

Guillermou

As Dr. Mercola reports, in this in-depth study, the preparation of meals of cruciferous vegetables, with plants rich in myrosinase, by chewing, and in digestion, the glucosinolates of cruciferous plants, decompose, to form compounds biological agents such as indoles, nitriles, thiocyanates and isothiocyanates. link.springer.com/.../s00394-008-2009-8

Indole-3-carbinol (an indole), and sulforaphane (an isothiocyanate), have been studied very frequently for their anticancer effects. These compounds prevent the formation of cancer in animals: bladder, breasts, colon, liver, lungs and stomach. www.tandfonline.com/.../DMR-100102342,
www.tandfonline.com/.../01635581.2001.9680607

Mechanisms of action: 1. protect DNA 2. deactivate carcinogens. 3. antiviral, antibacterial, and anti-inflammatory effects. 4. apoptosis. 5 inhibit the formation of tumoral blood vessels (angiogenesis). Studies in humans have shown positive results on common forms of cancer: 1. Prostate cancer: In case-control studies, people who consumed larger numbers of cruciferous plants had a lower risk of prostate cancer. cebp.aacrjournals.org/.../795.short,
www.tandfonline.com/.../S15327914NC3402_8, (2017) www.sciencedirect.com/.../S0955286316306611

2. Colorectal cancer: The results of this meta-analysis show that high consumption of cruciferae was inversely associated with the risk of colorectal cancer in humans
annonc.oxfordjournals.org/.../1079.abstract

A study in the Netherlands, the Netherlands Cohort Study on Diet and Cancer, women, who had a high consumption of cruciferous plants, had a reduced risk of colon cancer.
academic.oup.com/aje/article/152/11/1081/124248/Vegetable-and-Fruit-Co..

Epigenetic mechanisms including noncoding RNAs. (2017)
www.tandfonline.com/.../10408398.2017.1300

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3. Lung cancer: Data from the Nurses 'Health and Health Professionals', indicated that women who consumed more than 5 servings of cruciferous plants per week had a lower risk of lung cancer.

academic.oup.com/jnci/article/92/22/1812/2906016/Prospective-Study-of-..

Reduction in the risk of lung cancer among men who do not currently smoke.

(2017) jn.nutrition.org/content/early/2017/04/05/jn.117.247494.abstract

4. Breast cancer: In a case-control study, it was concluded that women who consumed larger numbers of cruciferous plants had a lower risk of breast cancer. Another cohort study of women in the United States also indicated only a weak relationship to the risk of breast cancer.

jamanetwork.com/.../1031379

academic.oup.com/jnci/article/91/6/547/2549364/Dietary-Carotenoids-and..

(2017) cdn.nutrition.org/.../cdn.117.000448

5. Uterine cervix. one study found that indole-3-carbinol was more effective than placebo in reducing the growth of abnormal cells on the surface of the cervix.

www.sciencedirect.com/.../S0090825800958475

6. Stomach cancer. Broccoli sprouts reduce infections of the bacterium *Helicobacter pylori* (*H. pylori*), a major cause of stomach cancer

7. Leukemia. Indole-3-carbinol inhibits NF- κ B, and expression of the regulatory gene.

www.ncbi.nlm.nih.gov/.../PMC1895177

Several case-control studies have shown that specific forms of a gene, encoding the enzyme glutathione S-transferase (metabolizes isothiocyanates), could influence the relationship between the consumption of cruciferous plants, and the risk of lung cancer, and colorectal cancer, in humans. .

ajcn.nutrition.org/.../704.short .

In addition, the GSTM-1 gene

utah.pure.elsevier.com/en/publications/interplay-between-dietary-induc..

