The Blood Fever Virus and the History of Vampires + Dracula

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The word Upir (Blood in the Night) as a term for vampire is found for the first time in written form in 1047 BC in north India the BrahmarakShasa was a vampire like creature.

Some of the earliest evidence of Ritual Vampirism comes from Tartaria in Transylvania and stems to the fifth millennium BC. Remains of a human body were found buried in a fire pit along with clay tablets upon which were inscribed the names of the ‘Sumerian’ god Enki and the ranking number of Father Anu. The language was subsequently termed ‘proto-Sumerian’ and represented some of the earliest written artifacts yet to be found.

The descendants of these early vampires were the Sacred Ubaid Race who, one millennium later, settled Mesopotamia and founded the Anunnaki religion of the Sumerians in 3500 BC. Their Transylvanian ancestors were the Anunnaki Gods themselves.
The languages of Europe will later add the V to replace the U for pronunciation. Various suggestions have been proposed in an attempt to explain the continued meaning of the word **vampire**. One recent suggestion was that it was applied to a group of 'Watchers' (Seers - Derkesthai: Dragons) who had occupied a settlement near "lake Van", in Urartu - Armenia. The original location - Greater Scythia - is faultless, the association is without error but the etymology is un-researched and the philology is completely absent.

Although that author’s suggested identification between **Watchers** and **Vampires** is absolutely correct, the word **vampire** does not in any sense relate to their former geographical location or origin but, as we shall see, rather to the **vampires'** social and spiritual identity and status within a given cultural framework, which in this instance was **Scythian**, overlaid on **Celtic**.

In the journals of the 17th century cleric, the **Abbé Calmet**, the word **vampire** is transliterated into its most common, and its earlier, central European form which is spelt either **oupire** or **oupere**. These spellings are common in literature of Calmet’s time and represent the original form of the word **vampire**.
When the word migrated into Latin from Anatolian the u became a v because, as we will recall, there is no u character represented in the Latin alphabet. If there had been, then the Latinized western European construction of the word would have been vampire. By now bells should be ringing in the readers’ heads as they remember hearing about vampires somewhere or another, perhaps in a humorous context.

The Romans didn’t have a w and this letter appeared in clerical Latin during the medieval period as v v, as presented in the ridiculous phrase mortvvs svm. The vv being used then as a long vowel sound to differentiate between u and v sounds which were both represented by the Latin v.

So to recap, let’s have a look at the linguistic migration so far: oupere - oupire - owpire - ovpire. At this point we must remember that the word migrated from one language into another at a time when the most commonly used form of transmission was oral. This was bound to lead to confusion when the word was written down for the first time, as it has in numerous other instances.

By now we should be asking “If the word vampire was originally spelt oupire, where on earth did the ‘m’ come from?” All the author can say is thank heavens for the anomalous ‘m’ because it is this component that really confirms the origin and meaning of the word vampire, according to currently accepted scholarship.

Philologists would agree that the word vampire, as oupere, in its present form originated from the Turkish word uber, which means ’witch’. This would appear to present even more problems because in addition to an anomalous ‘m’, we now also have a ’b’ to explain away!

John Reason’s
Real Vampire Life
An independent E-Zine of the vampire sub-culture,
a REAL vampire resource for everyone
The True Story of Dracula, Shot in Transylvania, by Transylvanians, for the World a Cast of Thousands, an Epic Struggle, The Blood Fever Virus is Real. If you have ever wondered about the true origins of Dracula, you must see Dracu.
The Blood Fever Virus and the History of Vampires + Dracula

Blood Fever Timeline
DRACU 2

A DOCUMENTARY ABOUT PRESENT DAY VAMPIRES AND THE BLOOD FEVER.

There is a real blood viral disease that causes this vampire
phenomena. "This is a documentary about vampires in the world
today. We invited vampires from around the world,
and when they came we interviewed them in the club.
We wanted to find out how vampires live today. Since not all
of them wanted to show their faces to the camera, for
some roles we hired actors. Still, don't worry! You are able
to see some real vampires in the movie, too!"
The Blood Fever Virus and the History of Vampires + Dracula

The true story of Dracula, shot in Transylvania, by Transylvanians. For the world.

A cast of thousands, an epic struggle, a love story in your theaters soon.

If you have ever wondered about the true origins of Dracula, you must see Dracu!

Real life vampires

She files her teeth to fangs, and if her husband says she looks like Maria von Trapp, he gets it in the neck, reports GLEN WILLIAMS.

In the 1990s, she had a husband, kids, and a successful career as a housewife and mother.

Now she's a vampire, and the world is watching.

We are building a coffin-shaped bed to sleep in. Our house is covered in cobwebs. It's beautiful.

Better ones:

Cherry, cherry, cherry, cherry. It's wonderful, and real people with souls and minds could speak. Three times.

The vampire is the soul, not the skin. It's real people with souls and minds could speak. The vampire is the soul.

The vampire is the soul, not the skin. It's real people with souls and minds could speak. The vampire is the soul.

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The vampire is the soul, not the skin. It's real people with souls and minds could speak. The vampire is the soul.
THE BLOOD FEVER VIRUS
FROM MYTHOS TO CLINICAL REALITY

-UPDATE-

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Medicina Alternativa
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The Blood Fever Virus and the History of Vampires + Dracula

BLOOD FEVER

The blood fever is a common disease that often infects soldiers. The ailment is caused by a bacteria that invades the body through any open and bleeding wound. The bacteria commonly lays dormant in garbage piles, corpses and in swamps. It gains a foothold in the body rapidly and then causes the skin to erupt in hundreds of sores which bleed constantly. This is accompanied by a high fever, stiff joints, sore muscles, a pounding heart and accelerated breathing. If left untreated, a victim can bleed to death from the sores alone. The elderly and those who are often succumb to heart failure. Even if the body fights the blood fever off, it often leaves scars where the sores were. Treatment usually consists of bed rest, bandaging all sores and a high intake of food. In addition, if blood root is eaten and applied directly to the wounds as a paste, recovery is much faster and scarring is greatly lessened. Once a person has contracted the blood fever, they usually will not become infected a second time. Those that do are able to shake off the effects much quicker the second time.

THE WORLD OF KHORAS - HOME PAGE

webmaster@khoras.net
THE ROMAN EMPEROR SPREADS THE BLOOD FEVER VIRUS TO ROME

WHEN TRAJAN BROUGHT BACK THE DACIANS TO ROME FROM ROMANIA IN 110 AD HE BRINGS THE BLOOD FEVER VIRUS WITH HIM. TRAJAN STARTS THE GLADIATOR GAMES TO DEAL WITH THE DACIANS. HERE IS THE ROMAN RECORD OF THE VICTORY OVER THE DACIANS
There were over 200,000 Dacians killed, Trajan brought back 20,000 only 10,000 survived. Trajan started
the Gladiator games to kill the Dacian slaves and entertain the people with 100 days of celebration.
9,000 bodies were thrown into the river and the blood fever virus drives the Romans to have a thirst for
blood. The last 1000 Dacians were the beginning of the games. Later their ancestors will return to Dacia
and call it Romania to remember Rome.
The Blood Fever Virus and the History of Vampires + Dracula

BUT DRACULA (VLAD THE IMPALER) MAKES VAMPIRE FAMOUS.
The Romanian word for devil is Dracu, the ui is added for emphasis like pretty prettier, the A means son of --so Dracula means son of the excessive devil

The Science of Vampirism

Vampire Virology

by Dr. Pecos: Here is the original page on the vampire virus, with some text and format edits by Robert Lomax.

In 1616, Italian scientist Ludovico Fatinelli published his Treatise on Vampires, in which he speculated that vampirism was caused by a microscopic pathogen, as opposed to demonic possession and other such myths. Tragically, he was burned at the stake for heresy, but his research lived on to inspire countless dedicated men and women to bring you the information included on this page.
The Virus

The source of vampirism is the **human vampirism virus (HVV)**. Like rabies, HVV has a distinct bullet shape and belongs to the order *Mononegavirales*—viruses with a nonsegmented, negative-stranded RNA genome. The virus' natural host is a flea commonly found on cave-dwelling bats—most notably the vampire bat. In the most common scenario, the flea bites a bat, which in-turn passes the virus on to humans and other mammals.

Unlike many other viruses, HVV is not airborne. Airborne viruses can travel from one host to another through the air and quickly cause an outbreak by infecting a significant number of people through the ventilation systems in large public buildings, such as a casino or shopping mall.

While most viruses are highly specific in what tissues they target, HVV is able to infect every living cell in the body, with the exception of red blood cells (which are replaced over time). It's also much less destructive, as it can effectively transform tissues without destroying them.

While in theory HVV infection is possible through any exchange of bodily fluids, transmission occurs through the bite of an infected person in virtually every case.
Stages of the Disease

**Stage One: Infection.** Within six to twelve hours of exposure, the victim develops a headache, fever, chills and other flu-like symptoms, as well as a drastic increase in metabolism and heart-rate as the virus spreads throughout the body. These symptoms can be easily confused with more common infections, although the presence of bite marks is usually enough to confirm the diagnosis. This stage generally lasts another six to twelve hours, during which the vaccine is 99 percent effective. The victim should also be treated with fluids and antibiotics.

**Stage Two: Coma.** Within 24 hours of exposure, the victim will slip into a vampiric coma. About 12 hours into this phase, the pulse slows, breathing is shallow and the pupils are dilated. Thousands have been buried alive because of this. While it is commonly thought that anyone infected with HVV turns into a vampire, in fact only a small percentage of people survive vampiric comas. Generally, the young, old and feeble never come out of their comas and eventually die, while the vast majority of survivors are males between the ages of 18 to 35. Vampiric comas last about a day, and usually end the night after their onset. The vaccine is roughly 50 percent effective when administered during Stage Two of the infection: the longer the victim has been in the coma, the less effective the vaccine.
Stage Three: Transformation. An HVV victim who survives the coma will awaken fully transformed into a vampire. An acclimation period follows, characterized by confusion, despondency and paranoia, accompanied by the pain of dehydration and malnutrition. Most vampires begin to hunt within 24 hours of transformation. The vaccine is of no use at this point, as all virus activity has gone dormant.

Untreated, a person who comes out of a vampiric coma will have undergone a number of major physiological changes affecting the various systems of the body. The information included below is only an overview; for a more detailed account, read Robert Lomax's extended pages here.

**Brain & Nervous System**

A vampire's nervous system is similar to humans and has proven to be their Achilles' heel: injuries to the spinal cord and brain can be devastating for vampires. While a vampire's spinal cord and nerves work as before transformation, a number of changes take place in the brain, and that altered brain chemistry goes a long way toward understanding vampire behavior.

**Serotonin:** Vampires have much lower levels of this neurotransmitter. Serotonin acts as an inhibitor against violent, aggressive and impulsive behavior, which also explains why criminals such as murderers and rapists have so little of it in their brains.

**Dopamine/Endorphins:** These neurotransmitters induce feelings of euphoria, and are released in a vampire's brain when it feeds. Neural pathways activated in feeding vampires are much like those found in drug users.
Circadian Rhythms: Chemical changes in the brain that help us "rise and shine" with the morning light are reversed in vampires.

Sense Organs

Powerful sense organs give vampires an advantage both in hunting and eluding capture. Sneaking up on them is virtually impossible, as they are aware of your presence long before you are aware of theirs.

Sight: In vampires, the iris in each eye becomes hyperdilated, giving them what appear to be black eyes. In addition, the retina now reflects more light into the rod cells, causing the eyes to shimmer in the dark. While all this gives vampires excellent night vision, it renders them effectively blind in daylight. They also experience extreme vasodilation of the sclera, making the whites of their eyes appear red.

Smell/Hearing: Both senses are extremely acute: thanks to a combination of increased neural sensitivity and additional receptor cells, hearing range is tripled while smell is tenfold.

Hair, Skin, Teeth & Nails

Part of the terror of encountering a vampire stems from dramatic changes to their outer appearance. Some of these changes are functional, while others are simply an unfortunate side effect of the transformation process.

Teeth: During the latter half of the vampiric coma, the upper and lower eyeteeth experience rapid growth as additional enamel is deposited on the crown of each tooth, creating sharp fangs. Many vampires will file these fangs to make them sharper for easier feeding—though they'll have to do this about once a week as vampire fangs are capable of regeneration, even when pulled out.
Skin: A newly-transformed vampire has a sickly, pale-yellow skin tone that fades to a ghastly bluish color over the next few days as its circulation slows. Over a matter of years, the skin becomes more and more translucent as its fat and water stores shrink away, revealing a fine network of veins underneath.

Nails: Both fingernails and toenails thicken and grow at a more than doubled rate. To prevent tension on their nail beds, vampires will generally keep their nails within a centimeter in length, and also quite jagged or pointed to help them grab victims and injure opponents.

Hair: Hair growth slows down substantially in order to feed the accelerated nails. Not only that, once a follicle reaches its terminal length and falls out, each regrowth will become smaller and lighter until it’s gone for good. Within ten years of transformation, a vampire's entire epidermis will be completely bald, with not even a hint of peach fuzz.

Muscular & Skeletal System

Adaptations in their skeletal and muscular systems give vampires significant advantages over humans.

Muscles/Connective Tissue: About 90% of vampire muscles are of the fast-twitch variety (compared to 50% for the average human). This brand of musculature enables short bursts of maximal force, ideal when hunting prey. However, unlike typical fast-twitch muscles, vampire muscles are highly resistant to fatigue, thanks to a drastic increase in mitochondria. Ligaments and tendons thicken in response to the workload imposed upon them by the muscles.

Skeletal System: Osteoblast production causes a vampire's entire skeleton to harden and thicken, both during the coma and after each feeding. As a vampire loses its fat and water stores, its spine will curve into a hunchback, a condition known as kyphosis.

Cardiovascular System

The most profound differences between our species are found in the circulatory system, as they enable vampires to survive injuries that would kill a human being.
**Blood:** Vampire blood is called ichor (pr. ik-er), and appears black due to an increase in iron levels, allowing it to carry more oxygen and clot faster.

**Heart:** Vampire blood is pumped via the contraction of skeletal muscle rather than the heart, which eventually atrophies from disuse. At rest, these contractions are mostly involuntary and take place in the limbs, emanating from the furthest extremities inward, like a wave. BPM for each contraction tends to be much lower than the average human heartbeat.

**Adrenaline:** This "emergency hormone," produced by the adrenal glands, is released in consistently large amounts in vampire blood during "fight-or-flight" situations. This quickly raises a vampire's sluggish metabolism by increasing blood flow, dilating air passages and accelerating the production of clotting factors. Along with changes in muscle, bone and connective tissue, this ability to release adrenaline only adds to a vampire's extraordinary power.

**Body Temperature**

Like a reptile (or a corpse), a vampire's core body temperature depends largely on its surrounding environment. They aren't completely cold-blooded, however, as they'll still shiver and produce heat to keep their temperature at a bare minimum of 60 degrees Fahrenheit (compared to 98 for humans). This proved to be a great help for modern vampire hunters, as it made vampires easily distinguishable from humans when viewed through infrared imagery.

**Aging & Life Expectancy**

While no vampire on record has ever died of natural causes, vampires do undergo an aging process—just not in the same way as humans. Vampires do not age on a molecular/genetic level, but their life of hunting and eluding capture creates tremendous wear and tear in the form of injuries to bones and tissue.
Because they presented such a danger to society, most vampires were destroyed long before the outer limits of their lifespan were determined. Ancient history offers some clues, however. In Ancient China, there was said to be one vampire in the Emperor's court through the entire Eastern Zhou Dynasty, which would put his age at 550. More accurate modern records have certified vampires of over 300 years old.

Contrary to the opinions of many theologians, vampiric longevity is not the result of some pact with the Devil, but rather an ability to ward off the DNA damage that occurs during cell division in normal humans. Specifically, the protective caps on the ends of chromosomes (known as telomeres) become chewed up over time in humans, but not vampires.

Though their DNA may have the ability to resist aging, mutations that take place during the initial coma cause a vampire's appearance to change dramatically within the span of a decade. It will lose all of its hair as its fat and water stores shrink away, causing its skin to become thinner and more transparent. This gives it a distinctly withered and dried appearance, with smaller muscles and a pronounced curvature of the spine.

Despite their rather feeble appearance, older vampires are still extremely powerful and agile. Many a vampire hunter has made the mistake of underestimating them.

**Vampire Sociology**

*Click here to read Vampire Biology.*

Vampire behavior resembles our own in more ways than we might imagine. By conducting extensive interviews with vampires, along with observing their behavior in the wild, scientists have been able to arrive at a reasonable understanding of their world.
The Newly-Transformed

The first few days after coming out of a vampiric coma are especially difficult for a vampire. A newly-transformed vampire awakens starved, dehydrated and disoriented, its judgement clouded by competing impulses and memories of its previous life. But all that is soon drowned out by a fierce, intense desire for blood. This urge for blood eventually snaps a vampire into focus, and it sets about finding a way to satisfy that urge.

The Hunting Pack

Though lone vampires are not uncommon, most vampires find it advantageous to either join an existing hunting pack or create one of their own. Each path has its own advantages. Joining an existing pack offers security, access to blood and protection from other packs. However, new members are low in the pecking order and are often forced to put themselves in dangerous positions, such as scouting missions. They're also the last to feed, if they get to feed at all. Vampires possessing natural leadership skills may find it better to hunt on their own and eventually bring some of their victims into the fold.

Since vampires are unable to bear children or have sex, the hunting pack is the only family unit of their life. In a successful pack, each vampire has its role, and there is little dissension. A typical pack is made up of four vampires, with one Alpha and three underlings. Four seems to be the ideal number for a hunting pack: anymore than that, not everyone always gets a chance to feed; any less and hunting becomes appreciably riskier. Of course, in the distant past, when vampire control was in a more primitive state, large vampire armies rose up and spread by overwhelming entire towns like locusts.

Are vampires sentimental? Do they love? In a limited sense, yes. Vampires are capable of developing loyalties and behaving selflessly to protect and serve their fellow pack members. However, the pack is the only area of their lives in which they are not mercenary.
**Alpha Vampires:** Vampires packs are meritocracies, not democracies. There are no elections, no "show of hands." The most capable hunter and leader runs the show, and the others follow. The Alpha Vampire coordinates hunting strategy, gives assignments and makes all final decisions. During hunting, the Alpha generally hangs back in a less risky position, yet when a victim is seized, the Alpha drinks first. But the job has its perils, too. For one, the Alpha has the difficult task of choosing replacements for fallen packmates. In this, it must walk a fine line: while the Alpha must be stronger than its pack, it cannot afford to carry weak, ineffectual hunters. Contrary-wise, stronger packmates can rise up and become a threat to its position.

Like virtually all mammals, vampires assert their dominance through display behavior and fighting. Vampires hiss, bare their fangs and claws and showcase their prodigious leaping ability to intimidate rivals. Physical size and power are important but by no means the only determinant of Alpha status; in fact, intellectual capacity is more important in determining success and longevity as a vampire.

While Alpha Vampires would seem to be in an enviable position, they actually have a higher mortality rate than underlings. Each new challenge to an Alpha from within the pack takes its toll. Injuries pile up, including many of the permanently-disabling variety: they can lose an eye, have flesh torn off and break bones. Older vampires are far from the dashing, handsome types so often seen in movies, as they're likely to be heavily scarred with parts of their face missing. The ultimate fate of the Alpha is a grim one: cast out of the safety of the pack, no longer able to fight, the once-powerful vampire is reduced to a solitary existence, subsisting on the blood of whatever cat or dog it can win the confidence of. Eventually, the Alpha succumbs to malnourishment or the weapons of vampire hunters.

"Eventually the Alpha succumbs to... the weapons of vampire hunters."
**Fledglings:** When a recently-transformed vampire joins a pack, it is usually taken under the wing of an elder, who helps the fledgling learn how to hunt. While some packs have no patience with slow learners, most fledglings are given a little bit of time to get up to speed. However, an unusually-quick learner may be perceived as a threat and destroyed by the Alpha. Fledglings with ambition learn to keep a low profile and hide their agenda until the time is right.

**Hunting:** Vampires will utilize all at their disposal to hunt while avoiding detection: they will slather themselves with makeup to appear more human, have female pack members pose as prostitutes to lure male victims, and haunt the shadows around nightclubs, sporting and concert venues and all-night diners. Unsurprisingly, prostitutes and homeless always make up a disproportionate number of victims. Vampires have also been known to kill taxi drivers and use their vehicles to pick up additional victims.

