Nutrition in Nature

Every five years the federal government issues dietary guidelines to provide practical advice for healthy eating.

In July the Dietary Guidelines Committee, a 14 member panel appointed by the Department of Health and Human Services and the Department of Agriculture, circulated a draft document that suggests Americans reduce their consumption of meat and dairy and eat more plant-based foods. The draft was based on studies showing that lowering meat consumption cuts greenhouse gas emissions, lessening the contribution our eating habits make to climate change. Final guidelines are due to be issued in late 2015."

There has been numerous studies made as far back as the seventies that shows the harm to the environment and to health from the consumption of meat and dairy. They left out of this report the harm it is causing mammalian chemistry, our personal health which has overwhelmed the health care system and the costs to consumers. This is from a recent article in Bloomberg news, October 6th issue on nutrition.

There is an amazing disconnect between people's perceptions of what they eat, and what they actually eat.

And in this case, unfortunately, perception is not reality. Everyone (or almost everyone) knows our nation's weighty health statistics: 68 percent of Americans are at least overweight, and nearly half of those people fall into the category of being obese (as in, a BMI of 30 or greater).
Now here are some results from a survey of 1,234 U.S. adults surveyed for Consumers Reports:

- **89.7 percent of Americans described their diet as "somewhat" (52.6 percent), "very" (31.5 percent), or "extremely" (5.6 percent) healthy.**
- **79 percent of Americans rarely or never count calories while a slim 8 percent do so on a daily basis.**

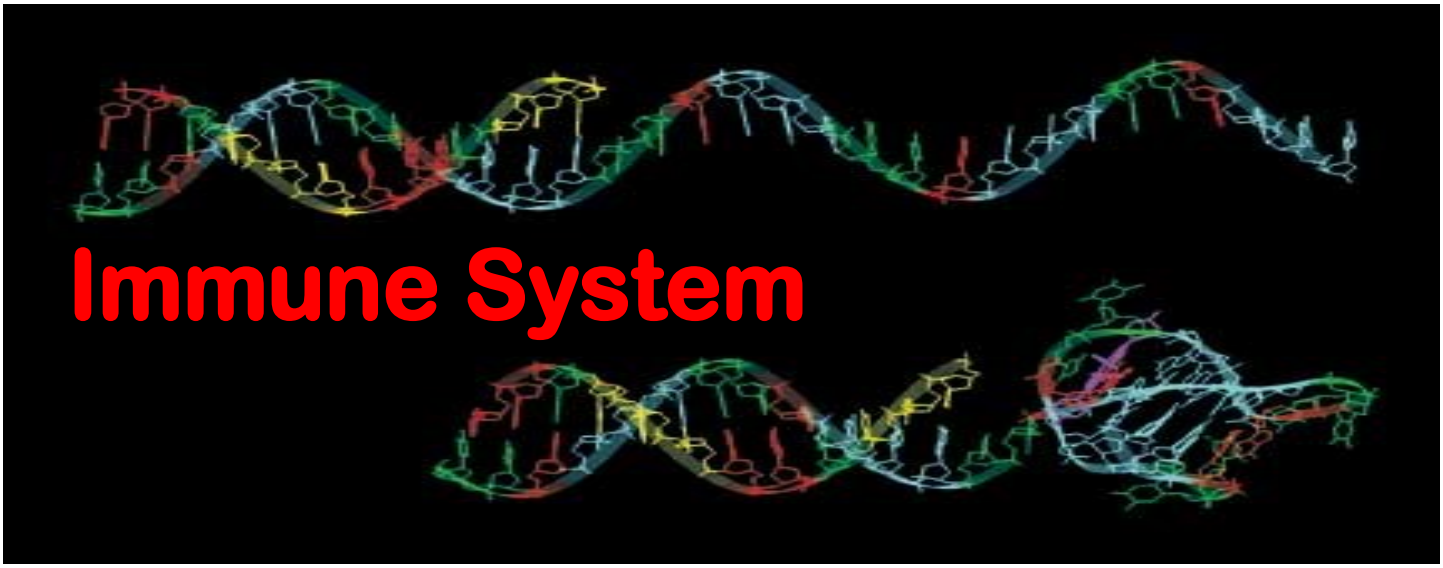
Exercise stimulates enzymes that help move LDL from the blood (and blood-vessel walls) to the liver. From there, the cholesterol is converted into bile (for digestion) or excreted. So the more you exercise, the more LDL your body expels.

Beets are a unique source of phytonutrients called betalains. Betanin and vulgaxanthin are the two best-studied betalains from beets, and both have been shown to provide antioxidant, anti-inflammatory, and detoxification support. The detox support provided by betalains includes support of some especially important Phase 2 detox steps involving glutathione. Although you can see these betalain pigments in other foods (like the stems of chard or rhubarb), the concentration of betalains in the peel and flesh of beets gives you an unexpectedly great opportunity for these health benefits.

Unlike some other food pigments, betalains undergo very steady loss from food as the length of cooking time is increased. For example, one recent study has shown the red betalain pigments in beets to be far less heat stable than red anthocyanin pigments in red cabbage. The difference between 15 minutes of steaming versus 25 minutes of steaming, or 60 minutes of roasting versus 90 minutes of roasting can be significant in terms of betalain damage. For these reasons, we recommend that you keep beet steaming times to 15 minutes or less, and roasting times under an hour.In recent lab studies on human tumor cells, betanin pigments from beets have been shown to lessen tumor cell growth through a number of mechanisms, including inhibition of pro-inflammatory enzymes (specifically, cyclooxygenase enzymes).

The tumor cell types tested in these studies include tumor cells from colon, stomach, nerve, lung, breast, prostate and testicular tissue. While lab studies by themselves are not proof of beets' anti-cancer benefits, the results of these studies are encouraging researchers to look more closely than ever at the value of betanins and other betalains in beets for both prevention and treatment of certain cancer types.

See page eleven for more current news.



The immune system is a network of cells, tissues, and organs that work together to protect the body from infection. The human body provides an ideal environment for many microbes, such as viruses, bacteria, fungi, and parasites, and the immune system prevents and limits their entry and growth to maintain optimal health. You can go to innerbody.com to see more details to the immune system.

Research

Although scientists have learned much about the immune system, they continue to study how the body targets invading microbes, infected cells, and tumors. New technologies for identifying individual immune cells help scientists determine which cells trigger an immune response under various circumstances. Improvements in microscopy also allow for observations of living immune cells as they interact within lymph nodes and other body tissues.

