

A hand is shown in the bottom left corner, holding a puzzle piece. The puzzle piece is grey and features the SOLAL logo and text. The background is a blurred image of a person's face wearing glasses, with a puzzle piece being placed into a larger puzzle.

SOLAL
TECHNOLOGIES
ANTI-AGING SPECIALISTS™

PRESCRIBED BY DOCTORS
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Products in Alphabetical Order

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3-PER-DAY™

The first and only Multivitamin and Mineral to supply vitamins and minerals at **OPTIMAL** doses to enhance longevity, energy, health and performance—not merely prevent deficiency diseases.

3-PER-DAY™ high potency anti-aging supplement that's takes the guesswork out of the strive for optimal health.

Formulated to:

- Boost immune function and protect the heart.
- Slow aging by neutralizing cell damaging free-radicals, with plant based anti-oxidants.
- Protect against the degenerative diseases that develop with aging.
- Improve energy levels, stress-coping ability and brain function.
- Detoxify the body systems (liver, kidney and lymph), from the toxic effects of fatty food, alcohol, smoking and pollution.
- Facilitate the correct metabolism of fats, carbohydrates and proteins.

Advantages of 3-PER-DAY™ over other multivitamin formulations:

- Vitamins and minerals delivered at anti-aging optimal health *scientifically researched* doses, not deficiency disease prevention RDA doses, unlike other "one-a-days".
- Only the most *bioavailable* and *effective* forms of vitamins and minerals are used, such as:
 - Amino-acid mineral chelates.
 - Buffered non-acidic vitamin C.
 - Natural vitamin E (d-alpha tocopherol).
 - Full spectrum of carotenoids: alpha and beta carotene as well as zeaxanthin and lutein.
 - Methylcobalamin form of Vitamin B₁₂, not the cyanocobalamin form which must be converted into methylcobalamin and produces cyanide in the process.

Composition	Each daily dose (3 capsules contains)	% RDA
Vitamin A (from 3mg beta-carotene)	5000IU	100%
Vitamin C (from 610mg calcium ascorbate)	500mg	833%
Vitamin D3 (10µg)	400IU	100%
Natural Vitamin E (d-alpha-tocopherol acetate)	200IU	667%
Vitamin B1 (thiamine)	75mg	5000%
Vitamin B2 (riboflavin)	50mg	250%
Vitamin B3 (niacinamide)	50mg	250%
Vitamin B6 (pyridoxine HCl)	75mg	3750%
Folic acid	800µg	200%
Vitamin B12 (methylcobalamin form)	300µg	5000%
Biotin	500µg	333%
Pantothenic acid (from calcium-d-pantothenate)	100mg	1000%
Calcium (from 610mg calcium ascorbate)	110mg	14%
Iodine (from 250µg potassium iodate)	150µg	100%
Magnesium (from 166mg magnesium oxide)	100mg	25%
Zinc (from 210mg zinc gluconate)	30mg	200%
Selenium (from 20mg SeSMC 0.5% selenium)	100µg	143%
Manganese (from 18mg manganese gluconate)	2mg	100%
Chromium (as 833µg chromium polynicotinate)	100µg	84%
Molybdenum (from 1mg 10% molybdenum amino acid chelate)	100µg	133%
Potassium (from 120mg potassium citrate)	25mg	<1%
Alpha-carotene natural source	100µg	*
Boron (from 20mg boron citrate)	1mg	*
Choline bitartrate	23mg	*
Inositol	50mg	*
Lutein	5mg	*
Zeaxanthin	500µg	*
Lycopene	2mg	*
PABA (para-aminobenzoic acid)	30mg	333%
Sugar free		

Form more information on anti-aging products and protocols or for any health need, contact:
SOLAL Technologies: Tel: 086 11 SOLAL or 086 11 76525 (Health line)
Tel: 011 783 3939 • Fax: 011 783 3399 • emails: solal@solaltech.com

The most useful health website in SA: www.solaltech.com

Your diet does not supply enough vitamins and minerals for health, disease prevention and long life. Therefore, you need to supplement with 3-Per-Day™ Multivitamin and Mineral.



