

AMINO ACIDS AND DIET

in Chronic Pain Management

This first installment of a multi-part series on amino acids and diet outlines their critical importance in pain practice.



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Pain management can be significantly assisted by the optimization of the body's own analgesic system. The body's three primary pain modulators appear to be the neurotransmitters endorphin, serotonin, and GABA (gamma amino butyric acid). Each of these potent pain fighters is produced from very specific nutrients called amino acids. These amino acids are derived from high protein foods. They can also be given in the form of quick-acting, free-form supplements.

Research and practice have found that increased intake of the amino acid substrates of the three key pain modulating neurotransmitters can often provide noticeable benefits within a few days.^{1,2} These precursor amino acids have also been shown to potentiate pain medications, thus sometimes reducing the amount of opiate needed.^{3,4} Seymour Ehrenpreis, PhD, pharmacology professor at Chicago Medical School did original research substantiating the benefit of d-phenylalanine, an endorphinase inhibiting amino acid in postoperative, cancer, and other kinds of severe pain.⁵ This reportedly allowed the medical

TABLE 1. β -Endorphin and ACTH 20-chain Amino Acid Compositions	
ACTH	
Asp-Ser-Gly-Pro-Tyr-Lys-Met-Glu-His-Phe-Arg-Trp-Gly-Ser-Pro-Pro-Lys-Asp-Lys-Arg	
β-Endorphin	
Tyr-Gly-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Val-Thr-Leu-Phe-Lys-Asn	

school hospital to significantly reduce the amounts of opiate medication administered.

So important are amino acids to pain practitioners, this journal is publishing a multi-part series on amino acids and diet for the pain practitioner. This first article outlines the basics of amino acids and diet in pain practice and subsequent articles will give more detailed protocols and guidelines for the use of pain-targeted amino acids and dietary therapies.

What Are Amino Acids?

Chemically speaking, an amino acid is a nitrogen molecule attached to hydrogen.

The body utilizes about 20 different amino acids. Nine are classified as "essential" since they can be metabolized into all of the others with the possible exception of carnitine. Dietary protein is simply a matrix of amino acids and protein derived from animals, milk, eggs, fish, plants, or nuts. Foods vary widely in amino acid make-up.

Amino acids are required for the production and maintenance of almost every function and tissue in the body. Their critical roles as the building blocks of muscle, bone, and hormones are well known. Less well known, but more crucial in terms of pain management, is the fact that endorphin, serotonin, and GABA—

