

The Body, Biomedicine & Society: Reflections on High Tech Medicine

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The Body, Biomedicine & Society: Reflections on the Field of High-Tech Medicine

1. Retrospects: The Body, Biomedicine & Society
2. Deteriorating Bodies: Intensive Care
3. Remaking Bodies: Organ Transplantation
4. Regenerating Bodies: Stem Cells
5. Embodied Practices: Biomedical Science in Action
6. Prospects: The Embodiment of Translational Research

Palgrave Health, Technology & Society Book Series
Editors: Andrew Webster & Sally Wyatt

Mapping stem cell innovation in action: an ethnography of the bench-bedside interface

Clare Williams, Steven Wainwright, Alan Cribb
Bobbie Farsides, Nigel Heaton & Mike Michael



Romeo & Juliet: Alina Cojocaru & Johan Kobborg (Royal Ballet)



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The Body, Biomedicine & Society

‘Theory, it seems, is only skin deep... Social theory has tended to focus on the exteriority of the body, on which culture becomes endlessly inscribed... the biological body remains a silent shadow.’
(Birke, 1999: 2, 26 & 137)



Fig. 1. Posed
specimen with

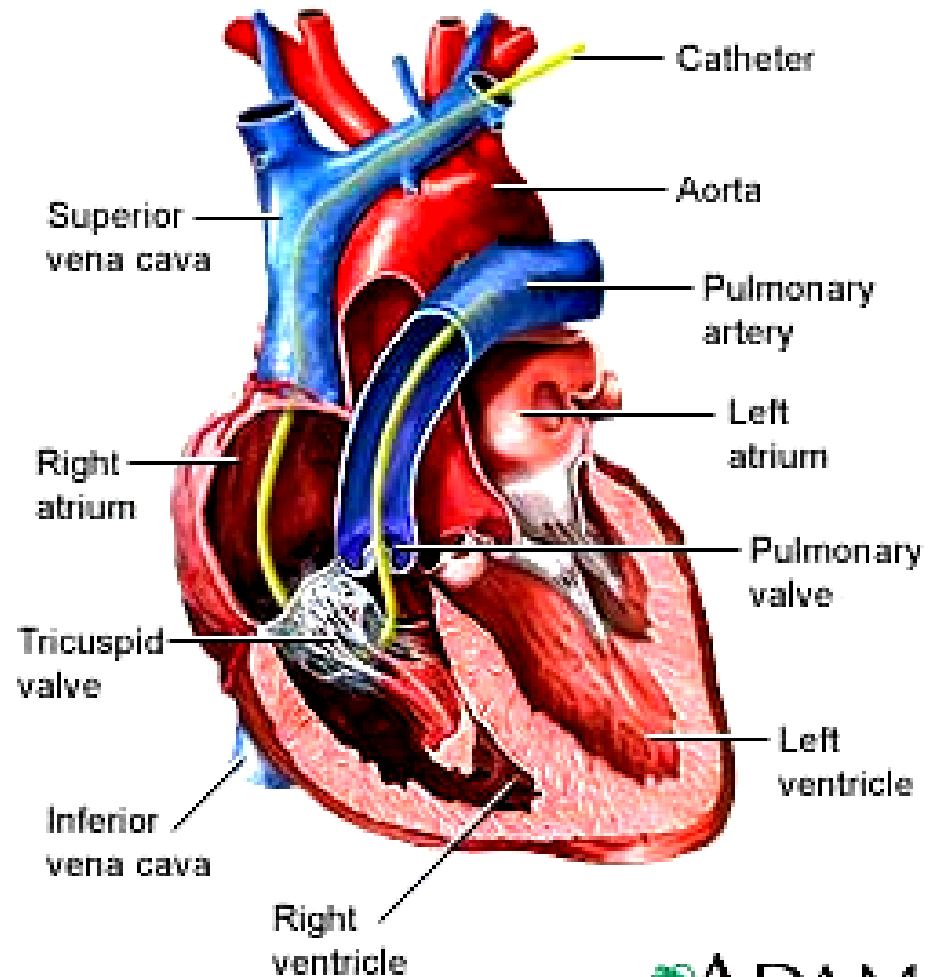
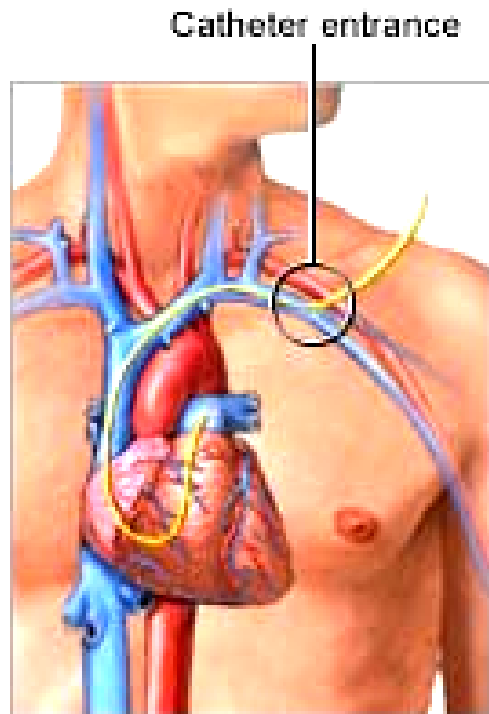
Gunther van Hagens (ND) *Posed whole body specimen with skin*