A given swath of real estate can only support so many vampires. While an urban area may offer more hunting opportunities for vampires, it also increases their chances of running afoul of another pack. The country is safer, but hunting opportunities may be few and far between. Therefore, vampire packs must be ruthless in defending their territory, making battles between packs almost unimaginably vicious. It is not enough
to merely win the confrontation: to have a future, they must show their rivals just how merciless and sadistic they can be.

**Treatment of Victims:** Treatment of victims can range from indifferent to barbaric. If a pack finds a suitable new member, it will keep that person in their midst until transformation is complete. However, it has to make sure not to drain the body too much or the person will die. The more blood that's left in the victim, the more likely he or she will transform and reawaken as a vampire. Vampires have also been known to perform elaborate **rituals** based around transforming supportive civilians into one of their kind.

Once a pack size is set, however, vampires will usually tear their victims apart after feeding. Some consider this behavior as proof that vampires are cruel, but in fact it is more a question of pragmatism than cruelty. Left intact, today's bite victim could become tomorrow's rival, however slim that chance is. Plus, it is much easier to hide body parts than a full corpse.

**The Vampire Home**

Vampire dwellings of the modern era are the very definition of crude and utilitarian. Since vampires spend most of their waking hours out hunting, there is little need for creature comforts at home. A vampire's priorities are avoiding detection and getting out of the sun, and their abodes reflect this transient nature of their lives. If a pack has found a particularly safe, secluded hiding spot, it may make perfunctory efforts to dress it up with furniture and assorted knick-knacks. Music is one of their preferred indulgences, which they have to curtail in the face of nosy vampire hunters. Knowing that their lair may be discovered at any time, vampires travel light. In the country, they live in caves, abandoned mines and barns; in the city, they inhabit sewers and abandoned buildings and subway stations, or tunnel under piers along the waterfront.

It wasn't always this way. In the Middle Ages, when vampire packs roamed the countryside without fear of extermination, they enjoyed occupying lavish digs. Once
set up in these palaces, Alpha Vampires would conspicuously display symbols of their success with all the windy self-importance of today's ruling classes.

**Hygiene:** Due to their cat-like aversion to water, vampires are generally uninterested in personal hygiene, as they dislike washing and will wear the same clothes as long as possible. However, because their hunting missions may require them to hide in plain sight, vampires have no choice but to wash themselves and put on new clothes—usually stolen from stores or taken off victims.

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**Demographics & Population**

The vast majority (about 80 percent) of vampires are males who were between the ages of 18 and 35 upon transformation. Another 10 percent are females between the ages of 15 and 35. The remaining 10 are males and females past 35, with the absolute oldest case being 72. The racial and ethnic makeup of a pack will generally mirror that of the local populace. Alpha Vampires are usually, but not always, male.

Despite the fact that they do not age on a cellular level, vampire mortality rates have always been high. In 1800, a newly-transformed vampire could expect to live 10 years on average. By 1900, that number had dropped to 5. In 1960, only 2 years. The leading causes of death have also changed with the times. In the Middle Ages, vampiricide, or murder by other vampires, was the leading cause. By 1930, vampire hunters had become the number-one killer.

Suicide rates are also much higher among vampires than humans. For much of the 20th century, suicide rates in the United States hovered between 10 and 15 suicides per 100,000 people. Vampires were easily triple that.

**Population:** As of 2013, the world's vampire population is estimated to be approximately 5000. The vast majority of this estimate (95 to 98 percent) are believed to be in the dormant phase. As the FVZA and other organizations around the world
made significant progress in vampire abatement during the 1950s and 60s, many vampires went into hiding, hoping to reawaken at a more hospitable time. Unfortunately, seeing as how the FVZA has been out of commission for almost 40 years, this day and age would be the perfect time for them to emerge.

![Global distribution of likely vampire hideouts, marked in red.](image)

Vampire population distribution largely mirrors that of humans, so they're most likely found in and around large cities. That does not mean the country is completely safe: in fact, many vampires find areas in the countryside—caves, cemetery crypts, abandoned mines—more suitable for a safe dormancy.
Religion

It may come as a surprise to many that vampires practice religion. Perhaps because they share with us a desire to make sense of the world, vampires have sought to put their bloodlust into some sort of context. Historically, vampires see themselves as the antithesis of the prevailing religion in the land of their origin. Thus, the worship of Satan, Judas and Lilith was born among vampire packs in Christian countries, while many vampires from Hindu countries believe themselves to be descended from Shiva, the God of Destruction.

Vampire Mythology

Click here to read Vampire Sociology.

Most vampire myths come to us from the Dark Ages, when science was in its infancy and people looked to religion or superstition to explain the world around them. While many vampire myths have their basis in Christian Orthodoxy and Victorian romanticizing, others represent imaginative interpretations of actual vampire characteristics and behavior.

Vampires sleep in coffins

Source: This myth likely arose from gravediggers and passersby who observed vampires emerging from coffins and crypts.

Fact: If a vampire did spend the night in a coffin, it probably had nothing to do with sleeping preference. In the old days, many bite victims were interred while still in a vampiric coma. The truth is, vampires will sleep wherever they feel safe.
Garlic repels vampires

**Source:** Most likely based on observation. To ward off vampires, garlic would be worn, hung in windows, or rubbed on chimneys and keyholes.

**Fact:** Vampires have sensitive noses and can be momentarily driven off by pungent odors. The blood fever virus can be disabled and destroyed by garlic.

http://www.downloads.imune.net/medicalbooks/Garlic%20Friend%20or%20Foe.pdf

Crosses repel vampires & burn their flesh

**Source:** Christian beliefs that vampires are demons and therefore enemies of God. During the Dark Ages, vampires were known to have been tortured by the church using superheated iron crosses to "burn the Holy Spirit" into them before execution.

**Fact:** Unless used as a melee or throwing weapon, or heated as a torture device, crosses have absolutely no effect on vampires. They have no trouble entering churches either.
Vampires are killed by driving a stake through their heart

Source: This myth actually started out as a misguided method of keeping suspected vampires in their coffins by driving a long iron stake through the torso and into the coffin floor, effectively pinning it in place. Eventually this evolved into simply stabbing the heart using special kinds of wood such as oak, ash and hawthorn, which were thought poisonous to vampires because of their "purity."

Fact: Because their blood clots quickly and is circulated by skeletal muscles, vampires can easily survive injuries to the heart and torso, and they have little trouble freeing themselves from impalement. They also have no apparent allergy to wood (or silver for that matter).

Vampires burst into flames upon exposure to sunlight

Source: Most likely based on observation of a vampire's extreme reaction to sunlight, and possibly reinforced by the sight of dead vampires being cremated during the day.

Fact: Sunlight renders vampires, with their hyperdilated irises and reflective retinas, blind. It also causes neural pathways to fire randomly in the brain, creating an extreme epileptic reaction. Lastly, vampire skin is highly sensitive to UV rays, becoming badly burned and blistered within minutes. However, as dramatic as these reactions may appear, not even a hint of smoke will occur.
**Holy water burns vampiric flesh**

**Source:** Christianity.

**Fact:** Holy water, or any water for that matter, has little effect on vampires. They can, however, still be drowned, and they generally hate getting wet as it can lower their body temperature, making them less energetic and able to hunt.

**Vampires prey on virginal women**

**Source:** A reflection of 19th-century fears over the sexual awakening of young women. In Balkan and Bulgarian folklore, male vampires were believed to deflower virgins and even impregnate them with half-human hybrids known as Dhampir.

**Fact:** While vampires have a stated preference for the taste of young blood, they are not particular as to which gender provides it. Being asexual, sterile and impotent, vampires cannot have intercourse, let alone produce any kind of offspring.

**Vampires can fly & move at the speed of sound**

**Source:** Observation of vampires running, leaping and using their quick reflexes.

**Fact:** While they can sprint faster than most humans (25 to 30 miles per hour) and jump higher than any (at least ten feet), vampires cannot fly, levitate, teleport, or move any faster than a world-class athlete.
Vampires can turn into bats

**Source:** Association of vampires with vampire bats, since they're both nocturnal, have fangs, drink blood and are the main vectors of the human vampirism virus.

**Fact:** Vampires cannot turn into bats, or anything else for that matter. Although vampires can't shapeshift (or retract their fangs), their appearance does change over time, and they can be quite adept at disguising themselves using makeup and other methods.

Vampires do not cast shadows & are not visible in mirrors

**Source:** Christianity. It was thought that a vampire, or any creature lacking a soul, would not cast a shadow or produce a reflection in a mirror.

**Fact:** Vampires do cast shadows and are indeed visible in mirrors—although interestingly enough, they are often quite uncomfortable with their own reflections.
Vampires shed bloody tears

Source: Vampires typically have red, bloodshot scleras—the so-called "whites of their eyes." Because of this, people throughout history have come to believe that vampires have bleeding eyes.

Fact: Because the blood is confined to the eyeball, vampire tears are just as clear as ours.

Humans become vampires by drinking their blood

Source: 19th-century sexualization of vampires and their victims "exchanging" bodily fluids.

Fact: While it's true that the vampirism virus is carried in both vampire blood and their saliva, transmission almost always occurs through biting. Contrary-wise, ingestion of vampire blood tends to cause a person to throw it back up, while injection can be outright lethal.
Elizabeth Báthory & Vlad the Impaler were vampires

**Source:** Their alleged penchant for drinking the blood of the people they killed. This eventually inspired Victorian author Bram Stoker's famous vampire character Count Dracula.

**Fact:** There exists no verifiable evidence that Countess Báthory and Prince Dracula were biological vampires. Even the notion that they drank blood is dubious at best.

Vlad III, aka Prince Dracula.

**Vampires have psychic, hypnotic & telekinetic powers**

**Source:** Observation of a vampire's ability to read subtle emotions, and their reputation for using their "silver tongue" to get what they want. Telekinesis was simply thrown in later as a baseless supplement, likely due to a common association of vampirism with witchcraft and the occult.

**Fact:** While vampires do have heightened senses due to their enlarged amygdalae, they cannot read minds or see the future, only physical expressions and mannerisms. This in-turn benefits their powers of persuasion, as they can more easily figure out
what to say. However, these abilities depend largely on individual skill and experience.

**Vampires look eternally youthful**


*Fact:* Older vampires look more like *Nosferatu.*

**Vampires can choose to live on only animals and blood bags**

*Source:* Numerous Hollywood movies and TV shows.

*Fact:* Although animals and blood bags can get them by for a while, vampires need to feed on live humans to get all the nutrients they require.

**A vampire's wounds can heal within seconds**

*Source:* Likely an exaggeration of vampire dexterity.
Fact: While it's true that even major injuries can clot within a few minutes, vampire healing rate is only double that of a human's, and they still form scars. And although they can regenerate their upper and lower fangs, they cannot regrow lost body parts such as limbs or eyes.

Vampires turn to ash when they are slain

Source: Most likely the practice of cremating slain vampires to prevent the possibility of infection, as well as the selling of vampire ashes in some parts of the world.

Fact: Dead vampires actually decompose at a slower rate than human corpses, thanks to natural antibiotics in their bodily fluids.

Vampires can be distracted by leaving seeds for them to count

Source: Due to chemical changes in the part of the brain that regulates habitual activity, vampires are more susceptible to mental disorders such as arithmomania, or the obsessive counting of objects. Some forms of porphyria, which has often been mistaken for vampirism throughout history, have also been linked with such conditions.  

Fact: Regardless of how severe a vampire's OCD might be, counting objects is a low priority when faced with a potential meal or threat.
Famous Vampire Victims

Vampires are indiscriminate hunters, and those facing them can expect no quarter, no matter their standing in life.

Giuliano de Medici and Simonetta Vespucci
Florence's Number One Couple
d. 1476
See Historical Tales: Guiliano and Simonetta
Lucretia Borgia
Daughter of Pope Alexander VI.
1480-1519
The femme fatale of the murderous, incestuous Borgia clan met her match when brother Cesare, recently transformed into a vampire, cornered her inside the Vatican.

Ivan the Terrible
Russian Tsar
1533-1584
After transformation, Ivan used his family as a personal smorgasbord, drinking the blood of his son and daughter-in-law before he was killed by palace guards.

Percy Bysshe Shelley
English Romantic Poet
1792-1822
While vacationing in Italy with wife Mary and friend and fellow poet Lord Byron, Shelley decided to pay a call to the vampiric residents of a lakeside castle. The hosts, unimpressed with his reputation, drank his blood then threw him over the castle ramparts into the lake.

Nat Turner
Slave Revolt Leader
1800-1831
Turner turned his bloodlust into a full-scale insurrection by leading other transformed slaves on a hunting spree across the Virginia countryside. All told, his pack killed 50 before a local militia put an end to them.

Edgar Allen Poe
Writer
1809-1849
The Master of the Fictional Macabre met up with the real thing when he stumbled into a couple of vampires while on a bender along the Baltimore waterfront. He was later euthanized at a nearby hospital.

Rasputin
Russian mystic and advisor to Tsar Nicholas II's wife, Alexandra d. 1916
Russian aristocrats, fearful of Rasputin's undue influence over the Tsar's wife, lured him to a vampire hideout in St. Petersburg. After transformation, the "Mad Monk" was shot, bludgeoned and thrown into the Neva River, yet he still turned up at the
palace the following night, whereupon he was beheaded by the Tsar's guards.

**Rudolph Valentino**  
*Movie Star*  
1895-1926  
While in New York City to promote his new movie, the Italian sex symbol was lured into a speakeasy, then set upon by a hunting pack. He managed to get back to his hotel, where he was eventually euthanized. The studio claimed his death was caused by a bleeding ulcer.

**Warren Harding**  
*29th President of the United States*  
1865-1923  

**Famous Cases: Who Killed Warren Harding?**

**Report Number:** 2381*

*As the actual file is missing, this case has been pieced together from interviews, memoirs and assorted public records.

**Date:** August 2, 1923  
**Location:** San Francisco, California  

Of all the American presidents who died in office, none had more questions surrounding his demise than the 29th President, Warren Harding. After Harding expired in San Francisco on August 2, 1923, the cause of death was ascribed to food poisoning, a determination later changed to stroke. However, many people suspected murder, as Harding had his share of enemies. But the true story behind Harding's
The Blood Fever Virus and the History of Vampires + Dracula

depth may have gone to the grave with one dogged FVZA Agent.

**Background:** Warren Harding came out of nowhere to seize the 1920 Republican Presidential nomination and go on to win the election. Almost from the outset, his administration was plagued with scandal. Harding installed several of his old Ohio friends in important positions within his Cabinet, and his White House was known more for its poker games and evening burlesques than for any actual legislation. The mid-term congressional elections of 1922, in which Republican candidates got hammered, were a wake-up call for Harding, who said of his friends, "they're the ones that keep me walking the floors at night." In a June 1923 speech, Harding vowed to rid his administration of corruption. But before doing so, the President had to make a long-promised trip west with his wife Florence and his good friend Jess Smith, assistant to the U.S. Attorney General.

Shortly before he left, the President received information that someone in the Justice Department was receiving kickbacks from Chicago gangster Al Capone's organization in order to protect Capone's monopoly on bootlegging (the United States had been "dry" since Prohibition began in 1919). Harding discussed the matter with Jess Smith, and both men endeavored to launch a full investigation when they returned to Washington.

Harding's historic trip west was beset with problems. A ship taking the President up the Alaska coast ran aground, then the President became sick with food poisoning after dining on some local crabs. On July 30, 1923, as the ship set sail from Alaska to San Francisco for the last leg of the trip, President Harding was eager to get back to Washington and commence a new, corruption-free chapter in his presidency.

**Incident:** On the night of August 1, Franklin Prevost, Director of the FVZA office in San Francisco, received an urgent call from Jess Smith asking him to meet the Presidential boat as it steamed into the harbor. Prevost, an ambitious, idealistic young man who had risen to become the youngest regional director in the Agency's history, boarded the boat on a typically foggy San Francisco evening and was informed by Smith that President Harding had been bitten by a vampire some time the previous evening. Smith told Prevost that one of the ship's hands, a Norwegian named Olaf Johans, had done it, and that he had leaped overboard after the attack. Prevost entered the Presidential Suite and found Harding in a vampiric coma, the telltale puncture wounds on his neck, his wife Florence at his bedside. A brief discussion arrived at the only reasonable course of action, and the President was put out of his
misery with a dose of cyanide.

Both Smith and Florence Harding wanted to keep the true means of the President's demise a secret. Prevost was hesitant, but eventually agreed to keep quiet and so, on August 2, 1923, it was announced that President Harding had died of food poisoning while on his way to San Francisco. No further investigation was ever conducted, as Florence Harding would not allow an autopsy on her husband. The body was returned to Washington for burial, and for the first and only time in American history, an FVZA report was suppressed.

The official version of death by poisoning did little to quell rumors flying around Washington and the rest of the country. Why hadn't Mrs. Harding permitted an autopsy, and why was there such a hasty burial? If Warren Harding had been murdered, then there were no shortage of suspects. Harding's promise to wipe out corruption would likely mean jail time for some of his pals. Even Harding's wife, Florence, came under suspicion, as the President's many affairs had caused her great personal anguish and embarrassment.

Investigation: The rumors and suspicions eventually died down as Vermonter Calvin Coolidge assumed the reins of government. But across the country in San Francisco, several unanswered questions continued to nag at FVZA Director Prevost. How had a man bitten by a vampire been able to board a ship carrying the President? And how had that vampire gotten to Harding, who was under full Secret Service protection?

Prevost quietly began his own investigation, interviewing everyone who had been on or around the ship in the days leading up to Harding's death. He learned that the Norwegian shiphand had disappeared two days before the ship's departure from Alaska. A big break came when a witness identified John Scalise and Albert Anselmi, two thugs from the Al Capone crime organization, as leaving the ship the night before Harding was bitten. Prevost began to consider the possibility that Capone had put a hit on the President to preserve his bootlegging operation. But the means of the hit-murder by vampire-didn't match gangster modus operandi. And it still didn't explain how the vampire had gotten to the President.

Then came a stunning announcement from Washington: former Assistant Attorney General Jess Smith had been indicted for accepting bribes from Al Capone. For Prevost, Smith’s link to Capone seemed to solve the puzzle of Harding's death.
the trip west, Smith had enjoyed unfettered access to the President, and stood to lose much in Harding's promised purge of corruption. In addition, as assistant head of the Justice Department, Smith had access to the FVZA lab, from which several vials of vampire blood had gone missing shortly before President Harding's trip west. Prevost told FVZA Director Hilton Dickerson of his findings; Dickerson summoned him to Washington, and told to bring along his report.

Prevost left San Francisco for Washington on September 12, 1924, but he never reached his destination. As he stepped off the train in St. Louis, two men with tommy guns burst into the station and opened fire. Prevost was shot 12 times, and died a short time later at a nearby hospital. His report was never recovered.

Eyewitness accounts of Prevost's murderers matched descriptions of Capone hit men Scalise and Anselmi. But before police could question the two men, they turned up dead, riddled with shotgun blasts in a Chicago barbershop.

**Post-Mortems:** Although Prevost's file was gone, he left behind enough information in his San Francisco office to build a case against Jess Smith in the death of Harding. FVZA Director Hilton Dickerson had every intention of pursuing the case, until Smith himself wound up dead from an apparently self-inflicted gunshot wound (the gun was found in his right hand, but the bullet wound was in his left temple). Smith's death meant that, only two years after Harding's death, virtually everyone involved in the event was gone (Florence Harding died November 21, 1924). Only Al Capone remained, and he wasn't talking. The Harding assassination case was dropped, and Capone continued to prosper until he was jailed for tax evasion in 1931. Afflicted with syphilis, he died in Florida in 1947.

