**Arthritis - A Metabolic Approach**

**Introduction**

Arthritis, is not in a true sense, a disease, but rather a symptom of inflamed joints, the cause of which, can be due to a variety of factors. First of all, an extensive range of nutrient deficiencies and excesses are involved in the causation of joint problems. Commonly involved nutrient deficiencies are calcium, magnesium, sodium, potassium, zinc, copper, manganese, iron, vitamin B, C, D and F. How effectively the thyroid and adrenal glands are functioning is also related to the various causes of arthritis.

By means of the latest research involving the use of hair analysis, we have been able to gain entirely new perspectives regarding the various causes of arthritis. We have also been able to go beyond simply controlling the symptoms of this most common condition.

To begin, let us consider how arthritic symptoms occur when the body is functioning in fast and slow oxidation.

**Oxidation And Arthritis**

Fast oxidation refers to an excessive rate of metabolism, characterized by overactive thyroid and adrenal gland function. The effect of overactive thyroid and adrenal gland function is almost the exact opposite of that found in slow oxidation. Slow oxidation is characterized by underactive thyroid and adrenal gland activity, the result of which, is a loss of sodium and potassium from the body tissues. Since sodium and potassium are mineral solvents, i.e., maintain minerals in solution, as their levels decline, calcium and magnesium begin to pathologically accumulate in various body tissues. An excessive accumulation of calcium in the body is referred to as bio-unavailable, because it is not in an ionized form and accumulates where it should not be, in various soft tissues of the body, such as the joints. The end result of calcium deposition in the joints is arthritis.

The tissues of the body of the slow oxidizer also become relatively more alkaline (as opposed to acidic in the fast oxidizer), which further favors precipitation of calcium in such undesirable locations as joints and arteries.

Thus, one basic cause of arthritis in the slow oxidizer is mineral deposition. Mineral deposition may also occur in fast oxidation, but is much more common in slow oxidation states and the end result is usually osteoarthritis.

Slow oxidation, due principally to adrenal exhaustion, also causes other changes in the body to occur. Copper frequently begins to accumulate, due to inadequate production of ceruloplasmin, a major copper-binding protein. Also, the body may raise copper levels to help maintain falling sodium levels. While copper is essential for protein formation, an excess of tissue copper causes dissolution and liquification of protein structures and is a major causative factor in degeneration of joint structures. Thus, it is that malfunction of protein metabolism which plays a vital role in contributing to arthritis in the slow oxidizer. An elevated tissue copper level also favors the destruction of vitamin C, another nutrient essential for collagen formation and joint structures.

As the metabolic rate continues to slow down, other minerals are improperly metabolized. As a result of this slow down, iron, zinc and manganese also may accumulate in the joints causing stiffness and pain.

**Specific Biochemical Indicators Of Arthritis**

**Cadmium and Lead.** Research indicates that cadmium and lead drive calcium out of the bones. Since calcium plays a major role in the integrity of the joints, the presence of cadmium and/or lead, as determined by a hair analysis chart, is highly indicative of a trend toward arthritis.

**Iron Toxicity and Rheumatoid Arthritis.** Excess iron is known to deposit in the joints, resulting in an inflammation of the joints. An elevated iron reading, as determined by a hair analysis, is thus an indicator of a possible trend toward arthritis.

**Elevated Sodium to Potassium Ratio and Arthritis.** Arthritis is intimately associated with inflammation. An elevated sodium to potassium ratio, as determined by a hair analysis, is an excellent indicator of the predominance of the pro-inflammatory hormones (represented by sodium on a hair analysis chart) over the anti-inflammatory hormones (represented by potassium). This is commonly manifested in inflammation of the joints. Therefore, an elevated sodium to potassium ratio is another indicator of a trend toward inflammatory arthritis.

**Individuals with a low sodium/potassium** ratio are most likely to be those who awaken with stiffness, which gradually improves as the day goes on. Physical activity for these individuals enhances adrenal gland secretion of cortisone, which has an anti-inflammatory affect and thereby reduces their stiffness and pain.

**Low Sodium to Potassium Ratio and Arthritis**. Excessive protein catabolism (breakdown) is frequently associated with arthritic conditions. Degeneration of the joints causes inflammation and joint pain. Therefore, a low sodium/potassium ratio as determined by a hair analysis is an indicator of protein catabolism and a trend toward arthritis.

**Calcium to Magnesium Ratio and Arthritis.** Magnesium acts to help keep calcium in solution. An imbalance in the calcium to magnesium ratio is thus an indicator of a trend toward arthritis.

**Zinc to Copper Ratio and Arthritis**. Both zinc and copper is necessary in balanced quantities for protein synthesis. Excess copper and a zinc deficiency have previously been discussed as a possible cause of arthritis. Frequently the zinc to copper ratio is a more important indicator of zinc and copper availability than either the zinc or copper level alone. A low zinc to copper ratio is thus another indicator of an arthritic trend.

