

SUMMARY OF INGREDIENTS

Thiamine 1.5mg

<https://examine.com/supplements/vitamin-b1/>

Also Known as

- Vitamin B1

Is a Form Of

- Essential Vitamin

Thiamine (Vitamin B1) is an essential vitamin involved heavily in glucose production. While not a common deficiency in an otherwise healthy diet and limited benefits when taken by a healthy subject, instances of high blood glucose and/or alcoholism can increase the need for this vitamin drastically.

Vitamin B3 20mg

<https://examine.com/supplements/vitamin-b3/>

Also Known as

- Niacin

Is a Form Of

- Essential Vitamin or
- Mineral

Goes well with

Aspirin or Laropiprant.
(both reduce flushing from niacin, but do not appear addictive)

Things to note

Niacin supplements are known to cause the 'Niacin flush', a medically benign warm/flushing sensation usually in the face (differing from beta-alanine tingles); nicotinamide supplements do not have this effect

Niacin is an essential B-vitamin. Supplementation results in improved cholesterol and triglyceride levels. However, since a side-effect of supplementation is increased insulin resistance, niacin supplementation only provides benefits for cardiovascular health if precautions are taken.

Summary

All Essential Benefits/Effects/Facts & Information
Vitamin B3 refers to the molecule commonly called nicotinic acid, or niacin, though it may also refer to the other vitamin B3 vitamer, called nicotinamide. Vitamin B3 is necessary to support the function of many enzymes.

Niacin supplementation is very effective at normalizing blood lipid levels. People with low HDL-C levels supplementation experience an increase in HDL-C levels, while people with high LDL-C experience a reduction in LDL-C levels. Triglyceride levels also fall after supplementation, which makes niacin look like a great cardioprotective supplement on paper. Unfortunately, niacin supplementation does not result in reduced cardiovascular disease risk, since it also increases insulin resistance, which negates the benefits niacin provides for blood lipid levels.

Other benefits of niacin supplementation are theorized to extend to growth, cognition, and longevity. This is because niacin supplementation increases cellular nicotinamide adenine dinucleotide (NAD+) levels. Preliminary evidence suggests increased NAD+ levels may result in the above benefits, but much more research is needed to determine if this effect actually occurs. Topical application of nicotinamide is sometimes used for skin health, though it is not as effective as vitamin A. Nicotinamide is used for topical application because it does not result in the flushed skin that niacin supplementation can cause.

Current evidence suggests prolonged niacin supplementation increases insulin resistance because it hinders the ability of insulin to suppress glucose synthesis in the liver. This causes an increase in blood glucose levels, which leads to lowered insulin sensitivity over time, since the relevant receptor is eventually desensitized to the elevated glucose levels in the blood.

The flush caused by niacin supplementation is a temporary effect. Though it may be uncomfortable, it is not harmful. There are many case studies describing people overdosing on niacin in an effort to pass a urine test. Niacin overdose results in multiple organ failure and is not effective at masking a urine test.

Folic Acid 200mcg

<https://examine.com/supplements/folic-acid/>

Is a Form of

- Essential Vitamin or
- Mineral

Also Known As

- Folate, Vitamin B9
- Pteroyl L-glutamic acid

Folic acid, the synthetic form of folate, is an essential B-vitamin most well known for its role in preventing neural tube defects in infants. It also has a role in supporting general health but may be detrimental in high amounts.

Summary

All Essential Benefits/Effects/Facts & Information

Folate is the essential vitamin sometimes referred to as Vitamin B9, but more commonly known by its synthetic supplemental form 'folic acid'. Found in low levels across most food products of plant origin and found in enhanced levels in some nation's wheat grain due to fortification, folic acid is a vitamin that has essential roles in the growth of neonates as well as in supporting a process known as methylation in adults.

Folic acid is primarily known as being the 'pregnancy supplement' where women who are planning to conceive children take 400 µg folic acid daily. This is critical in preventing something known as 'neural tube defects' (NTDs) which are caused by insufficient folate provision to the fetus when their neural tube is being formed and the combination of food fortification and supplementation has greatly prevented.

Beyond that, folate and folic acid are used to support methylation in the body. These two supplements, due to eventually forming a molecule known as 5-methyltetrahydrofolate (5-MTHF or L-methylfolate) are involved in indirectly supporting and creating S-Adenosyl Methionine (SAME) in the body. Due to this, these supplements tend to show quite a bit of similarity to SAME supplementation and some parallel to supplements involved in the alternate pathway which support SAME levels (of which supplements like creatine and trimethylglycine (TMG) are implicated in). These parallels are best demonstrated in their effects on depression where they all seem to be implicated in supporting serotonin-based medication (SSRIs usually) as adjuvant with a trend to benefit women more than men.

Despite these benefits, folic acid is unlike other B-vitamins where it does appear to have a potential side-effect when taken in high doses. While taking a very large dose of folic acid several thousand times the RDA will not cause immediate harm it appears that prolonged exposure to levels up to 250% the RDA may be associated with a relative increase in the rates of cancer, particularly colon cancer among the elderly; well demonstrated by acute increases in the rates of colon cancer when both Canada and the US introduced fortification (the rates, of which, have been declining beforehand and ever since). Among the B-vitamins, folate seems to be the one where a balance should be strived in your everyday life and high sources of supplemental folate should be avoided if not intended for other purposes.