**Comments from Dr. Pecos:** Is it possible that Warren Harding's close friend and Assistant Attorney General Jess Smith arranged and helped carry out the murder of the President? The evidence is certainly compelling. Unfortunately, we will never know the truth, and Harding's cause of death is still officially listed as a stroke. For Franklin Prevost, a man accustomed to battling the undead, the fight against organized crime was played out under a different set of rules. Though he paid for it with his life, Franklin Prevost's courage stands as a proud chapter in FVZA history.
Vampires are REAL
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V5 Vampire Virus

It is believed by some that the cause of vampyrism is to be attributed to some type of "virus." The, "Vampire Virus," has been given many, many names over the years, including, "Code V," "Code 5," "K-17," "G-17," "vHERV," "Stem Alpha," and, perhaps most notably, "The V5 Vampire Virus." It is believed that this is what causes vampyrism because, as studies have shown, retroviruses can have some rather significant (long-term) impacts on the physical rendering of one's appearance and attributes.

It is thought that this virus is a sort of endogenous retrovirus, behaving much like HIV. In short, retroviruses are viruses that, once in the body, attack the genetic make-up of our bodies, altering our very DNA, and the term, "endogenous," means that it is passed on through the offspring from the parent organism. Therefore, "endogenous retrovirus," means that it is a DNA-altering virus that can be passed on to the infected individual's children.

History of Endogenous Retroviruses

Allow me to start from the beginning...of time, that is... You see, endogenous retroviruses are the primary source of "evidence" for those who support the evolutionary theory and try to debunk all religion; however, it should be noted that many religious figures also use this as evidence for a divine
being(s). Now then, that being said, there is a lot of evolutionary jargon involved in endogenous retroviruses, but we'll try to keep it simple for now.

What are known as, "common ancestors," are merely the creature that all sub-species evolved from. For example, all birds came from a single, "common ancestor," with other species and kingdoms having been derived from other common ancestors. It is believed that there were several of each common ancestor roaming the earth at some point in time long, long ago. The common ancestors were, essentially, the "pure" species of avian (birds), mammalia (mammals), and the other animal groups. So, what was it that made these creatures change into, well, something else?

Charles Darwin stated that it is reasonable to make the assumption that our environments play some role in our developments as species, thus explaining why, in the Gallopagos Islands, turtles on some islands have short necks and uniform shells while turtles on other islands have long necks with a cut-out in their shell around their heads which allow them to raise their necks higher. This would also explain why Africans and other peoples with closer proximity to the equator are of a darker skin complexion than individuals in the extreme northern reaches of the world who tend to be of a much paler complexion; because if the Africans were not so dark they would burn, and because the sun shines to a much lesser extent in the north (if the sun even shines at all, which it doesn't in some parts of the year), the peoples of such regions have less need for darker skin, therefore they are more pale.

It could be said that the discovery of retroviruses both futhers Darwin's theory and destroys it, depending on the individual's views. It is believed that retroviruses played a key role in the development of life as we know it. To Darwin, we began with a common ancestor and its offspring adapted to their different environments accordingly. To retrovirologists, we began with a common ancestor who became infected with a retrovirus, altering its DNA, and, therefore, the DNA of its offspring, making it an endogenous retrovirus. This endogenous retrovirus then continued to alter the DNA of its host organisms through many, many, many generations until its host had achieved the new design that which the retrovirus was programmed to change it to.

In short, we had a basic, common ancestor with simplistic functions, but that design wasn't good enough so the retroviruses came along and infected the organism, thus altering its genetic makeup, which, as science has proven countless times, alters the physical attributes of the creature. Over many years, the virus continued to change the creature until the virus either died somehow or something happened that caused the virus to become dormant and stop functioning (science hasn't gotten that far quite yet).

Retrovirii Evolve to Form Vampire Virus

It is believed that a retrovirus similar to that of its ancient viral ancestors has been born and is beginning to affect the homosapien species, entering the organism and altering its DNA. Some of these changes include increases in reflexes, day and night eyesight, smell, hearing, endurance, strength, agility, a change in the body's circadian rhythm to be more awake at night (when most predators hunt), and much, much more.
Believers of this 'new retrovirus' will often cite the Mayan calendar and various other astronomical charts from different cultures, stating that they predicted, "a great change," in the year 2012, and that this change they mentioned could very well be the next step in human evolution – a new endogenous retrovirus.

This retrovirus would be passed on through the offspring of the infected, and could likewise be transferred via a blood transfusion to infect others. The virus would then force the new host to undergo the changes it was programmed to inflict until there are no further changes to be made and its purpose has been fulfilled. It is theorized that this state of "fulfillment" is vampyrism.

One individual with whom I spoke took this a step further, even, so as to say that this is why we Hunger for blood, and it must be said that it is definitely one of the most logical reasons I have heard thus far. This individual's theory for our need for blood was that it is what is needed to "fuel" the retrovirus and the changes it must make to our DNA. Our bodies would begin to enjoy these changes and, consequentially, become addicted to them – dependent on them even, and would therefore not allow them to cease so easily. When the retrovirus became weak, our bodies would induce upon us the symptoms of the Hunger, telling us to Feed; to nourish the virus so that it may continue to advance our bodies to the next step in evolution.

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Let’s compare the Blood fever virus to the other emotional virus Rabies also known as Hydro phobia because you get incredibly thirsty but fear water. With the blood fever you get a thirst and a fascination with blood and an over sense of shame thus fear of religious items like the cross or holy water. Both are blood diseases communicable by bite or blood. Hydrophobia is a harsh extreme strong virus, where the blood fever is a weak virus. The blood fever makes the pupils dilate from extra sex hormone and thus fear light. Guilt, shame, and delusion are present. But there is a simple cure. Garlic.
Rabies (ˈræbɪz; from Latin: rabies, "madness") is a viral disease that causes acute encephalitis in warm-blooded animals. The disease is zoonotic, meaning it can be transmitted to humans from another species (such as dogs), commonly by a bite from an infected animal. For a human, rabies is almost invariably fatal if postexposure prophylaxis is not administered prior to the onset of severe symptoms. The rabies virus infects the central nervous system, ultimately causing disease in the brain and death.

The rabies virus travels to the brain by following the peripheral nerves. The incubation period of the disease is usually a few months in humans, depending on the distance the virus must travel to reach the central nervous system. Once the rabies virus reaches the central nervous system and symptoms begin to show, the infection is virtually untreatable and usually fatal within days.
Early-stage symptoms of rabies are malaise, headache and fever, progressing to acute pain, violent movements, uncontrolled excitement, depression, and hydrophobia. Finally, the patient may experience periods of mania and lethargy, eventually leading to coma. The primary cause of death is usually respiratory insufficiency.

Rabies causes about 55,000 human deaths annually worldwide. 95% of human deaths due to rabies occur in Asia and Africa. Roughly 97% of human rabies cases result from dog bites. In the United States, animal control and vaccination programs have effectively eliminated domestic dogs as reservoirs of rabies. In several countries, including Australia and Japan, rabies carried by terrestrial animals has been eliminated entirely. While classical rabies has been eradicated in the United Kingdom, bats infected with a related virus have been found in the country on rare occasions.

![Rabies Diagram]

Signs and symptoms

Patient with rabies, 1959
The period between infection and the first flu-like symptoms is typically 2 to 12 weeks, but incubation periods as short as four days and longer than six years have been documented, depending on the location and severity of the inoculating wound and the amount of virus introduced. Soon after, the symptoms may expand to slight or partial paralysis, anxiety, insomnia, confusion, agitation, abnormal behavior, paranoia, terror, and hallucinations, progressing to delirium. Saliva production is greatly increased, and attempts to drink, or even the intention or suggestion of drinking may cause excruciatingly painful spasms of the muscles in the throat and larynx. Hydrophobia (fear of water), the historic name for the disease, refers to the dread of swallowing fluids these patients exhibit.\[9\][clarification needed]

Death almost invariably results 2 to 10 days after first symptoms. Once symptoms have presented, survival is rare, even with the administration of proper and intensive care.\[11\] In 2005, Jeanna Giese, the first patient treated with the Milwaukee protocol, became the first person ever recorded to have survived rabies without receiving successful post-exposure prophylaxis. An intention-to-treat analysis has since found this protocol has a survival rate of about 8%.\[13\]

Virology of Rabies

The rabies virus is the type species of the Lyssavirus genus, in the family Rhabdoviridae, order Mononegavirales. Lyssaviruses have helical symmetry, with a length of about 180 nm and a cross-section of about 75 nm.\[1\] These viruses are enveloped and have a single-stranded RNA genome with negative sense. The genetic information is packed as a ribonucleoprotein complex in which RNA is tightly bound by the viral nucleoprotein. The RNA genome of the virus encodes five genes whose order is highly conserved: nucleoprotein (N), phosphoprotein (P), matrix protein (M), glycoprotein (G), and the viral RNA polymerase (L).\[14\]

Once within a muscle or nerve cell, the virus undergoes the replication. The trimeric spikes on the exterior of the membrane of the virus interact with a specific cell receptor, the most likely one being the
acetylcholine receptor. The cellular membrane pinches in a procession known as pinocytosis and allows entry of the virus into the cell by way of an endosome. The virus then uses the acidic environment of that endosome and binds to its membrane simultaneously, releasing its five proteins and single strand RNA into the cytoplasm.\[15\\]

The L protein then transcribes five mRNA strands and a positive strand of RNA all from the original negative strand RNA using free nucleotides in the cytoplasm. These five mRNA strands are then translated into their corresponding proteins (P, L, N, G and M proteins) at free ribosomes in the cytoplasm. Some proteins require post-translative modifications. For example, the G protein travels through the rough endoplasmic reticulum, where it undergoes further folding, and is then transported to the Golgi apparatus, where a sugar group is added to it (glycosylation).\[15\\]

Where there are enough proteins, the viral polymerase will begin to synthesize new negative strands of RNA from the template of the positive strand RNA. These negative strands will then form complexes with the N, P, L and M proteins and then travel to the inner membrane of the cell, where a G protein has embedded itself in the membrane. The G protein then coils around the N-P-L-M complex of proteins taking some of the host cell membrane with it, which will form the new outer envelope of the virus particle. The virus then buds from the cell.\[15\\]

From the point of entry, the virus is neurotropic, traveling quickly along the neural pathways into the central nervous system, and then to other organs.\[2\\] The salivary glands receive high concentrations of the virus, thus allowing further transmission.

### Transmission

Any warm-blooded animal, including humans, may become infected with the rabies virus and develop symptoms, although birds have only been known to be infected in experiments.\[16\\] The virus has even been adapted to grow in cells of poikilothermic ("cold-blooded") vertebrates.\[17\\18\\] Most animals can be infected by the virus and can transmit the disease to humans. Infected bats,\[19\\20\\] monkeys, raccoons, foxes, skunks, cattle, wolves, coyotes, dogs, mongooses (normally yellow mongoose)\[21\\] or cats present the greatest risk to humans.

Rabies may also spread through exposure to infected domestic farm animals, groundhogs, weasels, bears, raccoons, skunks and other wild carnivores. Small rodents, such as squirrels, hamsters, guinea pigs, gerbils, chipmunks, rats, and mice, and lagomorphs such as rabbits and hares, are almost never found to be infected with rabies and are not known to transmit rabies to humans.\[22\\] The Virginia opossum is resistant but not immune to rabies.\[23\\]

The virus is usually present in the nerves and saliva of a symptomatic rabid animal.\[24\\25\\] The route of infection is usually, but not always, by a bite. In many cases, the infected animal is exceptionally aggressive, may attack without provocation, and exhibits otherwise uncharacteristic behavior.\[26\\] This is an example of a viral pathogen modifying the behavior of its host to facilitate its transmission to other hosts.

Transmission between humans is extremely rare. A few cases have been recorded through transplant surgery.\[27\\]

After a typical human infection by bite, the virus enters the peripheral nervous system. It then travels along the nerves toward the central nervous system.\[28\\] During this phase, the virus cannot be easily detected within the host, and vaccination may still confer cell-mediated immunity to prevent symptomatic
rabies. When the virus reaches the brain, it rapidly causes encephalitis, the prodromal phase, and is the beginning of the symptoms. Once the patient becomes symptomatic, treatment is almost never effective and mortality is over 99%. Rabies may also inflame the spinal cord, producing transverse myelitis. Diagnosis

Rabies can be difficult to diagnose because, in the early stages, it is easily confused with other diseases or aggressiveness. The reference method for diagnosing rabies is by performing PCR or viral culture on brain samples taken after death. The diagnosis can also be reliably made from skin samples taken before death. Diagnosis can be made from saliva, urine, and cerebrospinal fluid samples, but this is not as sensitive. Cerebral inclusion bodies called Negri bodies are 100% diagnostic for rabies infection but are found in only about 80% of cases. If possible, the animal from which the bite was received should also be examined for rabies.

The differential diagnosis in a case of suspected human rabies may initially include any cause of encephalitis, in particular infection with viruses such as herpesviruses, enteroviruses, and arboviruses such as West Nile virus. The most important viruses to rule out are herpes simplex virus type one, varicella zoster virus, and (less commonly) enteroviruses, including coxsackie viruses, echoviruses, polioviruses, and human enteroviruses 68 to 71. New causes of viral encephalitis are also possible, as was evidenced by the 1999 outbreak in Malaysia of 300 cases of encephalitis with a mortality rate of 40% caused by Nipah virus, a newly recognized paramyxovirus. Likewise, well-known viruses may be introduced into new locales, as is illustrated by the recent outbreak of encephalitis due to West Nile virus in the eastern United States. Epidemiologic factors, such as season, geographic location, and the patient's age, travel history, and possible exposure to bites, rodents, and ticks, may help direct the diagnosis.

Cheaper rabies diagnosis will become possible for low-income settings: accurate rabies diagnosis can be done at a tenth of the cost of traditional testing using basic light microscopy techniques.

Prevention

All human cases of rabies were fatal until a vaccine was developed in 1885 by Louis Pasteur and Émile Roux. Their original vaccine was harvested from infected rabbits, from which the virus in the nerve tissue was weakened by allowing it to dry for five to 10 days. Similar nerve tissue-derived vaccines are still used in some countries, as they are much cheaper than modern cell culture vaccines.

The human diploid cell rabies vaccine was started in 1967; a new and less expensive purified chicken embryo cell vaccine and purified vero cell rabies vaccine are now available. A recombinant vaccine called V-RG has been successfully used in Belgium, France, Germany, and the United States to prevent outbreaks of rabies in undomesticated animals. Currently, immunization prior to exposure has been used in both human and nonhuman populations, where, as in many jurisdictions, domesticated animals are required to be vaccinated.

In the United States, since the widespread vaccination of domestic dogs and cats and the development of effective human vaccines and immunoglobulin treatments, the number of recorded human deaths from rabies has dropped from 100 or more annually in the early 20th century to one to two per year, mostly caused by bat bites, which may go unnoted by the victim and hence untreated.
The Missouri Department of Health and Senior Services Communicable Disease Surveillance 2007 Annual Report states the following can help reduce the risk of contracting rabies: [42]

- Vaccinating dogs, cats, rabbits, and ferrets against rabies
- Keeping pets under supervision
- Not handling wild animals or strays
- Contacting an animal control officer upon observing a wild animal or a stray, especially if the animal is acting strangely
- If bitten by an animal, washing the wound with soap and water for 10 to 15 minutes and contacting a healthcare provider to determine if post-exposure prophylaxis is required

September 28 is World Rabies Day, which promotes the information, prevention, and elimination of the disease. [43]

Treatment

*Main article: Postexposure prophylaxis*

Treatment after exposure is highly successful in preventing the disease if administered promptly, in general within 10 days of infection. [1] Thoroughly washing the wound as soon as possible with soap and water for approximately five minutes is very effective in reducing the number of viral particles. “If available, a virucidal antiseptic such as povidone-iodine, iodine tincture, aqueous iodine solution, or alcohol (ethanol) should be applied after washing. Exposed mucous membranes such as eyes, nose or mouth should be flushed well with water.” [44]

In the US, the Centers for Disease Control and Prevention recommends patients receive one dose of human rabies immunoglobulin (HRIG) and four doses of rabies vaccine over a 14-day period. [45] The immunoglobulin dose should not exceed 20 units per kilogram body weight. HRIG is expensive and constitutes the vast majority of the cost of post exposure treatment, ranging as high as several thousand dollars. As much as possible of this dose should be infiltrated around the bites, with the remainder being given by deep intramuscular injection at a site distant from the vaccination site. [15]

The first dose of rabies vaccine is given as soon as possible after exposure, with additional doses on days three, seven and 14 after the first. Patients who have previously received pre-exposure vaccination do not receive the immunoglobulin, only the post exposure vaccinations on days 0 and 2.

Modern cell-based vaccines are similar to flu shots in terms of pain and side effects. The old nerve-tissue-based vaccinations that require multiple painful injections into the abdomen with a large needle are inexpensive, but are being phased out and replaced by affordable World Health Organization intradermal vaccination regimens. [33]

Intramuscular vaccination should be given into the deltoid, not gluteal area, which has been associated with vaccination failure due to injection into fat rather than muscle. [citation needed] In infants, the lateral thigh is used as for routine childhood vaccinations. [citation needed]

Awakening to find a bat in the room, or finding a bat in the room of a previously unattended child or mentally disabled or intoxicated person, is regarded as an indication for postexposure prophylaxis (PEP). The recommendation for the precautionary use of PEP in occult bat encounters where no contact is recognized has been questioned in the medical literature, based on a cost-benefit analysis. [46] However, a
2002 study has supported the protocol of precautionary administering of PEP where a child or mentally compromised individual has been alone with a bat, especially in sleep areas, where a bite or exposure may occur without the victim being aware. Begun with little or no delay, PEP is 100% effective against rabies. In the case in which there has been a significant delay in administering PEP, the treatment should be administered regardless, as it may still be effective.

**Induced coma**

*See also: Milwaukee protocol*

In 2004, American teenager Jeanna Giese survived an infection of rabies unvaccinated. She was placed into an induced coma upon onset of symptoms and given ketamine, midazolam, ribavirin, and amantadine. Her doctors administered treatment based on the hypothesis that detrimental effects of rabies were caused by temporary dysfunctions in the brain and could be avoided by inducing a temporary partial halt in brain function that would protect the brain from damage while giving the immune system time to defeat the virus. After 31 days of isolation and 76 days of hospitalization, Giese was released from the hospital. She survived with all higher level brain functions, but an inability to walk and balance. On a podcast of NPR's Radiolab, Giese recounted, "I had to learn how to stand and then to walk, turn around, move my toes. I was really, after rabies, a new born baby who couldn't do anything. I had to relearn that all...mentally I knew how to do stuff but my body wouldn't cooperate with what I wanted it to do. It definitely took a toll on me psychologically. You know I'm still recovering. I'm not completely back. Stuff like balance and, um, I can't run normally."

Giese's treatment regimen became known as the "Milwaukee protocol", which has since undergone revision with the second version omitting the use of ribavirin. Two of 25 patients survived when treated under the first protocol. A further 10 patients have been treated under the revised protocol, with a further two survivors. The anesthetic drug ketamine has shown the potential for rabies virus inhibition in rats, and is used as part of the Milwaukee protocol.

On April 10, 2008, in Cali, Colombia, a boy of 11 was reported to have survived rabies and the induced coma without noticeable brain damage.

On June 12, 2011, Precious Reynolds, an eight-year-old girl from Humboldt County, California, became the third reported person in the world and the second in the United States to have recovered from rabies without receiving PEP.

**Prognosis**

In unvaccinated humans, rabies is almost always fatal after neurological symptoms have developed. Rabies kills around 55,000 people a year, mostly in Asia and Africa. Vaccination after exposure, PEP, is highly successful in preventing the disease if administered promptly, in general within 6 days of infection. Begun with little or no delay, PEP is 100% effective against rabies. In the case of significant delay in administering PEP, the treatment still has a chance of success.

5 of the first 43 patients (12%) treated with the Milwaukee protocol survived, and those receiving treatment survived longer than those not receiving the treatment.

**Epidemiology**

60
Rabies-free countries (in green) as of 2010.

In 2010, an estimated 26,000 people died from rabies, down from 54,000 in 1990.\footnote{The majority of the deaths occurred in Asia and Africa.} India has the highest rate of human rabies in the world, primarily because of stray dogs, whose number has greatly increased since a 2001 law forbade the killing of dogs.\footnote{Effective control and treatment of rabies in India is also hindered by a form of mass hysteria or group delusion known as puppy pregnancy syndrome (PPS). Dog bite victims with PPS (both male and female) become convinced that puppies are growing inside them, and often seek help from faith healers rather than from conventional medical services. In cases where the bite was from a rabid dog, this decision can prove fatal. Dr. Nitai Kishore Marik, former district medical officer of West Midnapur, states "I have seen scores of cases of rabies that reached our hospitals very late because of the intervention of faith healers. We could not save those lives." An estimated 20,000 people die every year from rabies in India — more than a third of the global toll.} As of 2007, Vietnam had the second-highest rate, followed by Thailand; in these countries, the virus is primarily transmitted through canines (feral dogs and other wild canine species). Another source of rabies in Asia is the pet boom. In 2006 China introduced the "one-dog policy" in Beijing to control the problem.

