Lung endothelial cells from pulmonary arterial hypertension patients have reduced mitochondria numbers that increase after exposure to nitric oxide (electron microscopy image). Positron emission tomography scan of a patient with [18F] fluoro-deoxy-D-glucose reveals increased lung glucose uptake, without changes in computerized tomography chest scan, which is consistent with reduced mitochondrial respiration and greater cellular reliance on anaerobic glycolysis for energy in vivo. [PROC NATL ACAD SCI USA 2007;104:1342-1347.]