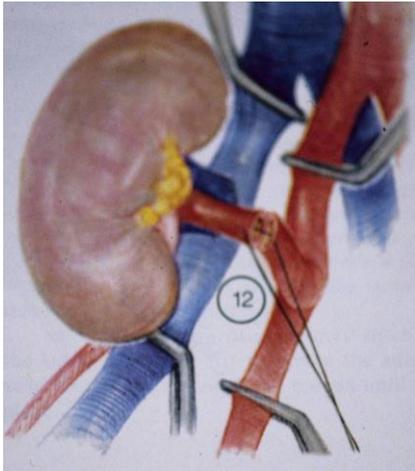


# Living Donor Kidney Transplantation The Donor & The Recipient

**Jonathon Olsburgh**

Consultant Urologist  
& Transplant Surgeon

Guy's and St Thomas'   
NHS Foundation Trust



The Department of Medicine,  
Faculty of Science,  
University of Mauritius





# Guy's Hospital

1721 - 1725

“The Hospital for the Incurables”



1644-1724



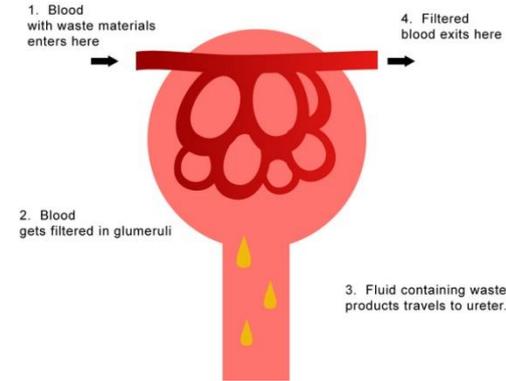
# Living Donor Kidney Transplantation

## The Donor & The Recipient

- **Kidney Transplantation**
  - History, UK perspective & Guy's Hospital perspective
- Recipient Medical Aspects
- Surgical Aspects of Kidney Transplant
- **Living Donation**
- Donor Medical & Psychological Aspects
- Surgical Aspects of Donor Nephrectomy
- Questions

# Renal Function

- eGFR - (e)stimate:
  - serum creatinine, age, sex & race
  - abbreviated (4 point) MDRD equation
    - not validated for children or in pregnancy
    - significant errors at extremes of body type
      - e.g. malnourished, amputees, body builders
    - racial differences- 20% higher in Afro-Caribbean black patients
- Formal GFR
  - EDTA or DTPA – GFR



# Chronic Kidney Disease (CKD) stages

Stage	eGFR	Description	Monitoring	Management
1	90+	Normal function but evidence of structural abnormalities	Annual	BP control, ACE if proteinuric
2	60-89	Mildly reduced kidney function	Annual	BP control, ACE if proteinuric
3a	45-59	Moderately reduced kidney function	6 monthly/Annual	BP control, ACE if proteinuric, CVS risk management
3b	30-44	Moderately reduced kidney function	6 monthly	BP control, ACE if proteinuric, CV risk management
4	15-29	Severely reduced kidney function	3-4 monthly	Prepare for Dialysis, Transplantation, Anaemia, CKD-MBD and CV risk management
5	<15 or on dialysis	Very severely reduced kidney function (end stage kidney disease)	Frequently	Dialysis, Transplantation, Anaemia, CKD-MBD and CV risk management

## Suffixes

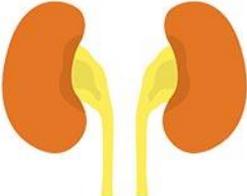
P= significant proteinuria

T= transplanted

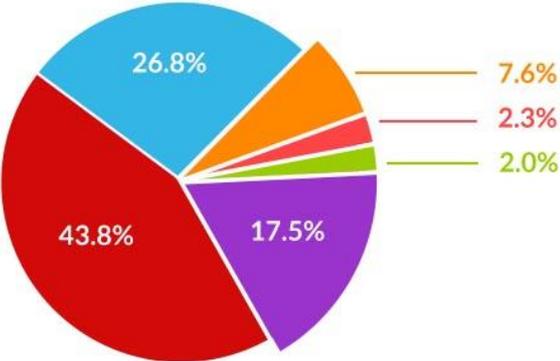
D= on dialysis



# Causes ESRD



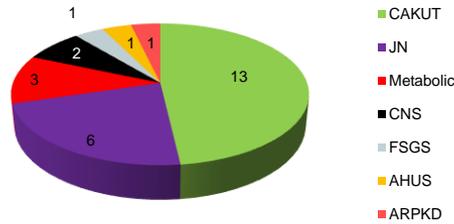
Primary Causes of Kidney Failure (2005)



- Diabetes
- High blood pressure
- Other
- Glomerulonephritis
- Cystic disease
- Urologic diseases

© TheDiabetesCouncil.com

Adults



Underlying Aetiology	Number of Children	Percentage (%)
Posterior urethral valves (PUV)	40	53.3
Dysplastic kidneys	15	20
Prune belly syndrome	6	8
Neuropathic bladder	4	5.3
Idiopathic	2	2.7
Other	8	10.7

VACTERL association, horseshoe kidney, duplex system, vesicoureteral reflux (VUR) and cloacal anomaly.

Children

# History

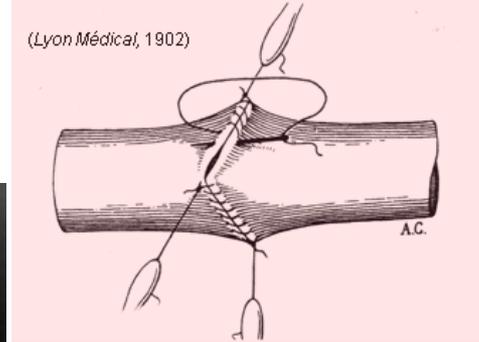
- 1902 Ullman  
Carotid



- 1906 Carrel & Guthrie



- 1906 Jaboulay  
Brachial / Femoral



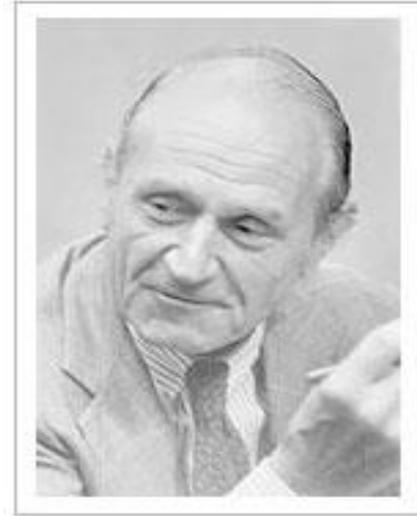
The Transplantation  
of Organs  
NY Med J 1914

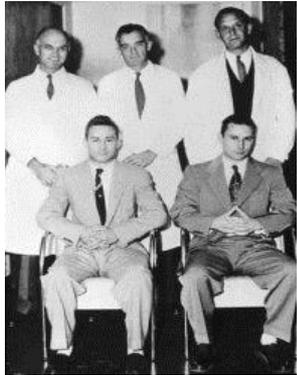
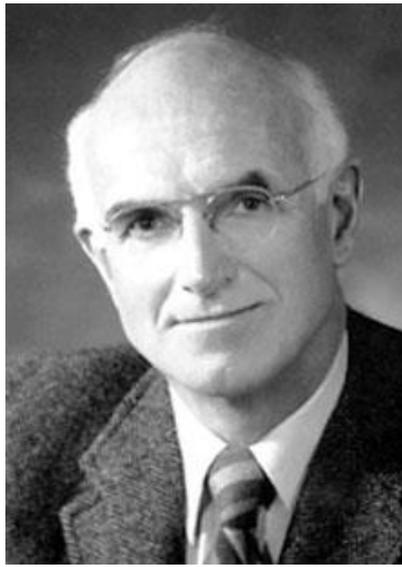
# History

- 1933 - Voronoy
- Human-femoral



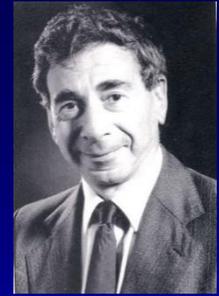
- 1951 - Kuss
- Human-abdominal





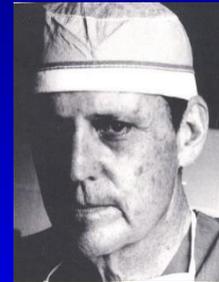
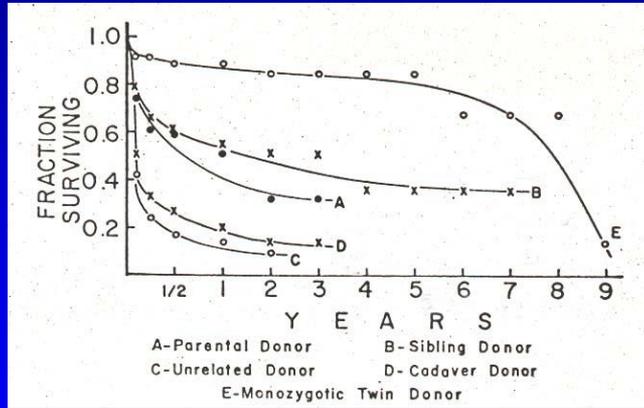
December 23<sup>rd</sup> 1954: Dr Joseph Murray  
1<sup>st</sup> successful kidney transplant  
Identical twins - Ronald & Richard Herrick  
Brigham & Women's Hospital – Boston, USA

**1957-61 6-MP & azathioprine synthesised (Elion & Hitchings). Worked in dogs (Calne) but initial results awful in humans.**



**1963: Starzl azathioprine + steroids**

**40 cases**



**1970 Cyclosporine isolated from fungus *Tolypocladium inflatum* Sandoz (Basel).**

**1976 J. F. Borel discovered its immunosuppressive activity**

**1978 R Calne – 1<sup>st</sup> Human transplant use**

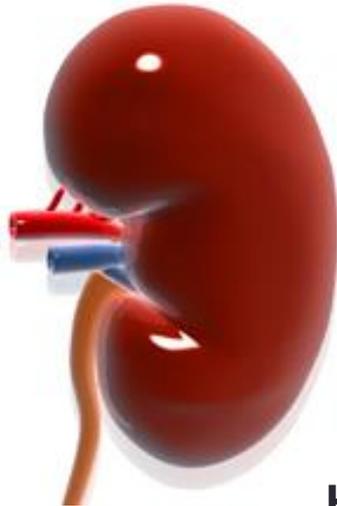
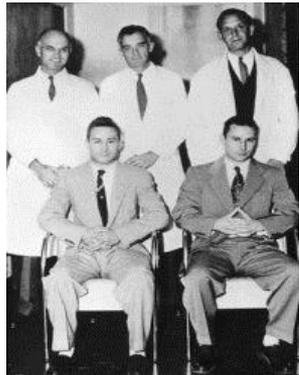
**“Cyclosporin A in patients receiving renal allografts from cadaver donors” *Lancet* 1979;2 (8104-5): 1323-1327**



# Where do kidney donors come from?

## Living donors

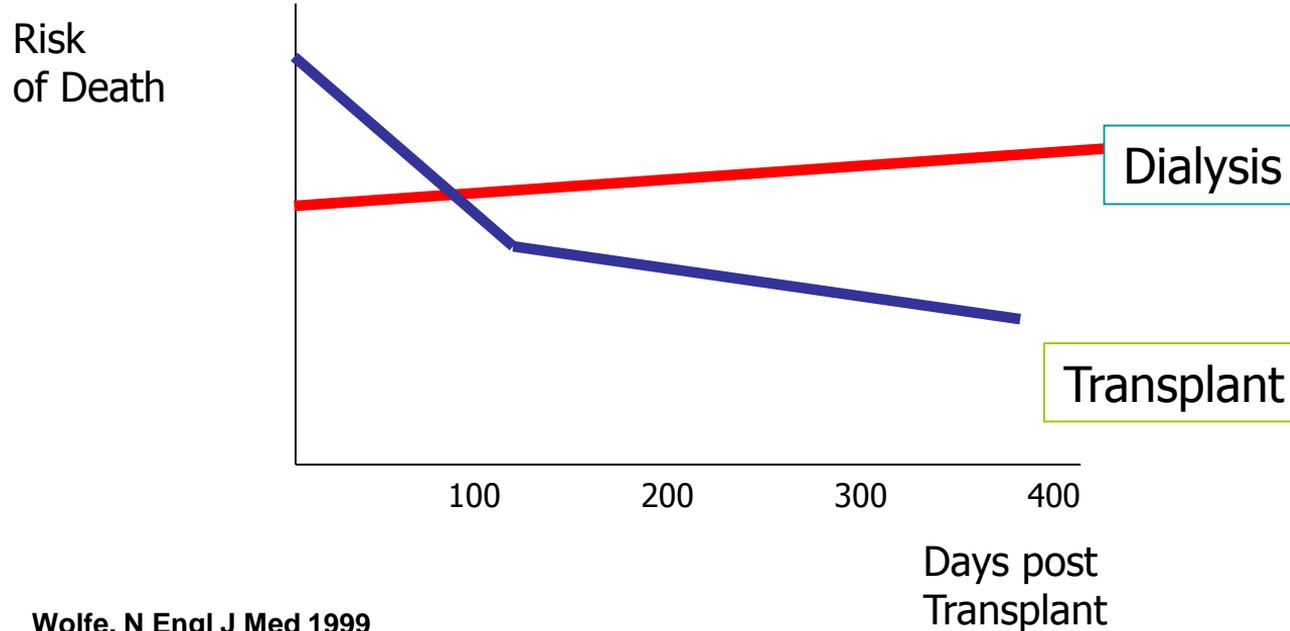
- related/unrelated
- paired exchange scheme
- altruistic
- ABO incompatible



