

Comment in response to CrossTalk debate:

‘Skeletal muscle oxidative capacity is/is not altered in patients with cystic fibrosis’

**Title: Skeletal muscle metabolic abnormalities in cystic fibrosis-
responses of the metabolic system relative to changes in exercise intensity**

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We read with interest the opposing viewpoints of Rodriguez-Miguel *et al.* (2017) and Hulzebos *et al.* (2017), in the CrossTalk series concerning whether skeletal muscle oxidative capacity is altered in individuals with cystic fibrosis (CF). Both groups make convincing cases for their respective position but an issue not addressed is the influence of exercise intensity on the bioenergetics of this patient group. We recently demonstrated how the muscle oxidative dysfunction during exercise in CF appears to be intensity dependent (Saynor *et al.*, 2016). This was based on the finding that the kinetics of pulmonary oxygen uptake, used to reflect muscle oxygen uptake dynamics, were slowed during very heavy (60% delta) but not moderate intensity (90% gas exchange threshold) exercise in young people with mild-to-moderate CF (Saynor *et al.*, 2016). Our observations correspond with an earlier observation in adolescents with CF, demonstrating impaired muscle oxidative metabolism during intense 90 s exercise but not during shorter, less intense exercise using ³¹P-magnetic resonance spectroscopy (Wells *et al.*, 2011). We propose these observations suggest that, in young patients with mild-to-moderate CF, oxidative dysfunction is exposed during intense exercise and this may be related to morphological, muscle oxygen delivery and intrinsic muscle metabolic differences that become limiting at higher metabolic rates.

206 words

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