

## Can Compression Stockings Prevent the Post-Thrombotic Syndrome?

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The full report is titled "Below-Knee Elastic Compression Stockings To Prevent the Post-Thrombotic Syndrome. A Randomized, Controlled Trial." It is in the 17 August 2004 issue of *Annals of Internal Medicine* (volume 141, pages 249-256). The authors are P. Prandoni, A.W.A. Lensing, M.H. Prins, M. Frulla, A. Marchiori, E. Bernardi, D. Tormene, L. Mosenza, A. Pagnan, and A. Girolami.

### What is the problem and what is known about it so far?

Deep venous thrombosis (DVT) is a blood clot in a deep vein of the legs. Pieces of the clot can break off and travel through the bloodstream to the lungs. The clots can cause serious symptoms and even death if they are not diagnosed and treated quickly. Even when patients with DVT receive treatment, they may develop sequelae related to impaired blood flow in the leg with the clot. For example, 1 out of 3 patients develop a condition called the post-thrombotic syndrome. Symptoms may include pain, swelling, cramping, numbness, tingling, and itching. Skin on the lower part of the leg may harden or darken. Doctors often recommend that patients with DVT wear special support hose (elastic compression stockings) to prevent these problems. The stockings provide a graduated pressure that is firmer at the bottom and looser at the top to help improve blood flow back to the heart. Unfortunately, few studies show whether the stockings actually prevent the post-thrombotic syndrome.

### Why did the researchers do this particular study?

To see whether below-knee elastic compression stockings prevent the post-thrombotic syndrome in patients with DVT.

### Who was studied?

180 adults with a first episode of DVT. All received standard treatment with blood-thinning medications for at least 3 to 6 months.

### How was the study done?

Patients being treated with blood thinners for a first episode of DVT were recruited from a university hospital. The patients were randomly assigned to wear or not wear a below-knee elastic compression stocking on the leg with the DVT for 2 years. The patients received routine outpatient care from their regular doctors. Researchers who were unaware of the treatment assignments checked the patients 3 months after the DVT and then every 6 months, or earlier if the patients developed problems, for signs and symptoms of the post-thrombotic syndrome. Then, the researchers compared the numbers of patients in the 2 groups who had the post-thrombotic syndrome.

### What did the researchers find?

More than 90% of the patients assigned to the stockings group reported wearing stockings daily during the 2-year period. Five of 90 patients given stockings stopped using them because of itching, redness, or discomfort. Approximately 25% of the patients assigned stockings developed the post-thrombotic syndrome within 2 years compared with approximately 49% of those not assigned stockings. About 13% to 14% of the patients in both groups had repeated episodes of DVT.

### What were the limitations of the study?

Both the patients and their doctors knew who wore the stockings.

### What are the implications of the study?

While almost half of all patients with DVT develop the post-thrombotic syndrome, wearing below-knee compression stockings can reduce this rate by about 50%.

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