In addition, scientists are rapidly unraveling the genetic blueprints that direct the human immune response, as well as those that dictate the biology of viruses, bacteria, fungi, and parasites. The combination of new technology and expanded genetic information promises to reveal more about how the body protects itself from disease. In turn, scientists can use this information to develop new strategies for the prevention and treatment of infectious and immune-mediated diseases.

Go to Innerbody.com to see a more detailed description of all the parts of the immune system.

As T cells move through the lymphatics and tissues, chemokine receptors, adhesion molecules, costimulatory molecules and antigen receptors engage their ligands in the microenvironment and contribute to establishing and maintaining cell polarity. Cytoskeletal assemblies, surface proteins and vesicle traffic are essential components of polarity and probably stabilize the activity of lymphocytes that must negotiate their 'noisy' environment. An additional component of polarity is a family of polarity proteins in T cells that includes Dlg, Scrib and Lgl, as well as a complex of partitioning-defective proteins. Ultimately, the strength of a T cell response may rely on correct T cell polarization. Therefore, loss of polarity regulators or guidance cues may interfere with T cell activation.

Company News

Moved the offices and during this time we found out that our phone lines were not properly connected so we were not able to hear your calls, we apologize for this inconvenience.

Honor and grandfather in the original selling prices given to current customers. The new retail prices are on the web sites.

We hope all is well with you and please feel free to contact us with any questions, comments, ideas or resources we can share with others.

Product News on mushroom intelligence

The best delivery system for the medicinal mushroom blends and herbs is with a food. Please see our new web sites and links which will provide information on ideas for food preparation. The brand name American was changed to Myshroom in 2013.

We continue to investigate new science and will provide abstracts and summaries on the science and opinions from ongoing research on the medicinal mushroom strains and other agriculture chemistry. When we reviewed the studies of the chemistry found in our hybrid strains, it showed so much more beneficial chemistry. The research team and collaborators have connecting the dots between our research and others and will be publishing new papers.

Developed partnerships with food companies. Jointly developed food and beverage products for introduction in the next twelve months. Our immune health blend has been incorporated in raw food bars, cookies, immune beverage and raw granola (using buckwheat not oats). The products are all gluten free and made with no sugars, dairy, soy or any artificial ingredients or preservatives. 100% organic, vegan and kosher. The beneficial chemistry includes all of the essential amino acids, ergothioneine, minerals and fiber.

Research indicates that the hybrid strain of the Agaricus Blazei specie that is used in the immune health blend product stimulates the following Immune System Cells: Macrophage NK Cells Leukocytes T-Cells. The hybrid specie stimulates the following Immune System Cytokines TNF-alpha Interferons - (a, (3, and y) Interleukins -(1(3, 6, 8, 12, and 23a). It limits damage from radiation and mutagens. Human trials have shown it lowers blood sugar levels and supports healthy liver function. This hybrid strain of the Agaricus is a rare fungi source of both conjugated linoleic acid CIA and vitamin D and is a highly popular supplement to the diet and used regularly by over a half million people in Japan.

Ergothioneine is an amino acid that is found mainly in mushrooms, but also in king crab, meat from animals that have grazed on grasses containing ergothioneine, and other foods. Amino acids are chemicals that are the building blocks for proteins. Ergothioneine is used as medicine. People take ergothioneine for liver damage, cataracts, Alzheimer's disease, diabetes, and heart disease. Ergothioneine is sometimes applied directly to the skin to prevent wrinkles, reduce signs of aging skin, and reduce sun damage.

Researchers are continuing to investigating ergothioneine to determine what mechanisms and pathways are reducing swelling (inflammation) in the lungs and damage in the liver, kidneys, and brain.

Blocking a key protein boosts immune system's ability to clear chronic infection

'Entirely illogical' finding from UCLA study suggests potential therapy for HIV

Elaine Schmidt | April 11, 2013

UCLA scientists have shown that temporarily blocking a protein critical to immune response actually helps the body clear itself of chronic infection. Published in the April 12 edition of the journal Science, the finding suggests new approaches to treating persistent viral infections like HIV and hepatitis C.

The research team studied type-1 interferons (IFN-1), proteins released by cells in response to disease-causing organisms. These proteins enable cells to talk to each other and orchestrate an immune response against infection. Constant IFN-1 signaling is also a trademark of chronic viral infection and disease progression, particularly in HIV.

"When cells confront viruses, they produce type-1 interferons, which trigger the immune system's protective defenses and set off an alarm to notify surrounding cells," said principal investigator David Brooks, an assistant professor of microbiology, immunology and molecular genetics at UCLA's David Geffen School of Medicine and the UCLA College of Letters and Science. " Type-1 interferon is like the guy in the watchtower yelling 'red alert' when the marauders try to raid the castle.

Scientists have long viewed IFN-1 as beneficial, because it stimulates antiviral immunity and helps control acute infection. Blocking IFN-1 activity, they reasoned, would allow infection to run rampant through the immune system.

On the other hand, prolonged IFN-1 signaling is linked to many chronic immune problems. The research team wondered whether obstructing the signaling pathway would enable the immune system to recover enough to fight off chronic infection.

To test this theory, Brooks and his colleagues injected mice suffering from chronic viral infection with an antibody that temporarily blocked IFN-1 activity.

Much to their surprise, they discovered that giving the immune system a holiday from IFN-1 boosted the body's ability to fight the virus. Stunningly, the respite also reversed many of the immune problems that result from chronic infection, such as a rise in proteins that suppress immune response, continuous activation of the immune system and disruption of lymph tissue.

The findings fly in the face of past studies that suggest eliminating IFN-1 activity in mice leads to severe, lifelong infection.

"What we saw was entirely illogical," Brooks admitted. "We'd blocked something critical for infection control and expected the immune system to lose the fight against infection. Instead, the

break in IFN-1 signaling improved the immune system's ability to control infection. Our next step will be to figure out why and how to harness it for therapies to treat humans."

"We suspect that halting IFN-1 activity is like pushing the refresh button," said first author Elizabeth Wilson, a UCLA postdoctoral researcher. "It gives the immune system time to reprogram itself and control the infection."

Uncovering this mechanism could offer potential for new therapies to tackle viruses like HIV and hepatitis C, according to Brooks. The team's next step will be to pinpoint how to sustain IFN-1's control of the virus while blocking the negative impact that chronic IFN-1 activity wreaks on the immune system.

The National Institute of Allergy and Infectious Diseases and the UCLA Center for AIDS Research supported the research.

Additional co-authors included Douglas Yamada, Heidi Elsaesser, Jonathan Herskovitz, Jane Deng and Genhong Cheng, all of UCLA; Bruce Aronow of the University of Cincinnati; and Christopher Karp of the University of Cincinnati and the Bill and Melinda Gates Foundation.

