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Take Charge of Your Health

Homocysteine

There is a chemical that we can produce that has been linked with causing damage to our arteries. This chemical is called homocysteine. Years ago, a cardiologist at the VA hospital in Rhode Island wondered why some patients with low cholesterol had heart attacks and blocked arteries. He was not convinced that cholesterol was the only problem. His investigations led him to believe that elevated levels of homocysteine were more important than your cholesterol levels.

In our diets we have an amino acid, the sub unit of protein known as cysteine. Normally this is converted into an amino acid named taurine, but our body needs vitamins B-6, folic acid and B-12 to do this. Folic acid is one of the most common deficiencies in our diets and vegetarians are very susceptible to having B-12 deficiencies. B-6 is used in many chemical reactions in

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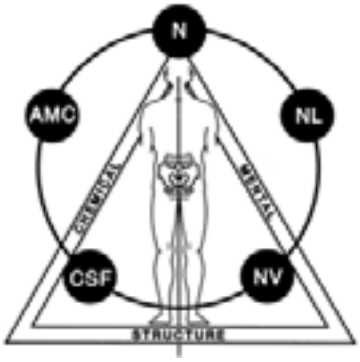

The Winter Blues

Many people just get down in the winter. This condition is known as seasonal affective disorder or just SAD. This condition is more com mon in women and characterized by depressed mood, hypersomnia, weight gain, and car bohydrate craving dur ing the winter. Some people can get this in late spring into sum mer, but that is less common. The symp toms of the summer depression are accom panied by insomnia and decreased appe tite.

This is apparently due to the decrease in sunlight in the winter months versus the summer. Interestingly, a study on patients with emotional problems showed that there were differences in the number of hospital admissions during the year that were associated with sunlight. There were more admissions for depression in January and more for mania in June.

One of the best ways to combat this is to get into bright light for 2 hours when you get up in the morning. While it was thought that the light had to be full spectrum light, studies have shown that any bright light helps. However, full spectrum light always outperforms the other light sources. In another study using light therapy for patients with severe depression that was not just season al, it was the early morning light that helped more than light therapy later in the morning.

The daily cycle of light and dark ness is important in the regulation

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Aging, Diet and Exercise

Aging is characterized by a deterioration in the maintenance of homeostatic processes over time, leading to functional decline and increased risk for disease and death.

The aging process is characterized metabolically by insulin resistance, changes in body composition, and physiological declines in growth hormone (GH), insulin-like growth factor-1 (IGF-1), and sex steroids. Rockefeller writes “epidemiological studies propose that extension of the human lifespan or the reduction of age associated diseases may be achieved by physical exercise, caloric restriction, and by consumption of certain substances such as resveratrol, selenium, flavonoids, zinc, omega 3 unsaturated fatty acids, vitamins E and C, ginkgo biloba extracts, aspirin, green tea catechins, antioxidants in general, and even by light caffeine or alcohol consumption.”

Over 70 years ago, scientists found that if they reduced food intake to animals that they would live longer. This has led to restrictive diets being related to longer life spans. More recent animal studies have shown that reducing calories by 25 % or more will result in the monkeys living longer with the reduced calorie diet than the controls. However, the restriction had to done when the monkeys were young and did not show any positive effects when older monkeys were given the severely restrictive diets. When the caloric content is dramatically reduced in human studies, major negative effects were loss of muscle mass, muscle strength and loss of bone. Weight loss in humans over 60 years of age is associated with increased mortality, hip fracture and increased institutionalization.

The main changes that are seen with moderate reduced calorie diets in humans are better blood sugar and fat levels as well as an overall increase in their health levels. One of the main benefits is a reduction in inflammation in the body. This is because a high intake of carbohydrates with a high glycemic index raises inflammation markers. Diets with a low glycemic index have been related to a reduced incidence of metabolic syndrome, the precursor to diabetes, and high blood pressure. The other positive findings are a reduction in total, as well as bad, cholesterol and triglycerides. Studies done at the National Institute on Aging have shown a direct correlation between excessive eating and brain changes. These changes have to do with what is called brain plasticity. This is a process that helps keep our brain young. What this research has shown is that with an excessive intake of these high glycemic foods, the area of the brain, the hippocampus, which is associated with memory and learning loosens intricate connections between the neurons and results in a dramatic decrease in the ability to learn and our memory.

