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## REPORT

### Top Ten Life Extension Drugs

Members often ask us to tell them which life extension nutrients and drugs we consider most important.

They ask us because of the vast number of nutrient and drug products available through The Foundation--a number that is constantly increasing as we come across exciting new products. Members want us to provide them with a list of these products in order of importance because they cannot afford to take everything of benefit to their health, or because they don't have the time to take everything they'd like to take.

We published our top ten life extension nutrient list in the August 1993 issue of Life Extension Update. We had hoped to publish our top ten life extension drug list soon afterwards, but so many new findings were coming out that we simply didn't have the time to put together such a list.

Since the FDA calls natural hormones "drugs", we have included hormone replacement therapies in our top ten list. We've also included several nutrients that are sold as "drugs" in other countries as treatments for some of the consequences of neurological aging.

In evaluating these drugs, we considered several important criteria. The first is whether there is any evidence that the drug has extended mean and/or maximum lifespan in laboratory animals. The problem with this measure is that there have been relatively few lifespan studies conducted with potential anti-aging therapies.

For example, there is evidence that deprenyl, melatonin, and centrophenoxine can extend lifespan in animals, but this evidence (except in the case of deprenyl) is sparse and far from definitive. On the other hand, there is no evidence that DHEA can extend lifespan in animals, but no such study (to our knowledge) has ever been conducted, although one is now underway at the V.A. Hospital at the University of Wisconsin (You'll be hearing more about this study later.)

Two other factors in our analysis are availability and affordability. Some drugs were lower on our list than they might have been because they are costly and difficult to obtain. For example, we have omitted potential anti-aging drugs such as low dose RU-486 because of the difficulty in obtaining it for clinical use.

#### WHAT ARE THE MOST IMPORTANT LIFE EXTENSION DRUGS?

In considering this list, it is important to understand that all the drugs included on the list are there because there is solid evidence that they have significant benefits for health and longevity. It's also important to note that new findings about these drugs are pouring into our offices at an unprecedented rate, which could lead us to change our opinion about the order of the list at any time.

#### LIFE EXTENSION DRUG NUMBER 10

##### ***SYNTHETIC HUMAN GROWTH HORMONE***

Injections of synthetic human growth hormone have been used by geriatric physicians to rejuvenate aging men by increasing their muscle mass, strength, flexibility, and coordination.

Growth hormone deficiency is a major cause of the decline in immune function and protein synthesis with advancing age in both muscle and neurologic tissues. Recent findings suggest that growth hormone may be an effective treatment for early-stage Alzheimer's disease as early senile dementia caused by a decline in brain cell energy metabolism. We will soon be reporting on clinical benefits reported with growth hormone therapy in both Alzheimer's and Parkinson's patients.

If growth hormone were not artificially overpriced because of the FDA restriction of its sale in the United States, we might have placed it higher on our list. It doesn't cost any more to synthesize growth hormone than it does to synthesize insulin. Without FDA interference, most aging Americans could easily afford injections of growth hormone in an attempt to slow aging. The need to inject growth hormone also limits the availability of this highly potent life extension drug.

If you want a referral to a doctor who offers growth hormone therapy, Call us at 1-800-841-5433

### **LIFE EXTENSION DRUG NUMBER 9**

#### ***PIRACETAM***

The most frequently used offshore drug to boost short-term memory and overall cognitive function is piracetam.

There are more than 800 published studies documenting the ability of piracetam to promote youthful neurologic function, including enhanced cellular protein synthesis and interhemispheric and intercellular communication.

Stroke victims might avoid paralysis and death if given drugs like piracetam after entering the hospital. Even in patients who suffered stroke-induced brain cell injury years ago, there is evidence that piracetam may help to improve the functioning of these damaged cells.

Piracetam can be ordered from Europe. If we succeed in abolishing the FDA, piracetam, like every other drug and nutrient product you buy, will be reduced immediately in price by at least 50%.

### **LIFE EXTENSION DRUG NUMBER 8**

***DHEA*** Because of some recently published studies in elderly humans, the news media have been touting the multi-faceted anti-aging benefits of DHEA (dehydroepiandrosterone).

