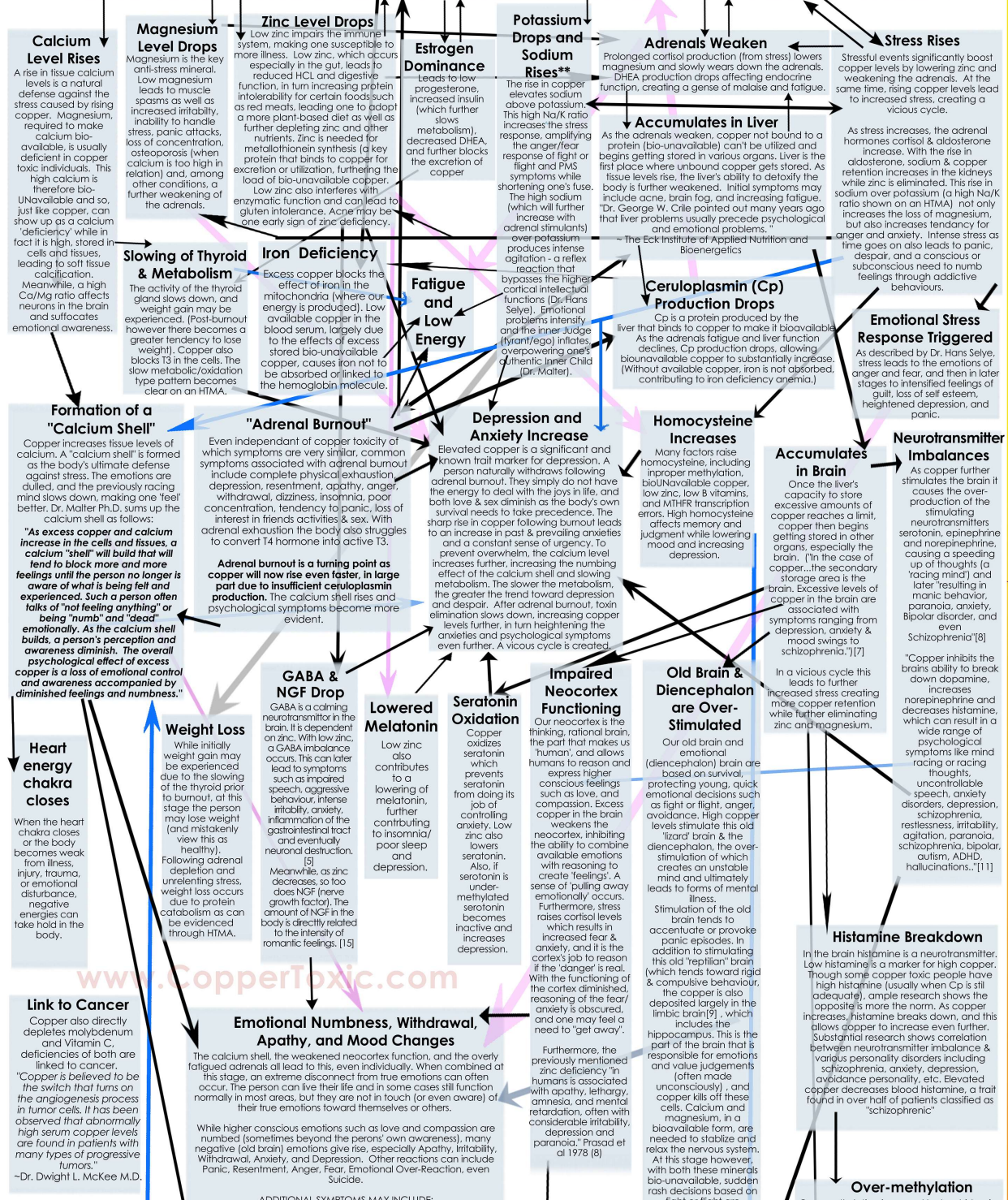


TISSUE COPPER LEVEL GOES UP

The above factors have contributed to an epidemic of copper toxicity amongst the population. Though an elevated level of tissue copper may not be cause for concern initially if symptoms are not present, once the level of bio-unavailable copper reaches a certain threshold, and especially after adrenal exhaustion, a long list of both physical and mental symptoms develop.



