



Volume 2

March 2024

Drug Information Center Newsletter

In this volume you will read



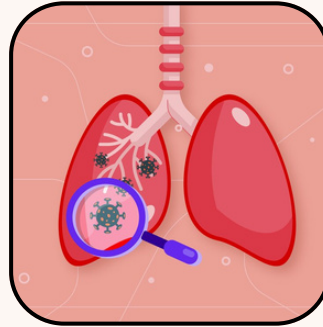
Periodontal
Disease

[Read more ...](#)



Hazards of
electronic
cigarettes and
vaping

[Read more ...](#)



Clopidogrel-
induced
pulmonary
disorder

[Read more ...](#)



Hepato-
protective
effect of
Ashwaganda

[Read more ...](#)

Periodontal Disease



Periodontal disease is one of the most common microbial infections in adults. It is an inflammatory disease of bacterial origin that affects the tooth-supporting tissues.

There are two major types of periodontal disease: gingivitis and periodontitis.

Gingivitis (gum inflammation) involves a limited inflammation of the unattached gingiva, is a relatively common and reversible condition. In contrast, periodontitis (gum disease) is characterized by general inflammation of the periodontal tissues, which lead to progressive destruction of the periodontal ligament and the alveolar bone. The progressive bone loss around the teeth, leads to the loosening, subsequent loss of teeth and the formation of periodontal pocket.

Periodontal Disease



Symptoms

The main signs of gingivitis are red, swollen and bleeding gums. The gums bleed when you clean your teeth, and sometimes for no obvious reason too. Gingivitis generally doesn't cause any pain or other symptoms, so it remains undetected for quite some time.

Periodontitis often doesn't cause any symptoms either until it has become advanced. As well as red and bleeding gums, it can also lead to sensitive teeth and receding gums ("long teeth"), sore gums and bad breath. If the gums are inflamed, they may start pulling away from the neck of the tooth. This causes gaps to form between the teeth and the gums, known as pockets. At a more advanced stage, periodontitis can cause teeth to shift position, start wobbling or hurt when you chew.

Periodontal Disease

Treatment

Gingivitis can usually be treated simply. Plaque and tartar are removed from teeth; the inflamed tissues around a tooth usually heal quickly and completely.

The treatment of periodontitis mainly focuses on the reduction of the total bacterial count. Conventional treatment methods include surgical and non-surgical management which includes mechanical scaling, root planning, often accompanied by antimicrobials.

Dental scaling and root planing is a two-part procedure that's often used as the first line of defense against gum disease. When plaque is not removed properly, it can harden to become tartar or calculus, which are difficult to remove with even proper home care. The bacteria cause the gum tissues to pull away from the teeth, creating periodontal pockets where even more bacteria can hide.



Dental Scaling



Root Planing

Periodontal Disease

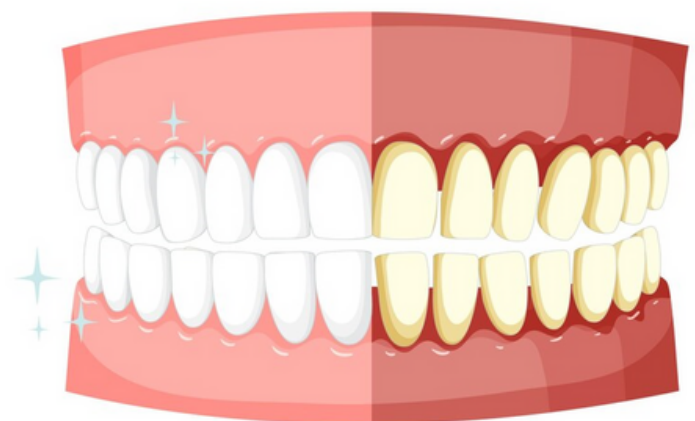
Dental scaling involves the removal of bacteria, plaque, and tartar from the gum pockets as well as the teeth surface both above and below the gum line. Root planing involves smoothing out the root surface to help your gums reattach and sealing the pocket so bacteria cannot get in.



How do I know if I need teeth scaling and root planing?

If your periodontist detects gum disease, they will likely recommend teeth scaling and root planing, but there are some general signs you can look out for as well:

- Persistent bad breath.
- Swollen gums.
- Bleeding gums.
- Pain when chewing.
- Teeth sensitivity.
- Receding gums.