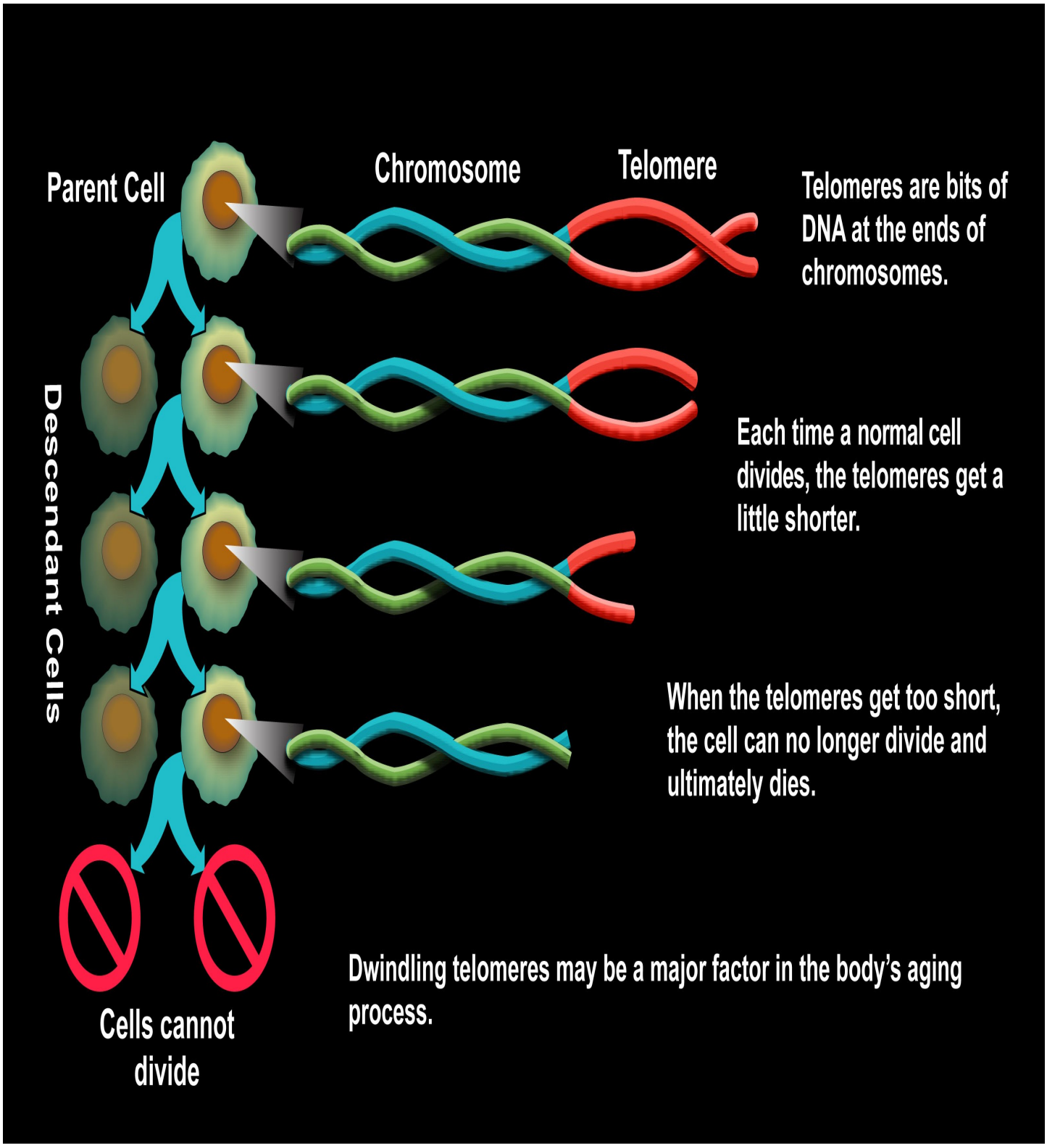
Cell-Signaling Molecule May Play Key Role in Development of Lupus & Kidney Disease

A National Institutes of Health (NIH) team has identified in mice a critical role for the cell-signaling molecule interleukin-17 (IL-17) in the development of lupus nephritis, a potentially fatal kidney disease. Although IL-17 has been found in kidney biopsies of people with lupus nephritis, this is one of the first studies to suggest that it might directly contribute to disease progression. The team’s findings appear in the November 1 issue of *Immunity*.

Background
Systemic lupus erythematosus (SLE), also known as lupus, is an autoimmune disease caused by the production of antibodies against a person’s own cells and tissues (autoantibodies). These autoantibodies can attack various organs of the body, and the kidneys are one of the primary targets. Approximately 50 percent of people with SLE may develop kidney disease, which can lead to organ failure. Current treatments for lupus nephritis aim to prevent or delay kidney failure, but there is no known cure for the disease.

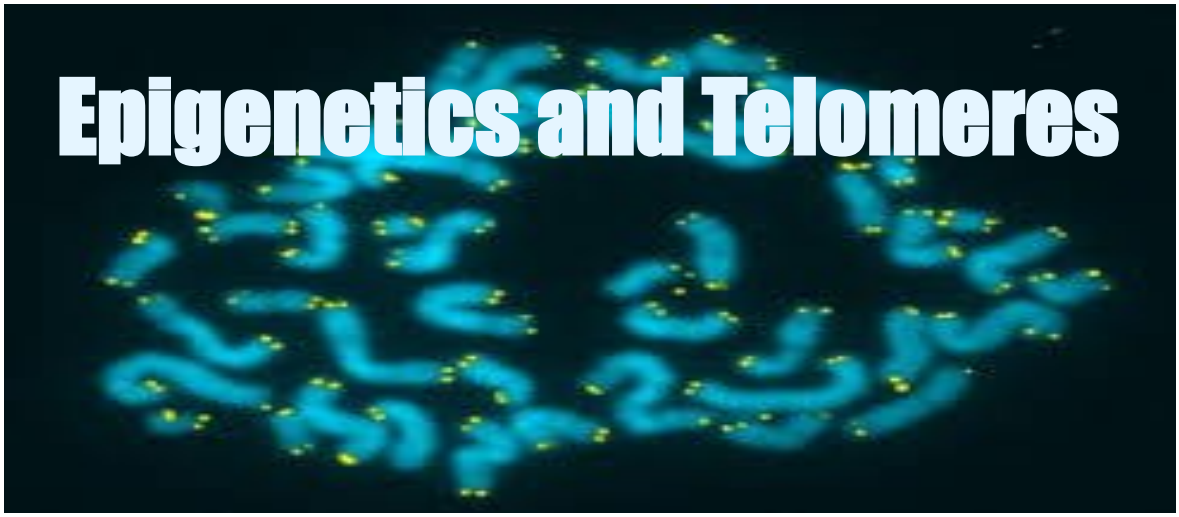
In healthy people, IL-17 contributes to the body’s defenses by helping to recruit certain types of immune cells to infection sites. Researchers also have observed increased levels of IL-17 gene expression in the tissues of people with autoimmune diseases, including the kidneys of those with lupus nephritis. It is unclear, however, if lupus nephritis is causing the increase in IL-17 or if IL-17 is contributing to the disease.

