

THE WALL STREET JOURNAL.

[Health Journal](#)

Doctors Use Estrogen to Treat Memory Loss in Older Women

By

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Updated March 18, 2008 12:01 a.m. ET

Gayatri Devi was a neurologist and psychiatrist specializing in memory disorders when a patient's case changed her career. The 52-year Brazilian woman, once a dynamo, had become forgetful and disoriented. Dr. Devi and her colleagues diagnosed early Alzheimer's disease and prescribed a standard AD drug. As an afterthought, Dr. Devi added estrogen, having seen research suggesting it might slow the dreaded disease.

Six months later, the woman returned and insisted she was cured. "I didn't believe it, but we tested her and her symptoms had resolved, thanks to the estrogen," says Dr. Devi. "That was the beginning of my journey."

Estrogen Connection

For more information on estrogen and memory, see:

- "Estrogen, Memory & Menopause" by Gayatri Devi, M.D.
- "It's My Ovaries, Stupid" by Elizabeth Lee Vliet, M.D.
- www.nymemory.org: Dr. Devi's New York Memory and Health Aging Services
- www.Herplace.com: Dr. Vliet's informational site

In the 10 years since, Dr. Devi has treated several hundred patients for menopause-related memory loss in her New York City practice. Many are professional women who find they can't summon up words or lose track of what they were doing. Some are afraid to tell anyone, some have been dismissed as simply stressed. And some are still years away from menopause; the hormonal ups and down are often more pronounced in "perimenopause," which can start as much as seven years earlier.

"They're terrified they are developing Alzheimer's disease," says Dr. Devi. "But the majority of them do respond to estrogen."

Other doctors who specialize in menopause say such cognitive problems are just as common as hot flashes and often more worrisome. "Women have been telling me this for 25 years," says

Elizabeth Lee Vliet, a women's health physician with offices in Tucson, Ariz., and Dallas, Tex., who notes that her patients often speak of feeling "fuzzy-headed." She takes detailed blood tests and typically prescribes 17-beta estradiol, an FDA-approved estrogen replacement. "They come back a couple weeks later and say 'It was like someone turned a lightbulb on my brain! I can think again!' "

The phenomenon isn't surprising considering that there are estrogen receptors throughout the brain, particularly in the areas that govern learning, memory and mood. Estrogen also stimulates the growth of dendritic spines that enable nerve cells to communicate, and increases the level of neurotransmitters, the brain's chemical messengers. In addition, estrogen helps regulate glucose, inflammation and antioxidants in the brain. Neuroimaging studies have shown that when estrogen declines, there is markedly less cerebral blood flow and activity.

Men's brains function differently. A 2005 study from the University of California at Irvine found that men rely much more heavily on gray matter, the information-processing centers in the brain, while women utilize more white matter, which provides networks between the processing centers. In short, women's brains make more connections. "Women remember word for word what somebody said yesterday, or last year," says Dr. Devi. But men's brains also require estrogen, which is converted from testosterone. In fact, because men continue to make testosterone all their lives, a 72-year old man typically has more estrogen than a 72-year old woman.

Discuss

Do you think that the risks of hormone replacement can outweigh the benefits of restoring a faulty memory? [Share your thoughts.](#)

Many studies have confirmed that declining estrogen affects visual and verbal memory, language and other cognitive skills. Barbara Sherwin, a professor of psychology and ob/gyn at McGill University in Canada, has shown that women who had their ovaries removed surgically and were given estradiol -- the estrogen replacement that is the same as women lose -- scored significantly higher on tests of short- and long-term memory and verbal memory than women who had received placebos. In a study published in the Lancet in 1996, researchers at Columbia University found that elderly women who took estrogen replacement were 50% less likely to develop Alzheimer's disease later in life.

Other studies have found contradictory results -- most prominently, the Women's Health Initiative Memory Study (WHIMS), part of the big government hormone trial. It reported in 2004 that women taking estrogen plus progestin had a higher risk of dementia than those who took a placebo.

But just as with other arms of the WHI, the memory study enrolled women who were well past menopause when they started taking hormones. The subjects were aged 65 to 79. Many experts now believe there is a critical period of about 10 years after menopause when estrogen can protect women's brains, while beginning to take hormones later can be harmful. (That same critical period seems to exist for heart attack and stroke as well; women in the main WHI who

started estrogen within 10 years of menopause had a decreased risk of heart attack and of death in general while women who started at older ages saw an increased risk.)

In addition, the WHIMS trial used Premarin, conjugated equine estrogen, which some experts say doesn't act on the brain as well as 17-beta estradiol. WHIMS also used a synthetic progestin that has been shown to negate some of the effects of estrogen. (Indeed, the WHIMS group that was given estrogen alone showed no increase for either Alzheimer's disease or mild cognitive impairment.) Finally, the trial used a measure of cognitive function known as the "modified mini-mental state examination" that isn't sensitive enough to assess any beneficial effects that estrogen might have had on verbal or working memory.

Many experts think the WHIMS findings needlessly frightened some women away from estrogen who might have benefited from it. Some who found the symptoms so unpleasant they've resumed. Says Dr. Devi "They say they can live with a possible future risk but that acting like an idiot today is a real problem."

There are still many unanswered questions -- including how long women should stay on estrogen. One study found that taking it for two to three years still provided protection for brain function 15 years later. Indeed, not all women suffer memory loss or fuzzy thinking at menopause, just like post-partum depression and pre-menstrual syndrome don't affect all women. "Some women are very sensitive to this decrease and some aren't," says Dr. Sherwin.

For women who are sensitive, HRT can be a lifeline. Lupe Iniguez, a tax attorney in Phoenix and mother of four found her estrogen levels so depleted in 2002 that she says "I couldn't think. I couldn't remember names of clients. I couldn't focus on documents. I resigned from every board and started to make arrangements to retire on disability." But after Dr. Vliet put her on an estradiol patch, Ms. Iniguez says, "I'm practicing full throttle again. I got my life back."