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Memorial Sloan Kettering
Cancer Center

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Ephedra is a stimulant that has caused heart attack and stroke resulting in several deaths.

Ephedra contains ephedrine and pseudoephedrine, which are known to stimulate the central nervous system (brain and spinal cord). They activate the “fight or flight” response, resulting in constriction of blood vessels, relaxation and dilation of air passages, appetite suppression, and general stimulant effects. While these effects explain the use of ephedra as a decongestant, weight loss supplement, and anti-asthma agent, in high doses ephedra can raise blood pressure and cause adverse reactions such as stroke and heart attack. Even a single dose of an ephedra containing supplement can cause dangerous increases in blood pressure and effects on heart function.

Laboratory studies indicate that ephedra also can kill bacteria on contact, reduce inflammation, and cause contraction of the muscles of the uterus. These effects have not been studied in humans.

What are the potential uses and benefits?

- To treat asthma
Ephedra may stimulate bronchial dilation. Alkaloids from ephedra have been used in over-the-counter medication as asthma remedies and nasal decongestants.
- To treat coughs and bronchitis
Ephedra may stimulate bronchial dilation, but human data are lacking. The risk of dangerous side effects of ephedra may outweigh any benefits.
- To treat the common cold
No scientific evidence supports this use.
- To treat infections
Laboratory studies show that ephedra has antibacterial properties.
- To promote urination
There are no data to back this claim.
- For strength and stamina
Ephedra stimulates the central nervous system, but human data are lacking. The risk of dangerous side effects of ephedra may outweigh any benefits.
- To lose weight
Even though a few clinical trials suggest that people taking ephedra lose weight, ephedra is not safe to use, even at normal doses.

What are the side effects?

- Headache
- Hypertension
- Gastric mucosal injury
- Palpitations
- Heart attack
- Stroke
- Seizures
- Insomnia
- Psychosis
- Death
- Acute bilateral ocular pain and decreased vision along with headache, nausea and vomiting: In a 52-year-old woman after taking a herbal medicine containing ephedra for weight loss. Her symptoms resolved following treatment with antiglaucoma medications.

What else do I need to know?

Patient Warnings:

- The FDA banned the sales of ephedra-containing dietary supplements as they pose significant health risks.

Do Not Take if:

- You have any of the following conditions: Anxiety, high blood pressure, heart disease, glaucoma, prostate enlargement, or hyperthyroidism.
- You are pregnant. (Ephedra can stimulate contraction of the uterus).
- You are taking aspirin (Ephedra may increase the risk of brain hemorrhage (stroke)).
- You are taking benzodiazepines or other sedatives (Ephedra may lessen their effects).
- You are taking beta-adrenergic agonists (Ephedra may have additive effects, possibly leading to toxicity).
- You are taking CNS stimulants (Ephedra may increase the stimulatory effects).
- You are taking monoamine-oxidase inhibitors (MAO-Is) (Use of ephedra at the same time can cause hypertensive crisis, or dangerously high blood pressure).
- You are taking theophylline (Ephedra may decrease its effects).
- You are taking digoxin (Use of ephedra at the same time can cause cardiac arrhythmia).

If you have any questions, contact a member of your care team directly. If you're a patient at MSK and you need to reach a provider after 5 p.m., during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Ephedra - Last updated on March 9, 2023

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