Results of Study
An NIH team, led by Ulrich Siebenlist, Ph.D., chief of the Immune Activation Section in the NIAID Laboratory of Immunoregulation, used mouse models to explore the role that IL-17 may have in lupus nephritis.



We will never have all of the answers as to what chemical reactions are going on in each cell in our body. There are just too many thousands of chemical reactions going on that it is statistically impossible and science will never have a total picture.

Epigenetics and Telomeres



Volume 1, Issue 4

Aging and Disease articles:

What are the prospects for human immortality?

Epigenetics

Telomeres

Biophysics

The connection - how do we think it all fits together?

Aging and Disease

Before a cell can divide, it makes copies of its chromosomes so that both new cells will have identical genetic material. To be copied, a chromosome's two DNA strands must unwind and separate. An enzyme (DNA polymerase) then reads the existing strands to build two new strands. It begins the process with the help of short pieces of RNA. When each new matching strand is complete, it is a bit shorter than the original strand because of the room needed at the end for this small piece of RNA. It is like someone who paints himself into a corner and cannot paint the corner.

As a cell begins to become cancerous, it divides more often, and its telomeres become very short. If its telomeres get too short, the cell may die. Often times, these cells escape death by making more telomerase enzyme, which prevents the telomeres from getting even shorter.

Many cancers have shortened telomeres, including pancreatic, bone, prostate, bladder, lung, kidney, and head and neck.

Measuring telomerase may be a way to detect cancer. And if scientists can learn how to stop telomerase, they might be able to fight cancer by making cancer cells age and die. In one (continued on page 10)

What are the prospects for human immortality?

Human lifespan has increased considerably since the 1600s, when the average lifespan was 30 years. By 2012, the average US life expectancy was nearly 79. Reasons for the increase include sewers and other sanitation measures, antibiotics, clean water, refrigeration, vaccines and other medical efforts to prevent children and babies from dying, improved diets, and better health care.

Some scientists predict average life expectancy will continue to increase, although many doubt the average will ever be much higher than 90. But a few say vastly longer lifespans are possible. Now some scientist say that our younger generations my live shorter lives because of all the toxins they have consumed or have been exposed to.

The approach to education in science is not to ply the student with a tidal wave of rote, but rather to challenge his or her mind with a paradox or puzzle drawn from the heart of good science that will offer a catalytic start in imaginative thinking of the kind that breeds new science. Carsten Schultz, PhD

Read about Epigenetics at foodabout.org

Pioneering discoveries on the brain and immune defense

It's true that the brain governs the body, but the body also governs the brain, for example when the immune defense system makes us rest when we're sick. This is shown in research that the world's leading researchers and Nobel laureates will be presenting at an international conference in the research field of psychoneuroimmunology in Stockholm in June. This is research that has led to, among other things, new knowledge about the development of depression, severe stress accelerating aging, and how anti-depressive drugs largely function as placebos.

Psychoneuroimmunology is a research field that studies the connections between the immune system, the brain, and psychological functions. The research deals with the relationship between physical and mental health, which is investigated via measurable effects in the connection between mental processes and health and between the nervous system and the immune system.

"This is an incredibly exciting research field, and we're just seeing the beginning of it. The most fascinating discoveries still lie ahead," says Mats Lekander, professor at the Stockholm University Institute for Stress Research and Karolinska Institutet, one of the pioneers in the field.

Although a young research field, groundbreaking discoveries have already been made

Psychoneuroimmunology is a relatively young research area, about twenty years old, which, together with adjacent research fields, has already produced a number of trailblazing discoveries:

- How the immune system governs the brain during illness.
- A new view of the mechanisms behind depression, when the immune system is balanced and strong you can be, or are cured of your depression, bipolar disorder (manic depressive) and schizophrenia.
- Severe stress affects and accelerates the body's aging.
- New knowledge about placebo effects creating new potential for more effective medicines.
- How patients are received by healthcare providers affects the body's healing processes.

"Psychoneuroimmunology clearly links together subject perceptions with biological observations, for example, how people perceive their health," says Mats Lekander.

experiment, researchers blocked telomerase activity in human breast and prostate cancer cells growing in the laboratory, prompting the tumor cells to die. But there are risks. Blocking telomerase could impair fertility, wound healing, and production of blood cells and immune system cells.

Geneticist Richard Cawthon and colleagues at the University of Utah found shorter telomeres are associated with shorter lives. Among people older than 60, those with shorter telomeres were three times more likely to die from heart disease and eight times more likely to die from infectious disease.

While telomere shortening has been linked to the aging process, it is not yet known whether shorter telomeres are just a sign of aging — like gray hair — or actually contribute to aging.

If telomerase makes cancer cells immortal, could it prevent normal cells from aging? Could we extend lifespan by preserving or restoring the length of telomeres with telomerase? If so, would that increase our risk of getting cancer?

Scientists are not yet sure. But they have been able to use telomerase in the lab to keep human cells dividing far beyond their normal limit, and the cells do not become cancerous.
If we used telomerase to "immortalize" human cells, we may be able to mass produce cells for transplantation, including insulin-producing cells to cure diabetes, muscle cells for treating muscular dystrophy, cartilage cells for certain kinds of arthritis, and skin cells for healing severe burns and wounds. An unlimited supply of normal human cells grown in the laboratory would also help efforts to test new drugs and gene therapies.

Some long-lived species like humans have telomeres that are much shorter than species like mice, which live only a few years. Nobody knows why. But it's evidence that telomeres alone do not dictate lifespan.

Cawthon's study found that when people are divided into two groups based on telomere length, the half with longer telomeres lives an average of five years longer than those with shorter telomeres. This study suggests that lifespan could be increased five years by increasing the length of telomeres in people with shorter ones.

People with longer telomeres still experience telomere shortening as they age. How many years might be added to our lifespan by completely stopping telomere shortening? Cawthon believes 10 years and perhaps 30 years.

