BODY POINT MUSCLE TESTING
FOR AMINO ACIDS:
A BIOCHEMICAL AND KINESIOLOGICAL LINK

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by Steven Rochlitz, M. A.

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In this article a description of body point muscle testing will be presented. Furthermore, an explanation of how this applied kinesiology technique can lead to new avenues of research for the biochemist will be offered. Specific illustrations of amino acid metabolic body points are depicted.

For the first time, body points for muscle testing of individual amino acids have been ascertained. It is revealed that known body points for individual vitamins and minerals can, in fact, be points whereby entire metabolic reactions, involving amino acids may be assayed by muscle testing. The associated vitamin or mineral can be an enzyme cofactor for the amino acid reaction. Included among these reactions are disordered vitamin B-6, methionine and citric acid metabolisms. These may be responsible for much of chronic physical and mental degenerative illness, according to Philpott. These disorders can now quickly be tested with this new kinesiological approach. Dosage-testing for both nutritional and toxic levels of individual amino acids is detailed. Substantiation of these preliminary body point muscle test results were made with twenty-four hour urine amino acid assays.

Body point muscle testing has become a useful diagnostic tool for the physician skilled in nutrition, acupuncture and kinesiology. Dr. Robert Riddler is credited for initially locating many of these points using acupuncture meridian principles. Dr. Peshek's text, Balancing Body Chemistry with Nutrition, provides an excellent description of body point muscle testing for vitamins, minerals, and digestants.[1] As

Dr. Peshek states, "body point muscle testing is a very basic diagnostic tool to take the guesswork out of knowing which supplements are needed to support the body's nutritional needs." [2] During the past decade an increasing number of health practitioners have availed themselves of this technique for determining optimum doses of vitamins, minerals and digestants.

It will be shown here that for the first time, a similar methodology can be utilized for (1) determining optimum dosage of individual amino acids and related substances, and (2) diagnosing amino acid related metabolic disorders. Body point muscle testing for l-cystine, l-cysteine, l-glutamine, l-lysine, l-tyrosine, the amino group acceptor alpha-ketoglutarate, the tripeptide l-glutathione and citric acid will be described. Muscle testing for toxic levels of individual amino acids, from both food and supplement sources, will also be detailed.

It is known that we can muscle test an individual for vitamin B-6 deficiency by having him simultaneously place one finger on the tip of his tongue and the thumb on one of the neuro-vascular reflex points, e.g. the jaw muscles point as depicted in Figure 1. B-6 dosage can be determined this way. If the patient's other (outstretched) arm tests weak, we can determine the amount of B-6 needed to strengthen it by placing increasing amounts on the person and retesting. (Of course, other muscle testing schemes could be utilized, e.g. pulling apart the patient's thumb and forefinger.)

Now however it is ascertained that the amino acids l-cystine, l-cysteine, the amino group acceptor alpha-ketoglutarate, the phosphorylated form of B-6, pyridoxal-5-phosphate (P-5-P), and citric acid can also be tested through the B-6 body point. The significance of this discovery is not merely that amino acids can now be muscle tested for, but perhaps more importantly the realization that an individual body point may be far more than an isolated vitamin or mineral body point -- it may be a point whereby an entire metabolism can be examined.

It will be shown that these B-6-body-point-related substances are also related nutritionally and biochemically -- this is the biochemical-kinesiological link. Firstly, pyridoxine is phosphorylated to P-5-P by the liver. A B-6 utilization disorder will be present if phosphorylation does not occur, or is hindered. There may not be obvious liver dysfunction symptoms for B-6 utilization to be suboptimal or even greatly diminished. Furthermore, the sulfur containing amino acid l-cystine (or l-cysteine) is also necessary for the utilization of B-6. The essential amino acid l-methionine is the source from which the body makes l-cystine.

It is the discovery of William Philpott, M. D. and collaborators that disordered methionine metabolism, with subsequent formation of various hallucinogenic methylated amines, endorphins, indoles, alkaloids and other psychomimetic substances are causative in many forms of mental disease.[3] Autism,

schizophrenia, the depressions and various other mental and physical degenerative diseases apparently can share these anomalies. Also, Philpott has shown that disordered methionine metabolism along with reduced secretion of pancreatic enzymes is responsible for the formation of endorphins and exorphins, respectively, causing addiction.[4]

More recently Philpott has found that alpha-ketoglutarate is, "likely the greatest culprit producing a B-6 utilization disorder."[5] Alpha-ketoglutarate, which is formed in the citric acid cycle, is the prime acceptor of amino groups in amino acid metabolism pathways. Glutamic acid is formed when an amino acid transfers its amino group to alpha-ketoglutarate. A transaminase enzyme promotes this transfer while P-5-P is the coenzyme that assists the transaminase.