The major problem is overeating especially when it is of high glycemic foods, those with lots of sugars, and overeating of proteins. Another finding from this is that exercise helps to stimulate this plasticity and reduces age related brain changes. In fact, exercise alone can work almost as well as calorie restriction when resveratrol is added to the diet. A combination of moderate calorie restriction and exercise has been shown to cause an increase in the size of the hippocampus and also an increase in the thickness of the cortex of the brain. A decrease in the size of these two areas is associated with memory problems and a loss of the ability to learn. The two main factors to reduce in your diet are carbohydrates like sugar, especially high fructose corn syrup, and bad fats. The bad fats include saturated fats, trans fats and an excess intake of omega 6 oils.

When we exercise, we produce a number of positive chemicals in the brain. One of these is called brain derived neurotrophic factor or BDNF. This special hormone stimulates the connections within the brain. Another chemical is the neurotransmitter serotonin that has been shown to help protect against depression. The last one is called insulin-like growth factor-1 that also plays a critical role in protecting our ability to remember. This last chemical is a two edged sword. Too much of it and it is linked with reduced life spans. Ingesting bovine growth hormone commonly used in the dairy industry can excessively elevate the levels of this. One of the other advantages to stressing the body with exercise or stressing the brain with intellectually challenging activities is that it causes the release of BDNF and at least one

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Resveratrol – part of the French Paradox

The French know how to live, eat and drink. Their cuisine is one of the tastiest in the world, their cheeses one of the best and then there is their wine.

To a Frenchman, no meal, except for breakfast, is complete without wine and cheese.
Their cheese is made from raw milk and their cows would never be treated with hor mones to increase production. Because of this, there is little discussion of the need of calcium supplementa tion in France.

The other part of the meal that is a necessity is the wine. There are strict laws in France about the production of their wine. One of the constituents in wine, especially red wine, is resvera-trol as it is found in the skins of the grapes.

Red wine is fermented with the skins; white wines after the skins have been removed so there is little resveratrol. You don't have to drink red wine to get it. One option is Concord grape juice; other options include peanuts, cranberry, blueberries, and there is even a small amount in choc-olate.

Many studies have shown that resveratrol has antioxidant and anti-inflammatory effects that reduce aging factors in the cardiovascular system. It also acts to simulate the effects of a reduced calorie diet especially when combined with an increase in exercise.

One of the beneficial effects of resveratrol is believed to be associated with the activation of a longevity gene known as SirT1. It has been shown that increas ing the intake of antioxi dants can be very beneficial in the treat ment and management of COPD. Biswas writes that various antioxidant agents, such as thiol molecules (glutathione and mucolytic drugs, such as N-acetyl-L-cysteine, dietary natural product-derived polyphenols and other com pounds such as curcumin, resve ratrol, green tea catechins, quer cetin, lycopene, acai and alpha lipoic acid have made it possible to modulate various biochemical aspects of COPD.

Most cancer victims will be treated with platinum-based com pounds that increase the risks of cardiovascular toxicity. The plati num drugs cause an increase in what are called reactive oxygen species. The increase in these compounds has been shown to increase strokes, thrombosis, cardiac weakening and failure.

Antioxidants, such as vitamin E, selenium, lycopene, melato nin, and resveratrol, have been shown, in cancer treatment, to suppress the oxidant injury. Resveratrol, especially, has been shown to increase the antineo plastic activity of cisplatin and carboplatin.

Another problem in an aging population is depression. Studies have shown a direct cor relation between degeneration in the brain and the advancement of depression. Substances like resveratrol and curcumin have shown great promise in reducing the inflammation in the brain that leads to the degeneration within the brain.

To sum it up, Petrovski writes "resveratrol, initially used for cancer therapy, has shown beneficial effects against most degenerative and cardiovascular diseases from atherosclerosis, hypertension, ischemia, and heart failure to diabetes, obesity, and aging."

So don't feel so guilty about that glass of red wine, just realize it does not contain large amounts of this important nutrient.