The rabies virus survives in widespread, varied, rural fauna reservoirs. It is present in the animal populations of almost every country in the world except Australia and New Zealand.\footnote{Australian bat lyssavirus (ABLV), discovered in 1996, is similar to rabies and is believed to be prevalent in native bat populations. In some countries, such as those in western Europe and Oceania, rabies is considered to be prevalent among bat populations only.} In Asia and in parts of the Americas and Africa, dogs remain the principal host. Mandatory vaccination of animals is less effective in rural areas. Especially in developing countries, pets may not be privately kept and their destruction may be unacceptable. Oral vaccines can be safely distributed in baits, a practice that has successfully reduced rabies in rural areas of Canada, France, and the United States. In Montréal, Quebec, Canada, baits are successfully used on raccoons in the Mont-Royal Park area. Vaccination campaigns may be expensive, and cost-benefit analysis suggests baits may be a cost-
effective method of control. In Ontario, a dramatic drop in rabies was recorded when an aerial bait-vaccination campaign was launched.

Rabies is common among wild animals in the US. Bats, raccoons, skunks and foxes account for almost all reported cases (98% in 2009). Rabid bats are found in all 48 contiguous states. Other reservoirs are more limited geographically; for example, the raccoon rabies virus variant is only found in a relatively narrow band along the East Coast. Due to a high public awareness of the virus, efforts at vaccination of domestic animals and curtailment of feral populations, and availability of postexposure prophylaxis, incidents of rabies in humans are very rare. A total of 49 cases of the disease was reported in the country between 1995 and 2011; of these, 11 are thought to have been acquired abroad. Almost all domestically acquired cases are attributed to bat bites.

In Switzerland, the disease has been virtually eradicated after scientists placed chicken heads laced with live attenuated vaccine in the Swiss Alps. The foxes of Switzerland, proven to be the main source of rabies in the country, ate the chicken heads and immunized themselves.

### History

#### Etymology

![Woodcut of a rabid dog from the Middle Ages](image)

A woodcut from the Middle Ages showing a rabid dog.

The term is derived from the Latin rabies, "madness". This, in turn, may be related to the Sanskrit rabhas, "to do violence". The Greeks derived the word lyssa, from lud or "violent"; this root is used in the name of the genus of rabies, Lyssavirus.

#### Impact

Because of its potentially violent nature, rabies has been known since circa 2000 B.C. The first written record of rabies is in the Mesopotamian Codex of Eshnunna (circa 1930 BC), which dictates that the owner of a dog showing symptoms of rabies should take preventive measure against bites. If another person were bitten by a rabid dog and later died, the owner was heavily fined.

Rabies was considered a scourge for its prevalence in the 19th century. In France and Belgium, where Saint Hubert was venerated, the "St Hubert's Key" was heated and applied to cauterize the wound. By an application of magical thinking, dogs were branded with the key in hopes of protecting them from rabies. The fear of rabies was almost irrational, due to the significant number of vectors (mostly rabid dogs) and the absence of any efficacious treatment. It was not uncommon for a person, showing no signs of the disease, bitten by a dog merely suspected of being rabid, to commit suicide or to be killed by others. This gave Louis Pasteur ample opportunity to test postexposure treatments from 1885.
ancient medical times, the attachment of the tongue (the lingual frenulum, a mucous membrane) was cut and removed as this is where rabies was thought to originate. This practice ceased with the discovery of the actual cause of rabies.[20]

Other animals

*Main article: Rabies in animals*

Rabies is infectious to mammals; three stages are recognized. The first stage is a one- to three-day period characterized by behavioral changes and is known as the *prodromal stage*. The second is the excitative stage, which lasts three to four days. This stage is often known as “furious rabies” for the tendency of the affected animal to be hyper-reactive to external stimuli and bite at anything near. The third is the paralytic stage and is caused by damage to *motor neurons*. Incoordination is seen, owing to rear limb *paralysis*, and drooling and difficulty swallowing is caused by paralysis of facial and throat muscles. Death is usually caused by *respiratory arrest*. [21]

Research

Rabies has the advantage over other *pseudotyping* methods for gene delivery in that the cell-targeting *(tissue tropism)* is more specific for difficult-to-reach sites, such as the *central nervous system* without invasive delivery methods, as well as being capable of *retrograde tracing* (i.e., going against the flow of information at synapses) in neuronal circuits. [22]

Recent evidence indicates artificially increasing the permeability of the *blood–brain barrier*, which normally does not allow most immune cells across, promotes viral clearance. [23][24]

**How Old is Rabies?**

*Rabies may be the oldest infectious disease known to man. Follow the timeline and discover how rabies made history over 4,000 years ago...*
Rabies Timeline

2300 BC
Dog owners in the Babylonian city of Eshnunna are fined heavily for deaths caused by their dogs biting people.

800-700 BC
Homer likens Hector to a “raging dog” in The Iliad, one of the oldest Greek poems known today. He writes that Sirius, the dog star of Orion, “exerts a malignant influence upon the health of mankind”.

500 BC
Democritus, a Greek philosopher records a case of canine rabies.

400 BC
Aristotle writes that “dogs suffer from the madness. This causes them to become very irritable and all animals they bite become diseased.”
By now, the Greeks have two special rabies gods; one to prevent rabies, (Arisaeus, son of Apollo) and a one to heal rabies, (Artemis).

001-100 AD
Rabies is widespread across the Roman Empire, Greece and Crete.
The Roman Cardanus describes saliva from a rabid dog as

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How Did Rabies Get its Name?

Rabid dogs sometimes appear to be angry or in a rage. Rabies comes from the Latin word rabere. Rabere means to rage or rave.

This Latin word rabere may have roots in a Sanskrit word rabhas. Rabhas means to do violence.

The Greeks called rabies lyssa or lytta, which means frenzy or madness. They named human rabies hydrophobia, which means fear of water, a symptom shown by rabies victims.
a virus— the Latin word
for poison.

Pliny the Elder also devises a
series of treatments based
around the idea that rabies is a
tongue worm.

A Roman physician named
Celsius takes a special interest
in rabies and discovers saliva
alone contains the virus. He
recommends cleaning, sucking
and burning (cauterizing) the
wound before leaving it open
so the virus could drain out.
This will remain the only
accepted treatment for the
next 1800 years.

201-300
The treatment for rabies in
cattle is described by early
veterinary medicine writer,
Vegetius Renatus.

501-600
Aetious, a Mesopotamian
physician, writes an accurate
description of dog rabies
symptoms.

601-700
Greek physician, Paulus
Aegineta records the
difference between fatal
hydrophobia caused by dog
bites and simple hydrophobia
stemming from a different
cause.

801-900
Syrian doctors believed
hydrophobia was incurable.
They helped suffering patients
by giving water disguised
inside drops of honey.
Rhazes, (Al-Razi) a Persian physician identifies hydrophobia and further describes rabies symptoms in humans.

1001-1100
The writings of another Arab physician, Avicenna, (Abu Ali Sina) mark a step forward in knowledge about the disease. His books were used in European medical schools for nearly 500 years.

1026
Madness in dogs is recorded in the laws of Howel the Good, of Wales. This is the earliest record of rabies in Great Britain.

1198
Poisons and Their Antidotes, by Talmud scholar and physician Moses Maimonides, contains remedies against bites from mad dogs.

1271
First large rabies outbreak reported. 30 people die after rabid wolves invade villages in Franconia (Germany).

1400
During the 15th century, Spain is ravaged by canine rabies

1500
During the 16th century, Christian Europeans believe a patron saint named St. Hubert will cure rabies. Many travel to his shrine at Liege, Belgium and die of ‘the madness’. Jean Gerson, a French theologian, speaks out against superstitious practices in religion.

1586
Canine rabies spreads through Flanders, (North Belgium) Austria, Turkey and Hungary.

1604
Rabies reaches Paris, causing panic.

1671
Superstitious practices for treating rabies are condemned by the Sorbonne.

1700
Rabies spreads through Europe during the 18th century.

1703
The first case of rabies is
reported in the Americas by a priest in Mexico. He is told off for raising the problem by his superiors in Spain.

1734-5
Canine rabies appears in England.

1750
Rabies is reported in Barbados among dogs and hogs. They are said to die around three days after getting sick.

1752
Orders to shoot dogs on sight are given in England when rabies appears around St. James, London.

1753
Canine rabies is present in the State of Virginia, North America.

1759-1762
Serious outbreak of rabies reported in London. All dogs are confined for one month. Dogs on the street are killed and a reward of 2 shillings per dog is offered. The reward prompts barbaric scenes of killing in the streets.

1763
Serious rabies outbreaks reported in France, Italy and Spain. Authorities slaughter dogs. In Madrid, Spain, 900 dogs are killed in just one day.
1768-1771
Rabies breaks out in Boston and other North American towns. Foxes and dogs carry the disease to farm animals. The symptoms are unusual and rabies is reported as a new disease.

1774
Rabies is a general disease throughout England. People are discouraged to keep dogs. Bigger rewards – up to five shillings - are paid for each dog killed.

1776-1778
The French West Indies is invaded by rabies. Cattle and people are bitten by infected dogs.

1785-1789
Rabies is now common across North America.

1789
A New Yorker dies from hydrophobia after skinning an infected cow.

1790-1821
Rabies is common in France and Silesia (now Poland and the Czech Republic). It spreads through wolves and foxes in central Europe.

1797
Rabies appears on Rhode Island.

1800
Rabies becomes
widespread in Northern, Western and Eastern Europe during the 9th century. It is common in the Ukraine. There are accounts of European villagers dying from contact with mad wolves, foxes and dogs. There is also a reappearance of rabies in North America and it moves up to Canada. And in England, it never goes away.

1803
Hundreds of dead foxes are spotted at the foot of the Jura Alps, eastern France. This outbreak, the largest yet recorded lasts for thirty years and wipes out all foxes in some areas, terrifying villagers. In the same year, rabies appears in Peru for the first time.

1804
Zinke, a German scientist demonstrates rabies is passed through saliva by conducting experiments on animals.

1806
Dogs belonging to English officers introduce rabies to Argentina.

1810
Rabies reappears in eastern USA and Ohio.

1825
Rabies enters the Black...
1835
Rabies appears in Chile and kills many.

1881
French chemist Louis Pasteur and his assistant, Physician-scientist Emile Roux, begin research on a cure for rabies.

1883
Roux presents a medical paper about the rabies research he as been doing with Pasteur. Roux creates a rabies vaccine from the spinal cord of an infected animal and tests it on dogs.

1885
Joseph Meister is mauled by a rabid dog and brought to Pasteur. Pasteur gives him the rabies vaccine immediately, despite the risks to his own career as he is not a doctor, but a chemist. The treatment was successful, and Pasteur was hailed as a hero.

1892
Canadian physician William Osler, describes hydrophobia in a medical textbook. He recommends careful washing and treatment of the wound. Osler is unaware of Pasteur’s breakthrough.

1953
The first US case of rabies
in a bat is reported by the CDC.

**1959**
**Dr. Robert Kissling** developed the fluorescent antibody test for rabies.
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Garlic Friend or Foe

Maybe I need to be... Super Friendly!

Who doesn't like garlic!

STINKY

The Blood Fever Virus and the History of Vampires + Dracula
There is a big debate on the issue of garlic as to its possible adverse effects on the Brain. The benefits of Garlic as an anti-parasite, anti-biotic are very evident. Allium sativum, Garlic has been used for centuries for medicinal purposes and as a culinary herb. In the Talmud Book of Ezra, Jews are encouraged to partake of garlic at the Friday night Shabbat meal for the following five reasons: (1) to keep the body warm; (2) to brighten the face; (3) to kill intestinal parasites; (4) to increase the volume of semen; and (5) to foster love and to do away with jealousy. Garlic is mentioned more than twenty times in the ancient Egyptian medical papyrus called the Codex Ebers dating back to ca. 1550 B.C. Pliny the Elder sited more than sixty therapeutic uses for garlic including treating mental disorders. Dioscorides, chief physician for the Roman army prescribed garlic for intestinal parasitic disorders and emotional distress after battle. In the Middle Ages Garlic was found to destroy evil. It was used to ward off the evil eye, evil people, and evil thoughts. Vampires were afraid of it because it could ward off evil.

Garlic in moderate amounts is an excellent food and a good medicine, it will not cure brain cancer but it helps in many ways. Italy has the lowest cancer level in Europe and the highest life expectancy, Garlic’s medicinal abilities are legendary, but as Ben Franklin said "Moderation in ALL Things" When the French joined a Soviet space mission in late 1986, their menus caused an international stir. The French would not go into space without garlic, and

Garlic is mentioned in the Bible as good food at Numbers 11:5:
We remember the fish which we ate freely in Egypt, the cucumbers, the melons, the leeks, the onions, and the garlic; , (but over use can cause headaches) ---

The debate of how it can destroy brain cells and affect the mind is brewing. As it appears from this long and thorough review of the complete evidence to date on the subject of Garlic’s effect on brain cells is that Garlic appears to act like chemotherapy. It has some poisonous properties to BAD BRAIN cells. In other words it can destroy cancer cells and or pathological evil minded cells. Thus it can affect the brain.
Suppressed science: Garlic proven to kill brain cancer cells without side effects

Wednesday, March 19, 2014 by: Paul Fassa

(NaturalNews) First comes a guy curing his stage 4 prostate cancer with baking soda. Next a woman cures her cancer with carrot juice while some time ago a UK farmer cured his cancer with wheat grass juice. Now there's an obscure study proving garlic kills brain cancer cells without side effects.

There's no money in any of that - only healing. Darn! How's the cancer industry going to exploit cancer victims and create huge fund raising revenues if this type of news gets out?

A small group of researchers at Medical University of South Carolina discovered something that's useful for anyone willing to properly consume lots of garlic. They discovered that certain organo-sulfur compounds in garlic do kill brain cancer cells without disturbing healthy cells.

But they did this in 2007! It didn't get much mainstream press, if any. Did we miss something? Maybe Big Pharma is trying to figure out how to create those compounds synthetically to get a patent and pay the FDA for approval after offering dubious papers from sketchy trials.

Whether it's useful for the cancer industry remains to be seen. But the results of this study haven't received much if any attention from the mainstream press. Apparently, there wasn't even a ripple within the medical establishment.

Instead of using the study to further explore natural methods of nipping brain cancer in the bud, the cancer industry encourages beginning "proven medical treatments" as early as possible. Treatments like surgery, radiation and chemotherapy offer 15 months or fewer of practicing efficient drool cup use before dying. But these "treatments" are proven money makers.

About that obscure garlic brain cancer study

Three researchers teamed up in South Carolina for an in vitro analysis of what three natural garlic compounds can do to brain cancer cells, specifically glioblastoma, the fastest growing brain cancer tumor common to adults. Two types of glioblastoma cancer cells were cultured, and three sulfur compounds from garlic were administered into the culture.
The compounds were diallyl sulfide (DAS), diallyl disulfide (DADS), and diallyl trisulfide (DATS). All three provided cytotoxic (cancer killing) effects, especially DATS, which "induced cell death via reactive oxygen species (ROS) production and a mitochondria-mediated pathway".

These compounds are able to get through the blood brain barrier to induce cancer cell apoptosis and prevent future cell growth.

Interestingly, what's implied from the background of the study abstract (sourced below) is that the protection against carcinogenesis provided by these garlic sulfur compounds was already known.

The researchers were attempting to determine the mechanics of how these compounds were so protective.

They found out how and more. They isolated the exact mechanics, detailed in the full study text below, and determined that these compounds are more than protective. They do what currently accepted brain cancer treatments are supposed to do but don't, while leaving other healthy cells alone which those "standard of care" treatments also don't.

It's recommended that one peels open garlic cloves and exposes them to air for 15 minutes or so to release those compounds. Some even say crush them for more exposure, then consume them raw to get the full benefits. This may not seem inviting to most. But is sure beats a slow agonizing death with a drool cup.

Garlic Can Heal the Brain—and It Has Other Health Benefits

Via William Harryman on Sep 20, 2010
Sometime yesterday, Ramesh Bjonnes posted an article here at the Elephant entitled, "Why Garlic Is a Brain Toxin!" I eat a lot of garlic, and I regularly recommend it to my clients for controlling cholesterol, boosting the immune system, and even for increasing testosterone levels in aging men. So I figured I’d better read the post.

I did. And then I did a Google Scholar search for "sulphone hydroxyl ion," which is the constituent the author said causes brain toxicity. Nothing came up – I mean, like, zero. That’s rare for anything that actually exists in the world. What this means is that no scholar or scholarly journal, magazine, or web site has ever mentioned this substance. In general, that would mean it does not exist.

So then I did a Google Scholar search for "garlic, brain, toxicity," assuming that if garlic is in any way toxic to the brain, someone would have noticed that by now (garlic is a widely studied subject). I did not find anything that suggests garlic is toxic to the brain, but many articles have looked at the ways in which garlic can remove other toxins from the brain, and maybe even stop neuronal apoptosis (neuron death). In general, garlic (especially in very high doses, most commonly as an aged garlic supplement, which makes it more stable – beyond what one might get in the diet) is neuro-protective, anti-cancer (including its possible use to prevent Alzheimer’s Disease and other neuro-degenerative disorders), and may extend the life span of cells, and therefore, of us.

Each of the following is an open-source, academic, peer-reviewed study (you can read the whole study at the link):
Mechanisms of Inhibition of Chemical Toxicity and Carcinogenesis by Diallyl Sulfide (DAS) and Related Compounds from Garlic

Chung S. Yang, Saranjit K. Chhabra, Jun-Yan Hong and Theresa J. Smith

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ABSTRACT

Diallyl sulfide (DAS) is a flavor compound derived from garlic and is sequentially converted to diallyl sulfoxide (DASO) and diallyl sulfone (DASO₂) by cytochrome P₄⁵₀ 2E1 (CYP2E1). These compounds have been shown to reduce the incidence of a multitude of chemically induced tumors in animal models. The impediment of phase I activation of these carcinogens is hypothesized to be accountable for their induction in tumor incidence. Indeed, DAS, DASO and DASO₂ are competitive inhibitors of CYP2E1. DASO₂, in addition, is a suicide inhibitor of CYP2E1. These compounds have been shown to reduce carbon tetrachloride-, N-nitrosodimethylamine- and acetaminophen-induced toxicity in rodents. All three chemicals are substrates for CYP2E1. The protective effect was observed when the organosulfur compounds were given before, during or soon after chemical treatment. DAS and DASO₂ inhibited the bioactivation of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol(NNK) and related lung tumorigenesis in A/J mice. Because CYP2E1 does not play a key role in NNK activation, the inhibition of other CYP enzymes active in NNK metabolism is likely. DAS also has been shown to induce other CYP and phase II enzymes as well as decrease hepatic catalase activity. All of these effects are observed at concentrations much higher than what is normally ingested by humans. The biological activities of garlic and its related compounds at lower concentrations that mimic human consumption remain to be studied further.

