

Allicin

The Heart of Garlic

Nature's aid to healing the human body

by Peter Josling

CTM BOOK REVIEW

Peter Josling's excellent book will be an inspiration to all, and shows how to harness the 'engine' of garlic, allicin, in its stabilised, most potent form without the obvious downsides of pong and taste. This book will show how to combat and even reverse a wide range of ailments, especially microbial disease caused by bacterial, viral and fungal infections, including:

Allergies, arthritis, asthma, athlete's foot,
bacterial infections, bites, candidiasis, chest infections,
colds, cold sores, colitis, congestion,
diarrhea, eczema, environmental toxins, fungal infections,
gum disease, lyme, cholesterol, psoriasis,
ringworm, sinusitis, wound infections

You will learn how allicin can:

- Protect you from opportunistic ('infectious') diseases
- Defend you against fatal infections like tuberculosis, smallpox and flesh-eating bacteria
- Learn how to prevent the deadly "superbug" MRSA from spreading throughout the healthy population as well as among those who are most vulnerable
- Save money on your doctor and hospital bills
- Protect your body from further diseases and a wide range of environmental toxins
- Prevent infections from returning to invade your body

Peter Josling is Director of The Garlic Centre based in Sussex, England, established in 1993 to provide an independent source of information about the medicinal, culinary and general qualities of garlic. The Garlic Centre also advises commercial companies, research establishments, government agencies and the press and media.

In 1997, Josling also formed a speciality chemicals division to provide key garlic components including alliin, allicin and ajoene for research and product formulation.

Recently he led a team of chemists and chemical engineers in the invention, development and manufacture of the world's first commercially-available stabilised and patented allicin extract formulated into powder capsules, liquids and cremes, all to carry the name Allisure® as a guarantee of real allicin in the products.

The list of already proven herbal remedies that will gain extra impetus by the addition of allicin into their formulations is almost endless. We already know that allicin can be safely added to the following list of *"healthy raw materials"* to make them even better:

- o Vitamin C
- o Probiotics

- o Ginger
- o Ellagic acid
- o Echinacea
- o Vitamins A and E
- o Swedish flower pollen
- o Black walnut hulls
- o Wormwood
- o Grapefruit seed extract
- o Broccoli
- o Garlic powder
- o Digestive enzymes
- o Hyaluronic Acid
- o Astragalus
- o Ginkgo biloba
- o Rosehips
- o Gentian
- o Hypericum
- o Horse chestnut
- o Ginseng
- o Green tea
- o Phosphatidyl serine

Allicin and Cancer Prevention

It is estimated that one on three people will develop a type of cancer at some time in their life and that cancer continues to account for around 25 per cent of all deaths recorded each year. The causes are numerous and varied. Whilst only recognised as a separate disease in the last century, physicians have been diagnosing and treating "*tumours*" for thousands of years. Traditional Chinese medicine has always used garlic as a part of any treatment for the patients who suffered from a tumor or cancer.

The search for compounds that prevent cancer has intensified, with the mounting evidence that many types of cancer are caused or triggered by factors relating to lifestyle and environment. It is well-known and documented that allicin can strengthen the immune system, which is vitally important for fighting cancer. When I reviewed this important area of medicine, I was surprised and pleased to find a considerable amount of data already published showing that by taking allicin powder capsules regularly, you can receive some degree of protection against various stomach cancers and boost your CD4-T cell count. Interestingly, the medical community has known about this for years and is currently trying to establish which compounds are the most protective, since evidence also shows major benefits from diallyldisulphide, which is a common breakdown component of allicin powder. Many of the breakdown products from allicin have been tested for their inhibiting effect on cancer cells, and in most experiments inhibition of tumor growth was established.

Evidence from laboratory experiments and population surveys is presently inconclusive as to the preventative activity of allicin. However, evidence also indicates that further research is warranted into the possible role of allicin in the prevention of cancer in humans.

Anti-cancer effects

In ancient times, garlic was used for the treatment of cancer of the uterus. Numerous reports, including several important epidemiological studies, have entered the scientific literature, asserting that garlic has a favorable effect on various forms of cancer. The following provides an overview of the current research and points of view concerning this very interesting special area of medicine.

Six decades ago, several statistical studies indicated that cancer occurs the least in those countries where garlic and onions are eaten regularly, such as France, Italy, the Netherlands, the Balkans, Egypt, India, and China. A review article published in 1936 referred to the connection between nutrition and cancer, and especially to the cancer growth-inhibiting effect of leek plants (allium plants). The practising physicians of the time were very good observers, but almost nothing was known about the real background of this phenomenon.

