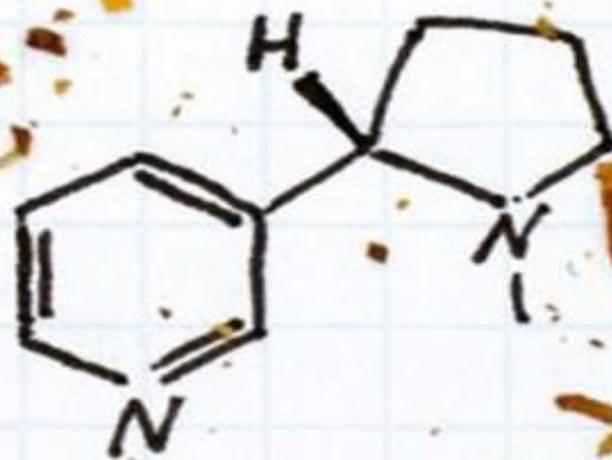
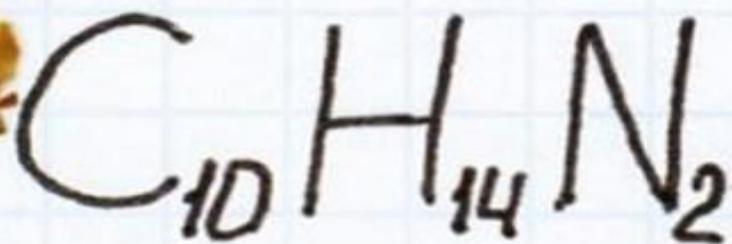
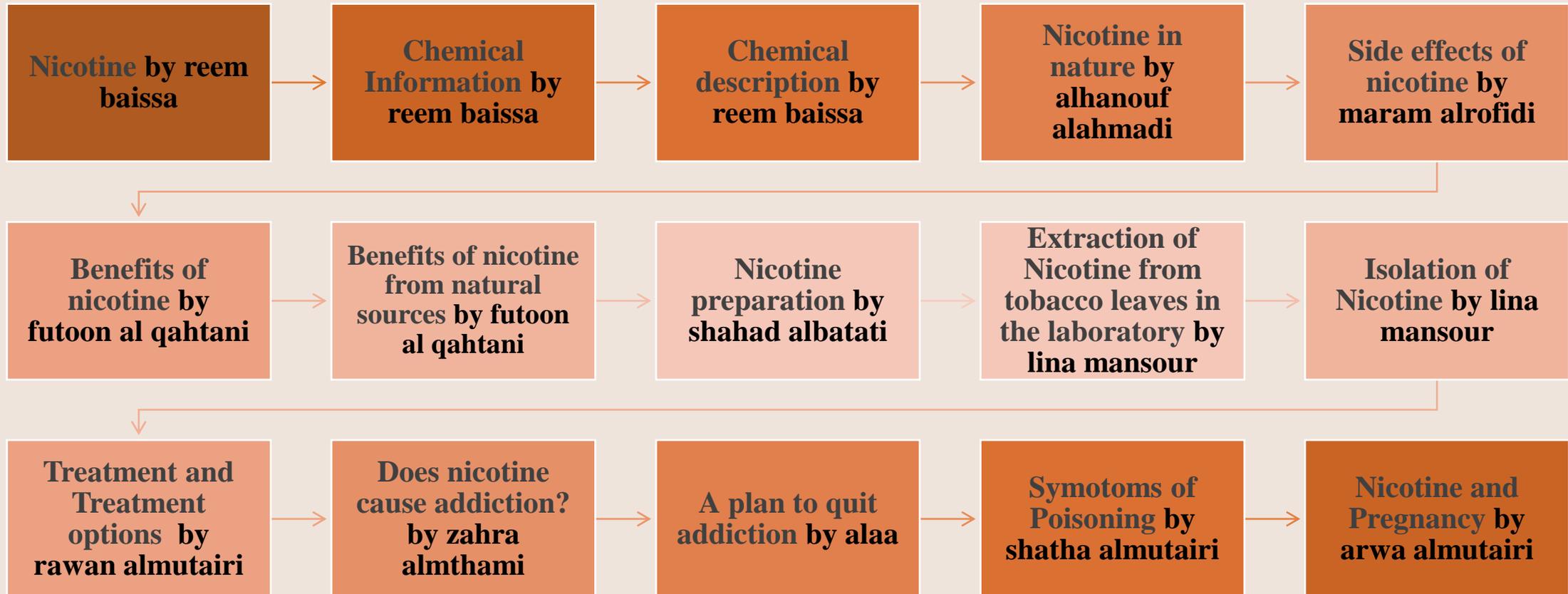
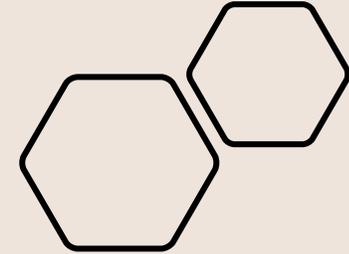