After age 60, the risk of death doubles every 8 years. So a 68-year-old has twice the chance of dying within a year compared with a 60-year-old. Cawthon's study found that differences in telomere length accounted for only 4% of that difference. And while intuition tells us older people have a higher risk of death, only 6% is due purely to chronological age. When telomere length, chronological age, and gender are combined (women live longer than men), those factors account for 37% of the variation in the risk of dying over age 60. So what causes the other 63%?

A major cause of aging is "oxidative stress." It is the damage to DNA, proteins, and lipids (fats) caused by oxidants, which are highly reactive substances containing oxygen. These oxidants are produced normally when we breathe, and also result from inflammation, infection, and consumption of alcohol and cigarettes. In one study, scientists ex-

Most likely oxidative stress, glycation, telomere shortening, and chronologic al age — along with various genes — all work together to cause aging.

Aging and Disease

(from page 10)

exposed worms to two substances that neutralize oxidants, and the worms' lifespan increased an average 44%.

Another factor in aging is "glycation." It happens when glucose, the main sugar we use as energy, binds to some of our DNA, proteins, and lipids, leaving them unable to do their jobs. The problem becomes worse as we get older, causing body tissues to malfunction, resulting in disease and death. Glycation may explain why studies in laboratory animals indicate that restricting calorie intake extends lifespan.

Most likely oxidative stress, glycation, telomere shortening, and chronological age — along with various genes — all work together to cause aging.

Recommended Web Sites.

Foodabout.org

Brucelipton.com

Environmental Health Trust

Edge.org

Naturalnews.com

Celiac.org

Quantum Health Human Research Institute

Sanford Burnham Institute

Aesopyoungacademics.wordpress.com

Recommended books to read.

"The Biology of Belief" by Bruce Lipton Ph.D.

"The Honeymoon Effect, the Science of Creating Heaven on Earth" by Bruce Lipton Ph.D."

"This Explains Everything" by John Brockman

"The Field" by Lynn McTaggart

NEWS

- A great article on Ebola in this months September 29th issue of ***Bloomberg Businessweek***. "***Ebola Rising***." It explains the story behind a drug development. A recommended reading for all.
- A 2012 poll found that Americans fear Alzheimer's more than any other disease, including cancer. But there's evidence to suggest that dementia and age-related cognitive decline are not inevitable by-products of getting older. A review published in the New England Journal of Medicine last year concluded that dementia rates in the U.S., and Europe are actually dropping. People ages 65 and up found that the prevalence of dementia was 6.5 percent in 2011.

Productivity isn't about how many brute hours you rack up– it's about how effective you are at replenishing mental resources. An article in the October issue of Entrepreneur Magazine's "The refueling principle" is a must for the very busy person, to make us think twice about non stop working and taking time off. Leaving the work at work is one of the most important recovery strategies and the hardest.

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"The lives of people are like young trees in a forest. They are being choked by climbing vines. The vines are old thoughts and beliefs planted by dead men."

Sherwood Anderson, "Seeds"

"*When I despair, I remember that all through history the way of truth and love have always won. There have been tyrants and murderers, and for a time, they can seem invincible, but in the end, they always fall. Think of it - always.***"**
— Mahatma Gandhi

The mushroom intelligence company's products are foods; that is all, but foods that have a unique and superior chemistry provided by nature. This elaborate chemistry has been proven to benefit human chemistry as researched and published by many research teams from across the world.

Further analysis such as is required for a drug company to make claims is just not necessary. Mushrooms are considered a food by the food and drug administration, regarded as safe to consume.

What we have done is connected the dots between the many published research reports and peer reviewed articles and directly with research done at university research labs on the proven chemistry of our medicinal mushrooms which shows it makes good sense to consume these products. We found theses hybrid strains grown in sterile clean rooms at university labs from around the world that produced the best beneficial chemistry for mammalian chemistry. We now grow these hybrid strains commercially. These proprietary mushroom blends, when incorporated in the diet, either consumed by itself or added into a food as an ingredient, does support the immune system which is the most important key to prevent disease.

We have interviewed many researchers, medical doctors and other health care professionals including researching published articles about the benefits of various foods, herbs and fungi . We found out that many doctors use various protocols that include various herbs, foods and natural compounds in the treatment of diseases and it is done secretly most of the time. Most of them do not share with the public or medical community because they are afraid of reprisals from the FDA or European Medicines Agency just for mentioning what they used. Although the FDA has stated that any physician can recommend foods and herbs but can not represent that it is a cure or to recommend a specific brand name.

Amyloid beta proteins form clumps in the brains of people who have Alzheimer's, and those clumps are suspected to cause or at least contribute to the disease. Amyloid beta-42 seems to be the most harmful form of these proteins. We have reports from physicians that use the immune health blend with patients and they are seeing an improvement and in many cases the amyloid plaque getting smaller.

NEWS

Directing cancer cell migration

By Susan Gammon, Ph.D.

A team of researchers at Sanford-Burnham has discovered how a single protein directs cancer cells to move and spread from one part of the body to another. The study, published in the Journal of Biological Chemistry, shows that it is an intricate balance between levels of the full-length protein with levels of its cleaved segments that control a tumor cell's ability to metastasize.

"We have discovered how protein-tyrosine pseudokinase 7 (PTK7) controls cell motility and metastasis," said Alex Strongin, Ph.D.,professor in the Bioinformatics and Structural Biology Program. "This is important because in cancer, metastasis is what kills. Understanding how PTK7 enables cancer cells to spread may lead to new approaches to controlling metastasis."

Cell Polarity

Prior to the study, researchers knew that PTK7 was essential for epithelial cell polarity. Polarity is a fundamental feature of epithelial cells that allows them to connect to one another and form sheets of cells that line the surfaces throughout the body, and maintain structural order. In epithelial-cell cancers—known as carcinomas—cells lose their polarity, bundle together to form tumors, and in some cases metastasize. About 80 to 90 percent of cancers are epithelial-cell cancers, and these include most lung, breast, prostate, and bowel cancers.

PTK7

PTK7 is a transmembrane protein, meaning that part of its structure is outside the cell (extracellular), part spans the cell membrane, and part resides inside the cell (intracellular). Prior to the study, scientists knew that when PTK7 is in its full-length configuration it has anti-metastatic effects. They also knew that in metastatic tumors, levels of PTK7 were elevated. Finally, they knew that PTK7 could be cleaved on the extracellular portion by a few enzymes, including one called membrane type-1 matrix and metalloproteinase (MT1-MMP), cutting the protein into segments.

So how do the pieces of the PTK7 puzzle fit together? By using a combination of animal models and human colon cancer specimens, the research team was able to show how a tightly controlled process of enzymatic cleavage of PTK7 regulates the dynamics of cell polarity, and is critical for directing epithelial cell motility, invasion, and metastasis. When PTK7 is full length, it stabilizes cell polarity. As the levels of MT1-MMP increase, more PTK7 is cleaved, and cells become free to move from one part of the body to another.

