Method	Resources Needed	Application	Advantages	Disadvantages
Circumference Measurement	Tape Measure	Measure limb circumference at specific anatomic points Difference of > 2cm is considered significant	Easy to perform in office Can monitor disease progression	Imprecise Inter/intraoperator variability
Water Displacement	Volumeters	Limb is submerged into water and overflow is measured Displacement >200ml considered significant	Reliable Includes hand and feet	Does not localize swelling Contraindicated in open wounds
Bioimpedance Spectroscopy	Bioimpedance device	Measures resistance to electrical current in comparing the composition of fluid compartments within the body	Quick Allows for early detection Comparison calculated to healthy individuals (Lymphedema Index aka L-Dex ratio, significant if >+10)[6] a or a score that has increased more than 6.5 units from baseline measure.	Expensive Not useful for bilateral limb lymphedema Unable to stage[17]
Perometry	Perometer (infrared optoelectronic device)	Affected limb is inserted into a frame in which parallel infrared light beams are emitted at right angles to each other, and the frame is moved along the limb	Minimal observer bias Can detect 3% limb volume change Measures volume, contour, cross sectional area, and percentage difference	Expensive
3D Laser Scanning	Laser scanner	The limb is scanned at reference points and allows for real-time 3D reconstruction of the upper limb	Can identify small variations in arm volume	Expensive Time Consuming
Lymphoscintigraphy	Radiotracer, scintillation gamma camera	Radiotracer injected in distal limb and proximal lymph node uptake is evaluated	Gold standard for diagnosis Useful for determining lymph node uptake, lymphatic ducts and dermal backflow	Unable to identify small lymphatic leaks
Indocyanine Green (ICG) Lymphography	ICG, near-infrared camera	Intradermal injection of ICG at distal limb	No radiation Good for intraoperative measurements	Expensive Superficial lymphatics only
Magnetic Resonance lymphangiography	MRI machine		No radiation High resolution Can evaluate lymphatic function	Expensive Technically demanding
Computed Tomography	CT machine		Can measure limb volume Can differentiate between lymphedema, general edema and cellulitis	Expensive Radiation exposure