



Shelbourne Knee Center
at Methodist Hospital
Specialized Care for Knee Injuries

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**Knee Pressure Dressings and Their Effects on Lower Extremity Venous Capacitance and Venous Outflow.
Mindrebo N, Shelbourne KD: *Orthopaedics International Edition* 2:273-280, 1994**

Postoperative knee pressure dressings significantly affect lower extremity venous blood flow, and certain dressings may predispose patients to deep venous thrombophlebitis. Strain gauge plethysmography was used to test five different knee dressings for their effect on lower extremity venous outflow and venous capacitance in 10 healthy subjects. One person in the laboratory applied all knee pressure dressings at consistent application pressures and recorded them. Another technician applied the strain gauge and then recorded all plethysmographic data. The dressings tested included Cryo/Cuff®, and Ace® wrap, a modified Jones dressing, a neoprene sleeve, and Tubigrip®. While all dressings affected deep venous hemodynamics to a significant but comparable degree, only the Ace® wrap consistently affected venous outflow and venous capacitance to such a degree that the strain gauge plethysmographic test would have been interpreted as equivocal or abnormal, indicating presence of deep venous thrombosis. This study suggests that all standard knee compression significantly affect deep venous hemodynamics. At the time of tourniquet deflation, the effects of the Ace® wrap were most severe of the dressings tested, i.e. slow shallow rise in venous capacitance but essentially no venous outflow. An ideal postoperative knee dressing should provide comfort, minimize swelling and intraarticular hemarthrosis, and have a minimal effect on deep venous hemodynamics.