Healthy teeth

Periodontitis

HAZARDS OF ELECTRONIC CIGARETTES AND VAPING

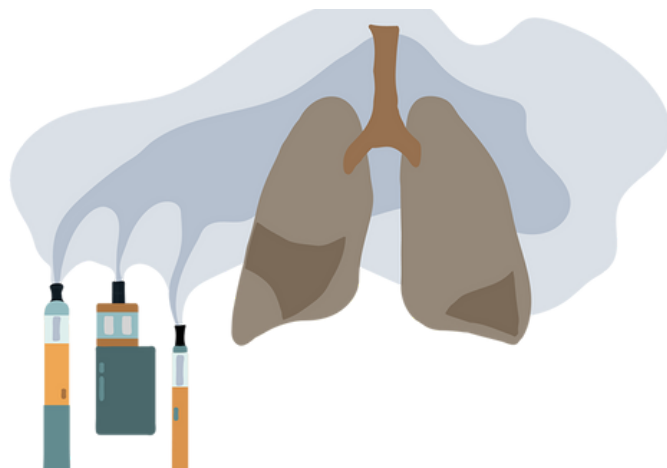


What Are E-cigarettes?

- E-cigarettes are electronic devices that heat a liquid and produce an aerosol, or mix of small particles in the air.
- E-cigarettes come in many shapes and sizes. Most have a battery, a heating element, and a place to hold a liquid.
- Some e-cigarettes look like regular cigarettes, cigars, or pipes. Some look like USB flash drives, pens, and other everyday items. Larger devices such as tank systems, or "mods," do not look like other tobacco products.
- E-cigarettes are known by many different names. They are sometimes called "e-cigs," "e-hookahs," "mods," "vape pens," "vapes," "tank systems," and "electronic nicotine delivery systems (ENDS)."
- Using an e-cigarette is sometimes called "vaping."

HAZARDS OF ELECTRONIC CIGARETTES AND VAPING

E-cigarettes produce a number of dangerous chemicals including acetaldehyde, acrolein, and formaldehyde. These aldehydes can cause lung disease, as well as cardiovascular diseases.



E-cigarettes also contain acrolein, a herbicide primarily used to kill weeds. It can cause acute lung injury and COPD and may cause asthma and lung cancer.

Both the U.S. Surgeon General and the National Academies of Science, Engineering and Medicine have warned about the risks of inhaling secondhand e-cigarette emissions, which are created when an e-cigarette user exhales the chemical cocktail created by e-cigarettes.



In 2016, the Surgeon General concluded that secondhand emissions contain, "nicotine; ultrafine particles; flavorings such as diacetyl, a chemical linked to serious lung disease; volatile organic compounds such as benzene, which is found in car exhaust; and heavy metals, such as nickel, tin, and lead."

HAZARDS OF ELECTRONIC CIGARETTES AND VAPING

How Does Nicotine Addiction Affect Youth Mental Health?

When a person is dependent on (or addicted to) nicotine and stops using it, their body and brain have to get used to not having nicotine. This can result in temporary symptoms of nicotine withdrawal.



Nicotine withdrawal symptoms include irritability, restlessness, feeling anxious or depressed, trouble sleeping, problems concentrating, and craving nicotine. People may keep using tobacco products to help relieve these symptoms.

Youth may turn to vaping to try to deal with stress or anxiety, creating a cycle of nicotine dependence. But nicotine addiction can be a source of stress.

What may start as social experimentation can become an addiction.

- The most common reason U.S. middle and high school students give for trying an e-cigarette is "a friend used them".
- The most common reason youth give for continuing to use e-cigarettes is "I am feeling anxious, stressed, or depressed".

HAZARDS OF ELECTRONIC CIGARETTES AND VAPING

What Are the Other Risks of E-cigarettes for Kids, Teens, and Young Adults?



Scientists are still learning about the long-term health effects of e-cigarettes. Some of the ingredients in e-cigarette aerosol could also be harmful to the lungs in the long-term. For example, some e-cigarette flavorings may be safe to eat but not to inhale because the gut can process more substances than the lungs.