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Ferroni P, Della-Morte D, Palmirotta R, et al. Platinum-based compounds and risk for cardiovascular toxicity in the elderly: role of the antioxidants in chemoprevention. Rejuvenation Res;14:293-308

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of a hormone called melatonin. How this hormone affects our body is under investigation for many conditions. Even some forms of epilepsy seem to have a relationship with the levels of melatonin. There are more seizures on cloudy days than on bright sunny days as well as more in the winter months than in the summer. One

startling finding was that patients with bipolar depression were dramatically improved with 2 hours of bright light in the morning.

As was mentioned earlier, these conditions relate to the levels of melatonin in our bodies. Melatonin is produced in a very small organ called the pineal gland. Malfunctioning of the pineal has been associated with timing prob lems in the body. We have a daily, monthly, yearly and lifetime clock. When the clock does not function properly many symptoms in the body besides those discussed here can occur.

The pineal gland needs an amino acid named tryptophan and the mineral zinc to produce melatonin. However, during the day there has to be an adequate amount of tyrosine available for the pineal gland to uptake the tryptophan so it can produce the melatonin. The stimulus for all of this to take place is light and darkness. During daylight or bright light, the production is inhibited and it is stimulated by darkness. This is one of the reasons that your bedroom should be as dark as possible. Melatonin has been called the sleep hormone because it helps us get deep restful sleep by making us drowsy and lowering our body temperature, but it is also a strong antioxidant . It actually helps other antioxidants work better. As we age, we pro duce less and less melatonin.

Fortunately, we have a method in applied kinesiology to test for possible pineal involve ment. There is a simple muscle test, using the difference between light and darkness that has consistently shown a relationship with patients who have problems with their “clock” mechanism.

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Bielski RJ, Mayor J, Rice J. Phototherapy with broad spectrum white fluorescent light: a comparative study. Psychiatry Res 1992;43:167-75.

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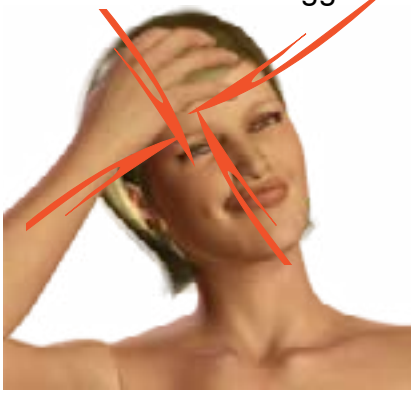
The new energy efficient light bulbs contain at least 5 mg. of mercury. This is enough to pollute 5500 gallons of water. If they break in your house, you must take precautions not to be exposed to the mercury. First , open the windows and let air into the room. If you have air-conditioning running, turn it off. The same would be true for a hot air heating system. Wait 30 minutes and clean up the broken glass with gloves on and use tape to pick up any small pieces.

Headaches

In a study published in December of 2010, the CDC (Center for Disease Control) reported that 21% of females and 11% of males suffered from severe headaches or migraines. In addition, the report showed that 10% of females and 5% of males had facial or jaw pain.

Headaches are broken down into three different classifications.
The first are called primary head aches. These include migraines, cluster headaches and tension head aches. Tension headaches are the most common with over 90% of the popu lation suffering from them from time to time. Cluster headaches are the least common.



Secondary headaches include those caused by neck problems and the headaches asso- ciated with tumors. Obviously, the most common causes are neck problems that can affect the muscles that attach to the head as well as the nerves and blood vessels to the head.

The final group includes headaches from neuralgias. These include the nerves at the base of the head as well as the nerves that cover the face.

The most common of all headaches is the tension headache. The prob lem is that anything that stresses the muscles of the neck and head can cause the headaches. This stress can be due to structural problems like jaw imbalances, poor posture, poor sleeping positions, weak neck muscles, over contracted muscles like the trapezius, etc.

There can also be chemical stressors that cause these headaches. These can include environmental factors like cleaning agents, detergents, sham poos, toothpastes as well as food sensitivities.

Mental stress can also cause these tension and even migraine type head aches. Stress can causes changes in hormone levels, muscle tension and even blood pressure. These and other factors can be the trigger that initiates the headache pattern.

Luckily, doctors trained in applied kinesiology have the tools to help find the triggers behind your headache.

