

## LYMPHATIC MANIFESTO

1. All regions of the body are drained by the lymphatic system. Usually, initial (terminal, capillary) lymphatics are joined to remote parts of the interstitium by tissue channels only a few tenths micra long, like blood exchange vessels. At a few sites, these channels form longer connections (many centimeters) but drain into true initial lymphatics eventually. In the brain and retina these communications lie outside the skull. Except in well-encapsulated organs, edema fluid enters initial lymphatics only with variations in tissue pressure caused by movement, peristalsis, respiration, arterial pulsation, contractions of adjacent muscles, and other haphazard forces. These factors help propel lymph into larger lymphatics where intrinsic contractions in the lymphatic wall promote flow.
2. The lymphatic system transports only a tiny fraction of small molecules from tissues, but even this comparatively limited volume helps minimize edema. Whereas small molecules primarily diffuse directly into the bloodstream, macromolecules and particulates are transported from the interstitium almost exclusively by the lymphatic system. Some tissue macromolecules undergo proteolysis and as smaller molecules diffuse directly back into the venous system.
3. The mere presence of edema signifies that regional lymphatic flow (as well as other pathophysiologic mechanisms operating to prevent edema) are overloaded. This derangement arises either from an excess of capillary filtrate with normal but overworked lymphatics, or alternatively because of defective lymphatics with an unaltered lymph load, or both phenomena.
4. If lymphatics draining a large region (e.g., a limb) are experimentally obliterated or totally obstructed, death may ensue in 1-3 weeks from protein loss via interstitial-cutaneous extravasation. This extraordinary phenomena is not seen clinically because lymph stasis in man is more gradual and seldom complete.
5. Failure to take into account lymphatic transport is a potential source of considerable error in interpreting blood microcirculatory experiments.
6. While external surface edema is often appreciated clinically, visceral edema is commonly overlooked or underestimated.
7. Edematous tissues exhibit poor oxygenation, reduced functional capacity, and heal slowly after injury. Persistent high protein edema is a prominent cause of chronic inflammation and fibrosis.
8. Sudden interference with lymphatic transport can provoke lymphedema especially when the system is already defective or overloaded. Derangement in lymph dynamics may derive from as insignificant an insult as an insect bite or as complex a one as iatrogenic damage after lymphadenectomy, lymphangiography (where oily contrast damages lymphatic endothelium), irradiation, or operative injury to major lymph trunks.
9. Lymphedema is nowadays effectively treated by operative and non-operative means including physiotherapy, com-

pression, and drugs, and thus it is improper to neglect it. As in other high-protein peripheral edemas, diuretic drugs and dietary salt restriction are of limited usefulness.

10. The objectives of the International Society of Lymphology are to promote knowledge about the lymphatic system including structure, function, its role in immunology and neoplasia, and to

foster clinical investigation and treatment of lymphatic disorders including insufficiency.

J. R. Casley-Smith, D.Sc., M.B.  
President, International Society of Lymphology  
University of Adelaide  
S.A. 5001, Australia