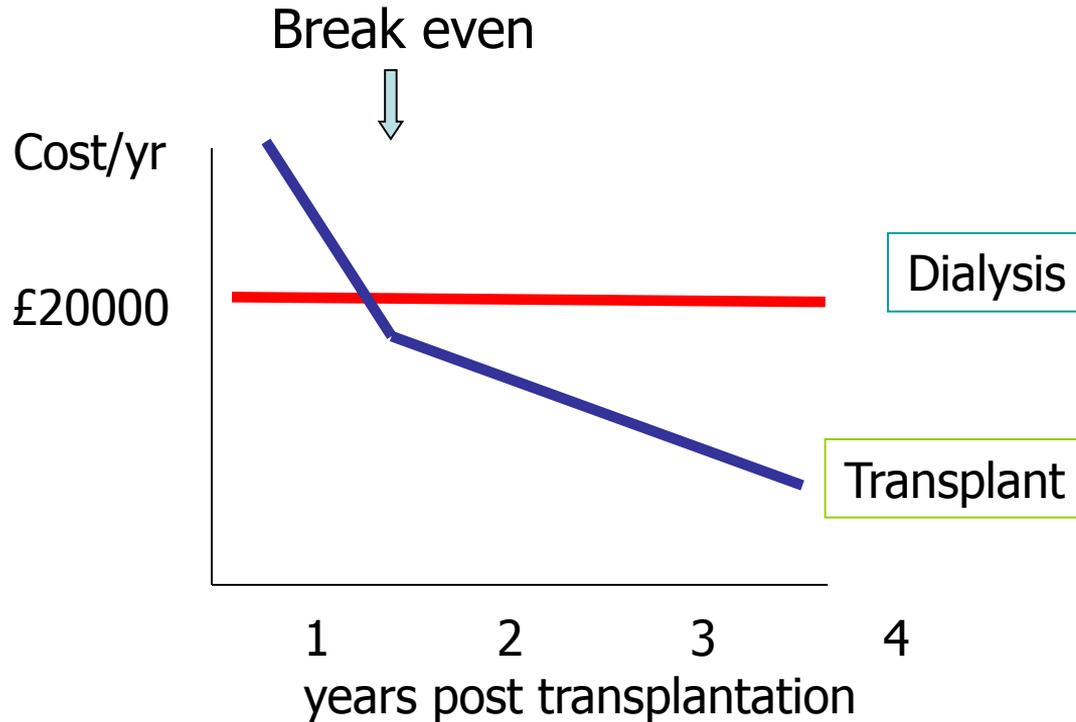
**Non heart-beating donors**  
donation after cardiac death (DCD)

**Heart-beating donors**  
donation after brain-stem death (DBD)

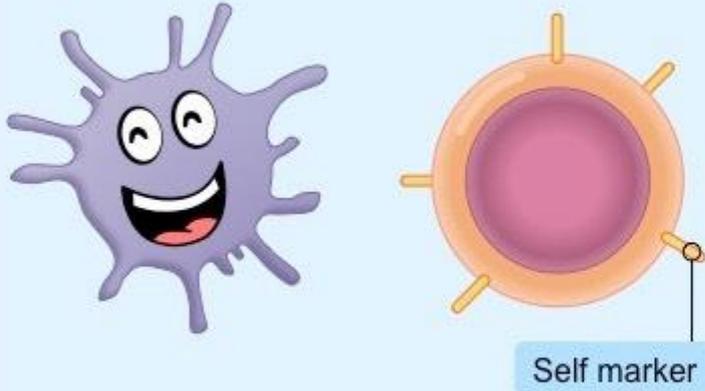
# Transplantation adds years



# Transplantation is economical

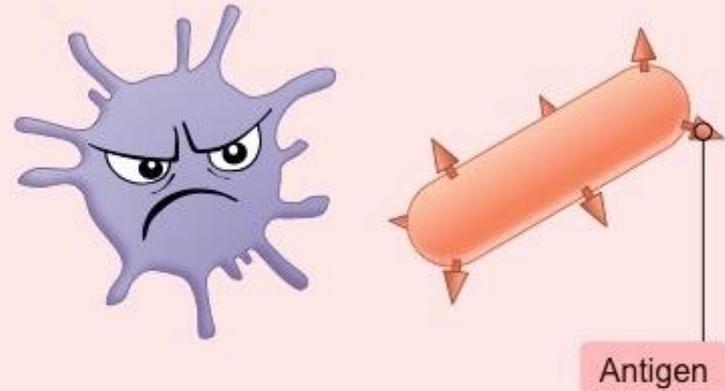


## IDENTIFYING SELF



A **self marker** (MHC) labels the body's cells as a 'friend' and are tolerated by the immune system

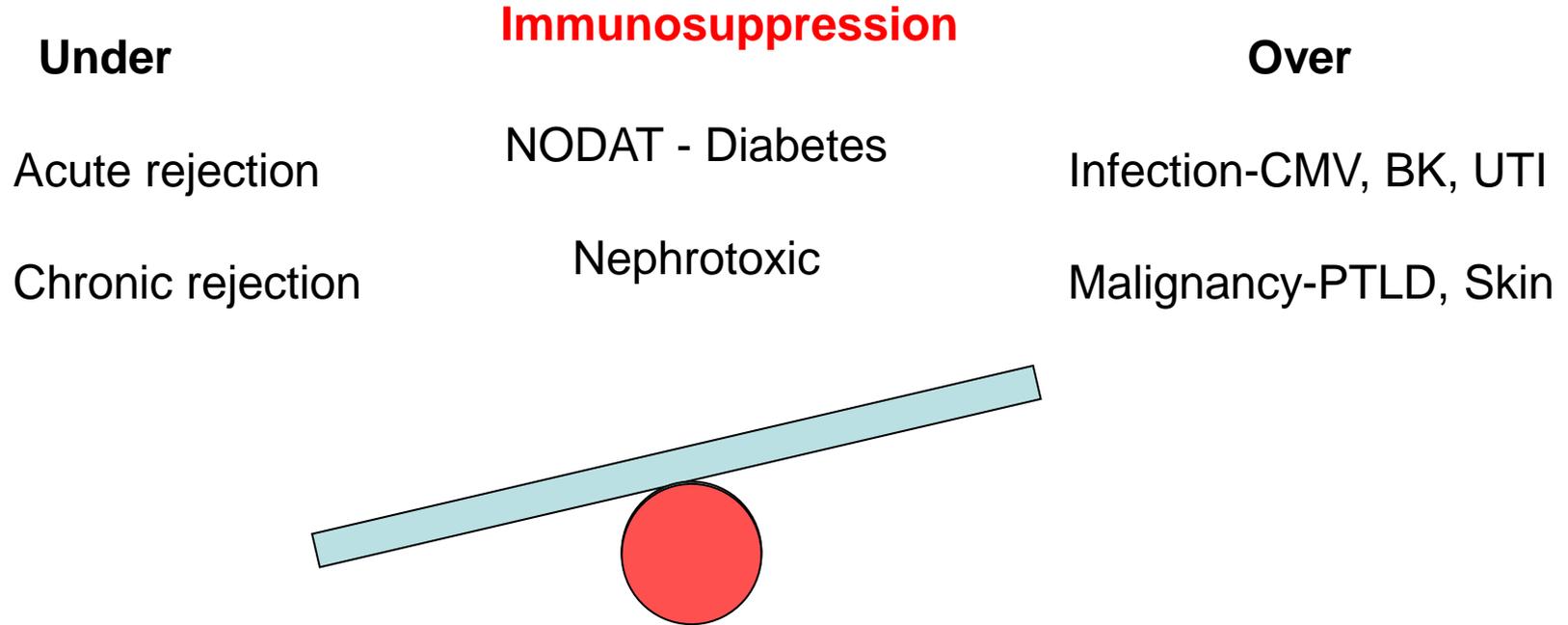
## IDENTIFYING NON-SELF



An **antigen** is a molecule that the immune system recognises as foreign (non-self) and treats as a 'foe'

Human Leucocyte Antigen = Major Histocompatibility Complex

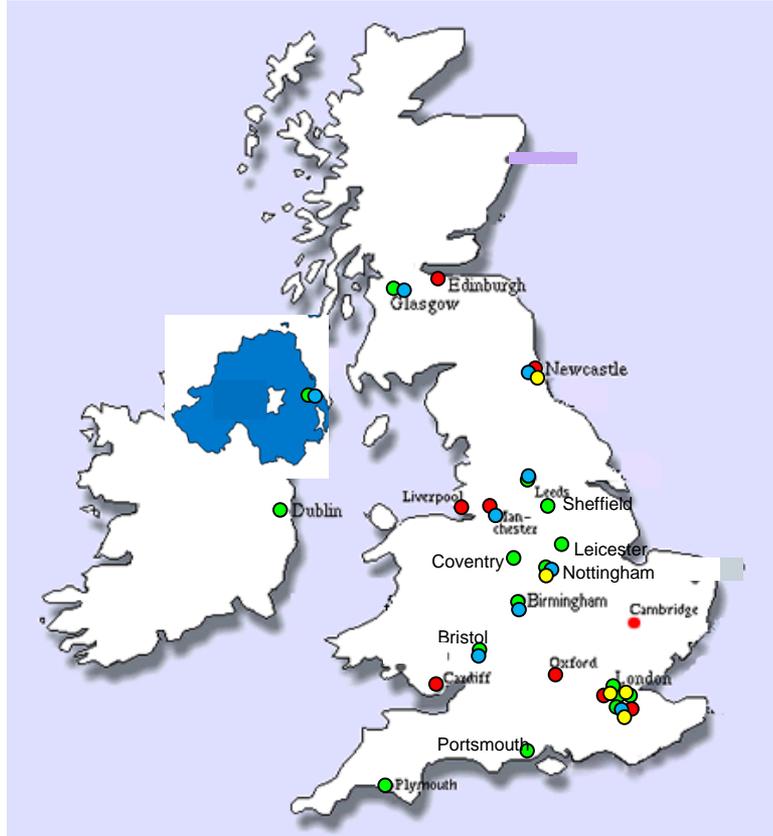
# The Clinical Conundrum



Population  
66 million

2018-2019

3594 Kidneys  
Transplanted



## ***UK Transplant***

- Adult Kidney Centres = 23
- Kidney & Pancreas Centres = 8
- Paediatric Kidney Centres = 9
- Transplant Urology at 6 centres

# UK Deceased donor kidney programme, 1 April 1998 - 31 March 2008

## Number of donors, transplants & patients on active transplant list

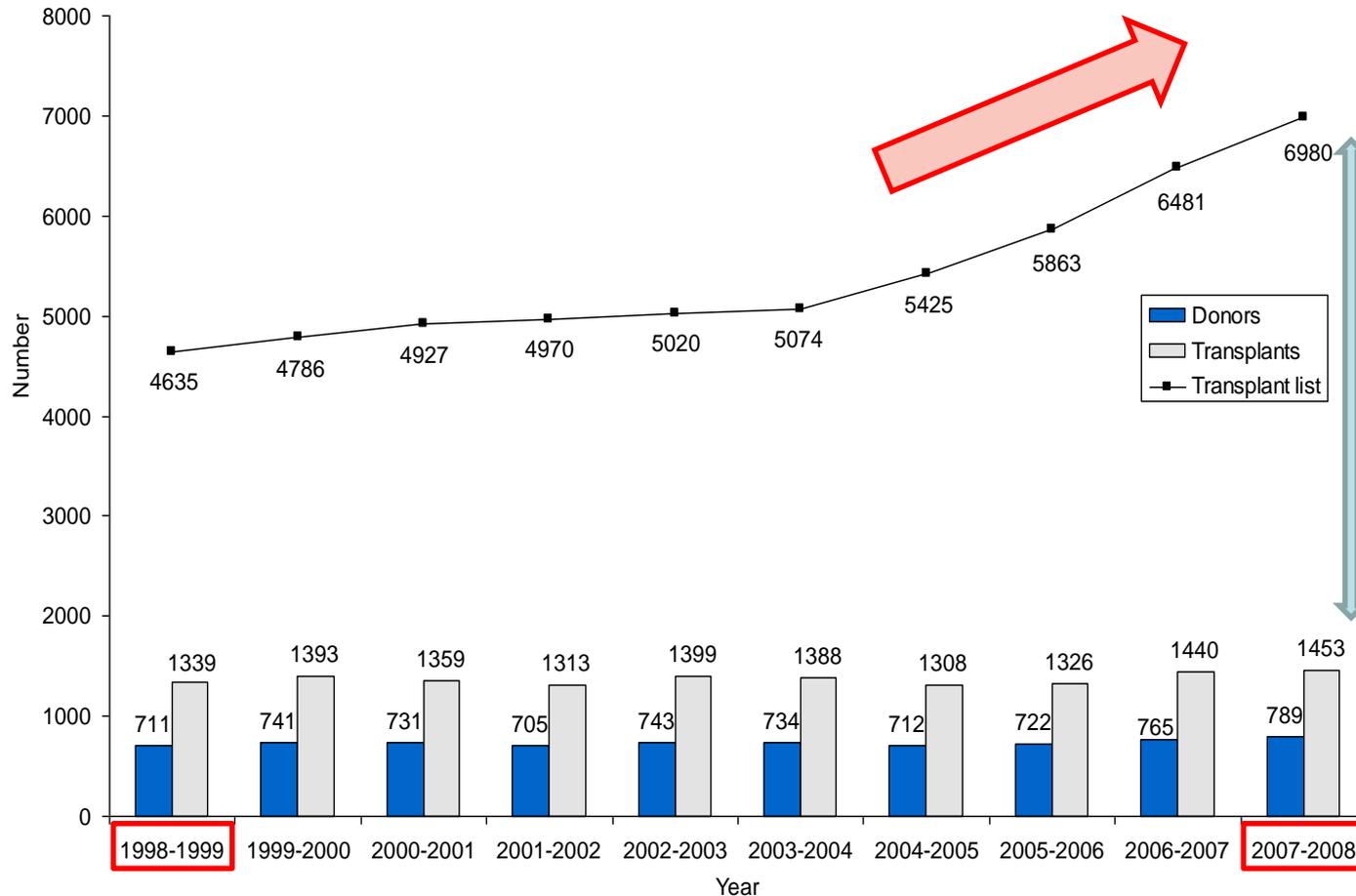


Figure 5.1

Deceased donor kidney programme in the UK, 1 April 2007 - 31 March 2017,  
Number of donors, transplants and patients on the active transplant list at 31 March