Finally, supplements tend to be in one of three forms; folate, folic acid, and L-methylfolate. Of these supplements folic acid is the most common but is thought to be negative when overconsumed. L-methylfolate seems the most promising as many people seem to have genetic mutations in the enzyme which produces L-methylfolate from folate and folic acid, so supplementing the latter two only causes a partial backlog in these people whereas supplementing L-methylfolate may circumvent this genetically disadvantageous rate-limiting step. Furthermore, L-methylfolate seems to be the most promising agent to support SAME levels as SAME, as a supplement, is quite expensive and this pathway tends to take on more of the workload than the one creatine and TMG are implicated in.

Vitamin B12 200mcg

<https://examine.com/supplements/vitamin-b12/>

Also Known As

- Cyanocobalamin
- Cobalamin
- Methylcobalamin
- 5-deoxyadenosylcobalamin
- Adenosylcobalamin
- Cobamamide
- Dibencozide
- Hydroxocobalamin

Is a Form Of

- Essential Vitamin or
- Mineral
- Nootropic

Cobalamin (Vitamin B12) is a water-soluble essential vitamin that is known to play roles in neurology.

Vitamin B5 5mg

<https://examine.com/supplements/vitamin-b5/>

Also Known As

- Pantothenic acid
- Panthenol
- Pantothenate
- Dexpanthenol
- Pantothenylnalcohol

Is a Form Of

- Essential Vitamin

Pantothenic acid is one of the B-vitamins which is critical in the formation of Co-enzyme A, a molecule which helps a large amount of enzymes function in the body, and for energy production in general. While it is important, it is rare to be deficient and further supplementation shows little promise.

CDP-choline 300mg

<https://examine.com/supplements/cdp-choline/>

Also Known As

- Citicholine
- Cytidine Diphosphocholine

Is a Form Of

- Nootropic

CDP-choline (citicholine) is a nootropic compound that converts to both choline and cytidine upon ingestion, the latter of which converts into uridine in the body. It appears to confer cognitive-promoting properties as a prodrug for these two compounds.

Summary

All Essential Benefits/Effects/Facts & Information
CDP-choline is a nootropic compound that is essentially a prodrug for both choline and uridine, conferring both of those molecules to the body following oral ingestion of CDP-Choline. Specifically, the CDP-choline dissociates into choline and cytidine, with the cytidine then converting into uridine. CDP-choline is one of the three choline-containing phospholipids that can be orally supplemented (the other two being Alpha-GPC and phosphatidylcholine).

This supplement is catered towards preventing or treating memory impairments associated with aging due to the fact that both of the molecules it confers are neuroprotective and potentially enhance learning. While it appears to be more effective than phosphatidylcholine (PC) at this role, in part due to also increasing PC synthesis in the brain, its potency is somewhat comparable to that of Alpha-GPC.

CDP-choline has some other potential uses in relation to cognition. It is commonly used as a memory enhancer in youth, but despite some rodent studies suggesting that this is possible with oral CDP-choline, there are no human studies in youth at this point in time. One study has noted an increase in attention with low dose CDP-choline (which needs to be replicated), and CDP-choline may have roles as an anti-addictive compound against both cocaine and (preliminary evidence suggests) food as well.

Piracetam 750mg

<https://examine.com/supplements/piracetam/>

Piracetam is the parent compound of the racetam class of nootropic supplements. When supplemented, it provides a mild boost to brain function.

Also Known As

- Pyracetam
- Pyrrolidone acetamide
- 2-Oxo-1-pyrrolidine
- Memotopril
- Fezam (with cinnarizine)
- UCB6215

Is a Form Of

- Racetam
- Nootropic

Editors' Thoughts on Piracetam

In regards to the mechanisms of Piracetam, I am personally leaning more towards Piracetam being an agent that can preserve mitochondrial membrane potential.

This sort of downplays it from a cognitive enhancer to a cognitive preserver. It does interact with mechanisms that can induce cognitive enhancement in otherwise healthy persons (AMPA modulation and Calcium Channel inhibition) but these effects, at best, are weak. Other racetams are more likely to be cognitive enhancers (For AMPA modulation and Calcium channel 2.2 inhibition respectively; this would be Aniracetam and Leviracetam) If it does enhance cognition significantly, it is possible that this is just from reversing small states of cognitive deficit.

That being said, it is a non-discriminate membrane fluidity preservative. This may also underlie how Piracetam is as effective as Aspirin at preventing blood clotting in older persons when taken as daily preventative medicine.

I believe Piracetam is not so much a Cognitive enhancer as it is a minor Longevity-enhancing agent; delaying age-related pathology in a non-specific and relatively weak manner. It is surprisingly non-toxic, so it might be a good health preserving agent if you have excess money to burn.