"We are looking forward to creating tools that can distinguish whole PTK7 from cleaved PTK7, because it appears that it's the ratio of the two that may provide information on the likelihood that a carcinoma will spread," said Strongin. "It's also clear that blocking the enzymatic cleavage of PTK7 may be a way to prevent metastasis. But it will be important to find molecules that selectively inhibit MT1-MMP-PTK7 cleavage because the MT1-MMP enzymes perform many normal cell functions as well."

See more at: http://beaker.sanfordburnham.org/2014/08/directing-cancer-cell-migration-2/#sthash.8Xlso13N.dpuf

Is there no such thing as a canola plant?

Wait, did you think there was a canola plant, like corn, soy or sunflower? Did you think making canola is just about pressing seeds? How DOES rapeseed oil magically turn into canola oil? It's "deodorized" with a chemical component. Do you want to put a "hex" on your health? Insert "hexane" and wait for problems to rear their ugly head. Hexane, a **vapor component of gasoline**, is used to process oils and has been since World War II. And yes, hexane is flammable. Hexane is a chemical made from crude oil, the mainstream solvent extraction method of the entire Western world. So how is this organic? Good question.

Canola oil comes from the genetically altered rapeseed plant. The rapeseed plant was changed by genetically adding a petunia gene and called the new oil from the plant canola oil not rapeseed oil. Canola, even the non GMO is GMO, the plant that produces all canola oil is a transgenic plant.

The omega-3 fatty acids of processed canola oil are transformed during the deodorizing process into **trans fatty acids**. The reason why canola is particularly unsuitable for consumption is that it contains a very-long-chain fatty acid called **erucic acid**, which under some circumstances is associated with **fibrotic heart lesions**.

Here's an interesting fact: In 1985, the Federal Register (official journal of the federal government of the United States) stated that the FDA outlawed canola oil in infant formulas because it retarded growth. So, 25 years ago it was not good for babies, but now it's suddenly okay for everyone else? (http://www.functionalmedicineuniversity.com/public/891.cfm)

Learn more:
http://www.naturalnews.com/043948_canola_oil_hidden_health_dangers_food_bar.html#ixzz3GmWRh1ig
http://articles.mercola.com/sites/articles/archive/2000/01/16/dangers-canola-oil.aspx

Heavy Metals

Look out for heavy metals in processed and fresh foods grown in china or from questionable locations.

Acute heavy metal intoxications may damage central nervous function, the cardiovascular and gastrointestinal (GI) systems, lungs, kidneys, liver, endocrine glands, and bones (Jang 2011; Adal 2013). Chronic heavy metal exposure has been implicated in several degenerative diseases of these same systems and may increase the risk of some cancers (Galanis 2009; Wu 2012).

Heavy metals are ubiquitous in the environment (Pohl 2011). Humans risk overexposure from environmental concentrations that occur naturally (eg, arsenic-rich mineral deposits) or human activities (eg, lead or mercury release as a result of industrial pollution) (Orloff 2009; Hutton 1986).

It is not possible to completely avoid exposure to toxic metals (Singh 2011). Even people who are not occupationally exposed carry certain metals in their body as a result of exposure from other sources, such as food, beverages, or air (Washam 2011; Satarug 2010).

Foods that must be organic

Apples	Strawberries	Raisins
Grapes	Cherry Tomatoes	Meats
Celery	Spinach	
Kale/Collard Greens	Peaches	
Sweet Bell Peppers	Potatoes	
Nectarines	Snap Peas	
Cucumbers	Hot Peppers	
Blueberries	Sweet Potatoes	

A few of the foods and additives to avoid

Artificial food colorings	**Canola Oil**	**Paraben**
Artificial Sweeteners	**Cotton Seed Oil**	**Polysorbates**
Barley Malt	**Distilled Vinegars***	**Potassium sorbate**
Benzoates	**Floride**	**Propyl Gallate**
Benzoic acid	**High Fructose Corn Syrup**	**Propylparaben**
Butylated Hydroxy-anisole	**Hydrogenated Vegetable Oil**	**Propyl p-hydroxybenozoate**
BHT/BHA	**Hydrolyzed Vegetable Proteins**	**Sodium Metabisulphite**
Calcium Sulphite	**Modified food starch**	**Sodium Bisulphite & Sodium Sulphite**
Calcium benzoate	**Monosodium Glutamate**	**GMO foods—http://www.gmo-foods.com/**
Cane sugars	**Nitrates**	**Soy**
Chlorine	**Non gluten free oats**	**Stannous chloride**
Corn Oil	**GMO corn**	**Sulphur Dioxide**
Wheat, Barley and Rye grains	**Peanuts**	**Tartrazine**

(Cider, rice and balsamic vinegars are safe. *Distilled vinegars include red and white wine vinegars.)

(Do not buy foods packed in plastics and canned as reported by published scientific reports)

FOOD ADDITIVES

See: http://gmofreeusa.org/

The loopholes for companies to put in additives in their food products are many; depending on what they're adding, sometimes it's up to the company itself, and not a third party, to put together scientific evidence to determine whether or not an additive is safe. With this voluntary certification system, as opposed to a more formal review process, it's no surprise that the number of additives in food is on the rise, so much so that the FDA has no idea whether the stuff in our food is safe or not.

We simply do not have the information to vouch for the safety of many of these chemicals," Michael Taylor, the FDA's deputy commissioner for food, told the Washington Post.

http://www.care2.com/causes/is-it-bad-that-the-fda-has-no-idea-if-some-additives-in-our-food-are-safe.html#ixzz3GnErqXJF

Carrots are great for your vision, especially night vision. The beta-carotene slows the progression of macular degeneration and helps prevent cataracts. There is more vitamin A in carrots than almost any other vegetable. They also contain high levels of fiber, biotin, vitamin K, vitamin B6, vitamin C, thiamin and potassium.

