WEIL SCC™ - SMART CHEST COMPRESSOR
THIRD GENERATION CPR TECHNOLOGY

- 3D Chest compression
- Real-time compression depth feedback
- Compression modes 30:2 / Continuous compression
- CPR data review and analysis
- Complies with ERC/UK Resuscitation Guidelines
- Portable, robust and lightweight design
WEIL SCC™ - SMART CHEST COMPRESSOR
THIRD GENERATION CPR TECHNOLOGY

ECD feedback

Weil SCC™ - The first mechanical chest compressor device to deliver real-time data feedback. ECD (Effective Compression Depth) enables assessment of depth and effectiveness of compressions.

ERC/UK Resuscitation guidelines recommend the depth of chest compressions should be 5 cm, also compressions should be uninterrupted and compression-ventilation (CV) ratio of 30:2 is used.

Weil SCC™ provides instant feedback for:

- Effective Compression Depth
- Compression Duration
- Compression Frequency
- Compression Mode

“The recommended depth of compression is at least 5 cm (not more than 6 cm) and the rate is at least 100 compressions min (not more than 120 min). Allow the chest to completely recoil in-between each compression”.

ERC/UK Resuscitation Guidelines

Intelligent data analysis

Weil SCC™ - PC software provides data storage for up to 10,000 patient records including:

- Effective Compression Depth
- Compression Duration
- Compression Frequency
- Compression Mode

All data can be transmitted via WiFi or Bluetooth to PC. The dedicated software enables data synchronisation and data analysis for assessment by clinicians.

“Rescuers begin CPR if the victim is unconscious or unresponsive and not breathing normally (ignoring occasional gasps). A single compression-ventilation (CV) ratio of 30:2 is used by the single rescuer of an adult or child (excluding newborn) out of hospital, and for all adult CPR”.

ERC/UK Resuscitation Guidelines
3D Compression Technology
High Efficiency - Less Traumatic

3D Compression technology combines ‘both’ cardiac and thoracic pump theory. The patent is owned by Weil Institute of Critical Care Medicine (fig a).

In addition to vertical chest compression between sternum (chest bone) and spine, the torso restraint is placed underneath and around the patient to firmly secure the compressor on the patient; this allows compression of the whole chest cavity to promote instant blood circulation. Resulting in highly effective three dimensional chest compression (fig b). Research studies have confirmed that 3D chest compression technology can shorten the compression cycle and the number of electrical shocks. Importantly using Weil SCC™ technology minimises rib fractures and neuro deficit. Weil SCC™ technology is non-invasive, improves hemodynamic efficacy during CPR and is the closest method to resemble the heart’s 3D pumping action.

<table>
<thead>
<tr>
<th>Medical parameter</th>
<th>Weil SCC™ Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect on Coronary Perfusion Pressure (CPP)</td>
<td>3D chest compression effectively increases CPP</td>
</tr>
<tr>
<td>Intrathoracic Positive Pressure</td>
<td>3D chest compression facilitates better blood circulation</td>
</tr>
<tr>
<td>Intrathoracic Negative Pressure</td>
<td>3D chest compression facilitates better blood circulation</td>
</tr>
<tr>
<td>Carotid Blood Flow (CBF)</td>
<td>3D chest compression facilitates better blood perfusion to the brain</td>
</tr>
</tbody>
</table>

* data source: Wei Chen, MD, PhD; Yining Weng, MD, PhD; Xiaobo Wu, MBE; Shijie Sun, MD, FCCM; Joe Biser, MSE; Max Harry Weil, MD, PhD, MCCM; Wanchun Tang, MD, MCCM. The effects of a newly developed minaturised mechanical chest compressor on outcomes of cardiopulmonary resuscitation in procine model. Crit Care Med 2012 Vol 40 No 11
Technology advances....

Within emergency medicine there is a requirement for high quality CPR. There are known limitations with manual CPR; but the emergence of technologies in recent years started to address the requirements to improve CPR and deliver new chest compression technology, to improve blood flow whilst performing CPR. The main objective being to revive the patient and improve blood flow to the heart and brain.

3rd Generation Technology

3rd Generation mechanical chest compression technology:

3D Compression
Cardiac and Thoracic Pump Theory

‘3D Compression’ - 100% of the chest cavity is enclosed with the torso restraint. In addition it provides multi-point compression, the whole chest cavity is compressed to simulate heart pump function.

2nd Generation Technology

2nd Generation mechanical chest compression technology:

Load Distributing Band Compression
Thoracic Pump Theory

‘Load Distributing Band Compression’ - major step forward from single point compression, it squeezes a wide area of the chest (50%) with multi point compression spreading out the force of compression.

1st Generation Technology

1st Generation mechanical chest compression technology:

Single Point Compression
Cardiac Pump Theory

‘Single Point Compression’ - simulates hands-only compression, single point compression, high impact force.
Portable, Easy to use and Rapid application

Rapid application for treatment of sudden cardiac arrest patients, apply immediate manual CPR, followed by effective continuous uninterrupted mechanical chest compression

- Rapid deployment minimises CPR interruptions
- Connects directly to hospital or external air supply
- Simple patient application, no tedious positional adjustment or fixation is required
- Complies with ERC/UK Guidelines

“It is well documented that interruptions in chest compression are common and are associated with a reduced chance of survival. The ‘perfect’ solution is to deliver continuous compressions whilst giving ventilation independently”.

ERC/UK Resuscitation Guidelines

Continuous Uninterrupted Chest Compressions

Major technology breakthrough - CPR chest compression is no longer restricted to stationary locations, now with uninterrupted chest compression for the whole course of treatment and transfer

- Weil SCC™ is one of the smallest chest compressors and is designed to be truly portable and yet is compact and robust
  - Portable (~2 kgs), easy to carry
  - Modes 30:2/Continuous
  - Effective Compression Depth (ECD) feedback

“There is increased emphasis on the importance of minimally-interrupted high-quality chest compressions throughout any ALS intervention: chest compressions are paused briefly only to allow specific interventions”.

ERC/UK Resuscitation Guidelines
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ERC/UK Resuscitation Guidelines

**Bibliography**

Wei Chen, MD, PhD; Yinlun Weng, MD, PhD; Xiaobo Wu, MBE; Shijie Sun, MD, FCCM; Joe Bisera, MSEE; Max Harry Weil, MD, PhD, MCCM; Wanchun Tang, MD, MCCM. The effects of a newly developed miniaturised mechanical chest compressor on outcomes of cardiopulmonary resuscitation in procine model. Crit Care Med 2012 Vol 40 No 11


