# The Power Of Broccoli Sprouts- Sulforaphane

Food First Nutrition

MOST PEOPLE KNOW THAT EATING CRUCIFEROUS VEGETABLES (BROCCOLI, CAULIFLOWER, BRUSSEL SPROUTS, CABBAGE) IS GOOD FOR YOU!

Broccoli sprouts in particular contain a very concentrated form of a plant chemical called Glucoraphanin at an amount 20-50 times more than in the mature broccoli plant. Therefore, you can eat a small amount of the sprouts and it is like eating huge amounts of the vegetable!

Inside the sprout is two sacks, one with the Glucoraphanin and the other an enzyme called Myrosinase. When the plant is chewed the two sacs combine and a substance called Sulforaphane is created.

## WHAT DOES SULFORAPHANE DO?

Sulforaphane upregulates a pathway in your body that stimulates over two thousand genes that make many of the bodies protective cellular responses including the body's antioxidant and anti-inflammatory pathways, cell survival and immune response mechanisms.

There is a growing pool of in vitro, in vivo and human studies investigating sulforaphanes protective role in conditions such as cancer, type 2 diabetes, stomach ulcers, mental health disorders, arthritis, psoriasis, autism and autoimmune conditions.

## SULFORAPHANE IN DETAIL

Some of the ways sulforaphane helps with health include:
1. Upregulating the body's own antioxidant capacity and inducing the production of glutathione, which is the body's main antioxidant.
2. Inhibiting NF-kB which reduces inflammation in the body.
3. Upregulating phase 2 liver detoxification which is important for detoxifying estrogen and other chemicals, hence its protective role in cancer.
4. An ability to cross the blood brain barrier so it can reduce neuronal inflammation implicated in psychological conditions and dementia.
5. It can also improve vitamin D and iron regulation.

## HOW IS IT DIFFERENT FROM OTHER SUPPLEMENTS THAT ARE MEANT TO BE ANTI-INFLAMMATORY?

Many of us take vitamins like vitamin C, E and A, to reduce oxidative stress directly. However, studies looking into the success of these vitamins have sometimes been disappointing. For instance, in 2010 a meta-analysis of trials investigating the effects of antioxidant supplements on the prevention of diabetes found no effect of Vitamin E, C, beta-carotene, selenium, zinc and others (Chang & Chuang, 2010).

Polyphenols, such as curcumin, resveratrol and quercetin are also commonly taken and have been studied extensively where they demonstrate great antioxidant capabilities in the test tube but the absorption of these compounds in humans is low (around 1%) which again has led to some disappointing results in human studies.

Sulforaphane, in contrast has a high absorption rate at around 80% and acts indirectly by upregulating the body's own existing antioxidant and anti-inflammatory systems, which has a far greater capacity to reduce oxidative stress.

# The Power Of Broccoli Sprouts- Sulforaphane con't

Food First Nutrition

## WHERE DO I GET SULFORAPHANE ?

As mentioned, chewing broccoli sprouts makes sulforaphane. But you would have to eat huge amounts of broccoli sprouts to get a therapeutic amount.

Cell Logic provide 100% bioactive dried broccoli sprout powder of extremely high quality.

Care should be taken when sourcing your broccoli sprout powder, however, because there are many products on the market that are labelled as broccoli sprout or seed extracts but they have no myrosinase so that means they have no sulforaphane.

## CONCLUSION

If you would like to know more about broccoli sprout powder and how it fits into a healthy diet and its therapeutic dosage please reach out to me

Patricia Yetsenga
Nutritional Medicine Practitioner
Food First Nutrition
0431 107 227
patricia@foodfirstnutrition.com.au
https://foodfirstnutrition.com.au/

## REFERENCES

Cell Logic (n.d). Geneactiv Formulation E (GFE), Technical Overview. chrome-extension://nlaealbpbmpioeidemdfedkfmglobidl/https://cell-logic.com.au/wp-content/uploads/2021/05/GFE-Tech-Data-Aug-2017.pdf

Chang YC, Chuang LM. (2010). The role of oxidative stress in the pathogenesis of type 2 diabetes: from molecular mechanism to clinical implication. Am J Transl Res, 2(3):316-31. PMID: 20589170; PMCID: PMC2892404.

Du, P., Zhang, W., Cui, H., He, W., Lu, S., Jia, S., & Zhao, M. (2022). Sulforaphane Ameliorates the Severity of Psoriasis and SLE by Modulating Effector Cells and Reducing Oxidative Stress . Frontiers in Pharmacology . Retrieved from https://www.frontiersin.org/articles/10.3389/fphar.2022.805508

Jiang T, Tian F, Zheng H, Whitman SA, Lin Y, Zhang Z, Zhang N, Zhang DD.( 2014). Nrf2 suppresses lupus nephritis through inhibition of oxidative injury and the NF-κB-mediated inflammatory response. Kidney Int. 85(2):333-343. doi: 10.1038/ki.2013.343. Epub 2013 Sep 11. PMID: 24025640; PMCID: PMC3992978.

Houghton C. A. (2019). Sulforaphane: Its "Coming of Age" as a Clinically Relevant Nutraceutical in the Prevention and Treatment of Chronic Disease. Oxidative medicine and cellular longevity, 2716870. https://doi.org/10.1155/2019/2716870

Moon, S. J., Jhun, J., Ryu, J., Kwon, J. Y., Kim, S. Y., Jung, K., Cho, M. L., & Min, J. K. (2021). The anti-arthritis effect of sulforaphane, an activator of Nrf2, is associated with inhibition of both B cell differentiation and the production of inflammatory cytokines. PloS one, 16(2), e0245986. https://doi.org/10.1371/journal.pone.0245986

Zheng, W., Li, X., Zhang, T., & Wang, J. (2022). Biological mechanisms and clinical efficacy of sulforaphane for mental disorders. General Psychiatry, 35(2), e100700. https://doi.org/10.1136/gpsych-2021-100700