

# Curcumin Complex

Highly bioavailable curcumin formula for superior absorption



DESIGNS  
FOR SPORT™

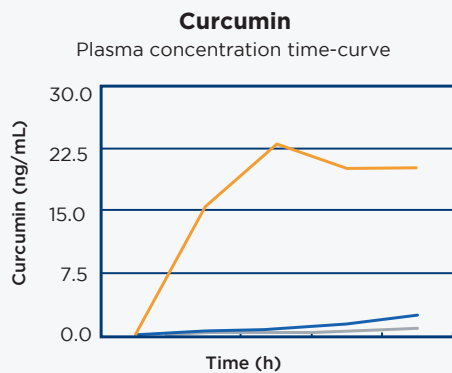
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Curcumin Complex is a patent pending, highly bioavailable curcuminoid formulation. This product contains a unique combination of three bioactive, health-promoting curcuminoids: curcumin, bisdemethoxy curcumin and demethoxy curcumin, along with turmeric oil. The three curcuminoids are the strongest, most protective and best researched constituents of the turmeric root. Naturally occurring turmeric root powder contains only 5-7% curcumin, while the blend in Curcumin Complex is concentrated to contain 95% curcuminoids, of which curcumin represents 70%.

## ABSORPTION

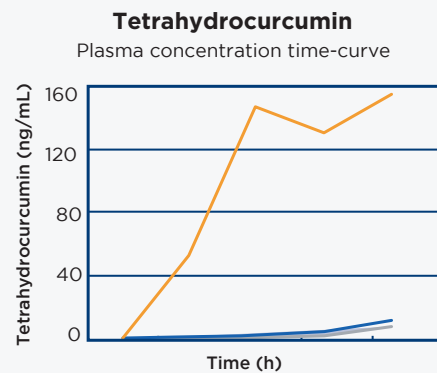
The crystalline structure of curcumin renders it difficult to absorb in the GI tract. According to researchers, "The potential health benefits of curcumin are limited by its poor solubility, low absorption from the gut, rapid metabolism and rapid systemic elimination."<sup>1</sup> For this reason, Curcumin Complex is manufactured using the new Designs for Health Evail™ process, which is an all-natural formulation that improves the absorption and delivery of curcumin. This process uses a proprietary blend of turmeric oil, sunflower lecithin, and vitamin E, without the use of potentially harmful surfactants. This delivery technology increases the absorption rate and reduces the absorption time for nutrients and may allow for superior effects through lower dosages.

Curcumin Complex is unique in that it has been shown to increase tetrahydrocurcumin as well as curcumin, demethoxycurcumin and bisdemethoxycurcumin in plasma. Tetrahydrocurcumin is a major metabolite of curcumin and demonstrates remarkable antioxidant properties exceeding those of curcumin alone.<sup>2-4</sup> Compared to reference products containing equal concentrations of curcuminoids, Curcumin Complex exhibited several-fold higher absorption, resulting in plasma levels of tetrahydrocurcumin that were nearly 30 times higher.



— Curcumin Complex  
— Ref A  
— Ref B

**Curcumin Complex was 15X and 38X more absorbed than curcumin in Reference A and Reference B formulations respectively.**



— Curcumin Complex  
— Ref A  
— Ref B

**Tetrahydrocurcumin is the plasma after ingestion of the Curcumin Complex was 18X and 29X greater than that in Reference A and Reference B formulations, respectively.**

## CURCUMIN AND THE INFLAMMATORY RESPONSE

Excessive inflammation is a common risk factor for disease occurrence and progression. Inflammation may lead to joint tissue destruction, cancer, cardiovascular events, insulin resistance/diabetes and brain/liver/kidney degenerative diseases. Research shows curcumin helps support a healthy inflammatory response.<sup>12</sup> It was shown to reduce both acute and chronic inflammation caused by physical injury, joint wear and tear (as in osteoarthritis), chronic infections or inadequate antioxidant protection.<sup>5-8, 12, 18, 19, 22, 60</sup>

Curcumin was shown to be more effective than certain NSAIDs in reducing inflammation and pain associated with rheumatoid arthritis<sup>19</sup> or post-operative trauma<sup>56</sup>. It has a better cardiovascular safety profile than aspirin because, unlike aspirin, it does not inhibit the arterial protective factor prostacyclin.<sup>22</sup> Curcumin acts on the mother compound NF Kappa beta. By suppressing this inflammatory marker, curcumin has a domino effect that reduces the entire cascade of inflammatory compounds that would be produced thereafter.

## Benefits Shown in Research Using Curcumin Extracts:

### Muscle Health & Soreness

- Improved markers of DOMS (delayed onset muscle soreness).

