COPPER TOXICITY PATTERN

Headaches, fatigue, insomnia, depression, skin rashes, spaciness or detachment, learning disorders or premenstrual syndrome can be symptoms of a copper imbalance. It is an extremely common nutritional imbalance. It is often overlooked because it is often not easy to detect. Blood and urine tests are usually not helpful.

Copper is an essential trace mineral that is vitally important for both physical and mental health, however, its importance for health is still largely unappreciated.

COPPER'S ROLE IN THE BODY

Copper has a number of important functions in the human body. The problem usually occurs when there is too much of it in the soft tissues of the body. Here are some of the important roles of copper:

Bones and connective tissue. Copper is required to fix calcium in the bones and to build and repair all connective tissue, tendons, ligaments, skin, hair, nails, arteries and veins.

Imbalances can contribute to osteoporosis, bone spurs, conditions of skin, hair and nails, symptoms related to connective tissue, cardiovascular problems, tendon and ligament conditions, scoliosis, and other skeletal and structural imbalances.

Energy production in the cells. Copper is needed in the final steps of the Krebs energy cycle called the electron transport system. This is where most of our cellular energy is produced. Any problem here causes fatigue, depression and other low energy symptoms.

Immune Response. Copper must remain in balance with zinc. When imbalances occur, one is more prone to all infections, including fungal and yeast infections that are common today. Most people have some intestinal yeast if they eat sugars and chronic sinus infections if they have common symptoms such as post-nasal drip.

The glandular system, particularly the thyroid and adrenal glands. The thyroid gland is extremely sensitive to copper. Common conditions associated with copper

imbalance include hypothyroidism and often Hashimoto's disease. These go away fairly easily on a properly designed nutritional balancing program. Taking thyroid hormones is not required.

Copper is also associated with some cases of Grave's disease or hyperthyroidism. This also improves with a properly designed nutritional balancing program. Drugs may be needed temporarily to control the symptoms. Surgery or radioactive iodine treatment (RAI) are drastic and rarely needed

Reproductive system. Copper is closely related to estrogen metabolism and is required for fertility and to maintain pregnancy. Imbalance can cause premenstrual syndrome, ovarian cysts, infertility, miscarriages, sexual dysfunctions and more. It affects men less than women but it may affect men's potency and sexual drive.

Nervous system. Copper stimulates production of the neurotransmitters epinephrine, norepinephrine and dopamine. It is required for monoamine oxidase, an enzyme related to serotonin production. As a result, copper is involved deeply with all aspects of the central nervous system. Copper imbalances are highly associated with most psychological, emotional and neurological conditions. These include memory loss, depression, anxiety, bipolar disorder and schizophrenia.

THREE COPPER IMBALANCES

It is possible for a person to become copper-toxic, copper-deficient or to have a condition called biounavailable copper. The first two of these are fairly easy to understand. Copper is found in certain foods in greater quantity such as meats, eggs, poultry, nuts, seeds and grains. Other foods are low in copper such as fruits, vegetables and some nuts and grains.

Refined food diets are low in copper in many cases. Also, some, especially children, need much more copper than others. This has to do mainly with their metabolic type or body chemistry.

Fast oxidizers need more copper while slow oxidizers often have too much. Those who we find are fast oxidizers require a lot more copper. Slow oxidizers often have excessive copper in their bodies. Thus they are far more prone to copper imbalance of this nature.

What is biounavailable copper? In this common situation, copper is present in excess in the body, but it cannot be utilized well. The reason is that minerals such as copper must be bound and transported within the body.

Biounavailability occurs due to a deficiency of the copper-binding proteins, ceruloplasmin or metallothionein. Without sufficient binding proteins, unbound copper may circulate freely in the body, where it may accumulate primarily in the liver, brain and female organs.

When copper is biounavailable, one may have symptoms of both copper toxicity and copper deficiency. Copper toxicity and biounavailability often occur in people who are slow oxidizers and copper deficiency occurs mostly in people who are fast oxidizers. We use the term copper imbalance when more than one of the three types of copper problems are possible.

IMPORTANT SYMPTOMS OF COPPER IMBALANCE

Each mineral has "target organs" where it tends to accumulate. The places where copper accumulates are the liver first, then the brain and the reproductive organs. Copper may affect any organ or system of the body, however, it usually affects about four or five major systems of the body. These are the nervous system, the reproductive system, connective tissues such as hair, skin and nails and major organs like the liver.

