



## Background

Manikin studies have demonstrated that feedback/prompt systems improve the quality of CPR. Link CPR (SunLife, China) is a newly designed feedback/prompt device that can provide real-time chest compression (CC) depth, rate, chest recoil feedback and data review. In this study, we investigated the effects of LinkCPR on the quality of CCs during hands-only CPR performed by laypersons based on the 2015 AHA guidelines. We hypothesized Link CPR would improve the quality of CCs performed by laypersons.

## Methods

Eighty laypersons were assigned randomly to perform CPR on manikins with (Link group) or without (C group) Link CPR. Participants underwent manual CPR training and took a written basic life support examination; they were then required to perform two minutes of hands-only CPR. The quality of CPR was quantified as the percentage of correct CCs (appropriate depth, rate, and complete recoil) each minute.

## Results

Table 1. Demographic and performance of hands-only CPR.

	C group	Link group
<b>Demographics</b>		
Female, n (%)	19 (51.4%)	20 (51.3%)
Age, yrs	22 ± 4	21 ± 6
BMI, kg/cm <sup>2</sup>	24.1 ± 2.9	22.9 ± 3.1
<b>Mean rate of CCs, n/min</b>		
The first minute	128 ± 13	112 ± 12 <sup>b</sup>
The second minute	133 ± 14	116 ± 10 <sup>b</sup>
<b>Mean depth of CCs, mm</b>		
The first minute	45 ± 8	52 ± 7 <sup>b</sup>
The second minute	41 ± 10 <sup>a</sup>	46 ± 9 <sup>a, b</sup>
<b>Numbers of CC with incomplete recoil, n</b>		
The first minute	8.8 ± 4.4	4.7 ± 3.2 <sup>b</sup>
The second minute	9.9 ± 5.3	5.2 ± 3.9 <sup>b</sup>
<b>Proportion of CC with all three components being correct, %</b>		
The first minute	27 ± 19	57 ± 16 <sup>b</sup>
The second minute	16 ± 14 <sup>a</sup>	40 ± 14 <sup>a, b</sup>

CPR, cardiopulmonary resuscitation; C group, control group; Link group, perform CPR with LinkCPR; BMI, body mass index; CCs, chest compressions. Values are presented as mean ± SD.

<sup>a</sup>*p*<0.05, vs. the first minute; <sup>b</sup>*p*<0.05, vs. C group.



Thirty-nine participants in the Link group and 37 participants in the C group completed the study. There were no significant differences in gender and body mass index between groups. Reductions in the mean depth of CCs and proportion of correct CCs after the first minute of CPR were observed in both groups. However, better performance was achieved by rescuers in the Link group when compared with those in C group during each of the 2 minute CPR periods (Table 1).

## Conclusions

Link CPR improves the quality of hands-only CPR performed by laypersons following the standards of the 2015 AHA guidelines.

## References

1. Atkins DL, Berger S, Duff JP, et al. Circulation. 2015; 132 :S519-25.
2. Hsieh TC, Wolfe H, Sutton R, et al. Resuscitation. 2015;93:35-9.

## Disclosure

None