, whereas performance under the no-treatment condition declined by as much as 60-100 percent. Here, benefits were most noticeable after 24-32 hours of continuous wakefulness. A French study yielded similar results and found that for missions of about 24 hours, modafinil for soldiers is preferable to naps.
- o In the U.S. military, modafinil has been approved for use on certain Air Force missions. The French, British, and Indian militaries have all expressed interest in modafinil.