COPPER AND THE NERVOUS SYSTEM

Dr. Paul Eck called copper the "emotional mineral". The reason for this is that copper imbalances related to it have a profound impact on the central nervous system. The psychiatric implications of copper imbalance are tremendous and most of the psychiatric or psychological individuals improve when copper is balanced.

The overall effect of copper appears to be to enhance all emotional states. Dr. Eck felt that copper stimulates the diencephalons or old brain. Zinc is needed for the new brain or cortex. This brain is associated with the "higher emotions" such as reasoning, compassion and love.

When an imbalance between the Cu/Zn ratio exists, the person tends to revert to the use of the old brain, also called the animal brain or emotional brain. This can lead to all kinds of emotional conditions.

Nervous system dysfunctions. Mental and emotional conditions ranging from moderate to suicidal depression, anxiety, violence, obsessive-compulsive disorder, bipolar disorder, phobias, Tourette's syndrome, schizophrenia, epilepsy, ADD, ADHD, autism, delayed mental or emotional growth, panic attacks, migraines, spaciness, brain fog, mind racing, insomnia, nervousness, irritability and others development improve when copper is balanced.

COPPER AND THE BLOOD

One of the most common symptoms of biounavailable copper or a copper deficiency is an anemia that appears identical to iron deficiency anemia. Those most affected are young adult women, children and vegetarians. It usually appears as a mild, microcytic, microchromic anemia on blood exams.

Mechanism. Copper is required to change iron from ferric to ferrous and back again. It is required to incorporate iron into hemoglobin. When copper is not available, usually due to adrenal insufficiency, iron is not incorporated into the hemoglobin, resulting in anemia.

Correction. Few doctors are aware of this cause for anemia. As a result, most physicians make the mistake of giving supplemental iron for this condition, which may work a little, but makes the patient much worse in terms of overall health. Iron can boost the adrenals and make copper more available, reducing the anemia, however, iron is irritating to the intestines. Iron is better raised by supplementing with betaine hydrochloride to raise the acidity of the stomach which will better absorb iron and to correct the copper metabolism. Then the anemia goes away by itself.

COPPER AND INFECTIONS

Infections, especially sinus and other fungal infections. Copper imbalance is related to all fungal infections. These often include common sinus conditions that give few symptoms such as a stuffy nose or post-nasal drip. Copper is involved in acute and chronic Candida albicans infections.

Copper is critical for aerobic metabolism, so a copper imbalances allows fungal organisms to thrive in the body and must be corrected to reduce these infections. This

is why some people find it difficult to eliminate Candida albicans or chronic yeast, parasitic infections or sinus infections.

Copper is linked to many other types of infections because zinc is needed for the proper immune response. Elevated or biounavailable copper accompanies a low tissue zinc level, even though blood tests may be normal. Even a hair analysis is often normal.

For reasons, one must always look for hidden copper imbalance on the hair mineral analysis.

COPPER, PARASITES AND YEAST INFECTIONS

Parasites are impeded and killed when copper is available. Copper is used in agriculture and some medications to kill parasites. When copper is out of balance, parasitic infection is more common. Until copper is brought into better balance using a nutritional balancing program, one may appear to eradicate parasites, but they often return.

Yeasts. Our bodies use copper to help control the growth of yeast. This is because copper favors aerobic metabolism, the type of cellular metabolism that human beings should have. Copper, along with iron, is required for the electron transport system, where most of our cellular energy is produced.

In contrast, yeasts and fungi are anaerobic. This means they ferment sugars for their energy production. Thus, when copper is not bioavailable to the body in sufficient quantity, aerobic or normal oxygen-using metabolism is crippled while anaerobic metabolism or the fermentation of sugars flourishes.

For this reason, for example, copper sulfate is often sprayed on crops to kill yeast and fungus. Copper is also used in some swimming pools and hot tubs to control yeast and bacterial growth.

COPPER AND THE REPRODUCTIVE SYSTEM

Women tend to have higher levels of copper than men. Women also have more symptoms related to copper imbalance.

Premenstrual syndrome. The symptoms of PMS mimic the symptoms of copper imbalance. This occurs because estrogen levels and copper levels correlate and both

increase before the menstrual period. For this reason, taking extra zinc and vitamin B6 before the menstrual period can often lower copper enough to reduce the symptoms of premenstrual.

