

All Emulsions Are Not Created Equal

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As the explosion in nutritional research continues, more and more fat soluble components are being discovered. The race is on to see who has the best forms of delivery. Curcumin is a case in point.

It has so many restorative properties. But its properties are in the oil fragment portion of the plant. Due to American diet, at least 30% of the patients that walk in your door have biliary stasis, biliary insufficiency or a fatty liver. So even if people are getting high quality fat soluble nutrients, can they emulsify them to the point where they can be absorbed by the body? Commercial companies give us the option to use the oil itself, or micellized, emulsification and micro-emulsification processes.

Micelles are created by mixing substances, in this case oil, with a detergent like substance which creates a nano-sized particle. This smaller than light sized particle is invisible to the eye and goes directly into the blood stream. Theoretically this is a great way to raise blood levels. However, the bigger question is "what are



the side effects of this detergent like substance?"

Many companies use a substance called carboxymethylcellulose (CMC) or Polysorbate 80 commonly known as tween. An in vivo study in nature found tween induced low grade inflammation and obesity or/ metabolic syndrome in mice and promoted robust colitis in mice, predisposed to this disorder. Tween dramatically altered the microbiota composition in both facial and intestinal bacteria. Another study showed tween lowered the Antibacterial efficacy of several hydrophobic antimicrobials as well as the fat soluble antibacterial com-

pounds, thyme oil or thymol used against Salmonella and Staphylococcus aureus. Also "tween can stimulate biofilm growth for Staphylococcus aureus when added to mature biofilms." Some studies have shown that tween can cause leaky gut by dysregulating or affecting the permeability of cell membranes.

So yes, they may increase blood levels but at what cost? How about emulsions? In nature we know that the oils in seeds, nuts and mother's milk are in an emulsified state. Once in that emulsified state, the oils can then go into the lymph system where every cell in the body is bathed. Unfortu-

nately, all emulsions are not created equal! To assure that Biotics' Bio-AE Mulsion contained the smallest emulsion particles, they purchased all available emulsified vitamin A products on the professional market to check particle size. You can see by the samples, that there is a big difference in particle size and consistency. The Biotics emulsion is consistent throughout the entire slide.

This consistent small particle allows the emulsions to bypass the biliary system and go directly into the lymph system where every cell is bathed. One of the concerns with nano-sized particles is that if they are too small, they can get into cellular areas that may not be prepared to handle large quantities of a concentrated substance. You can see a link to a study using 100,000 I.U. of emulsified vitamin A in an oil form and a micellized form.

With this amount of vitamin A, obviously all groups of mice died. However, the defense systems of the mice taking the micellized forms of vitamin A were completely overwhelmed. Diarrhea ensued and they died. The mean survival time for the micellized vitamin A group was less than a day compared to 6 days for the emulsified form given mice.

The particle size of Biotics emulsions consistently hover right around 0.5 microns which technically makes them a micro-emulsion. This means the emulsified particles are small enough to go directly into the lymph system but not so small that they may create cellular membrane disruption.

The emulsification technology Biotics employed has been safely and effectively utilized over 40 years. Biotics Research Corporation's philosophy has been to emulsify with food grade materials any fat soluble vitamin, botanical or food that has therapeutic value.

As you know the liver must emulsify all oils via bile before they can be absorbed. Someone with chronic illness already has compromised liver/biliary function. We know Coenzyme Q10

must be emulsified by the liver to be absorbed. For example, 30 mg of emulsified CoQ raised blood levels equal to 90 mg of a dry form of CoQ.

As the leader in the emulsification field, Biotics released two new emulsified products: Bio-ADEK-Mulsion and CurcumRx. Bio-ADEK-Mulsion supplies vitamins A, D, E, and K in a micro-emulsified form. Five drops supply 1200 IU of vitamin A as palmitate, 1000 IU of vitamin D as D3, 30 IU of vitamin E as both ad-alpha and mixed tocopherols and 100 mcg of vitamin K as K1 and K2 in a 50:50 ratio.

CurcumRx, utilizing a specialized emulsion technology, is 5-6 times more bioavailable and ensures greater absorption than the leading competitors.

You see, by using the parts of the plant itself to emulsify the oils, CurcumRx is the first and only natural ingredient to provide turmeric's "whole food footprint." Most turmeric ingredients feature only the active compound, curcumin. CurcumRx's unique composition is 100 percent turmeric, featuring a minimum of 45 percent curcuminoids plus standardized levels of more than 200 beneficial nutrients found in turmeric root - including polysaccharides, dietary fiber, turmerone oil, and turmerin fiber. It is this unique composition that is responsible for its greater absorption, stability, and bioavailability. Biotics Research's emulsified fat soluble nutrients possess the smallest particle sizes of commercial emulsions tested. They have equal or greater uptake and bioavailability than micellized products. More importantly, Biotics micro-emulsions do not contribute to toxicity issues.

As a bonus, Biotics' emulsions are the most cost-effective forms of fat-soluble nutrients on the market. And since researchers estimate at least 30% of the patients that walk in your door have biliary stasis, biliary insufficiency or a fatty liver, your patients will feel the difference in their health and pocketbook.

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