Objective
Evaluate the ability of extracorporeal CO₂ removal to maintain hemodynamic stability during treatment of ARDS.

Study Design
Randomized prospective experimental outcome study comparing extracorporeal CO₂ removal (n = 20) with sham (n = 8).

Study Population
28 adult sheep (Suffolk ewes).

Methods
Smoke inhalation injury (LD 50) plus 40% 3rd degree burn.
Measurement of ABG, CO₂ removal performance, PaO₂/FiO₂ ratio, mechanical ventilation settings, outcomes.

Results
At 48 hours after start of extracorporeal CO₂ removal heart rate, mean arterial pressure, cardiac output, pulmonary artery pressure, pulmonary arterial wedge pressure and central venous pressure were not different between groups.
Extracorporeal CO₂ removal allowed significant reduction in minute ventilation, FiO₂, tidal volume, peak inspiratory pressure, and respiratory rate while normocapnia was achieved.

Commentary
Extracorporeal CO₂ removal is an effective method that is hemodynamically well tolerated.