DETOXING
As the body is initially too weak to properly eliminate copper (especially after a burnout), detox often begins with supplementation to strengthen the adrenals. This gives the person a sense of renewed energy, but with it comes the mobilization of copper from the tissues. This mobilization, if done too quickly without adequate detox pathways and Cp support, can increase calcium, further affecting and numbing the emotions. Adrenal supplementation will also increase sodium, thereby increasing the Na/K ratio and amplifying the negative stress response/reaction. Zinc also needs to be given with great caution due to its mobilizing effect, which can send copper from the liver to the brain. This underscores the importance of why various mineral levels and ratios MUST be properly monitored via HIMA during detox so that such negative reactions can be minimized. Blood tests should not be relied on as they do NOT represent stored tissue levels. The detox process also often brings repressed hurts and fears to the surface, and this can often (even control) the patient's thoughts and decisions. Detoxing usually brings about some of the worst psychological consequences of the copper toxicity experience. These symptoms can last months or even years. Support and regular monitoring through HIMA is essential.

ADDITIONAL SYMPTOMS MAY INCLUDE:
- sudden changes in mood
- auditory hallucinations and "strange thoughts"
- losing interest in areas or people of previous interest and having new interest in things previously not interested in
- uncharacteristic personality changes
- dissociative fugue state

Affect on Relationships
Though each person will react differently based on speed of detox, toxicity load, support & guidance, and buried beliefs and programs, without an understanding of the psychological ramifications of copper toxicity, burnout, and the calcium shell, relationships are very commonly damaged or challenged. Contributing factors include:
(i) Adrenal burnout (leading to withdrawal, irritability, depression, and loss of libido). As Dr. Eck explains in his 1984 book on Energy, the exhaustion created by mineral imbalance can "destroy a marriage that should have lasted forever."
(ii) Low NGF (directly lessens the intensity of romantic feelings);
(iii) altered neurotransmitter levels in the brain affecting outlook;
(iv) With the sympathetic N.S. stress response in overdrive, survival comes first, while sex and sleep become less important.
(v) The calcium shell (further numbs loving emotion and deadens awareness);
(vi) Certain memories erased due to zinc deprivation in the hippocampus;
(vii) Impaired "rationalizing" neocortex weakens emotions of higher consciousness; (the part of the brain which records memories, processes meaningful experiences, and the part of the brain associated with self-awareness, compassion, and introspection) die when deprived of zinc. Someone at the height of copper toxicity therefore risks not only the loss of certain meaningful memories, but can act as if certain events never even happened.
Numerous studies show that the cells of the hippocampus (the part of the brain which records memories, processes meaningful experiences, and the part of the brain associated with self-awareness, compassion, and introspection) die when deprived of zinc. Someone at the height of copper toxicity therefore risks not only the loss of certain meaningful memories, but can act as if certain events never even happened.

Over-methylation
Over-methylation is caused by low histamine and high copper (though, not in some cases copper toxic individuals may in fact be under-methylators). Paranoid schizophrenia and psychosis is associated with over-methylation caused by copper toxicity (4). Over-methylation is the dominant cause behind 2/3 of those with anxiety attacks. Numerous studies show that 1/2 to 2/3 of schizophrenics have high levels of copper!
Other symptoms of over-methylation include: Depression, Anxiety, Sleep disorders, Self mutilation/Cutting, increased pain tolerance, Weight gain, Low libido, Delusions, & self-imposed Isolation and/or Withdrawal.
"Experience in the diagnosis and treatment of large numbers of schizophrenic patients has led us to separate three main biotypes: 50 percent are histepic (low blood histamine, high serum Cu, low folate)... (Pfeiffer, 1975): [8]
Over-methylation is also associated with the underfunctioning of methallothionein which in turn impairs the elimination of heavy metals.

Link to Alzheimer's
Not only does zinc deficiency kill off the cells of the hippocampus (affecting memory), but depression further impairs cell growth.
"There are two areas in your brain where you grow new brain cells. One is the hippocampus, which is involved in memory. It turns out that this growth is decreased in cases of depression."
- Kirwan, Behavioural Brain Research, 2013
We also know from Dr. Rashid Dean's (PhD) study that "over time, copper's cumulative effect is to impair the systems by which amyloid beta is removed from the brain." Amyloid beta is a main component of the amyloid plaques found in the brains of Alzheimer patients.

Link to Cancer
Copper also directly depletes molybdenum and Vitamin C, deficiencies of both are linked to cancer. "Copper is believed to be the switch that turns on the angiogenesis process in tumor cells. It has been observed that abnormally high serum copper levels are found in patients with many types of progressive tumors."
-Dr. Dwight L. McKee M.D.

Heart chakra closes
When the heart chakra closes or the body becomes weak from illness, injury, trauma, or emotional disturbance, negative energies can take hold in the body.