We have thus shown the biochemical relationship involving B-6 utilization, methionine to cystine metabolism, and citric acid cycle metabolism. Thus, pyrodoxine, P-5-P, citric acid, alpha-ketoglutarate, l-cysteine, l-cystine are all interrelated.

Preliminary results indicate that through muscle testing the B-6 body point all of the above related substances were found to strengthen five persons who initially tested weak. All five were shown to be very deficient in l-cystine by a twenty-four hour urine assay for amino acids performed by MineraLab, Inc.[6] Two of the five patients had taken twenty-four

hour urine tests for kynurenic acid and xanthurenic acid spillage under tryptophan loading conditions. Both had positive results indicating B-6 utilization disorder (inadequate P-5-P).

Preliminary muscle testing reveals that an amount of P-5-P equal to one-twentieth that of pyrodoxine will cause strengthening in most cases. This helps to demonstrate that phosphorylation disorder, not diet deficiency, is occurring in such cases. A 300 mg. capsule of alpha-ketoglutarate, (available from Vital Life, Inc.), was sufficient to cause muscle "lock-out" of "B-6 weak" individuals in three cases. As indicated above, alpha-ketoglutarate deficiency may be the cause of phosphorylation dysfunction. L-cystine, l-cysteine, citric acid or alpha-ketoglutarate will all strengthen a B-6 weak individual without the presence of any B-6. L-cystine was needed in lower doses than l-cysteine. It appears that we can determine at what point in a metabolic pathway a disorder occurs and how to go about correcting it. (Of course, any combination of these related substances can be muscle tested for dosages.)

Along these lines, and in the hopes of creating a body point mapping of individual amino acids and metabolicly related substances, the following preliminary findings have been made: (The biochemical rationale will follow shortly.)

(1) L-lysine can be muscle tested using the iron body point. This "lysine point" was co-discovered with Dr. S. Alan Roll, D.C., to whom I have related my findings (see figure 1).

(2) L-tyrosine can be muscle tested for using the iodine body point (see figure 1).

(3) L-glutathione can be muscle tested for using the trace mineral body point (see figure 1).

(4) L-glutamine can be muscle tested for using the pancreas insulin body points (see figure 1).

These findings correlate well with known biochemical data as follows. (1) L-lysine has been shown to enhance iron absorption. (Deficiencies in two persons, as deduced from muscle testing, correlated with twenty-four hour assays.) Lysine testing for herpes and other viral induced illnesses is obviously quite important. (2) L-tyrosine is needed to make the thyroid hormone thyroxin and, of course, iodine's role in thyroid hormone production is well known. (3) The tripeptide l-glutathione, consists of cystine, glycine, and glutamic acid. In the glutathione peroxidase reaction selenium is required as a cofactor and glutathione is a cosubstrate. Selenium, of course, has been muscle tested through the trace mineral body point. (4) L-glutamine is known to cross the blood-brain barrier and is a non-glucose source of energy to the brain. Again, these preliminary results indicate that in the near future a vastly expanded mapping of body points will emerge for amino acids, peptides and related substances which utilize vitamins, or minerals as cofactors in metabolic reactions.

Finally, recent research indicates that in susceptible

individuals relatively small amounts of certain amino acids can have deleterious effects.[7] Also, since self-supplementation of amino acids may become quite popular, a methodology for ascertaining toxic levels of amino acids was looked for. As indicated above, proper B-6 utilization (phosphorylation) in the liver is known to be necessary for normal metabolic processing of various amino acids. This line of reasoning led to the realization that dosage toxicity testing can be performed by holding the amino acid near the bile lobe of the liver (see figure 1). This body point muscle testing technique has allowed for toxic dosage determinations in six individuals of l-alanine, l-ornithine, l-methionine, l-histidine, l-valine, l-tryptophan, and l-glycine. Theoretical considerations indicate that this methodology should facilitate the testing of l-serine too.

Since Dr. Jon B. Pangborn, Ph.D. has found that there is a, "particular group of amino acid abnormalities that constitutes an important subset of protein-intolerant, food-reactive syndromes",[8] involving improper tubular reabsorption, the kidneys were considered as an additional testing site for amino acid toxicities. Pangborn's work on hypervalinemia and disordered metabolism of beta amino acid can indeed be matched with muscle testing. Beta-alanine was found to result in a weak muscle test at very low levels in two individuals where amino acid assays showed hypervalinemia. (Holding the amino acid behind the kidney while muscle testing was utilized here).