Nicotine



We wil talk about:



Nicotine

- **Nicotine is an organic compound that is alkaloid and toxic. It is found in nature in all parts of the tobacco plant ,The biosynthesis is found in the roots and collects in the leaves. Besides tobacco, nicotine is also found in tomatoes, potatoes, green peppers, eggplant, and more. It is also found in the coca leaves. Plants, especially tobacco, use nicotine as a means of defense against insects.**



Chemical Information

Chemical formula:

C₁₀H₁₄N₂

Systematic name:

(S)-3-[1-Methylpyrrolidin-2-yl]pyridine

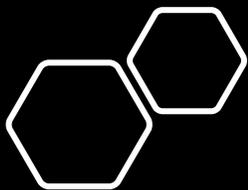
Trade Name:

Nicorette

Nicotrol

CAS-Number:

54-11-5



Chemical description:

- **Nicotine is an oily liquid with a strong aroma and a burning spicy taste. It is colorless when pure, turns yellow with air and light, and turns brown afterward. Nicotine is soluble in water**

Nicotine in nature

- **Nicotine is an alkaloid found in the nightshade family of plants (Solanaceae), predominantly in tobacco, and in lower quantities in tomato, potato, eggplant (aubergine), and green pepper.**
- **.Nicotine alkaloids are also found in the leaves of the coca plant.**
- **Nicotine constitutes 0.3 to 5 percent of the tobacco plant by dry weight, with biosynthesis taking place in the roots, and accumulates in the leaves.**
- **It is a potent neurotoxin and is included in many insecticides.**
- **In lower concentrations, the substance acts as a stimulant and is one of the main factors responsible for the dependence-forming properties of tobacco smoking**



Side effects of nicotine

- **Nicotine causes a wide range of side effects in most organs and systems:**
- **The circulation of the blood can be affected in the following ways:**
- **an increased clotting tendency, leading to a risk of harmful blood clots**
- **atherosclerosis, in which plaque forms on the artery wall**
- **enlargement of the aorta**
- **Side effects in the brain include:**
- **dizziness and lightheadedness**
- **irregular and disturbed sleep**
- **bad dreams and nightmares**
- **possible blood restriction**
- **In the gastrointestinal system, nicotine can have the following effects:**



Side effects of nicotine

- **nausea and vomiting**
- **dry mouth, or xerostomia**
- **indigestion**
- **peptic ulcers**
- **diarrhea**
- **heartburn**
- **The heart can experience the following after taking in nicotine:**
- **changes in heart rate and rhythm**
- **an increase in blood pressure**
- **constrictions and diseases of the coronary artery**
- **an increased risk of stroke joint pain**



Benefits of nicotine

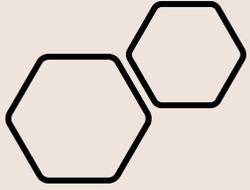
- **1-here is a new study that shows that nicotine has some benefits, such as that nicotine reduces nerve degeneration, and it can protect against aging, and it activates receptors in the human brain and increases human perception. And some researchers talked about the benefits of nicotine in losing weight, as it works to block the human appetite**
- **2-There is a study that says nicotine improves memory levels in people with mild amnesia.**
- **3-Some say that nicotine is similar to the caffeine found in coffee and tea, and that few of it are harmless, and that nicotine is harmful because of its use with tobacco, but using it correctly is not harmful to human health. Human health is largely negative, and death may occur in some cases. We also find that these benefits are still not scientifically proven. All of these studies are not proven false.**