Formation of a "Calcium Shell"
Copper increases tissue levels of calcium. A "calcium shell" is formed as the body's ultimate defense against stress. The emotions are dulled, and the previously racing mind slows down, making one "feel" better. Dr. Moller Ph.D. sums up the calcium shell as follows:
"As excess copper and calcium increase in the cells and tissues, a calcium "shell" will build that will tend to block more and more feelings until the person no longer is aware of what is being felt and experienced. Such a person often talks of "not feeling anything" or being "numb" and "dead" emotionally. As the calcium shell builds, a person's perception and awareness diminish. The overall psychological effect of excess copper is a loss of emotional control and awareness accompanied by diminished feelings and numbness."

Adrenal Burnout
Even independent of copper toxicity of which symptoms are very similar, common symptoms associated with adrenal burnout include complete physical exhaustion, depression, resentment, apathy, anger, withdrawal, dizziness, insomnia, poor concentration, tendency to panic, loss of interest in friends, activities & sex. With adrenal exhaustion the body also struggles to convert T4 hormone into active T3.
Adrenal burnout is a turning point as copper will now rise even faster, in large part due to insufficient ceruloplasmin production. The calcium shell rises and psychological symptoms become more evident.

Emotional Numbness, Withdrawal, Apathy, and Mood Changes
The calcium shell, the weakened neocortex function, and the overly fatigued adrenals all lead to this, even individually. When combined at this stage, an extreme disconnect from true emotions can often occur. The person can live their life and in some cases still function normally in most areas, but they are not in touch (or even aware) of their true emotions toward themselves or others.
While higher conscious emotions such as love and compassion are numbed (sometimes beyond the person's own awareness), many negative (old brain) emotions give rise, especially Apathy, Irritability, Withdrawal, Anxiety, and Depression. Other reactions can include Panic, Resentment, Anger, Fear, Emotional Over-Reaction, even Suicides.

Depression and Anxiety Increase
Elevated copper is a significant and known trait marker for depression. A person naturally withdraws following adrenal burnout. They simply do not have the energy to deal with life in any way, both love & sex diminish as the body's own survival needs to take precedence. The sharp rise in copper following burnout leads to an increase in past & prevailing anxieties and a constant sense of urgency. To prevent overwhelm, the calcium level increases further, increasing the numbing effect of the calcium shell and slowing metabolism. The slower metabolism, the greater the trend toward depression and despair. After adrenal burnout, toxin elimination slows down, increasing copper levels further, in turn heightening the anxieties and psychological symptoms even further. A vicious cycle is created.

Neurotransmitter Imbalances
As copper further stimulates the brain it causes the over-production of the stimulating neurotransmitters serotonin, dopamine and norepinephrine, causing a speeding up of thoughts (a "racing mind") and later "resulting in manic behavior, paranoia, anxiety, Bipolar disorder, and even Schizophrenia"[8]
"Copper inhibits the brain's ability to break down dopamine, increases norepinephrine and decreases histamine, which can result in a wide range of psychological symptoms like mind racing or racing thoughts, uncontrollable speech, anxiety disorders, depression, schizophrenia, restlessness, irritability, agitation, paranoia, schizophrenia, bipolar, and auditory hallucinations." [11]

Old Brain & Diencephalon are Over-Stimulated
Our old brain and diencephalon (diencephalon) brain are based on survival, protecting young, quick emotional decisions such as fear or flight, anger, avoidance. High copper levels stimulate this old lizard brain & the diencephalon. The over-stimulation, which creates an unstable mind and ultimately leads to forms of mental illness. Stimulation of the old brain tends to accentuate or provoke panic episodes. In addition to stimulating this old reptilian brain (which tends toward rigid & compulsive behaviour, the copper is also deposited largely in the limbic brain [9], which includes the hippocampus. This is the part of the brain that is responsible for emotions and value judgements (often made unconsciously), and copper kills off these cells. Calcium and magnesium, in a bioavailable form, are needed to stabilize and relax the nervous system. At this stage however, when both these minerals bioavailable, sudden rash decisions based on fight or flight are accentuated.