Posted On 10/16/2017

Almond

Because I have a garden and game meat, I do a lot of Asian cooking. My 3 combo herbs are mustard-ginger-garlic. This combination does incredible things for recipes! I use fresh ginger root most of the time and mince it. I also mince garlic. I prefer powdered mustard and will either measure it with a spoon or use a shaker bottle to add as much as I need to a recipe. Mustard is also a necessary ingredient in my tossed salads, whether bottled, or, more often, powdered. Ingredients for Caesar Salad made in an oversized bowl : Black pepper, cider vinegar (or balsamic), Braggs or salt--toss. Optional--1 raw egg, coddled and dropped into salad bowl--pour lemon juice over to "cook" egg in acid. Lemon juice, mustard powder, dash of stevia or honey--toss. EVOO and minced garlic or garlic powder--toss. Wait at least 3 minutes and toss again. Optional to serve topped with Parmesan or croutons, etc.. Here is a recipe for Mustard of Dijon that is centuries old. You can vary amounts according to taste. Equal parts cinnamon powder, honey, mustard powder. You can also stir mustard (powdered or prepared) into a white sauce or cream sauce.

Posted On 10/16/2017

Ib1921

I have a real old timey recipe for ham slice...buy a smoked ham slice and put in large shallow skillet. Mix together 3T brown sugar, 1 T flour, 2t dry mustard and 1/4 c milk. Spread mixture over the ham, pour 3/4 cup boiling water over all, simmer 1 hour. I think you could spread the mix over the ham and keep in the frig for a few hours to sort of "marinate". Very delicious.

Posted On 10/16/2017

Reverend Alan

I mix a tablespoon of HOT mustard powder with a little water and let it rest for a few minutes. Then next to it in a small dipping bowl I add some fermented chili paste, and some soy sauce. I use this as a dipping sauce for steamed bok choy et al. It makes a big bowl of veggies a delicious meal.

Posted On 10/16/2017

Tompkins

Thanks Almond for the ideas. I enjoy your posts.

Posted On 10/16/2017

RaajSingha

Mustard seems to be quite popular in the US in all forms except for the oil. Generations of Indians grew up on pure mustard oil, that is until the market literally got flooded with the RBD oils. Mustard oil was an integral part of the existence. Besides, in food, it was used as or in balms/salves/lotions, for massage, bath oil, moisturizer, mouth rinse and hair oil.

A mix of mustard oil+coconut oil 1:1 for oil pulling first thing every morning has worked wonders for me. Come winter and it is time for the garden fresh rich green sun-soaked mustard greens. It is a real challenge to stand the strong pungent flavour of the allyl isothiocyanate in the juiced greens. Immediate mouth rinse with water after mustard oil pulling is not advisable. Allyl isothiocyanate reacts with water and causes sharp tingling in the mouth.

Posted On 10/16/2017

mirandola

hi Raaj, it is so wonderful to read of your Ayurvedic uses for balms, shampoos, mouth rinses et al! Thank you as this is both interesting, heartening and enlightening, all at once!

When doing spices as body lotions or wraps, etc be cautious. All hot spices when applied topically, will dilate the capillaries and enhance circulation, a good thing of course. The potential is always for skin burns. Using proper cautions, this should not happen and is fully preventable. Never fall asleep with a spice wrap or spice-infused body lotion! Don't do this when fatigued, rule number one. Leave on for about fifteen or twenty minutes, then remove the spice-infused lotion or compress and gently apply olive or coconut oil to the area to cool down. Do not rinse.

If the skin is healthily pink, that is a good thing. If it is an unhealthy red, you have a burn either working up or god forbid, already in a burnt state. If there is a burn, remove the spices with cold water and apply olive or coconut oil as above after patting, not rubbing, the now-sensitive skin dry. Keep an eye out and then all should be fine.

Such compresses with a tea made of mustard seed, ginger, cayenne and the remaining fragments of the spices themselves applied directly to the skin, are used for arthritis. Dilating the capillaries not only brings circulation to the area, but also carries toxins away with the circulating blood. This enhances healing. The spices also have pain-fighting compounds and have what is called a counter-irritant action. Again observe the cautions above and it is safe when following the precautions. This can be done alongside further anti-inflammatory intervention, hypo-allergenic diet, etc as a piece of a greater sum to address arthritis or inflammation, not as sole therapy. Use conjunctly with mainstream anti-inflammatories as well. All the best!

Posted On 10/16/2017

Guillermou

Hi Raaj and Mirandola. It is a pleasure to participate in this very gratifying dialogue. In the Ayurvedic massage, sesame oil and coconut are widely used as a base, to sensitize the sense of touch, and intensify the process of purification, relieving and expelling the altered doshas and accumulated toxins. The oil applied on the skin, is considered according to ayurveda a food.