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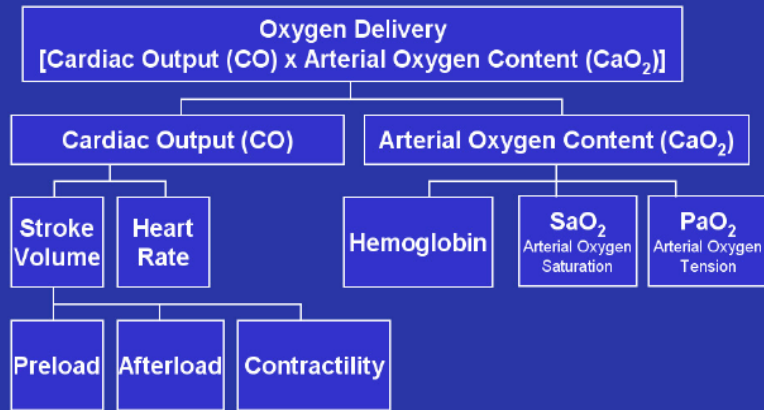
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Cyborg Bodies: Shock, 'Swan-Ganz' Catheters & ICU

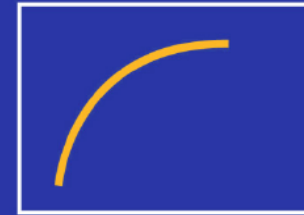


Assessment of Oxygen Delivery (DO_2)



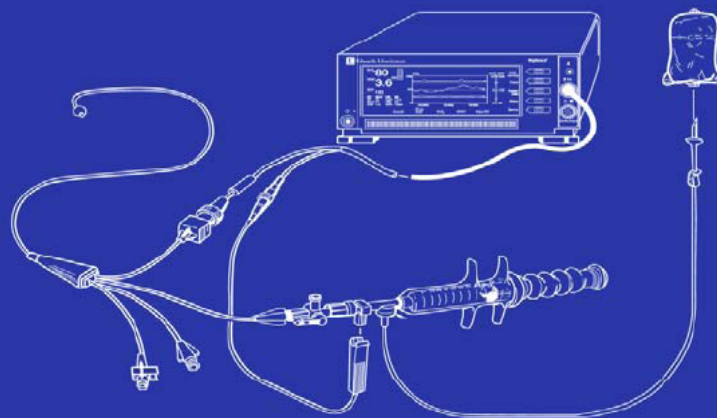
The Significance of Preload: Frank-Starling Curve

Force of Contraction
SV, CO



Fiber Stretch
RA, PAD, PAWP, LA

CO-Set[®] Room Temperature Injectate



System shown with all components connected for room temperature measurement: computer, PAC, injectate set, temperature probe

Continuous Cardiac Output The Swan-Ganz[®] Continuous Cardiac Output Thermodilution Catheter

Balloon Inflation Volume

- Appropriate inflation volume for 7F to 8F catheters is 1.25 – 1.5 cc.