Benefits of nicotine from natural sources

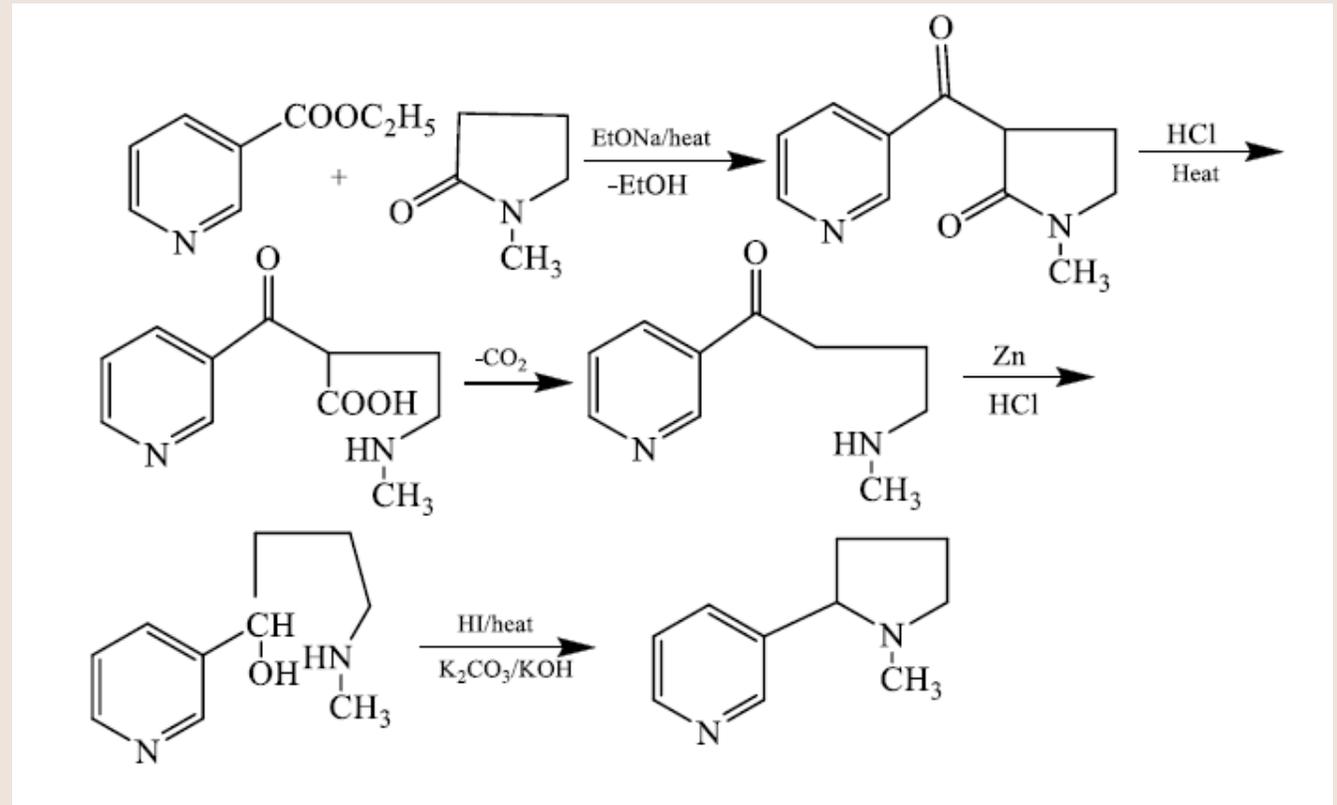
- 1-treat depression and anxiety
- 2-improve cognitive function
- 3-helps relax the body
- 4-treat some mental illnesses
- 5-prevention of neurological diseases