Traditionally in ayurveda is used: Sesame oil, for Vata and Kapha, and its alterations, provides strength, elasticity, warmth and firmness to the skin. Coconut oil, for Pitta or Pitta type alterations, increases hair growth, and skin complexion. It is a good healing and optimal for skin problems. Mustard oil: for Kapha or Kapha alterations. Mustard oil. It alleviates Kapha and Vata. It is penetrating, and hot. It is very good, it reduces joint pain, reduces fat, and strengthens the body. Some ayurvedic recommendations: Vata: Sesame, olive, coconut, almond, castor, ghee. Pitta: Almond, sunflower, coconut, olive, ghee. Kapha: almond, coconut ayurvedicoils.com/.../ayurvedic-health-benefits-of-sesame-oil .

www.banyanbotanicals.com/info/ayurvedic-living/living-ayurveda/herbs/a..

www.mindbodygreen.com/0-21260/why-ayurvedic-oils-are-your-skins-new-be.. .

According to Ayurveda, the characteristic personality of an individual is determined by a combination of the three Doshas: Vata, Pitta and Kapha. The health of an individual, the diseases, the cure for any disease, etc. are governed by these three doshas. It is the combination of these three doshas, which makes a person different, and peculiar to others. In this link, you can perform a test, to know your Ayurveda typology. www.prokerala.com/.../prakriti-analysis .

Also: The Three Personality Types of Ayurveda upliftconnect.com/three-personality-types-ayurveda

www.ncbi.nlm.nih.gov/.../PMC3215408

Posted On 10/16/2017

Immiles

How about mustard seed sprouts?? Wonder if they contain the maveulous myrosinase. Perhaps a mix of mustard and broccoli sprouts?

Posted On 10/15/2017

Julianne

I alternate my broccoli and kale sprouts with mustard sprouts. They grow much faster, and are really cheap to buy. For some reason, bulk brassica seeds for sprouting are quite expensive in Australia, so I grow my own. One plant can give you an awful lot of seeds!

Posted On 10/15/2017

Guillermou

Cruciferous vegetables have different phytochemicals glucosinolates. It would be ideal, make a mixture of cruciferous vegetables, with the plants mentioned, by Dr. Mercola high in the enzyme myrosinase, crush the mixture to produce the reaction of phytochemicals (glucorafanine, etc.) with the enzyme. You can add garlic.

Cauliflower contains about a quarter of the total of glucosinolates in Brussels sprouts, half of which contain the Col de Milan, 60% of the contents of broccoli, and 70% of the contents in the kale. Broccoli shoots are concentrated sources of this phytochemical, which provides between 20-100 times of glucosinolates, according to research published in Proceedings of the National Academy of Sciences. A 1 ounce serving (28 grams) provides 73 mg of sulforaphane glucosinolate. Slightly cooked, they taste like steamed spinach.

A half-cup serving of 44 grams of Brussels sprout outbreaks, provides approximately 104 mg of total glucosinolates. The half cup of 45 grams of Savoy cabbage provides 35 mg of total glucorafanine, while the same amount of red cabbage provides 29 mg. Inflorescences of cauliflower have between 0.10 and 0.30 mg of glucorafanine. pi.oregonstate.edu/mic/dietary-factors/phytochemicals/isothiocyanates

1. Scrape or crush the inflorescences cruciferous vegetables, with some of the plants high in myrosinase, and garlic. on a plate with a little water. Therefore, the glucosinates react with the enzyme, and sulforaphane and other phytochemicals are obtained.
2. Steam cooking (3 to 5 minutes)
3. By transforming into the intestinal flora. Up to 80% of glucorafanin (depending on the intestinal flora of each individual), becomes sulforaphane, in an environment with a pH greater than 5. For this reason, vitamin C, in acid form inhibits the formation of sulforaphano. Vitamin C in the form of ascorbates, does not have this disadvantage. Also, it could be the basis of a sauce to add to the cooked dishes

