Foods, Spices & Supplements to Help Counter the Biological Effects of Radiation

FOODS

Bengal Quince

Fruit extract of Aegle marmelos protects mice against radiation-induced lethality.

Broccoli

Sulforaphane mobilizes cellular defenses that protect skin against damage by UV radiation.

Protection against UV-light-induced skin carcinogenesis in SKH-1 high-risk mice by sulforaphane-containing broccoli sprout extracts.

Reduction of x-ray-radiation mortality by cabbage and broccoli.

Caffeine (Coffee, tea, etc.)

Radioprotective action of caffeine: use of Saccharomyces cerevisiae as a test system.

Caffeine protects mice against whole-body lethal dose of gamma-irradiation.

Radioprotective and antioxidant action of caffeine: mechanistic considerations.

Caffeine consumption is associated with decreased severe late toxicity after radiation to the pelvis.
Cherries

Acute toxicity effects of Prunus avium fruit extract and selection of optimum dose against radiation exposure.

Cordyceps

PHOTOPROTECTIVE POTENTIAL OF CORDYCES POLYSACCHARIDES AGAINST ULTRAVIOLET B RADIATION-INDUCED DNA DAMAGE TO HUMAN SKIN CELLS.

Protection against radiation-induced bone marrow and intestinal injuries by Cordyceps sinensis, a Chinese herbal medicine.

Curry

Effect of curcumin analog on gamma-radiation-induced cellular changes in primary culture of isolated rat hepatocytes in vitro.

Protective effect of curcumin on gamma-radiation induced DNA damage and lipid peroxidation in cultured human lymphocytes.

Protection of radiation-induced protein damage by curcumin.

Protective effect of curcumin, ellagic acid and bixin on radiation induced genotoxicity.

Flaxseed

Prophylactic effect of flaxseed oil against radiation-induced hepatotoxicity in mice.

Fucoidan-rich foods (Brown seaweeds used extensively in Japanese cooking)

Fucoidan inhibits UVB-induced MMP-1 promoter expression and down regulation of type I procollagen synthesis in human skin fibroblasts.

Radioprotective effects of fucoidan on bone marrow cells; improvement of the cell survival and immunoreactivity.

Radioprotective effects of fucoidan in mice treated with total body irradiation.

Ginger

Zingiber officinale protects HaCaT cells and C57BL/6 mice from ultraviolet B-induced inflammation.

[6]-Gingerol prevents UVB-induced ROS production and COX-2 expression in vitro and in vivo.

Zingiber officinale exhibits behavioral radioprotection against radiation-induced CTA in a gender-specific manner.
**Zingiber officinale Rosc. modulates gamma radiation-induced conditioned taste aversion.**

Ginger (Zingiber officinale Rosc.), a dietary supplement, protects mice against radiation-induced lethality: mechanism of action.

**Influence of ginger rhizome (Zingiber officinale Rosc) on survival, glutathione and lipid peroxidation in mice after whole-body exposure to gamma radiation.**

**Goji Berries**

Mice drinking goji berry juice (Lycium barbarum) are protected from UV radiation-induced skin damage via antioxidant pathways.

**Indonesian Long Pepper**

Protective effect of Piper longum fruit ethanolic extract on radiation induced damages in mice: a preliminary study.

**Mustard Leaf**

Protective effect of the cruciferous vegetable mustard leaf (Brassica campestris) against in vivo chromosomal damage and oxidative stress induced by gamma-radiation and genotoxic chemicals.

**Sesame seeds and oil**

Protection of cellular DNA and membrane from γ-radiation-induced damages and enhancement in DNA repair by sesamol.

Effect of sesamol on radiation-induced cytotoxicity in Swiss albino mice.

**Soy foods especially miso**

Radioprotective effects of miso (fermented soy bean paste) against radiation in B6C3F1 mice: increased small intestinal crypt survival, crypt lengths and prolongation of average time to death.

Protective effects of soybean isoflavone against gamma-irradiation induced damages in mice.

**Tomatoes & Ketchup**

Lycopene protects the structure of the small intestine against gamma-radiation-induced oxidative stress.

Lycopene in the prevention of gastrointestinal toxicity of radiotherapy.

Lycopene: An antioxidant and radioprotector against gamma-radiation-induced cellular damages in cultured human lymphocytes.
Radioprotective effect of lycopene on chromosomal aberrations (CAs) induced by gamma radiation in human lymphocytes.