VIP Port

- 30 cm from tip

Proximal Injectate Port

- 20 cm from tip
- Located in RA or SVC
- If incorrectly positioned in introducer sheath, Bolus CO measurement will be erroneously high due to reflux of injectate within introducer
- Transduce Proximal Injectate Lumen – proper waveform is RA

PA Distal Port

- Transduce distal lumen – proper waveform is PA



Thermistor

- 4 cm from tip
- In main body of PA

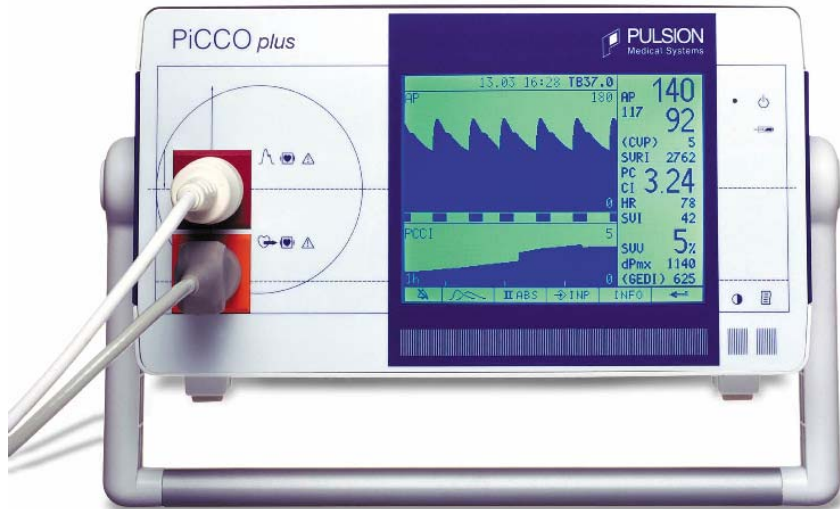
Thermal Filament

- 14 – 25 cm from tip
- Rests between RA and RV
- Should be free floating and avoid endocardial surface
- Erroneous CCO measurements may result if beyond pulmonic valve



Note: Assess patient physiology. Atypical physiology and heart size may require special handling

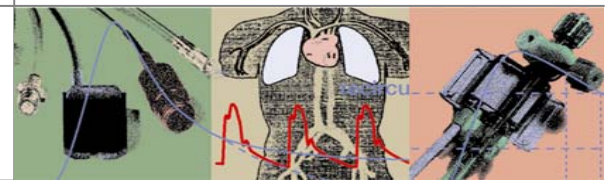
PiCCO *plus* Standalone Monitor



PiCCO ...