Posted On 10/16/2017

lb1921

I used to be discouraged growing broccoli here in the midwest because the heads were unreliable...but now I don't grow it for the heads, instead for the leaves. I pick the young leaves and cook a few minutes in butter before adding eggs, or raw in the green smoothie recipe from Dr Gundry's website (The Plant Paradox book). My four plants are about 3' high here in October and with the cooler weather a new flush of leaves. When the clusters get too dense, I just cut back 4-5 inches and chop all that up for the chickens. I wish there was some easy way to analyze the enzyme/vitamin content of plants...seems like that should be an upcoming technology...wouldn't it be great to point your iphone or ipad at a plant leaf and read the brix or whatever it is to measure nutrient value! I also grow red russian kale, and do the same thing...just pick off the leaves when about 3-4 inches long, destem, and either briefly cook or eat raw. The chickens get all the stems and insect chewed leaves. We get amazing eggs!

Posted On 10/16/2017

cat2735

Thank you for all the fantastic posts, Dr. Mercola & Dr. Becker!

Posted On 10/16/2017

therwill

Instead of eating the broccoli sprouts raw, we get the same benefits from cooking them as we do with mature broccoli. This is for the same reasons the broccoli needs to be cooked: The same epithiospecifier protein (ESP) that largely blocks the hydrolysis of the glycosylates to sulphoraphane described in the article has exactly the same effect on the sprouts. This is why we get a far greater dose of sulphoraphane when we cook the broccoli sprouts and add some myrosinase back in as described in the article.

Posted On 10/16/2017

markpower007

I would be interested to know how the high pressure processing at 60C is achieved. 400 to 600 megapascals is between 58,000 to 87,000 PSI, somewhere in the range of water jet cutting. No question they must do it hydraulically, but no ordinary aqueous hydraulic pump that I know of exists that will allow you to do this at home!!

Posted On 10/16/2017

FreeWoman17

My dad ate MUSTARD on most all his green veggies long as I recall. Sadly, he succumbed to BLADDER CANCER after about 2 yrs of symptoms. He was 90. So, for mustard's purported ability to keep bladder cancer at bay, I'm not sure. However, I wonder whether mustard did shorten the length of illness.

Posted On 10/16/2017

mirandola

Related to mustard as cited by Dr Mercola, we have watercress growing in our garden. I planted the live plants purchased at Whole Foods (organic) and they self-seeded. The beautiful, feathery, ethereal and brilliant yellow flowers, scintillate in the air as if dusting the air with gold. Truly beautiful! And I am not a lover of yellow by the way. Yet, the effect is gorgeous! The pollen obviously flew in the wind and we ended up with invasive clumps. Growing underwater in streams, this stuff can't be drowned! Yet, here it is growing in clay soil and barely watered, and on it goes! What a very strong and hardy plant. I dug some up and put it into pots where we can control the environment better. I dug a bit around the roots so as to leave the earth intact and not shock the plants. Then I flooded the large pots with about four inches of water after putting the plants into the potted organic soil, so as to let them soak as they do in the wild. The plants never registered having been transplanted at all, let alone go into any shock whatsoever! Truly hardy, once again. Bolt upright they are growing and we look forward to eating them after they expand and leaf out a bit. Very easy to grow and you almost can't kill it, and once bloomed they seem to spread almost invasively. Be aware though that watercress absorbs toxins from the water and soil, organic is the only way to go. If possible use filtered water in a watering can, not water directly from the garden hose. I have pots of mint and basil growing alongside the cress, we have a patch of parsley and basil as well. Cilantro is next. And I can't wait until our seeded fennel plants come up and grow. What a combination of tastes for salads! YUM!

Posted On 10/16/2017

farmercist

Looks like I should take some mustard powder with me when I eat at a restaurant.

Posted On 10/16/2017

Reverend Alan

Or eat in Chinese restaurants where they will have it already prepared for you as a dipping sauce.

