

Hormones

There is a growing body of scientific evidence suggesting that hormones, including sex hormones, may affect and be affected by the immune system. For example, both estrogen and progesterone, two important female sex hormones may suppress some immune activity. Testosterone, the primary male hormone, may also act as an immune response suppressor. During pregnancy, estrogen and progesterone levels are very high, which may help explain why pregnant women with MS usually have less disease activity.

Laboratory Studies Suggest Role of Sex Hormones

Manipulation of sex hormones in animal models of MS as well as in models of some other autoimmune diseases has been shown to prevent or ameliorate these diseases. To address this question, The National MS Society convened a Task Force on Gender, MS and Autoimmunity, which has made specific recommendations for research:

- The immune responses of men and women be studied comparatively
- The interaction of all hormones with the immune system be studied in both men and women
- A comparison study of menstruation, pregnancy and menopause in women with MS and other autoimmune diseases
- A study of genetic factors to determine if gender-related autoimmune responses are inherited
- A study of differences in the disease course between men and women

Sex Hormones as Treatments for MS

Both testosterone and estriol, an estrogen hormone that is produced during late pregnancy have been shown to have a beneficial effect in experimental allergic encephalomyelitis (EAE), the animal model of MS. Based on these findings, Dr. Rhonda Voskuhl and colleagues conducted a small trial of estriol in women in MS. Estriol appeared to reduce MRI activity in women with relapsing remitting, but not in those with secondary-progressive MS. Larger scale trials are being planned.

A similar trial of testosterone in men with MS has been completed and the data are currently being analyzed.

There have been no large-scale studies of the effects of oral contraceptives or hormone replacement therapy in women with MS who are post-menopausal. The effects of such hormonal therapies on MS are unknown. One study has suggested

that the use of oral contraceptives by women has no effect on the expected rate of developing MS.

MS and Fertility

To date, there is no evidence that either women or men with MS have lower fertility than aged matched healthy controls.

.....

See also...

Sourcebook

- Menstrual Cycle/Menopause
- Pregnancy

Society Web Resources

- Brochure: Hormones: The Basic Facts
www.nationalmssociety.org/Hormones
- Spotlight: MS and Pregnancy
www.nationalmssociety.org/Pregnancy

Clinical Bulletins for Healthcare Professionals

- Reproductive Issues in Persons with Multiple Sclerosis
- The Role of Hormones in MS
www.nationalmssociety.org/ClinicalBulletins

Books

Kalb R. (ed.) *Multiple Sclerosis: The Questions You Have; The Answers You Need* (3rd ed.). New York: Demos Medical Publishing, 2004.
—Ch. 13 Fertility, Pregnancy, and Childbirth

Kalb R. (ed.). *Multiple Sclerosis: A Guide for Families* (3rd ed.). New York: Demos Medical Publishing, 2005.
—Ch. 5 Fertility, Pregnancy, and Childbirth

The National Multiple Sclerosis Society is proud to be a source of information about multiple sclerosis. Our comments are based on professional advice, published experience, and expert opinion, but do not represent individual therapeutic recommendations or prescription. For specific information and advice, consult your personal physician.

To contact your chapter, call **1-800-FIGHT-MS** (1-800-344-4867) or visit the National MS Society web site: www.nationalmssociety.org.