

THE EDITOR'S CORNER

Pain Relief Rundown

Tooth discomfort is a normal aspect of orthodontic treatment, particularly when starting new appliances or making archwire adjustments. Parents frequently inquire about over-the-counter pain relievers such as aspirin, Advil, Aleve, or Tylenol to mitigate the soreness. With so many options available—and each acting somewhat differently—it can be challenging to determine the best choice for our patients. Let's take a closer look at the mode of operation and potential side effects for each one.

Aspirin, Advil, and Aleve—all the As—are nonsteroidal anti-inflammatory drugs (NSAIDs) that are widely used to relieve pain, reduce inflammation, and lower fever. They function by blocking two cyclooxygenase enzymes, COX-1 and COX-2, which produce prostaglandins—the chemicals released by cells in response to tissue damage or illness. Additionally, COX-1 assists in blood clotting and protects the stomach lining. Most NSAIDs inhibit both enzymes, which is why long-term use can lead to gastrointestinal bleeding.

Aspirin, or acetylsalicylic acid, is unique among NSAIDs in that it permanently inhibits COX-1 and COX-2 enzymes. This not only alleviates pain and inflammation, but also provides the blood-thinning effects that are commonly prescribed to prevent heart attacks and strokes. Compared to other NSAIDs, aspirin poses a higher risk of stomach irritation. While it can relieve mild tooth pain, it's usually not the first choice of medication.

On the other hand, Advil, or ibuprofen, is a popular choice for managing tooth and TMD soreness because of its rapid and effective analgesic and anti-inflammatory properties. Unlike aspirin, it temporarily inhibits COX enzymes, reducing swelling and discomfort while minimizing the risk of gastrointestinal side effects. It is generally well tolerated when taken short-term with food. This balanced action also makes Advil a good option for most patients.

Although Aleve, or naproxen, is less commonly recommended by orthodontists, it shouldn't be overlooked. As an NSAID, it functions similarly to Advil but binds to COX enzymes for a longer

duration, extending its anti-inflammatory effects. For example, while Advil is taken every four to six hours, Aleve lasts eight to 12 hours. This prolonged action makes it a practical option for managing chronic pain, such as jaw discomfort or muscle inflammation associated with TMD.

Tylenol, or acetaminophen, is not classified as an NSAID and therefore lacks anti-inflammatory properties. Unlike NSAIDs, it does not inhibit COX enzymes in peripheral tissues; instead, it acts primarily within the central nervous system to reduce pain perception. Its minimal impact on the gastrointestinal tract makes it a safer option for certain patients. Tylenol is often used when NSAIDs are contraindicated, or combined with them to enhance pain control.

Many orthodontists recommend Tylenol for dental pain because NSAIDs may reduce prostaglandin production and thus inhibit osteoclastic activity, potentially interfering with bone remodeling and slowing tooth movement.¹ Advil is often preferred for TMJ pain, where inflammation is a key factor. Nevertheless, the research regarding the effects of NSAIDs on tooth movement remains inconclusive.² I recommend Advil Liqui-Gels to all patients due to their fast-acting relief.

In review, NSAIDs reduce pain, inflammation, and fever, whereas Tylenol primarily relieves only pain and fever. Remember, there's no "I" in Tylenol—because it's ineffective for inflammation. Whether you choose to prescribe Tylenol for tooth pain and NSAIDs for muscle pain, or you prefer to keep it simple like I do, either option can work just fine. The next time a mom asks you to recommend a pain medication, I hope selecting the best one won't be such a pill.

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REFERENCES

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