

# Hypertension and Women

## Does Menopause Affect the Blood Pressure?

*By: Thomas Pickering, MD, DPhil, FRCP, Director of Integrative and Behavioral Cardiology Program of the Cardiovascular Institute at Mount Sinai School of Medicine, New York.*

It has been uncertain whether there is a true increase of blood pressure associated with the menopause, or whether there is just a gradual upward trend that is the consequence of aging. A Belgian study of 315 healthy women aged between 30 and 70 checked their blood pressure three times over a 5-year period by conventional clinic measurements, and once by ambulatory (24 hour) monitoring. During that time 44 of the women went through the menopause.

Both types of blood pressure measurement led to the same conclusion: that there is an increase of systolic pressure of about 5 mmHg that is the result of the menopause itself, that is distinct from the effects of aging and putting on weight, which also tends to happen at the time of the menopause. There appeared to be no effect of the menopause on diastolic pressure, and men of the same ages as the women showed no similar change of blood pressure.

### **Doctor's Comments**

Part of the previous confusion as to whether the menopause directly affects blood pressure has been due to the fact that blood pressure (particularly systolic) tends to go up with age. What this study was able to show was that, over the same span of 5 years, women who went through the menopause showed a bigger increase of systolic pressure than those who did not. The fact that only systolic pressure was affected led the authors to suggest that the lack of estrogens, which accompany the menopause may result in an increased stiffness of the arteries.

*Source: JA Staessen and colleagues. Conventional and ambulatory blood pressure and menopause in a prospective population study. Journal of Human Hypertension 1997;11:507*

## Do Oral Contraceptives Raise Blood Pressure?

*By: Thomas Pickering, MD, DPhil, FRCP, Director of Integrative and Behavioral Cardiology Program of the Cardiovascular Institute at Mount Sinai School of Medicine, New York.*

Soon after oral contraceptives were first introduced, more than 30 years ago, there were a number of reports of high blood pressure associated with their use. The pills contain a mixture of estrogens and progestins, but the amount of each ingredient in the preparations used today is only about one fifth of the original dose, although there is considerable variation between different brands. The Nurses' Health Study has investigated the risk of developing high blood pressure from taking the oral contraceptives now in use. The study followed the health of more than 100,000 American nurses, who were first contacted in 1989. Among other questions, they were asked about their use of oral contraceptives and their blood pressure on three occasions over a four year period. Those who reported having hypertension at the beginning of the study were excluded from this analysis. The principal findings were:

- The chances of developing hypertension were about 80% higher in the women who had used oral contraceptives in comparison with those who had not.
- The risk was slightly higher in women who had used them for more than six years. The risk did not vary significantly according to the amount of estrogens and progestins in the pills.
- Women with a family history of high blood pressure were at increased risk of developing it themselves, but they did not appear to be any more susceptible to the effects of oral

contraceptives than those with no family history.

- There was no evidence of any racial difference in susceptibility to the effects of oral contraceptives on blood pressure; if anything, black women were at lower risk than white women.
- The number of women who were estimated to have developed hypertension as a result of taking the pills was small- the equivalent of 41 cases in 10,000 women over a period of one year, or 0.4%.

### **Doctor's Comments**

This study is reassuring for women taking oral contraceptives, because although there is a definite risk of developing high blood pressure, it is quite small. Furthermore, other studies have shown that if the pressure does go up, it will usually go back to its previous level within three months of stopping the pills. One implication is that if you are taking oral contraceptives, it is important to get your blood pressure checked at regular intervals. Women who already have hypertension are generally advised not to take oral contraceptives.

**Source:** Chasan-Taber L and colleagues. Prospective study of oral contraceptives and hypertension among women in the United States. *Circulation*. 1996;94:483-489.

## **High Blood Pressure and Bone Weakening**

*By: Thomas Pickering, MD, DPhil, FRCP, Director of Integrative and Behavioral Cardiology Program of the Cardiovascular Institute at Mount Sinai School of Medicine, New York.*

There is a lot of evidence from both human and animal studies to show that high blood pressure leads to loss of calcium from the body, mainly as a result of increased amounts of calcium in the urine. Most of our calcium stores are in our bones, which leads to the question whether high blood pressure might contribute to the development of osteoporosis, a common cause of weak bones and fractures in older people, particularly women.

A survey of 3,676 elderly white women living in four parts of the USA, whose average age was 73, had their blood pressures measured and also a bone density test, which was measured a second time after another three and a half years. Comparison of the bone densities over this period enabled the estimation of the rate of bone loss. The results showed that women with the highest blood pressures had nearly double the rate of bone loss in comparison with women with low blood pressure.

### **Doctor's Comments**

Osteoporosis is a major health problem for older people and accounts for more than a million bone fractures a year in the US. It affects women more than men, and whites more than blacks (which is why this study did not include black women). The reason for the link with high blood pressure which this study shows is presumed to be the increased loss of calcium in the urine, which is a direct consequence of high blood pressure. A high salt diet also leads to more calcium loss. For people who have high blood pressure the good news is that thiazide diuretics (the sort normally used to treat high blood pressure in older people) actually reduce the calcium loss, and there is some evidence that they may help to prevent osteoporosis.

**Source:** FP Cappuccio and colleagues. High blood pressure and bone-mineral loss in elderly white women: a prospective study. *Lancet* 1999;354:971

## High Blood Pressure Isn't Well Controlled in Older Women

Data from the Women's Health Initiative offers a glimpse of hypertension treatment in older women. Based on information from nearly 99,000 women aged 50 to 79, researchers found:

- 37.8% had high blood pressure (defined as 140/90 mmHg or being on medication for high blood pressure).
- While 64.3% of those were receiving medication, blood pressure was controlled in only 36.1%.
- More women on hormone replacement therapy were hypertensive than those not taking hormones.
- 44.3% of the hypertensive women used diuretics either alone or in combination with other classes of drugs.
- Women taking diuretics alone had better blood pressure control than those taking any of the other drugs by themselves.

The researchers, writing in the journal *Hypertension*, concluded that hypertension in older women is not being treated aggressively enough, especially not in those most at risk for stroke and heart disease because of their age.

**Source:** Wassertheil-Smoller S, Anderson G, Psaty BM, et al. Hypertension and its treatment in postmenopausal women. *Hypertension*, 2000;36:780. (Abs.)