* * *

Antioxidant Health Effects of Aged Garlic Extract

Carmia Borek

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ABSTRACT

Oxidative modification of DNA, proteins and lipids by reactive oxygen species (ROS) plays a role in aging and disease, including cardiovascular, neurodegenerative and inflammatory diseases and cancer. Extracts of fresh garlic that are aged over a prolonged period to produce aged garlic extract (AGE) contain antioxidant phytochemicals that prevent oxidant damage. These include unique water-soluble organosulfur compounds, lipid-soluble organosulfur components and flavonoids, notably allixin and selenium. Long-term extraction of garlic(up to 20 mo) ages the extract, creating antioxidant properties by modifying unstable molecules with antioxidant activity, suchas allicin, and increasing stable and highly...
bioavailable water-soluble organo sulfur compounds, such as S-allylcysteine and S-allylmercaptocysteine. AGE exerts antioxidant action by scavenging ROS, enhancing the cellular antioxidant enzymes superoxide dismutase, catalase and glutathione peroxidase, and increasing glutathione in the cells. AGE inhibits lipid peroxidation, reducing ischemic/reperfusion damage and inhibiting oxidative modification of LDL, thus protecting endothelial cells from the injury by the oxidized molecules, which contributes to atherosclerosis. AGE inhibits the activation of the oxidant-induced transcription factor, nuclear factor (NF)-

B, which has clinical significance in human immunodeficiency virus gene expression and atherogenesis. AGE protects DNA against free radical–mediated damage and mutations, inhibits multistep carcinogenesis and defends against ionizing radiation and UV-induced damage, including protection against some forms of UV-induced immunosuppression. AGE may have a role in protecting against loss of brain function in aging and possess other antiaging effects, as suggested by its ability to increase cognitive functions, memory and longevity in a senescence-accelerated mouse model. AGE has been shown to protect against the cardiotoxic effects of doxorubicin, an antineoplastic agent used in cancer therapy and against liver toxicity caused by carbon tetrachloride (an industrial chemical) and acetaminophen, an analgesic. Substantial experimental evidence shows the ability of AGE to protect against oxidant-induced disease, acute damage from aging, radiation and chemical exposure, and long-term toxic damage. Although additional observations are warranted in humans, compelling evidence supports the beneficial health effects attributed to AGE, i.e., reducing the risk of cardiovascular disease, stroke, cancer and aging, including the oxidant-mediated brain cell damage that is implicated in Alzheimer’s disease.

For this next one, I’m posting the whole introduction since it covers so many of the research findings on the health benefits of garlic.

**Garlic Reduces Dementia and Heart-Disease Risk**

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**ABSTRACT**

Risk factors for cardiovascular disease, including high cholesterol, high homocysteine, hypertension and inflammation, increase the risk of dementia, including its most common form, Alzheimer’s disease (AD). High cholesterol is also associated with elevated β-amyloid (Abeta), the hallmark of AD. Oxidative damage is a major factor in cardiovascular disease and dementia, diseases whose risk increases with age. Garlic, extracted and aged to form antioxidant-rich aged garlic extract (AGE or Kyolic), may help reduce the risk of these diseases. AGE scavenges oxidants, increases superoxide dismutase, catalase, glutathione peroxidase, and glutathione levels, and inhibits lipid peroxidation and inflammatory
prostaglandins. AGE reduces cholesterol synthesis by inhibiting 3-hydroxy-3-methylglutaryl-CoA reductase and is additive with statins in its action. Inhibition of cholesterol, LDL oxidation, and platelet aggregation by AGE, inhibits arterial plaque formation; AGE decreases homocysteine, lowers blood pressure, and increases microcirculation, which is important in diabetes, where microvascular changes increase heart disease and dementia risks. AGE also may help prevent cognitive decline by protecting neurons from Abeta neurotoxicity and apoptosis, thereby preventing ischemia- or reperfusion-related neuronal death and improving learning and memory retention. Although additional observations are warranted in humans, compelling evidence supports the beneficial health effects attributed to AGE in helping prevent cardiovascular and cerebrovascular diseases and lowering the risk of dementia and AD.

**INTRODUCTION**

Recent evidence suggests that midlife risk factors for cardiovascular disease, such as high cholesterol, hypertension, high homocysteine, and inflammation, are important risk factors for dementia in later years (1–5), with high cholesterol and hypertension showing a consistent association with increased risk of Alzheimer’s disease (AD)² and vascular dementia, pathological conditions whose frequency increases with age.

High cholesterol levels promote the formation of atherosclerotic plaques that are risk factors for both heart attacks and stroke, in the latter case the resulting ischemia may result in neuronal death and lead to dementia. High cholesterol is also associated with increased levels of free-radical–producing β-amyloid peptides (Abeta), the hallmark of AD. Hypertension may contribute to cognitive decline seen in AD by causing cerebral small-vessel pathology and increasing the number of neurofibrilar tangles and amyloid plaques. Small-vessel disease resulting from hypertension may be associated with the observed atrophy of the hippocampus and amygdala in AD (5).

Elevated plasma homocysteine (hyperhomocysteinemia) is an independent risk factor for cardiovascular disease, stroke, and dementia, including AD (7,8). Studies on people 65 y and older and on young people ages 4–18 show that plasma levels of homocysteine increase progressively with age, posing a serious threat for these diseases in aging individuals. Hyperhomocysteinemia is caused largely by deficiencies in vitamins B-6, B-12, and folate. The adverse vascular and neurotoxic effects of homocysteine are associated with oxidant stress; homocysteine impairs DNA repair in the hippocampus, sensitizing neurons to amyloid toxicity (9).

**Reactive oxygen species.** Reactive oxygen species and oxidant stress are implicated in cardiovascular disease, cancer, and various forms of dementia including AD (10). Oxidative damage to DNA, proteins, lipids, and other molecules rank high as a major cause in the onset and development of these diseases. Reactive oxygen species, including free radicals, are by-products of normal metabolism and increase during infection and inflammation, hyperhomocysteinemia, and exposure to exogenous sources, including nitrous oxide metabolite pollutants, smoking, certain drugs (e.g., acetaminophen), and radiation. Oxidative modification of LDL cholesterol increases the risk of atherosclerosis, cardiovascular, and cerebrovascular disease. Free radical–producing Abeta triggers neuronal apoptosis, increasing the risk of brain atrophy and dementia, including AD, its most common form (11).

**Garlic antioxidants.** Garlic ranks highly among foods that help prevent disease, largely due to its high content of organosulfur compounds and antioxidant activity. Fresh garlic, however, may cause indigestion,
and its pungent odor that lingers on the breath and skin can be a social deterrent. These disagreeable effects of fresh garlic are due to allicin, an oxidant released upon cutting or chewing the clove.

Aged garlic extract. An alternative source of garlic that is odorless and rich in antioxidants is aged garlic extract (AGE) (12,13). The well-standardized and highly bioavailable supplement is produced by prolonged extraction and aging of organic fresh garlic at room temperature. The process converts unstable compounds, such as allicin, to stable substances and produces high levels of water-soluble organosulfur compounds that are powerful antioxidants. These include S-allylcysteine (SAC), AGE’s major component, and S-allylmercaptocysteine, unique to AGE. Among other compounds present are low amounts of oil-soluble organosulfur compounds, flavonoids, a phenol, allixin, selenium, and saponins.

AGE and cardiovascular disease. AGE has been shown to modulate cardiovascular risk factors in both clinical and preclinical settings (14–23). AGE has been shown to reduce blood pressure, inhibit platelet aggregation and adhesion, lower LDL and elevate HDL cholesterol, reduce smoking-related oxidative damage, inhibit the production of prostaglandins involved in inflammation, and lower homocysteine. SAC has been found to lower cholesterol by deactivating 3-hydroxy-3-methylglutaryl-CoA by as much as 41% (15). AGE efficacy in reducing cholesterol synthesis is additive with statins, which inhibit 3-hydroxy-3-methylglutaryl-CoA reductase at a transcriptional level. Other possible contributors to protection against cardiovascular disease and dementia are the effects of AGE in increasing microcirculation (21) and protecting endothelial cells from oxidative damage, a factor most important in diabetes where the microvasculature is damaged, and the risk of dementia is high. AGE can also temporarily increase, by 30–40% (23), the synthesis of constitutive nitric oxide, a protective factor against myocardial ischemic or reperfusion injury, risk factors in cardiovascular disease and dementia following stroke (24). AGE has been found to inhibit the progression of coronary-artery calcification (25), thus reducing the risk of a myocardial infarct.

AGE and the heart-dementia risk link: neuroprotective effects. The broad range of cardiovascular protection afforded by AGE may be extended to a protective effect on the brain, helping reduce the risk of dementia, including vascular dementia and AD. AGE has potential to protect the brain against neurodegenerative conditions. Mechanisms include lowering cholesterol, inhibiting inflammation, reducing homocysteine, preventing oxidative brain injury following ischemia, protecting neuronal cells against apoptosis (a programmed cell suicide triggered by oxidative stress) by inhibiting caspase 3, and preventing Abeta-induced neurotoxicity.

Homocysteine. People with cardiovascular risk factors and a history of strokes have an increased risk of both vascular dementia (arteriosclerotic dementia), which can occur after a stroke, and AD, the most common form of progressive dementia, accounting for over 70% of all cases. Elevated homocysteine damages endothelial cells that line blood vessels and induces thrombosis that can lead to heart attacks and stroke. Homocysteine produces breaks in DNA and induces apoptosis, a major cause of neuronal death in dementia (7–9). The link between high levels of homocysteine and dementia, including AD, has been observed in epidemiological studies and confirmed in case-control studies, where people with vascular dementia and AD had higher levels of homocysteine than healthy people. A recent study (7) provided compelling evidence of a direct link between increased plasma homocysteine and loss of cognition, showing that in adults with intact cognition, an elevation in plasma homocysteine, over time, is associated with an increased incidence of dementia, including AD.
Consumption of AGE has been shown to reduce homocysteine levels. In a preclinical study, levels of homocysteine in a 4-wk folate-deficient diet containing AGE were compared with a folate-fortified diet containing AGE. Plasma homocysteine was 30% lower in the folate-deficient animals that received AGE, but not in those with adequate folate. The results suggest that AGE may serve as an added treatment in hyperhomocysteinemia (26). A clinical study, showing that AGE inhibits the progression of coronary artery calcification, also showed a trend in lowering homocysteine levels (25).

**Protection against ischemic or reperfusion adverse effects.** Single ischemic or thromboembolic infarcts that occur in strategic areas of the brain hemispheres may cause a dementia-like syndrome; multiple temporally staggered small cerebral infarcts can give rise to progressive cognitive deficits and dementia. Areas of the brain supplied by small penetrating arterioles are especially prone to degenerative changes in patients with hypertension and diabetes. Ischemia followed by reperfusion results in an increased production of free radicals and oxidant stress that may lead to neuronal death by apoptosis and contribute to the development of dementia following stroke.

AGE has been shown to lower blood pressure and protect brain cells from the deleterious effects of ischemia, increasing their survival. The high antioxidant level in AGE helps prevent the oxidant damage that occurs during ischemia or reperfusion. The protective effects of AGE were observed in a preclinical study of ischemia, and the findings showed that treatment with SAC attenuated damaging reactive oxygen species and prevented brain injury, reducing infarct volume. None of the lipid-soluble compounds tested had a protective effect (27). SAC prevented neuronal death following ischemia and increased cell survival in the hippocampus, the memory region of the brain, by 30%, compared with controls (28).

**Preventing neuronal apoptosis.** The brain of an individual with AD exhibits extracellular plaques of aggregated Abeta, intracellular neurofibrillary tangles that contain hyperphosphorylated tau protein and a loss of forebrain cholinergic neurons that enervate the hippocampus and the neocortex. The accumulation of Abeta may trigger or contribute to neurodegeneration. Neuronal apoptosis, one of the characteristics of Alzheimer’s disease, is associated with Abeta. Reactive oxygen species produced by Abeta are thought to play a role in the apoptotic mechanism of Abeta-mediated neurotoxicity. Several routes lead to apoptotic cell death; a major route is through a mitochondrial-dependent pathway that results in the lease of cytochrome C, followed by the activation of caspases, with caspase-3 leading cells to their death (29). AGE and SAC have been shown in a number of in vitro studies to protect neuronal cells against Abeta toxicity and apoptosis (30–34). In none of the studies, PC12 cells exposed to Abeta showed a significant increase in reactive oxygen species. Treatment with AGE and SAC suppressed the generation of reactive oxygen species and also attenuated caspase-3 activation and DNA fragmentation, associated with apoptosis, and protected the cells against Abeta-induced apoptosis. In another study AGE was found to inhibit caspase-3 in a dose-dependent manner (33). Caspase-3 catalyzes the formation of Abeta peptide (34) and is activated by Abeta (35). Their neurotoxic effects, however, appear to be independent; that is, in the presence of specific caspase inhibitors, Abeta-induced neuronal death still occurred with different morphological features (35). The findings that AGE can inhibit Abeta toxicity, attenuate caspase-3 activation, and inhibit apoptosis enhances the potential of AGE as a neuroprotector against AD.

**Other anti-aging neuroprotective effects.** Preclinical studies in models that are genetically prone to early aging show that AGE has additional anti-aging effects(36,37). Treatment with AGE or SAC
prevented the degeneration of the brain’s frontal lobe, improved learning and memory retention, and extended life span. Isolated neurons from the hippocampus area, grown in the presence of AGE or SAC, showed an unusual ability to grow and branch, which may be linked to the findings that AGE increases learning and cognition (37).

### Intake of Garlic and Its Bioactive Components

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**ABSTRACT**

The health benefits of garlic likely arise from a wide variety of components, possibly working synergistically. The complex chemistry of garlic makes it plausible that variations in processing can yield quite different preparations. Highly unstable thiosulfinates, such as allicin, disappear during processing and are quickly transformed into a variety of organosulfur components. The efficacy and safety of these preparations in preparing dietary supplements based on garlic are also contingent on the processing methods employed. Although there are many garlic supplements commercially available, they fall into one of four categories, i.e., dehydrated garlic powder, garlic oil, garlic oil macerate and aged garlic extract (AGE). Garlic and garlic supplements are consumed in many cultures for their hypolipidemic, antiplatelet and procirculatory effects. In addition to these proclaimed beneficial effects, some garlic preparations also appear to possess hepatoprotective, immune-enhancing, anticancer and chemo-preventive activities. Some preparations appear to be antioxidative, whereas others may stimulate oxidation. These additional biological effects attributed to AGE may be due to compounds, such as S-allylcysteine, S-allylmercaptocysteine, N-fructosylarginine and others, formed during the extraction process. Although not all of the active ingredients are known, ample research suggests that several bioavailable components likely contribute to the observed beneficial effects of garlic. I did come across one article – Garlic as an antioxidant: the good, the bad and the ugly – that suggests whole garlic in high doses may have some toxicity for the liver, kidneys, and heart. Unfortunately, the article is not open-source [always lame when information is kept behind a pay-wall]. However, in following that rat trail, I did come across this article:

### Clarifying the Real Bioactive Constituents of Garlic

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**ABSTRACT**
Compounds in garlic work synergistically to produce various effects, but, because of garlic’s chemical complexity, processing methods yield preparations with differing efficacy and safety. Although thiosulfimates such as allicin have been long misunderstood to be active compounds due to their characteristic odor, it is not necessary for garlic preparations to contain such odorous compounds to be effective, and they decompose and disappear during any processing. Garlic exhibits hypolipidemic, antiplatelet, and procirculatory effects. It prevents cold and flu symptoms through immune enhancement and demonstrates anticancer and chemopreventive activities. In addition, aged garlic extract possesses hepatoprotective, neuroprotective, antioxidative activities, whereas other preparations may stimulate oxidation. Additional effects may be caused by S-allylcysteine, S-allyl mercaptocysteine, saponins, N-

-fructosylarginine, and other substances formed during a long-term extraction process. Although not all of active ingredients of garlic are known, and allicin-like transient components are not directly active, ample research suggests that an allicin-free garlic preparation that is standardized with a bioavailable components such as S-allylcysteine, is active and various effects of garlic may be attributed to it. Furthermore, various chemical constituents in garlic products, including non-sulfur compounds such as saponins, may contribute to the essential biological activities of garlic. Further studies are needed to confirm their bioavailability and associated activities.

So, my advice? Get some whole garlic, press it, add it to some ground basil, and a little bit of extra virgin olive oil, with whatever other ingredients you like (maybe some Romano cheese), then slather some over the top of a grilled free-range chicken breast covered in melted Havarti cheese. Add some steamed asparagus, also covered with some pesto and grated cheese, and you have a really healthy dinner that is good for your heart, your immune system, and your brain.

About William Harryman

I am a writer/editor, fitness trainer, integral coach, and a graduate counseling psychology student. I blog at Integral Options Cafe and The Masculine Heart. I am an occasional contributor to Elephant Journal. Read more from William Harryman »
Could Sulfur deficiency (from garlic and onions) Be the Hidden Factor Behind Obesity, Heart Disease, and Chronic Fatigue?

By Dr. Mercola

Dr. Stephanie Seneff is a senior scientist at MIT and has been conducting research there for over three decades. However, she also has an undergraduate degree in biology from MIT, and a minor in food and nutrition. She's affiliated with the Weston A. Price Foundation and will be speaking at their November Dallas conference, and so will I. Dr. Seneff has a wealth of information in an area that many are not very knowledgeable about, and that is the importance of sulfur.

Sulfur deficiency is pervasive, and may be a contributing factor in:

- Obesity
- Heart disease
- Alzheimer's disease
- Chronic fatigue
- And more

She also believes conventional medicine is seriously confused about cholesterol, which is closely interrelated with sulfur. Furthermore, healthy cholesterol and sulfur levels are also highly dependent on your vitamin D levels! Here, she discusses the importance and the intricate relationships among these three factors.

Heart Disease May be a Cholesterol Deficiency Problem...

Considering the fact that conventional medicine has been telling us that heart disease is due to elevated cholesterol and recommends lowering cholesterol levels as much as possible, Dr. Seneff’s claims may come as a complete shock:

"Heart disease, I think, is a cholesterol deficiency problem, and in particular a cholesterol sulfate deficiency problem..."

She points out that all of this information is available in the research literature, but it requires putting all the pieces together to see the full picture. Through her research, she believes that the mechanism we call "cardiovascular disease," of which arterial plaque is a hallmark, is actually your body's way to compensate for not having enough cholesterol sulfate.
She explains: "The macrophages in the plaque take up LDL, the small dense LDL particles that have been damaged by sugar... The liver cannot take them back because the receptor can't receive them, because they are gummed with sugar basically. So they're stuck floating in your body... Those macrophages in the plaque do a heroic job in taking that gummed up LDL out of the blood circulation, carefully extracting the cholesterol from it to save it -- the cholesterol is important -- and then exporting the cholesterol into HDL – HDL A1 in particular... That's the good guy, HDL. The platelets in the plaque take in HDL A1 cholesterol and they won't take anything else... They take in sulfate, and they produce cholesterol sulfate in the plaque. The sulfate actually comes from homocysteine. Elevated homocysteine is another risk factor for heart disease. Homocysteine is a source of sulfate. It also involves hemoglobin. You have to consume energy to produce a sulfate from homocysteine, and the red blood cells actually supply the ATP to the plaque. So everything is there and the intent is to produce cholesterol sulfate and it's done in the arteries feeding the heart, because it's the heart that needs the cholesterol sulfate. If [cholesterol sulfate is not produced]... you end up with heart failure."

So, in a nutshell, high LDL appears to be a sign of cholesterol sulfate deficiency—it's your body's way of trying to maintain the correct balance by taking damaged LDL and turning it into plaque, within which the blood platelets produce the cholesterol sulfate your heart and brain needs for optimal function... What this also means is that when you artificially lower your cholesterol with a statin drug, which effectively reduces that plaque but doesn't address the root problem, your body is not able to compensate any longer, and as a result of lack of cholesterol sulfate you may end up with heart failure.

**IMPORTANT UPDATE: How Sun Exposure Impacts Your Sulfur Status**

According to the conventional view, high LDL is correlated with heart disease, so the idea is that you can take a statin drug to artificially reduce the LDL and you'll be fine. However, as Dr. Seneff explains, if you have high LDL, it's because your body probably needs it to produce cholesterol sulfate, which your heart requires for optimal function. Hence, when you simply remove the LDL, you also remove your body's "backup" mechanism to keep your heart as healthy as possible, and as a result you get heart failure.

But high LDL is correlated with cardiovascular disease (please note that cardiovascular disease is an entirely different disease category from heart failure, which explains a lot of the confusion on this issue), so how can your body produce cholesterol sulfate without the harmful LDL? How is it produced under normal, healthy conditions? This is where sun exposure enters the picture. When you expose your skin to sunshine, your skin synthesizes vitamin D3 sulfate. This form of vitamin D is water soluble, unlike oral vitamin D3 supplements, which is unsulfated. The water soluble form can travel
freely in your blood stream, whereas the unsulfated form needs LDL (the so-called "bad" cholesterol) as a vehicle of transport. Her suspicion is that the simple oral non-sulfated form of vitamin D likely will not provide the same benefits as the vitamin D created in your skin from sun exposure, because it cannot be converted to vitamin D sulfate. This is yet another reason to really make a concerted effort to get ALL your vitamin D requirements from exposure to sunshine!

