

# DHEA

Winter 2001

## Summary

DHEA is a hormone used by some people with HIV/AIDS (PHAs) to help manage depression, increase energy and build up muscle mass. Health Canada classifies DHEA as a controlled drug. Such products are only available by prescription.

## What is DHEA?

DHEA (dehydroepiandrosterone) is a hormone produced by the adrenal glands, which sit on top of the kidneys. Researchers are certain that DHEA is used as a building block to make the hormones testosterone and estrogen, but they are not sure about other functions of DHEA. Levels of DHEA are at their highest in people between the ages of 20 to 30 years. After this, DHEA levels slowly decline, reaching their lowest levels in the elderly. This change in DHEA levels has caused some people to speculate that DHEA is an anti-aging hormone, however, results from recent experiments on animals and elderly humans do not support this.

Several studies have found that some PHAs have lower levels of DHEA than healthy people without HIV infection. Moreover, over the course of HIV, DHEA levels fall, reaching their lowest level when AIDS develops.

As part the body's response to attack by a virus, DHEA levels fall and production of another hormone, cortisol, rises. In the short term, the changes in DHEA levels seen in people with HIV may be part of this normal reaction. Over the long term, increased cortisol levels combined with low DHEA levels may play a role in the reduced immunity that is seen in AIDS. Although several lab experiments have found that DHEA has antiviral activity in the test tube,

studies have not found it to have significant anti-HIV activity in people.

## How is DHEA used?

### a) To relieve mild depression:

Some PHAs use DHEA to help manage mild depression by taking this hormone with or without antidepressant medication. The doses of DHEA used in controlled clinical trials in depressed people have ranged from 30 mg/day to 300 mg/day. Some researchers say that DHEA can help improve mood by increasing production of the neurotransmitter serotonin in the brain. DHEA may also reduce cortisol levels in the brain. There is not enough data to be certain about DHEA's beneficial impact on depression in PHAs. Furthermore, there have been reports of DHEA causing mania in people with pre-existing bipolar depressive illness.

## Warning

- It is not clear that DHEA is effective for the treatment of depression.
- DHEA may make some symptoms associated with depression, such as mania, worse.

Bear in mind that PHAs who feel that they may be depressed should have this confirmed by a doctor. Moreover, effective treatments for depression are available from your doctor.

#### b) **To relieve fatigue:**

People taking DHEA often report decreased feelings of fatigue or increased energy. Readers should note that fatigue can often be a symptom of other serious problems including the following:

- depression
- less-than-normal levels of red blood cells
- drug side effects
- imbalanced thyroid hormone levels
- infections
- poor eating habits

People experiencing persistent fatigue should have this investigated by a doctor.

#### c) **To build up muscle mass:**

HIV infection is associated with the loss of lean body mass — muscle. To increase muscle mass, some people take supplements of DHEA. Exactly how DHEA might increase muscle mass is unclear. Some researchers think that DHEA helps the body make better use of the testosterone that it produces. Injections of testosterone or prescription anabolic steroids have been found to be effective in building up muscle mass. However, unlike these drugs, DHEA has not been tested in controlled clinical trials in humans for this use.

#### d) **To maintain testosterone levels:**

We have received anecdotal reports of middle-aged male PHAs taking supplements of DHEA to boost their levels of testosterone and DHEA. Yet in published studies, DHEA does not appear to significantly increase testosterone levels in HIV positive males.

### **Treatment**

Most of the anecdotal reports we have received are of adult males starting DHEA at a dose of 25 mg/day to 50 mg/day. Women tend to start at a lower dose of 15 mg/day. It is important to have your DHEA levels measured in samples of blood or saliva before deciding to use this hormone. In the body, DHEA comes in two forms: DHEA and DHEA-sulfate, or DHEA-S.

Either form is converted into the other and they are considered to be the same. Many labs measure levels of DHEA-S, as this form is relatively common in the body.

Some doctors suggest that people not take the drug continuously and take “hormone holidays” from DHEA. Some PHAs take DHEA three times weekly on Monday, Wednesday and Friday. The best dose and schedule for DHEA is not yet known.

### **Cautions and concerns**

Pregnant women, non-adults and people at high risk for or who have the following hormone-sensitive cancers should **never** use DHEA:

- breast cancer
- cervical cancer
- prostate cancer
- uterine cancer
- malignant melanoma

As mentioned earlier, people with bipolar illness who use DHEA may experience mania that can lead to suicidal behaviour. Therefore people with bipolar depression should **not** use DHEA.

In small, short studies in people with HIV, DHEA appears to help relieve depression but this needs to be confirmed in large studies. As well, most studies of DHEA have been in middle-aged or elderly subjects. The safety of DHEA in younger subjects is not known. For PHAs, the safety of taking DHEA for more than four months is not known.

### **Side effects**

Depending on the dose used, HIV positive people who have taken DHEA for less than four months have experienced at least one of the following side effects:

- acne
- fatigue
- headache
- nausea
- nasal congestion
- high levels of the liver enzyme ALT

- joint pain
- problems falling asleep

Because DHEA has not been well-studied in PHAs, there may be other side effects. The impact of DHEA on signs/symptoms of the HIV lipodystrophy syndrome is not known. We do not know of any interactions between DHEA and medications commonly used by PHAs.

## Availability

DHEA has not been approved by Canadian regulatory authorities. Health Canada considers DHEA to be a controlled substance. Products that fall under this category are available only with a doctor's prescription. It is illegal to import DHEA into Canada for personal use. If you and your doctor(s) decide that you need DHEA to maintain your health, have your doctor call or e-mail Health Canada's Special Access Programme: 613-941-2108 (between 8:30 am and 4:30 pm Eastern Standard Time) or 613-941-3061 after 4 pm. e-mail: EDR\_Drugs-BPA@hc-sc.gc.ca.

For more information about DHEA, you may wish to consult an endocrinologist, a doctor who specializes in the study of the body's hormones.

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## Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV-related illness and the treatments in question.