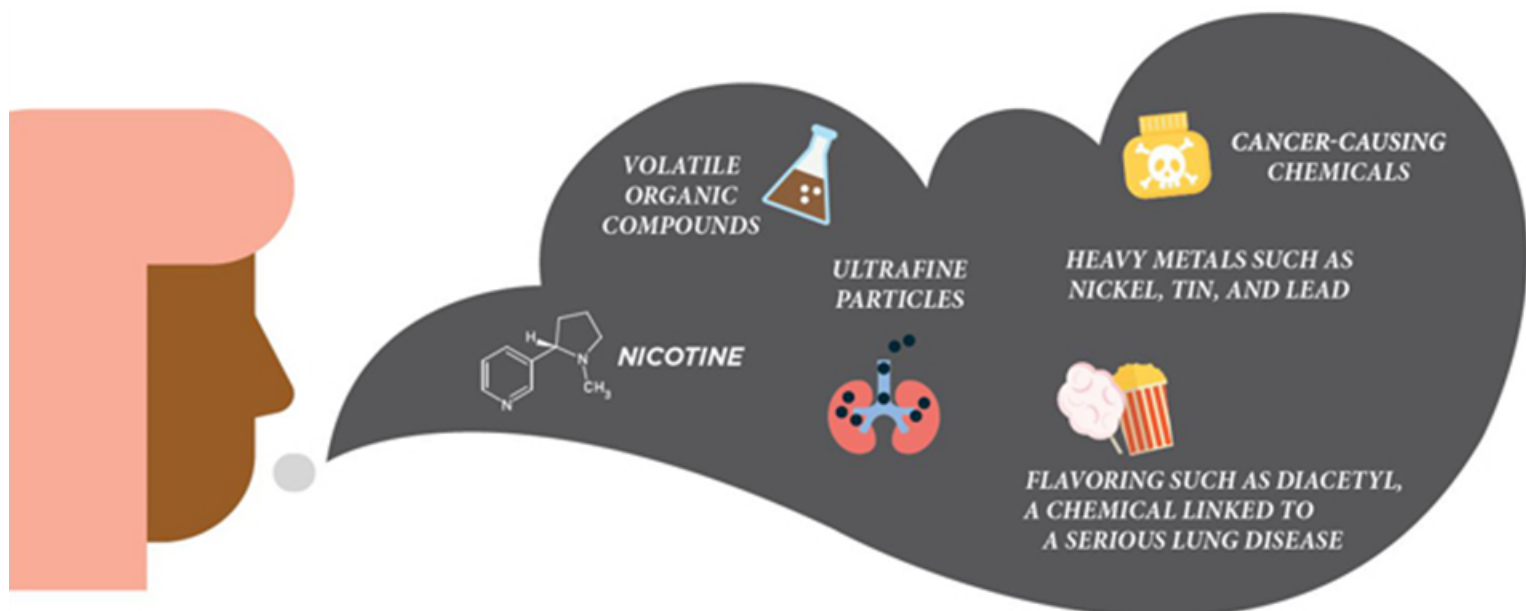
Defective e-cigarette batteries have caused some fires and explosions, a few of which have resulted in serious injuries.

Children and adults have been poisoned by swallowing, breathing, or absorbing e-cigarette liquid through their skin or eyes. Nationally, approximately 50% of calls to poison control centers for e-cigarettes are for kids 5 years of age or younger.

HAZARDS OF ELECTRONIC CIGARETTES AND VAPING

What Is in E-cigarette Aerosol?

- E-cigarette aerosol is NOT harmless "water vapor."
- The e-cigarette aerosol that users breathe from the device and exhale can contain harmful and potentially harmful substances, including:



- It is difficult for consumers to know what e-cigarette products contain. For example, some e-cigarettes marketed as containing zero percent nicotine have been found to contain nicotine.

HAZARDS OF ELECTRONIC CIGARETTES AND VAPING

What Can I Do to Prevent My Child from Using E-cigarettes or to Help Them Stop?

- Talk to your child or teen about why e-cigarettes are harmful for them. It's never too late.
- Set a good example by being tobacco-free and ensure that your kid is not exposed to the secondhand emissions from any tobacco products, including e-cigarettes.
- Encourage your child to learn the facts and get tips for quitting tobacco products .
- Speak with your child's teacher and school administrator about enforcement of tobacco-free school grounds policies and tobacco prevention curriculum.
- Set up an appointment with your child's health care provider so that they can hear from a medical professional about the health risks of tobacco products, including e-cigarettes.



Clopidogrel-induced pulmonary disorder

Clopidogrel is an antiplatelet drug like aspirin, ticagrelor, and prasugrel which is used in the treatment and prevention of thromboembolic events, and cardiovascular and cerebrovascular complications, especially in coronary artery disease patients. The administration period of clopidogrel is about 6-12 months.

Multiple case reports present different pulmonary events associated with clopidogrel administration such as aspiration pneumonia (AP), alveolar damage, pleural effusion, post-stroke infections including pneumonia, and interstitial lung disease (ILD) that cause lung fibrosis.

Despite all these mechanisms, that's assuring to know all case reports that indicated clopidogrel-induced lung toxicity in the early stages manage this toxicity mainly through the discontinuation of clopidogrel oral administration.

Several studies also indicate that using another antiplatelet drug such as aspirin or ticagrelor may reduce these pulmonary events. However, we still warrant more studies to understand the pathophysiology of antiplatelet especially clopidogrel-induced initiation and progression of this toxicity.