Nicotine preparation

- By the Clayzen method of ethyl nicotinate and N-methylpyrrolidine



A Nicotine extraction experiment



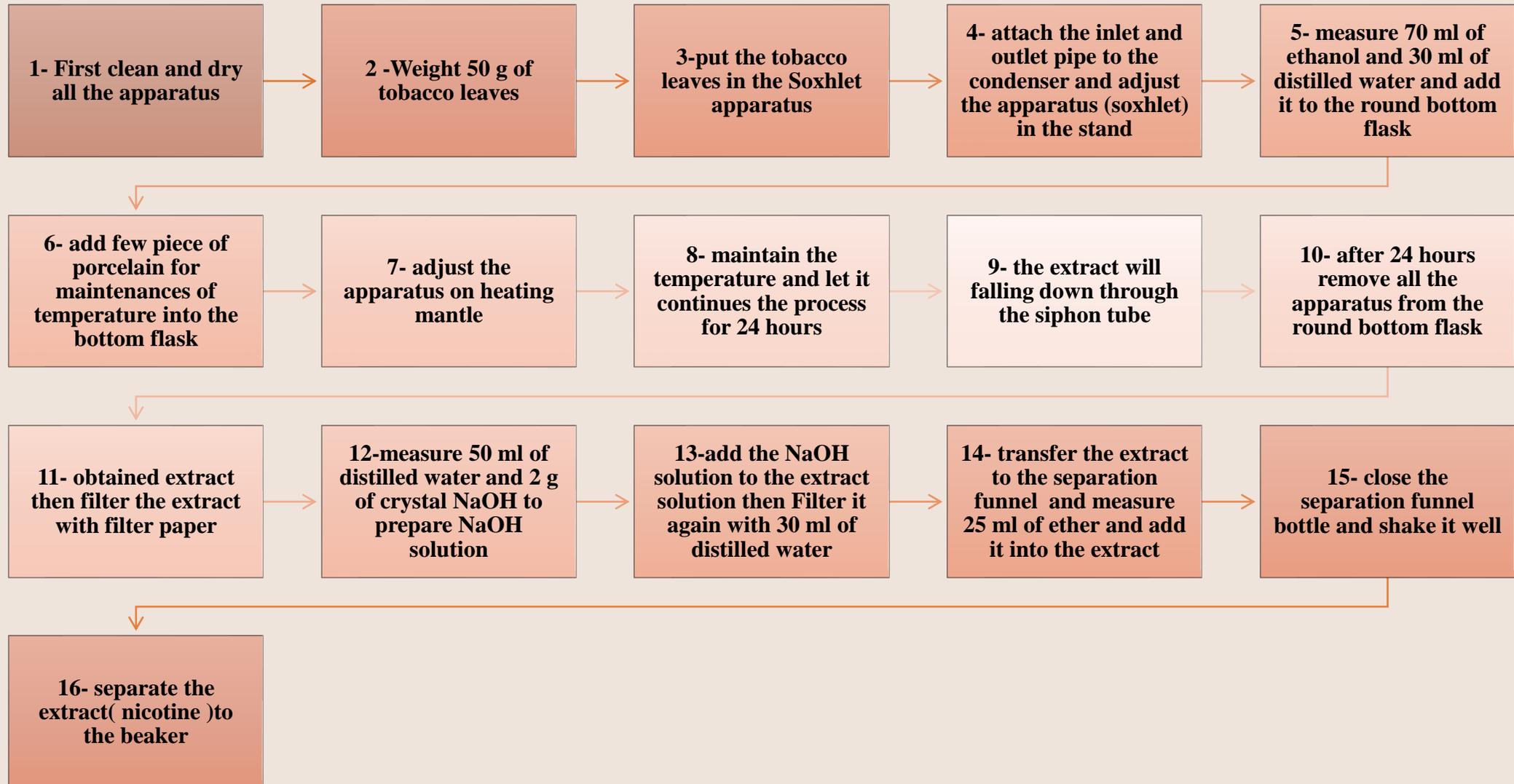


Chemicals

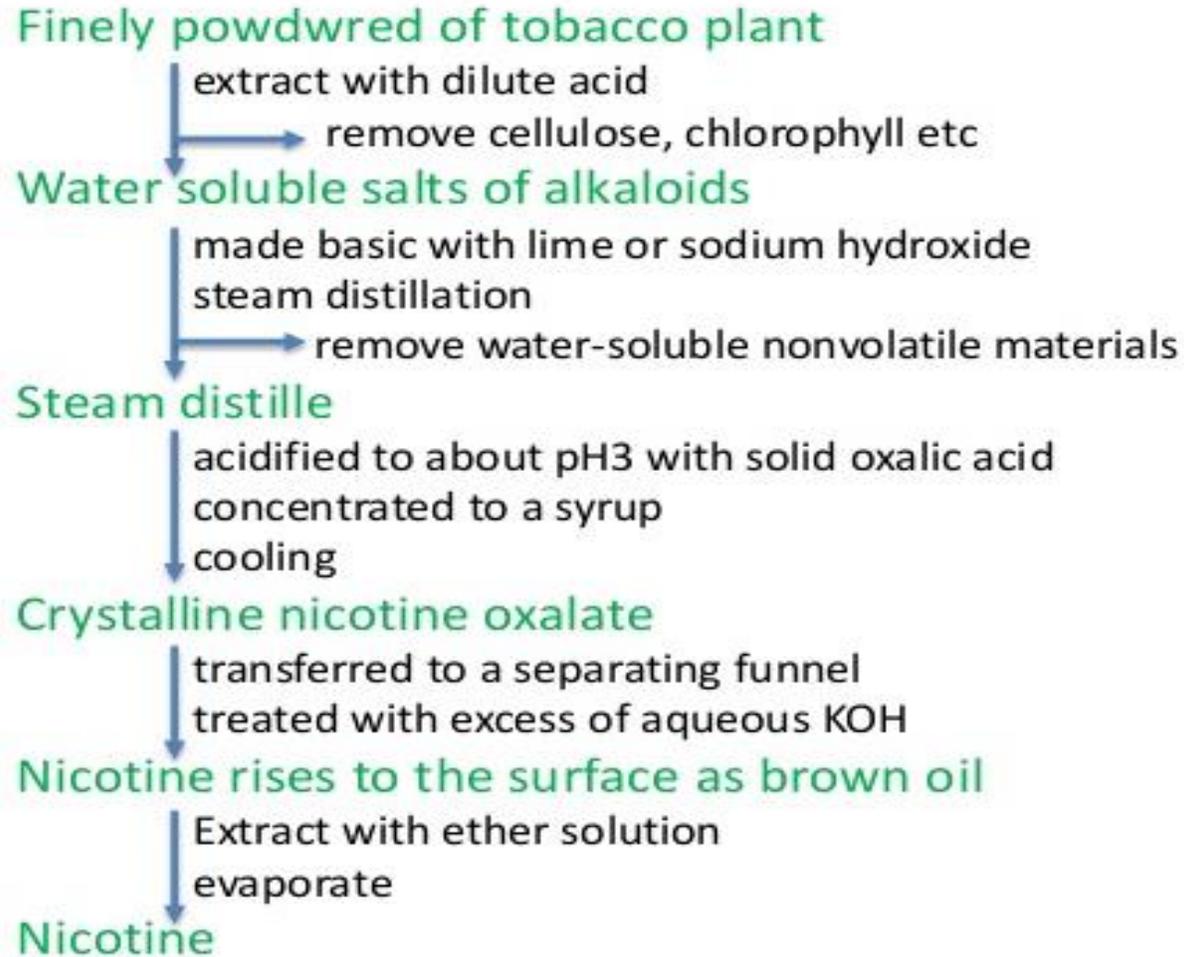


**Used
equipments**

Extraction of Nicotine from tobacco leaves in the laboratory



Isolation of Nicotine



Treatment

- **The primary therapeutic use of nicotine is treating nicotine dependence to eliminate smoking and the damage it does to health. Controlled levels of nicotine are given to patients through gums, dermal patches, lozenges, inhalers, or nasal sprays to wean them off their dependence. A 2018 Cochrane Collaboration review found high quality evidence that all current forms of nicotine replacement therapy (gum, patch, lozenges, inhaler, and nasal spray) therapies increase the chances of successfully quitting smoking by 50–60%, regardless of setting.**
- **Combining nicotine patch use with a faster acting nicotine replacement, like gum or spray, improves the odds of treatment success. 4 mg versus 2 mg nicotine gum also increase the chances of success.**
- **In contrast to recreational nicotine products, which have been designed to maximize the likelihood of addiction, nicotine replacement products (NRTs) are designed to minimize addictiveness.¹¹² The more quickly a dose of nicotine is delivered and absorbed, the higher the addiction risk.**