It was thought that the inhibitory action of garlic on putrefaction in the intestines, together with the secretion-stimulating effect, brought about detoxification and an increase in resistance. Stimulation of gastric juice secretion and restoration of the intestinal flora, combined with the resulting prevention of gastrointestinal autointoxication, may help to remove at least one of the possible causes of cancer. Garlic may therefore be useful as a cancer preventative agent, and its application as an anticancer "*drug*" is based on this assumption. More recently, this idea has again been pursued, not only in Europe, but also in the Third World countries, where the favorable effects of garlic for cancer are well known. For instance, the consumption of black or green tea, as well as of garlic, is known to be a culinary practice which inhibits tumourigenesis in the lung, forestomach, and esophagus.

The only known study in which garlic has been used to treat patients with advanced stages of cancer was conducted by Spivak (1962). An aqueous garlic juice preparation was administered in doses of 0.2-2mL intravenously or 1-5mL intramuscularly daily for 3-7 days. Of 35 patients with cancer at various sites (lung, cervix, stomach, lower lip, mammary gland, larynx, and leukemia), 26 showed positive treatment results of differing degrees, though complete healing was not achieved in any case. There is a single-case report, however, of a man whose pituitary tumour shrank by 50% during the 5 months in which he ate 5-7 grams of fresh garlic daily. This was the first case ever reported of reduction of this type of tumour without chemotherapy or surgery.

Treatment Regimen

Some notable success stories have been reported using allicin powder capsules, especially in Norway where patients with various types of cancer have dramatically improved their CD4-T cell count (remember this is a measure of how efficient your immune system is). Patients going through chemotherapy or radiotherapy tend to have a very poorly functioning immune system since they are effectively destroyed by treatment.

For 4 months, Mrs EH from Norway had cell poisoning. Now her lymph cancer has gone, but she's continuing with allicin powder capsules and vitamins and minerals.

"When I got the cancer diagnosis, I became more interested in my diet. I thought it was very important to strengthen my immune system. Amongst other things, I found out

that garlic is a significant antioxidant which prevents the body from deteriorating," says Elsa.

Since it is difficult to ingest large amounts of fresh garlic, Elsa chose to invest in capsules. She started with two per day, but later increased this to six per day. She reports, *"Then I was in control (in the summer). My blood count was very good. Personally, I think it was due to the allicin."*

There are many garlic products on the market, but Elsa chose to take one that can guarantee real allicin. Elsa has now been without cell poisoning for over a year. She regularly goes to the doctor for check-ups but gets happier because her blood count gets better every time. She praises the doctor and the hospital because she got such good service.

Elsa believes that a healthy lifestyle without smoking and alcohol, together with allicin, vitamins and mineral supplements has given her a good immune system. Of course, she is concerned that the cancer may come back, but she chooses to think positively. She thanks God that she is well.

Anticancer Effects: Active Compounds

From the many publications reviewed, it is apparent that the anti-cancer effects of garlic are likely due to allicin and allicin-derived compounds as well as unidentified compounds not related to allicin. The following is a summary of the evidence for possible active compounds.

1) Epidemiological studies from six different countries have consistently shown that garlic consumption is associated with decreased risk of gastrointestinal cancer. Since garlic is mainly eaten cooked (allinase inactivated) in most of these countries, allicin may not be necessary to achieve significant cancer reduction.

2) A major decrease in incidence of gastric cancer in China, particularly where large amounts of allicin-yielding fresh garlic are eaten, is associated with the antibiotic effects of garlic and its thiosulfinates (allicin) toward decreasing the amount of nitrate-reducing bacteria in the stomach, hence the amounts of carcinogenic nitrosamines formed. Therefore, allicin does appear to have an important role in prevention of gastric cancer.

3) Animal studies have indicated the importance of allicin, since dietary fresh garlic (but not allinase-inhibited garlic), greatly decreased breast cancer incidence in mice. A large number of animal studies with allicin-derived diallyl disulfide and diallyl sulfide, most using very large doses (100-200mg/kg), have shown positive effects toward decreasing carcinogen-induced cancer. Although allicin itself has not been tested, these studies indicate that allicin derived-compounds have the ability to affect cancer incidence.

The new allicin containing products also naturally form all the beneficial components that are not stabilised when fresh or cooked garlic is used.

What is Allicin?

Allicin is derived from fresh, raw garlic. Heads of garlic are specifically selected to ensure that they contain significant enzyme activity (allinase enzyme). Garlic heads are split into cloves, which are left unpeeled and then subjected to crushing, filtration and a

temperature controlled extraction process designed to produce pure liquid allicin dissolved in water. No chemical solvents are used. The alliin amino acid in fresh garlic is subjected to complete conversion by the allinase enzyme and to ensure a large volume of active allicin is harvested.

The volume of allicin produced is directly related to the enzymatic activity. At a high concentration allicin is an oily unstable substance that quickly decomposes. However the extraction process dilutes allicin very quickly to a concentration where it is stabilised and can be dried to produce allicin powder.