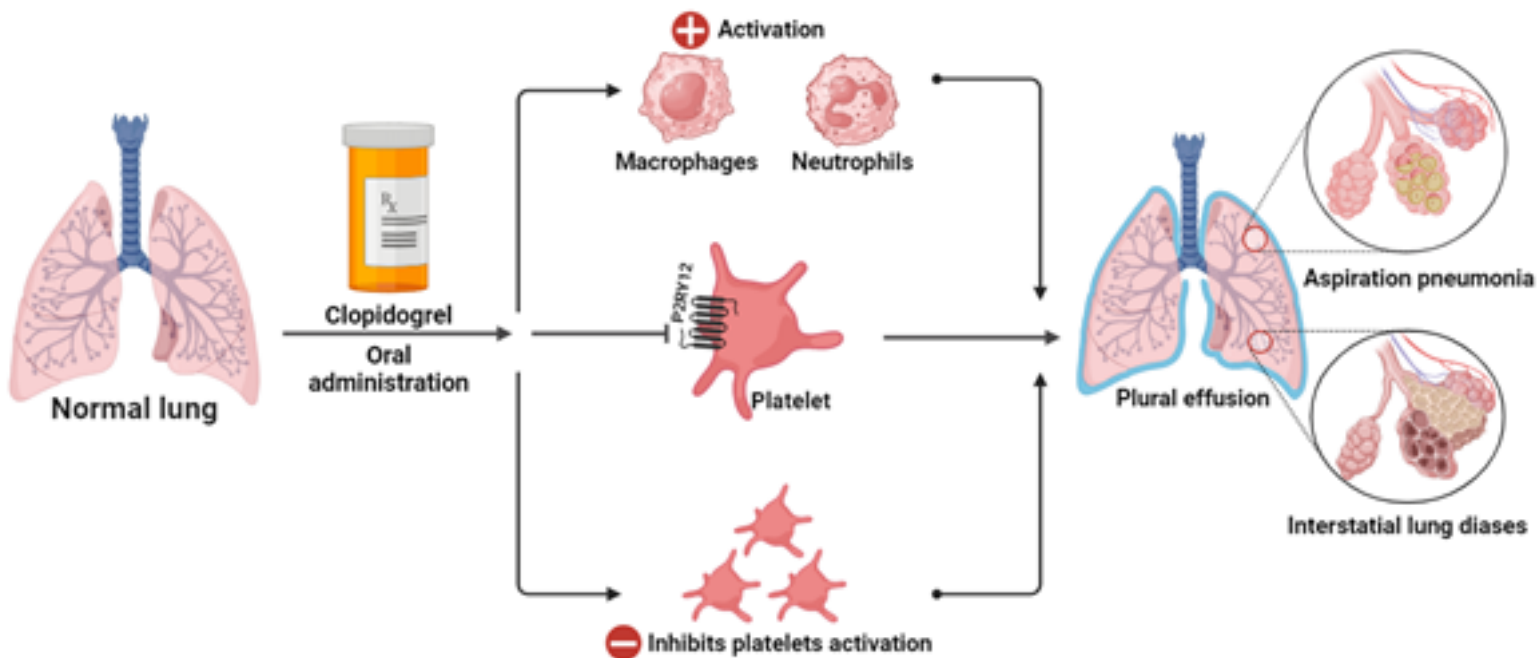


Clopidogrel-induced pulmonary disorder

The first mechanism is the hypersensitivity to clopidogrel. Clopidogrel may activate neutrophils and macrophages leading to fibrosis and scarring which occurs in approximately 1% of patients.

The second mechanism is related to its antiplatelet effect since it binds specifically and irreversibly to the platelet P2RY12 purinergic receptor, inhibiting ADP-mediated platelet activation and aggregation resulting in alveolar hemorrhage.

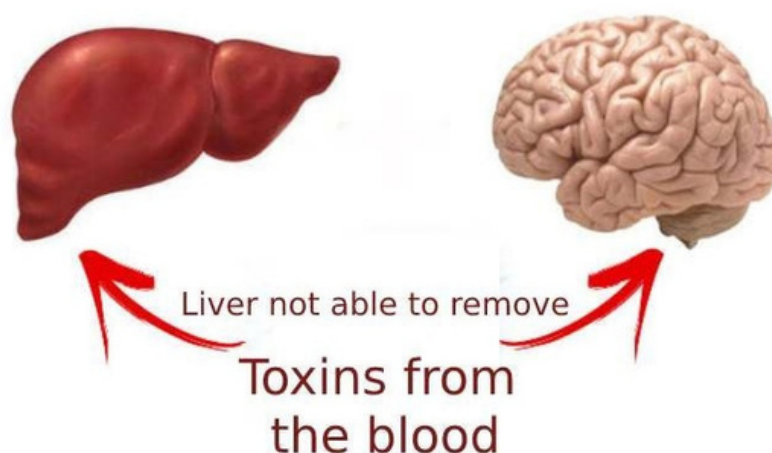
The third mechanism is considered a sequential reason for inhibiting the platelet activation and thus probably increases the risk of infection via suppressing the platelet-mediated immune response.