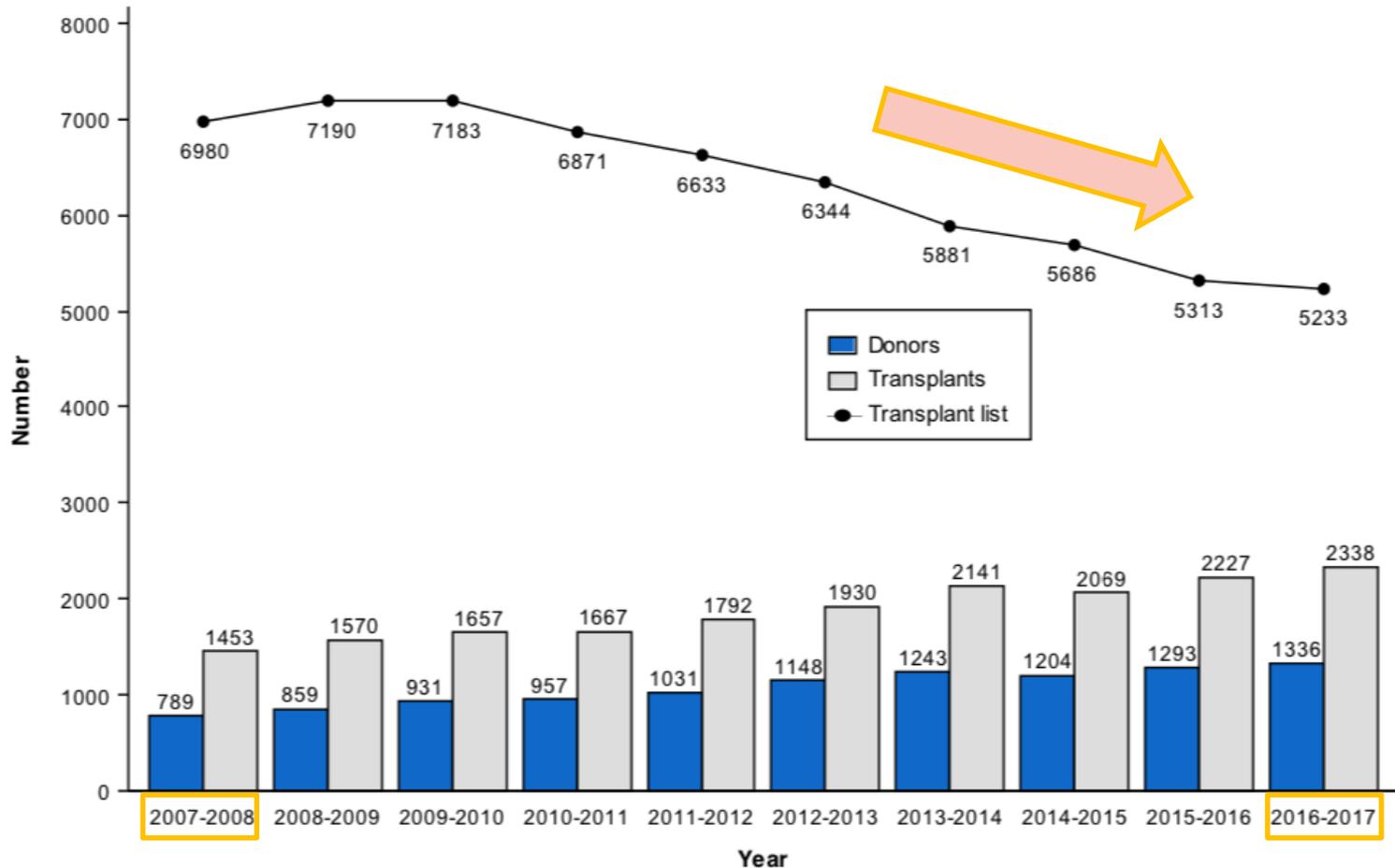
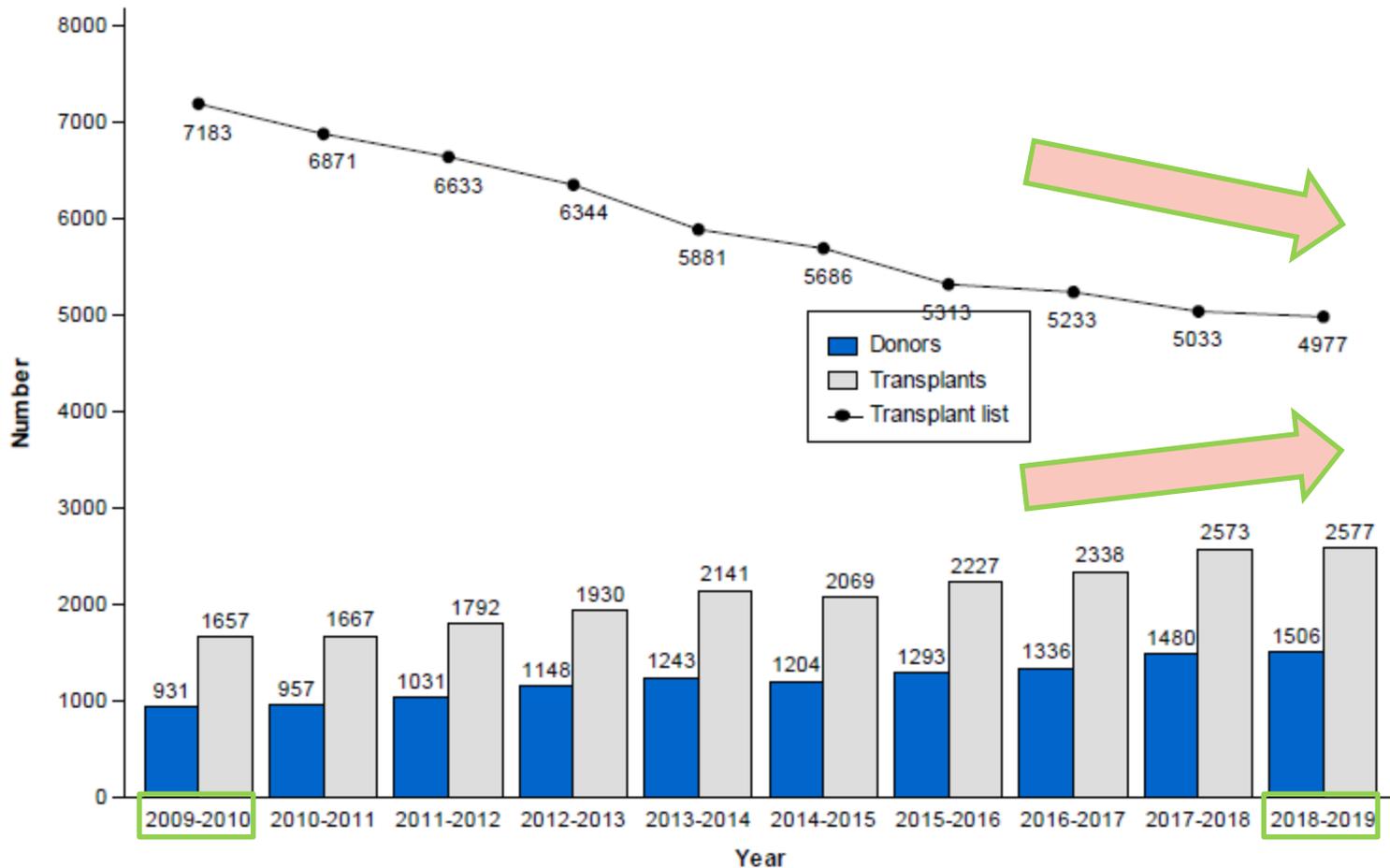


Figure 5.1

Deceased donor kidney programme in the UK, 1 April 2009 - 31 March 2019, Number of donors, transplants and patients on the active transplant list at 31 March

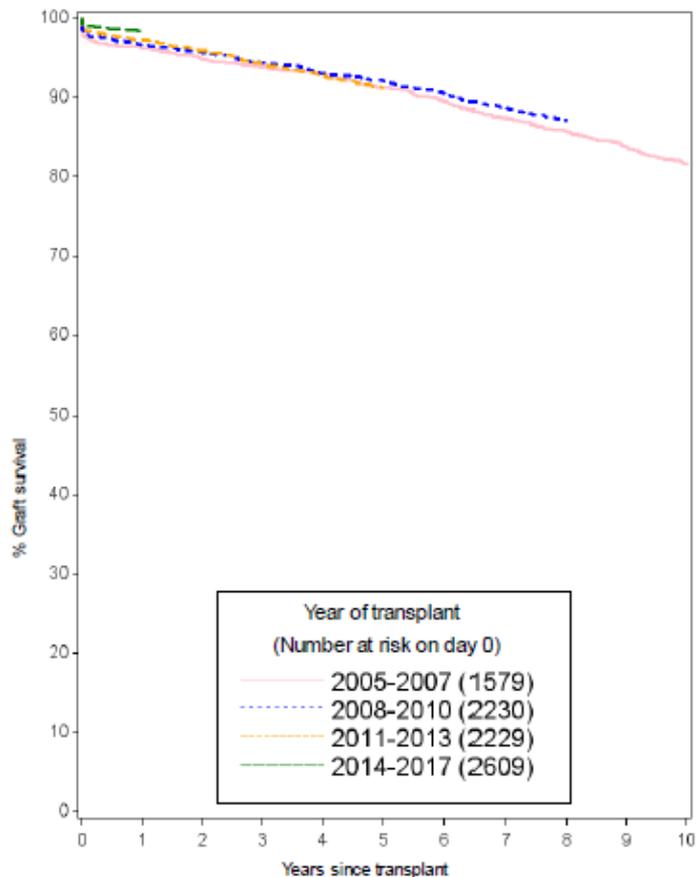


**Table 2.5**      **Number of transplants reported as functioning at 31 March 2019**

	<b>Functioning transplants<sup>1</sup></b>
Kidney	39700
Pancreas	2000
Cardiothoracic	4000
Liver	10500
Intestinal	100
<b>ALL PATIENTS</b>	<b>54500</b>

<sup>1</sup> Approximate number of patients with a functioning transplant being followed up  
Multi-organ transplants (excluding intestinal transplants) are counted in each organ  
Excludes those patients known to be lost to follow-up

**Figure 11.3** Long-term graft survival after first adult living donor kidney only transplant in the UK, 1 January 2005 – 31 December 2017



# Outcomes

**Table 11.5** Graft survival after first adult living donor kidney transplant

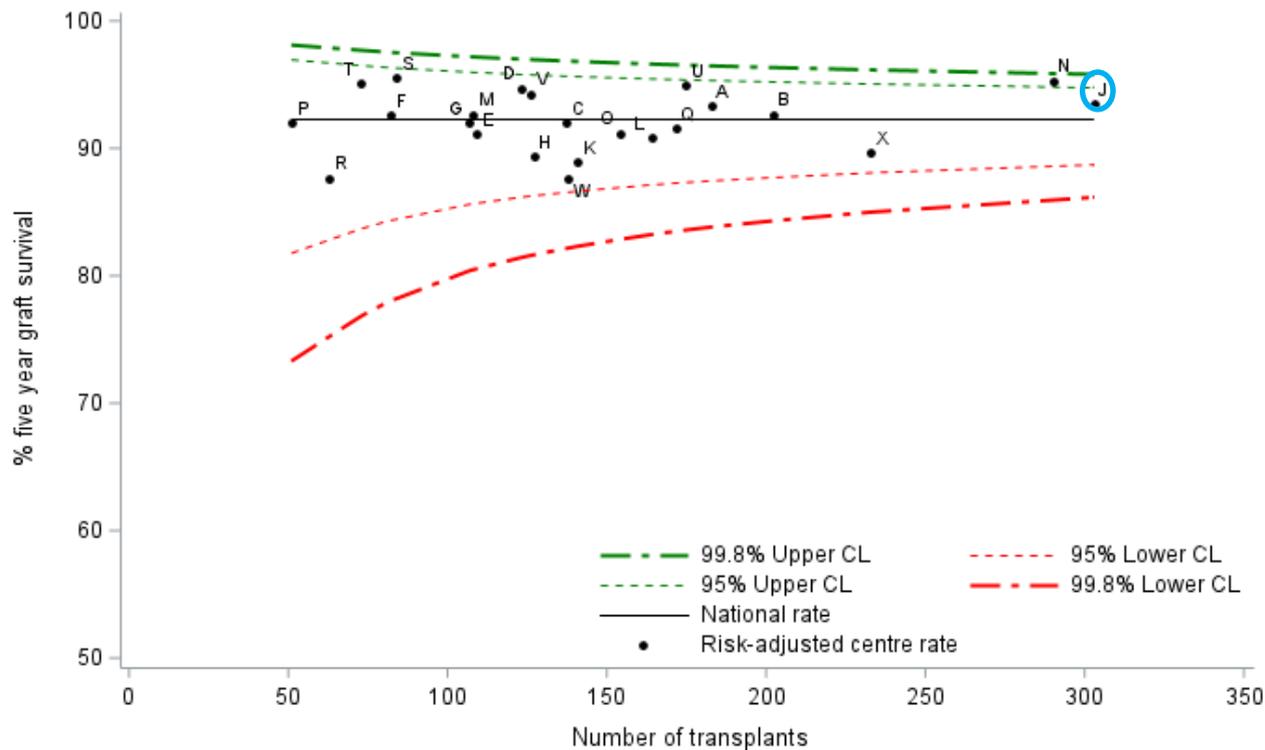
Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
2005-2007	1579	96 (95-97)	95 (94-96)	91 (90-93)	82 (80-84)
2008-2010	2230	97 (96-97)	96 (95-96)	92 (91-93)	-
2011-2013	2229	97 (96-98)	96 (95-97)	91 (90-92)	-
2014-2017	2609	98 (98-99)	-	-	-

**Table 11.6** Patient survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
2005-2007	1579	99 (98-99)	98 (97-99)	96 (95-97)	90 (88-91)
2008-2010	2230	99 (98-99)	98 (97-98)	94 (93-95)	-
2011-2013	2228	99 (99-99)	98 (97-99)	95 (94-96)	-
2014-2017	2609	99 (99-99)	-	-	-

Figure 6.7

Risk-adjusted five year graft (death censored) survival rates for first live donor kidney transplants in adult patients, between 1 April 2010 and 31 March 2014



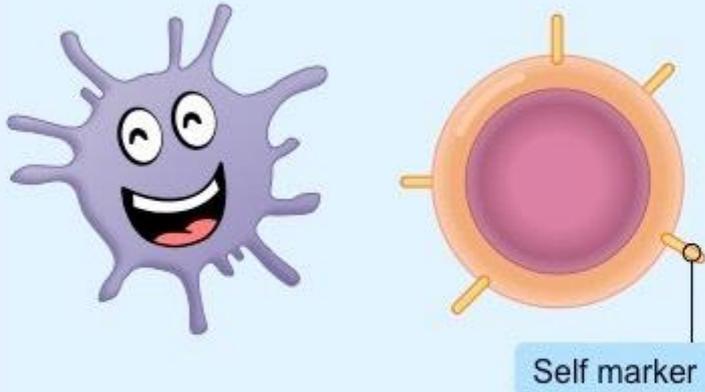


# Optimise the donor organ

# Optimise the transplanted organ

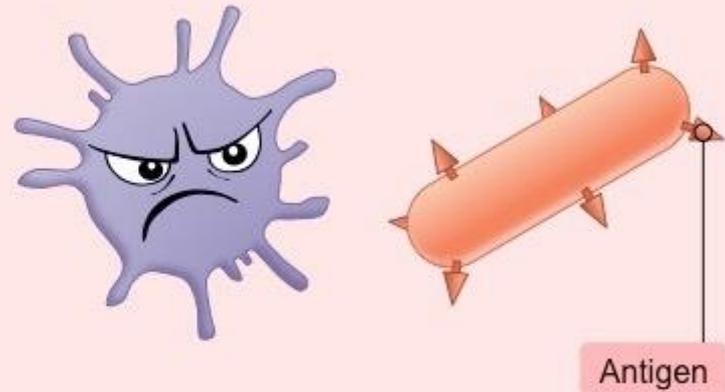
# Optimise the recipient

## IDENTIFYING SELF



A **self marker** (MHC) labels the body's cells as a 'friend' and are tolerated by the immune system