...Simple – Safe – Speedy - Specific

PiCCO-Technology



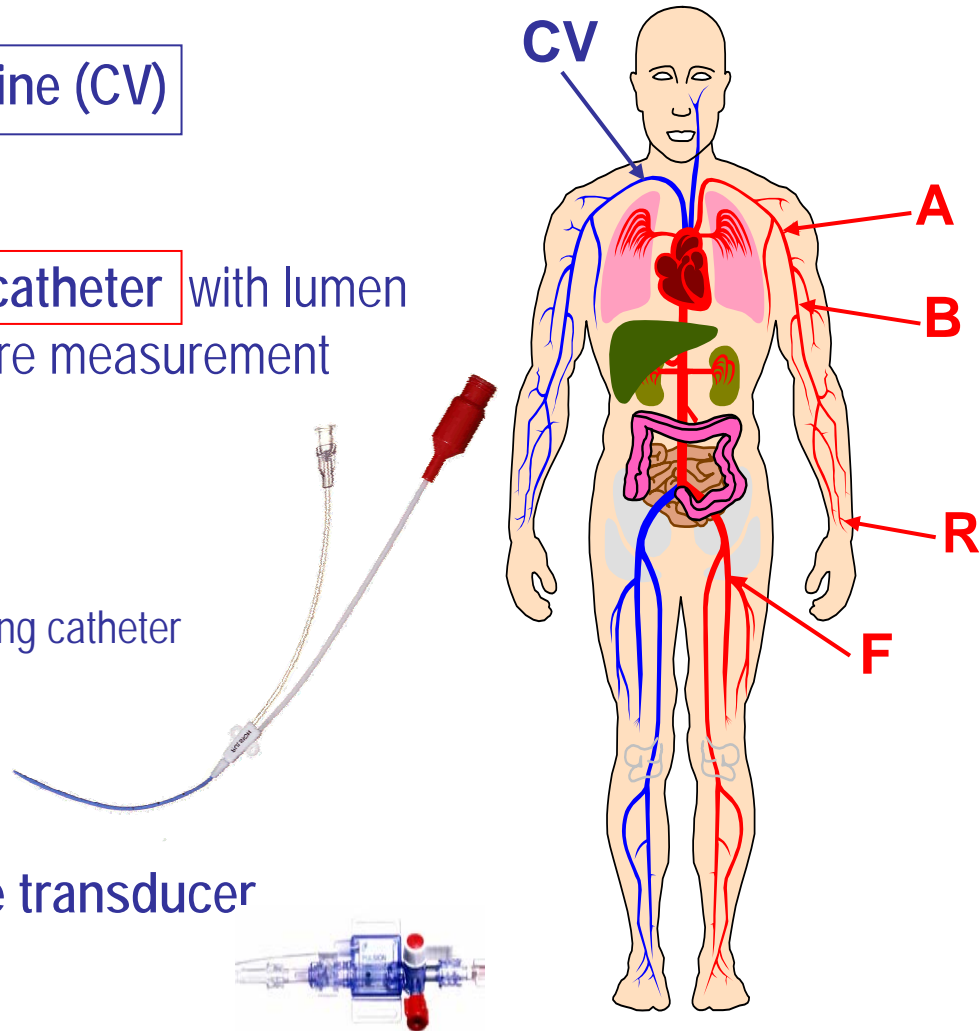
Configuration of PICCO