"[S]ulfate actually inactivates vitamin D," Dr. Seneff says. "The sulfated form of vitamin D does not work for calcium transport, which I find very intriguing. And in fact, I think it's the sulfated form for vitamin D that offers the protection from cancer. It strengthens your immune system. It protects you from cardiovascular disease. It's good for your brain. It helps depression. I think all of those effects of vitamin D are effects of vitamin D sulfate."

For those who are still under the mistaken impression that sun exposure is the primary cause of skin cancer, the following explanation may be of great help. In a Weston A. Price article on sulfur,

Dr. Seneff states that:

"Both cholesterol and sulfur afford protection in the skin from radiation damage to the cell's DNA, the kind of damage that can lead to skin cancer. Cholesterol and sulfur become oxidized upon exposure to the high frequency rays in sunlight, thus acting as antioxidants to "take the heat," so to speak. Oxidation of cholesterol is the first step in the process by which cholesterol transforms itself into vitamin D3."

As I've stated before, your body was designed to be exposed to the rays of the sun, and your skin contains all the necessary mechanisms to extract or produce beneficial nutrients from it while simultaneously shielding itself from harm. When you circumvent this natural process, either by using sunblock or staying out of the sun entirely, you lose all the health benefits, and give a variety of disease processes free reign.

**Cholesterol Sulfate—The Link Between Obesity and Lack of Sun Exposure?**

Furthermore, your skin also produces huge amounts of cholesterol sulfate, which is also water soluble and provides a healthy barrier against bacteria and other potentially disease-causing pathogens that might otherwise enter your body through your skin. And, due to its polarity, it can enter both fat cells and muscle cells with equal ease. Dr. Seneff proposes that, because of this, cholesterol sulfate may be able to protect fat and muscle cells from glucose and oxygen damage. She also argues that when you're deficient in cholesterol sulfate, your muscle and fat cells become more prone to damage, which subsequently can lead to glucose intolerance; a condition where your muscles cannot process glucose as a fuel. As a result, your fat cells have to store more fat in order to supply fuel to your muscles, and excess fat accumulates as damage increases.
Sulfur also plays an important role in glucose metabolism. She hypothesizes that if sufficient amounts of sulfur is available, it will act as a decoy to glucose, effectively diverting it to reduce the sulfur rather than glycating and causing damage. This would have the beneficial effect of reducing inflammation, as sugar (glucose) is highly inflammatory and wreaks havoc in your body.

The Many Roles of Sulfur

Overall, sulfate appears to be a highly underestimated molecule with vast health implications. Dr. Seneff discusses her findings in great detail, but offers the following analogy:

"[I]f you breakdown the sulfate you will release energy, which means that the sulfate is actually absorbing the energy from light... I think of the skin as a battery – or solar panel you might say – taking in the sun's energy and saving it in the form of the sulfate molecule storing the energy in the sun."

It seems logical that humans would have some capacity to absorb energy from the sun directly, but this is the first time I've heard of a molecular explanation for this capacity!

"I have a lot of thoughts about what sulfate does," Dr. Seneff says. "One thing I'm quite sure of is that cholesterol sulfate is highly protective against bacterial and virus invasions. That's why sun exposure protects you from infection. It strengthens your immune system. That cholesterol sulfate is incredibly important to immunity."

Sulfur also plays a vital role in the structure and biological activity of both proteins and enzymes. If you don't have sufficient amounts of sulfur in your body, this deficiency can cascade into a number of health problems as it will affect bones, joints, connective tissues, metabolic processes, and more.

Other areas where sulfur plays an important role include:

- Your body's electron transport system, as part of iron/sulfur proteins in mitochondria, the energy factories of your cells
- Vitamin-B thiamine (B1) and biotin conversion, which in turn are essential for converting carbohydrates into energy
- Synthesizing important metabolic intermediates, such as glutathione
- Proper insulin function. The insulin molecule consists of two amino acid chains connected to each other by sulfur bridges, without which the insulin cannot perform its biological activity
- Detoxification
Sulfate—Essential for Babies

Cholesterol sulfate is also essential for babies in utero. A woman has about 1.5 units of cholesterol sulfate normally in her blood. When she gets pregnant, her blood levels of cholesterol sulfate steadily rise, and it also begins to accumulate in the villi in the placenta—which is where nutrients are transferred from the placenta to the baby. At the end of pregnancy the cholesterol sulfate in the villi rises to levels of about 24 units!

Colostrum also contains high levels of sulfur, even more than the breast milk itself. So clearly, nature seeks to provide the baby with plenty of both sulfur and cholesterol at the time of birth. Interestingly enough, when a mother has high serum cholesterol, the baby’s levels are typically low. Why?

Dr. Seneff explains:

"[Because] it can't get through. The mother has high serum cholesterol I think because she has low serum cholesterol sulfate. I think the two go together. The way to bring down your LDL in a healthy way is to get sunlight exposure on your skin. Your skin will produce cholesterol sulfate, which will then flow freely to the blood—not packaged up inside LDL—and therefore your liver doesn't have to make so much LDL. So the LDL goes down. In fact... there is a complete inverse relationship between sunlight and cardiovascular disease – the more sunlight, the less cardiovascular disease."

Now, when a baby is born of a mother who has high cholesterol and low cholesterol sulfate, the baby's cholesterol will be low, but will also have fatty deposits in its arteries...despite the fact that fatty deposits are supposed to be associated with high cholesterol.

"The deposits are there, I think, to start this cholesterol sulfate program that's replacing the one that isn't happening..."Dr. Sennneff explains. “Children who have adequate cholesterol sulfate delivered from their mother do not have fatty deposits... It's bizarre, but the high cholesterol associated with fatty deposits in the adult (that's causing heart disease) is a solution, not a cause.”

This is a complete turnaround in thinking compared to the conventional paradigm!

Furthermore:

"The worst thing you can do is to clobber the LDL... because you're going to end up with heart failure," Dr. Seneff says..

Dietary Sources of Sulfur

Sulfur is derived almost exclusively from dietary protein, such as fish and high-quality (organic and/or grass-fed/pastured) beef and poultry. Meat and fish are considered "complete" as they contain all the sulfur-containing amino acids you need to produce
new protein. Needless to say, those who abstain from animal protein are placing themselves at far greater risk of sulfur deficiency.

Coconut oil and olive oil also contain sulfur (and are ideal sources of healthful saturated fats too). Other dietary sources that contain small amounts of sulfur IF the food was grown in soil that contains adequate amounts of sulfur, include:

<table>
<thead>
<tr>
<th>Organic pastured eggs</th>
<th>Legumes</th>
<th>Garlic</th>
<th>Onion</th>
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<tbody>
<tr>
<td>Brussel sprouts</td>
<td>Asparagus</td>
<td>Kale</td>
<td>Wheat germ</td>
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Any diet high in grains and processed foods is likely to be deficient in sulfur, because once whole foods are processed, sulfur is lost. Additionally, soils around the world are becoming increasingly sulfur-depleted, resulting in less sulfur-rich foods overall. Hard water also tends to contain more sulfur than soft water, which, according to Dr. Seneff, may be why people who drink soft water are at greater risk of developing heart disease.

In addition to making sure you're getting high amounts of sulfur-rich foods in your diet, Dr. Seneff recommends soaking your body in magnesium sulfate (Epsom salt) baths to compensate and counteract sulfur deficiency. She uses about ¼ cup in a tub of water, twice a week. It's particularly useful if you have joint problems or arthritis.

As for supplements, methylsulfonylmethane, commonly known by its acronym, MSM, is an option. MSM is an organic form of sulfur and a potent antioxidant, naturally found in many plants.

Health Benefits of Garlic

Beware! It's the Opposite of What you Might Think -
Garlic Desynchronises your Brainwaves!

Source: From a lecture by Dr. Robert C Beck, DSc, given at the Whole Life Expo, Seattle, WA, USA, in March 1996. printed by Nexus Magazine

The reason garlic is so toxic, the sulphone hydroxyl ion penetrates the blood-brain barrier, just like DMSO, and is a specific poison for higher-life forms and brain cells. We discovered this, much to our horror, when I (Bob Beck, DSc) was the world's largest manufacturer of ethical EEG feedback equipment.

We'd have people come back from lunch that looked clinically dead on an encephalograph, which we used to calibrate their progress. "Well, what happened?" "Well, I went to an Italian restaurant and there was some garlic in my salad dressing!" So we had them sign things that they wouldn't touch garlic before classes or we were wasting their time, their money and my time.

I guess some of you who are pilots or have been in flight tests...I was in flight test engineering in Doc Hallan's group in the 1950's. The flight surgeon would come around every month and remind all of us: "Don't you dare touch any garlic 72 hours before you fly one of our airplanes, because it'll double or triple your reaction time. You're three times slower than you would be if you'd not had a few drops of garlic."

Well, we didn't know why for 20 years later, until I owned the Alpha-Metrics Corporation. We were building biofeedback equipment and found out that garlic usually desynchronises your brain waves.

So I funded a study at Stanford and, sure enough, they found that it's a poison. You can rub a clove of garlic on your foot - a you can smell it shortly later on your wrists. So it penetrates the body. This is why DMSO smells a lot like garlic: that sulphone hydroxyl ion penetrates all the barriers including the corpus callosum in the brain.

Any of you who are organic gardeners know that if you don't want to use DDT, garlic will kill anything in the way of insects.

Now, most people have heard most of their lives garlic is good for you, and we
put those people in the same class of ignorance as the mothers who at the
turn of the century would buy morphine sulphate in the drugstore and give it to
their babies to put'em to sleep.

If you have any patients who have low-grade headaches or attention deficit
disorder, they can't quite focus on the computer in the after-noon, just do an
experiment - you owe it to yourselves. Take these people off garlic and see
how much better they get, very very shortly. And then let them eat a little
garlic after about three weeks. They'll say "My God, I had no idea that this
was the cause of our problems." And this includes the de-skunked garlic's,
Kyolic, some of the other products.

Very unpopular, but I've got to tell you the truth.

Editor's Notes:

1) Taoists and some other spiritual practices recommend against eating any
garlic, onions, green onions (shallots), chives or leeks. This is because they
believe they attract negative energies - bad energies love bad smells.
However, I understand that the problem with garlic is much more serious than
this, due to the reasons above. It has very toxic chemicals in it, in addition to
the spiritual effects.

2) I was emailed that because garlic is meant to be a blood purifier, that
maybe the brain changes are caused by toxins coming out into the
bloodstream. Maybe. But I believe that is not the case. Generally, the stronger
something tastes, the more toxins it has. That's what gives it flavor. For
example, no woman with morning sickness wants to be anywhere near garlic.
If it was not toxic, you could sit down to a meal of garlic. And would smell fine
aterwards!

3) READ THE LABEL! SOME FOODS THAT CONTAIN GARLIC:

1. Some chips
2. Sweet chili sauce (There's as much garlic in it as chili! Plus it's 50%
sugar)

4) ALTERNATIVE TO GARLIC: Use fresh ginger

UPDATE: I personally believe that anything that kills microbes, is bad for
your health when there is nothing wrong with you, especially long-term.
But if there is some kind of disease, then garlic may be useful for a while. Here are some positive reports on garlic from a reader:

"Garlic is a very powerful herb. I dissolved a tumor in my neck with it. It took about 3 hours. Doctors would have put me in surgery and cut me open and done who knows what damage to my neck and spine in order to get it out. I have also taken off warts and other cysts on many people using garlic topically as well as neutralizing yeast infections over night- no 3 day or 7 day systems where you are putting toxic chemicals inside you.

Taken internally, no self respecting virus can survive in your body when taking garlic. I look at it as a natural and mild form of Chemical type treatments that people get when fighting cancer. It can neutralize all forms of cancers in the body on contact, something ginger just cannot do, and it can do this in just a few days instead of months or years. And it won’t take you to the brink of death while performing this miraculous feat.

Taken internally injunction with a poultice type bandage applied directly on the affected area, garlic can heal almost any type of terminal issue. Obviously some forms that have gone into the latter stages cannot be helped without divine intervention but there are few exceptions to this.

H1N1 or H5N1? Forget it!! Garlic will wipe this out in a few hours. It will also take out the flora in your digestive track but a few servings of fruits and vegetables and yogurt will replenish this in no time at all.

I do understand the challenge with garlic and the very delicate processes of the brain and the barrier between the brain and cranial blood flow. When you eat several cloves of garlic, you can feel it. However, the effects are never permanent and they can be countered at the time simply by eating or drinking the juice from a head of parsley. In juicing terms, that would be approximately 2 ounces, which of course should be mixed 50% - 50% with a carrot juice, but this will counter act the effects of the sulphone ion on the brain processes."

Garlic - Toxic And A Brain Synchronization Destroyer
Reiki Empowerment Seminars
4-30-7
I have been telling people this for years, all you need is a ECG of the brain to see the truth .. it totally desynchronizes the brain and cause us to loose our psychic mind ... yes our psychic mind, we are Human not slaves to the
race of beings that control us ... this doesn't mean much to most ...
Garlic is not only repulsive to any one that eats it for hours ... but it makes
us stupid slow and simple ... this is hard for most people to grasp, do the
ECG and do the experiment yourselves ... read this article on this and you
will be amazed it does clean the blood but it also destroys the total mind
synchronization of the two hemispheres .. I was heart broken, when I heard
of this because I love the smell of garlic and onions ... but oh well ... once
you find out they are a neuro poison then it makes al the sense in the world
when you eat it ... what happens to you ! ... you smell awful and are totally
repulsed by others . most are generally being nice not to tell you ... YOU
STINK .. stay your distance!
it is also the best organic insect killer, too, is there a reason why no bug will
eat garlic or any of the onion family...because it kills them.
The reason garlic is so toxic, the sulphone hydroxyl ion penetrates the blood
brain barrier, just like DMSO, and is a specific poison for higher life forms
and brain cells. We discovered this much to our horror, when I was the
world's largest manufacturer of ethical EEG biofeedback equipment. We'd
have people come back from lunch that looked clinically dead on the
encephalograph, which we used to calibrate their progress. "Well, what
happened?" " Well, I went to an Italian restaurant and there was some garlic
in my salad dressing!"

So we had 'em sign things that they won't touch garlic before classes or we
were wasting their time, and money and my time. I guess those of you who
are pilots or have been in flight tests... I was in flight test engineering in
Doc Hallan's group in the 1950's. The flight surgeon would come around
every month and remind all of us: "Don't you dare touch any garlic 72 hours
before you fly one of our airplanes, because it'll double or triple your
reaction time. You're three times slower than you would be if you'd [not]
had a few drops of garlic."

Well, we didn't know why for 20 years later, until I owned the Alpha-
Metrics Corporation. We were building biofeedback equipment and found
out that garlic totally desynchronizes your brain waves. So I funded a study
at Stanford and, sure enough, they found that it's a poison. You can rub a
clove of garlic on your foot - on the sole of your foot - and you can smell it
shortly later on your wrists. So it penetrates the body. This is why DMSO
smells a lot like garlic: that sulphone hydroxyl ion penetrates all the barriers
including the corpus callosum in the brain. Any of you who are organic
gardeners know that if you don't want to use DDT, garlic will kill anything
in the way of insects. Now, most people have heard most of their lives that
garlic is good for you, and we put those people in the same class of ignorance as the mothers who at the turn of the century would buy morphine sulphate in the drugstore and give it to their babies to put 'em to sleep. If you have any patients who have low-grade headaches or attention deficit [disorder], they can't quite focus on the computer in the afternoon, just do an experiment - you owe it to yourselves. Take those people off garlic and see how much better they get, very, very shortly. And then let them eat a little garlic after about three weeks. They'll say: "My God, I had no idea that this was the cause of our problems." And this includes the de-skunked garlic's, Kyolic, some of the other products. Very unpopular, but I've got to tell you the truth. (Source: From a lecture by Dr Robert [Bob] C. Beck, DSc., given at the Whole Life Expo, Seattle, WA, USA, in March 1996)

Bob Beck also found in his research on human brain function in the 1980's that garlic has a detrimental effect on the brain and researching this further he learned that many yoga groups and philosophical teachings caution against the use of garlic and onions as they are known to interfere with meditation practices. Some aware individuals have actually described themselves as experiencing brain fog after having garlic.

The Harmful Effects of Garlic

Garlic is toxic to humans because its sulphone hydroxyl ions penetrate the blood-brain barrier and are poisonous to brain cells.(1) For precisely the same reason the garlic family of plants has been widely recognized as being harmful to dogs.(2)

As far back as the 1950s it was known that garlic reduced reaction time by two to three times when consumed by pilots taking flight tests. This is because the toxic effects of garlic desynchronize brain waves.

The Taoists realized thousands of years ago that plants of the alliaceous family were detrimental to humans.(3) They labeled this group of plants onions, garlic, leeks, chives and spring onions the 'five spicy-scented plants.' They noticed that onions are harmful to the lungs, garlic to the heart, leeks to the spleen, chives to the liver and spring onions to the kidneys. Hindus also avoid this group, which they have called the 'five pungent plants.'(4) As well as producing offensive breath and body odour, these plants induce aggravation, agitation, anxiety and aggression. Thus they are harmful physically, emotionally, mentally and spiritually.

Even when garlic is used as food in Chinese culture it is considered harmful to the stomach, liver and eyes, and a cause of dizziness and scattered energy when consumed in immoderate amounts.(5) Nor is garlic always seen as
having entirely beneficial properties in Western cooking and medicine. It is widely accepted among health care professionals that, as well as killing harmful bacteria, garlic also destroys beneficial bacteria, which are essential to the proper functioning of the digestive system. Furthermore, Ken Bergeron, in Professional Vegetarian Cooking, p. 16, writes: "garlic in the raw state can carry harmful (potentially fatal) botulism bacteria." Perhaps it is with an awareness of this that the Roman poet Horace wrote of garlic that it is "more harmful than hemlock." (7) 

In the practice of Reiki, we have noticed that garlic and onions are some of the first toxic substances that are expelled from a person's system along with tobacco, alcohol and pharmaceutical medications. This makes it apparent that alliaceous plants have a negative effect on the human body and should be avoided for health reasons. Homeopathic medicine comes to the same conclusion when it recognizes that red onion produces a dry cough, watery eyes, sneezing, runny nose and other familiar cold-related symptoms when consumed. (8)

Reiki Empowerment Seminars: Taoist Knowledge

Did Bob Beck fund a Stanford University study on garlic?

I've read an article by Dr. Beck that states garlic is a brain toxin due to the sulphone hydroxyl ions released into the bloodstream. He cites a Stanford University study that found garlic to be a poison. http://www.healingcancernaturally.com/ga...

However...there were no links given to the source study documentation nor were any other details of the study given (such as date, which would be useful in tracking down said study)

I have searched Stanford's site and the only articles I've found are on the health benefits. Further, having searched for "sulphone hydroxyl" online, I've only come across copies of the same article. The same is true for Bob Beck/Robert Beck and any kind of Stanford study on garlic.

So...can anyone shed light on this? I do have respect for the man's other achievements, but the vagueness of this article frustrates me. I need scientific data, which one expects to receive from a scientist. If someone can prove to me one way or the other whether this supposed study really did take place, then it'll be at least a starting point for my continued search.
Garlic

What's New and Beneficial About Garlic

- You can increase the health benefits you receive from garlic by letting it sit after you've chopped it or crushed it. If you give your chopped/crushed garlic time to sit before changing its temperature (through cooking) or its pH (through the addition of acidic food like lemon juice), it will give the alliinase enzymes in garlic an opportunity to work on behalf of your health. For example, in the absence of chopping or crushing, research has shown that just 60 seconds of immediate microwaving will cause garlic to lose some of its cancer-protective properties. Immediate boiling of whole, intact garlic will also lower these properties, as well as immediate addition of a very low-acid ingredient like lemon juice.
- Some of garlic's unique components are most durable in food (versus processed extract) form. Allicin—one of garlic's most highly valued sulfur compounds—stays intact for only 2-16 hours at room temperature when it is present in purified (extracted) form. But when it's still inside of crushed garlic, allicin will stay viable for 2-1/2 days.
- Garlic may help improve your iron metabolism. That's because the diallyl sulfides in garlic can help increase production of a protein called ferroportin. (Ferroportin is a protein that runs across the cell membrane, and it forms a passageway that allows stored iron to leave the cells and become available where it is needed.)
- In addition to being a good source of selenium, garlic may be a more reliable source as well. Garlic is what scientists call a "seleniferous" plant: it can uptake selenium from the soil even when soil concentrations do not favor this uptake.
- The cardio-protective benefits of garlic may partly rest on the production of hydrogen sulfide (H2S) gas. Our red blood cells can take sulfur-containing molecules in garlic (called polysulfides) and use them to produce H2S. This H2S in turn can help our blood...
vessels expand and keep our blood pressure in check. Interestingly, some processed garlic extracts cannot be used by our red blood cells in the same way and do not seem to provide the same level of cardioprotection that is provided by garlic in food form.