In fact, many people have multiple causes of their headaches. It is not uncommon for someone to find one and think that the detec tive process is finished only to find that there are other factors that have been missed.
Finding the triggers that cause headaches is only half of the battle. The other half is to solve the structural problems that are created by the triggers. This can include correcting muscle imbalances in the neck and especially the small muscles that hold the head on the neck, muscle imbalances that involve your jaw, commonly called TMJ prob- lems, or other imbalances in the head involving the bones of the skull and the many muscles that attach to it.

Again, the doctor trained in applied kinesiology and its various treatment options is well equipped to aid in the correction and stabilization of these structural problems that are related to the headache syndrome.

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our body although it was first related to carpal tunnel syndrome.

In a deficiency of any of these nutrients, our body does not produce taurine from the cysteine but instead produces homocysteine.
The homocysteine then causes damage to the lining of our arteries and the rest is history.

Recently, a new study has shown that homo cysteine activates an enzyme in monocytes, one of our white blood cells, and causes them to produce a chemical called superoxide and then these cells infil trate into the lining of our blood vessels. This is how the inflammation starts and the process of atherosclerosis begins.

To test the effects of folate on homocysteine levels, a study compar ing the levels of homo cysteine and antioxidant activity was performed. After 8 weeks of increas ing folate, the test group had dramatically lower levels of homocysteine but also had increased serum antioxidant activ ity. This study was done on patients with high cholesterol levels that were taking a statin drug.

Homocysteine eleva tion has also been found

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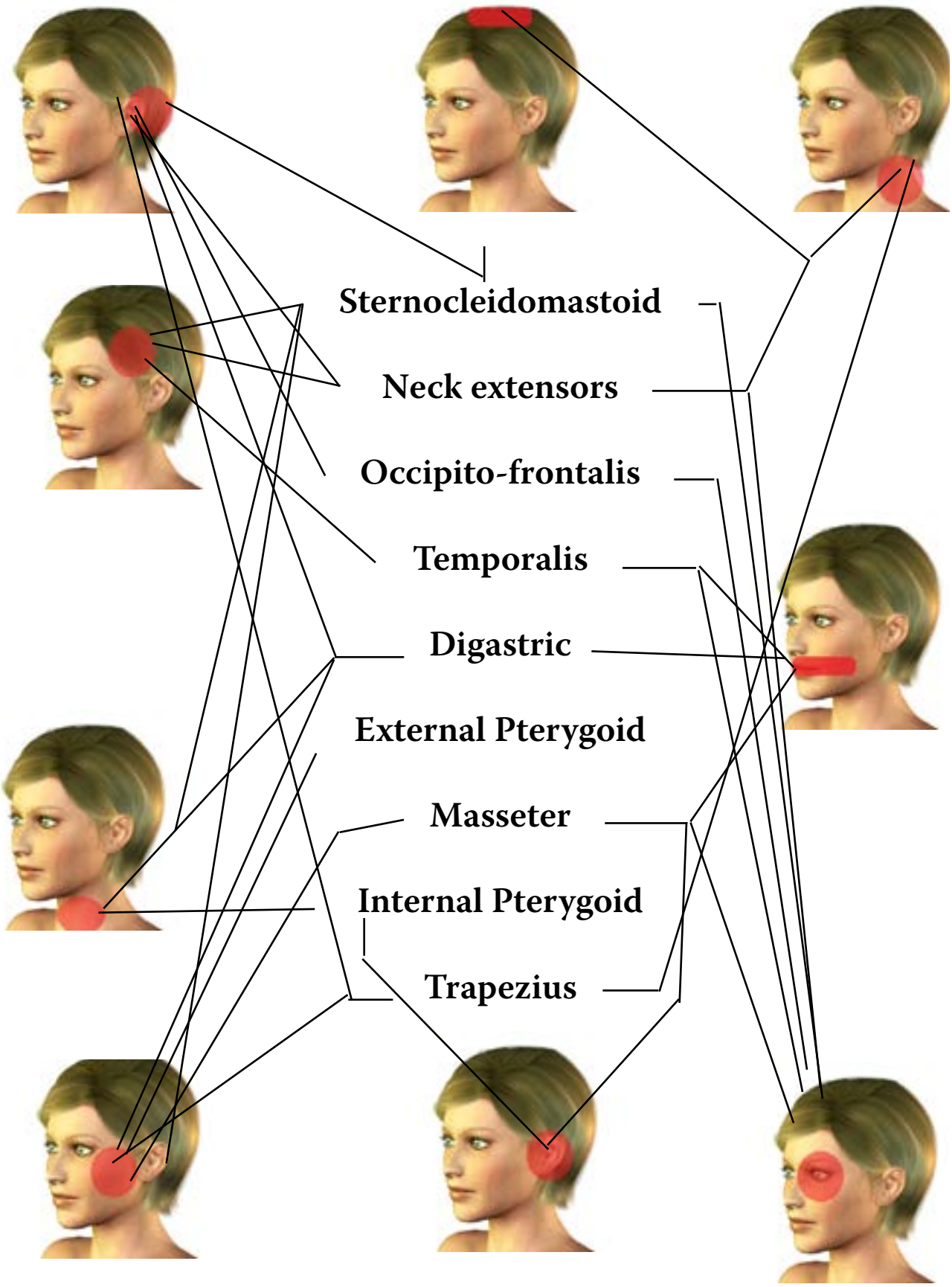
Muscles and Where They Can Cause Head Pain