Posted On 10/16/2017

Cancer is one of the most deadly diseases that affect human health. According to GLOBOCAN, the global cancer burden is estimated to be 28.4 million cases in 2040, an increase of 47% compared to 2020 rates, with the greatest growth in countries in transition (64% to 95%). Sulforaphane (SFN) is an isothiocyanate found in its inactive storage form as glucoraphanin, and its main source is broccoli, an important plant in the Brassicaceae family. Upon mechanical damage (e.g., biting, chewing, or cutting) to broccoli and other cruciferous vegetables, glucoraphanin is released and hydrolyzed by the plant enzyme myrosinase, forming its active molecule SFN. For this purpose also mustard seeds. Sulforaphane (SFN) from cruciferous vegetables is one such natural agent and studies have shown that it can target a population of specific cancer cells that display stem-like properties, known as cancer stem cells (CSCs).

Also sulforaphane (SFN), a phytochemical found in cruciferous vegetables, is a potent chemosensitizer that increases the sensitivity of cancer cells to chemotherapy and overcomes chemoresistance.

www.ncbi.nlm.nih.gov/.../PMC9909961 (2023).— www.mdpi.com/.../802 (2024).--

www.mdpi.com/.../244 (2024).--- www.mdpi.com/.../757 (2024).

www.frontiersin.org/journals/oncology/articles/10.3389/fonc.2023.11683.. (2023).--

www.mdpi.com/.../6979 (2023).--- www.mdpi.com/.../htm (2021) .--- www.lidsen.com/.../rpn-02-01-008 (2022) .--- www.mdpi.com/.../htm (2021).----

pubs.rsc.org/en/content/articlelanding/2022/fo/d1fo03398k/unauth (2022).---- www.mdpi.com/.../htm (2021).--

Guillermou

Sulforaphane has also demonstrated antidiabetic and antiobesity effects, improving glucose tolerance and reducing fat accumulation. The ability of SFN to activate Nrf2, a transcription factor that regulates oxidative stress and inflammation in cells, is a primary mechanism behind its anticancer and antidiabetic effects. Its antioxidant, anti-inflammatory and anti-apoptotic properties are also suggested to provide beneficial effects against neurodegenerative diseases. The potential health benefits of SFN have generated increased interest in its use as a dietary supplement or adjunct to chemotherapy, but there is insufficient data on its efficacy and optimal doses, as well as its safety.

This review aims to present and discuss the potential of SFN in the treatment of various diseases, such as cancer, diabetes, cardiovascular diseases, obesity, and neurodegenerative diseases, focusing on its mechanisms of action. It also summarizes studies on the pharmacological and toxicological potential of SFN in in vitro and animal models and explores its protective role against toxic compounds through in vitro and animal studies.

Since SFN could be used as a potential therapeutic agent, we briefly mention its synergistic attributes with other potential nutraceuticals that are associated with acute and chronic inflammatory conditions. Given its health-promoting effects, SFN could be a potential nutraceutical at the forefront of sports nutrition. www.mdpi.com/.../147 (2024).--- www.mdpi.com/.../1790 (2024).--- onlinelibrary.wiley.com/.../imcb.12686 (2023).-- www.sciencedirect.com/.../S1043661823002748 (2023).-- pubs.rsc.org/en/content/articlelanding/2022/fo/d1fo03398k/unauth (2022) www.mdpi.com/.../htm (2021)

Posted On 03/19/2024

grulla

My favorite cruciferous veggie is green or red cabbage, which is #10 on the EWG Clean 15 list. I use it to make "Mediterranean" coleslaw salad with EVOO and ACV (instead of mayo), and various other veggie ingredients like pimiento stuffed green olives, black beans, celery, more pimientos, green peas, green onion, oregano, parsley, mushrooms, garlic powder, caraway seed, etc. Cabbage leaves are also used on my sourdough Mexican tomato sauce sardine sandwich with a slice of Muenster cheese, refrigerated horse radish, and some green onions. When cooking, cabbage leaves are use for pigs-in a-blanket and also as a substitute for pasta straps in lasagna.

