

# Turning Down Pain Amplifiers

*"In KappArest, 7 of the 8 ingredients have documented activity in suppressing NF-kappaB."*

As most of you know, curcumin is emerging as one of the "rock stars" in the anti-inflammatory botanical world. One reason why curcumin works is its ability to naturally inhibit NF-kappaB. So here's a review about NF-kappaB, including a diagram you can use with patients.

NF-kappaB is a protein complex that acts as an intracellular 'amplifier' that promotes inflammation. This simplified diagram illustrates how NF-kappaB is inhibited or amplified. In the cytosol of every cell, NF-kappaB is made inactive by inhibitor Kappa B (I $\kappa$ B). However exposure to stressful stimuli such as LPS, (lipopolysaccharides) or excess oxidative stress activate "inhibitor kappa B kinase" (IKK ) and phosphorylate (I $\kappa$ B )for destruction. Once I $\kappa$ B is destroyed the NF-kappaB is free to bind with DNA.



When activated NF-kappaB enters the nucleus and binds with DNA to activate genes. Genes are then encoded to increase the production of inflammatory mediators. What are the inflammatory mediators that are released by NF-kappaB, C-reactive protein, cytokines, prostaglandins, leukotrienes, and free radicals to name a few. But to the patient they mean pain and inflammation.

Formulated in conjunction with Dr. Alex Vasquez, KappArest™ contains a proprie-

tary blend of botanicals that inhibit NF-kappaB. KappArest contains curcuminoids (turmeric extract), Boswellia serrata extract, propolis, green tea extract, ginger extract, rosemary extract, celery seed extract, resveratrol, alpha lipoic acid, phytochemicals, and piper nigrum.

KappArest™ was designed and has been shown to supply targeted nutrition that inhibit the production of NF-kappaB and has been documented to have a positive impact on the

production of inflammatory mediators.

Let's consider botanical formulas for a moment. Often several primary ingredients are used to create a therapeutic effect. Then secondary and tertiary ingredients are used to enhance or intensify the bioavailability. Curcumin, for example, even at doses of 2,000 mg has not been shown to increase blood levels in humans. However, piper nigrum from black pepper increases the bioavailability of curcumin as well as other botanicals. One study showed tiny amounts increased blood levels of curcumin by 2,000%.

Here's another example. If one of the effects of a formula is to detoxify the liver, there is a potential for nausea. In anticipation, the botanical formula may contain ginger to calm a potential queasy stomach. With KappArest, ginger will also add to the anti-inflammatory properties. So the end result is that the synergistic combination of each of the botanicals in the formulation is more potent than the individual herb itself.

One, plus one, plus one doesn't equal 3. Due to the synergistic and multiplying effect of the blend it may have a therapeutic effect of 9.

Research studies often use single botanicals in higher doses for short periods to get dramatic effects. Combination formulas are often more effective and safer for the body to use long term.

In KappArest, 7 of the 8 ingredients have documented activity in suppressing NF-kappaB. The 8th ingredient, phytolens, has been shown to reduce inflammation by quenching free radicals.

You can see both an expanded version of these concepts and further description of the biological properties of nutrients and botanicals in an article by Dr. Vasquez that I have attached. He gives over 440 references and creative charts to give you a deeper understanding to this subject.

In terms of a safe, effective clinical application of these principles, these 4 basic steps can be implemented to reduce NF-kappaB with confidence.

1. An anti-inflammatory diet.
2. Supplementation with vitamin D as in Bio D-Mulsion Forte, 3-5 drops or until 50 ng/ml is attained.
3. Combination Essential Fatty Acids that contain both GLA and EPA/DHA as in Optimal EFAs. Therapeutic ranges for omega-3 fatty acids are around 3 grams and can be reduced as inflammation subsides.
4. Botanicals that are designed to reduce genetic modulators of inflammation like KappArest; use 4 bid.

Please take time to explain some of the charts and examples with your patients. Your patients are looking for someone to guide them step by step through the maze of internet hype.

Modifications like we've just discussed enhance body chemistry as a whole. Everyone has unique ways of learning, so you may have to try different strategies until your patients and families understand these concepts. Don't give up on them. And we'll continue to offer ideas to share, until you have established the wellness practice you desire.

Thanks for reading this week's Tuesday Minute edition. I'll see you next Tuesday.