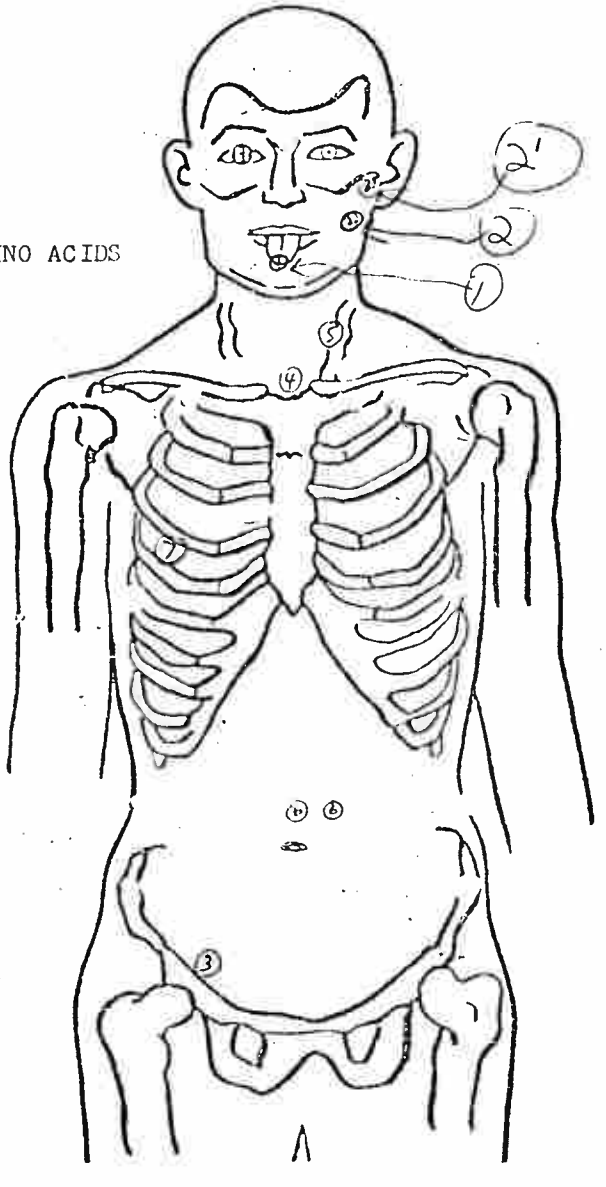
Nutritionally, beta-alanine is obtained from the peptides carnosine and anserine found in beef and pork (carnosine) and poultry or rabbit (anserine). Perhaps persons susceptible to beta-amino aciduria with its allergic-like symptoms of headache, irritability, and itching can be muscle tested for these meats, in this manner to determine the portions they may be able to tolerate.

In conclusion, preliminary results indicate that a mapping of amino acid body points will soon emerge. Furthermore, the known vitamin and mineral body points are here seen to be metabolic points where entire pathways may be checked through muscle testing. One can even envision the reverse process taking place. For example, since the processing of the amino acid l-histidine needs folic acid as a cofactor, if we find a body point for histidine it may well turn out to be the (as yet unknown) folic acid point.

The disordered B-6, methionine and citric cycle metabolisms which may play a large role in much of degenerative physical and mental illness can now quickly be examined for, utilizing the muscle testing proceedures described here. Various amino acids and foods can be muscle tested to determine toxic levels in an individual.

Much follow-up work, with many subjects, utilizing corroborating blood and urine assays by other investigators is

called for to substantiate these findings. When we consider that the biochemistry of amino acid metabolism is still in its infancy we arrive at a very promising conclusion. We may find through muscle testing that certain amino acids can be tested at vitamin or mineral body points that were not known to be cofactors in the amino acid metabolism. We can then ask the biochemist to look for a relationship between the vitamin or mineral and the amino acid. Thus this methodology can possibly allow for the kinesiologist to provide new information and point to research avenues for the biochemist. It is clear from this work that body point muscle testing has reached a new level of sophistication and importance as a diagnostic tool.



BODY POINTS CHART FOR AMINO ACIDS

FIGURE 1

BODY POINT LOCATIONS FOR AMINO ACIDS

1. L-cystine and other B-6 related substances

1. and 2. or 1 and 2'

Forefinger on tip of tongue, thumb on (2) jaw muscles point or on (2') slightly anterior to temporomandibular joint.

3. L-lysine

Three finger point on the right inguinal ligament at midpoint.

4. L-tyrosine

One inch above the jugular notch of the sternum.

5. L-glutathione

Medial side of the left sternomastoid muscle.

6. L-glutamine

Two finger contact. One point is one inch up from the navel on the midline, the other is one inch lateral to the left.

7. Bile lobe (toxicities)

On the dip in the rib cage two inches below the right nipple and two to three inches to the right.

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