Other sexual organ symptoms include amenorrhea, dysmenorrhea, fibroid tumors, ovarian cysts, pelvic inflammatory disease, fibrocystic breast disease, endometriosis and pelvic inflammatory disease.

Miscarriages and infertility. Copper is required to maintain a pregnancy. Studies indicate that women with low estrogen and low copper have more miscarriages. Correcting the copper imbalance can help immensely with normal pregnancy. Infertility, on the other hand, is more common among women with elevated or biounavailable copper. This may be due to weak adrenals that give rise to copper imbalance. Fertility problems can be due to many factors.

Low libido in women and men. Since copper raises the hair and tissue calcium level, women with very high copper levels or hidden copper on their hair mineral analyses, often lose interest in sex because their energy declines and the body can become a bit "numb" because excessive tissue calcium tends to render the nervous system less sensitive.

Low sexual interest in men is also related to copper, which interferes with zinc metabolism. Men's sperm and fluids are rich in zinc. If they become depleted, male fertility and male sexual performance suffer. Most of the time, these problems are easy to overcome by correcting the levels of zinc and copper in the body using nutritional balancing methods.

Estrogen dominance and copper. Copper-toxic women are often estrogen dominant. They have more estrogen in their bodies, proportionately, than they have progesterone. Progesterone therapy, even natural or bio-identical progesterone therapy, may be poorly tolerated in copper-toxic women and even men. Instead, if we balance the copper, the symptoms of estrogen dominance such as premenstrual tension, vanish quickly and completely.

Biounavailable copper and progesterone and body shape. Women with biounavailable copper are often low in estrogen. Their bodies are often more linear in shape and less "curvy". Copper is not the only factor affecting hormones. Some

pesticides, for example, mimic the effects of estrogen and can affect the hormone balance.

Men and copper imbalance. Boys and men are more affected when copper is out of balance than are women. Men should be zinc dominant. While most women have more copper in their bodies, men, by contrast, should be zinc-dominant. Zinc, a 'masculine' element, balances copper and is essential for male reproductive activity.

Among the boys, symptoms that are most prominent are growth and developmental delay, ADD, ADHD, autism and related brain disorders. Among men, symptoms of copper toxicity include prostate enlargement, prostate infections, prostate cancer, erectile dysfunction, depression, anxiety, violence, testicular pain and testicular cancer.

Secondary sex characteristics and copper. Secondary sex characteristics are aspects of sexuality that are more mental and emotional than they are physical or anatomical. For example, while their sexual organs are similar, some men just love sex and women, while others are less sexual. The differences have to do with hormone levels, and often with the copper imbalance.

Birth control pills and copper IUDs . These two birth control methods affect copper metabolism. While some women can handle them, others experience depression, anxiety, personality shifts and many horrible side effects.

This aspect of women's "sexual revolution" has probably caused more disasters in women's health than any other. Developing cancer, for example, can take years so women do not understand the dangers. The truth is, even if a woman quits taking the pill, her risk of cancer remains high for her entire lifetime.

Excessive sexual desire or sexual dysfunctions in women. Another effect of copper excess in women can be excessive sexual interest. This has to do with the estrogen levels and liver toxicity due to the copper imbalance. Other sexual difficulties in both men and women such as pain on intercourse, vaginal dryness and others may also have to do with copper imbalance.

COPPER AND CONNECTIVE TISSUE

Copper is required for collagen formation. Copper deficiency is association with atherosclerosis and other cardiovascular conditions. Excess copper or biounavailable

copper often causes connective tissue problems, interfering with the disulfide bonds in connective tissue.

Copper and vitamin C. Copper and vitamin C are direct antagonists. This means that they oppose each other in the body. This is one reason many people feel better taking a lot of vitamin C. Copper tends to oxidize and destroy vitamin C in the body. Meanwhile, vitamin C chelates or removes copper from the body. This requires a dose of vitamin C of at least about 500 mg daily, far higher than the minimum daily requirement of about 60 mg. Vitamin C is critical for connective tissues. One of the prominent symptoms of scurvy, or vitamin C deficiency, is bleeding, such as bleeding gums. This is due to connective tissue weakness.

Thus, a copper excess can easily lead to a deficiency of vitamin C in the body and with it many symptoms of vitamin C deficiency. A copper deficiency also causes connective tissue problems, especially in the heart and cardiovascular system where it is associated with a tendency for aneurisms and atherosclerosis. Thus, it is important to maintain the proper copper balance.