Lycopene as a natural protector against gamma-radiation induced DNA damage, lipid peroxidation and antioxidant status in primary culture of isolated rat hepatocytes in vitro.

**SPICES & CONDIMENTS**

Ginger

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Holy Basil

Modulation of glutathione and antioxidant enzymes by *Ocimum sanctum* and its role in protection against radiation injury.

**Rosemary**

Modulation of radiation-induced biochemical alterations in mice by rosemary (*Rosemarinus officinalis*) extract.

Prevention of radiation induced hematological alterations by medicinal plant *Rosmarinus officinalis*, in mice.

Radioprotective-antimutagenic effects of rosemary phenolics against chromosomal damage induced in human lymphocytes by gamma-rays.

Radioprotective potential of *Rosmarinus officinalis* against lethal effects of gamma radiation: a preliminary study.

Rosmarinic acid, a photo-protective agent against UV and other ionizing radiations.

**SUPPLEMENTS**

![Supplements](image)

**Alpha Lipoic Acid**

Protective effects of dietary antioxidants on proton total-body irradiation-mediated hematopoietic cell and animal survival.

Radioprotective effect of DL-alpha-lipoic acid on mice skin fibroblasts.

Radioprotection of hematopoietic tissues in mice by lipoic acid.

**Beta Glucan**

Enhancement of radioprotection and anti-tumor immunity by yeast-derived beta-glucan in mice.
Glucan as stimulator of hematopoiesis in normal and gamma-irradiated mice. A survey of the authors’ results.

Related citations

Glucan-induced hemopoietic and immune stimulation: therapeutic effects in sublethally and lethally irradiated mice.

**Black seed extract (Oil rich Nigella sativa)**

Radioprotective effects of black seed (Nigella sativa) oil against hemopoietic damage and immunosuppression in gamma-irradiated rats.

**Cherry Fruit Extract**

Acute toxicity effects of Prunus avium fruit extract and selection of optimum dose against radiation exposure.

**Chlorella**

Post-exposure radioprotection by Chlorella vulgaris (E-25) in mice.

Evaluation of radioprotective action of a mutant (E-25) form of Chlorella vulgaris in mice.

Radioprotection of hemopoiesis conferred by aqueous extract from chlorococcal algae (Ivastimul) administered to mice before irradiation.

Amelioration of radiation damage to haemopoiesis by Ivastimul, given after irradiation to mice protected by peroral cystamine.

**Cordyceps**

PHOTOPROTECTIVE POTENTIAL OF CORDYCEPS POLYSACCHARIDES AGAINST ULTRAVIOLET B RADIATION-INDUCED DNA DAMAGE TO HUMAN SKIN CELLS.

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**Curcumin**

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Protective effect of curcumin on gamma-radiation induced DNA damage and lipid peroxidation in cultured human lymphocytes.

Protection of radiation-induced protein damage by curcumin.

Protective effect of curcumin, ellagic acid and bixin on radiation induced genotoxicity.

**DMSO (DIMETHYSULFOXIDE)**

An alternative mechanism for radioprotection by dimethyl sulfoxide; possible facilitation of DNA double-strand break repair

**Ellagic Acid**

Studies on the aqueous extract of Terminalia chebula as a potent antioxidant and a probable radioprotector.

Protective effect of curcumin, ellagic acid and bixin on radiation induced genotoxicity.

Radioprotective properties of the phytochemically characterized extracts of Crataegus monogyna, Cornus mas and Gentianella austriaca on human lymphocytes in vitro.

Modulation of radiation-induced protein kinase C activity by phenolics.

Protective effect of curcumin, ellagic acid and bixin on radiation induced toxicity.

**Fat-soluble antioxidants**

The role of fat-soluble vitamins A and E in preventing the biological effects of ionizing radiation in rat tissues

**Flaxseed oil**

Prophylactic effect of flaxseed oil against radiation-induced hepatotoxicity in mice.

**Fucoidans**

Fucoidan inhibits UVB-induced MMP-1 promoter expression and down regulation of type I procollagen synthesis in human skin fibroblasts.

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Influence of ginger rhizome (*Zingiber officinale Rosc.*) on survival, glutathione and lipid peroxidation in mice after whole-body exposure to gamma radiation.

Ginseng

Radioprotective potential of ginseng

Glutamine

Glutamine supplementation prevents collagen expression damage in healthy urinary bladder caused by radiotherapy.

