

BRIEFING

Does cannabis oil really help people?

Alison George

MEDICINAL cannabis is in the headlines after Billy Caldwell, a 12-year-old British boy with severe epilepsy, had his cannabis oil medication confiscated. The UK government has now announced a review into medicinal cannabis. Here's what you need to know.

What is cannabis oil?

Cannabis oil is extracted from the cannabis plant, *Cannabis sativa*. Some varieties of the plant contain high levels of the psychoactive substance tetrahydrocannabinol (THC). The plant's other major chemical component is cannabidiol, which has little or no psychoactive effect.

So can cannabis oil make you high?

It depends on the THC level. Some types of the plant, known as hemp, contain little THC. Extracts from these contain mainly cannabidiol.

Is cannabidiol legal?

It is legal in the UK. Cannabis oils are available in high-street shops,

but the THC content must be below 0.2 per cent. The oil used to treat Billy Caldwell, which was obtained in Canada, contained a higher dose. And cannabidiol is illegal in many other countries. In the US, it is a schedule 1 substance, the most stringently controlled, and can be sold only in states where cannabis use is legal.

What is the evidence that cannabis oils can help treat epilepsy?

Recent trials showed that cannabidiol is effective at treating two severe forms of epilepsy: Lennox-Gastaut syndrome and Dravet syndrome. The issue is less clear for commercial cannabis oils, where evidence is mainly anecdotal, and oils can contain differing amounts of THC.

Are there any cannabis-based epilepsy drugs on the market?

Yes. On 25 June, the US Food and Drug Administration approved a drug called Epidiolex for Dravet syndrome and Lennox-Gastaut syndrome (see page 7). The active ingredient is cannabidiol. This is



Billy Caldwell and his mother, Charlotte

the first time the FDA has approved a drug that contains a purified form of marijuana.

The drug contains no THC. "There is currently very little scientific evidence to support cannabis oil containing both THC and cannabidiol as a treatment for epilepsy," said the charity Epilepsy Action, in a statement.

Are cannabis-based medications available for other conditions?

They are. A synthetic version of THC called nabilone has been used since the 1980s to treat nausea after chemotherapy. A drug called Sativex is also approved in some countries, but not the US, to treat pain and

spasms in multiple sclerosis. It contains high levels of THC as well as cannabidiol and so would be unsuitable for treating children with epilepsy.

What is the aim of the UK government's review?

First, it will look at the evidence for the therapeutic value of cannabis-based products. Depending on what that discovers, the Advisory Council on the Misuse of Drugs can recommend a change to the legal medical status of cannabis and its active ingredients. ■

Mystery gibbon found in ancient royal tomb

AROUND 2200 years ago, the grandmother of the first emperor of China was laid to rest. But Lady Xia was not alone in death. Buried alongside her was a previously-unknown species of gibbon, and the ape was probably her pet.

Lady Xia's tomb in modern-day Shaanxi, the second largest known in China, was excavated in 2004. Inside, the partial facial bone and lower mandible of an ape was found. Now,

analysis of the bones has revealed it to be an entirely new species.

The ape was identified by Sam Turvey at the Institute of Zoology in London and his team, who named it *Junzi imperialis*.

The facial bone (pictured) has upper teeth including two large canines, the nose cavity and part of the eye socket and forehead. The mandible also includes teeth.

Enough detail remained for distinctive features in the cranial bone and teeth to be compared with corresponding ones from data sets of hundreds of gibbons from present-day species. The comparisons revealed *Junzi* was also a new genus,



The newly discovered ape is another species we seem to have wiped out

separate from the four known surviving ones (*Science*, doi.org/crd8).

Turvey's team thinks the gibbon evolved locally, as the tomb also held remains of other animals native to the Shaanxi region of central China, including a leopard and a black bear.

No gibbons have been seen in the area for hundreds of years. "This is a warning, another piece of evidence we've caused the loss of species well before the last 200 years," says Susan Cheyne at the University of Kent, UK.

All 20 of the world's remaining gibbon species are endangered. They include China's Hainan gibbon, of which only 26 remain. Andy Coghlan ■