Symptoms. Symptoms associated with connective tissue and joints include arthritis, osteoporosis, stretch marks, joint problems, scoliosis, kyphosis (bad posture), diseases of the muscles, ligaments and tendons and many of the conditions of the skin, hair and fingernails and toenails.

Among the most common, especially in women, are hair loss, tendonitis, back problems due to muscle weakness.

COPPER AND HOMOSEXUALITY

Dr. Paul Eck found that elevated tissue copper is associated with homosexual desire. It probably has to do with hormone imbalance, which always involves copper imbalance. As the copper balance improves, we find that homosexual desires often abate.

COPPER AND ADDICTION

Addiction may be related to copper and the adrenals. The use of stimulant drugs, loud music, sex and even exercise stimulates the adrenals. This helps keep copper available and makes one feel better. Without this stimulation, unbound copper builds up quickly in the body and one may feel fatigued, moody or depressed.

This can easily result in a compulsive or addictive need for some kind of adrenal stimulant such as more exercise, more caffeine or cocaine. Part of the appeal of cocaine, caffeine, amphetamines or other stimulants may be their ability to help lower copper temporarily by stimulating the adrenals.

Relation of cadmium to copper. Dr. Paul C. Eck stated that cadmium found in marijuana and cigarettes drives copper back into storage. Therefore, these drugs may also make a person feel better temporarily by affecting the copper balance.

THE HIGH COPPER PERSONALITY

A high copper personality includes positive traits such as a warm, caring, sensitive, emotional nature, often with artistic orientation and a child-like quality. High-copper people are usually young-looking. Many traditionally feminine traits are associated with copper such as softness, gentleness and intuitiveness. This may relate to the qualities of metallic copper, which include softness, malleability and an excellent conductor of electricity.

When the personality is not fully integrated or the copper becomes too high, negative traits show up. These include spaciness, racing thoughts, living in a dream world and naiveté. Other qualities include childishness, excessive emotions, sentimentality, a tendency to depression, fearfulness, hidden anger and resentments, phobias, psychosis and violence. Artists, inventors and other high-copper types often "live on the edge", in part due to their high copper level.

The copper personality tends to accumulate copper easily. Copper can function as a psychological defense mechanism. An excess causes one to detach slightly from reality which provides relief from stress for the sensitive individual. It works well as long as the copper does not become too high. Very high copper can cause a psychotic break from reality, a type of schizophrenia.

Copper and other food cravings. Copper-toxic individuals may also be drawn to sweets or salty foods due to adrenal insufficiency. Some sea salt is often beneficial. Sweets, including fruit juices, provide a temporary lift but may worsen the condition.

Anorexia and copper. Another common symptom is a lack of appetite or some degree of anorexia. Excessive copper tends to shut off the appetite, whereas zinc is required for

the appestat mechanism in the brain. Zinc is also needed for an acute sense of taste and smell. The anorexia situation ends to be the worst in teenagers. For one thing, they are under more stress than younger children. Also, their diets are often low in quality proteins such as meats that are rich in zinc. Instead, they eat a lot of carbohydrates such as pizza that interfere with zinc uptake in the intestines. This combination can be lethal for some teenage girls.

Anemia. Copper is needed for iron metabolism. An important cause of anemia, especially in women, is a copper imbalance. On a blood test, it looks exactly like an iron-deficient anemia but it will not respond very well to the administration of supplemental iron. The copper imbalance must be corrected and then the anemia corrects itself.

COPPER AND CANCER

Copper imbalance impairs the immune system. Research is underway investigating the role of excess copper in tumor angiogenesis. Copper above 12 on a hair mineral analysis is related to a tendency for infections and cancer.

Cancer is associated with all three copper imbalances – deficiency, excess and biounavailable copper, which is a combination of the other two. This is one reason for the cancer epidemic we experience today.

Here are just a few ways cancer is linked to copper imbalance:

The levels of estrogen and copper have a direct relationships. As copper rises, often estrogen rises, too. This is one reason many women and even men are so-called "estrogen dominant" today. Often, they have too much copper and cannot detoxify estrogen well enough. This imbalance is tied to cancer because estrogen is a potent carcinogen.

