Strong corruption of electrocardiograms caused by cardiopulmonary resuscitation reduces efficiency of two-channel methods for removing motion artefacts in non-shockable rhythms.

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Overview: Cardiopulmonary resuscitation (CPR) artefact removal methods provide satisfactory results when the rhythm is shockable but fail on non-shockable rhythms. We investigated the influence of the corruption level on the performance of four different two-channel methods for CPR artefact removal.

Conclusions: Using a simplified data model we showed that, when the ECG rhythm is non-shockable, two-channel methods could not reduce CPR artefacts without affecting the rhythm analysis for shock recommendation.. Future investigations should both include the refinement of filter methods and also focus on reducing motion artefacts already at the recording stage.