Treatment options

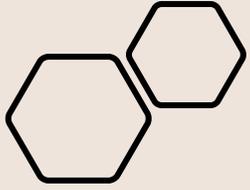
- Behavior modification
- Nicotine lozenges
- Nicotine gum
- Nicotine patches
- Nicotine inhaler
- Nicotine nasal spray
- Bupropion SR



Does nicotine cause addiction?

- **Yes, Nicotine is highly addictive.**
- **People who regularly consume nicotine and then suddenly stop experience withdrawal symptoms, which may include:**
 - **sense of emptiness**
 - **Anxiety**
 - **Depression**
 - **Moodiness**
 - **Irritability**
 - **difficulty focusing or attention**
- **The American Heart Association says that nicotine consumed from smoking tobacco is one of the hardest substances to quit. It is considered to be at least as hard as quitting heroin**
- **.A 2013 study showed that reducing the amount of nicotine in cigarettes also brings down their level of addictiveness**





A plan to quit addiction

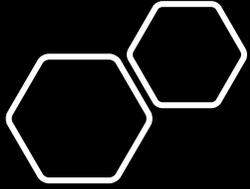
- **Determine an appropriate day to quit smoking**
The patient must make an effort to prepare to quit smoking during the week preceding the day set for quitting, such as trying not to smoke in enclosed Place, changing the preferred sitting place if it was previously a smoking site or reminding him of the desire to smoke, and removing all ashtrays from the house to avoid the longing for smoking And keeping indoor places smoke-free, also finding ways how to deal with urgent cravings for smoking, such as drinking water, sports, early sleep, and other methods.



And also ..

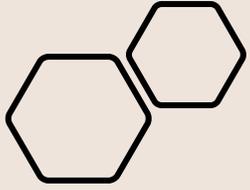
- There are some recipes that are used to reduce smoking, or get rid of toxins resulting from it .
- **Fenugreek:** A small spoon of fenugreek seeds is taken daily, so that the toxins resulting from the smoking process are eliminated
- **Radish:** The radish is squeezed and sweetened with sugar or honey, then at least one cup is drunk daily, in the event that you want to stop smoking
- **Herbs and melissa herbs:** Addiction can be treated with herbs, especially in cases of smoking, by using the herbs of haramel and melissa, where the melissa is soaked, and then drunk 3 times a day, taking 3 grams of Harmal powder





