

## EPC, CEC and Microvesicles: What is the Significance for CKD Patients?

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Endothelial progenitor cells (EPC) are cells derived from the bone marrow that circulate in the blood stream and can exhibit phenotypic characteristics of endothelial cells. They are thought to be directly or indirectly involved in postnatal vasculogenesis and repair of injured endothelium. Circulating endothelial cells (CEC) are mature endothelial cells in the circulation and endothelial vesicles or microparticles are thought to be derived from the membranes of endothelial cells as a result of injury or activation. Recent research has focused on using these markers of endothelial injury and repair to assess the state of endothelial health. These efforts have been hampered by lack of uniformity in methodology and terminology. I will review the common techniques used to identify and isolate these cells, clinical studies in patients with chronic kidney disease where they serve as markers of endothelial health and predictors of outcome, and possible mechanisms of progenitor cell dysfunction in chronic kidney disease.