## IDENTIFYING NON-SELF



An **antigen** is a molecule that the immune system recognises as foreign (non-self) and treats as a 'foe'

Human Leucocyte Antigen = Major Histocompatibility Complex

# Donor-Recipient Matching in Kidney Transplantation

Principle	Rationale
ABO compatibility	Avoids hyperacute rejection
<b>Best HLA match (HLA-DR &gt; HLA-B &gt; HLA-A)</b>	<b>Reduces risk of acute rejection May improve graft survival Prevents allo-sensitisation</b>
No preformed anti-donor HLA antibodies (negative cross-match)	Avoids hyperacute rejection
<b>Minimise cold ischaemia time</b>	<b>Reduces allograft injury</b>

# HLA “Mismatches”

**Convention describes relationship between donor and recipient HLA type as “mismatches”**

**6 potential mismatches (2A, 2B, 2DR)**

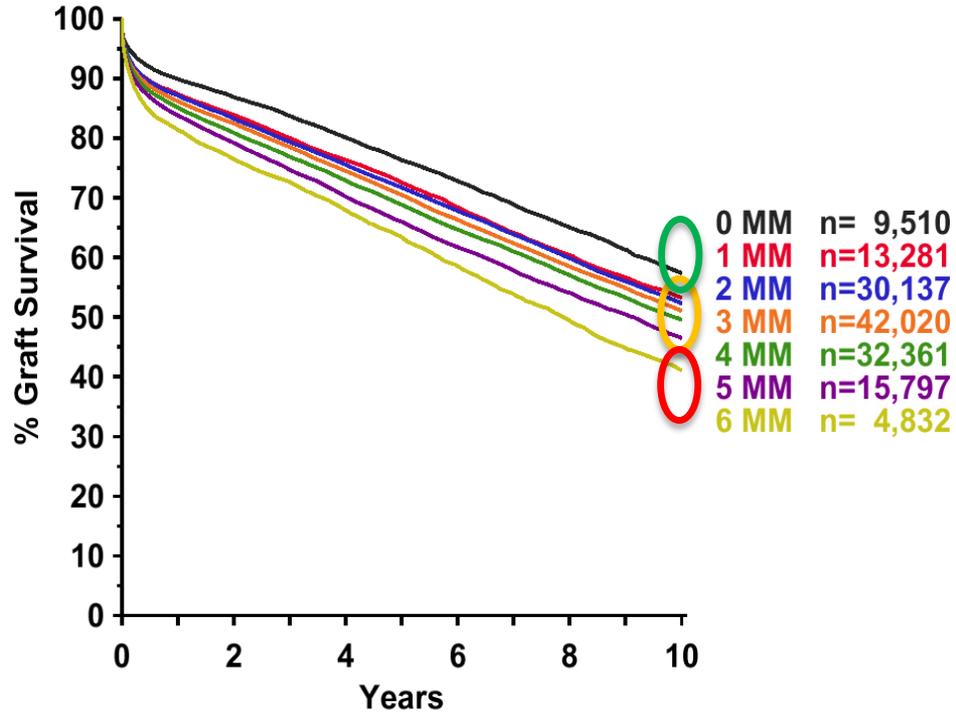
e.g: 1,0,1 = A 1 matched, B both matched, DR 1 matched

e.g: 0,1,0 = A both matched, B 1 matched, DR both matched

0,0,0 = A, B & DR all matched

# HLA-A+B+DR Mismatches

Deceased Donor, First Kidney Transplants 1985-2009

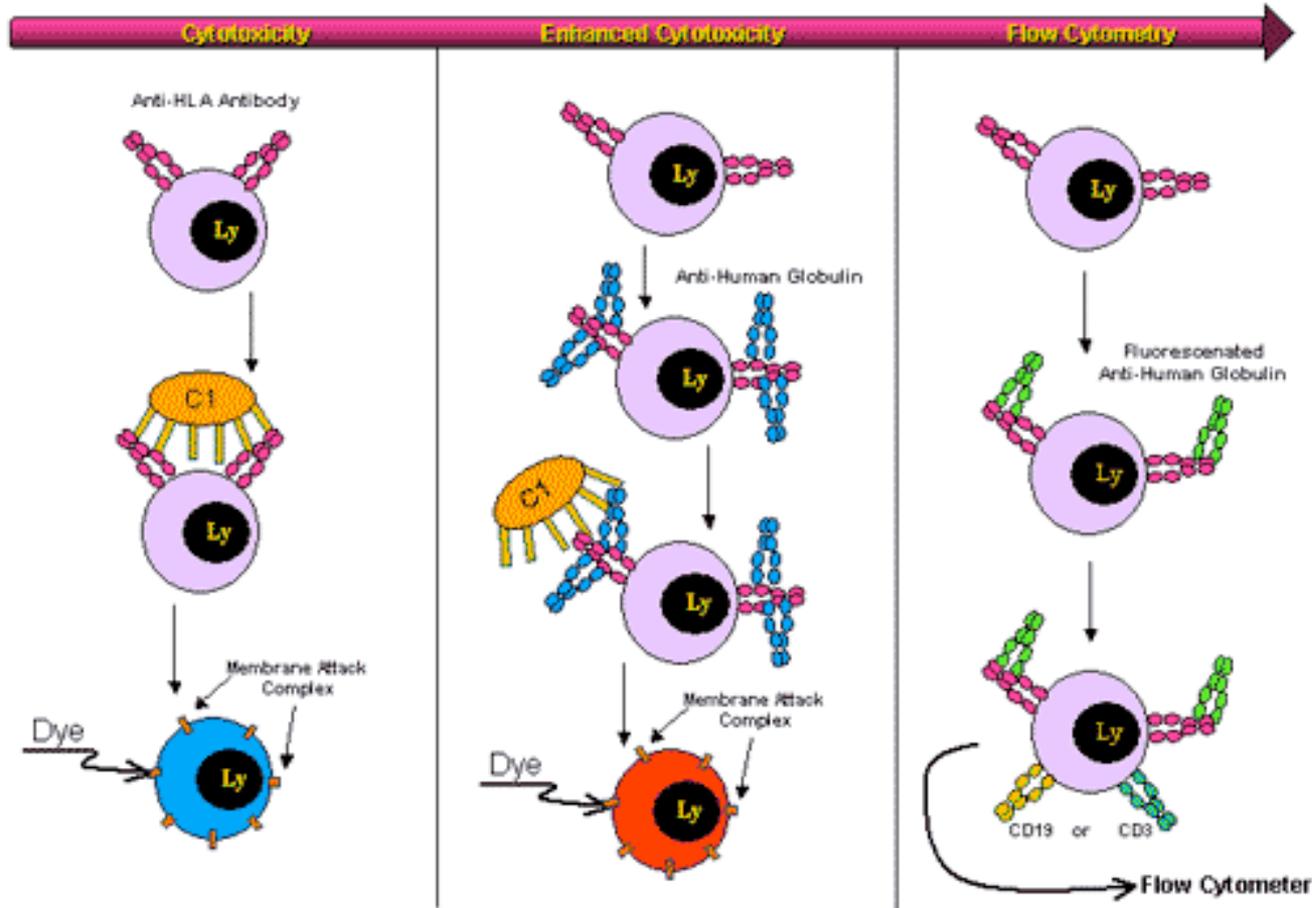


# HLA match is less important with living donors

Degree of HLA MM	Unadjusted 5yr survival by donor type		
	Extended criteria donor	Standard criteria donor	Living donor
0	60%	74%	87%
1	53%	71%	80%
2	57%	71%	80%
3	52%	70%	79%
4	52%	70%	79%
5	50%	66%	81%
6	47%	65%	79%

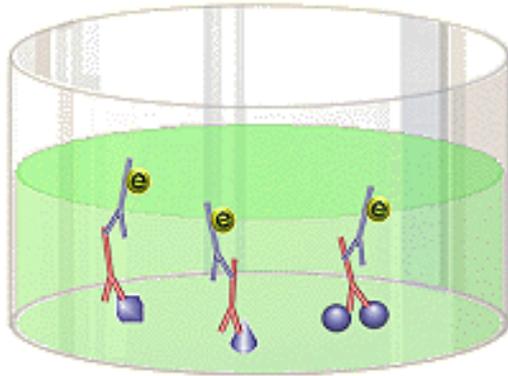


# Cell-based HLA antibody screening

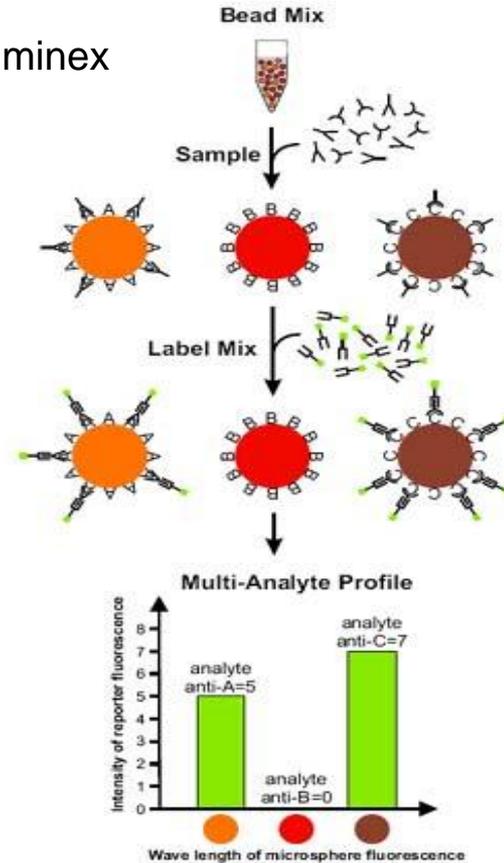


# Solid phase immunoassays for HLA antibody screening

ELISA

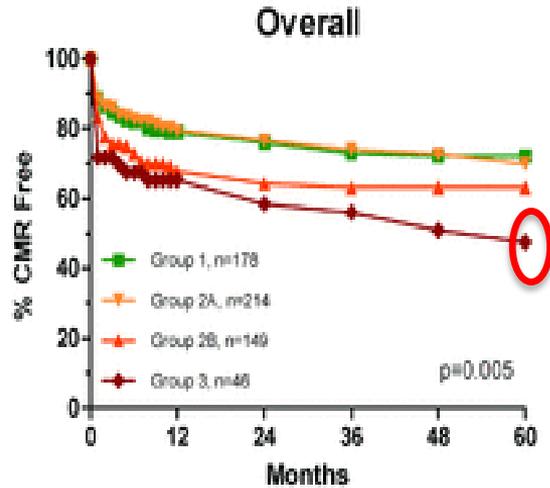


Luminex

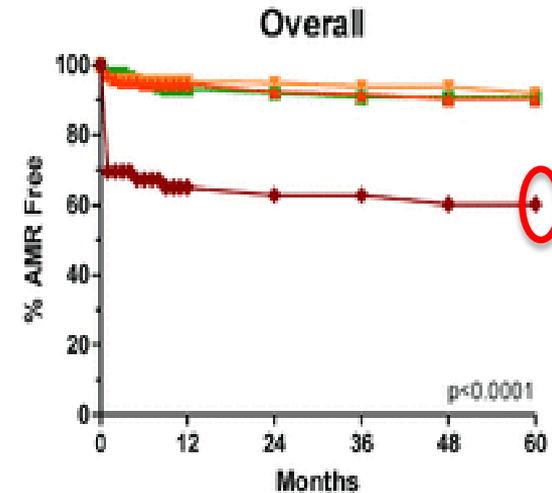


# Donor-specific HLA antibody leads to increased rejection

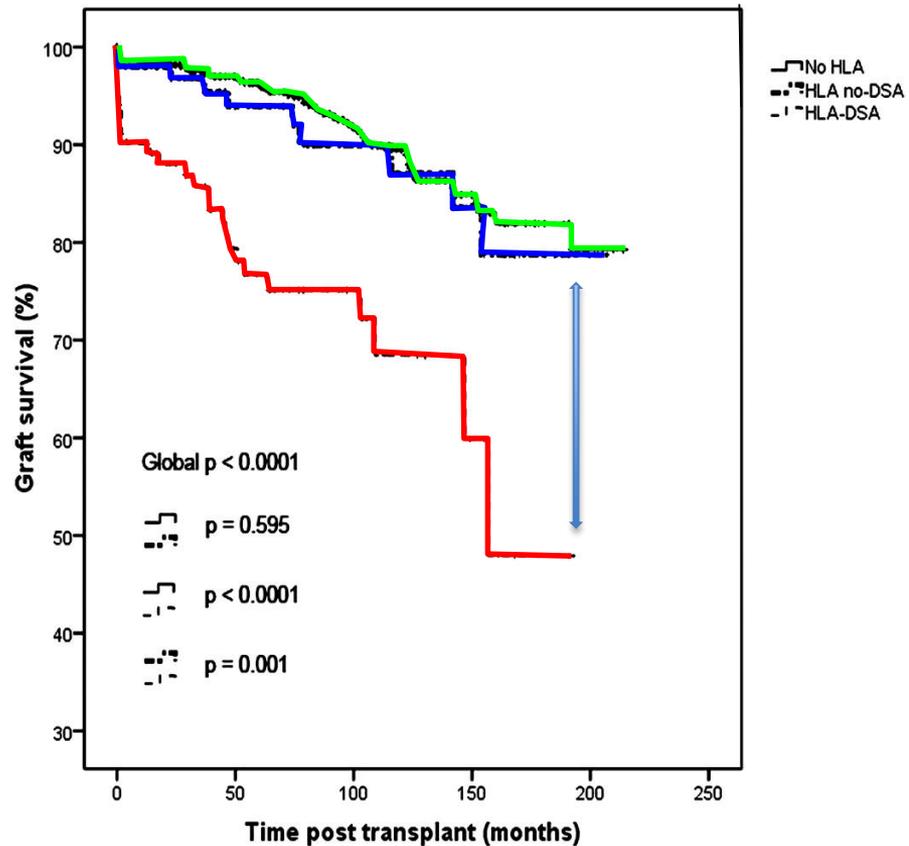
**A** Cell Mediated Rejection-Free Survival