Most common elements lacking in American diets:

1. Calcium

Purpose: bones, structural system; teeth; bone and skin mending joints; stomach acid; buffer

Things that deplete this element: coffee, sugar, salt, high animal protein diet, sesame seeds, soda, excessive phosphorus, oxalic acid

Vegetarian food source: almonds, cashews, seeds, carrots, carrot juice, broccoli, chickweed, yogurt, horsetail, oatstraw, parsley, sprouts

Herbal source: alfalfa, buchu, chamomile, dandelion

2. Silicon

Purpose: hair luster and strength; more youthful-looking skin; prevents cracking skin and nails

Things that deplete this element: fats, starches, sugar

Vegetarian food source: asparagus, leaf lettuce, cauliflower, apricots, apples, wild rice, nuts, seeds

Herbal source: horsetail, alfalfa, dandelion, yucca, barley juice, cornsilk, skullcap, gotu kola, chlorophyll

3. Iodine

Purpose: feeds thyroid gland, which controls weight, metabolism, energy levels

Things that deplete this element: radiation from TV, x-rays, power lines, stimulants such as caffeine and ephedra

Vegetarian food source: seaweed, garlic, onions, eggplant, mushrooms, potatoes

Herbal source: kelp, dulse, black walnut, spirulina

4. Sodium

Purpose: can prevent stomach disturbance or joint distress; dissolves hard calcium build-up in the body; adds flexibility

Things that deplete this element: salt, antacids, prescription diuretics

Vegetarian food source: celery, cucumbers, strawberries, goat milk and whey, okra, dandelion, sesame seeds, Swiss and Roquefort cheese, raisins, red cabbage, black mission figs, watercress

Herbal source: hydrangea, alfalfa, safflower, rose-hips, peppermint, parsley, licorice

5. Potassium

Purpose: helps regulate water retention; muscle cramps, or spasms; muscular fatigue; hypertension; hardening of the arteries

Things that deplete this element: red meat, coffee, alcohol, laxatives, diuretics, salt, sugar

Vegetarian source: bananas, raisins, potato peel broth, parsley tea, bitter greens, cashews, almonds, whole grains

Herbal source: kelp, parsley, Irish moss, ginger, peach bark, licorice, horsetail, capsicum

Herbal source: alfalfa, ginseng, bee pollen, comfrey, spirulina, dandelion

6. Iron

Purpose: necessary for hemoglobin production; a remedy for anemia; improves protein assimilation; mental vitality; circulation; liver and kidney functions; promotes vitality

Things that deplete this element: food additives, coffee, black tea, excessive phosphorous, food preservatives

Vegetarian source: black cherries, blackberries, dried fruits, strawberry juice, dark leafy greens, spinach, black strap molasses

Herbal source: yellow dock, capsicum, butcher's broom, kelp, red beet root, red raspberry leaves, chickweed, nettle, mullein leaves, dong quai

7. B12

Purpose: essential for healthy gastrointestinal tract; formation of blood cells; supports nervous system; healthy skin and mucus membranes. Vitamin B-12 deficiency is a serious health concern that affects an estimated 40 percent of the U.S. population. The numbers are alarmingly high when you consider just how important this vitamin is to your health, especially if you elderly. Is found almost exclusively in animal tissue, including foods like beef, lamb, snapper, shrimp, poultry and eggs. Therefore, if you do not eat meat or animal products, you may be deficient.

Things that deplete this element: junk food

Vegetarian source: sea vegetables (kelp, nori, kombu), nutritional yeast, miso

Source: freshlyvegetarian.com

8. Vitamin D3

Vitamin D deficiency is a serious public health concern that many experts say is at widespread epidemic proportions. It's estimated that as much as 40% to 50% of Americans are deficient in vitamin D. New research has linked low vitamin D levels to numerous health dangers and provided further evidence that the "sunshine vitamin"

Several studies have reported that the D3 form of the vitamin is more potent than D2, with a study led by Robert Heaney, MD, from Creighton University in Nebraska reporting that D3 was 87% more potent than D2 (*Journal of Clinical Endocrinology & Metabolism*, doi: 10.1210/jc.2010-2230).

An Enzyme In Various Fungi Helps Combat Gram Negative Bacteria

A group of hybrid strains of fungi in the product called immune health blend may prove to be an efficient inhibitor of several types of gram-negative bacteria called: metallo - β -lactamases, including New Delhi metallo-B-lactamase-1 (NDM-1). Several patients at research hospitals with severe infectious were not able to fight against an infection with antibiotics. They had very little hope of survival. The various antibiotics could not combat the negative gram bacteria. When the patients were fed 20 grams a day of the immune health blend of fungi, the patients were able to combat the infections and survive. This immune blend is made from seven different hybrid strains from four different species that came from university research labs. .[7]

The research team from McMaster University seemed to have found the enzyme that comes from fungi to support antibiotics by blocking the chemistry in negative gram bacteria so that it is resistant to antibiotics.

Various fungi from soil proved to be an efficient inhibitor of several types of metallo -β-lactamases, including New Delhi metallor- β -lactamase-1 (NDM-1), according to Gerard Wright at McMaster University in Hamilton, Ontario, Canada, and his collaborators. Because those β -Lactamases render bacterial pathogens resistant to carbapenem antibiotics, he and his collaborators are continuing to study this natural product as a candidate to use with carbapenems to overcome that resistance and restore their clinical usefulness, he says.[1]

“Metallo-B-lactamases destroy our best β -lactam antibiotics and help life threatening pathogens to spread,” says microbiologist Kim Lewis at Northeastern University in Boston, Massachusetts.[1]

Beta-lactamases are enzymes produced by some bacteria that provide resistance to β-Lacta antibiotics like penicillins, cephamycins, and carbapenems (ertapenem), although carbapenems are relatively resistant to beta-lactamase.[2] Beta-lactamase provides antibiotic resistance by breaking the antibiotics’ structure. These antibiotics all have a common element in their molecular structure: a four-atom ring known as a β-Lactam. Through hydrolysis, the lactamase enzyme breaks the β-Lactam ring open, deactivating the molecule's antibacterial properties. An advantage of this enzyme is its low molecular weight, which enables it to cross the outer membrane of gram-negative pathogens.

Beta-lactam antibiotics are typically used to treat a broad spectrum of Gram-positive and Gram-negative bacteria.[3]

Beta-lactamases produced by Gram-negative organisms are usually secreted, especially when antibiotics are present in the environment.

Aspergillomarasmine A is an polyamino acid naturally produced by the mold *Aspergillus versicolor*. The substance has been reported to inhibit two antibiotic resistance carbapenemase proteins in bacteria, New Delhi metallo-beta-lactamase 1 (NDM-1) and Verona integron-encoded metallo-beta-lactamase (VIM-2), and make those antibiotic-resistant bacteria susceptible to antibiotics.[4] Aspergillomarasmine A is toxic to leaves of barley and other plants, being termed as "Toxin C" when produced by *Pyrenophora teres*.[5]

Aspergillomarasmine A can be made from a culture of molds that produce it. The liquid culture is filtered. Then from the filtrate, a precipitate is formed using calcium chloride, tricalcium phosphate and acetone. From the precipitate, the substance is redissolved at pH 9 in water. Then chromatographic separation in Amberlite IRC 50 with ammonia in water, and finally crystallisation at pH 3.0. At pH 2.5 aspergillomarasmine B crystalises.[6]

Gram negative bacteria have thin cell walls with an outer layer composed of proteins and lypopolysaccharide. This outer layer sometimes reacts with the immune system, causing inflammation and infection. In addition to preventing the bacteria from staining, the outer membrane of the cell also helps the bacteria resist an assortment of drugs, making treatment of infections with Gram-negative bacteria rather challenging.