Effect of timing of glutamine-enriched enteral nutrition on intestinal damage caused by irradiation.

The effect of glutamine on radiation-induced organ damage.

Effects of oral arginine and glutamine on radiation-induced injury in the rat.

Gotu Kola

Protection of DNA and membranes from gamma-radiation induced damages by Centella asiatica.

Radioprotective Potential of Plants and Herbs against the Effects of Ionizing Radiation.

Modification of gamma ray induced changes in the mouse hepatocytes by Centella asiatica extract: in vivo studies.

Radioprotection of Swiss albino mouse by Centella asiatica extract.

Protection against radiation-induced conditioned taste aversion by Centella asiatica.

The effect of tetrandrine and extracts of Centella asiatica on acute radiation dermatitis in rats.
**Grape Seed Extract**

Antioxidant activity and radioprotective effects against chromosomal damage induced in vivo by X-rays of flavan-3-ols (Procyanidins) from grape seeds (Vitis vinifera): comparative study versus other phenolic and organic compounds.

**Green Tea compounds**

Potential Protection of Green Tea Polyphenols Against 1800 MHz Electromagnetic Radiation-Induced Injury on Rat Cortical Neurons.

Modification of gamma-radiation response in mice by green tea polyphenols.

Protective effects of EGCG on salivary gland cells treated with gamma-radiation or cis-platinum(II)diammine dichloride.

Radioprotective effects of (-)-epigallocatechin 3-O-gallate (green-tea tannin) in mice.

**Hawthorne Berries**

Radioprotective effects of hawthorn fruit extract against gamma irradiation in mouse bone marrow cells.

**Kelp**

Suppression of radioactive strontium absorption by sodium alginate in animals and human subjects.

**Licorice Root**

Protection of DNA and microsomal membranes in vitro by Glycyrrhiza glabra L. against gamma irradiation

**Lycopene**

Lycopene protects the structure of the small intestine against gamma-radiation-induced oxidative stress.

Lycopene in the prevention of gastrointestinal toxicity of radiotherapy.

Lycopene: An antioxidant and radioprotector against gamma-radiation-induced cellular damages in cultured human lymphocytes.

Radioprotective effect of lycopene on chromosomal aberrations (CAs) induced by gamma radiation in human lymphocytes.

Lycopene as a natural protector against gamma-radiation induced DNA damage, lipid peroxidation and antioxidant status in primary culture of isolated rat hepatocytes in vitro.
Melatonin

Melatonin and roentgen irradiation-induced acute radiation enteritis in Albino rats: an animal model.

Effect of exogenous melatonin on X-ray induced cellular toxicity in lymphatic tissue of Indian tropical male squirrel, Funambulus pennantii.

A radiobiological review on melatonin: a novel radioprotector.

Ameliorative effect of melatonin against gamma-irradiation-induced oxidative stress and tissue injury.

Assessment of the radioprotective effects of amifostine and melatonin on human lymphocytes irradiated with gamma-rays in vitro.

Protective effects of melatonin on gamma-ray induced intestinal damage.

Radioprotective effects of melatonin on radiation-induced cataract.

Melatonin protects against ionizing radiation-induced oxidative damage in corpus cavernosum and urinary bladder in rats.

Protective effects of melatonin on the ionizing radiation induced DNA damage in the rat brain.

Melatonin ameliorates ionizing radiation-induced oxidative organ damage in rats.

The effect of melatonin on peripheral blood cells during total body irradiation in rats.

Antioxidative effects of melatonin in protection against cellular damage caused by ionizing radiation.

Effect of exogenous melatonin on the ovarian follicles in gamma-irradiated mouse.

Melatonin and protection from genetic damage in blood and bone marrow: whole-body irradiation studies in mice.

Melatonin and protection from whole-body irradiation: survival studies in mice.

Pomegranate

Punica granatum peel extract protects against ionizing radiation-induced enteritis and leukocyte apoptosis in rats.

Propolis

Concentration-Dependent Protection by Ethanol Extract of Propolis against γ-Ray-Induced Chromosome Damage in Human Blood Lymphocytes.

