

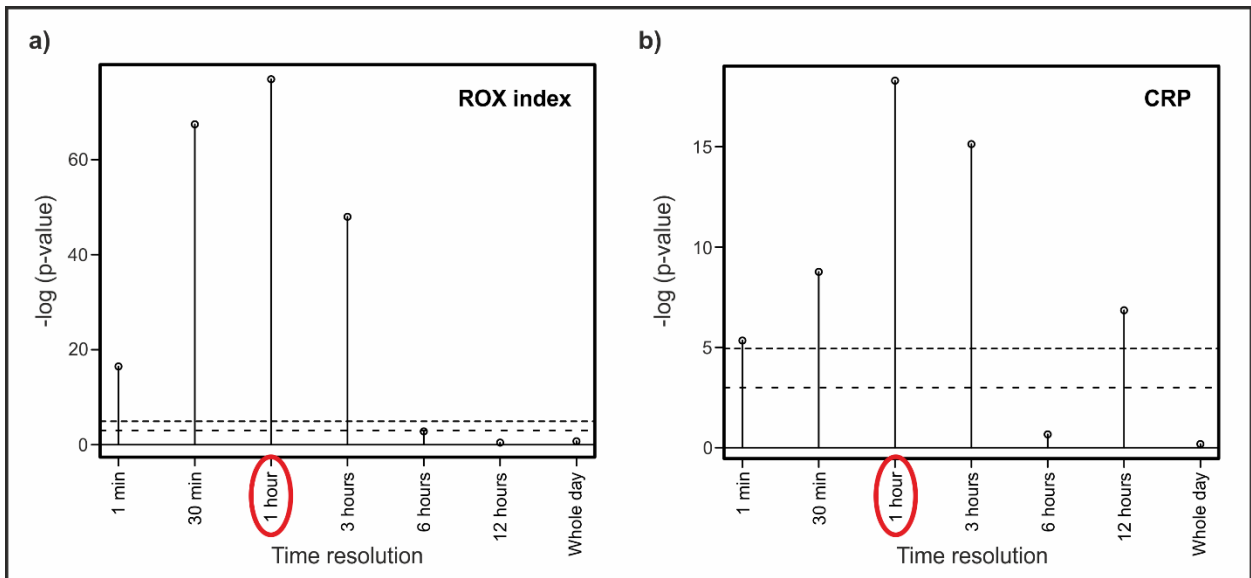
## Online supplementary material

### Smartphone-based cough monitoring as a near real-time digital pneumonia biomarker

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**Supplemental Figure 1. Biomarker development analysis.** Different time units of cough counts were analyzed for their association with established a) clinical and b) laboratory markers of pneumonia disease activity. For both the ROX index and CRP – reflecting oxygenation and inflammation, respectively – the strongest statistical association was observed for a 1 hour time resolution (highlighted in red), leading us to focus our analyses on hourly cough counts.

*Abbreviations used: CRP, C-reactive protein.*



**Supplemental Figure 2. Individual cough trajectories.** Shown are time-resolved coughing data for all 44 study subjects over the length of their individual hospital stays. Cough was continuously monitored and is shown as the number of coughs per 6 hours. The 6 hour intervals relate to the actual starting time point of cough monitoring and may therefore be misaligned with individual calendar days.