Copper causes liver toxicity when it is in excess or when it biounavailable. Protecting your liver is important to avoid and to control cancer, according to Dr. Max Gerson, MD, a pioneer in non-toxic cancer therapies.

Copper alters thyroid gland activity in most cases. This can also contribute to cancer and many other illnesses such as Grave's disease.

Copper imbalance is associated with fungal and other infections. These can be at the root of a cancer situation. For example, it is known that root canal-filled teeth can give off bacterial toxins that help predispose the body to cancers.

Copper blocks anaerobic metabolism when it is in balance. This can help prevent cancer when copper is in balance, but not when it is too high or too low.

Copper in excess often interferes with zinc metabolism. Zinc is required for the immune response and for over 100 enzymes in the body from helping digestion to protecting the skin from invasion from infections and skin cancers.

COPPER AND CHILDREN

Copper has an incredible impact on young children. Common conditions such as ear infections, skin rashes, dandruff, learning and developmental disorders, colic, ADD and ADHD, sleep problems and childhood cancers usually involve an imbalance between copper and zinc.

This has to do with the extreme importance of copper in childhood development, especially of the developing nervous and immune systems. Children are born with high copper levels. Young children are very sensitive and intuitive. They lose some of their sensitivity as their copper levels diminish around age four. Today, persistently elevated copper levels in children are commonly seen. At times, the copper is hidden.

Why children have copper imbalances. Copper imbalance problems for a child often begin when still in the womb. High-copper mothers pass on excessive copper (and often low zinc) to the fetus through the placenta. This is called congenital, rather than genetic high copper. It can be prevented by correcting one's copper metabolism before becoming pregnant. It can also be corrected after a baby is born, though this takes more effort.

Once a baby is born, copper imbalance can develop. Inadequate zinc or high copper in the breast milk is one reason children stop breastfeeding. Children's diets are often atrocious. Stress in the home or at school is another critical factor in sensitive children that can "push them over the edge." Stress of any kind can lower zinc and raise the copper level.

Vaccination and the use of prescription drugs can aggravate a child's copper imbalance, usually by depleting the zinc level. Copper imbalance in children is associated with delayed development, attention deficit disorder, anti-social and hyperactive behavior, autism, learning difficulties and infections such as ear infections.

Beware of fast oxidizing young children. Do not restrict their copper. Most of them absolutely require extra copper. This is because they are fast oxidizers. This body type must have extra copper or they will exhibit violence, sleep problems or anti-social behavior such as ADD or ADHD. So beware, since avoiding copper will make these children worse.

COPPER AND THE CARDIOVASCULAR SYSTEM

Low or biounavailable copper is associated with atherosclerosis and a tendency for aneurisms. The arteriosclerosis or atherosclerosis is secondary, usually, to weakened arterial walls. The body tries to reinforce inflamed or weakened arteries by coating them on the inside with calcium or fatty plaques.

High or biounavailable copper is associated with mitral valve prolapse and other cardiovascular problems. It is not directly associated with high blood pressure, but may be secondarily due to the reasons for arteriosclerosis explained above.

COPPER AND SOCIETY

Mineral balance affects our attitudes. Copper is called the 'love' mineral, the "emotional" mineral, the 'intuitive' mineral, and a 'feminine' mineral because it is so important for the female reproductive system. Its level generally parallels that of estrogen. While many factors influence our attitudes and values, the rise in tissue copper levels in both men and women in the past fifty years parallels renewed interest in women's issues, in religious and intuitive knowledge, and other spiritual movements.

Copper may promote or encourage these interests and activities by causing mild tissue catabolism that breaks down old tissues in the body, thus making way for the development of other types of tissues in the body.

COPPER AND VEGETARIAN DIETS

Zinc is found mainly in meats. For this reason, vegetarian diets are higher in copper and lower in zinc. Those who follow vegetarian diets tend to accumulate too much copper in the body, which often shortens their lives, even if they feel well during their entire lives.

Obligatory vegetarians. Dr. Eck discussed the idea that sometimes people become vegetarian due to the buildup of excess copper in the body. Excess copper interferes with zinc, a mineral needed to make digestive enzymes. Too much copper impairs thyroid activity and the functioning of the liver. If severe enough, a person will become an obligatory vegetarian. This means they are no longer able to digest meat well. The taste for meat often returns when copper is brought into better balance with a nutritional balancing program.

