DELIVERY OF CARDIOPULMONARY RESUSCITATION IN THE MICRO- 
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INTRODUCTION. Cardiopulmonary resuscitation (CPR) is a life 
saving intervention that is essential for the initial stabilization of the ill or 
injured patient. Although advanced cardiac life support (ACLS) protocols 
are well documented, limited research has been devoted to evaluating the 
adequacy of CPR in microgravity. This study was the first to demonstrate 
the effects of zero-g gravity on the delivery of effective CPR.

METHODS. A manikin humanoid, the Airway Management 
Training System (AMTS), was used to simulate human head and neck 
size during CPR. The AMTS was placed in a supine position and 
enveloped with a soft rubber-like material. CPR was delivered using 
standard methods and equipment, including a self-inflating airway 
management device (CCAD), a self-inflating bag and mask ventilator, and 
standardized compressions. The quality of CPR was assessed using 
manual monitors and simulated pulseless ventricular fibrillation (PVT) 
and shock algorithms. The study was conducted in a simulated 
microgravity environment using the KC-135 aircraft.

RESULTS. The CCAD was found to be effective in delivering 
effective chest compressions, but positional limitations were observed. 
The mask was also effective in delivering adequate ventilation.

CONCLUSIONS. The delivery of effective CPR in microgravity 
requires modifications to standard techniques and equipment. 
Further research is needed to optimize CPR delivery in this 
environment.