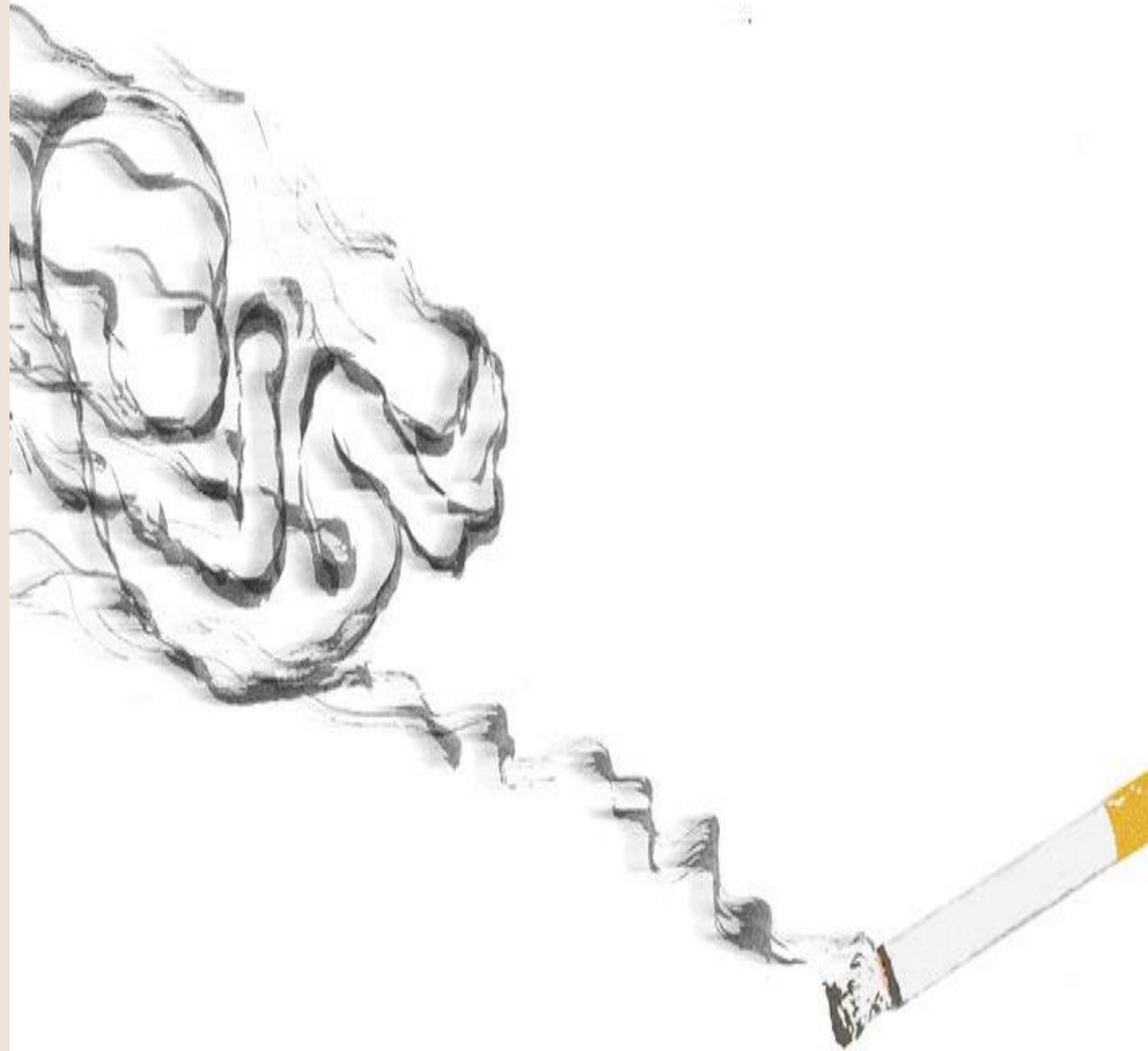
Symptoms of Poisoning

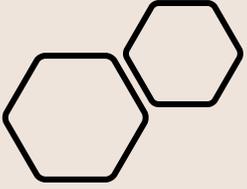
- Symptoms of acute nicotine poisoning include:
- 1-Dizziness
- 2-Diarrhea
- 3-feeling of nausea
- 4-desire to vomit
- 5- increase in salivation
- 6-Increased sweating
- 7-pallor of the skin
- 8-Cardiovascular disorders (arrhythmia, bradycardia, hypertensive crisis, spasm of large vessels)
- 9-Neurological symptoms (slurred speech, unconsciousness, shaky hands, loss of consciousness, neurosis-like conditions)
- 10-Nutritional disorders (weight loss)-



Nicotine and Pregnancy

- **If a pregnant woman smokes cigarettes and does not stop as she is supposed to do, then nicotine here may carry the following harms to her fetus:**
- **Diabetes.**
- **Infertility and fertility problems.**
- **Breathing problems.**
- **Behavioral problems and difficulties.**
- **Birth defects in the brain.**
- **high blood pressure.**
- **Obesity.**





المراجع

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- <https://www.sciencedaily.com/terms/nicotine.htm>
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- [file:///C:/Users/Louly/Downloads/extraction of nicotine from cigarettes%20\(2\).pdf](file:///C:/Users/Louly/Downloads/extraction%20of%20nicotine%20from%20cigarettes%20(2).pdf)
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