Evaluation of radioprotective effects of propolis and its flavonoid constituents: in vitro study on human white blood cells.
**Radioprotective effects of quercetin and ethanolic extract of propolis in gamma-irradiated mice.**

**Radioprotective effects of propolis and quercetin in gamma-irradiated mice evaluated by the alkaline comet assay.**

**Evaluation of the radioprotective effects of propolis and flavonoids in gamma-irradiated mice: the alkaline comet assay study.**

**Assessment by survival analysis of the radioprotective properties of propolis and its polyphenolic compounds.**

**Antitumor, hematostimulative and radioprotective action of water-soluble derivative of propolis (WSDP).**

**Immune activation and radioprotection by propolis.**

- **Resveratrol**
  
  *Resveratrol reduces radiation-induced chromosome aberration frequencies in mouse bone marrow cells.*

- **Silymarin**
  
  *Evaluation of silymarin as a promising radioprotector.*

- **Soy Isoflavones**
  
  *Radioprotective effects of miso (fermented soy bean paste) against radiation in B6C3F1 mice: increased small intestinal crypt survival, crypt lengths and prolongation of average time to death.*

  *Protective effects of soybean isoflavone against gamma-irradiation induced damages in mice.*

- **Spirulina**
  
  *Radioprotective effect of extract from Spirulina platensis in mouse bone marrow cells studied by using the micronucleus test.*

- **Triphala**
  
  *The evaluation of the radioprotective effect of Triphala (an ayurvedic rejuvenating drug) in the mice exposed to gamma-radiation.*
Your body depends on stem cells from your bone marrow to maintain health and respond to injuries and disease. To help insure that your bone marrow stem cells are “up to snuff”:

Dr. David Steenblock’s

**Stemgevity™**

In lab tests *Stemgevity™* produced a 300% increase in the numbers of primitive stem cells (Very small embryonic-like stem cells) in the peripheral blood. It should be noted that 10 of *Stemgevity™*’s 19 ingredients appear in the preceding list of radiation protective substances!
To order Stemgevity™ on-line just click this link or call toll free 1-800-300-1063

LINKS TO ABSTRACTS OF PUBLISHED SCIENTIFIC PAPERS CONCERNING HOW ADULT (NONEMBRYONIC) STEM CELLS INCLUDING THOSE PRODUCED IN YOUR OWN BODY PARTICIPATE IN HEALING RADIATION-INFLECTED DAMAGE TO BODILY TISSUES

Mesenchymal stem cells increase self-renewal of small intestinal epithelium and accelerate structural recovery after radiation injury.

[Therapeutic effect of human mesenchymal stem cells in skin after radiation damage].

Mobilization of bone marrow stem cells by granulocyte colony-stimulating factor ameliorates radiation-induced damage to salivary glands.

Local irradiation not only induces homing of human mesenchymal stem cells at exposed sites but promotes their widespread engraftment to multiple organs: a study of their quantitative distribution after irradiation damage.

In a Nutshell:

The human body depends on stem cells in its various tissues especially bone marrow to repair damage and stay healthy. Actually the vital role stem cells play in both health & disease is one of the greatest health discoveries of modern times.

As we age one of our primary stem cell production “factories” (the bone marrow) doesn’t produce and/or release the quantity and quality of stem cells that it did when we were younger. This is the end result of aging as well as exposure to various environmental (and sometimes dietary) toxins, stress, and for many other yet unidentified reasons.

This lack of stem cells can lead to un-repaired damage in virtually any body part or organ, leading to tissue breakdown, aging, and loss of health. Without active, vigorous stem cells good health is virtually impossible long-term.

Stemgevity™ supports the bone marrow's production and release of healthy, active stem cells. No other product does this. Regular use of Stemgevity™ can thus keep the bone marrow actively supplying stem cells that can contribute to greatly improved health, vitality and longevity.
**Stemgevity™**, the Stem Cell Mobilizing Formula, is the result of years of research spearheaded by physician and stem cell expert Dr. David Steenblock. He is a practicing physician as well as the head of the nonprofit Steenblock Research Institute in San Clemente, California. Dr. Steenblock has been researching stem cells for a number of years and during the course of his work has discovered that many herbs and herbal and plant-derived compounds as well as minerals and other natural substances can stimulate the body to increase the number, activity and release of stem cells into the bloodstream. This is a natural process that, according to scientific theory, becomes less responsive as a person ages. **Stemgevity™** supports the body’s own quick, natural release of stem cells.