DHEA is now fulfilling much of the promise indicated in the animal studies that Saul Kent and The Life Extension Foundation have been informing our members about since 1975.

For those suffering from adult-onset diabetes, atherosclerosis, Parkinson's and Alzheimer's disease, or any form of autoimmune disease such as multiple sclerosis or lupus, DHEA replacement therapy is highly recommended.

DHEA can be expensive for people who need high doses, but for most people it is reasonably priced. We recommend blood tests to measure the effect that DHEA supplementation has on your DHEA serum level. Men should also have more regular PSA (prostate specific antigen) tests to make sure they do not have prostate cancer.

It is regrettable that we have had to advise men with prostate cancer to avoid DHEA because it could increase testosterone (and subsequently dihydrotestosterone levels), which could accelerate the proliferation of prostate cancer cells. For all men taking DHEA, we suggest supplementation with SERENX (saw palmetto extract) to block the conversion of testosterone into the more dangerous dihydrotestosterone.

SERENX (also called PERMIXON) has not been listed in the top ten because it is not an appropriate therapy for most women. However, for men over 40, we strongly recommend the daily intake of 1 -2 capsules of low cost SERENX to prevent benign prostatic hypertrophy and possibly prostate cancer.

If DHEA was completely free of side effects, and did not require blood testing, we might list it higher. It is a well substantiated life extension therapy that can help to protect us against many of the degenerative diseases associated with aging, and may have an effect on aging itself.

### **LIFE EXTENSION DRUG NUMBER 7**

#### ***VINPOCETIN--HYDERGINE***

These two drugs provide a wide range of anti-aging effects in brain and other cells that you cannot easily obtain with any other therapy.

Vinpocetine and/or Hydergine have been shown to:

- improve blood supply to the brain

- increase the amount of oxygen delivered to the brain
- increase oxygen use by the brain
- enhance metabolism in brain cells
- protect the brain from damage during periods of decreased and/or insufficient oxygen supply
- slow the deposit of age pigment (lipofuscin) in the brain
- prevent free radical damage in brain cells
- increase intelligence, memory, learning, and recall
- enhance the use of glucose by brain cells
- increase ATP levels in the brain
- stop blood from becoming sticky
- raise brain levels of serotonin

Vinpocetine is rather expensive (at 20-40 mg a day), which is one reason we don't list it any higher. Vinpocetine has been on the world market since the early 1980s, but as far as we know, has yet to be entered in the FDA's new drug approval quagmire. The cost of this periwinkle herbal extract would be very little if the FDA didn't interfere with the shipment of drugs from overseas companies. We are currently seeking a standardized periwinkle extract that we could sell as a low cost nutrient just as we do with acetyl-L-carnitine and melatonin.

Hydergine is more affordable at effective dose ranges of 4 to 12 mg a day. Most generic brands of ergoloid mesylate are comparable to the Sandoz "Hydergine" brand.

### **LIFE EXTENSION DRUG NUMBER 6**

#### ***LIFE EXTENSION DRUG GH3 or KH3***

GH3 and KH3 are popular products whose active agent is procaine, an anti-aging compound discovered in the 1950s by Romanian physician Ana Asian. Both GH3 and KH3 suppress monoamine oxidase (MAO) levels. Elevated MAO destroys the essential neurotransmitters dopamine and norepinephrine. GH3 or KH3 also suppress elevated serum cortisol levels, which has been linked to several of the degenerative diseases of aging. There are better cortisol suppressing therapies such as low dose RU-486, but at this time, RU-486 is not available to Americans.

GH3 and KH3 can be taken every day including the days you take deprenyl, which is a selective MAO inhibitor. An appropriate dose of these drugs is one to two GH3 or KH3 tablets daily. Some doctors believe you should take a five day break from these drugs once a month to avoid too much monoamine oxidase suppression, but our review of the scientific literature does not support the need for taking such a break.