Hepato-protective effect of Ashwaganda

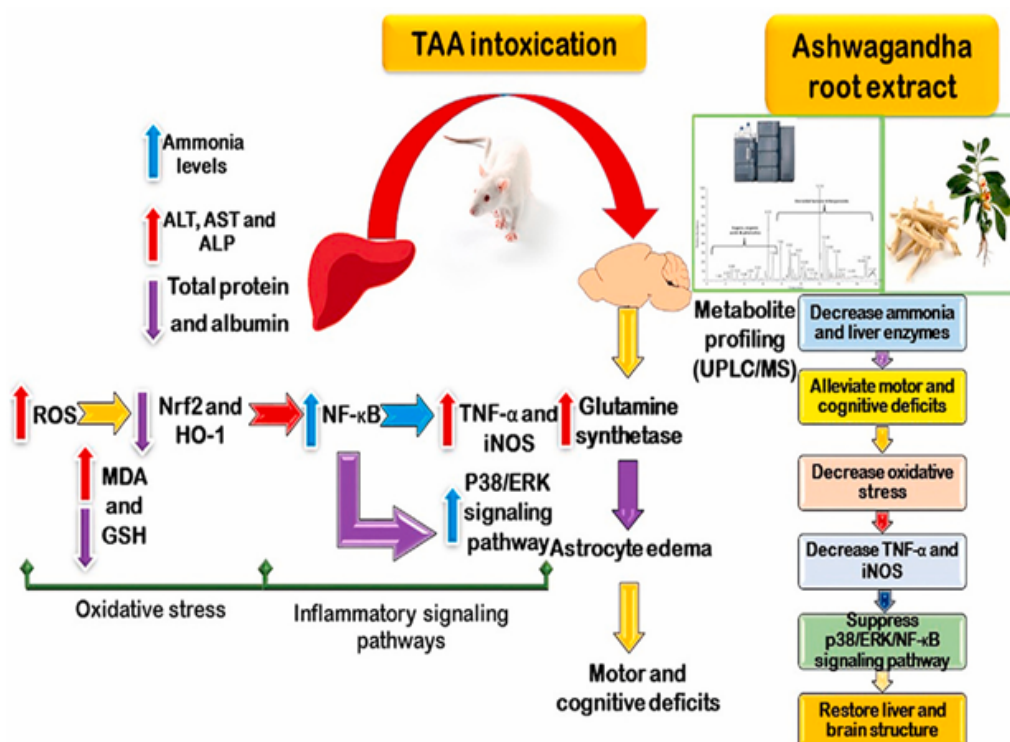
Ashwagandha is one of the medicinal plants used in traditional Indian , for their broad range of pharmacological activities including, tonic, energy stimulant, and counteracting chronic fatigue. Besides, it is used in the treatment of nervous exhaustion, memory-related conditions, insomnia, as well as improving learning ability and memory capacity. Ashwagandha is preclinically proven to be efficient in hepatoprotection and improving cognitive impairment, however, its effects against hepatic encephalopathy is still unclear. Hyperammonemia is commonly agreed to be responsible for the clinical, pathological, and neurochemical alterations in hepatic encephalopathy. Additionally , inflammation and oxidative stress are involved in hepatic encephalopathy progression.

Hepatic encephalopathy



Hepato-protective effect of Ashwagandha

Ashwagandha improved the locomotor and cognitive deficits, serum hepatotoxicity indices and ammonia levels, as well as brain and hepatic histopathological alterations. Ashwagandha reduced hepatic and brain levels of oxidative stress, and increased their antioxidant capacity. In conclusion, it's well-established that hyperammonemia, and the increase in oxidative stress, proinflammatory cytokines and mediators, and the suppression of apoptotic signaling cascade served as inter-connecting pathways in hepatic encephalopathy. Also, the hepato- and neuroprotective effects of Ashwagandha could be attributed to suppressing hyperammonemia and cognitive impairments, as well as its anti-inflammatory and antioxidant activities.





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