

# RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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## Synthetic cannabinoid products

The use of synthetic cannabinoid products has recently become increasingly popular as an alternative to marijuana, being promoted as 'legal herbal mixtures.' While the ingredients of these products are not explicitly revealed in any source, packaging information on the products claim that they are a combination of dried and ground herb and plant material (as many as 14 different ingredients), which is sprayed with synthetic cannabinoid or cannabinoidmimetic substances, and then packaged and marketed as incense.

The originator brand, 'Spice' (first available in 2002) has been studied the most extensively following reports of severe adverse effects that were inconsistent with those expected from listed ingredients. 'Spice' was shown to contain the cannabinoids JWH-018, JWH-073 and HU-2101. Synthetic cannabinoids have activity at the cannabinoid receptors CB1 and CB2, and have been reported to produce more potent effects than those seen with marijuana. Different combinations of the synthetic cannabinoids are used to mimic the psychoactive effects produced by marijuana. Internet forums and numerous websites suggest smoking these products induces a 'legal high' similar to that of cannabis. It is also worth noting that unlike cannabis, as tests to detect these compounds in blood, urine or saliva have not yet been developed; screening tests are currently not available. This is of considerable concern in relation to road traffic safety and workplace screening in relation to operation of heavy equipment (e.g. on mining sites) or where users may have contact with vulnerable individuals (e.g. health professionals, child care workers etc).

Products containing synthetic cannabinoids that have been available for sale in Australia include products known as *Kronic*, *Puff*, *Voodoo*, *Kaos*, *Kalma* and *Mango Kush*. There are over 40 variations of these types of product internationally, all of which contain different variations of synthetic cannabinoids. These products have also been found to be contaminated with different adulterants and the current lack of regulation by the TGA and regulatory authorities is of grave concern. 'Kronic,' a product that has been the subject of recent media attention in Australia, originates from New Zealand and has not long been available here.

Little objective data regarding adverse effects of these products exists, however several articles and case reports suggest that the effects peak and disappear within 30 minutes. Adverse effects including seizures, paranoia, anxiety, tachycardia, irritability, numbness, tingling, hallucinations, tremor, drowsiness, slurred speech, dilated pupils, vomiting, hypokalaemia and hypertension have all been documented.

As would be expected, there is no data relating to the effect of the use of 'Kronic' or similar products during pregnancy, however it is not unreasonable to extrapolate information regarding the use of cannabis in pregnancy, which suggests unfavourable outcomes. Cannabis use by pregnant women is reported to be responsible for an array of abnormalities including reduced foetal growth, congenital defects and abnormal neurobehaviours in the newborn, which can persist into infancy, childhood and adolescence. Children exposed to cannabis *in utero* are also at higher risk of leukaemia.

Up to now there has been some conflicting information regarding the legality of synthetic cannabinoids, with some sources calling them 'legal weed' while others, including the National Cannabis Prevention and Information Centre suggesting that they are in fact illegal. As from 17 June 2011 a ban on synthetic cannabinoids came into effect in SA, WA, Queensland, Tasmania and Victoria have also announced that these jurisdictions are also proceeding towards bans.

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