

PhD Scholarship Proposal

Advanced Heart Failure & Cardiac Transplant Service



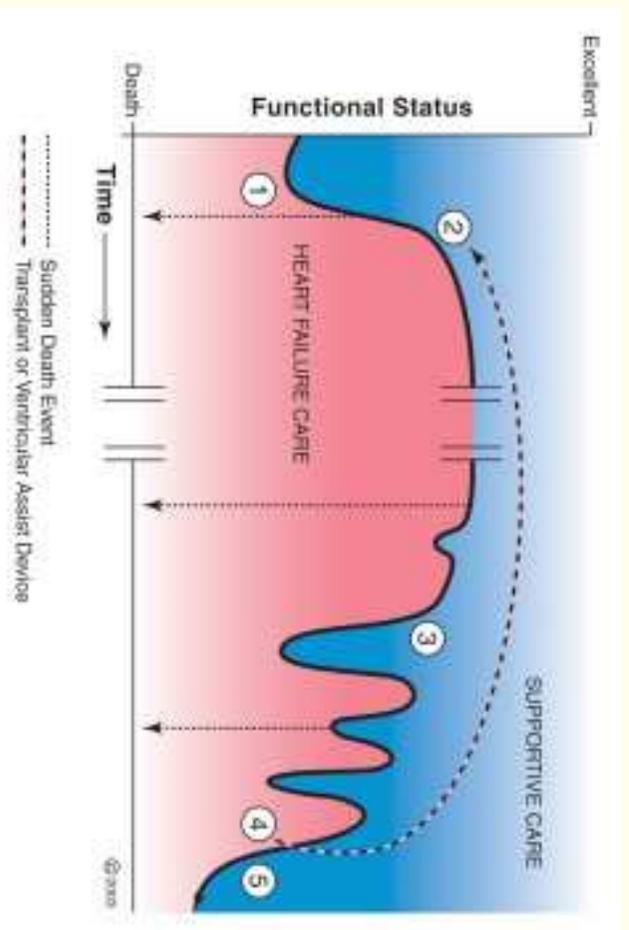
Dr. Andrew Maiorana, PhD
Senior Exercise Physiologist

Advanced Heart Failure & Cardiac Transplant Service
Royal Perth Hospital
&

Senior Research Fellow
School of Physiotherapy
Curtin University

Heart Failure

An inability of the heart to pump sufficient blood to meet the requirements of the body.



Ventricular Assist Devices (VADs)

- Augment cardiac output in heart failure



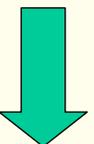
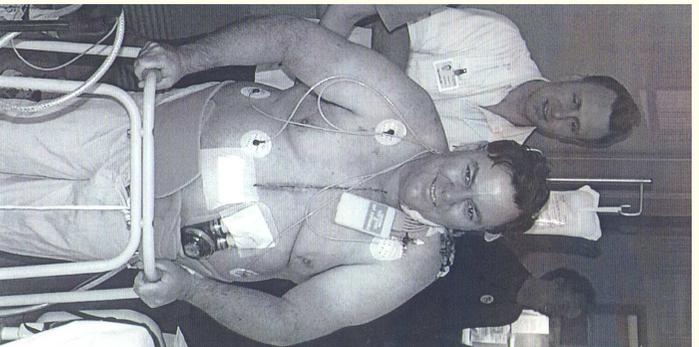
RPH Experience with VADs

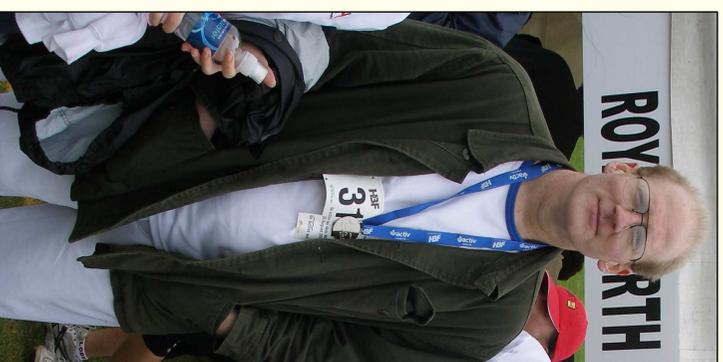
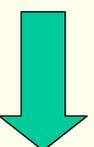
- 96 implants (since 1999)
- 6 different devices
- Expert surgical, medical, nursing and allied health support.
- Comprehensive rehabilitation

What are the benefits for patients?