Some examples of Gram-negative bacteria include Legionella, Salmonella, and E. Coli. Numerous other pathogens are also Gram-negative, including some forms of meningitis, a number of bacterial sources of gastrointestinal distress, and spirochetes. Gram-negative bacteria can be stubborn infectious agents, and many sources of lethal infection are Gram-negative, including the bacteria which contribute to secondary infections in hospitals and clinics.

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9. The phenolic acids and proanthocyanidins (PACs) of pecans possess bioactive properties, which might be useful in retarding the onset of and ameliorating the status of certain chronic disease states. There is a general lack of information in the literature regarding such compounds, especially the PACs. Crude phenolic extracts pooled from eight commercially significant cultivars were selected based on their relatively high antioxidant capacities. The pooled extracts were separated via Sephadex LH-20 column chromatography into five ethanolic low-molecular-weight (LMW) fractions and one acetonic high-molecular-weight (HMW) fraction. The preparations were then characterized using RP-HPLC-ESI-MS/MS and diol-phase HPLC-ESI-MS/MS in order to determine the key constituents present in the LMW and HMW fractions, respectively. As previously observed in pecan nutmeat, ellagic acid and (+)-catechin were found to be the major phenolics in the LMW fractions. The last eluting LMW fraction did not contain phenolic acids; rather it possessed PAC monomers and dimers. The HMW fraction comprised a majority of its PACs as dimers; yet, monomers, trimers, tetramers, pentamers, and hexamers were also separated and characterized.

10. Biological activities of the antiviral protein BE27 from sugar beet (Beta vulgaris L.). Iglesias R[1], Citores L, Di Maro A, Ferreras JM.N:

    The ribosome inactivating protein BE27 displays several biological activities in vitro that could result in a broad action against several types of pathogens. Beetin 27 (BE27), a ribosome-inactivating protein (RIP) from sugar beet (Beta vulgaris L.) leaves, is an antiviral protein induced by virus and signaling compounds such as hydrogen peroxide and salicylic acid. Its role as a defense protein has been attributed to its RNA polynucleotide:adenosine glycosidase activity. Here we tested other putative activities of BE27 that could have a defensive role against pathogens finding that BE27 displays rRNA N-glycosidase activity against yeast and Agrobacterium tumefaciens ribosomes, DNA polynucleotide:adenosine glycosidase activity against herring sperm DNA, and magnesium-dependent endonuclease activity against the supercoiled plasmid PUC19 (nicking activity). The nicking activity could be a consequence of an unusual conformation of the BE27 active site, similar to that of PD-L1, a RIP from Phytolacca dioica L. leaves. Additionally, BE27 possesses superoxide dismutase activity, thus being able to produce the signal compound hydrogen peroxide. BE27 is also toxic to COLO 320 cells, inducing apoptosis in these cells by either activating the caspase pathways and/or inhibiting protein synthesis. The combined effect of these biological activities could result in a broad action against several types of pathogens such as virus, bacteria, fungi or insects.

11. Betaine is a methyl derivative of glycine first isolated from sugar beets. Betaine consumed from food sources and through dietary supplements presents similar bioavailability and is metabolized to di-methylglycine and sarcosine in the liver. The ergogenic and clinical effects of betaine have been investigated with doses ranging from 500 to 9,000 mg/day. Some studies using animal models and human subjects suggest that betaine supplementation could promote adiposity reductions and/or lean mass gains. Moreover, previous investigations report positive effects of betaine on sports performance in both endurance- and resistance-type exercise, despite some conflicting results. The mechanisms underlying these effects are poorly understood, but could involve the stimulation of lipolysis and inhibition of lipogenesis via gene expression and subsequent activity of lipolytic-/lipogenic-related proteins, stimulation of autocrine/endocrine IGF-1 release and insulin receptor signaling pathways, stimulation of growth hormone secretion, increased creatine synthesis, increases in protein synthesis via intracellular hyper-hydration, as well as exerting psychological effects such as attenuating sensations of fatigue. However, the exact mechanisms behind betaine action and the long-term effects of supplementation on humans remain to be elucidated. This review aims to describe evidence for the use of betaine as an ergogenic and esthetic aid, and discuss the potential mechanisms underlying these effects.

12. Natural occurrence of aflatoxins in peanuts and peanut butter from bulawayo, zimbabwe. Mupunga I[1], Lebelo SL[2], Mngqawa P[3], Rheeder JP[3], Katerere DR[4].

    Mycotoxins are toxic secondary metabolites produced by filamentous fungi that may contaminate food and pose a health risk, especially in developing countries, where there is a lack of food security and quality is subsumed by food insufficiency. Aflatoxins are the most toxic known mycotoxins and are a significant risk factor for liver and kidney cancer, teratogenicity, undernutrition, and micronutrient malabsorption in both humans and animals. The main aim of the study was to determine the extent of fungal and aflatoxin contamination in peanuts and peanut butter being sold in both the formal and informal markets in Bulawayo, Zimbabwe. Eighteen peanut samples and 11 peanut butter samples were purchased from retail shops and the informal market. Fungal contamination was determined using standard mycology culture methods, while aflatoxin contamination was determined using high-performance liquid chromatography-fluorescence detection. Four of the six peanut samples tested for fungal contamination were infected with Aspergillus flavus/parasiticus, ranging from 3 to 20% of the kernels examined, while 27% (3 of 11) of the peanut butter samples were infected with A. flavus/parasiticus. Ninety-one percent (10 of 11) of the peanut butter samples were contaminated with aflatoxins (mean, 75.66 ng/g, and range, 6.1 to 247 ng/g), and aflatoxin B1 was the most prevalent (mean, 51.0 ng/g, and range, 3.7 to 191 ng/g). Three of the 18 peanut samples were contaminated with aflatoxins (range, 6.6 to 622 ng/g). The commercial peanut butter samples had very high aflatoxin levels, and manufacturers should be sensitized to the detrimental effects of aflatoxins and measures to reduce contamination.

More great information About Hexane Soy:

http://www.cornucopia.org/2010/11/hexane-soy/?gclid=CK2w_PCd38ECFYLtMgodRBsAiQ