Airtight sockets are believed to provide better pressure distribution, comfort, fit, and performance than non-airtight sockets. The purpose of this case study was to establish any correlation between perceived and actual differences in distal pressures between the residual limb and the socket for both airtight and non-airtight locking sockets. The experiment successfully demonstrated a significant measurable difference in the distal pressures experienced during the normal gait cycle. Analysis of the results revealed unexpected benefits in airtight vs. non-airtight sockets which indicate that not only is pressure reduced in an airtight socket, but overall fit and compliance are enhanced significantly. The Poster will cover the methods used, and results of this case study.