**D** Antibody Mediated Rejection-Free Survival



## Donor-specific HLA antibody leads to poorer graft survival



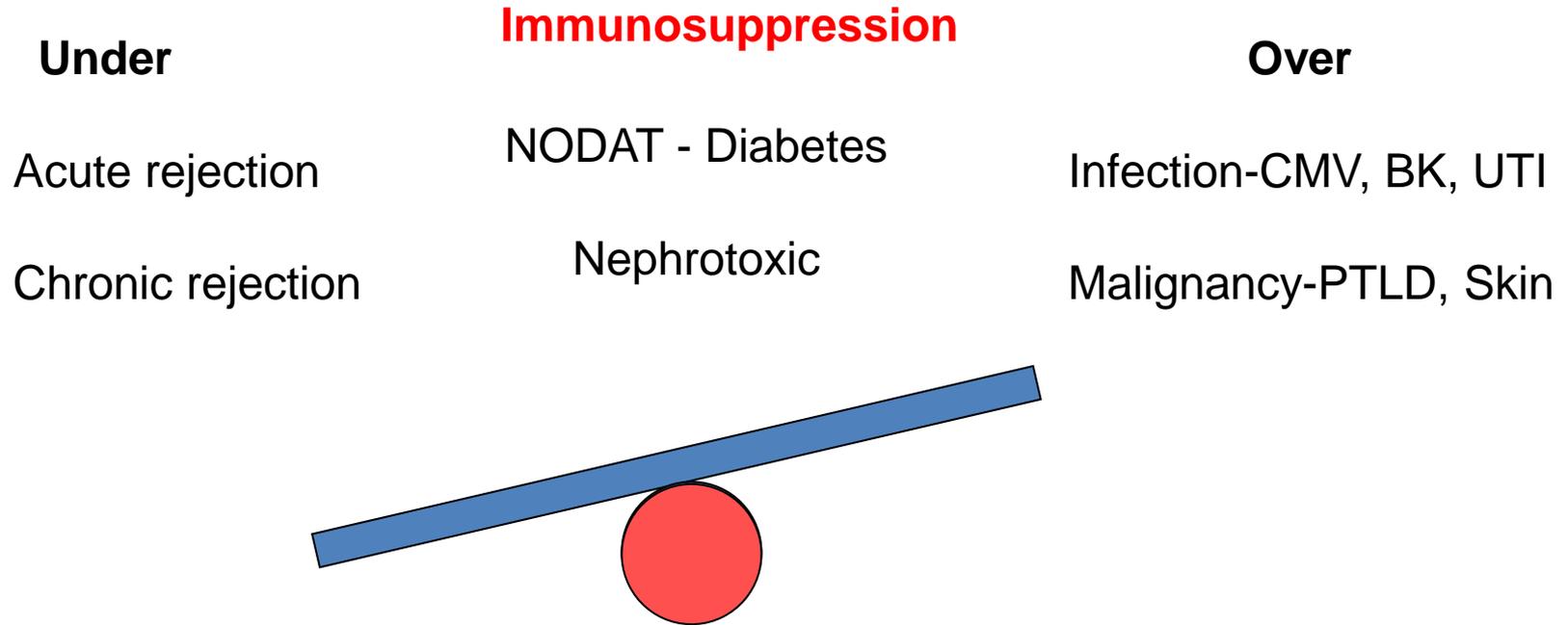
# Stratification of Immunological risk

- “Low risk”
  - non-sensitised patient receiving minimally HLA mismatched organ in the absence of current or historical donor reactive antibodies
- “Intermediate risk”
  - sensitised patients with HLA antibodies (but not donor-specific)
  - or chance of prior donor sensitisation (even in absence of current antibody)
    - Husband to Wife
    - Child to Mother
    - Previous transplanted organ

# Stratification of Immunological risk

- “High risk”
  - patients who are cross-match **negative** by flow-cytometry but who have a **current** or **historic** donor-specific antibody which arose following exposure to this antigen from a previous solid organ transplant or pregnancy (these patients require augmented immunosuppression)
- “Very High risk” - HLA Antibody incompatible
  - patients who are cross-match **positive** by flow-cytometry are deemed **HLA Antibody incompatible** (these patients require measures to remove the DSA pre-transplant plus augmented immunosuppression)

# The Clinical Conundrum



# Immunosuppression - basic principles

- **Acute rejection risk & graft loss highest in the first three months**

⇒ immunosuppression is at its highest during this period

- **serious side effects** of immunosuppressive therapy (i.e. infections and malignancy) correlate with total immunosuppressive burden

⇒ immunosuppression taper to maintenance level by 6 to 12 months

# Principal side effects of immunosuppressive therapy

Corticosteroids	Ciclosporin	Tacrolimus	Azathioprine	Mycophenolate mofetil	Sirolimus
Hypertension	Nephrotoxic effects	Nephrotoxic effects	Marrow suppression	Diarrhoea gastrointestinal upset  Cytomegalovirus infection	Hyperlipidaemia
Glucose intolerance	Hypertension	Hypertension			Thrombocytopenia
Dyslipidaemia	Glucose intolerance	Glucose intolerance			Poor wound healing
Osteoporosis	Dyslipidaemia	Insulin-dependent diabetes mellitus			Lymphocele
Poor wound healing	Gum hyperplasia	Dyslipidaemia			
	Hirsutism				

# Induction immunosuppression

- Monoclonal antibodies
  - Basiliximab (anti-IL2 receptor)
  - Alemtuzumab (anti-CD52) - (CamPath)
  
- Polyclonal antibodies
  - Anti-thymocyte globulin ATG (rabbit)

# Immunosuppression Protocol

- **Induction:**

- Basiliximab (Simulect®) 20mg IV administered by anaesthetist pre-operatively (day 0) and on day 4 post-operatively on the ward.
- Tacrolimus (Adoport®) 0.05mg/kg PO 1 hour pre-operatively.
- Methylprednisolone 1g IV administered by anaesthetist pre-operatively

- **Maintenance:**

- Tacrolimus (Adoport®) 0.05mg/kg orally BD adjusted according to trough tacrolimus levels.
- Mycophenolate mofetil 500mg orally QDS.
- Prednisolone 20mg orally OM for 2 weeks, then 15mg for 2 weeks, then 10mg for 4 weeks then 5mg OM and continue for 6 months then review.

## **Tacrolimus levels**

Low risk: Trough 3-7ug/l

Standard & High risk: Trough 10-12ug/l for 2 months then 8-10ug/l

# Preventing drug toxicity

- Steroid sparing regimens, and steroid avoidance
- Reduce calcineurin inhibitor dose after early post transplant period
- Calcineurin inhibitor avoidance
- Single drug regimens
  - Higher rates of acute rejection

# “Symphony Study 2007”

*The* NEW ENGLAND JOURNAL *of* MEDICINE

ORIGINAL ARTICLE

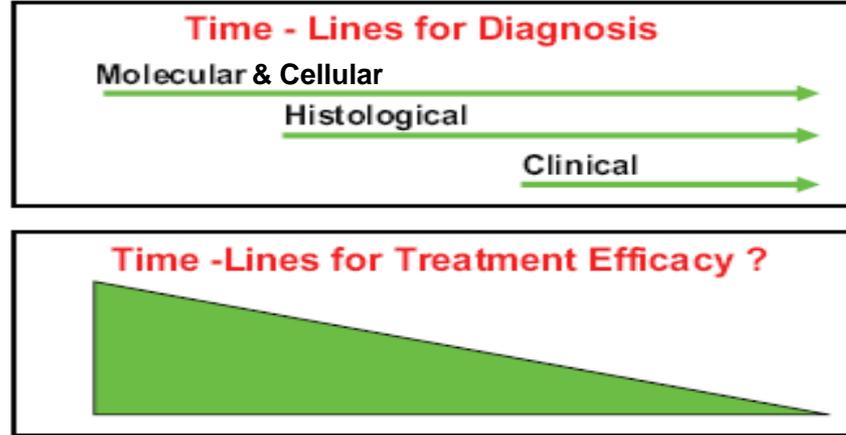
## Reduced Exposure to Calcineurin Inhibitors in Renal Transplantation

Henrik Ekberg, M.D., Ph.D., Helio Tedesco-Silva, M.D., Alper Demirbas, M.D.,  
Štefan Vitko, M.D., Björn Nashan, M.D., Ph.D., Alp Gürkan, M.D., F.A.C.S.,  
Raimund Margreiter, M.D., Christian Hugo, M.D., Josep M. Grinyó, M.D.,  
Ulrich Frei, M.D., Yves Vanrenterghem, M.D., Ph.D., Pierre Daloze, M.D.,  
and Philip F. Halloran, M.D., Ph.D., for the ELITE–Symphony Study\*

### **Tacrolimus levels**

Low risk: Trough 3-7ug/l

## Rejection: A Time-Line Model



Rationale: **early intervention**

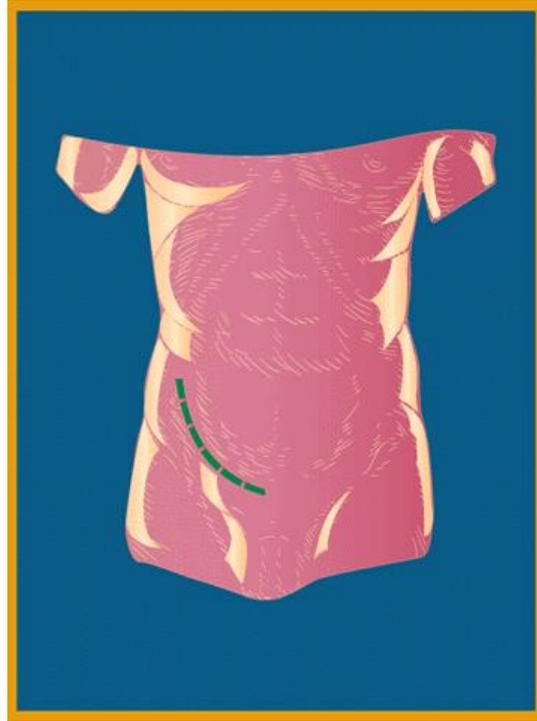
Molecular and cellular surveillance strategies anticipate histological and clinical rejection.

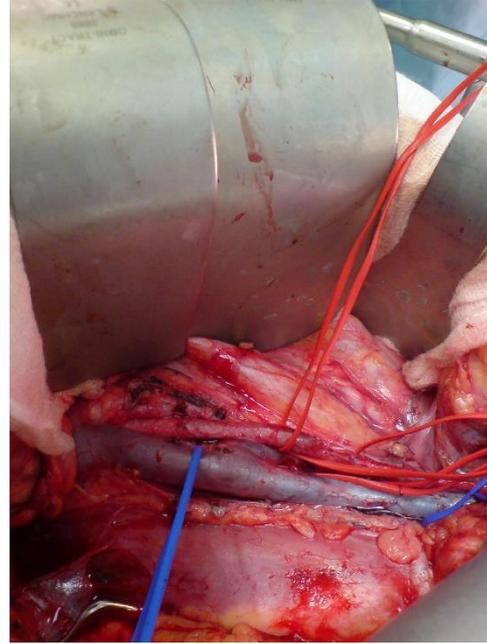
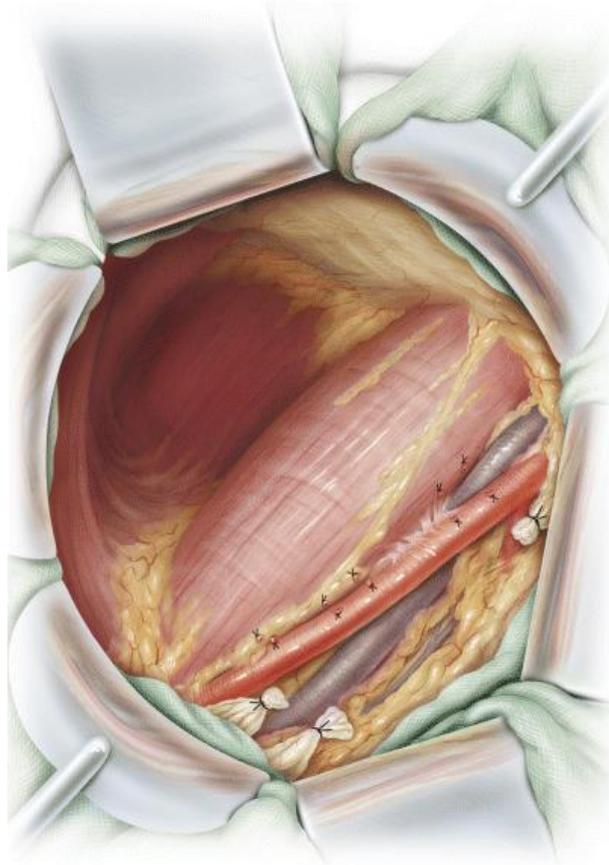
*D Anglicheau & M Suthanthiran Transplantation 2008; 86: 192*

