

## **THE CALCIUM SHELL**

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An interesting pattern revealed on many hair tissue mineral analyses is a calcium level above 175-200 mg%. This pattern is called a calcium shell. It was a discovery of Dr. Paul C. Eck around 1980 or so.

The pattern is mainly a personality or psychological pattern, although it is associated with what is called biounavailable calcium and magnesium. Usually magnesium is very high as well.

Traits associated with very high hair calcium include defensiveness, rigidity, psychological withdrawal, emotional numbness, emotional inhibition, loss of sexual desire, fatigue, apathy and depression.

These are not absolutes, and one should not "diagnose" emotional conditions based solely on a mineral analysis. However, they are useful observations that can help a person understand his condition better by becoming aware of the biochemical factors that contribute to his condition.

### **WHY DO SYMPTOMS OCCUR?**

Symptoms are partially due to the depressing or inhibiting effect of calcium upon the central nervous system. Calcium raises the voltage at which nerve cells fire. This has a deadening or numbing effect. Thus it is not surprising that lethargy, depression and withdrawal would occur.

Symptoms are also in part due to a copper imbalance. In our experience, a high calcium level is always accompanied by a copper imbalance. The copper imbalance may or may not be revealed on the first hair analysis. Too much copper is present in the soft tissues and usually copper is not able to be transported and utilized correctly. We call this a biounavailable copper pattern. Eventually, if one continues with a nutritional balancing program for some months or more than a year, obvious copper toxicity will be revealed on a hair mineral retest analysis.

Copper imbalance is associated with depression, and suppression of the thyroid and adrenal glands. Symptoms associated with adrenal and thyroid insufficiency include fatigue, depression, lethargy, and apathy.

### **A COMPENSATION FOR HIGH COPPER**

Copper imbalance also causes excessive emotions, mood swings and anxiety. The calcium shell reduces the intensity of some of these disturbing symptoms of copper imbalance. The high calcium numbs the entire nervous system, thus reducing the mood swings and feelings of anxiety. As the calcium level declines on a nutrition program, most patients experience their emotions more forcefully. It is part of their healing process.

Often, emotional maturing is necessary to enable a person to handle his or her emotions better. Only then can the calcium shell be lowered fully. Our nutrition programs can help break down the calcium shell, but will only be fully effective if one is willing to face the world without the shell as a protective mechanism.

### **A PROTECTIVE WALL**

Another cause for the calcium shell in some individuals appears to be simply as a means of protection. The shell reduces stress by reducing the intensity of the impact of the environment on a person. This is the numbing effect mentioned earlier. Since it shuts a person down to some extent, however, it also reduces one's outward expression as well.

Some individuals apparently need the shell to protect them from real or imagined stressors. The shell may be a remnant of a difficult childhood, for example, when one was not in control of the environment and had to use any defense possible to maintain one's integrity. In other words, the calcium shell can be seen as a kind of personality posturing that was adaptive at some stage of life.

In other cases, the body is biochemically very weak and the person cannot handle stress for this reason. The calcium shell is a kind of support or crutch that is needed at this time.

In other cases, a person may not know the techniques for handling stress, or is exposed to too much stress, and becomes overwhelmed. Any of these situations can result in the calcium shell as a protective device or adaptation.

A final reason for the shell is to slow a person down. The lethargy caused by the high calcium has a slowing effect on individuals who have a tendency to drive themselves too hard. These are usually people with high copper levels. Copper can stimulate brain activity and lead to a frenzied lifestyle.

## OUT OF TOUCH WITH REALITY

As the calcium level becomes high, and especially when it is greater than 400 mg%, we find that the individual is so blocked that he or she often does not listen well, and is often in denial or out of touch with reality. There are usually no hallucinations as occurs in some forms of schizophrenia. However, there is often much denial and defensiveness.

This pattern of behavior is even more likely when the calcium/magnesium ratio is out of balance. Even if the calcium level is not excessively high, if the ratio of calcium to magnesium is over 13-14:1 or less than 2:1, it is a strong indicator of emotional imbalances in one's life.

## CORRECTION

The calcium shell pattern is definitely correctable through a scientific nutrition program. The program includes taking calcium and magnesium in a bioavailable form to replace that which is being lost. Also important are B-complex vitamins, and often vitamin C and E, manganese, zinc, and adrenal and thyroid glandular substance.

Usually the calcium shell can be substantially reduced within six to twelve months with the diet, supplement program and a healthful lifestyle. A detoxification program using near infrared light saunas (others will work but are not as effective) will often speed up the healing process.

## PHYSICAL ASPECTS OF THE CALCIUM SHELL AND BIOUNAVAILABLE CALCIUM AND MAGNESIUM

When the hair calcium and magnesium levels rise above about 75 mg% for calcium and about 11mg% for magnesium, some loss of calcium and magnesium occur from the blood. The sequence of events appears to be as follows:

- 1) low sodium and potassium in relation to calcium and magnesium cause difficulty keeping calcium and magnesium in a soluble form in the blood. The low sodium and potassium usually result from renal problems due to advanced adrenal exhaustion.
- 2) Calcium and magnesium begin to precipitate out of the blood and into the soft tissues.
- 3) the body will steal calcium from the bones if the diet is not adequate in calcium and magnesium, as is often the case.
- 4) If the pattern continues for years, the result is osteoporosis, and calcium deposition in the soft tissues.

The loss of calcium from the blood and bones, and deposition in soft tissues gives rise to seemingly contradictory symptoms. On the one hand, a person may develop symptoms of calcium **deficiency**. These range from muscle cramps or tightness, restless leg syndrome, irritability or difficulty sleeping, to more serious conditions such as osteoporosis, osteopenia with erosion of the alveolar bones of the mouth.

At the same time, one may suffer from symptoms of calcium **excess** including fatigue, lethargy, and calcium deposits in joints, muscles, arteries or other organs. The paradox is resolved by understanding that the calcium that is lost from the blood becomes biologically unavailable, or *biounavailable*. It is present (often in excess) but not usable. This accounts for the simultaneous symptoms of deficiency of available calcium accompanied by symptoms of calcium excess.