

KIDNEY TRANSPLANT: PRE-OPERATIVE NURSING CARE

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Objectives

- Review some concepts of CKD.
- Define kidney transplantation.
- Recognize the process of evaluation and preparation for kidney transplantation.

Chronic Kidney Disease

Table 10. Stages of Chronic Kidney Disease

Stage	Description	GFR (mL/min/1.73 m²)
1	Kidney damage with normal or ↑ GFR	≥90
2	Kidney damage with mild ↓ GFR	60–89
3	Moderate ↓ GFR	30–59
4	Severe ↓ GFR	15–29
5	Kidney failure	<15 (or dialysis)

Chronic kidney disease is defined as either kidney damage or GFR <60 mL/min/1.73 m² for ≥3 months. Kidney damage is defined as pathologic abnormalities or markers of damage, including abnormalities in blood or urine tests or imaging studies.

Top 10 Leading Cause of Mortality

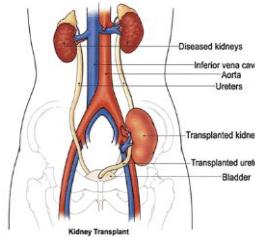
CAUSES	NUMBER AND RATE/100,000 POPULATION			
	Philippines			
	5-Year Average (2004-2008) & 2009			
CAUSES	5-Year Average (2004-2008)		2009*	
	Number	Rate	Number	Rate
1. Diseases of the Heart	82,290	94.5	100,908	109.4
2. Diseases of the Vascular System	55,999	64.3	65,489	71.0
3. Malignant Neoplasms	43,185	49.6	47,732	51.8
4. Pneumonia	35,756	41.1	42,642	46.2
5. Accidents**	34,704	39.9	35,990	39.0
6. Tuberculosis, all forms	25,376	29.2	25,470	27.6
7. Chronic lower respiratory diseases	20,830	24.0	22,755	24.7
8. Diabetes Mellitus	19,805	22.7	22,345	24.2
9. Nephritis, nephrotic syndrome and nephrosis	11,612	13.4	13,799	15.0
10. Certain conditions originating in the perinatal period	12,590	14.5	11,514	12.5