- While still in its very early stages, research suggests that garlic consumption may actually help to regulate the number of fat cells that get formed in our body. 1,2-DT (1,2-vinyldithiin) is one of the unique sulfur compounds in garlic that has long been recognized as having anti-inflammatory properties. But only recently have researchers discovered that some of our fibroblastic cells (called "preadipocytes") only evolve into full-fledged fat cells (called "adipocytes") under certain metabolic circumstances involving inflammatory system activity. 1,2-DT may be able to inhibit this conversion process. Since obesity is increasingly viewed by researchers as a chronic state of low-grade inflammation, the inflammation-related benefits of garlic's 1,2-DT may eventually be extended into the clinical area of obesity.

**WHFoods Recommendations**

With their unique combination of flavonoids and sulfur-containing nutrients, allium vegetables—such as garlic—belong in your diet on a regular basis. There’s research evidence for including at least one serving of an allium vegetable—such as garlic—in your meal plan every day. If you’re choosing garlic as your allium family vegetable, try to include at least 1/2 clove in your individual food portion. If you’re preparing a recipe, we recommend at least 1-2 cloves.

Garlic is a wonderful seasoning to add aroma, taste, and added nutrition to your dishes. We often recommend using raw chopped or pressed garlic in many of our dishes to take advantage of the benefits derived from garlic. However, if you cannot tolerate raw garlic, you can add chopped garlic to foods while they are cooking. It is best to add it towards the end of the cooking process to retain the maximum amount of flavor and nutrition.

<table>
<thead>
<tr>
<th>Garlic, raw</th>
<th>Calories: 27</th>
<th>GI: low</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.00 cloves</td>
<td>(18.00 grams)</td>
<td></td>
</tr>
<tr>
<td>Nutrient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>manganese</td>
<td>15%</td>
<td></td>
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<tr>
<td>vitamin B6</td>
<td>12.5%</td>
<td></td>
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<tr>
<td>vitamin C</td>
<td>7.4%</td>
<td></td>
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<tr>
<td>copper</td>
<td>5.5%</td>
<td></td>
</tr>
<tr>
<td>selenium</td>
<td>4.6%</td>
<td></td>
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<tr>
<td>phosphorus</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>vitamin B1</td>
<td>3.3%</td>
<td></td>
</tr>
<tr>
<td>calcium</td>
<td>3.2%</td>
<td></td>
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</tbody>
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This chart graphically details the %DV that a serving of Garlic provides for each of the nutrients of which it is a good, very good, or excellent source according to our Food Rating System. Additional information about the amount of these nutrients provided by Garlic can be found in
Health Benefits

Whole books have been written about garlic, an herb affectionately called "the stinking rose" in light of its numerous therapeutic benefits. A member of the lily or Allium family, which also includes onions and leeks, garlic is rich in a variety of powerful sulfur-containing compounds including thiosulfinates (of which the best known compound is allicin), sulfoxides (among which the best known compound is alliin), and dithiins (in which the most researched compound is ajoene). While these compounds are responsible for garlic's characteristically pungent odor, they are also the source of many of its health-promoting effects.

More recent research has identified additional sulfur-containing compounds that are responsible for garlic's star status as a health-supporting food. These sulfur compounds include 1,2-vinylidithiin (1,2-DT), and thiacremonone. The hydrogen sulfide gas (H2S) that can be made from garlic's sulfides has also been the subject of great research interest. When produced and released from our red blood cells, this H2S gas can help dilate our blood vessels and help keep our blood pressure under control.

Finally, when thinking about the sulfur compounds in garlic, it is important to remember that sulfur itself is a key part of our health. Several research studies have noted that the average U.S. diet may be deficient in sulfur, and that foods rich in sulfur may be especially important for our health. In addition to all of the sulfur-related compounds listed above, garlic is an excellent source of manganese and vitamin B6, a very good source of vitamin C, and a good source of selenium.

Cardiovascular Benefits

Most of the research on garlic and our cardiovascular system has been conducted on garlic powder, garlic oil, or aged garlic extracts rather than garlic in food form. But despite this research limitation, food studies on garlic show this allium vegetable to have important cardioprotective properties. Garlic is clearly able to lower our blood triglycerides and total cholesterol, even though this reduction can be moderate (5-15%).

But cholesterol and triglyceride reduction are by no means garlic's most compelling benefits when it comes to cardioprotection. Those top-level benefits clearly come in the form of blood cell and blood vessel protection from inflammatory and oxidative stress. Damage to blood vessel linings by highly reactive oxygen molecules is a key factor for increasing our risk of cardiovascular problems, including heart attack and atherosclerosis. Oxidative damage also
leads to unwanted inflammation, and it is this combination of unwanted inflammation and oxidative stress that puts our blood vessels at risk of unwanted plaque formation and clogging. Garlic unique set of sulfur-containing compounds helps protect us against both possibilities—oxidative stress and unwanted inflammation.

The following provides a list of sulfur-containing garlic's constituents that help lower our risk of oxidative stress:

- alliin
- allicin
- allixin
- allyl polysulfides (APS)*
- dialyl sulfide (DAS)
- dialyl disulfide (DADS)
- dialyl trisulfide (DATS)
- N-acetylcysteine (NAC)
- N-acetyl-S-allylcysteine (NASC)
- S-allylcysteine (SAC)
- S-allylmercaptocysteine (SAMC)
- S-ethylcysteine (SEC)
- S-methylcysteine (SMC)
- S-propylcysteine (SPC)
- 1,2-vinyldithiin (1,2-DT)
- thiacremonone

* "Allyl polysulfides" is a general term that refers to a variety of compounds.

On the anti-inflammatory side of the equation, garlic's 1,2-vinyldithiin (1,2-DT) and thiacremonone are the compounds that have been of special interest in recent research. Both compounds appear to work by inhibiting the activity of inflammatory messenger molecules. In the case of thiacremonone, it is the inflammatory transcription factor called NFkappaB that gets inhibited. In the case of 1,2-DT, the exact anti-inflammatory mechanisms are not yet clear, even though the release of inflammatory messaging molecules like interleukin 6 (IL-6) and interleukin 8 (IL-8) by macrophage cells has been shown to be reduced in white adipose tissue by 1,2-DT. The combination of anti-inflammatory and anti-oxidative stress compounds in garlic makes it a unique food for cardiovascular support, especially in terms of chronic degenerative cardiovascular conditions like atherosclerosis.

In addition to the ability of garlic to help prevent our blood vessels from becoming blocked, this allium vegetable may also be able to help prevent clots from forming inside of our blood vessels. This cardiovascular protection has been linked to one particular disulfide in garlic called ajoene. Ajoene has repeatedly been shown to have anti-clotting properties. It can help prevent certain cells in our blood (called platelets) from becoming too sticky, and by keeping this stickiness in check, it lowers the risk of our platelets clumping together and forming a clot.

Equally impressive about garlic is its ability to lower blood pressure. Researchers have known for about 10 years that the allicin made from alliin in garlic blocks the activity of angiotensin II. A small piece of protein (peptide), angiotensin II helps our blood vessels contract. (When they contract, our blood is forced to pass through a smaller space, and the pressure is increased.) By
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blocking the activity of angiotensin II, allicin form garlic is able to help prevent unwanted contraction of our blood vessels and unwanted increases in blood pressure.

More recently, however, researchers have found that garlic supports our blood pressure in a second and totally different way. Garlic is rich in sulfur-containing molecules called polysulfides. It turns out that these polysulfides, once inside our red blood cells (RBCs), can be further converted by our RBCs into a gas called hydrogen sulfide (H2S). H2S helps control our blood pressure by triggering dilation of our blood vessels. When the space inside our blood vessels expands, our blood pressure gets reduced. (H2S is described as a "gasotransmitter" and placed in the same category as nitric oxide (NO) as a messaging molecule that can help expand and relax our blood vessel walls.) Interestingly, our RBCs do not appear to use processed garlic extracts in the same way that they use polysulfides in food-form garlic.

Garlic's numerous beneficial cardiovascular effects are due to not only its sulfur compounds, but also to its vitamin C, vitamin B6, selenium and manganese. Garlic is a very good source of vitamin C, the body's primary antioxidant defender in all aqueous (water-soluble) areas, such as the bloodstream, where it protects LDL cholesterol from oxidation. Since it is the oxidized form of LDL cholesterol that initiates damage to blood vessel walls, reducing levels of oxidizing free radicals in the bloodstream can have a profound effect on preventing cardiovascular disease. Garlic's vitamin B6 helps prevent heart disease via another mechanism: lowering levels of homocysteine. An intermediate product of an important cellular biochemical process called the methylation cycle, homocysteine can directly damage blood vessel walls.

The selenium in garlic can become an important part of our body's antioxidant system. A cofactor of glutathione peroxidase (one of the body's most important internally produced antioxidant enzymes), selenium also works with vitamin E in a number of vital antioxidant systems.

Garlic is rich not only in selenium, but also in another trace mineral, manganese, which also functions as a cofactor in a number of other important antioxidant defense enzymes, for example, superoxide dismutase. Studies have found that in adults deficient in manganese, the level of HDL (the "good form" of cholesterol) is decreased.

Anti-Inflammatory Benefits Across Body Systems

Our cardiovascular system is not the only body system that may be able to benefit from garlic's anti-inflammatory properties. There's preliminary evidence (mostly from animal studies, and mostly based on garlic extracts rather than whole food garlic) that our our musculoskeletal system and respiratory system can also benefit from anti-inflammatory compounds in garlic. Both the diallyl sulfide (DAS) and thiacremonone in garlic have been shown to have anti-arthritic properties. And in the case of allergic airway inflammation, aged garlic extract has been show to improve inflammatory conditions (once again in animal studies).

Even more preliminary is research evidence showing that some inflammatory aspects of obesity may be altered by sulfur-containing compounds in garlic. Specifically, there is one stage in development of the body's fat cells (adipocytes) that appears to be closely related to status of our inflammatory system. Fat cells cannot become fully themselves unless they are able to progress from a preliminary stage called "preadipocytes" to a final stage called "adipocytes." One of the sulfur compounds in garlic (1,2.-vinylidithiin, or 1,2-DT) appears able to lessen this
conversion of preadipocytes into adipocytes, and the impact of 1,2-DT appears to be inflammation-related. Even though very preliminary, this research on 1,2-DT is exciting because obesity is increasingly being understood as a disease characterized by chronic, low level inflammation and our inflammatory status is precisely where garlic’s 1,2-DT has its apparent impact.

**Antibacterial and Antiviral Benefits**

From a medical history standpoint, the antibacterial and antiviral properties of garlic are perhaps its most legendary feature. This allium vegetable and its constituents have been studied not only for their benefits in controlling infection by bacteria and viruses, but also infection from other microbes including yeasts/fungi and worms. (One particular disulfide in garlic, called ajoene, has been successfully used to help prevent infections with the yeast Candida albicans.) Very recent research has shown the ability of crushed fresh garlic to help prevent infection by the bacterium Pseudomonas aeruginosa in burn patients. Also of special interest has been the ability of garlic to help in the treatment of bacterial infections that are difficult to treat due to the presence of bacteria that have become resistant to prescription antibiotics. However, most of the research on garlic as an antibiotic has involved fresh garlic extracts or powdered garlic products rather than fresh garlic in whole food form.

Overgrowth of the bacterium *Helicobacter pylori* in the stomach—a key risk factor for stomach ulcer—has been another key area of interest for researchers wanting to explore garlic’s antibacterial benefits. Results in this area, however, have been mixed and inconclusive. While garlic may not be able to alter the course of infection itself, there may still be health benefits from garlic in helping to regulate the body’s response to that infection.

**Cancer Prevention**

While not as strong as the research evidence for cruciferous vegetables, research on the allium vegetables—including garlic—shows that these vegetables have important anti-cancer properties. Interestingly, high intake of garlic (roughly translated as daily intake of this food) has been found to lower risk of virtually all cancer types except cancer of the prostate and breast cancer. However, moderate intake of garlic (roughly translated as several times per week) has been repeatedly found to lower risk of only two cancer types—colorectal and renal cancer. This difference between “high” versus “moderate” garlic intake may be a real difference that suggests we all need to eat more garlic if we want to maximize its cancer-related benefits. Or it may be a difference that is more related to research complications involving the options given to research participants when reporting their food intake. Still, garlic has a consistent track record with respect to general anti-cancer benefits, and there are good research reasons for classifying garlic as an “anti-cancer” food.

The allyl sulfides found in garlic may play a key role in its cancer-prevention benefits. These garlic compounds are able to activate a molecule called nuclear erythroid factor (Nrf2) in the main compartment of cells. The Nrf2 molecule then moves from the main compartment of the cell into the cell nucleus, where it triggers a wide variety of metabolic activities. Under some circumstances, this set of events can prepare a cell for engagement in a strong survival response, and in particular, the kind of response that is needed under conditions of oxidative stress. Under other circumstances, this same set of events can prepare the cell to engage in programmed cell death (apoptosis). When a cell recognizes that it has become too compromised to continue functioning in a healthy manner with other cells, it stops proceeding...
through its own life cycle and essentially starts to dismantle itself and recycle its parts. It’s critical for a cell to determine whether it should continue on or shut itself down, because cells that continue on without the ability to properly function or communicate effectively with other cells are at risk of becoming cancerous. The ability of garlic’s allyl sulfides to activate Nrf2 suggests that garlic may be able to help modify these all-critical cell responses and prevent potentially cancerous cells from forming.

One especially interesting area of research on garlic and cancer prevention involves meat cooked at high temperatures. Heterocyclic amines (HCAs) are cancer-related substances that can form when meat comes into contact with a high-temperature cooking surface (400°F/204°C or higher). One such HCA is called PhIP (which stands for 2-amino-1-methyl-6-phenylimidazopyridine). PhIP is thought to be one reason for the increased incidence of breast cancer among women who eat large quantities of meat because it is rapidly transformed into DNA-damaging compounds.

Diallyl sulfide (DAS), one of the many sulfur-containing compounds in garlic, has been shown to inhibit the transformation of PhIP into carcinogens. DAS blocks this transformation by decreasing the production of the liver enzymes (the Phase I enzymes CYP1A1, CYP1A2 and CYP1B1) that transform PhIP into activated DNA-damaging compounds. Of course, your best way to prevent formation of PhIP is not to bring your meat into contact with a 400°F/204°C cooking surface in the first place. But this area of research still bolsters our view of garlic as an allium vegetable with important cancer-preventive properties.

Garlic and Iron Metabolism

Recent research has shown that garlic may be able to improve our metabolism of iron. When iron is stored up in our cells, one of the key passageways for it to be moved out of the cell and returned into circulation involves a protein called ferroportin. Ferroportin is protein that runs across the cell membrane, and it provides a bridge for iron to cross over and leave the cell. Garlic may be able to increase our body’s production of ferroportin, and in this way, help keep iron in circulation as it is needed.

Description

For a small vegetable, garlic (Allium sativum) sure has a big, and well deserved, reputation. And although garlic may not always bring good luck, protect against evil, or ward off vampires, characteristics to which it has been assigned folklorically, it is guaranteed to transform any meal into a bold, aromatic, and healthy culinary experience. Garlic is a member of the Lily family and is a cousin to onions, leeks and chives.

Garlic is arranged in a head, called a "bulb," which averages about 2 inches in height and diameter and consists of numerous small separate cloves. Both the cloves and the entire bulb are encased in paper-like sheathes that can be white, off-white, or have a pink/purple hue. Although garlic cloves have a firm texture, they can be easily cut or crushed. The taste of garlic is like no other—it hits the palate with a hot pungency that is shadowed by a very subtle background sweetness. While elephant garlic has larger cloves, it is more closely related to the leek and therefore does not offer the full health benefits of regular garlic.

Fresh, dried and powdered garlic are available in markets throughout the year, however, fresh varieties from California are in season from June through December.
History

Native to central Asia, garlic is one of the oldest cultivated plants in the world and has been grown for over 5000 years. Ancient Egyptians seem to have been the first to cultivate this plant that played an important role in their culture.

Garlic was not only bestowed with sacred qualities and placed in the tomb of Pharaohs, but it was given to the slaves that built the Pyramids to enhance their endurance and strength. This strength-enhancing quality was also honored by the ancient Greeks and Romans, civilizations whose athletes ate garlic before sporting events and whose soldiers consumed it before going off to war.

Garlic was introduced into various regions throughout the globe by migrating cultural tribes and explorers. By the 6th century BC, garlic was known in both China and India, the latter country using it for therapeutic purposes.

Throughout the millennia, garlic has been a beloved plant in many cultures for both its culinary and medicinal properties. Over the last few years, it has gained unprecedented popularity since researchers have been scientifically validating its numerous health benefits.

Currently, China, South Korea, India, Spain and the United States are among the top commercial producers of garlic.

How to Select and Store

For maximum flavor and nutritional benefits, always purchase fresh garlic. Although garlic in flake, powder, or paste form may be more convenient, you will derive less culinary and health benefits from these forms.

Purchase garlic that is plump and has unbroken skin. Gently squeeze the garlic bulb between your fingers to check that it feels firm and is not damp.

Avoid garlic that is soft, shriveled, and moldy or that has begun to sprout. These may be indications of decay that will cause inferior flavor and texture. Size is often not an indication of quality. If your recipe calls for a large amount of garlic, remember that it is always easier to peel and chop a few larger cloves than many smaller ones. Fresh garlic is available in the market throughout the year.

Store fresh garlic in either an uncovered or a loosely covered container in a cool, dark place away from exposure to heat and sunlight. This will help maintain its maximum freshness and help prevent sprouting, which reduces its flavor and causes excess waste. It is not necessary to refrigerate garlic. Some people freeze peeled garlic; however, this process reduces its flavor profile and changes its texture.

Depending upon its age and variety, whole garlic bulbs will keep fresh for about a month if stored properly. Inspect the bulb frequently and remove any cloves that appear to be dried out or moldy. Once you break the head of garlic, it greatly reduces its shelf life to just a few days.
Tips for Preparing and Cooking

Tips for Preparing Garlic

The first step to using garlic is to separate the individual cloves. An easy way to do this is to place the bulb on a cutting board or hard surface and gently, but firmly, apply pressure with the palm of your hand at an angle. This will cause the layers of skin that hold the bulb together to separate.

Peel garlic with a knife or alternatively, separate the skin from the individual cloves by placing a clove with the smooth side down on a cutting board and gently tapping it with the flat side of a wide knife. You can then remove the skin either with your fingers or with a small knife. If there is a green sprout in the clove's center, gently remove it since it is difficult to digest.

Chopping or crushing stimulates the enzymatic process that converts the phytonutrient alliin into allicin, a compound to which many of garlic's health benefits are attributed. In order to allow for maximal allicin production, wait at least 5 minutes before eating or cooking the garlic. Also observe this 5-minute "time out" period before adding any high acidic ingredient to the garlic (for example, lemon juice). Ingredients with a pH below 3.5 can also deactivate the enzymatic process.

Since crushing and chopping are the food preparation steps that activate garlic's enzymes, these steps can help you obtain many of garlic's special benefits. For example, research has shown that microwaving or boiling garlic in uncrushed, whole clove form will deactivate its enzymes, preventing these enzymes from working. For this reason, we recommend that you chop or crush the garlic cloves prior to heating. According to research on garlic preparation methods, it only takes 60 seconds of microwaving whole cloves to lessen some of garlic's health benefits. By contrast, many of garlic's health benefits (including its anti-cancer properties) are preserved if the whole cloves are crushed and allowed to sit for 10 minutes prior to cooking.

