

## Supplementary Figure 3. Effect on $P_a CO_2$ of Hb.

Lines show the  $P_aCO_2$  for Hb of 20, at each shunt fraction. Red markers show the  $P_aCO_2$  for Hb of 5 at the corresponding shunt fraction. Missing values are for data that is physiologically impossible ( $C_{\overline{V}}O_2$  of < 0 would be required), which is more likely when Hb is low,  $\frac{\dot{Q}_S}{\dot{Q}_T}$  is high, and  $\dot{Q}_{EC}$  is low. At any given value of  $\dot{Q}_{EC}$  and shunt fraction, the maximum difference in  $P_aCO_2$  between Hb of 5 and 20 was 1.6 mm Hg, providing both data points were physiologically tenable.