### **LIFE EXTENSION DRUG NUMBER 5**

#### ***CENTROPHENOXINE***

Lifespan studies have documented specific anti-aging properties for the combination of DMAE and p-chlorophenoxyacetate, the two active ingredients that make up centrophenoxine, a potent life extension drug sold under several names, including Lucidril.

Centrophenoxine has extended the lifespan of laboratory mice and has been shown to reduce a type of cellular debris called lipofuscin (aging pigment) in the neurons that populate our brain and central nervous system. The excessive accumulation of lipofuscin with advancing age has been linked to age-related neurologic diseases.

Centrophenoxine speeds up information processing in the brain and enhances brain cell uptake of glucose. Brain cells use glucose to produce the energy they need to perform their neurological functions and to maintain cell viability.

Some People cannot tolerate even one tablet a day of centrophenoxine, while others can take 1-4 tablets a day and experience dramatic cognitive and energy enhancing effects.

### **LIFE EXTENSION DRUG NUMBER 4**

#### ***PHOSPHATIDYLSERINE***

Phosphatidylserine (PS) is sold as a drug in Europe at outrageously high prices. The standardized PS extract now available as a dietary supplement is less expensive than the European "drug", but is still a pricey item.

We have written extensively about the anti-aging benefits of PS later in this September edition of Life Extension Update and want to reiterate that PS may produce a cumulative effect that could enable people to reduce their dosage of the drug after attaining the desired cognitive enhancing benefits.

Standardized PS extract is contained in the new COGNITEX and is available in bottles of 100 mg soft-gel caps.

### **LIFE EXTENSION DRUG NUMBER 3**

#### ***DEPRENYL***

(Also known as Eldepryl) This was a hard one to call. A good argument could be made for deprenyl being Life Extension Drug Number 2, but we based this decision strictly on the published evidence we have today. A new study tomorrow could cause us to move deprenyl to number 2.

Deprenyl has produced dramatic life extension effects in animals, but we are fairly certain that deprenyl alone will not do as well in humans. The reason for this is that in rats, the elevation of monoamine oxidase (MAO) plays a greater role in the aging process than in humans. Deprenyl is a potent, selective inhibitor of MAO-B, the type of MAO that damages brain cells during "normal" aging.

Life Extensionists take deprenyl to help prevent Parkinson's disease and the symptoms of aging that are very similar to those suffered by Parkinson's patients. There is solid evidence that deprenyl protects many types of brain cells from premature aging and death. There is also evidence that deprenyl boosts cellular production of SOD and catalase, the natural antioxidant enzymes that are depleted in aging.

Our current protocol calls for 2-5 deprenyl tablets (5 mg) a week for those in their 40s. The older you are, the more deprenyl you should take, but it is advisable not to take more than one 5-mg tablet (or capsule) of deprenyl a day unless you have the early symptoms of Parkinson's or Alzheimer's disease. In this case, you should take 10 mg of deprenyl a day under the supervision of a physician.

### **LIFE EXTENSION DRUG NUMBER 2**

#### ***ACETYL-L-CARNITINE***

There are too many new studies appearing in the scientific literature about acetyl-L-carnitine for life extensionists not to take this enhanced amino acid compound that enters the blood stream and penetrates cell membranes more effectively than regular L-carnitine .

Acetyl-L-carnitine is beneficial to heart muscle cells, immune function and probably enhances energy production in every cell of the body. The multifaceted benefits of acetyl-L-carnitine in brain cells makes it the single most important supplement we can take to maintain and improve overall neurological function.

Acetyl-L-carnitine has been shown to improve neurological function even after we stop taking it, suggesting that acetyl-L-carnitine may re-program neuronal and neurotransmitter functions to enable the brain to function in a more youthful, energetic state.

We suggest that healthy members go on at least two 50-day cycles (2 capsules each day) of acetyl-L-carnitine supplementation every year. If you can afford to take acetyl-L-carnitine more often, this should produce greater benefits.

### **LIFE EXTENSION DRUG NUMBER 1**

#### ***MELATONIN***

If we published all the new research findings about melatonin every month, there wouldn't be any room in *Life Extension Magazine* for anything else.