Allicin has been proven to prevent and treat the common cold in the only double blind placebo controlled study of its kind on a garlic product published recently in the peer reviewed American medical journal *Alternatives in Therapy*, Volume 18 Number 4, July/August 2001 pages 189-194.

Volunteers taking allicin were at least 50% less likely to contract a cold. They also recovered from a wide range of symptoms, including cough, sore throat, runny nose and headaches, very much faster (1.58 days vs 5.01 days) and were less likely to get another cold.

Genuine allicin products are also capable of destroying a wide range of bacterial and fungal infections. Published work shows excellent activity against *Staphylococcus aureus*, *Candida albicans*, streptococcus species, *Escherichia Coli*, *Salmonella* species and *Helicobacter pylori*.

Methicillin Resistant *Staphylococcus Aureus* bacteria (MRSA) treated with allicin powder, liquid and crème shows a large zone of dead bacteria usually left untouched by pharmaceutical treatments. No zone of inhibition.

Allicin Effective Against MRSA Superbugs Powerful New Evidence

A compound extracted from garlic is effective against even the most antibiotic-resistant strains of MRSA, the killer hospital superbug, and can cure patients with MRSA-infected wounds within days, according to new research by microbiologist Dr Ron Cutler of the University of East London (UEL).

In a paper to be published in the New Year, Dr Cutler, an expert in the antimicrobial properties of plant extracts, claims that allicin - a compound that occurs naturally in garlic kills not only established varieties of MRSA, but also destroys the new generation of super-superbugs that have evolved resistance to Vancomycin and Glycopeptides, the powerful antibiotics widely considered to be the last line of defence against MRSA.

MRSA (Methicillin-resistant *Staphylococcus aureus*) now causes an estimated 5,000 deaths in UK hospitals each year mainly through secondary infection of surgical wounds. Though MRSA organisms can live harmlessly in humans and are carried in the nasal passages and on the skin, they can cause fatal infection in immune-suppressed patients, the elderly, the young and those with surgical implants.

Doctors have become increasingly alarmed over the past few months by the emergence in UK hospitals of new generations of resistant strains of MRSA known as VISAs, and GISAs (Vancomycin or Glycopeptide resistant Staphylococcus aureus). MRSA has also become endemic in many hospitals, especially in London and the South-East, prompting the NHS to review its hygiene procedures.

Dr Cutler, who recently proved that allicin destroys the MRSA microbe in laboratory trials, has now teamed up with a new company, Allicin International, to develop topical treatments to prevent MRSA infection. The group have developed a nasal cream, oral capsules and soaps that have proved effective against both MRSA and GISA.

In partnership with colleagues in the NHS, Dr Cutler is now embarking on a major clinical trial involving around two hundred volunteers, including patients at several hospitals in London and the South East.

Dr Cutler said: *"The trials we have conducted so far show that this formulation is highly effective against MRSA and it could save many lives. This finding is backed up by initial findings from a number of recent case studies. We have been trying to set up a clinical trial for many months now and, at last, we have secured funding from sources including Allicin International."*

MRSA is causing a genuine crisis in our hospital system in Britain and worldwide. Antibiotics are increasingly ineffective, but we do have a powerful natural ally. Plant compounds have evolved over millions of years as chemical defence agents against infection. Garlic has been used in medicine for centuries and it should be no surprise that it is effective against this very modern infection."

The research on the laboratory effects of allicin on GISA was presented in part at the Institute of Biomedical Scientists congress in Birmingham, October 2003, and is being prepared for publication in the Journal of Biomedical Science to appear in the New Year. A full clinical study involving the use of allicin to reduce nasal carriage in healthy volunteers, involving hospitals from London and the South East, is underway. Initial results are due to be published in summer 2004.

Case Study: Deborah's Story

Deborah Brown (34), a probation service officer who lives in Rainham, Kent, contracted MRSA after a major spinal operation in November 2000. The painful wounds on her spine failed to heal despite constant applications of both oral antibiotics and creams, which also failed to reduce the levels of MRSA in her tissue.

In December 2002, Deborah's mother Pauline contacted Dr Cutler after seeing an item on TV about MRSA and received a course of Allimax cream and capsules by post. Within two months, the MRSA had mostly cleared from Deborah's tissues and the wounds had begun to heal, allowing an operation to remove her spinal supports to be carried out in June 2003.

Deborah said: *"The effect of the treatment was dramatic - I am making a good recovery now but it was really awful at the time. Having weeping wounds on my back that never healed for two years was incredibly painful and I became increasingly depressed"*

as the MRSA didn't respond to repeated courses of antibiotics. If my case helps to show that allicin works against MRSA then I am glad that something good might come of it."

Further Resources

***Allicin - The Heart of Garlic* by Peter Josling**