

# Tylenol Isn't So Safe, But At Least It Works, Right?



By Josh Bloom — September 18, 2017



Nuff Said [1]

(Part 2/2) See: [Is Tylenol 'By Far the Most Dangerous Drug Ever Made?'](#) [2]

I'm not a big fan of Tylenol, which becomes rather obvious if you read the first part of this two-part series. For a drug that is so widely used, it is quite easy to consume enough, accidentally or otherwise, to take enough to suffer a toxic overdose due to irreversible liver damage.

But drugs cannot be judged by safety alone. Both the good and the bad - benefits and risks - must be taken into account to get the true measure of the quality of a drug. So if Tylenol isn't all that safe, you might expect that, at the very least, it should work well. Otherwise, why would so many people be taking it?

That's the \$64,000 question, and here's the answer. In reality, Tylenol doesn't work very well at all, and there is plenty of evidence to back this up, especially in systematic *Cochrane Reviews* - highly regarded, evidence-based reviews that carefully evaluate the quality of data in multiple studies. Here are some representative analyses.

## **Osteoarthritis of the Knee and Hip**

A group of five pain specialists and pharmacologists in Denmark examined seven studies of patients with hip- or knee osteoarthritis. All seven included a comparison between acetaminophen (used continuously for more than two weeks) with placebo. The [review](#) [3], entitled "Acetaminophen for Chronic Pain: A Systematic Review on Efficacy" was published in the journal *Basic & Clinical Pharmacology & Toxicology*. The conclusion:

*"All included studies showed no or little efficacy with dubious clinical relevance. In conclusion, there is little evidence to support the efficacy of acetaminophen treatment in patients with chronic pain conditions. Assessment of continuous efficacy in the many patients using acetaminophen worldwide is recommended."*

Z. Ennis, et. al., *Basic & Clinical Pharmacology & Toxicology*, 2016, 118, 184–189

Well, that doesn't sound so marvelous. Perhaps it's just a single bad paper. Or not.

### **Acute and Chronic Lower Back Pain**

A 2016 [Cochrane Review](#) [4] entitled "Paracetamol for low back pain" (1) examined the utility of Tylenol in treating lower back pain. The review included three trials with a total of 1825 participants, mostly middle-aged, who had acute back pain, and another trial in which the participants had lower back pain for more than six weeks. All of the trials also had a placebo arm. The drug was administered either orally or by IV in doses that ranged from one gram to four grams. How did that work? Ouch.

*"We found high-quality evidence that paracetamol (4 g per day) is no better than placebo for relieving acute LBP in either the short or longer term. It also worked no better than placebo on the other aspects studied, such as quality of life and sleep quality."*

B.Saragiotto et. al., *Cochrane Review*, June 2016

### **Back Pain, and Hip and Knee Osteoarthritis**

The hits keep coming. A 2015 [review](#) [5] in the *British Medical Journal* entitled "Efficacy and safety of paracetamol for spinal pain and osteoarthritis: systematic review and meta-analysis of randomised placebo-controlled trials" examined reports of 13 randomized trials. The review examined several measures of pain relief: pain intensity, disability, and quality of life in people with low back pain, and hip or knee osteoarthritis. and concluded:

*"Paracetamol is ineffective in the treatment of low back pain and provides minimal short term benefit for people with osteoarthritis. These results support the reconsideration of recommendations to use paracetamol for patients with low back pain and osteoarthritis of the hip or knee in clinical practice guidelines."*

M. Ferreira, et. al, *BMJ* 2015; 350

### **Headaches**

OK, so it doesn't work for back pain or arthritis, but that's OK because most people use it for headaches. Well, it works. Sort of. A [Cochrane Review](#) [6] entitled "Oral paracetamol for treatment

of acute episodic tension-type headache in adults" looks at just that. This may surprise you.

Things look OK at the beginning of the results sections: "*The International Headache Society recommends the outcome of being pain free two hours after taking a medicine. The outcome of being pain free or having only mild pain at two hours was reported by 59 in 100 people taking paracetamol 1000 mg...*"

It may not be perfect, but a 59% response isn't all that terrible. Until you read the rest of the sentence: "...and in 49 out of 100 people taking placebo. This means that only 10 in 100 or 10% of people benefited because of paracetamol 1000 mg.

Now, \*that's\* pretty bad. Of the 59 of you who are getting headache relief from the stuff either believed that their headache went away, or it went away within two hours on its own, not from the drug. So, the real efficacy of Tylenol is 10%. That's enough to give you a headache.