Melatonin is the most documented anti-aging therapy in the world.

It not only protects us against neurological aging, but possibly protects us against every age-related disease known to mankind. It is a highly potent antioxidant, has been shown to protect against various forms of cancer, and has extended lifespan in laboratory animals. Melatonin has also been used by physicians at high doses as an effective treatment for a wide variety of

diseases. We will soon be carrying an exclusive story about one of these physicians who has been using melatonin for over 15 years in his research. There has been no evidence of toxicity in any of the published studies of melatonin that we have seen.

Melatonin costs very little. The Life Extension Buyers Club uses only ultra pure pharmaceutical-grade melatonin that costs us 40% more than lower grade melatonin. This ultra pure melatonin goes through additional purification processes that makes it almost 100% pure (99.8% to 99.9% certified purity).

There are still dedicated life extensionists who do not take melatonin because they think it is only useful for the treatment of insomnia. Melatonin is effective in about 80% of people suffering from insomnia, and is highly effective in preventing the symptoms of jet lag. However, we strongly suggest that people who do not suffer from insomnia take at least a 1 mg of melatonin every night. The cost of melatonin is too low for anyone seriously following a life extension program not to use it.

There are some people who should not take melatonin. Here are the conditions where melatonin might be contraindicated :

- children (unless recommended by a doctor)
- pregnant women
- people under the age of 30
- people with seasonal affective disorders (SAD)
- people with acute schizophrenia
- manic patients
- possibly those with ovarian or immune system cancers such as leukemia and lymphoma

All others should consider taking melatonin on a regular basis. You can order melatonin in bottles containing 1, 3 or 10 mg capsules.

## **PREVENTING HEART ATTACKS AND STROKES**

### ***ASPIRIN***

This is an extra added bonus to our top ten coverage of life extension drugs. Seventy-five percent of Americans die from heart attacks and strokes. There's no point in taking all or any of the life extension drugs listed in this magazine if you're going to drop dead of a heart attack or stroke caused by a blood clot that blocks your blood circulation before the anti-aging benefits of these drugs take effect.

Even if you don't die immediately from a stroke, you stand an excellent chance of becoming partially or completely brain dead. If you don't suffer from a stroke, transient ischemic attacks (TIAs) can cause chronic loss of neurological function as a result of decreased circulation to the brain.

One of the best ways of preventing heart attacks and thrombotic strokes is the daily intake of low-dose aspirin--1/4 to 1/2 an aspirin a day. Aspirin works by a mechanism that is different than anti-thrombotic nutrients, such as green tea extract, ginkgo, vitamin C, vitamin E, folic acid, etc. The nutrient that most resembles aspirin's anti-clotting action is EPA/DHA fish oil supplements. We highly recommend fish oil supplements for a wide range of health benefits, but most People do not like the "repeating" that occurs after ingesting fish oil capsules and fish oil capsules are fairly expensive.

Alternative medicine practitioners are often biased against aspirin because of the side effects that chronic over-dosing of aspirin can produce. Two regular aspirin tablets contain 650 mg of salicylic acid and people in chronic pain have been known to consume 4-to-12 regular aspirin tablets a day and consequently suffer serious side effects. A baby aspirin tablet has only 81 mg of aspirin, which is all you need to protect you against heart attacks and strokes, and if you take it with a heavy meal, there is little risk of gastric irritation.

Aspirin is just too inexpensive and readily available for life extensionists not to take. Aspirin reduces overall cardiovascular disease risk, may lower colon cancer risk, and Durk Pearson and Sandy Shaw have uncovered evidence of a unique mechanism by which aspirin may slow the decline in protein synthesis during aging.

The Life Extension Foundation sells a fund-raising aspirin product called Healthprin. Each tiny heart-shaped tablet contains just 81 mg of aspirin, equal to just one-quarter of a regular aspirin tablet. Healthprin heart-shaped aspirin tablets are easy to break in half if you only want to consume only 40 mg of aspirin a day. We will send you a bottle containing 500 of these heart-shaped tablets.

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