




# Intrapulmonary shunt measured by bedside pulse oximetry predicts worse outcomes in severe COVID-19

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**Using simple bedside pulse oximetry to create oxygen-haemoglobin desaturation curves may be useful in triaging patients with COVID-19. Intrapulmonary shunting is associated with worse outcomes in COVID-19, and the degree of shunt may predict outcomes.** <https://bit.ly/2KVv0m2>

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## To the Editor:

Hypoxaemia is a key indicator for hospital admission with coronavirus disease 2019 (COVID-19) [1, 2]. Controversy surrounds the pathophysiology underlying hypoxaemia, with intrapulmonary shunt, mismatch in ventilation-to-perfusion ( $V_A/Q'$ ) ratio, endothelial injury, microvascular coagulation and host inflammatory response hypothesised to play a role [3–6]. It has recently been proposed that COVID-19 pneumonia may exist as two phenotypes dependent on the preservation of lung mechanics and the relative contribution of  $V_A/Q'$  mismatch and intrapulmonary shunting to hypoxaemia [7]. We hypothesised that  $V_A/Q'$  mismatch and intrapulmonary shunting are present in COVID-19 pneumonia and aimed to assess their effect on outcome. A mathematical model was used to construct oxygen-haemoglobin dissociation curves (ODC) [8] to determine the degree of shunt and  $V_A/Q'$  mismatch in a cohort of patients with severe COVID-19. Factors contributing to shunt and mortality were identified.