Central venous line (CV)

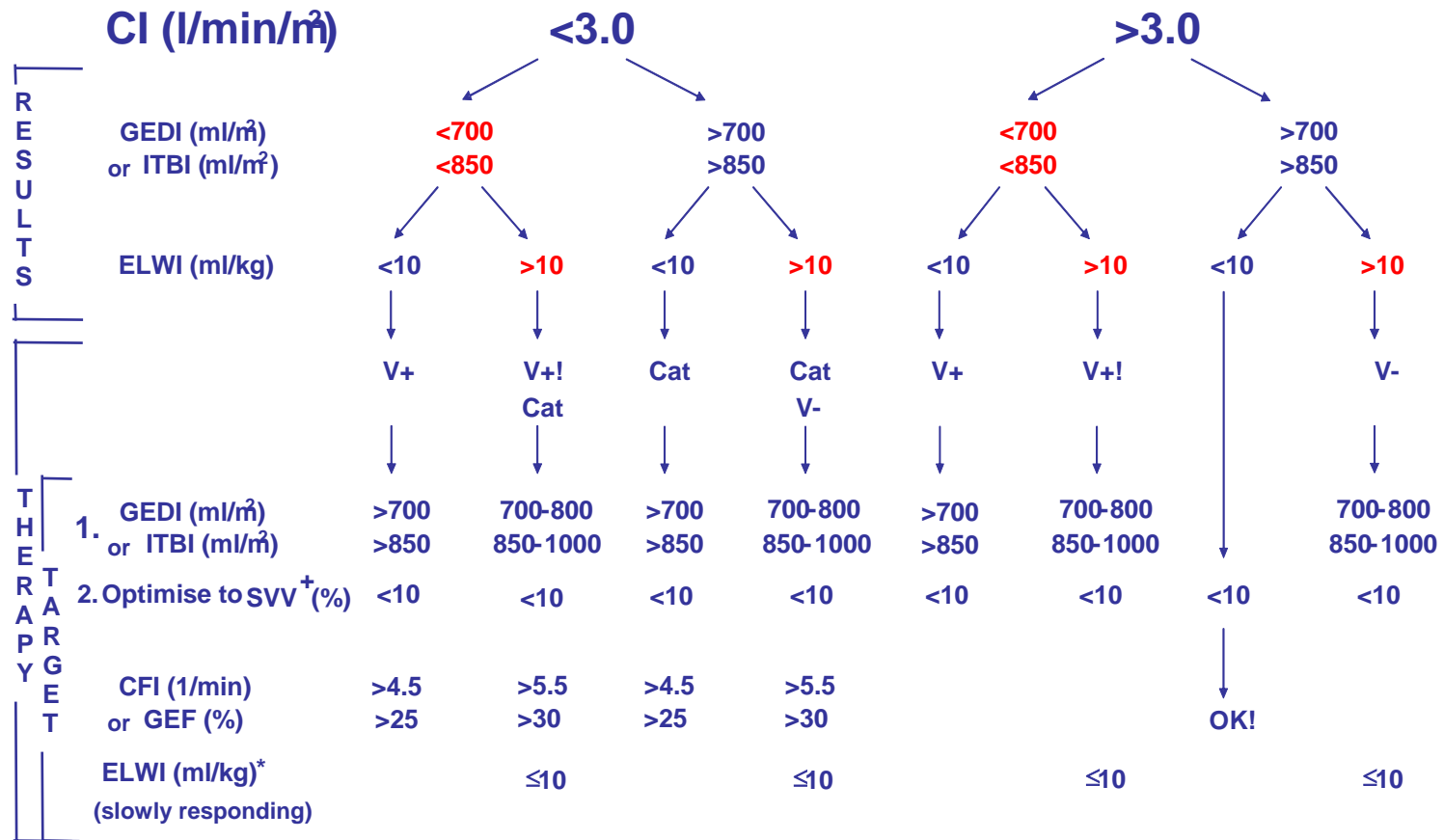
Thermodilution catheter with lumen for arterial pressure measurement