Other reasons for following a vegetarian diet include one's philosophy about eating animals, dislike for how animals are slaughtered, or other reasons. Some are born with a distaste for meat. No matter what the outward reason, a hidden buildup of copper – even at birth – is, in fact, part or all of the reason a person takes an interest in a vegetarian diet.

Symptoms. At times, the vegetarian orientation is temporarily health-producing. Many people associate vegetarianism with eliminating refined flour and refined sugar. However, in most people, meat-restricted diets do not work well. Fatigue, spaciness and other symptoms begin to appear. Many people feel they are becoming more "spiritual" on a vegetarian diet, when in fact it is just copper poisoning.

Some people with high copper dislike all protein. They crave high-carbohydrate diets. Protein feels heavy or causes other symptoms. Eating protein stimulates glandular activity. This releases stored copper, which causes the symptoms. However, these individuals usually need to eat protein, and their symptoms will eventually disappear as their health improves.

COPPER AND ADRENAL BURNOUT, INSUFFICIENCY OR HYPOFUNCTION

Adrenal burnout, characterized by chronic fatigue and other symptoms, is often related to copper imbalance. Although correcting emotional and other factors are necessary,

improving the copper imbalance, supporting the adrenals and releasing fearful thoughts go hand in hand to restore optimum health.

SOURCES OF COPPER

Congenital high copper (children born with high copper or low zinc). Today, many children are born with excessive tissue copper. It is passed from high-copper mothers to their children through the placenta. Stress from any cause contributes to copper imbalance. Stress depletes the adrenal glands and lowers the zinc level in the body.

Zinc deficiency. Whenever zinc becomes deficient, copper tends to accumulate. Our soil is low in zinc. Refined sugar, white rice and white flour have been stripped of their zinc. The trend toward vegetarianism reduces zinc in the diet, since red meat is the best dietary source of zinc.

High-copper diets. Copper is found in many foods, particularly vegetarian proteins such as nuts, beans, seeds and grains. Meats contain copper, but it is balanced by zinc which competes for its absorption. Chocolate is high in copper. A desire for copper may help explain chocolate cravings.

Copper pipes. Another source of copper is drinking water that remained in copper water pipes, or copper added to your water supply. During a recent dry summer, several Oregon cities added copper sulfate to their reservoirs to reduce algae growth. Accident and disease rates increased.

Mineral deficiencies. Deficiencies of manganese, iron, selenium, chromium and other minerals can contribute to copper accumulation.

Vitamin deficiencies. These include deficiencies in the diet of B-vitamins and vitamin C.

Adrenal weakness. According to Dr. Eck's research, the adrenal hormones help stimulate the liver to produce ceruloplasmin, a major copper binding protein in the body.

Liver sluggishness or toxicity. A sluggish liver due to toxicity, slow metabolism or a chronic infection such as hepatitis C, can predispose one to copper imbalance.

Metallothionein or other copper transport imbalances. These may also contribute to copper toxicity or biounavailability.

Other sources. They include using copper cookware, and copper exposure from dental materials, vitamin pills, jewelry, drinking water, fungicide and pesticide residues on food, copper intra-uterine devices and birth control pills. Plumbers and a few other occupations such as electricians may be exposed to copper.

Hot tubs and pools may increase hair copper levels. Copper is used to sanitize pools and some hot tubs, and can increase hair copper. Hot tubs and pools are also breeding grounds for so many micro-organisms that are not killed by the chemicals that we don't recommend either for optimum health. It is much better to avoid all public pools and hot tubs and/or use about 250 parts per million of hydrogen peroxide to sanitize your hot tub. The internet has information about how to do this.

When copper is out of balance, our bodies cannot control yeast overgrowth. This often lead to chronic Candida albicans infections that are resistant to treatment.

Case history. After Mrs. Robinson had her baby, her doctor told she could continue to take her pre-natal vitamin pill, which contained 4 mg of copper. Within 6-months, both she and her breast-fed baby began to experience hair loss. Loss of hair is a common symptom of copper toxicity, and many pre-natal vitamins have a lot of copper in them. This is done because taking copper during pregnancy may help maintain a pregnancy in some cases. As soon as Mrs. Robinson stopped taking the pre-natal vitamin, the hair loss in both her and her baby stopped.

Most pre-natal vitamins are extremely inadequate, and are missing many vital nutrients needed by developing babies. In addition, most contain too much copper. Only with a nutritional balancing program can a woman know what she needs during pregnancy and afterwards to raise a healthy child.