**How is Stemgevity™ better than other products on the market?**

**Stemgevity™** is unique in that it not only helps release bone marrow stem cells (and according to our research does that far better than anything else on the market), but also may have the effect of boosting the proliferation of stem cells as well (proliferation means “to increase in number”). In other words, **Stemgevity™** may assist your bone marrow in creating and releasing increased numbers of stem cells. Additionally **Stemgevity™** appears to “feed” the stem cells once they’re in the blood. This combination of properties makes **Stemgevity™** unique.

Because **Stemgevity™** facilitates the release of bone marrow stem cells into the bloodstream, it follows that people with circulation problems or concerns such as those that follow below should have a keen interest in taking it.

- Diabetics.
- Smokers.
- People with poor circulation or blood vessel damage, including varicose veins and stroke, even atherosclerosis (arterial blockage).
- People with a history of heart and circulatory problems.
- Of course, people with a history of heart trouble in their family might want to regularly use **Stemgevity™** to help keep their heart and circulatory systems well supported and thus functioning optimally.

There are potential benefits to areas of the body where cells divide rapidly or more readily sustain damage such as:

- Photodamaged and aged skin
- Bodily areas that have been recently injured, such as sprains, bruising, bone fractures, or following surgery.
- The immune system.
- Muscles especially in those such as athletes both young and old. **Stemgevity™** supports muscle growth, fat-burning, and recovery after intense exercise or injury.
- Joints especially problem areas such as knees, hips, and spine.
• Liver and pancreas, which can sustain damage in people who drink alcoholic beverages.
• And...there is evidence the ingredients in Stemgevity™ can be of benefit to the Central Nervous System including brain in ways nothing else can. This is good news in light of the fact that neurodegenerative conditions such as Alzheimer’s and Parkinson’s are rising at an incredible rate. It’s possible that increasing the numbers of circulating bone marrow stem cells (such as by taking Stemgevity™) may be of benefit in preventing some of these diseases from occurring or slow their progression once they do arise; the research is ongoing in this regard.

Stemgevity™ is not intended to treat any disease and the FDA has not evaluated nor endorsed the statements made here or anywhere in our literature or website. Stemgevity’s™ ingredients support the body’s own stem cell production and release system and by doing so may increase the number of circulating stem cells in the bloodstream. We use examples of health conditions known to benefit from increased stem cells and are not making any claims. A person may or may not benefit by taking Stemgevity™.

What is the recommended amount of Stemgevity™ to take?

3 capsules per day is the recommended dose. The best time to take them is before going to bed as your body is in full “repair mode” at night, but you can take them anytime. Some people like to take 1 capsule 3 times a day, and several athletes have reported seeing best results taking Stemgevity™ a short time following a workout. It is recommended to increase the dosage following strenuous activity, such as athletic competition, or following a traumatic event, such as a fall, accident or injury.

What about the Lithium Aspartate in Stemgevity™?

Lithium is an important trace element naturally occurring in many types of foods including grains and vegetables. It is the element Li on the Periodic Table.

Combined with aspartate it is safe for use in supplements.

Remember we are talking about Lithium aspartate an essential trace mineral, NOT Lithium carbonate.

Lithium carbonate (a prescription drug) is prescribed in high dosages of 300-2700 mg/day as it has been shown to help bipolar disorder. At these intake levels doctors must do periodic blood testing because, like most anything else, too much can be toxic.

The amount of lithium aspartate (natural trace mineral) in each capsule of Stemgevity™ is only 4 mg and at 3 capsules per day is 12 mg/day.
That is 1/25th of even the minimal amount prescribed as a drug.

Many health professionals have recommended that 10 to 25 mg of lithium aspartate per day should be taken as a nutritional supplement.

Bottom line: Stemgevity™ does not provide enough lithium to cause concern for toxicity or any other negative effects. In fact it is one of the most beneficial natural trace mineral supplements you could use! There is a growing volume of research to support this.

**How to Get Go About Getting Additional Information:**

Conduct an Internet search using “lithium and stem cells” as your search phrase.

Jonathan Wright, MD has a nice discussion about low-dose lithium here: [http://www.tahomaclinic.com/lithium1.shtml](http://www.tahomaclinic.com/lithium1.shtml)

James Howenstine, MD has another nice discussion on the topic (Google his name)

**Is Stemgevity™ FDA approved?**

No. The FDA does not approve dietary supplements in the same way that FDA approves some drugs and medical devices. Nonetheless, the FDA does regulate product quality, product safety, and product claims, and has authority to remove products from the market that are not safe or that make claims that are not substantiated by scientific evidence.

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