The Healthiest Way of Cooking Garlic

We recommend using raw garlic in many of our recipes. If it is a cooked dish you are preparing and you cannot tolerate raw garlic, add chopped garlic towards the end of the cooking time to retain maximum flavor and nutrition. Too much heat for too long will reduce the activity of the health-promoting sulfur compounds that have formed by letting it sit for 5-10 minutes; it will also make garlic bitter. Therefore expose garlic to heat for as little time as possible (5-15 minutes).

If you would like to combine garlic with oil, we recommend that you avoid high-temperature heating of this oil-garlic mixture. Keeping the heat at 250°F/121°C or lower will help preserve the health benefits of both the garlic and the oil. This same principle applies to the oven roasting of garlic bulbs themselves. We do not recommend the 350°F/177°C temperature range that you will find in many recipes and on many websites. Once again, a lower temperature is needed to help preserve health-protective compounds in garlic.

How to Enjoy

WHFoods Recipes That Feature Garlic

- Garlic Shrimp Salad
• Mediterranean Dressing

We actually include garlic as an ingredient in so many of our recipes. To find these just go to the Recipe Assistant on the Recipes page and click on "garlic" in the "Food to Include" box.

A Few Quick Serving Ideas

• Purée fresh garlic, canned garbanzo beans, tahini, olive oil and lemon juice to make quick and easy hummus dip.
• Healthy Sauté steamed spinach, garlic, and fresh lemon juice.
• Add garlic to sauces and soups.
• Purée roasted garlic, cooked potatoes and olive oil together to make delicious garlic mashed potatoes. Season to taste.

Individual Concerns

Garlic is not a commonly allergenic food, is not known to contain measurable amounts of oxalates or purines and is also not included in the Environmental Working Group's 2010 report "Shopper's Guide to Pesticides" as one of the 12 foods most frequently containing pesticide residues.

The Johns Hopkins Lupus Center has recently listed garlic as a food to be avoided by persons diagnosed with lupus (systemic lupus erythematosus, or SLE). While we have not seen any published research documenting lupus flare-ups with garlic intake, and while the Lupus Foundation of America has suggested on its website that "occasional use is cooking is not likely to cause significant problems for most people," we have heard directly from website visitors who have experienced problems in this area. If you are a person diagnosed with lupus, we recommend a consult with your healthcare provider to decide about inclusion or avoidance of garlic in your meal plan.

Do not store garlic in oil at room temperature. Garlic-in-oil mixtures stored at room temperature provide perfect conditions for producing botulism, regardless of whether the garlic is fresh or has been roasted.

Nutritional Profile

The sulfur compounds in garlic are perhaps its most unique nutrients. There are literally dozens of well-studied sulfur molecules in garlic, and virtually all of them have been shown to function as antioxidants. In addition, many provide us with anti-inflammatory benefits. The very presence of sulfur in so many different garlic compounds may also play an important role in our nourishment.

Additionally, garlic is an excellent source of manganese and vitamin B6. It is also a very good source of vitamin C and copper. In addition, garlic is a good source of selenium, phosphorus, vitamin B1, and calcium.

For an in-depth nutritional profile click here: Garlic.
In-Depth Nutritional Profile

In addition to the nutrients highlighted in our ratings chart, an in-depth nutritional profile for Garlic is also available. This profile includes information on a full array of nutrients, including carbohydrates, sugar, soluble and insoluble fiber, sodium, vitamins, minerals, fatty acids, amino acids and more.

Introduction to Food Rating System Chart

In order to better help you identify foods that feature a high concentration of nutrients for the calories they contain, we created a Food Rating System. This system allows us to highlight the foods that are especially rich in particular nutrients. The following chart shows the nutrients for which this food is either an excellent, very good, or good source (below the chart you will find a table that explains these qualifications). If a nutrient is not listed in the chart, it does not necessarily mean that the food doesn't contain it. It simply means that the nutrient is not provided in a sufficient amount or concentration to meet our rating criteria. (To view this food's in-depth nutritional profile that includes values for dozens of nutrients - not just the ones rated as excellent, very good, or good - please use the link below the chart.) To read this chart accurately, you'll need to glance up in the top left corner where you will find the name of the food and the serving size we used to calculate the food's nutrient composition. This serving size will tell you how much of the food you need to eat to obtain the amount of nutrients found in the chart. Now, returning to the chart itself, you can look next to the nutrient name in order to find the nutrient amount it offers, the percent Daily Value (DV%) that this amount represents, the nutrient density that we calculated for this food and nutrient, and the rating we established in our rating system. For most of our nutrient ratings, we adopted the government standards for food labeling that are found in the U.S. Food and Drug Administration's "Reference Values for Nutrition Labeling." Read more background information and details of our rating system.

<table>
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<tr>
<th>Nutrient</th>
<th>Amount</th>
<th>DRI/DV (%)</th>
<th>Nutrient Density</th>
<th>World's Healthiest Foods Rating</th>
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<tr>
<td>manganese</td>
<td>0.30 mg</td>
<td>15.0</td>
<td>10.1</td>
<td>excellent</td>
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<tr>
<td>vitamin B6</td>
<td>0.22 mg</td>
<td>12.9</td>
<td>8.7</td>
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<tr>
<td>vitamin C</td>
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<td>7.5</td>
<td>5.0</td>
<td>very good</td>
</tr>
<tr>
<td>copper</td>
<td>0.05 mg</td>
<td>5.6</td>
<td>3.7</td>
<td>very good</td>
</tr>
<tr>
<td>selenium</td>
<td>2.56 mcg</td>
<td>4.7</td>
<td>3.1</td>
<td>good</td>
</tr>
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<td>Content</td>
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<tr>
<td>-------------</td>
<td>-----------------</td>
<td>---------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>phosphorus</td>
<td>27.54 mg</td>
<td>DRI/DV&gt;=75% OR Density&gt;=7.6 AND DRI/DV&gt;=10%</td>
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<td></td>
</tr>
<tr>
<td>vitamin B1</td>
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<td>DRI/DV&gt;=50% OR Density&gt;=3.4 AND DRI/DV&gt;=5%</td>
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<td></td>
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<td>calcium</td>
<td>32.58 mg</td>
<td>DRI/DV&gt;=25% OR Density&gt;=1.5 AND DRI/DV&gt;=2.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In-Depth Nutritional Profile for Garlic

References

The Blood Fever Virus and the History of Vampires + Dracula


**Allium cepa, Onion**
Like garlic, onions contain antibiotics and substances that lower blood sugar, serum cholesterol and blood pressure. Onion juice sweetened with sugar or honey is a traditional remedy for colds and coughs. Onions are rich in vitamins B-1, B-2 and Vitamin C.

**Allium sativum, Garlic**
It has been used for centuries for medicinal purposes and as a culinary herb. In the Talmud Book of Ezra, Jews are encouraged to partake of garlic at the Friday night Shabbat meal for the following five reasons: (1) to keep the body warm; (2) to brighten the face; (3) to kill intestinal parasites; (4) to increase the volume of semen; and (5) to foster love and to do away with jealousy. Garlic is mentioned more than twenty times in the ancient Egyptian medical papyrus called the Codex Ebers dating back to ca. 1550 B.C. Pliny the Elder cited more than sixty therapeutic uses for garlic. Dioscorides, chief physician for the Roman army, prescribed garlic for intestinal parasitic disorders. Garlic oil was first isolated in 1844. More than one hundred compounds have been identified as constituents of garlic oil. In the Middle Ages, it was eaten daily as a protection against the bubonic plagues that ravished the European continent. Louis Pasteur described its antibacterial properties in 1858. Tons of garlic were used in World War I in field dressings to prevent infection. Alliin and allicin are sulfur-containing compounds that are antibacterial and anti-fungal. When garlic cloves are sliced, diced, or minced, alliin converts allicin into a large number of thioallyl compounds that are effective in lowering blood pressure, blood sugar, serum cholesterol and serum triglycerides. It is effective in boosting the immune system. Garlic is a natural pesticide against mosquito larvae.

**Allium schoenoprasum, Chives**
In traditional folk medicine Chives were eaten to treat and purge intestinal parasites, enhance the immune system, stimulate digestion, and treat anemia. Garlic and scallions, along with onions, leeks, chives, and shallots, are rich in flavonols, substances in plants that have been shown to have anti tumor effects. New research from China confirms that eating vegetables from the allium group (allium is Latin for garlic) can reduce the risk of prostate cancer.

**Allium tuberosum, Garlic Chives**
In Chinese herbal medicine, garlic chives have been used to treat fatigue, control excessive bleeding, and as an antidote for ingested poisons. The leaves and bulbs are applied to insect bites, cuts, and wounds, while the seeds are used to treat kidney, liver, and digestive system problems.
Other Irritants

Stimulation! If men only knew what stimulation does to their bodies. There is no difference in the ultimate effect, no matter whether the stimulating substance be tobacco, whiskey, salt, pepper, vinegar, mustard, spice and so on. The ultimate effect is to degenerate the integrity of the tissues, cells, glands, organs, blood vessels and to decrease function by depressing the nerves.

Dr. A. D. Birchard described the destructive effect of condiments on the body as follows:

"Thru absorption into the blood, the poisonous oils of condiments are brought into contact with every cell and fiber of the body. The first effect is produced on the delicate walls of blood vessels. A defensive effort causes these to become thickened, a change known as arteriosclerosis (hardening) occurs; the primary thickening is followed by hardening thru a deposit of chalk.

"The eminent Prof. Huchard of Paris, the world’s greatest authority on this subject, showed that mustard and other condiments, when administered to animals, may produce change in the blood-vessels in a few months’ time.

"The same poisonous effects produced upon the blood vessels, are also produced in the kidneys, the delicate cells of which, being brought in contact with the poisons in more or less concentrated form thru their elimination by way of the urine, are made to undergo degenerative changes, thru which their efficiency is impaired, and Bright’s disease is produced.

"Baix fed a half a gram (7.5 grains) of pepper to a rabbit daily. The animal died at the end of 27 days. The liver was found hardened and its cells degenerated. The kidneys were greatly congested.

"Man is the only animal that deliberately commits suicide by (slow) self-poisoning. He is the only animal that spoils his food before he eats it. The average individual suffers constantly from chronic poisoning of some kind, due to the food he eats, either in wrong combination or in excessive amounts, or by adding to it injurious substances for the purpose of stimulating a jaded appetite.
Why I Don’t Eat Toxic Garlic Or Onions

Onion and garlic is actually toxic, believe it or not.

We all know vampires don’t like garlic… but maybe there’s something behind this immortal creatures disdain for garlic that we’re over-looking. Think about it: most of us mortals fear the dreaded “garlic breath” after eating Italian food before getting close and cozy for some face time with a mate. For a good reason too, because most people find onion and garlic breath to be pretty repulsing. So we know that if anything, having garlic and onions before the big date is a major faux pas… but is there more to it?

The answer is, yes.

Before we get into the science, let’s just think common sense. How many people get bad breath after eating apples, pineapple, berries, celery, carrots, orange juice, or even simple bread? You don’t hear any girls running away in terror back to their friends saying “OH NO, BREAD BREATH!” I think it’s a safe bet that most people with good hygiene don’t.

In fact, you even see couples feeding each other strawberries and kissing each other with fruit… but not onions. There’s nothing sexy or sensual about running an onion peel over a women’s breast and lips …unless I suppose you have a alliums fetish (good luck having that up on your online dating profile).
Why is that? Well first let’s tackle what bad breath is first. According to Wikipedia:

**Halitosis** (bad breath) is a term used to describe noticeably unpleasant odors exhaled in breathing. […] In most cases (85–90%), bad breath originates in the mouth itself. The intensity of bad breath differs during the day, due to eating certain foods (such as garlic, onions, meat, fish, and cheese), obesity, smoking, and alcohol consumption. Since the mouth is exposed to less oxygen and is inactive during the night, the odor is usually worse upon awakening (“morning breath”).

**Tongue bacteria** produce malodorous compounds and fatty acids, and account for 80 to 90% of all cases of mouth-related bad breath. Tongue bacteria produce malodorous compounds and fatty acids, and account for 80 to 90% of all cases of mouth-related bad breath.

See, even the definition mentions garlic and onions increase bad breath!

Now everyone knows that certain foods just aren’t good for you. Also, I’m sure people know of certain foods that cause people in a 10 ft radius to run away, plugging their nose in fear. So to me, it only seems logical that if you’re eating a food that causes such an unpleasant response to you and those around you, it might not be so good for you.

If somebody doesn’t bathe and they smell like ass, chances are you don’t want to be around them. Why is that? Why do we find THAT smell to be so offensive? It’s simply because evolution says those smells tend to correlate with people that are often:

- unhealthy (not living a clean lifestyle)
- diseased (again, not clean, sickly)
- **toxic** (smells indicate the body trying to **detox**)  
- low-status (can’t afford basic hygiene maintenance)
- low-self esteem (doesn’t bother to keep themselves up)
- unfavorable mating material (not the best chances of survival)

It’s basically natures warning system for ourselves and others that we should either change what we’re doing to get healthier, or to stay away from somebody that can possibly pose a threat to our **wellbeing**. It’s nature and human instinct — not superficial politically correct nonsense. It’s logical, and makes total sense.

With all the being said, now that I’m very healthy with a low toxic load, I find people that eat loads of garlic and onions to reek (kind of like **leek** — oh so clever). Not only their breath, but you can smell it in their sweat. The body is trying to detox it anyway it can, and if it’s that offensive, chances are it’s probably not the best food for you (or them).

So I did some research and found a few really interesting things:
They contain allicin. It is anti fungal as well as antibiotic, that is most likely used to prevent the plant from being eaten by fungus, bacteria, and other animals. Farmers can strategically place them in their gardens to prevent animals from getting at other crops. If animals instincts tell them to avoid them… how are we so much smarter?


Reiki practitioners explain that garlic and onions are among the first substances to be expelled from a person’s system – along with tobacco, alcohol and pharmaceutical medications.

Back in the 1980’s, in his research on human brain function, Dr Robert [Bob] C. Beck, DSc. found that garlic has a detrimental effect on the brain. He found that in fact garlic is toxic to humans because its sulphone hydroxyl ions penetrate the blood-brain barrier and are poisonous to brain cells.

Dr Beck explained that as far back as the 1950s it was known that garlic reduced reaction time by two to three times when consumed by pilots taking flight tests. This is because the toxic effects of garlic desynchronize brain waves. “The flight surgeon would come around every month and remind all of us: “Don’t you dare touch any garlic 72 hours before you fly one of our airplanes, because it’ll double or triple your reaction time. You’re three times slower than you would be if you’d not had a few drops of garlic.”

In my research that chemical is NOT found in red onions, so that’s considered more “safe”.

The Taoists realized thousands of years ago that plants of the alliaceous family were detrimental to humans in their healthy state. In his writings, one sage Tsang-Tsze described the Alliums as the “five fragrant or spicy scented vegetables” — that each have a detrimental effect on one of the following five organs — liver, spleen, lungs, kidneys, and heart. Specifically, onions are harmful to the lungs, garlic to the heart, leeks to the spleen, chives to the liver and spring onions to the kidneys.

Tsang-Tsze said that these pungent vegetables contain five different kinds of enzymes which cause “reactions of repulsive breath, extra-foul odor from perspiration and bowel movements, and lead to lewd indulgences, enhance agitations, anxieties and aggressiveness,” especially when eaten raw.

According to Ayurveda, India’s classic medical science, foods are grouped into three categories - sattvic, rajasic and tamasic - foods in the modes of goodness, passion and ignorance. Onions and garlic, and the other alliaceous plants are classified as rajasic and tamasic, which means that they increase passion and ignorance.

Rajasic and tamasic foods are also not used because they are detrimental to meditation and devotions. “Garlic and onions are both rajasic and tamasic, and are forbidden to yogis because they root the consciousness more firmly in the body”, says well-known authority on Ayurveda, Dr.Robert E.Svoboda.

I’m part Italian, so giving up garlic and onions for me was pretty difficult on a cooked food diet. It wasn’t so bad now that I eat mostly raw, but you’d be suppressed how many recipes call for garlic and onions. Now
I’m sure a little bit of seasoning here and there isn’t gonna hurt me — but generally speaking, I don’t add any if can avoid it.

When I did my initial garlic and onion detox, I had some incredible results. First off, it helped with my dark circles under my eyes a little bit (though I did detox from regular peanuts as well). Second, and most profoundly, all that garlic and onion was detoxing through my nose! Let me explain. Every time I took a shower and washed my face, I could literally smell the onion garlic scent on my fingers.

**My entire body was detoxing the garlic and onion through the sweat on my nose.**

I was perplexed …maybe it was just residual smell from my fingers.

It wasn’t. Each day I got into the shower, I would rub my nose and the natural face oils would get on my finger. I would smell my fingers and BOOM! That smell again. I could smell it on my nose from my nose too. Yeah I know this sounds kinda weird and gross, but that’s the whole point of it. My entire body was detoxing the garlic and onion through the sweat on my nose. It was so bizarre.

After I think about 2 weeks, it finally went away, and I no longer smelled garlic and onions on my nose. Crazy. Though to me, it meant my body was trying to remove whatever toxins were built up, and it was all finally out of my system. That shit doesn’t happen when you eat apples. You don’t go through 2 weeks of “apple nose” when you stop eating them. Proof enough for me that they weren’t so good.

As of now, knowing that red (purple, super high color on the energy spectrum) onions don’t have that same toxic chemical as the story above about pilots and reaction time, I do at times add it to guacamole or other dishes. Since it’s such a potent thing for me, I only need a tiny amount to add that extra kick. Garlic is hard to avoid, as it’s everywhere, but I minimize my consumption as much as possible.

I have to admit that I have a really extremely healthy, all-natural and organic, low toxic lifestyle (sad that it’s considered extreme), so I’m hyper in-tune and aware of myself and others, thus I probably notice a more drastic change from something as simple as removing 2 foods from my diet than an average person on the SAD. While I do acknowledge there may be some health benefits to these foods, for me, my immune system is so strong and I get plenty of what I need elsewhere, that the cons of eating these foods greatly outweighs the benefits for me, personally. For others at certain times in their life, it may be good — I have no idea.

Who knows, maybe you would see a difference in your body odor, breath, and agility by removing (or at least greatly reducing) these foods as well! Be sure to let me know if you’ve had any experience with this, and what your results were. Remember to think for yourself and do what feels right and makes sense to you, this is my own experience — not a dogma for others, or even myself. In a few years my body could change, who knows….I guess those vampire hunters really were onto something. Be well!
Lucille Rick  6:08pm Mar 25
Thank you Desire Dubounet that is fabulous advice. Such a relief, I love garlic!

Comment History
Desire Dubounet  1:26pm Mar 25
I eat Garlic like crazy, I have a bowl of rich thick garlic soup every week or two, I have written over 300 books made over 500 movies and I have been called the most intelligent person alive by some, being modest I can say without doubt I am one of the most intelligent people alive, and at 63 i can out think most people in tests and outplay most men age 20 in many sports , it is not because i eat so much garlic , but it helps me

Desire Dubounet  1:13pm Mar 25
any food can be a poison it is up to the amount

Desire Dubounet  1:08pm Mar 25
Garlic in moderate amounts is an excellent food and a good medicine, it will not cure brain cancer but it helps in many ways . Italy has the lowest cancer level in Europe and the highest life expectancy, Garlic's medicinal abilities are legendary, but as Ben Franklin said "Moderation in ALL Things" When the French joined a Soviet space mission in late 1986, their menus caused an international stir. The French would not go into space without garlic , and Garlic is mentioned in the Bible as good food , but over use can cause headaches --- at Numbers 11:5:
We remember the fish which we ate freely in Egypt, the cucumbers, the melons, the leeks, the onions, and the garlic;
Bob Beck did experiments proving garlic prevented the front and rear brain communicating with each other. But garlic is still touted to be great for some things, I for one am confused, perhaps Desire Dubounet could comment please, and put us out of our dither?
The Blood Fever Virus and the History of Vampires + Dracula
"Because I am Outraged
I have become
Outragous"
Your editor and author
Desire' Dubounet