**Stress and Arthritis.** Acute stress can result in an inflammatory reaction, which can result in arthritis as previously discussed. Many factors can be the source of stress, such as a change in weather, change in diet, fatigue, emotional conflicts, etc.

**A Complex Interaction Of Factors May Be   
Responsible For Arthritis**

Generally, we find that a combination of the above factors frequently contribute to pushing a person beyond his or her defensive homeostatic threshold; the end result is arthritis.

As an illustration, arthritis could have its beginnings in a zinc deficiency, due to an acute stress, such as an illness or emotional conflict. The zinc deficiency may persist because the diet is deficient in zinc. As a result, the body begins to absorb cadmium to replace zinc at certain mineral binding sites. The resulting retention of cadmium causes elevated tissue sodium levels, which begins to dissolve calcium out of body tissue reservoirs. A deficiency of zinc and the loss of calcium may now contribute to arthritis.

Because toxic metals are usually stored in various organs or in the arthrodia joints, it often requires several hair analyses to reveal all the toxic metals involved in a case of arthritis. These metals are frequently only revealed as they are mobilized out of the joints, as a result of a nutritional correction program. The toxic metals are eliminated into the blood stream and from the blood find their way into the hair tissue where they may be measured and monitored.

Multiple nutrient deficiencies may also be masked by complex compensating mechanisms so that correction is often a slow process of undoing layers of toxic metal deposits and nutrient deficiencies, until restoration of joint structures becomes possible.

**A New Understanding Regarding Perplexing Questions About Arthritis**

**Why Does Rheumatoid Arthritis Predominate In Younger Populations While Osteoarthritis Is More Common In The Elderly?**

The answer may lie in the fact that the factors which produce the rheumatoid-type arthritis, are more characteristically found in the biochemical state of fast oxidation. Fast oxidation states are found much more commonly among younger individuals.

Osteoarthritis is the primary result of deposition of minerals in the joints and this type of arthritis is more commonly associated with slow oxidation types. Slow oxidation is the more common oxidation state found in older people.

**Why Does A Copper Bracelet Help Some Arthritis Sufferers?**

While it is an old folk remedy, the copper bracelet does help some people with arthritis. This phenomenon can be explained biochemically on the basis that enough copper is absorbed through the skin, thereby assisting in the retention of calcium in the bones and can therefore assist in restoring joint integrity. In addition, copper functions as an anti-inflammatory agent and may in this manner reduce arthritic symptoms.

**Why Do Remedies Such As Super Oxide Dismutase (S.O.D.) And Apple Cider Vinegar Help Certain Cases Of Arthritis?**

Superoxide dismutase is an enzyme, which detoxifies damaging superoxide radicals. The enzyme S.O.D. requires copper and manganese to function efficiently. When these minerals are deficient, there may be inadequate production of this important enzyme. Rather than give the enzyme, a more permanent solution is to restore the deficient minerals so that the body will produce the proper amounts of this vitally important enzyme.

Apple cider vinegar is an acidic substance that is high in potassium content. Both these qualities of apple cider vinegar may temporarily alleviate some of the symptoms associated with the slow oxidizer type of arthritis. The increased acidification of the body tissues helps to solubilize calcium deposits and potassium helps to dissolve calcium and temporarily raise cortisone levels, which has an anti-inflammatory effect.

**Is There A Connection Between The Psychosomatic Causes Of Arthritis And The Known Biochemical Abnormalities?**

Several psychological characteristics of arthritic sufferers correlate directly with our biochemical findings in arthritis.

Resentment is frequently associated with arthritic conditions. Resentment is reflected on a hair analysis as a low sodium/potassium ratio, a ratio, which we frequently find in osteo-arthritic patients.

A rigid personality is also frequently associated with arthritis. On the hair analysis, the rigid personality is reflected often in very high calcium and magnesium readings. This is a slow oxidation pattern that is characterized by calcium deposits in numerous tissues and organs. High calcium and magnesium levels are another common finding in arthritis cases.

**Conclusion**

With the use of hair analysis it becomes clear that arthritis is not a single illness, but a syndrome with many possible causes. By analyzing hundreds of cases, certain patterns emerge:

* Arthritis may occur in both fast and slow oxidizers for different reasons.
* Excesses of minerals such as cadmium, lead, iron, calcium and copper are frequently involved
* Deficiency of vital nutrients such as zinc, copper, manganese, potassium, sodium, calcium and magnesium often play a role in the causation of arthritic symptoms.
* Unbalanced mineral ratios, such as zinc to copper, play a vital role in the causation of arthritis.

By correcting these mineral imbalances, we have repeatedly seen dramatic reduction in arthritic symptoms.

A further benefit of the mineral balancing approach is that the tendency or trends for arthritis may be identified often years before symptoms occur and by correcting mineral imbalances early, the illness can be prevented.

In summary, hair analysis provides a powerful and exciting new tool for understanding, detecting and correcting the many hidden causes of arthritis.

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