Note: Excludes ill-defined and unknown causes of mortality

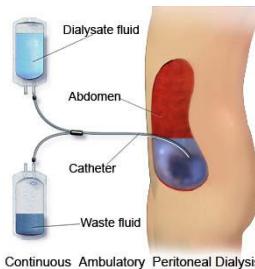
* reference year

** External causes of Mortality

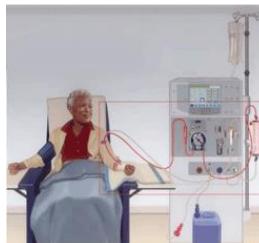
Renal Replacement Therapies



Kidney Transplant



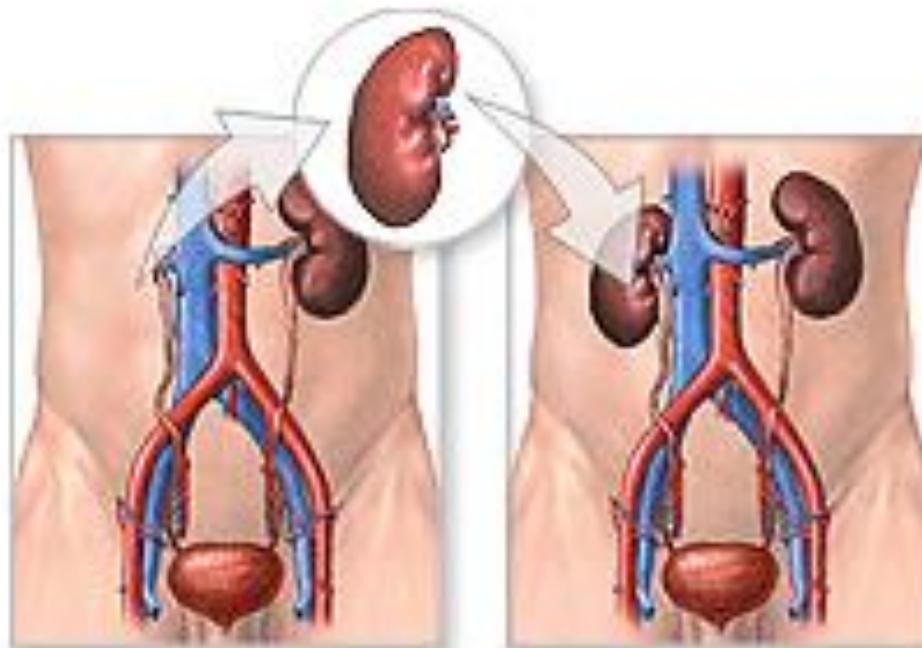
Peritoneal Dialysis



Hemodialysis

Kidney Transplant

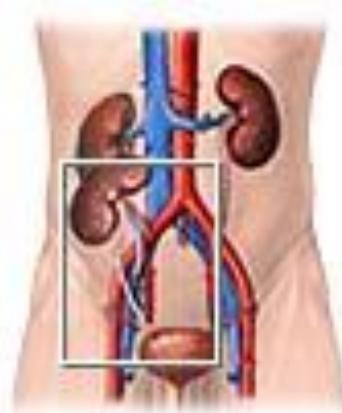
- A kidney transplant is a surgical procedure performed to replace a diseased kidney with a healthy kidney from another person.



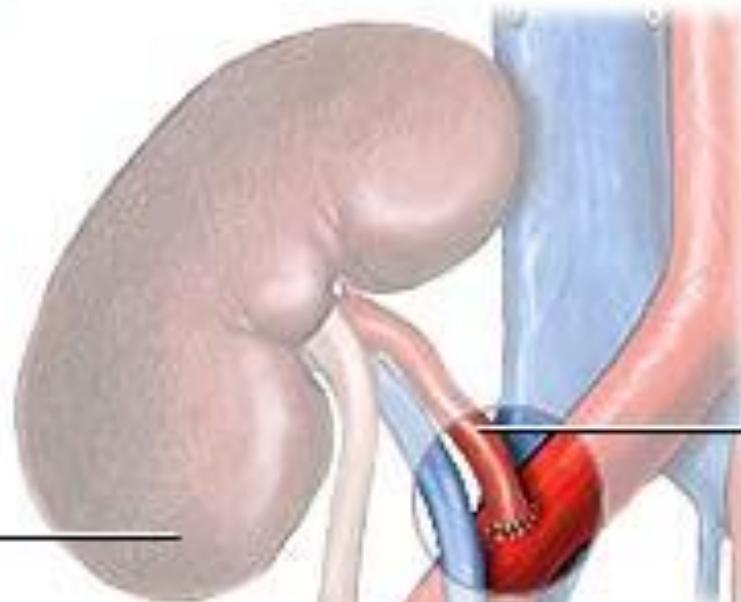
ADAM

The Surgical Procedure

- Vein-vein
 - Renal vein-external iliac vein
- Artery-artery
 - Renal artery-external iliac artery
 - Renal artery-internal iliac artery
- Ureter -bladder



