



TheAlfred

MONASH University

# Cardiothoracic Surgery

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## Donor Heart Preservation

Improved techniques of preservation can enhance the current results of cardiac transplantation and reduce the incidence of primary graft failure once a transplant has been done. Primary graft failure often necessitates the use of mechanical support for the heart to allow the patient to survive and recover. Improved preservation may also allow the use of a new source of donor hearts, namely donation after cardiac death (DCD) hearts. DCD donors are patients who have technically died because of cessation of heart beat followed by brain death. However, with improved techniques it may be possible to restart the heart, revive it and subsequently use it as a transplant. Our new technique of preserving transplant hearts is to perfuse them continuously between donation and transplantation with a novel protective solution. We have shown that perfusion preservation is highly superior to conventional storage in ice.

## Integrative Medicine

Improving cardiothoracic surgery patients' pain and anxiety after surgery has been the main focus in 2010. A randomised study comparing massage therapy delivered on the wards to an equivalent period of rest time was conducted. The study also determined feasibility of providing such a service on a busy ward and assessed patient and staff satisfaction with the intervention.

## Major Findings

We have shown that preservation of donor hearts by perfusion is superior to the conventional technique of cold storage. This perfusion enables prolonged preservation of normal donor hearts and resuscitation of donation after cardiac death hearts.

We have shown that massage given to patients after cardiac surgery significantly reduced perceived pain, anxiety and muscle tension and induced relaxation and increased patients' hospital experience when compared to an equivalent amount of rest time. In particular, a highly significant 52% reduction in pain was reported after a 20 minute

*Dr Lesley Braun and Cathy Reardon (back left and right) coordinate the stress reduction after cardiac surgery by massage study.*



*Accurately calibrated perfusion is critical for the success of a transplant. From left: Alfred perfusionists Mark Mennen and Robin McEgan, Professor Frank Rosenfeldt (Chief Investigator) and Chris Egan (Research Assistant).*

massage delivered to patients on days 3 or 4 after surgery. A significant reduction in pain was also observed when massage was applied on days 5 or 6, thereby confirming the original result. Acceptance of the therapy by nurses and physiotherapists was excellent. Over the study period, an additional 91 referrals were made for the massage service, predominantly by physiotherapy staff, indicating an unmet need for this therapy.

Due to the significant benefits of massage therapy on pain, anxiety, muscle tension and relaxation, and interest from nursing and physiotherapy staff to implement a service, we have been negotiating with Endeavour College to provide massage to patients free-of-charge. We have developed a 2-day induction program for potential massage therapists to provide orientation to cardiac surgery, the cardiothoracic patients needs and medications, working in a hospital environment and OHS issues. Massage therapists will be supervised by an experienced supervisor with experience working at The Alfred hospital. This will directly translate the research findings into practice and shortly benefit patients.

## Current Projects

- Donor heart preservation by perfusion – Franklin Rosenfeldt
- Heart donation after cardiocirculatory death – Franklin Rosenfeldt
- Cardiac Wellness Project – Lesley Braun and Franklin Rosenfeldt
- Rib plating for chest trauma – Silvana Marasco
- Stress reduction after cardiac surgery by massage – Lesley Braun
- Evaluation of carbon dioxide insufflation during cardiac surgery – Silvana Marasco

## Postgraduate Students

2 PhD Students  
2 Masters Students

## Publications

20 Journal Articles  
1 Book  
4 Book Chapters