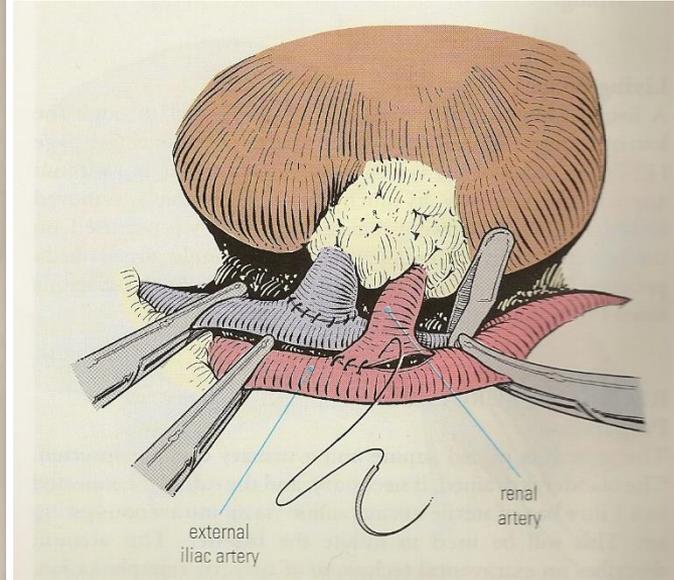
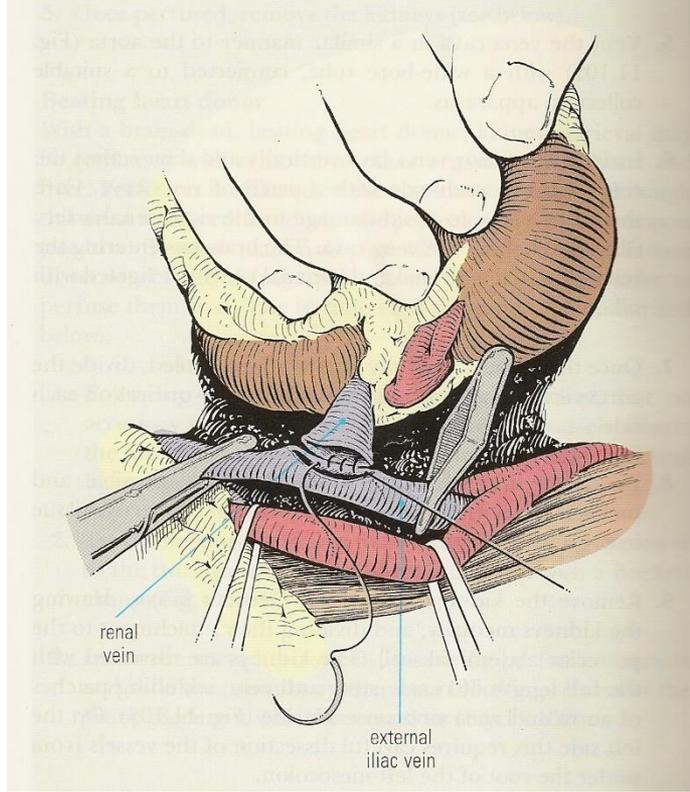


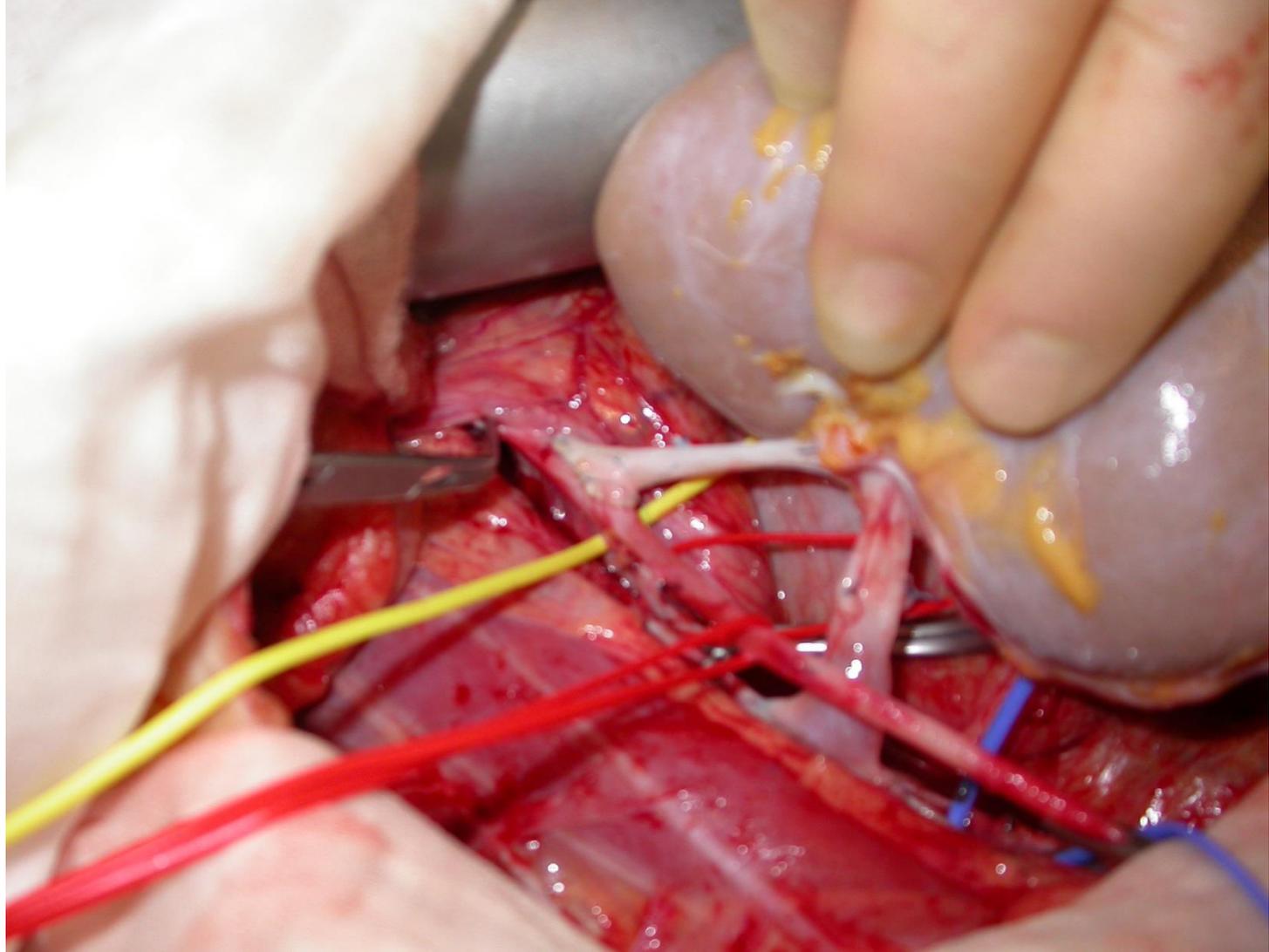
3 anastomoses and that's it

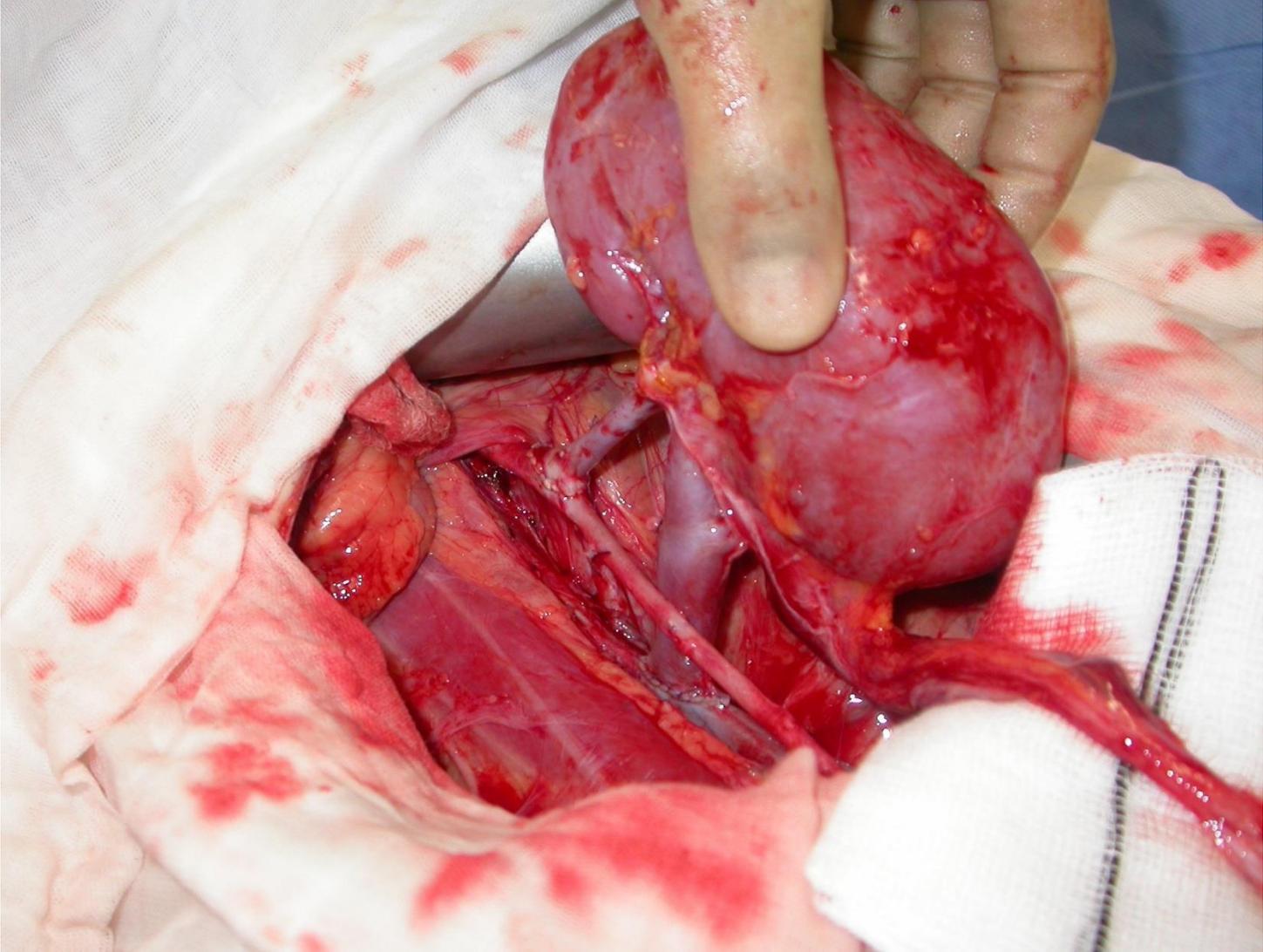
# Incision



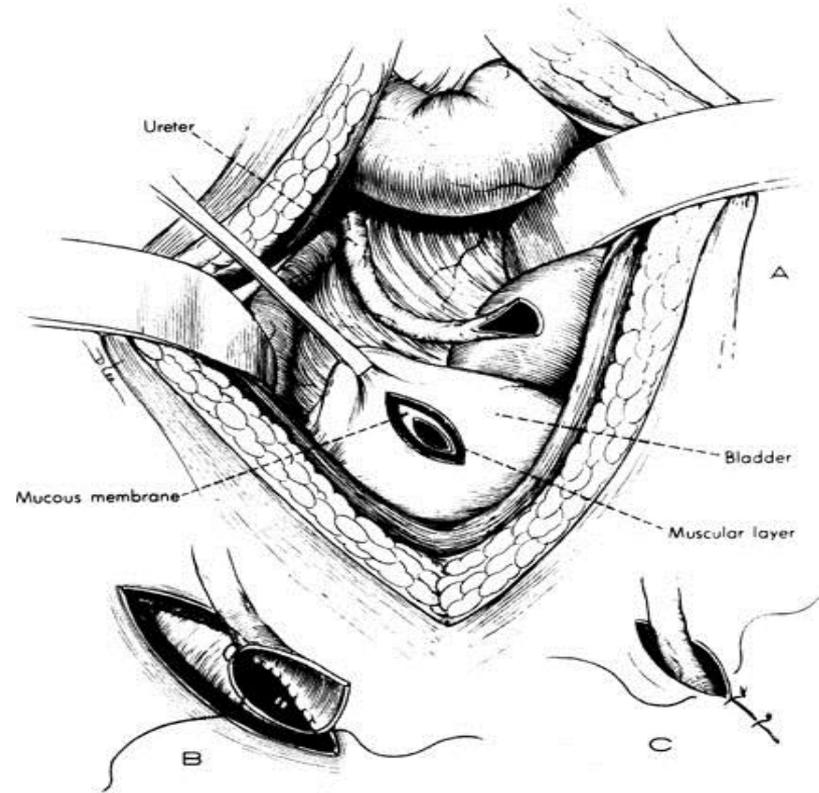






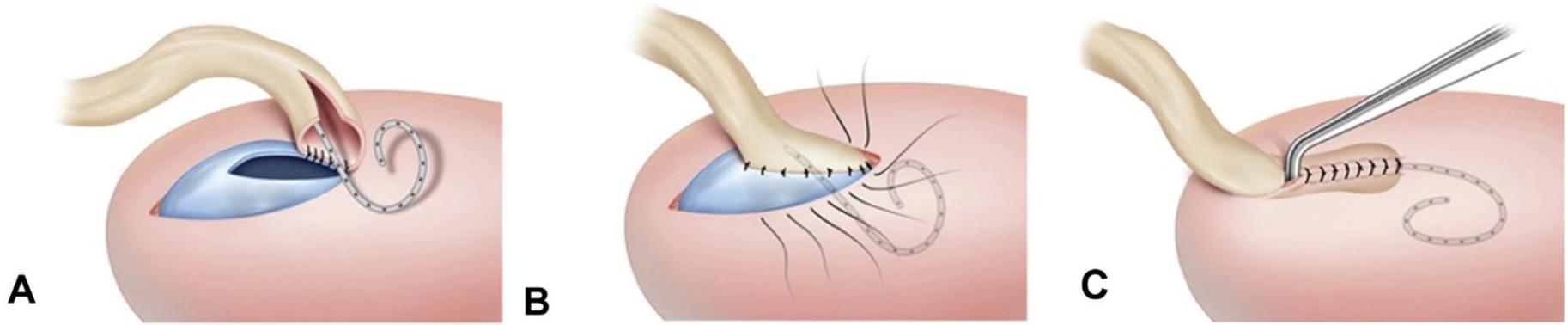


# Extravesical / Onlay – Lich-Gregoir interrupted / continuous



# Ureteric anastomosis – standard approach

- Ureter to bladder – Lich-Gregoir (Campos-Friere)
  - Role of Transplant Ureteric JJ stent



*Urology, Volume 3, Issue 3, March 1974, Pages 304-308*

*Geraldo de Campos Freire, Gilberto Menezes de Góes, J. Geraldo de Campos Freire*



