

Amino acids	essential AA	semi-essential AA	non-essential AA	BCAA	AAA	polar AA	ketogenic AA	glucogenic AA
Alanine			+			+		+
Arginine		+						+
Asparagine			+			+		
Aspartate			+					+
Cysteine			+			+		+
Glutamine			+			+		
Glutamate			+					+
Glycine			+			+		+
Histidine		+						+
Isoleucine	+			+		+	+	
Leucine	+			+		+	+	
Lysine	+							
Methionine	+				+	+		
Phenylalanine	+				+	+	+	
Proline			+			+		+
Serine			+			+		+
Threonine	+					+		
Tryptophan	+				+	+		
Tyrosine			+		+	+	+	
Valine	+			+		+		+