Impaired Neocortex Functioning
Our neocortex is the thinking, rational brain, the part that makes us "human", and allows humans to reason and express higher conscious feelings such as love and compassion. Excess copper in the brain weakens the neocortex, inhibiting the ability to combine available emotions with reasoning to create feelings. A sense of "pulling away emotionally" occurs. Furthermore, stress raises cortisol levels which results in increased fear & anxiety, and it is the cortex's job to reason if the "danger" is real. With the functioning of the cortex diminished, reasoning of the fear/anxiety is lost, and one may feel a need to "get away".
Furthermore, the previously mentioned zinc deficiency "in humans is associated with apathy, lethargy, amnesia, and mental retardation, often with considerable irritability, depression and paranoia." Prasad et al 1978 [8]

Lowered Melatonin
Low zinc also contributes to a lowering of melatonin, further contributing to insomnia/poor sleep and depression.

Serotonin Oxidation
Copper oxidizes serotonin which prevents serotonin from doing its job of controlling anxiety. Low zinc also lowers serotonin. Also, if serotonin is under-methylated serotonin becomes inactive and increases depression.

GABA & NGF Drop
GABA is a calming neurotransmitter in the brain. It is dependent on zinc. With low zinc, a GABA imbalance occurs. This can later lead to symptoms such as impaired speech, aggressive behaviour, intense irritability, anxiety, inflammation of the gastrointestinal tract and eventually neuronal destruction. [5]
Macrophages, as zinc decreases, so too does NGF (nerve growth factor). The amount of NGF in the body is directly related to the intensity of romantic feelings. [15]

Weight Loss
While initially weight gain may be experienced due to the slowing of the thyroid prior to burnout, at this stage the person may lose weight (and mistakenly view this as healthily). Following adrenal depletion and unrelenting stress, weight loss occurs due to protein catabolism as can be witnessed through HTMA.

Stress Rises
Stressful events significantly boost copper levels by lowering zinc and weakening the adrenals. At the same time, rising copper levels lead to increased stress, creating a vicious cycle.
As stress increases, the adrenal hormones cortisol & aldosterone increase. With the rise in aldosterone, sodium & copper retention increases in the kidneys while zinc is eliminated. This rise in sodium over potassium (a high Na/K ratio shown on an HTMA), not only increases the loss of magnesium, but also increases tendency for anger and anxiety. Intense stress as time goes on also leads to panic, despair, and a conscious or subconscious need to numb feelings through addictive behaviours.

Accumulates in Liver
As the adrenals weaken, copper not bound to a protein (bio-unavailable) can't be utilized and begins getting stored in various organs. Liver is the first place where unbound copper gets stored. As tissue levels rise, the liver's ability to detoxify the body is further weakened. Initial symptoms may include acne, brain fog, and increasing fatigue. Dr. George W. Cole pointed out many years ago that liver problems usually precede psychological and emotional problems.
The Eck Institute of Applied Nutrition and Bioenergetics

Ceruloplasmin (Cp) Production Drops
Cp is a protein produced by the liver that binds to copper to make it bioavailable. As the adrenals fatigue and liver function declines, Cp production drops, allowing bioavailable copper to substantially increase. (Without available copper, iron is not absorbed, contributing to iron deficiency anemia.)

Emotional Stress Response Triggered
As described by Dr. Hans Selye, stress leads to the emotions of anger and fear, and then in later stages to intensified feelings of guilt, loss of self esteem, heightened depression, and panic.

Homocysteine Increases
Many factors raise homocysteine, including improper methylation, bioUnavailable copper, low zinc, low B vitamins, and MTHFR transcription errors. High homocysteine affects memory and judgment while lowering mood and increasing depression.

Neurotransmitter Imbalances
In a vicious cycle this leads to further increased stress creating more copper retention while further eliminating zinc and magnesium.

Histamine Breakdown
In the brain histamine is a neurotransmitter. Low histamine is a marker for high copper. Though some copper toxic people have a high histamine (usually when Cp is still adequate), ample research shows the opposite is more the norm. As copper increases, histamine breaks down, and this allows copper to increase even further. Substantial research shows correlation between neurotransmitter imbalance & various personality disorders including schizophrenia, anxiety, depression, avoidance personality, etc. Elevated copper decreases histamine, a trait found in over half of patients classified as "schizophrenic"

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Distortion of Thoughts
Memories, perception and thoughts are now being influenced / controlled by copper's effects (just as a drug influences one's perception of reality). As a result of neurotransmitter imbalance and the calcium shell, it is not uncommon for a patient to act out with a sense of detachment, often unaware entirely of cruelty they may be imposing on others close to them.
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**Balancing the Sodium / Potassium levels is essential, and this is another reason why having regular HTMA testing done is imperative to determine exact levels and proper supplementation. Until the high Sodium/Potassium level is corrected, it can be almost impossible to get through to counselling a copper toxic person.