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## The authors respond: Alternatives to chest compression CPR



To the author,

We thank you for your interest in our manuscript “Leg-heel chest compression as an alternative for medical professionals in times of COVID-19”. We are aware of the limitations of this unusual technique and would not recommend its widespread unreflective use. But special circumstances like COVID-19 pandemic require unconventional thinking and technique to provide safety for health care professionals. In our opinion, leg-heel chest compression may be an alternative explicitly for special circumstances like COVID-19 with lack of proper personal protection equipment (PPE) or cramped spatial conditions. None of our participants had fatal balance problems and none of the cited literature of our manuscript described severe adverse events because of balance problems. Potential damage of PPE during leg-heel chest compression is an interesting point we think. In our setting we did not notice damaged PPE because of leg-heel chest compression and do not think that with less movement of the upper body there will be more damage in comparison to standard chest compression. Nevertheless, we are thinking about a follow up investigation regarding this topic. More or less surprisingly the effectiveness of leg-heel chest compression method was not as inferior as expected compared to standard care. Analyzing our data and previous research as described in our manuscript, considerably too great compression depths did not occur so we would not expect higher rates of compression related injuries. We consent to that distance will not make potential infectious aerosols absent but may be the only ubiquitous available form of “PPE” in the sense of staff protection during pandemics. We also agree that conditions during simulation are not the same as in hospitals. In a first approach, we implemented a simulation study to show risks, benefits and feasibility in terms as a proof of concept. Out of this there definitely will follow further investigation in hospital conditions. Besides that, we should still be aware of the unsatisfactory quality of standard chest compression and focus on frequent training.

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## Declaration of competing interest

None.

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