HERITAGE HAVENS

NUTRITION & PEPTIDE WELLNESS COHORT

Protein & Amino Acid Guide

Understanding the building blocks that connect nutrition to peptide therapy

Nutrition & Peptide Wellness Cohort · Month 2

Peptides are made of amino acids. Amino acids are the building blocks of protein. This means your nutritional protein intake is the raw material that your body — and any peptide therapy — depends on. Understanding this connection transforms how you think about food.

> **Core Insight: A protein-deficient body cannot respond optimally to peptide therapy. You cannot build a house without lumber. Feed the system first.**

THE FOUNDATION

What Is an Amino Acid?

An amino acid is an organic molecule with an amino group (-NH2), a carboxyl group (-COOH), and a unique side chain (R group) that defines its properties. When amino acids link together via peptide bonds, they form peptides and proteins. A chain of 2–50 amino acids is a peptide. Longer chains fold into proteins.

The 3 Categories of Amino Acids

- Essential (9): Cannot be made by your body — must come from food
- Non-essential (11): Your body can synthesize these from other compounds
- Conditionally essential: Non-essential under normal conditions, but become essential under stress, illness, or injury (e.g., glutamine, arginine)

Why This Matters for You

- Incomplete protein sources are missing one or more essential amino acids
- This is why food combining matters for plant-based eaters
- Therapeutic peptides are specific amino acid sequences — their availability depends on your dietary amino acid pool
- Deficiency in any essential amino acid creates a metabolic bottleneck

ESSENTIAL AMINO ACIDS

The 9 You Must Eat — What They Do

Your body cannot synthesize these. Every single day, your diet must supply all nine or your body begins breaking down its own muscle tissue to obtain them.

Amino Acid	Primary Functions	Best Food Sources	Clinical Relevance
Histidine	Immune function, hemoglobin production, nerve signal transmission	Meat, fish, poultry, eggs, dairy	*Low levels linked to anemia and immune dysfunction*
Isoleucine	Muscle metabolism (BCAA), blood sugar regulation, hemoglobin synthesis	Eggs, soy, meat, fish, nuts, seeds	*Branched-chain — critical for exercise recovery*
Leucine	Primary trigger for muscle protein synthesis (MPS) — the most anabolic EAA	Beef, chicken, pork, tuna, eggs	*Most important BCAA — prioritize at every meal*

Amino Acid	Primary Functions	Best Food Sources	Clinical Relevance
Lysine	Collagen synthesis, calcium absorption, carnitine production, immune function	Meat, eggs, legumes, quinoa	*Often deficient in plant-heavy diets*
Methionine	Methylation, glutathione (antioxidant) production, fat metabolism	Eggs, meat, fish, brazil nuts	*Sulfur-containing — critical for detoxification*
Phenylalanine	Precursor to tyrosine, dopamine, epinephrine — mood and focus	Meat, fish, dairy, eggs, soy	*Converts to tyrosine for neurotransmitter synthesis*
Threonine	Gut lining integrity, collagen/elastin production, immune antibody synthesis	Meat, dairy, eggs, lentils, almonds	*Direct support for intestinal mucosa — gut health*
Tryptophan	Precursor to serotonin and melatonin — mood, sleep, appetite regulation	Turkey, chicken, eggs, pumpkin seeds	*Sleep and mood are directly tied to dietary tryptophan*
Valine	Muscle growth and repair (BCAA), energy production during exercise	Dairy, meat, mushrooms, soy, peanuts	*Branched-chain — works synergistically with leucine/isoleucine*

PEPTIDE CONNECTION

Key Amino Acids in Therapeutic Peptides

The following amino acids appear as structural components of the peptides covered in this cohort — or directly support the biological pathways those peptides work through.

Glycine

15 of BPC-157's amino acids — glycine is a core structural component. Also the primary amino acid in collagen (makes up ~33%). Anti-inflammatory, supports sleep quality, and is the precursor to glutathione (your master antioxidant).

Best sources: bone broth, collagen peptides, skin-on poultry, pork rinds

Glutamine

The primary fuel source for enterocytes (gut lining cells). Critical for maintaining intestinal tight junction integrity — the mechanism behind leaky gut prevention. Classified as conditionally essential — your body cannot make enough under stress or illness.

Best sources: beef, chicken, fish, eggs, dairy, cabbage, beets; L-glutamine supplement

Arginine

Precursor to nitric oxide (NO) — the molecule that dilates blood vessels and supports tissue healing. Arginine is also a precursor to growth hormone secretion. BPC-157's angiogenic (blood vessel growth) effects are partly mediated through the NO pathway.

Best sources: turkey, chicken breast, pumpkin seeds, peanuts, dairy, lentils

Leucine

The most anabolic of all amino acids — the primary trigger for muscle protein synthesis (MPS). 3g of leucine per meal is the approximate threshold to maximally stimulate MPS. Critical for anyone using GH peptides or body recomposition protocols.

Best sources: beef, chicken, tuna, eggs, milk — animal sources are richest

Proline

Structural component of collagen alongside glycine and hydroxyproline. Essential for wound healing, gut lining repair, and joint integrity. Works synergistically with BPC-157 and TB-500's tissue repair mechanisms.

Best sources: bone broth, collagen peptides, gelatin, egg whites, dairy, cabbage

Tryptophan

Precursor to serotonin and melatonin. Your gut microbiome converts tryptophan to serotonin — this is the gut-brain axis in biochemical terms. Serotonin regulates mood, appetite, and sleep. Directly relevant to the gut healing content in Session 3.

