

**FLUID PRESSURES IN THE RABBIT POPLITEAL AFFERENT
LYMPHATICS DURING PASSIVE TISSUE MOTION****F. Ikomi, B.W. Zweifach, G.W. Schmid-Schönbein**

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ABSTRACT

The mechanisms of pressure and flow generation in the initial lymphatic network remain undefined in many details. Active pump mechanisms by lymph smooth muscle contraction have been demonstrated in collecting lymph ducts while passive mechanisms by periodic lymph compression in noncontractile initial lymphatics have received relative little attention. The aim of this study was to examine lymph flow before and during periodic passive tissue deformation under different lymph outflow pressures. Lymph flow rate and lymph outflow pressure were measured in rabbit popliteal prenodal lymphatics during whole leg rotations. The hind legs were rotated in a sagittal plane at selected frequencies. During constant leg rotation, lymph flow rates reached steady levels which depend on lymph outflow pressure. When lymph outflow was occluded, intralymphatic pressures increased progressively to levels which depend on leg rotation frequency. Both lymph flow rate and pressure showed higher values with foot edema than in the absence of foot edema. These results suggest that periodic tissue deformation, lymph outflow pressure, and interstitial free fluid volume are important determinants of the lymph flow rate.