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5-HTP

Also known as: **5-Hydroxytryptophan**

Description

5-HTP is an endogenous, intermediate Amino Acid formed from Tryptophan. Exogenous 5-Hydroxytryptophan is manufactured as a supplement as a means of bypassing the first step in the production of endogenous Serotonin.

- [View the Metabolic Pathway for 5-HTP](#)

Health Benefits of Supplemental 5-HTP

Metabolism

- 5-HTP possesses **Antioxidant** properties. [references](#)
- 5-HTP may reduce Appetite in persons afflicted with **Obesity**. [references](#)

Musculoskeletal System

- 5-HTP (50 - 300 mg per day (or night)) may alleviate **Fibromyalgia**. [references](#)

Nervous System

- 5-HTP may reduce **Aggressiveness** (without decreasing Assertiveness). [references](#)
- 5-HTP may alleviate **Anxiety**. [references](#)
- 5-HTP may reduce **Appetite** in persons afflicted with Obesity: [references](#)
 - 5-HTP may reduce **Carbohydrate Cravings** (due to 5-HTP's role in the production of Serotonin). [references](#)
- 5-HTP may increase **Assertiveness** (non-aggressive Assertiveness). [\[more info\]](#)
- 5-HTP may be beneficial for **Attention Deficit/Hyperactivity Disorder** (ADHD) patients (due to its role as a precursor for the production of Serotonin, a Neurotransmitter that is commonly depleted in ADD patients). [references](#)
- 5-HTP may alleviate various forms of **Depression** (including **Endogenous Depression, Major Depression** and **Reactive Depression**). [references](#)
- 5-HTP may be a valuable adjuvant therapy for **Down's Syndrome**. [\[more info\]](#)
- 5-HTP may be a valuable adjuvant therapy for **Epilepsy**. [\[more info\]](#)
- 5-HTP may prevent **Headaches** (especially Tension Headaches). [references](#)
- 5-HTP may alleviate **Insomnia**. [references](#)
- 5-HTP prevents and alleviates the symptoms of **Migraines**. [references](#)
- 5-HTP may improve **Mood** (due to its ability to increase Serotonin levels): [references](#)
 - 5-HTP may induce feelings of **Happiness** (described as elation). [references](#)
- 5-HTP may help to prevent **Nightmares**. [references](#)
- 5-HTP (50 - 200 mg per day) may be an effective treatment for **Obsessive-Compulsive Disorder** (OCD) (according to anecdotal reports). [references](#)
- 5-HTP may alleviate **Panic Disorder**. [references](#)
- 5-HTP may be a useful adjuvant therapy for **Parkinson's Disease**. [\[more info\]](#)
- 5-HTP may increase total **Sleep** time: [references](#)
 - 5-HTP may increase the amount of **REM Sleep**. [references](#)

5-HTP may Enhance the Function of these Substances

Hormones

- 5-HTP may increase Brain **Melatonin** levels (via Serotonin and N-Acetyl-Serotonin). [references](#)

Neurotransmitters

- 5-HTP is the immediate metabolic precursor for endogenous **Serotonin**. [references](#)

Opioids

- 5-HTP may increase **Beta-Endorphin** levels (especially in Depression patients). [references](#)

These Substances may Enhance the Function of 5-Hydroxytryptophan

Amino Acids

- 5-HTP is manufactured within the body from **Tryptophan**. [references](#)

Enzymes

- The **5-HTP Decarboxylase** enzyme catalyzes the conversion of 5-Hydroxytryptophan to Serotonin (5-HT). [references](#)
- The **Tryptophan Hydroxylase** enzyme catalyzes the conversion of Tryptophan to 5-Hydroxytryptophan. [references](#)

Vitamins

- **Vitamin B6** is a cofactor for the endogenous conversion of 5-Hydroxytryptophan to Serotonin via the 5-HTP Decarboxylase enzyme. [references](#)
- **Vitamin C** is an essential cofactor for the conversion of Tryptophan to 5-HTP. [references](#)

These Herbs may Enhance the Function of 5-HTP

- **Golden Root** may facilitate the transport of 5-HTP into the Brain. [\[more info\]](#)

Potentially Toxic Effects of 5-HTP

Digestive System

- Supplemental 5-HTP may cause Diarrhea in some persons. [references](#)
- Supplemental 5-HTP may cause Intestinal Cramps in some persons. [references](#)

Nervous System

- Supplemental 5-HTP may cause Nausea in some persons.

