Amino Acids:

1.
2.
3.
4.
5.
6.
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9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
21.
22.

Amino Acids:

1. Alanine
2. Arginine - B
3. Asparagine
4. Aspartic Acid
5. Carnithine -B
6. Cysteine
7. Glutamic Acid
8. Glutamine
9. Glycine
10. Histadine - E
11. Isoleucine - E
12. Leucine -E
13. Lysine - E
14. Methionine - E
15. Phenylalanine - E
16. Proline
17. Serine
18. Taurine - B
19. Threonine - E
20. Tryptophan - E
21. Tyrosine
22. Valine – E

4A2C1H1I2L1M2P1S4T1V

Vitamins:

Are listed by letter:
What happened to the missing letters:
Water soluble vitamins:
Water insoluble vitamins:
B Vitamins:

-
-
-
-
-
-
-
-

Vitamins:

Are listed by letter: In the order in which they were discovered.
What happened to the missing letters: They were used, but turned out not to be vitamins. Once they get used, they get thrown out and don't get used again.
Water soluble vitamins: A,D, E, & k
Water insoluble vitamins: B & C

- B Vitamins:B vitamins have similar functions in the utilization of the macronutrients.
  - B1 - Thiamine
  - B2 - Riboflavin
  - B3 - Niacin (nicotinic acid)
  - B5 - Pantothenic acid
  - B6 - Pyridoxine
  - B7 - Biotin
  - B9 - Folic Acid
  - B12 - Cobalamin

Vitamins

Other Vitamin B's like choline and inositol:

Total Number of Vitamins:

Why do you have 100+ names?

Vitamin A (animal source):

Vitamin A (plant source):

Vitamin C:

Vitamin D:

Vitamin E:

Vitamin E Toxicity:

Vitamin K:

Vitamins

Other Vitamin B's like choline and inositol: are probably not essential.

Total Number of Vitamins: 13

Why do you have 100+ names? Either multiple names for the same thing, or they are different substances that all perform the same basic need. (i.e. Silicon spray and Oil are both lubricants.)

Vitamin A (animal source): retinol or preformed vitamin A. Preformed is ready to be used right away. Preformed can get in there and kill the liver.

Vitamin A (plant source): Carotene (beta carotene for example). About 1/2 the carotene that comes in the body actually gets used.

Vitamin C: Ascorbic Acid

Vitamin D: The general term is calciferol, three types (D1,D2,D3) all are called calciferol.

Vitamin E: Alpha, Beta, Gama, & Delta tocopherols.

Vitamin E Toxicity: Leads to bleeding disorders.

Vitamin K: Phyllloquine (K1), Menaquinone (K2), Menadione (K3), “K” comes from Danish for coagulation.

Minerals

Other elements that make up most of macronutrients:

Major Elements (note electrolytes):

1. ( )
2. ( )
3. ( )
4. ( )
5. ( )
6. ( )
7. ( )

Minerals

Other elements that make up most of macronutrients: Nitrogen3.3%, Hydrogen Carbon, Oxygen 65%,

Major Elements (note electrolytes):.1% to 1.5% of the body weight.

1. Calcium (Ca)
2. Chlorine (Cl) - E
3. Magnesium (Mg)
4. Phosphorus (P)
5. Potassium (K) - E
6. Sodium (Na) - E
7. Sulfur (S)

Three are found in bones: calcium, phosphorus and magnesium
Sulfur is there because certain amino acids have sulfur in the R groups.

CCMPPSS

Trace Elements

1-8 Can be deficient. 9-14 can never be deficient. They make up less than 0.1% of our body weight.

1. ( )
2. ( )
3. ( )
4. ( )
5. ( )
6. ( )
7. ( )
8. ( )
9. ( )
10.( )
11.( )
12.( )
13.( )
14.( )

Trace Elements

1-8 Can be deficient. 9-14 can never be deficient.

1. Chromium (Cr)
2. Copper (Cu)
3. Iodine (I)
4. Iron (Fe)
5. Manganese (Mn)
6. Molybdenum (Mo)
7. Selenium (Se)
8. Zinc (Zn)

CCIIMMSZ & BCNSTV

9. Boron (B)
10. Cobalt (Co)
11. Nickel (Ni)
12. Silicon (Si)
13. Tin (Sn)
14. Vanadium (V)