-Kurtis Frank

Acetyl-L-Carnitine 500mg

<https://examine.com/supplements/l-carnitine/>

Also Known As

- Acetyl-L-Carnitine
- ALCAR
- Acetylcarnitine
- L-Carnitine
- L-Carnitine-L-Tartrate
- LCLT
- Glycine Propionyl-L-Carnitine
- GPLC
- Levocarnitine
- Levacecarnine
- L-3-hydroxytrimethylamminobutanoat e

Is a Form Of

- Nootropic
- Pseudovitamin

L-Carnitine is involved in energy metabolism and mitochondrial protection. It is made in the body, but can also be consumed through food. Supplementation of L-carnitine does not burn fat unless the individual is deficient in L-carnitine.

Summary

All Essential Benefits/Effects/Facts & Information
L-Carnitine and the related compound Acetyl-L-Carnitine (ALCAR) are compounds able to alleviate the effects of aging and disease on mitochondria, while increasing the mitochondria's potential to burn fat.

ALCAR is often used as a brain booster, due to its ability to increase alertness and mitochondrial capacity while providing support for the neurons. ALCAR has been shown to be very effective at alleviating the side effects of aging, like neurological decline and chronic fatigue. ALCAR supplementation is also a very safe method of improving insulin sensitivity and blood vessel health, particularly for people with delicate or weakened cardiac health. ALCAR can also protect neurons and repair certain damage, such as that caused by diabetes and diabetic neuropathy.

Theoretically, ALCAR supplementation for fat burning should work well, but studies on ALCAR in isolation do not show very good results. Fat loss is typically attributed to the increased activity done by people, from the increased energy they have from ALCAR supplementation.

Huperzine-A

<https://examine.com/supplements/huperzine-a/>

Also Known As

- 1R, 9S, 13E)-1-amino-13-ethylidene-11-methyl-6-azatricyclo- 7.3.1.0 2
- 7 trideca-2(7), 3, 10-trien-5-on, Qian Ceng Ta (Huperzia Serrata)

Is a Form Of

- Nootropic

Huperzine-A is a cognitive enhancer that inhibits an enzyme that degrades the learning neurotransmitter, acetylcholine; due to this, a relative increase occurs. It belongs to the cholinergics class of molecules, and may be useful in fighting cognitive decline in the elderly. May need to be cycled.

Summary

All Essential Benefits/Effects/Facts & Information

Huperzine-A is a compound extracted from the herbs of the Huperziaceae family. It is known as an acetylcholinesterase inhibitor, which means that it stops an enzyme from breaking down acetylcholine which results in increases in acetylcholine.

Acetylcholine is known as the learning neurotransmitter, and is involved in muscle contraction as well. Increasing levels of acetylcholine is routinely used as a technique amongst weight-lifters and scholars. Huperzine-A appears to be a relatively safe compound from animal studies of toxicity and studies in humans showing no side-effects at dosages routinely supplemented with. Huperzine-A is in preliminary trials for usage in fighting Alzheimer's Disease as well.

L-Theanine 50mg

<https://examine.com/supplements/theanine/>

Also Known as

- L-Theanine
- 5-N-Ethyl-Glutamine

Is a Form Of

- Nootropic
- Stress Relief
- Amino Acid Supplement

Goes well with

- Caffeine

L-Theanine is a relaxing and nondietary amino acid found pretty much exclusively in teas from Camellia sinensis (alongside green tea catechins and caffeine) and is known to promote relaxation without sedation. It appears to be effective at this as well as reducing stress at standard dosages.

Summary

All Essential Benefits/Effects/Facts & Information

L-Theanine is an amino acid that is not common in the diet (not one of the essential amino acids or even one of the common nonessential amino acids), and is deemed a nondietary amino acid similar to L-Ornithine or L-Citrulline. L-Theanine has structural similarity to glutamine and both neurotransmitters that are produced from it (GABA and glutamate) and is known to reach the brain and act in the brain following oral ingestion.

The properties of L-theanine can be summed up as being a relaxing agent without sedation (relative to something like lemon balm which relaxes but may also sedate), and is also implicated in reducing the perception of stress and slightly improving attention. While L-theanine does not appear to induce sleep, it may (quite weakly) help with sleep although its potency suggests it may not be a good first line treatment for this.

Interestingly, the relaxing and attention promoting properties of L-theanine coupled with the lack of sedation may L-Theanine have its most significant supplemental role in attenuating the 'edge' of many stimulants. A combination of L-Theanine with caffeine (200mg each) is noted to be synergistic in promoting cognition and attention.

L-Theanine, for the most part, is a relaxing but not sedating amino acid that is synergistic with stimulants such as caffeine as it can 'take the edge off'. It is effective by itself in the standard supplemental dosages as well, and although it can be attained via a diet high in green tea ingestion that is the only dietary source of L-Theanine. There are some health benefits associated with green and black tea ingestion that are thought to be more reflective of the Theanine content rather than the green tea catechins or the theaflavins, and this is thought to be related to cardiovascular health (as L-Theanine positively regulates nitric oxide) and some cognitive benefits.