Best sources: turkey, chicken, eggs, pumpkin seeds, wild-caught fish, dairy

BIOAVAILABILITY

Protein Quality Scores — What They Mean

Several scoring systems exist to measure protein quality. The two most clinically relevant are the DIAAS (Digestible Indispensable Amino Acid Score) and PDCAAS (Protein Digestibility Corrected Amino Acid Score). Both measure how well a food delivers the essential amino acids your body actually needs.

Food Source	DIAAS Score	Digestibility	Clinical Notes
Whey protein isolate	1.09	~90–95%	Best overall — complete, highly digestible

Food Source	DIAAS Score	Digestibility	Clinical Notes
Whole eggs	1.13	~88–94%	Nature's most bioavailable whole food protein
Chicken breast	1.08	~80–85%	Lean, complete, highly digestible
Beef (lean)	0.92	~74–80%	Rich in zinc, iron, B12 alongside protein
Salmon (wild)	0.97	~80–85%	Complete + omega-3s — powerful combination
Milk / Greek yogurt	1.18	~80–90%	Highest DIAAS of whole foods — whey + casein mix
Soy protein isolate	0.98	~70–80%	Best plant option — complete but phytoestrogen note
Lentils	0.59	~55–65%	Incomplete — missing methionine; pair with rice
Black beans	0.75	~50–60%	Incomplete — pair with corn/rice for completeness
Quinoa	0.82	~65–72%	Complete plant protein — one of few exceptions
Brown rice	0.59	~68–75%	Low lysine — pair with beans or lentils
Peas (pea protein)	0.82	~75–80%	Incomplete (low methionine) — often rice-blended

DIAAS > 1.0 = excellent quality. DIAAS 0.75–1.0 = good. DIAAS < 0.75 = incomplete or limited. A score of 1.0 means the food meets all essential amino acid requirements per gram of protein.

PERFORMANCE & RECOVERY

Branched-Chain Amino Acids (BCAAs)

Leucine, isoleucine, and valine are the three branched-chain amino acids. They are metabolized directly in muscle tissue (not the liver), making them uniquely important for exercise recovery, muscle protein synthesis, and preventing muscle breakdown during caloric restriction.

When BCAAs Are Most Valuable

- Fasted training: BCAAs can prevent catabolism without breaking a fast fully
- Caloric deficit: preserving lean mass while losing fat
- Aging (40+): leucine threshold for MPS rises with age — more is needed
- GLP-1 medication users: appetite suppression reduces dietary BCAA intake
- Post-surgery or injury recovery: accelerates tissue rebuilding

BCAA Supplement vs. Food

- Whole food protein sources provide BCAAs + all other amino acids — always prefer food
- BCAA supplements are warranted for fasted training or when protein targets are impossible to hit from food
- Leucine threshold for MPS: ~3g per meal — easily met with 4–5 oz animal protein
- If supplementing: look for 2:1:1 ratio (leucine : isoleucine : valine)
- Skip BCAAs if already hitting full protein targets — redundant and expensive

GUT & JOINT SUPPORT

Collagen Amino Acids — The Gut-Repair Connection

Collagen is the most abundant protein in your body — your skin, tendons, ligaments, gut lining, and bone matrix are all collagen-dependent structures. The amino acids that make up collagen are directly relevant to peptide therapy because BPC-157 and TB-500 both work through collagen-dependent repair pathways.

Collagen Amino Acid Triad

- Glycine (~33%): anti-inflammatory, sleep support, glutathione precursor, BPC-157 structural component
- Proline (~15%): wound healing, gut lining integrity, cartilage and joint repair
- Hydroxyproline (~13%): collagen cross-linking — the structural strength component
- Together these three form the repeating tripeptide sequence (Gly-X-Y) of every collagen fiber
- Food sources: bone broth, gelatin, collagen peptide powder, skin-on poultry, pork rinds

Clinical tip: Take collagen peptides with 500mg Vitamin C. Vitamin C is essential for hydroxylation of proline and lysine — without it, collagen cannot form properly. A collagen supplement without Vitamin C is significantly less effective.

QUICK REFERENCE

Amino Acid — Peptide Cross-Reference

Use this table to understand which dietary amino acids most directly support the peptide protocols discussed in this cohort.

Amino Acid	Relevance to Peptide Protocols	Top Food Sources
Glycine	BPC-157 structural component; collagen synthesis	Bone broth, collagen peptides, pork rinds
Glutamine	Gut lining fuel; intestinal tight junction support	Beef, chicken, L-glutamine supplement
Arginine	Nitric oxide precursor; GH release support; angiogenesis	Turkey, pumpkin seeds, peanuts, lentils
Leucine	Muscle protein synthesis trigger; GH peptide synergy	Beef, chicken, eggs, dairy, tuna
Proline	Collagen formation; wound healing; gut lining repair	Bone broth, gelatin, egg whites
Tryptophan	Serotonin/melatonin precursor; gut-brain axis support	Turkey, eggs, pumpkin seeds
Lysine	Collagen synthesis cofactor; calcium absorption; immune support	Meat, eggs, quinoa, legumes
Methionine	Methylation; glutathione synthesis; hepatic detoxification	Eggs, meat, brazil nuts
Cysteine	Glutathione precursor; antioxidant defense system	Chicken, turkey, eggs, legumes, oats

Month 2 Takeaway

- You don't need to memorize biochemistry — you need to understand the connection
- Every gram of protein you eat is potential raw material for your body's repair systems
- Focus on diverse, complete protein sources to ensure your full amino acid profile is covered
- Bone broth + collagen peptides daily directly feeds the pathways BPC-157 works through
- Bring questions about specific amino acid supplements to Session 3 — we'll cover glutamine in depth