

## Depth and Rate of Chest Compression has Impact on Survival



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A review of research by UT Southwestern Medical Center Emergency Medicine physicians shows that the depth of chest compressions and the rate at which they are applied can have a significant impact on the survival and recovery of patients. The findings have been published in *Circulation* and *Critical Care Medicine*.

The reviews show that CPR compressions deeper than 5.5 centimetres resulted in decreased survival. A possible explanation may be the collateral damage to other internal organs.

The results are contradictory to popular belief as well as to the guidelines provided by the American Heart Association that recommend compressing the chest at least 5 centimetres and do not provide any upper limit.

"Most people do not recognise that it takes quite a bit of thrust to compress the chest 2 inches," said Dr. Ahamed Idris, Professor of Emergency Medicine and Internal Medicine at UT Southwestern, who works with the Resuscitation Outcomes Consortium. "About 60 lbs. of pressure are required to reach this depth. But in some cases a burly fireman or well-intended volunteer can go way past that amount, which can harm the patient."

The research team found that the rate at which chest compression was applied is most important and that compression rates of 100 to 120 per minute are optimal for survival.

According to Dr. Idris, Director of the Dallas-Fort Worth Center for Resuscitation Research sponsored by the National Institutes of Health, the survival rate is greatly dependent on the quality of the CPR. The depth of chest compression and the rate at which they are applied can have important results in the first few moments of cardiac arrest.

The findings indicate that half of responders are giving compression too fast. Around one third of the responders are giving 100 compressions per minute and 20 percent above 140 per minute. Dr. Idris is also the Section Chief of Research in Emergency Medicine and a trainer of paramedics and he suggests that the beat of the children's song "Row, Row, Row Your Boat" can be a good measure to reach 100 to 120 beats per minute.

According to American Heart Association guidelines, two steps should be followed in an emergency situation. These include calling 911 and starting chest compressions immediately. Dr. Idris adds that this should be continued till paramedics arrive.

Source: UT Southwestern Medical Center

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