
American Botanical Council

HerbClip

FILE: · Nicotine
· Tobacco

Date: July 11, 1996 HC 7-11-6-3

To: General Distribution

Re: **Pharmacology of Nicotine**

Vedantam, Shamkar. In nicotine debate, one thing is sure: it's powerful stuff. *Austin American Statesman*, April 7, 1996, pp. E1 and E6.

One of the most powerful known psychoactive drugs is nicotine, a combination of ten carbon atoms, 14 hydrogens, and two nitrogens. Put on the tips of arrows by ancient hunters, the nicotine in concentrated tobacco would block the autonomic nervous system of the animal shot with the arrow, paralyzing the diaphragm so that the animal could not breathe. It is immediately toxic only in large doses, and today millions of humans ingest nicotine in less concentrated forms, through cigarettes, cigars, and other tobacco products.

In the words of Jack Henningfield, a top government pharmacologist, nicotine “works like a drug; it looks like a drug; it is a drug pure and simple,” and cigarettes are “a drug delivery system.” When tobacco burns, it is highly toxic. “A cigarette is a little blast furnace. Any product that burns tobacco is almost impossible to have at an acceptable level,” says Henningfield.

Nevertheless, nicotine is being studied for its potential beneficial effects for Alzheimer's and Parkinson's disease patients. The more receptors one has in the brain, the more protection one has against getting these diseases, and nicotine seems to increase the number of receptors on brain cells. It acts like the chemical acetylcholine, which opens certain receptors like a key. This has apparent pleasurable effects; low doses of nicotine cause “arousal, stimulation, increased heart rate and blood pressure,” according to another top pharmacologist. An ideal medicine, however, would not carry the same dangers with it that nicotine does.