## Colds

Tylenol is often used to treat symptoms of a common cold. For a [cold](#) [7], the data are not as conclusive as in the studies about, but there is little evidence that acetaminophen is effective.

*"Acetaminophen may help relieve nasal obstruction and rhinorrhoea [runny nose] but does not appear to improve some other cold symptoms (including sore throat, malaise, sneezing, and cough). However, two of the four included studies in this review were small and allocation concealment was unclear in all four studies. The data in this review do not provide sufficient evidence to inform practice regarding the use of acetaminophen for the common cold in adults."*

S. Li, et. al, "Acetaminophen (also called paracetamol) for the common cold in adults." Cochrane Review, June 2013

## Tooth Pain

For a [pain following wisdom tooth extraction](#) [8], Tylenol is inferior when compared with ibuprofen (Advil), but when two are combined there seems to be a synergistic effect.

*"There is high quality evidence that ibuprofen is superior to paracetamol at doses of 200 mg to 512 mg and 600 mg to 1000 mg respectively based on pain relief and use of rescue medication data collected at six hours postoperatively. The majority of this evidence (five out of six trials) compared ibuprofen 400 mg with paracetamol 1000 mg, these are the most frequently prescribed doses in clinical practice. The novel combination drug is showing encouraging results based on the outcomes from two trials when compared to the single drugs."*

E. Bailey et. al, "Ibuprofen versus paracetamol (acetaminophen) for pain relief after surgical removal of lower wisdom teeth Cochrane Review, December 2013

## Fever

Tylenol is given to children to lower fever, and [it does so successfully](#) [9]. So do NSAIDs, such as aspirin and ibuprofen. There is some indication that giving the two together or alternating the drugs may be more effective, but the evidence is weak.

*"Paracetamol (also known as acetaminophen) and ibuprofen lower the child's temperature and relieve their discomfort.... There is some evidence that both alternating and combined antipyretic therapy may be more effective at reducing temperatures than monotherapy alone. However, the evidence for improvements in measures of child discomfort remains inconclusive."*

T. Wong, et.al., "Alternating and combined antipyretics for treatment of fever in children." Cochrane Review, October 2013

This article is not intended to be a comprehensive examination of every review about the efficacy of acetaminophen. There are undoubtedly studies that demonstrate efficacy, however, I chose to include (mainly) information from Cochrane, since it is widely considered to be a high-quality source for evidence-based medicine.

To wrap this up: acetaminophen largely ineffective. And I have already demonstrated why it is only marginally. This makes it one lousy drug.

Note:

(1) Paracetamol is another name for acetaminophen, the generic name of Tylenol. It is commonly used in Britain.

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**Source URL:** <https://www.acsh.org/news/2017/09/18/tylenol-isnt-so-safe-least-it-works-right-11827>

### Links

[1] [https://en.wikipedia.org/wiki/File:Symbol\\_thumbs\\_down.svg](https://en.wikipedia.org/wiki/File:Symbol_thumbs_down.svg)

[2] <https://www.acsh.org/news/2017/09/11/tylenol-far-most-dangerous-drug-ever-made-11711>

[3] <https://www.ncbi.nlm.nih.gov/pubmed/26572078>

[4] [http://www.cochrane.org/CD012230/BACK\\_paracetamol-low-back-pain](http://www.cochrane.org/CD012230/BACK_paracetamol-low-back-pain)

[5] <http://www.bmj.com/content/350/bmj.h1225>

[6] <http://uk.cochrane.org/news/featured-review-oral-paracetamol-treatment-acute-episodic-tension-type-headache-adults>

[7] [http://www.cochrane.org/CD008800/ARI\\_acetaminophen-also-called-paracetamol-common-cold-adults](http://www.cochrane.org/CD008800/ARI_acetaminophen-also-called-paracetamol-common-cold-adults)

[8] [http://www.cochrane.org/CD004624/ORAL\\_ibuprofen-versus-paracetamol-acetaminophen-for-pain-relief-after-surgical-removal-of-lower-wisdom-teeth](http://www.cochrane.org/CD004624/ORAL_ibuprofen-versus-paracetamol-acetaminophen-for-pain-relief-after-surgical-removal-of-lower-wisdom-teeth)

[9] [http://www.cochrane.org/CD009572/INFECTN\\_alternating-and-combined-antipyretics-for-treatment-of-fever-in-children](http://www.cochrane.org/CD009572/INFECTN_alternating-and-combined-antipyretics-for-treatment-of-fever-in-children)