- Axillary (A)
- Brachial (B)
- Femoral (F)
- Radial (R), long catheter

Arterial pressure transducer



Decision tree for hemodynamic monitoring**



V± = volume loading (! = cautiously) V- = volume contraction Cat = catecholamine / cardiovascular agents
 SVV[†] only applicable in ventilated patients without cardiomyopathy

** without guarantee

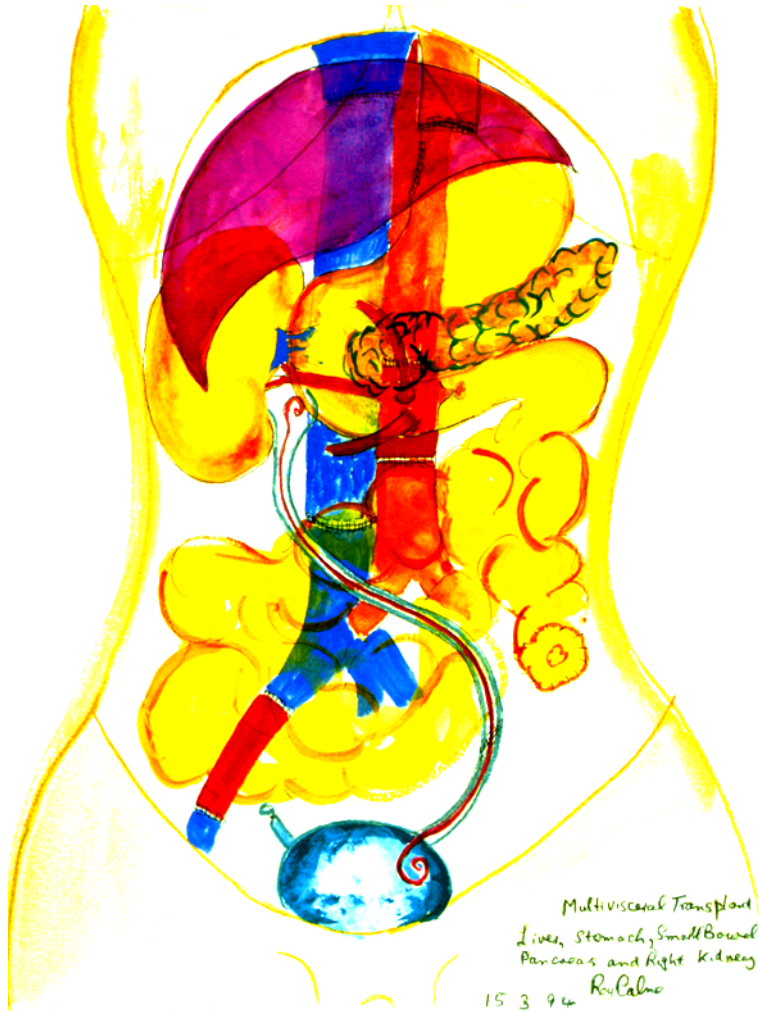
*not available in USA

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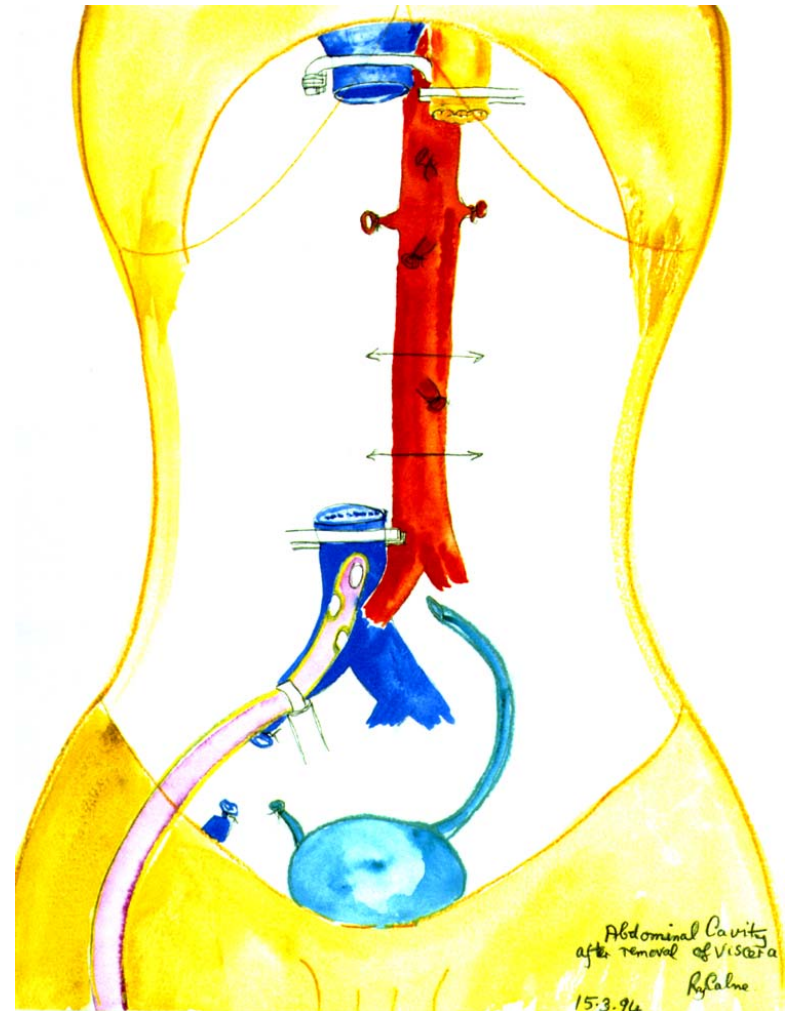
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From Organ Transplants to (Stem) Cell Transplants?



Organs without Bodies (OwB)



