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Once popular in the treatment of pain, coughs, and diarrhoea, codeine is falling out of favour with doctors. The World Health Organization dropped it from its list of recommended medicines for pain in children in 2012. Why the turnaround?

Harnessing flower power

Like morphine, codeine is derived from the opium poppy. Its name is derived from the Greek word ‘kodeia’ for poppy head.

Flowers and plants have long been known to harness medical properties: aspirin [4]derived from willow bark, heart medicines from foxgloves. Dr Edward Bach’s use of wildflowers in his famous flower remedies—and a suggestion that crocuses [5]could be used in cancer drugs.

Codeine and morphine

Much of today’s codeine is derived from morphine (or petroleum due to a shortage of poppies). Once in the body, codeine is broken back down into morphine and binds to receptors in the brain (to relieve pain) and gut (to treat diarrhoea).

These are the same receptors that your natural endorphins bind to, and this explains the sense of euphoria that can accompany morphine administration.

Codeine, being weaker than morphine, does not produce euphoria: it is also safer than morphine and much less addictive. It does, however, have only about 20% of the potency of morphine as a painkiller, so is mainly used for mild pain such as [6]headache [6], backache and less severe cancer pain.

Why the concern about codeine?

Codeine constipates. Sometimes severely. Laxatives are always advised when taking codeine. Side effects can also include vomiting, itchiness and even breathing problems at high doses.

The main concern, however, has been that even where codeine is meant to help (pain and cough), studies have shown it sometimes to be useless; other times to be deadly.

Patchy pain relief

Whether or not codeine works for you as a painkiller depends on your genetic make-up, since this determines how readily your liver can convert codeine into morphine. Some people are 'ultrafast metabolisers' and so risk codeine toxicity; others (up to 10% of Caucasians) are unable to metabolise codeine, so it is ineffective.

Young children are much less able to metabolise codeine than adults, so medicines such as paracetamol and ibuprofen are more appropriate.

For those children who are unusually fast metabolisers, codeine can be fatal: one Canadian study [7] reported two deaths in children receiving codeine for pain relief after removal of their tonsils.

Another study [8] showed that breastfeeding children can be at serious risk of codeine toxicity if their mothers are receiving codeine to help with the pain of childbirth. As a result, codeine is not advised for children under the age of 12 or for breastfeeding mothers.

Chocolate flavoured coughs

Scientists never fully discovered the mechanism by which codeine apparently suppresses the urge to cough—and now several studies [9] show that codeine is in fact hardly more effective than a placebo in treating cough. In contrast, trials have shown that chocolate might work wonders as a cough medicine.

Chocolate or codeine? I know which I would choose.

MEDICAL JOURNALISTS' ASSOCIATION

Links
[1] http://www.readersdigest.co.uk/health/health-centre/all-you-need-know-about-codeine [2] https://www.helencowan.co.uk/../tags/drugs [3] https://www.helencowan.co.uk/../tags/brain [4] http://www.readersdigest.co.uk/health/health-centre/everything-you-need-know-about-aspirin [5] http://www.bbc.co.uk/news/science-environment-14855666 [6] http://www.readersdigest.co.uk/health/health-a-z/aches-pains/headaches-and-migraines-how-cure-headache [7] http://www.ncbi.nlm.nih.gov/pubmed/22492761 [8] http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(06)69255-6/abstract [9] http://news.bbc.co.uk/1/hi/health/5159442.stm