This page shows where problems with muscles can cause referred pain. Pain or ache in these areas can come from other causes, but these muscles can be one of the major causes of the pain.



other chemical that improves mental function. Exercise has one additional positive role in brain functioning and that is that it has been shown to increase blood flow to the brain. The study that showed these changes was performed after 4 months of regular exercise.

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Physical Activity Recommendations ages 20 – 99

Minimum for health maintenance

150 minutes of moderate activity like brisk walking. Each unit should be at least 20 minutes and ideally 40. OR 75 minutes of running or jogging

PLUS

At least 2 times a week activity for muscle strengthening. This would include activities like yard work or physical exercises using both the upper and lower body.

To increase health benefits the following are the minimums

150 minutes of vigorous activity like jogging

PLUS

More than 2 days a week of muscle strengthening activates

If you are over 65, 300 minutes of moderate activity can replace the 150 minutes of high activity.

To gain muscle strength the CDC states "To gain health benefits, muscle-strengthening activities need to be done to the point where it's hard for you to do another repetition without help. A repetition is one complete movement of an activity, like lifting a weight or doing one sit-up. Try to do 8—12 repetitions per activity that count as 1 set. Try to do at least 1 set of muscle-strengthening activities, but to gain even more benefits, do 2 or 3 sets"

related to an increase in dementia as we age. This was correlated with low levels of B-12 and folate in these patients as well as those with Alzheimer's disease. Another study showed that cognitive decline could be predicted in older patients who had high homocysteine levels and decreased levels of B-12 and folate.

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What are Cranial Problems?

This refers to imbalances in the normal motion of the skull bones.

Approximately 20% of the population suffers from chronic head pain. In addition to this group are people who have neck, shoulder, arm and other musculoskeletal pains that are caused by imbalances in the bones of the head.

Early this century, two researchers, one a chiropractor and the other an osteopath, began investigating pain patterns caused by imbalances in the motion of the cranial bones. It is customary for the medical profession in this country to discount the motion of the these bones, however, the schools in Italy and England have been teaching about the potential motion of these bones for centuries. Imbalances can easily be seen by looking for asymmetry in the face or abnormal motion of the jaw when opening and closing your mouth.

What can problems with the motion of the bones cause?

Imbalances can cause:

Headaches - head pain	Jaw pain
Vision or hearing changes	Neck, shoulder - arm pains
Gait-walking problems	Blood pressure changes

Is there an easy way to see if you might have problems with these bones?

Look closely at the shape of your eyes and the level that they are in your eye sockets. One of the easiest ways to see the effects of chronic muscle contractions on the skull is change in the shape and level of the eyes. Then watch as you slowly open and close your mouth. Movement of the head, or a shifting of the jaw to one side indicates an imbalance in the muscles of chewing. Differences in the shape of the forehead, the symmetry of the back of the skull or even the relative flare of the ears can indicate a chronic problems.

Next month, we will discuss how these problems can be addressed with applied kinesiology.

In December/January

Making a Plan for the Year
TMJ Problems
Boosting your immune system
and more