DETECTING COPPER IMBALANCE

Hair testing, in my experience, is far and away the best method to detect copper imbalances. It can detect copper excess, copper deficiency and also copper biounavailability. Hair is not a primary site of copper deposition, however, if one knows how to interpret the hair mineral analysis, one can easily assess copper status.

COPPER ASSESSMENT VIA HAIR MINERAL ANALYSIS

An ideal range of copper in the hair is about 1.5-2.5 mg% or about 15-25 ppm. Any number higher than this tends to indicate excessive copper in the hair tissue and, by extension, in other tissues of the body. A hair copper level of less than about 1.5 mg% usually indicates hidden copper toxicity.

Swimming in pools. Swimming in pools regularly or even regular use of a hot tub can increase the copper level in the hair. This is due to the use of copper compounds added to the water as disinfectants. These, of course, are best avoided if one has symptoms of elevated copper.

Indirect copper indicators. The copper level on a hair mineral analysis is NOT the best way to assess copper status. The reason is that copper does not often accumulate in the hair tissue and too many other factors can skew the reading. In fact, copper assessment is quite complex.

NORMALIZING COPPER IMBALANCE

The best way to reduce excess copper in the body, whether it is bioavailable or biounavailable, is a complete nutritional balancing program. This is a much better solution than only using chelators, antagonists, adrenal support, homeopathy, drainage remedies, physical therapies or other methods.

The key is to use a number of methods simultaneously. This does not always mean taking piles of pills or strange diets, however. It can be done easily and rather inexpensively and without a lot of fuss. The methods used in nutritional balancing to balance copper include:

1. Reduce exposure to sources of copper. Common sources include copper intra-uterine devices or IUDs, swimming in pools, vegetarian diets and high copper foods such as nuts, seeds and avocado.

2. Diet is critical. The diet must contain seventy to eighty percent cooked vegetables, not raw ones. Also needed is healthful animal protein daily, and some whole grain rice and corn, if these can be tolerated well.

For a recommended diet, Use the Slow Oxidizer Diet. This high protein, low carbohydrate diet is appropriate for most of those with copper imbalance, though not all. A small number of people are fast oxidizers. They must have much more fat and oil in their diets, and less protein.

Equally important, the diet must be as low as possible in sweets, fruits and sugars. These foods, along with all stimulants, stress the adrenal glands and tend to make copper imbalance worse. Stimulants include sugars, caffeine and food additives such as MSG, aspartame and other excitotoxins in the diet. Many other food chemicals and additives stress the body and are not helpful for copper imbalance. Vegetarian diets tend to aggravate copper imbalance. Wheat and refined flour products are also not helpful at all.

3. Lifestyle modification. Most people with copper imbalance are very emotionally sensitive. Many also need to slow down, relax more and let go of anger and resentments. Some also need to make changes in their relationships, location, work and other important aspects of their lives so that they "live their truth" to a greater degree. Living a lie can be an important problem, in fact, with copper imbalance.

4. Reducing fear and stress. This is often helpful and necessary to balance copper. Methods range from a change in location or work to meditation, more rest, counseling and MemGram® Processing.

5. Carefully chosen nutritional supplements are extremely important for adrenal gland restoration and to balance copper. These must be determined by the use of a hair mineral analysis. They must always include a powerful digestive aid, a multiple nutrient product for one's oxidation type, supplementary vitamins and minerals as indicated by the hair mineral analysis to support the body properly.

6. Detoxification procedures. These are not always needed, but can be most helpful. Copper imbalance responds beautifully to the use of coffee enemas and the use of far infrared sauna, mats, detox footpads such as the KinoTox® pads or massage tables. These may be absolutely essential for those with emotional problems connected to their copper imbalance.

HEALING MECHANISMS INTEGRATED INTO ALL OUR NUTRITIONAL BALANCING PROGRAMS

1. Enhance energy production and improve adrenal gland activity. This is part of the program design. Restoring the adrenal glands is often absolutely necessary to prevent copper from accumulating over and over again in the body. This is because the adrenal glands signal the liver to produce ceruloplasmin, the principal copper binding agent in the body, along with metallothionein. However, be sure to avoid stimulating herbs such as ginseng and licorice root. These eventually cause more severe problems, though they may offer quick results in some cases.