1. Increase survival
2. Preserve and revive organ function
3. Facilitate rehabilitation

Rehabilitation

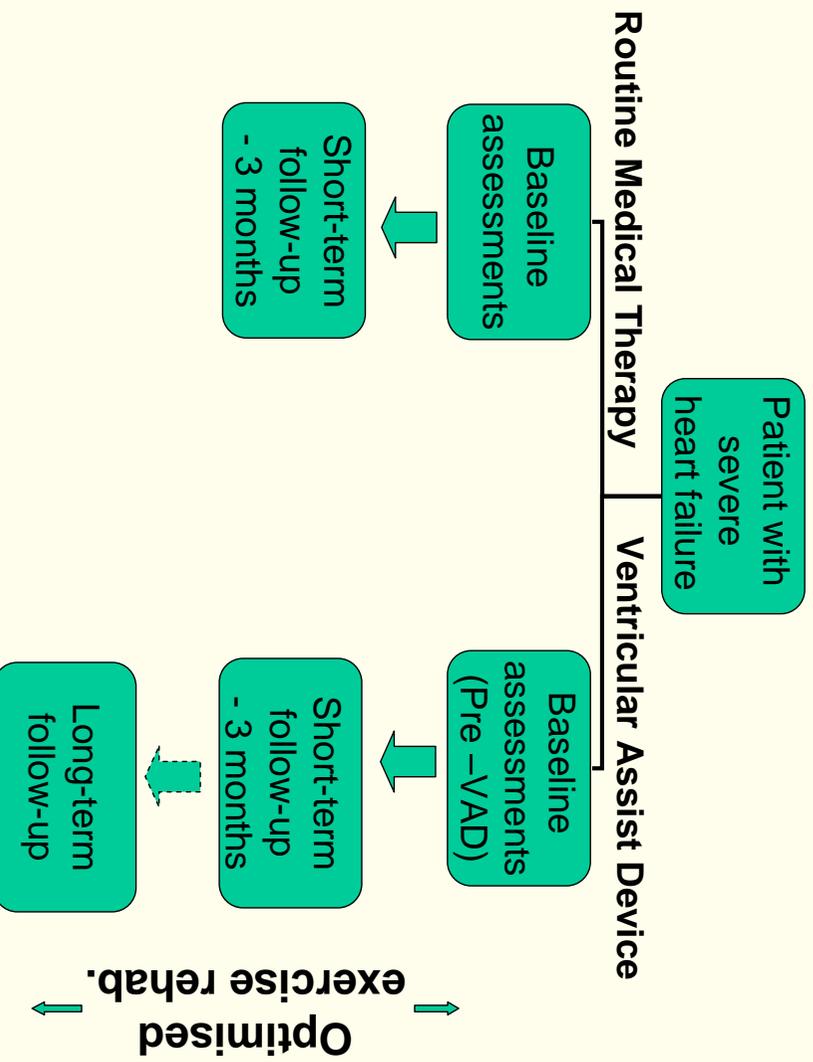




Description of the Project:

To evaluate the clinical, physiological and psychosocial effects of *optimised exercise rehabilitation* in patients with ventricular assist devices (VADs).

Study Design



Optimised Exercise Rehabilitation

- Combination of aerobic (walking and cycling) and resistance exercise (weights)
- 3 x week, under supervision at the Royal Perth Hospital Cardiac Gymnasium
- Fortnightly review and adjustment
- Exercise progression guided by haemodynamics, perceived exertion and muscle function

What will be measured?

- **Aerobic fitness** - this test measures the ability to deliver and utilise oxygen during exercise (known as VO_2 max).
- **Muscle mass and strength** - muscle mass will be determined by a low level x-ray; strength will be measured for muscles of the upper and lower body
- **Heart function** – ultrasound will be used to measure the size and pumping ability of the heart's chambers.
- **Activity levels** – activity will be measured for 1 wk.
- **Psychological well being** - quality of life will be measured using a validated questionnaire.