5-HTP may Increase these Potentially Toxic Substances

Hormones

- 5-HTP may increase the production of Prolactin. [references](#)

Comparison of Selective Serotonin Reuptake Inhibitors (SSRIs) with 5-HTP

- SSRIs "work" by counteracting deficiency in the Neurotransmitter, Serotonin. They increase available Serotonin by preventing Serotonin Receptors from soaking up recently released molecules of Serotonin "floating" around freely in the Synapses between Neurons (inhibiting reuptake).
- In contrast, Tryptophan is a precursor for the production of NEW Serotonin. This is regarded as a superior method of treating Serotonin deficiency compared to the modus operandi of SSRIs, which merely recycle OLD Serotonin.

5-HTP vs Tryptophan [references](#)

	5-HTP	Tryptophan
Serotonin:	<p>5-HTP is a direct precursor for Serotonin. It is approximately ten times more potent on a gram for gram basis for the production of Serotonin.</p> <p>Unlike tryptophan, serotonin synthesis from 5-HTP is not rate-limited by any natural feedback control for Serotonin synthesis. 5-HTP bypasses this governing mechanism. This permits 5-HTP to significantly increase Serotonin production by also</p>	<p>Tryptophan is a precursor for Serotonin but is two metabolic steps away from Serotonin.</p> <p>Serotonin synthesis from tryptophan is rate-limited by a natural feedback control for Serotonin synthesis. This may be useful for preventing excessive Serotonin production.</p> <p>High doses of Tryptophan cause its own destruction by inducing the enzyme, Tryptophan Pyrrolase</p>

	Serotonin production by also increases the potential for excessive Serotonin synthesis.	which metabolizes Tryptophan to Kynurenine.
	5-HTP is unaffected by the Tryptophan Pyrrolase enzyme and is therefore fully available for Serotonin synthesis.	
Proteins:	5-HTP cannot be used by the body for the production of proteins and enzymes.	Tryptophan is used by the body for purposes other than Serotonin production. It can be used for the creation of certain proteins and enzymes.
NADH:	5-HTP is NOT a precursor for the production of NADH.	Tryptophan is a precursor to NADH.
Infections:	5-HTP does not aggravate pre-existing bacterial and parasitic infections.	Sometimes supplemental Tryptophan can aggravate pre-existing bacterial and parasitic infections.
Blood-Brain Barrier:	5-HTP readily crosses the Blood-Brain Barrier.	

Endogenous 5-HTP Levels

LABORATORY REFERENCE VALUES

Urine 5-HTP

- The following urine 5-HTP levels are regarded as normal (values may differ between different laboratories):
 - less than 50 mcg per 24 hours

Bioavailability references

- Orally administered 5-HTP is well absorbed - approximately 70% of orally ingested 5-HTP enters the bloodstream.
- Absorption of supplemental 5-HTP is maximized when it is consumed orally two to three hours after a meal (or on an empty Stomach) and at least 30 to 60 minutes prior to the following Protein-containing meal:
 - The conversion of 5-HTP to Serotonin (in the Brain) can be maximized by taking supplemental 5-HTP on an empty Stomach (or more specifically, without Protein-containing foods).
- The duration of action of 5-HTP is relatively short. For this reason, the therapeutic effects of supplemental 5-HTP may be maximized if it is taken as several divided doses instead of one full dose.
- 5-HTP readily crosses the Blood-Brain Barrier.

Dosage Recommendations

Nervous System

- Most orthomolecular-oriented physicians recommend the use of 300 - 600 mg of 5-HTP per day for the treatment of **Depression**:
 - Many people using 5-HTP for the treatment of Depression experience benefits from doses of 50 - 150 mg per day and some people experience benefit from as little as 25 mg of 5-HTP per day.
- The standard dosage of 5-HTP for the treatment of **Epilepsy** is 150 - 300 mg per day.
- The standard dosage of 5-HTP for the treatment of **Down's Syndrome** is 1 mg of 5-HTP per kg of body weight.
- The standard dosage of 5-HTP for the treatment of **Parkinson's Disease** is 100 - 600 mg per day.