Posted On 03/19/2024

Guillermou

Good foods.. GRULLA. RED CABBAGE: IMPORTANT FACTS, HEALTH BENEFITS, AND RECIPES

www.relish.com/food-wiki/153873/red-cabbage-important-facts-health-ben.. .--- draxe.com/.../red-cabbage .-----

The anthocyanins in red cabbage may provide health benefits that may be associated with anti-aging. The protection of anthocyanin-rich extract (ARE) of red cabbage and cyanidin-3-diglucoside-5-glucoside-rich extract (CY3D5G) against age-related cognitive dysfunction was investigated in normally aging mice. Behavioral tests showed that ARE and CY3D5G significantly reduced cognitive impairment increased superoxide dismutase activity by 29.18 and 23.09% and decreased malondialdehyde by 15.74 and 10.05%, respectively, compared with control.

Histological staining showed that treatment with ARE and CY3D5G reduced hippocampal neuronal damage and brain-derived neurotrophic factor degeneration. ARE and CY3D5G significantly reduced IL-1 and IL-6 levels in serum and brain ($p < 0.05$) by promoting the MAPK signaling pathway while enriching the abundance of butyrate-producing bacteria and altering the functional profile of the microbial community. In conclusion, ARE and CY3D5G may attenuate age-related cognitive dysfunction by reducing neuroinflammation and regulating the gut-brain axis.

pubs.acs.org/.../acs.jafc.3c03183 (2023).--

Posted On 03/19/2024

LSquare

Due to time limitations, I normally can't watch the videos, but I strongly recommend watching the last video in the article to the end. It's not long. Sad to realize that as much as I like broccoli and Brussels sprouts, I've not been getting all that I should've from them, especially from frozen, but glad to know now how to fix that.

Posted On 03/19/2024

memeKnight1

Thank you for recommending the video. It is excellent!

Posted On 03/19/2024

Almond

I believe a stricter-than-strict diet is a major factor in recovery from cancer. The body is capable of healing if given what it needs and being able to detox faster than the cancer is growing. Simply put, create a hostile environment for the growth of cancer while supporting the immune system. Every mouthful must be considered conscientiously. It is not a hot-or-miss situation with breaks for even the most modest indulgements. It requires more self-control than most people have. Having said all of that, I prob consumed daikon as a side dish almost daily and mustard was regularly included in my recipes. (Mustard, garlic, ginger as main condiments) I also included many mushroom varieties known to be therapeutic for my kind of cancer. The idea behind lightly cooking cruciferous vegetables was that cancer patients may be nutrient-deficient and lightly cooking would help "pre-digest" food without destroying valuable enzymes. Barely cooked food.

Posted On 03/19/2024

JudyCharl

For those with a busy schedule, here's how I maximize my time. Once a week, usually a Sunday, I prep my salad greens. Soak, chop or tear into bite size pieces. After spinning out the moisture, I place in a large bowl, add fresh julienned kale, 2-3 shredded carrots and shredded red cabbage. The salad ingredients go into a large ziplock (or other container) lined with paper towels or a cotton cloth (which will get stained, BTW). Into the fridge it goes. When I'm ready for my daily salad, I grab a handful of the prepared greens out of the bag and add whatever ingredients for the salad I'm making. You can vary the ingredients as you wish. I often add fresh spinach or fresh shredded brussel sprouts to the mix, or whatever other salad green I wish. This is a huge time saver and makes meal time less hectic. It also encourages me to eat all the salad fixings before they go bad! It would be easy to add any of the vegetables listed in the above article.

Posted On 03/19/2024

memeKnight1

My preferred way to eat cabbage is by making sauerkraut. Does that destroy the beneficial items listed above?

Posted On 03/19/2024

uggles

memeKnight1, to make your sauerkraut, do you ferment it in water or brine (not vinegar, as that would be pickling rather than fermenting)? I happen to be fermenting my very first batch of sauerkraut right now; it will be ready to taste in a few days. I really don't know whether fermenting would destroy myrosinase although the act of chopping it in preparation for salt or brine, as Dr. Mercola says, does activate the enzyme. There is no heat involved in fermentation, so it is possible that both myrosinase and sulforaphane are preserved (and their benefits possibly even enhanced) in the fermenting process, although that's just a very slightly educated guess.

Posted On 03/19/2024

Otorongo

Excellent Article and video. I always seem to do better with a visual that goes along with the instructions.

Posted On 03/19/2024

kri8450

Does this only work with brown mustard seed powder or does black or yellow mustard seed powder have the same benefits?

Posted On 03/19/2024
