

THE CHEMICAL ELEMENTS OF THE HUMAN BODY CONCEIVED AS PAIRS OF OPPOSITES EXEMPLIFIED BY CALCIUM-CHROMIUM

Late S. MAHDIHASSAN*

ABSTRACT

The human body contains chemical elements some in much larger percentages than the others. The minor constituents are called Trace elements. The roll of trace elements remains unknown. We have to look upon all the elements as pairs of opposites, the minor components help the body to retain the major opposites. Chromium for example helps its opposite calcium to form a complex with some protein when the resultant becomes non-dializable and is retained in the body. It is supposed that all trace elements help their opposites to become non-dializable and these remain in the system. Here the pair of opposite elements considered have been calcium-chromium, Iron-copper and sodium-potassium. The ailments concerned have been diabetes, anemia and polyurea.

The human body contains chemical elements which exist partly in large ratios and partly as minor constituents. The latter group of elements is usually called Trace Elements. And chromium is one of the latest in all elements to have been recognized. Now while their existence is established the role they play in the human system is still unknown or atleast mainly unknown.

Let us now consider some facts. When there is a patient of diabetes he is given insulin injections. It is known that insulin helps the metabolism in calcium. When blood of a

diabetic patient is dialysed calcium is dialized. It means in diabetes calcium remains as free radical which thus passes into urine or excreted with stools. It is not bound to same protein and remain non-dialyzable. This is brought about by insulin. Now it has been found that the above complex forming calcium needs not only insulin but also chromium. In the absence of chromium in the system the happy effect of insulin does not occur. Thus chromium is necessary for allowing calcium to be retained in the body when calcium forms a complex with some protein and remains non-dialyzable. Ignoring

* SD 34-Block 'A', North Nazimabad, Karachi-33, Pakistan.

the mechanism of action the fact is obvious that chromium helps the body to retain calcium.

Let us take another case. The heart muscle needs calcium for its proper action. A patient of heart disease would be given digitalis. It is found that digitalis metabolizes calcium and blood of a patient receiving digitalis contains bound calcium or non-dialyzable calcium. Digitalis also helps the body to retain calcium. Unfortunately it is not known that even the beneficial action of digitalis needs the co-existence of chromium but I can assume that even here chromium is needed. Briefly wherever calcium is mobilized as a complex with some protein chromium is necessary. To know the mechanism of action of chromium would be an interesting problem to investigate at any rate we have here a pair of opposites, chromium helps the body to retain calcium. Briefly there is a pair of opposites as calcium-chromium.

We may take another case and that of anemia. There would be some patients who are given iron as medicine responded by increase of blood. But there would also be a few who receiving iron excrete the same in urine or in stools and remain as anemic as before. Now if such a patient is given the standard dose of 20 mg. of iron as iron-sulphate or ferrous fumarate and 1 mg. of copper

as copper sulfate there is now increase of 1% of blood and this rise is about the maximum beneficial effect. And we find a red blood cell contains haemoglobin which would be iron bound to a protein. And the membrane of the red blood cell would contain a protein-copper complex. Thus facts clearly reveal that copper helps to metabolize iron in the system. Then there would be another pair of opposites as iron-copper.

Now when the weather is very cold some suffer from polyurea. It means sodium chloride which is normally absorbed by some protein in the circulatory system becomes free and dialyzable and is excreted in urine. Now if this patient takes a tablet of Potassium chloride or enjoys a meal rich in potatoes which contain much potassium in either case polyurea is reduced. It means potassium is the opposite of sodium and helps to retain sodium. In this light we find a trace element has its own opposite which is retained in the system by its having become a complex with some protein. Trace element then functions as the retainer of its opposite and this it does by enabling the opposite to form a non dialyzable complex with some protein. The above idea is capable of being generalized so that we can assume that trace elements play the role of retaining in the human system the element which is its opposite.

मारंगश

मानव शरीर के रासायनिक तत्त्वों पर विपरीत युगलों के रूप में विचार,
कैल्शियम-क्रोमियम के उदाहरण द्वारा प्रस्तुति

— एम. मेहदीहसन

मानव शरीर में रासायनिक तत्त्व होते हैं। जिनमें से कुछ तत्त्वों का प्रतिशत अन्य तत्त्वों की अपेक्षा अधिक होता है। अल्प प्रतिशत में विद्यमान उन घटकों को "ट्रेस एलिमेंट्स" कहा जाता है, जिनकी भूमिका के विषय में कोई जानकारी नहीं है। सभी ऐसे तत्त्वों को विपरीत युगलों के रूप में देखना चाहिये। वे अल्प अथवा गौण घटक बड़ी मात्रा में उपस्थित घटकों की उपस्थिति को बनाए रखने में शरीर के सहायक होते हैं। यहाँ पर कैल्शियम-क्रोमियम, आयरन-कोपर तथा सोडियम-पोटेशियम के विपरीत युगलों पर विचार किया गया है। इनसे सम्बन्धित व्याधियाँ हैं मधुमेह, पाण्डु तथा बहुमूत्र।