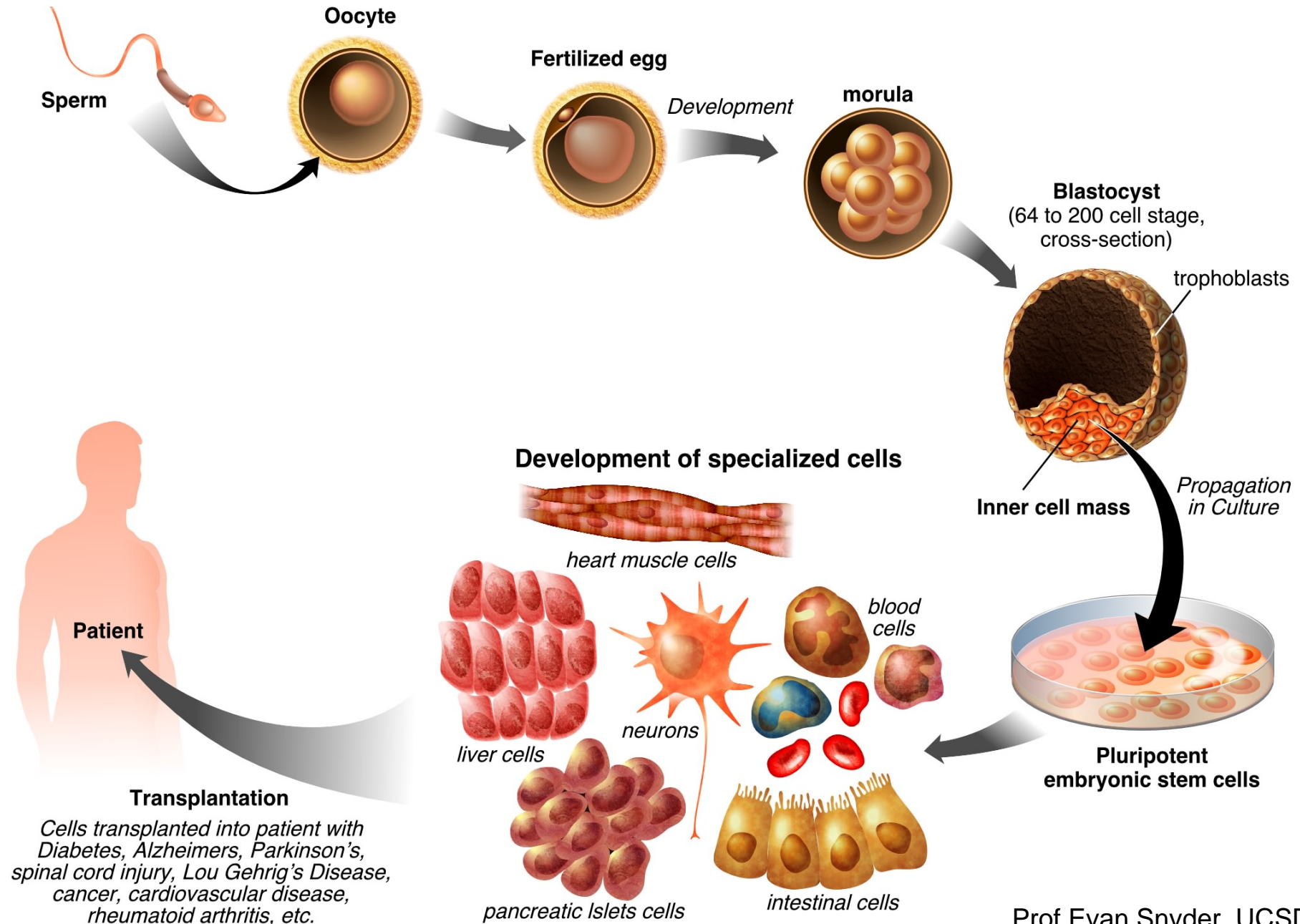
Body without Organs (BwO)

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Stem Cell Therapy: Cell Transplants & Regenerative Medicine



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Alexis Rockman (1993) *Biosphere: Laboratory*



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San Diego Consortium of Regenerative Medicine



Translational Research & the Stem Cell Valley of Death

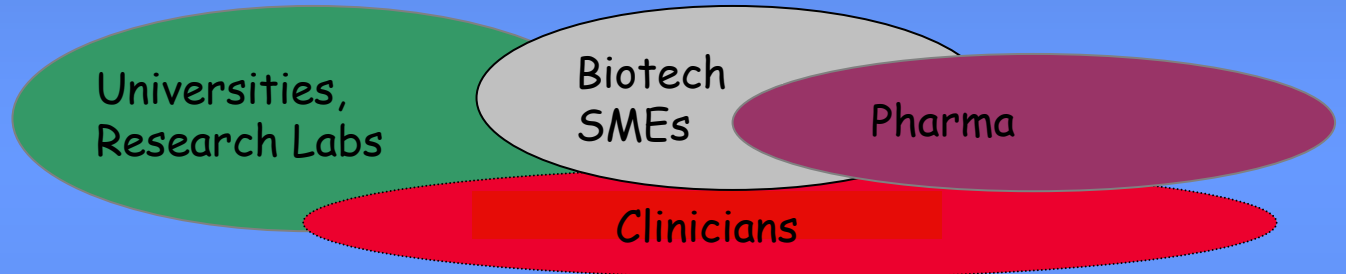
Stages:



