What are synthetic cannabinoids?
Synthetic cannabinoids are products that are marketed as being related to the active chemical in marijuana, commonly known as THC. THC is a naturally-occurring cannabinoid, while “synthetic” cannabinoids are manufactured chemicals. They are sold by many different brand names including “Spice” and “K2” and may be referred to as “natural or legal highs”, “herbal blends”, “potpourri”, or “incense.” They can be purchased from shops such as gas stations or head shops, or over the Internet. In reality, these products contain ground up, non-marijuana plant material that has been tainted with a synthetic version of THC.

How do synthetic cannabinoids differ from marijuana?
Although synthetic cannabinoids and marijuana are both sold for similar pleasurable effects (creating a sense of well-being and relaxation), synthetic cannabinoids produce more stimulant effects, similar to amphetamines, and are associated with significantly more adverse effects than marijuana.

How are synthetic cannabinoids used?
The plant material is either smoked or ingested.

Are synthetic cannabinoids safe to use?
Synthetic cannabinoids are often incorrectly assumed to be “safe” and “natural”, however, they have side effects that affect many organ systems including:

- Brain
  - Hallucinations/Psychosis
  - Anxiety/agitation
  - Confusion
  - Profound drowsiness
  - Seizures
- Heart
  - Fast heart rate
  - Heart attack
- Gastrointestinal
  - Nausea and vomiting
- Kidney
  - Kidney failure

Are synthetic cannabinoids illegal?
Yes. The Drug Enforcement Agency (DEA) has banned many synthetic cannabinoids and possession or distribution may be subject to criminal prosecution.

Are synthetic cannabinoids detectable in drug testing?
Yes. Though most are not detected on regular urine screens for marijuana, they can be detected by specialized testing.

Can synthetic cannabinoids cause long-term damage?
Since synthetic cannabinoids have only been around for a few years, the long-term effects are not completely understood. It is suspected that long-term effects may be similar to other stimulants and include lung damage, heart disease, and decreased sperm counts. Synthetic cannabinoids are known to cause physical dependence and cause withdrawal symptoms when use is stopped.

Created by Scott Lucyk, MD on behalf of the American College of Medical Toxicology