2. Inhibit the excessive activity of the sympathetic nervous system and balance the autonomic nervous system. This is easier said than done. Copper toxic individuals often complain of their mind racing. Turning off the sympathetic or fight-or-flight nervous system can be a challenge. Methods that are helpful include electric light sauna therapy, meditation, relaxation techniques, deep breathing, targeted supplements, and coffee enemas.

3. Enhance the eliminative organs, such as the liver, skin and colon. Digestive enzymes, especially pancreatin, are very important. Also excellent is far infrared sauna therapy, far infrared massage mats, tables and detox footpads such as KinoTox® pads, coffee enemas, colonic irrigation and skin brushing. Colon Toddy is an excellent intestinal detox product.

4. Use of copper antagonists such as zinc, sulfur compounds, manganese, selenium, vitamins B-complex, C and E, and perhaps others. These are chemicals that compete with copper for absorption and utilization. Research indicates copper may be excreted by binding with glutathione and metallothionine which require these nutrients.

5. Making the body much more yang in Chinese medical terms. This is often essential to reduce excess copper and make copper bioavailable.

6. Restoring zinc and selenium levels. This is also needed in almost all cases, and takes a while. Meats are among the best food sources of zinc and selenium, and this is one reason why vegetarian diets simply do not work well in the long run. A diet of mostly cooked vegetables is also needed to obtain the correct forms of zinc and selenium, which are not common in the diets of most people.

Zinc is often used to correct a high copper, however, it lowers the hair tissue sodium level, which can be dangerous. Molybdenum, another copper antagonist and chelator, raises sodium and is somewhat toxic and best avoided in most cases. Vitamin C, when used in high doses, tends to cause other imbalances because it removes other metals besides copper and because it is extremely yin in Chinese medical terminology. This is quite harmful for some people.

Each vitamin and mineral affects overall body chemistry. For best results, I strongly recommend an integrated nutrition, lifestyle and detoxification program based on a properly performed and interpreted hair mineral analysis. It is worth the extra time, cost and energy to get better results. It can also avoid the purchase of unnecessary and costly supplements and other problems that come from their use.

ATTITUDES AND SPIRITUALITY HELP BALANCE COPPER

Life is not easy for many copper-toxic people. Most are highly intelligent, very sensitive, angry and emotional, at times, and the copper may help detach them from the world.

One must be aware of this fact and live appropriately, letting go of the world in a gentle and loving way. See the article entitled Letting Go.

A method I highly recommend is a MemGram® Processing. I cannot recommend it highly enough. It is simple to do and will slowly reduce all causes of stress as it brings more truth and light into one's life.

In addition, prayer, reading the bible and any other true spiritual activity will often assist copper-toxic individuals. This is the case because it helps them to know they are all right, they are loved by their Creator and God is present in their lives. This can be vital for a copper-toxic person, though it is helpful for everyone who cares about spiritual matters.

COPPER DETOXIFICATION SYMPTOMS

One of the difficulties in reducing excess copper are symptoms that arise during the process of elimination. As the body begins to mobilize excess copper from tissue storage sites, it enters the bloodstream on its way to the liver and kidneys for elimination. While in the bloodstream, the copper can cause headaches, skin rashes,

racing thoughts, strange odors, digestive upset, mood swings and energy fluctuations. In men, testicular pain is not uncommon. Women's periods may be affected.

Certain methods of lowering copper cause these symptoms more than others. Zinc, vitamin C and manganese tend to cause more symptoms, perhaps because zinc and manganese replace copper in the liver. Sulfur compounds such as Russian black radish tend not to produce copper elimination effects.

If one knows what is occurring, it is possible to take measures to minimize these temporary elimination symptoms. Enemas, sweating, and drinking more water can help promote copper elimination. Reducing the nutrition program for a few days may also help slow the reactions and reduce symptoms if they are severe. Supplements of molybdenum, bile acids, laxative herbs and vitamin B6 may also mitigate elimination symptoms.

THE BLESSING OF COPPER TOXICITY

Copper imbalance is often a sign that one is not living one's gifts and truths. If it takes copper imbalance to move you in a different direction, then it is a wonderful thing, though the suffering may not seem worth it right now.

With enough compassion for yourself and a complete nutritional balancing program based on hair mineral analysis, almost all copper toxic clients become well and much happier. Then the creative, intuitive and loving qualities of the high-copper individual can shine through to the world.