Manufacturing



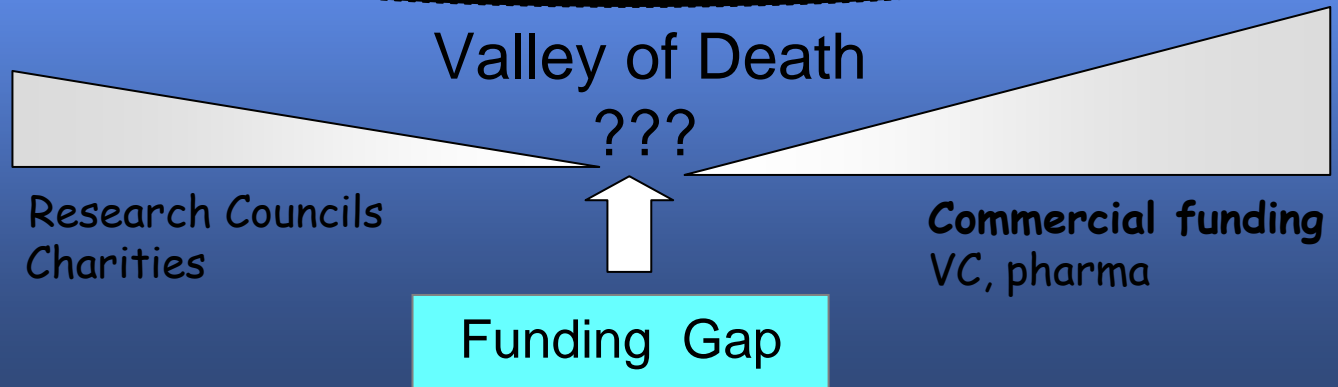
Infrastructure:



Stakeholders:



Funding:



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Implications for Policy include:

1. Understanding Cultures of Translational Research:

Over the coming years we intend to accelerate the rate at which MRC research is translated into new methods of diagnosis and treatment – a process that can take anything from a few years to decades... to bring our knowledge and discoveries into the healthcare system and so to patients. (Colin Blakemore, MRC, 2004: 1)

Problems (Wainwright, Williams et al, 2006)

- Different cultures of medicine and science
- Can hES cells be turned into functioning cells?

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Implications for Policy include:

2. Boundary between Research & Treatment:

- *'Courage to Fail', 'Experiment Perilous'* (Fox, 1972; 1962)
- Now Global Setting (e.g. Human Embryonic Stem Cells)

If I'm not prepared to do something, someone else will do it. There's someone right behind me, who's going to clamber over my back, prepared to do that. There is great pressure on individuals and institutions to 'push ahead'
(Consultant Surgeon, Ethics Discussion Group 2)

Turner & Landscapes of Loss (Wainwright & Williams, 2005)



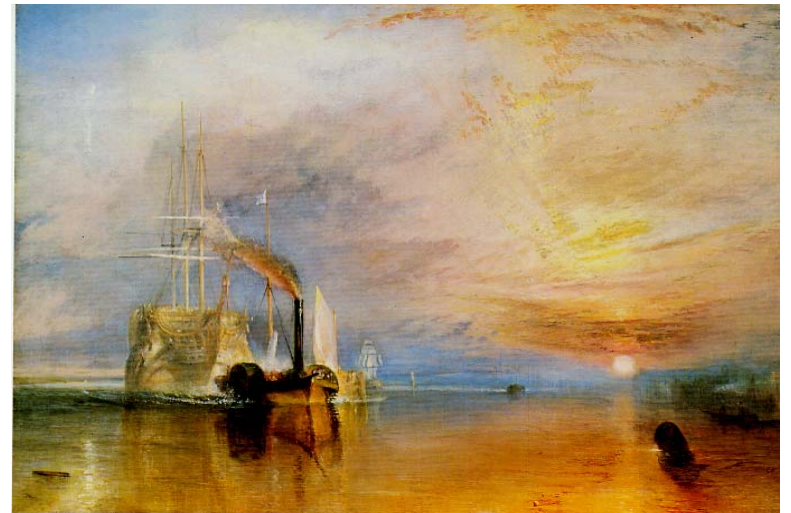
The Rise of the Carthaginian Empire (1815)



The Decline of the Carthaginian Empire (1817)



The Bay of Baiae, with Apollo & the Sibyl (1823)



The Fighting 'Temeraire' (1839)