WHAT'S ALL THE FUSS ABOUT TURMERIC?

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In this article, Donna presents an overview of the popular ingredient turmeric, compares it to curcumin and discusses the latest research in the benefit of this ingredient and its bioavailability.

YOU HAVE probably seen it just about everywhere you look - turmeric lattes, turmeric tea, turmeric stalls at your local market and even turmeric in your skincare. Yes, skincare products! Why is there such a fuss about turmeric lately? Well, to be honest, it's a pretty amazing natural ingredient. Here are some of the key points to know about turmeric and what to watch out for.

WHERE DOES IT COME FROM?

Turmeric is a yellow powder that is harvested from the roots (rhizomes) of plants from the *Genus Curcuma*, using the roots and its extracts of *Curcuma* for health benefits and disease management has been a practice for centuries. The practice of using *Curcuma* in Indonesia is called JAMU, in Ayurvedic traditional medicine, the use of turmeric in Hindi is called HALDI and in South-Eastern Asia the practice is referred to as HIANG JUANG. So, if it has been around for so long, why such a resurgence of interest now?

Part of this is due to our scientific advances and the ability to pinpoint what the active constituents in the rhizomes of *Curcuma* species do on a more molecular level, backing up what traditional medicine has been telling us for centuries. Another reason is the popularity of and consumer demand for natural, or alternative remedies that can sort out our ailments.

WHAT ARE THE DIFFERENT TYPES OF TURMERIC AND WHAT IS DIFFERENT ABOUT THEM?

Turmeric is properly known as the genus *Curcuma* and there are about 130 different species. Most of the turmeric you see and hear about is *Curcuma longa* (turmeric) and comes from India. This is the turmeric you would typically find in the grocery store or specialty store spice aisle. Another species traditionally used for its many health benefits is Curcuma aromatica (wild turmeric). These, and many other species in the Curcuma genus are used for the active compounds from its rhizome called curcuminoids. The most effective of the three curcuminoids is curcumin and will be referred to from here for simplicity.

One very unique species from the Javanese region of Indonesia, is called *Curcuma xanthorrhiza* (Javanese turmeric). It is also referred to in Javanese as 'temulawak'. It only flourishes well at an altitude of about 1500 m or greater and in a tropical climate. What makes C. *xanthorrhiza* stand out from the other species is the additional active compound contained in the rhizome called *xanthorrhizol*. This makes it a very potent active natural ingredient and research is discovering some very amazing properties.

WHAT DO CURCUMIN AND XANTHORRIZOL DO FOR US?

Curcumin is the main active ingredient in most *Curcuma* species. In traditional medicine, curcumin has been used for centuries for treating liver diseases, aiding in digestion,

treating skin conditions and for muscle and joint issues. Several scientific studies have now proven that curcumin has anti-inflammatory, neuroprotective, anti-cancer properties and can help with digestive, skin, lung and arthritic conditions. It is important to note that curcumin can also interrupt coagulation pathways, therefore, if someone is on anti-coagulants, caution should be taken in consuming large amounts, or very concentrated turmeric, or *Curcuma* based products orally. As with any oral product, your physician should be consulted.

Xanthorrhizol is the most abundant active compound from the rhizomes of *Curcuma xanthorrhiza* and also the most active. Studies are finding that the beneficial properties of xanthorrhizol are about 8-10 times more potent than curcumin. To date, the multiple beneficial properties of xanthorrhizol include anti-cancer, antimicrobial, anti-inflammatory, antioxidant, blood sugar regulation, blood pressure regulation, antiplatelet activities, neuroprotection, and protection from liver disease. It is no wonder that C. *xanthorrhiza* is such a beneficial natural ingredient that is being investigated for pharmacological properties that highly outweigh the benefits and risks of some synthetic drugs.

BIOAVAILABILITY OF CURCUMIN

Now that we have discussed the amazing properties of the actives in Curcuma, we need to talk bioavailability and uptake. Drinking your turmeric latte and adding heaps of turmeric to your cooking is all well and good, but is it actually doing anything? It depends on the purity of your turmeric and what other spices you are putting in your food along with it. The percentage of curcumin in turmeric powder is typically quite low, in fact less than 5%. Curcumin, when contained in turmeric powder form, does not get absorbed very well on its own. Consuming black pepper, which contains the active ingredient piperine, helps with the absorption of curcumin from powder.

Eating the root as a whole gives more benefit as the natural oils in the root help with the absorption of the curcumin and the whole root will also contain other beneficial active components. Preparing the Curcuma extracts as a purified oil is one of the best ways to utilise this ingredient, especially for skincare products.

WHAT CAN CURCUMA EXTRACT DO FOR THE SKIN?

Since *Curcuma* extracts have quite amazing anti-inflammatory, wound healing and antioxidant properties, this makes it quite an attractive ingredient for skin care products. In terms of a topical skin care product, curcumin is approximately 370 Da and xanthorrhizol approximately 220 Da and therefore should penetrate the skin relatively well. Curcumin and xanthorrhizol can block reactive oxygen species formation and also inhibit cyclooxygenases and other enzymes in inflammation pathways. In addition, curcumin can inhibit the production of several inflammatory cytokines. Xanthorrhizol also has high antimicrobial properties, including against the acne-causing bacteria *P. acnes*, making it great ingredient as a topical acne treatment.

In conclusion, yes turmeric does deserve a bit of recognition for its actives that hold amazing properties. The key is to know how your *Curcuma* is prepared and the best way to consume or apply it. Are you consuming whole turmeric powder, extract purified curcumin and how has it been extracted? You also need to consider the co-consumption or application of piperine to assist the uptake of curcumin. Don't forget that turmeric powders and oils can stain (even your skin) yellow, so it is important to ensure you are not applying pure turmeric powders or oils directly to the skin. If *Curcuma* extracts are appropriately extracted and prepared in a topical product, the benefits of this ingredient are numerous. APJ