### Immune System Regulation

- Inflammation<sup>12</sup> – injury, post-operative<sup>56</sup>, joint wear and tear (osteoarthritis)<sup>60</sup>
- Allergic reactions – asthma<sup>9</sup>
- Autoimmune activity reduction<sup>19,32</sup> – rheumatoid arthritis and multiple sclerosis in animals
- NK cell activity increase<sup>6</sup>
- Anti-cancer properties – breast<sup>23</sup>, prostate<sup>39</sup>, colon<sup>32</sup>, pancreatic<sup>29</sup>, glioma<sup>33</sup>, ovarian<sup>53</sup>

### Antimicrobial

- Antiviral<sup>10</sup>, Epstein Barr<sup>6</sup> and HIV virus<sup>26,27</sup>
- Antibacterial, antiparasitic<sup>4</sup>

### Cardiovascular Protection

- Reduces cholesterol oxidation and levels, increases HDL<sup>30</sup>
- Reduces fibrinogen<sup>38</sup>
- Reduces platelet aggregation<sup>22,41</sup>

### Brain Protection

- Reduces brain damage following ischemia (reduced blood flow)<sup>51</sup>
- Reduces development and regression of Alzheimer's disease progression in animal models<sup>50</sup>
- Reduces gliomas (brain tumors)<sup>33</sup>
- Antidepressant effects<sup>20</sup>

### Liver Protection

- from alcohol and aflatoxin (peanut fungus)<sup>58,59</sup>

### Toxic Metal Chelator<sup>57</sup>

- Effective chelator of copper and iron

### Antioxidant<sup>31</sup>

### Bile Support

- Enhances bile flow and solubility<sup>43</sup>

## ALLERGIES AND HISTAMINE RELEASE

Curcumin has been shown to decrease histamine release, suggesting that it plays a significant role in exerting both antioxidative and anti-allergic activities.<sup>9</sup> Research shows that curcumin's potential beneficial effect on the allergic response works by inhibiting the production of cytokines affecting eosinophil function and IgE synthesis.<sup>10</sup>

## AUTOIMMUNE CONDITIONS

Curcumin downregulates mediators characteristic of rheumatoid arthritis,<sup>19</sup> reduces disease activity in Crohn's<sup>13</sup> and was shown to reduce disease activity in a model of multiple sclerosis in animals.<sup>32</sup>

"These findings highlight the fact that curcumin inhibits experimental encephalomyelitis by blocking IL-12 signaling in T cells and suggest its use in the treatment of MS and other Th1 cell-mediated inflammatory diseases."<sup>32</sup>

By boosting NK cell activity increase,<sup>6</sup> curcumin may also enhance the body's ability to fight infections.

## CARDIOVASCULAR PROTECTION

Curcumin may lower total cholesterol, fibrinogen and platelet aggregation, while increasing HDL and decreasing lipid peroxidation.<sup>30, 38, 22, 41</sup>

In one study, "The effect of curcumin administration in reducing the serum levels of cholesterol and lipid peroxides was studied in ten healthy human volunteers, receiving 500 mg of curcumin per day for 7 days. A significant decrease in the level of serum lipid peroxides (33%), increase in HDL Cholesterol (29%), and a decrease in total serum cholesterol (11.63%) were noted."<sup>30</sup> According to another study, "Our reviewed data show that, in human healthy subjects, the daily intake of 200 mg of the above extract results in a decrease in total blood lipid peroxides as well as in HDL and LDL-lipid peroxidation. This anti-atherogenic effect was accompanied by a curcuma antioxidant-induced normalization of the plasma levels of fibrinogen and of the apo B/apo A ratio, that may also decrease the cardiovascular risk."<sup>38</sup>

## BRAIN PROTECTION

Curcumin pretreatment reduced brain damage following ischemia/stroke<sup>51</sup> and from heavy alcohol intake.<sup>54</sup> Curcumin reduced development and severity of Alzheimer's disease in animal models by reducing plaque aggregation and plaque induced oxidative stress and was even capable of dissociating existing plaque.<sup>21</sup> Its chelating ability for iron and copper ions is also believed to play a beneficial role in reducing the progression of the disease.<sup>57</sup>

"Initially, we reported the impact of non-steroidal anti-inflammatory drugs (NSAIDs), notably ibuprofen, which reduced amyloid accumulation, but suppressed few inflammatory markers and without reducing oxidative damage. Safety concerns with chronic NSAIDs led to a screen of alternative NSAIDs and identification of the phenolic anti-inflammatory/anti-oxidant compound curcumin, the yellow pigment in turmeric that we found targeted multiple AD pathogenic cascades. The dietary omega-3 fatty acid, docosahexaenoic acid (DHA), also limited amyloid, oxidative damage and synaptic and cognitive deficits in a transgenic mouse model. Both DHA and curcumin have favorable safety profiles, epidemiology and efficacy, and may exert general anti-aging benefits (anti-cancer and cardioprotective.)"<sup>50</sup>

## HOW TO TAKE:

Take one softgel per day with a meal, or as directed by a health care practitioner.



## Supplement Facts

Serving Size 1 softgel

Amount Per Serving	% Daily Value
Curcuminoid Proprietary Blend	1 g *
Curcuminoid Powder (380 mg curcuminoids - curcumin, demethoxycurcumin, bisdemethoxycurcumin), Turmeric Oil ( <i>Curcuma longa</i> ) (rhizomes), Sunflower Lecithin, Vitamin E	

\*Daily Value not established.

**Other Ingredients:** Bovine gelatin, purified water, glycerine, and annatto (color)

**Contraindications:** Not recommended during pregnancy. Individuals on blood thinning therapy,<sup>14</sup> or anyone with gallstones (stimulates bile flow), ulcers, and GI inflammatory conditions should be monitored closely. Inhibits various P450 enzymes.<sup>47</sup>

**References available upon request.**