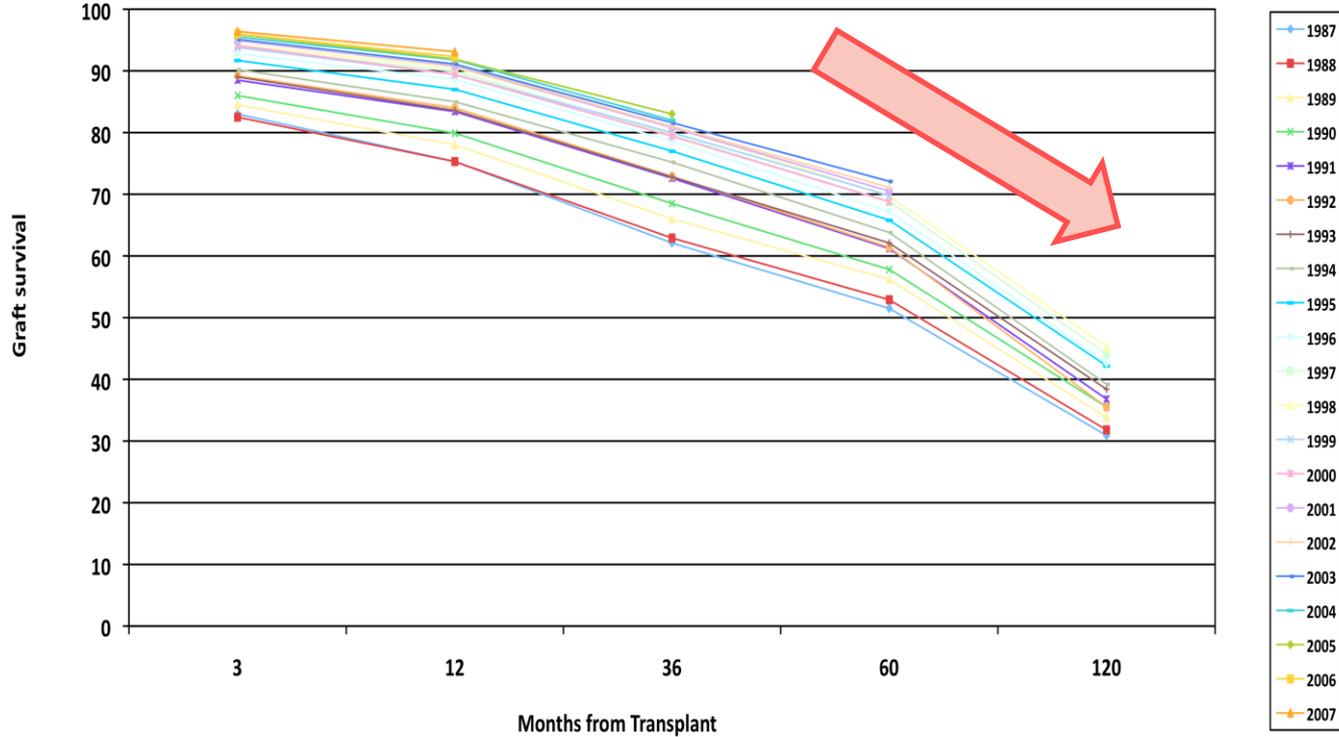
# Early post op issues

- Fluid balance: can have high UO - 4 litres/24 hours
- Bleeding: Haemoglobin & drain output
- Arterial/Venous thrombosis - 1%
  - Suspect if sudden fall in UO (take care to account for any native output)
  - Gross haematuria
  - Graft tenderness
  - Management- urgent Doppler/ Surgical exploration
- Urinary leak: 1%-2%
  - Unexplained abdominal pain, decreased UO, increased drain volume.
  - Rise in serum creatinine, check drain fluid creatinine
  - Management- catheter/surgical
- Recurrent 1' FSGS- urinary protein creatinine ratio

# Prophylaxis

- Arterial Thrombosis - aspirin
- sc heparin only if increased risk venous thrombosis
  - e.g. anti-phospholipid syndrome
- Peptic ulcer - Rantidine or PPI
- Infection
  - PCP: Co-trimoxazole, Dapsone, Pentamidine nebs
  - CMV: Valgancyclovir if Donor positive to Recipient negative
  - TB: Isoniazid/pyridoxine

# Late graft loss remains problematic



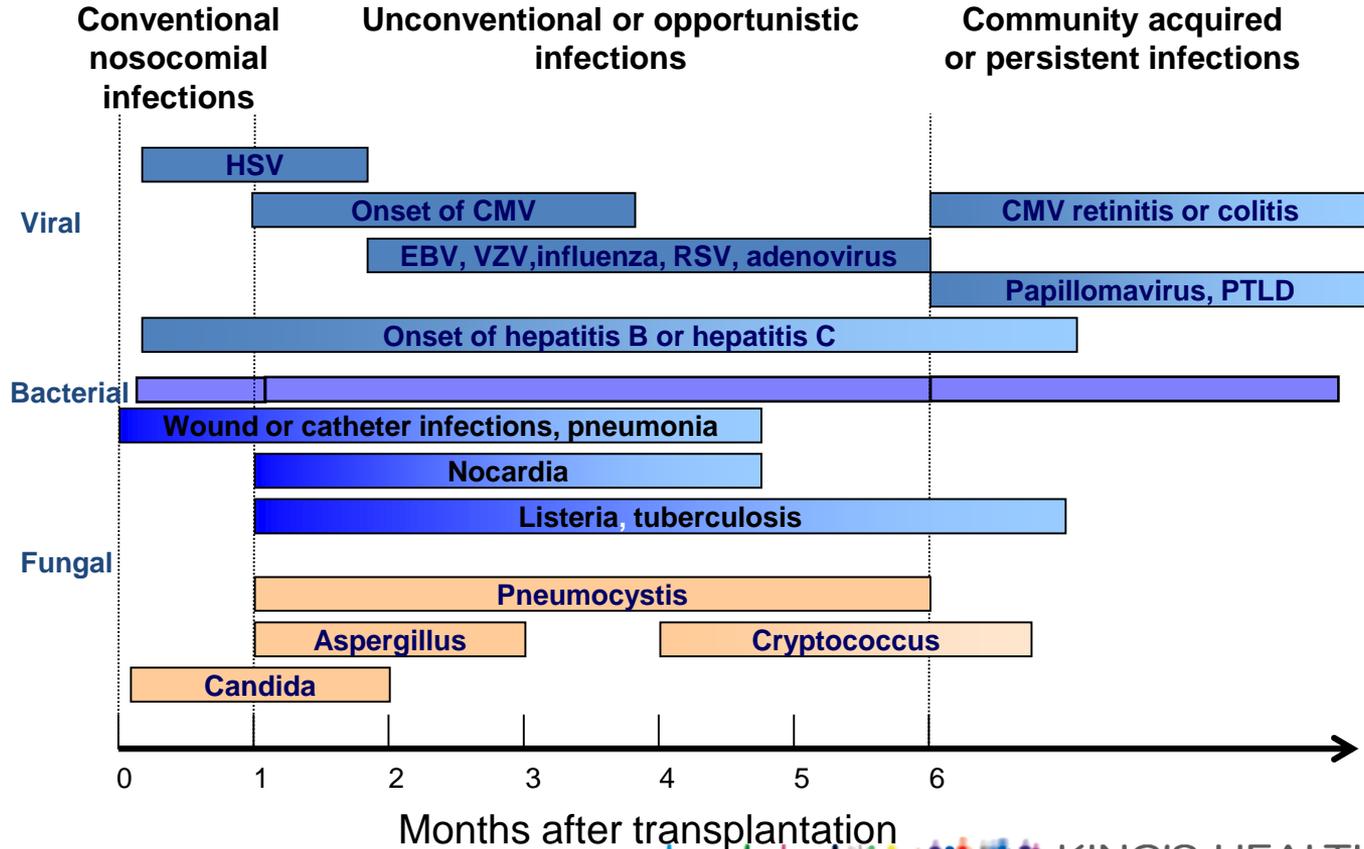
# Getting the balance right



# Post-transplant infection - general principles

- Common community-acquired AND rarer opportunistic infections
  - Fewer symptoms, muted clinical findings, delayed clinical presentation
  - Drug resistance more common
  - May need urgent treatment
  - Potential drug interactions
  - Drug levels only crudely estimate immunosuppressive burden
- Focus on disease prevention: prophylaxis and vaccination

# Timeline of post-transplant infections



# Viral Infections post-transplant

- Community-acquired (e.g. common respiratory viruses)
- Latent viruses (e.g. HSV, CMV, VZV, hepatitis B and C, papillomavirus, and polyomavirus)
- Donor-derived (e.g. CMV, EBV, hepatitis B & C, HIV, rabies)

# Post-transplant malignancy



Lymphoma  
PTLD

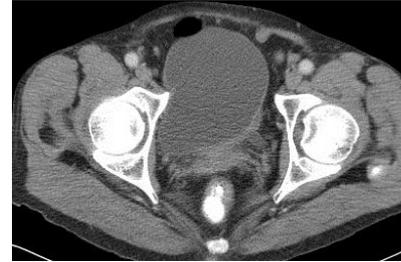
Native Kidney  
RCC



BCC



Kaposi  
Sarcoma



Bladder  
Cancer



HPV-related



## Post-transplant malignancy

Cancer Site	No. Cases	Expected No.	Ratio
Nonmelanoma skin	127	5.1	24.7
Thyroid and other endocrine	30	2.1	14.3
Mouth, tongue, and lip	22	1.6	13.8
Cervix, vulva, and vagina	39	3.6	10.8
Non-Hodgkin lymphoma	25	2.4	10.3
Kidney and ureter	32	3.5	9.1
Bladder	26	4.7	9.1
Colorectal	38	10.5	3.6
Lung	30	12.5	2.4
Brain	10	4.1	2.4
Prostate	11	5.2	2.1
Melanoma	7	4.1	1.7
Breast	15	13.6	1.1

# Recurrent renal disease

- 3<sup>rd</sup> commonest cause of graft loss
- FSGS
- Membranous GN
- MCGN type 1 and 2
- IgA
- Diabetic nephropathy
- HUS

# Summary points

- Increasing effectiveness of transplantation allows many more patients to be considered, **but** ongoing shortage of donors
- Outcomes living donor kidneys much better than deceased donor kidneys
  - **Optimise Donor**
  - **Optimise Organ**
  - **Optimise and Monitor Recipient**

# Summary points - 2

- Improvements in managing early acute rejection have **not** led to impressive long-term improvement in graft and patient survival
- Strategies to minimise rejection include immunological matching and identification / avoidance of preformed anti-donor HLA antibodies
- Immune-suppression still corticosteroid & calcineurin inhibitor-based, in spite of side effects
- Main side-effects - increased risks of infection, malignancy & diabetes

# Living Donation



  
**Give a Kidney**  
*one's enough*

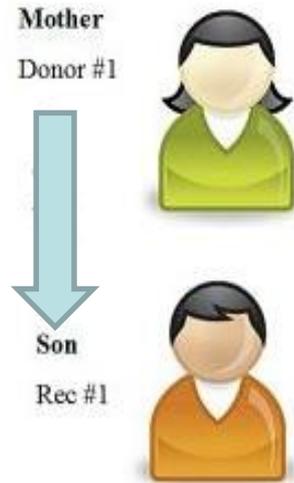
**Increasing  
Supply: Living  
Donation**

# Living Donation

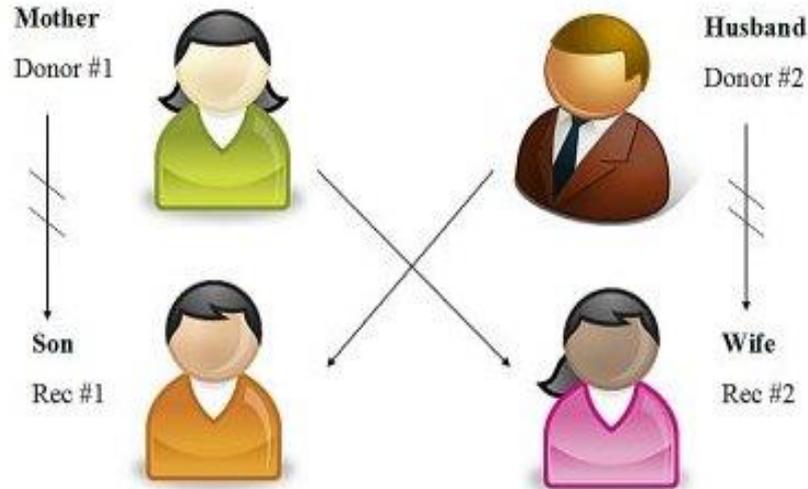
- Relative / friend / colleague
- Strangers...
  - Altruistic
  - "Good Samaritan"
  - Unspecified



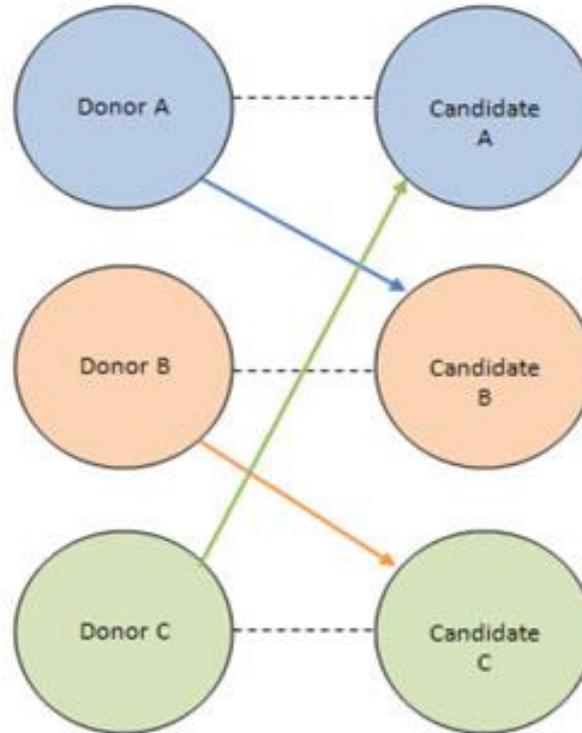
# Living Donation – Standard Direct Donation



# Living Donation – Paired Exchange



# Living Donation – National Kidney Sharing



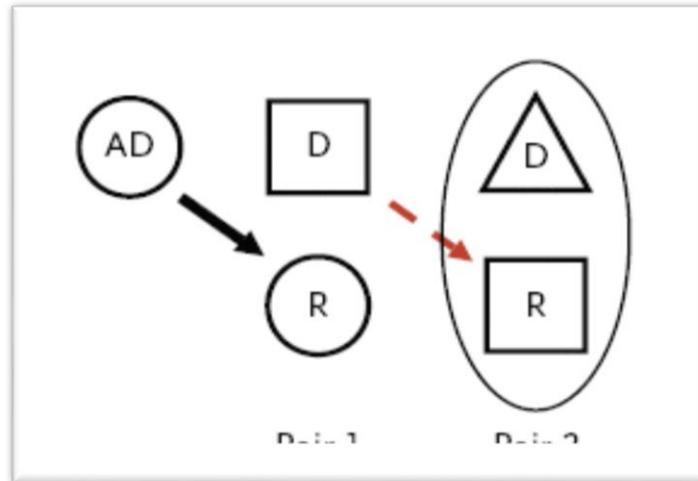
Guy's London

Leeds

Edinburgh

# Living Donation – Domino Chains

- Altruistic donors
- Therapeutic nephrectomy
- Human Tissue Act





# Altruistic (non-directed) Donors

- Controversial!
  - Challenges traditional views on medical ethics
    - Where does the benefit lie?
- Issues
  - Troubles some transplant professionals
  - Is illegal in some parts of the world
  - Assumption of psychopathology

# Non-directed Donors

- However...
  - Around 80 people do this each year in the UK
  - 9% of living donor programme nationally
- Very motivated group of individuals
  - They have their own charity...