Commercial Availability of 5-HTP Supplements

"Singular" Oral 5-HTP Products

- Supplemental 5-HTP is available from health food stores and mail order supplement companies (usually only in the USA, Canada and Europe) in the form of:
 - 5-HTP liquid
 - 33 - 100 mg capsules

Rationale for Use

- Supplemental 5-Hydroxytryptophan is used by many people as an alternative to Tryptophan supplementation (due to restrictions on the sale of Tryptophan in many regions and also due to 5-HTP being "one-step-closer" to the desired end-product of Tryptophan supplementation, i.e. to Serotonin).

Consumer Advice

- Commercially-available 5-HTP products are usually derived from plant sources (usually from *Griffonia simplicifolia*).

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7-Keto DHEA

Also known as: **7KD**; **7-Keto Dehydroepiandrosterone**

Description

7-Keto DHEA is a modified form of the hormone, DHEA (i.e. an analog of DHEA). It is naturally present in the human body (as a metabolite of regular DHEA) and is *claimed* to exert more potent therapeutic effects than regular DHEA.

Health Benefits of 7-Keto DHEA

- The therapeutic properties of 7-Keto DHEA are very similar to those of **DHEA**. The primary difference between 7-Keto DHEA and regular DHEA is that the anabolic properties of DHEA are maximized while the androgenic effects (which are problematic) are minimized with 7-Keto DHEA. There are also *claims* that 7-Keto DHEA is more potent in terms of therapeutic effects compared to regular DHEA:
 - Unlike regular DHEA, 7-Keto DHEA is NOT transformed into Testosterone or Estrogens. [references](#)

Cardiovascular System

- 7-Keto DHEA may be useful for the treatment of **Raynaud's Disease**. [references](#)

Metabolism

- 7-Keto DHEA may facilitate weight loss in persons afflicted with **Obesity** (by facilitating **thermogenesis**). [references](#)
- 7-Keto DHEA may be useful for the treatment of **Wilson's Thyroid Syndrome** (by increasing Triiodothyronine (T3) levels without affecting other Thyroid Hormones). [references](#)

Nervous System

- 7-Keto DHEA may improve **Memory** (in some cases to a greater extent than regular DHEA). [references](#)

7-Keto DHEA may Enhance the Function of these Substances

Hormones

- 7-Keto DHEA stimulates the production of **Triiodothyronine (T3)**. [references](#)

Immune System Chemicals - Cytokines

- 7-Keto DHEA stimulates the production of **Interleukin 2 (IL-2)**. [references](#)

These Substances may Enhance the Function of 7-Keto DHEA

Hormones

- 7-Keto DHEA is manufactured within the human body from regular Dehydroepiandrosterone (**DHEA**) (regular DHEA is transformed into both 7-Keto DHEA and Testosterone). [references](#)

Safety [references](#)

- All of the studies that have been conducted to date indicate that supplemental 7-Keto DHEA is entirely safe:
 - The impressive safety profile of supplemental 7-Keto DHEA is highly likely to be due to its inability to be converted within the body to further Hormones (e.g. Testosterone, Estrogens).
 - Human studies have demonstrated the absolute safety of supplemental 7-Keto DHEA at doses of 200 mg per day (in men aged 18 to 49).

Dosage Recommendations

- The usual therapeutic dosage of 7-Keto DHEA is 25 - 50 mg per day and may be effective

- in dosages of as low as 5 - 10 mg per day.
- Clinical trials of 7-Keto DHEA have involved the use of 50 - 200 mg per day.
- Initial results indicate that 7-Keto DHEA can safely be taken in higher doses than standard DHEA supplements (due to the lack of androgenic properties of 7-Keto DHEA compared to standard DHEA).
- 7-Keto DHEA may be a more suitable form of DHEA supplementation for women.

Commercial Availability of 7-Keto DHEA Supplements

"Singular" Oral 7-Keto DHEA Products

- 7-Keto DHEA is available from health food stores and mail order supplement companies (only in the USA) in the form of:
 - 12.5 mg capsules
 - 25 mg capsules
 - 50 mg capsules

Topical Products

- 7-Keto DHEA is an active ingredient in some topical Skin and Hair care products.

Chemical Data

Chemical Names

- 3-acetyl-7-oxo-dehydroepiandrosterone
- 3 β -Hydroxyandrost-5-ene-7,17-dione