How to Give a Kidney

Latest News

Support Us

Events

£ Support Us

WHY WE NEED MORE DONORS

HOW DO I GO ABOUT DONATING A KIDNEY?

THE DONOR OPERATION: BEFORE, DURING AND AFTER

HOW SAFE IS DONATION?

PERSONAL STORIES / VIDEOS

PAST AND FUTURE OF ALTRUISTIC KIDNEY DONATION

'No waiting for a transplant for want of a kidney'

News @Giveakidney motherwelltimes.co.uk/news/health/be... March 20, 2019

"It was a doddle – I slept through the whole thing!" Colin McLachlan, donated a kidney at Edinburgh Royal Infirmary.



Give a Kidney is a charity that aims to raise awareness of non-directed (also known as altruistic) living kidney donation in the UK.

Other Stories

- Read Donor Stories
Read recipient stories
Read kidney patient stories

Latest News

# Altruistic Donors

- Outcomes:
  - Very positive
  - No significant difference with people donating to someone they know
- There are some differences...
  - Demographics
  - Altruistic behaviours
  - Fits in with lifestyle

# Altruistic Donors

- Getting the transplant community on board
    - Improved in recent years
    - Need to address issues / concerns
  - 1. Psychopathology
  - 2. Motivations
  - 3. Outcomes
    - 1. Who will donate?
    - 2. Who may get screened out and why?
  - 4. What is a living donor kidney worth?
- What is the best way to use these kidneys?
    - Hit the jackpot!
    - Donor chains

**BOUnD**

Understanding Barriers and Outcomes in  
Unspecified (altruistic) Kidney Donation



Non-directed  
donor



Incompatible  
donor-recipient  
pairs

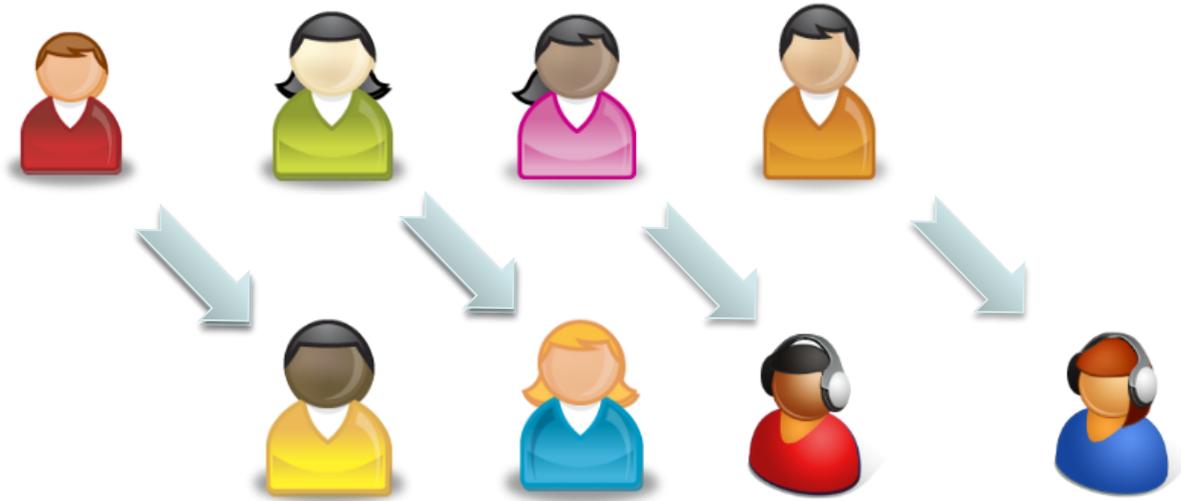
Waiting list  
recipient



Often very difficult to transplant

- Highly sensitised
- May otherwise not be transplanted

# Non-directed Donors





1 non-directed donor = 20 kidney transplants

# Non-directed Donors

- Making a massive contribution to the waiting list
- UK has largest kidney exchange programme in Europe
  - Surge in 2018
  - 48% donated as part of a chain in 2018
- 33 donors
  - 82 transplants
    - Combination of short and long chains

# Donor Stones - Bench URS



Before  
Fragmentation



After Laser Fragmentation

# Hand Assisted Laparoscopy Donor Nephrectomy



# Technique

- Transverse / midline 7cm
- 2 x 12mm ports





- **Donor Safety**
- Donor QOL; Pain; LoS; Cosmesis
- Recipient outcome
- Reproducible across department
- Ability to train / teach

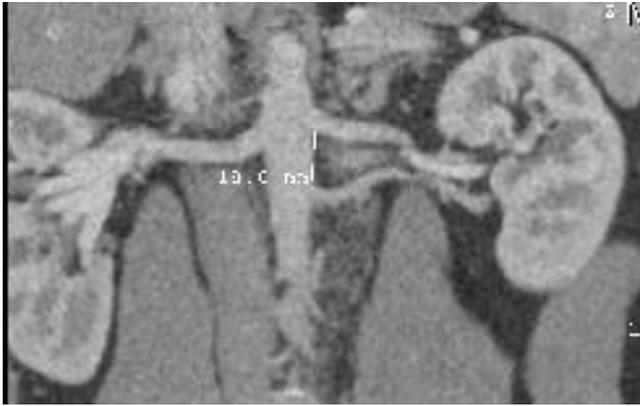
**Risk is with Recipient not Donor**

- Energy source -Thunderbeat
- Dissect colon medial
- Gonadal vein to renal vein
- Thunderbeat / Ligasure - gonadal + adrenal veins
- Mobilise kidney
- Ureter divided at pelvic brim – clips
- A / V articulated linear stapler

Left HALDN

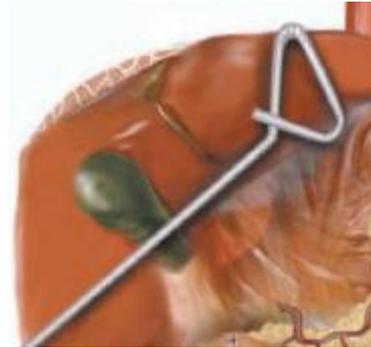
# Right side

- **Why right?**
- Single R v multi L RA
- Split function
- Stone / Benign mass

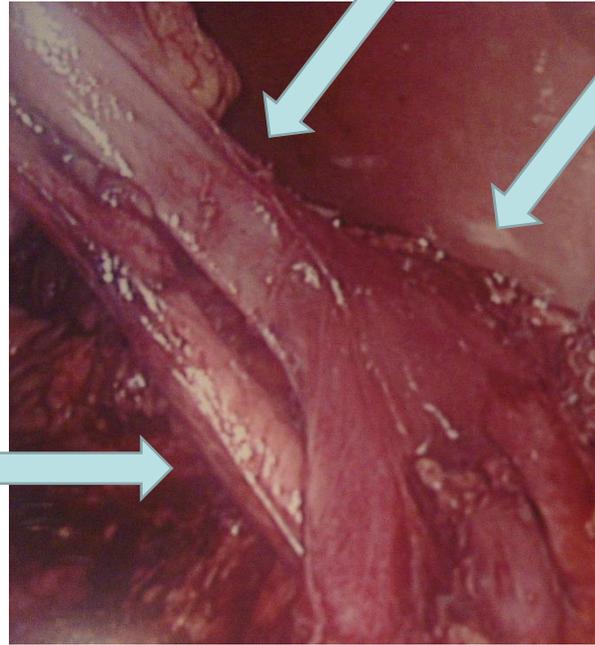


2 Renal Arteries to Left 1.8cm apart  
1 Renal Artery to Right

- **Potential problems**
- Short renal vein
- Liver retraction
  - Extra 5mm port



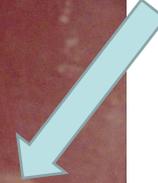
Renal Artery



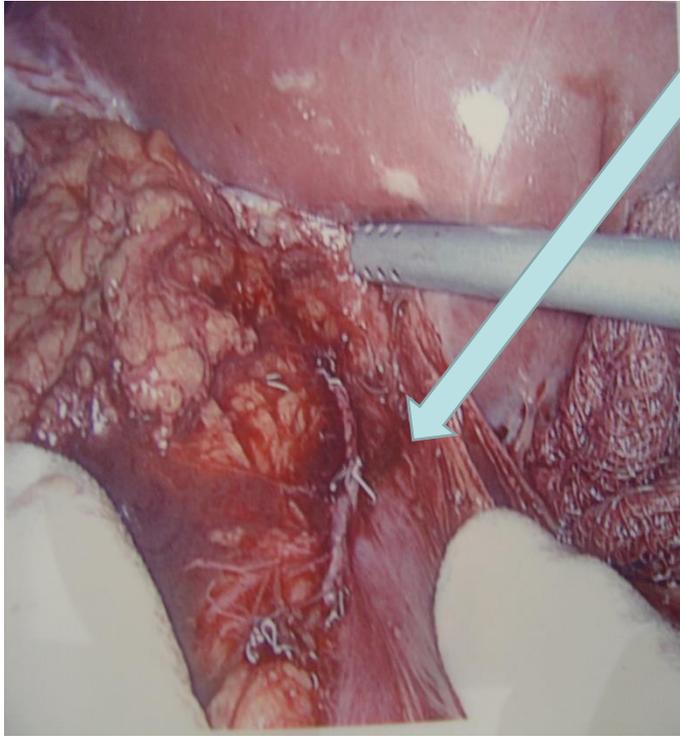
Renal Vein



IVC



Right HALDN



IVC

Right HALDN

# Energy Sources



# Lap Emergency Trolley



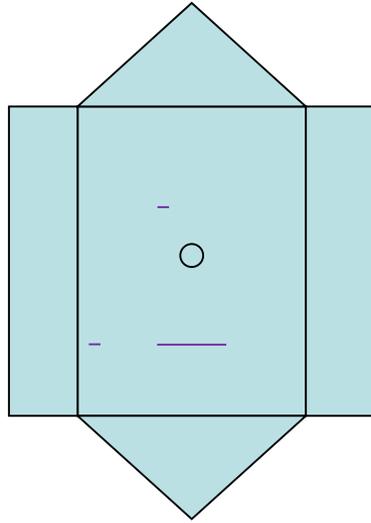
# “First do no harm”

- Donor safety paramount
  - Major intraoperative risk – bleeding
    - Friedman 2006 - 2 lap donor fatalities – non-locking clips RA
  - Bowel diathermy injury
    - Oyen 05
- Minimise donor morbidity
- Maximise recipient outcome

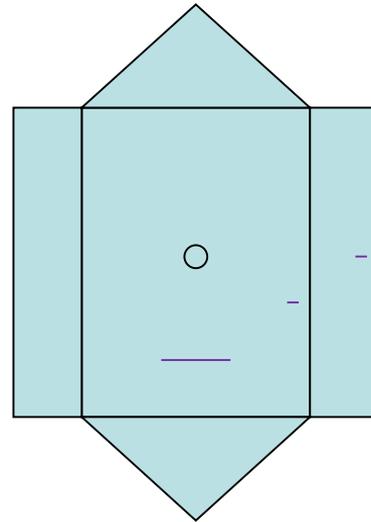
Risk is with Recipient not Donor

# Patient preference

Cosmesis – where do they want the scar?



Right HALDN



Left HALDN

# HALDN v Other techniques

- Donor Safety
  - Donor QOL
  - Recipient outcome
  - Reproducible across department
  - Ideal for training
- Mini-open
  - Pure Lap
  - Retro Lap
  - Robot-assist Trans Lap



# Costs - The bigger picture?

## Theatre time

HALDN: 180 min

## Re-usable equipment

Lap stacks etc; Lap instruments

## Consumables

	£		£
Thunderbeat	387	Harmonic	407
Stapler	294	Ligasure	411
Stapler reload x2	244	Hemolock	24
Gelport	281	Fibrillar	60
Trocars x2	67	Dermabond	22
Sucker	93	TOTAL	1500

---

Hospital stay: 2-4 days (culture)

Time back to work: 3 v 6 weeks ?



# Pain management

- 20mls 0.5% levo-bupivacaine between peritoneum and fascia
- LA wound infiltration skin / ports
- LA Infusion pump – 0.125% L-BP
- Fentanyl PCA – low background & demand
- Paracetamol iv / po
- + - 3 days Ibuprofen with PPI cover

# Training





# 50 years of Renal Transplantation at Guy's - the early years

**1962 Acute HD & PD**

**Aug 1966 long- term HD**

*Richard Batchelor (1931-2015)*

*tissue typing and matching (trained by Peter Gorer)*

**May 1967 1<sup>st</sup> transplant**

**Nov 1968 1<sup>st</sup> paediatric transplant**

Frank Ellis & Michael Joyce

Mick Bewick 1968; Geoff Koffman & John Taylor 1970/80s

**1976 500 Tx in SE region (421 DD; 79 LD)**

**1979 1000 Tx (820 DD (DCD); 180 LD)**



*Cameron & Ogg*



# 2019 - 50 years of Renal Transplant at Guy's

6745 Adult Transplants

856 Paediatric Transplants





# Pioneering

American Journal of Transplantation 2017; XX: 1-10  
Wiley Periodicals Inc.

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and the American Society of Transplant  
doi: 10.1111/ajt.13111

**Prophylactic Ureteric Stents in Renal Transplant Recipients: A Multicenter Randomized Controlled Trial of Early Versus Late Removal**



Transplant  
Urology



Robotics



EVNP



HIV transplants



3D printing





# Living Donor Kidney Transplantation

## The Donor & The Recipient



### Kidney Transplantation

History, UK perspective & Guy's Hospital perspective

Recipient Medical Aspects

Surgical Aspects of Kidney Transplant

### Living Donation

Donor Medical & Psychological Aspects

Surgical Aspects of Donor Nephrectomy

Questions

# Thank you