Donor kidney

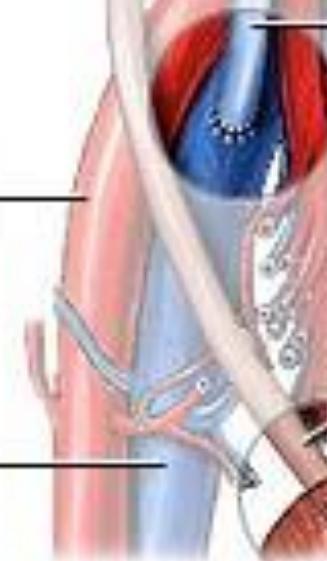


Renal artery

Renal vein

Right iliac artery

Right iliac vein



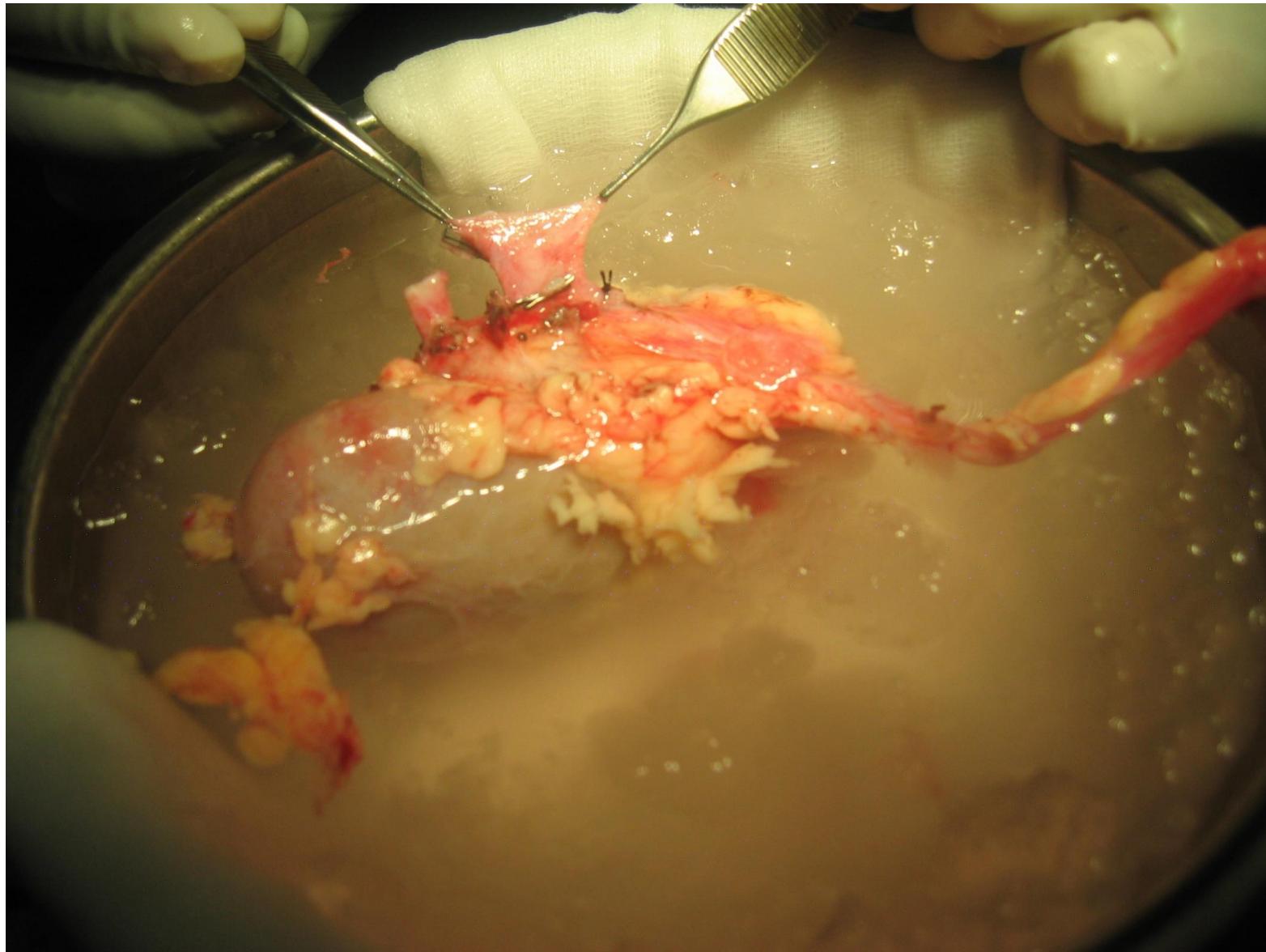
Ureter

Bladder

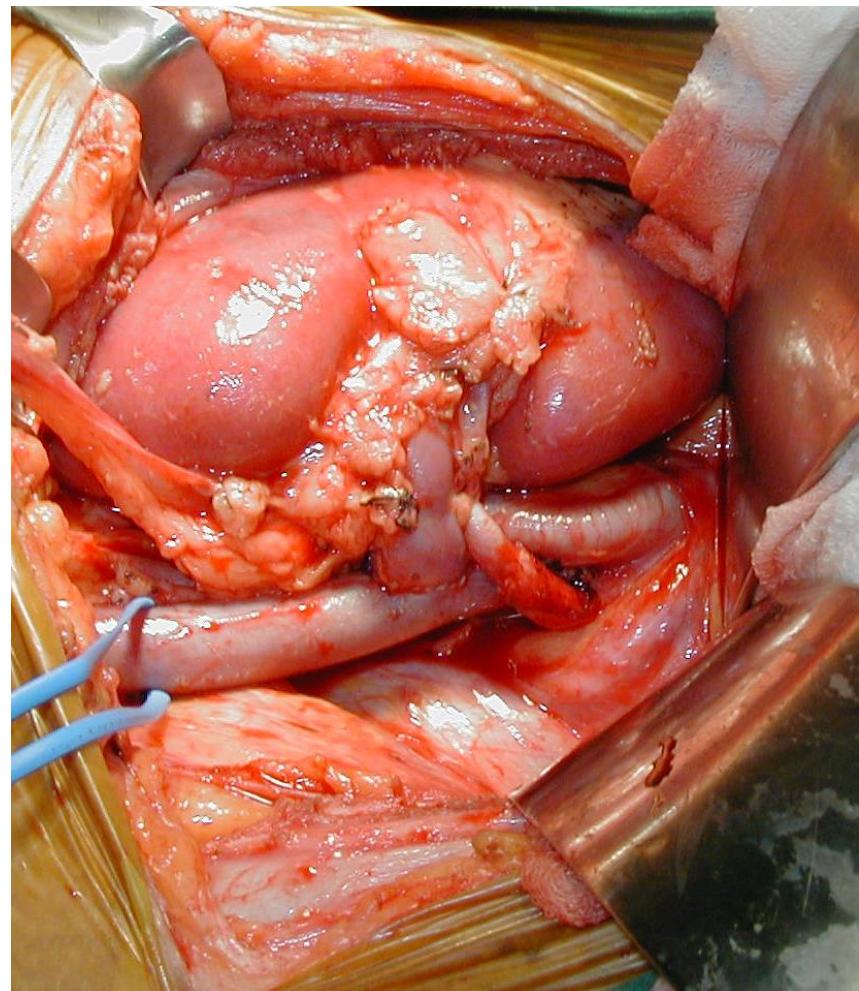
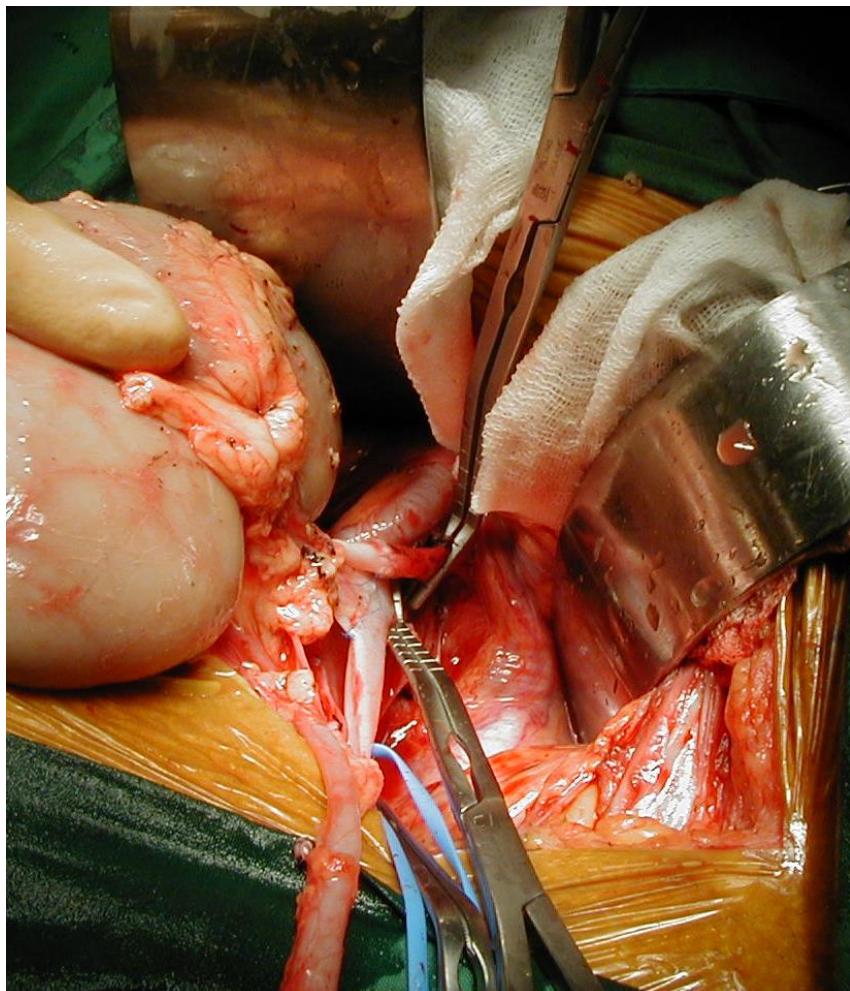
Perfusion & Anastomosis



Photos from Dr. Edna Dacudao



Photos from Dr. Edna Dacudao



Photos from Dr. Edna Dacudao

The Transplant Team

- Vascular surgeon
- Nephrologist
- Anesthesiologist
- Medical specialists
- Nurses and Nurse coordinators



Types of Donor

- Living Related
- Living Non-related
- Deceased



Benefits of Successful Renal Transplantation

- Optimal treatment for most patients with End Stage Renal Disease
- Improved quality of life
- Reduced medical expenses
- Survival advantage

ABSOLUTE CONTRAINDICATIONS TO TRANSPLANTATION

- Short life expectancy (<1 yr)
- Untreatable malignancy
- Untreated acute or chronic infection
- Uncontrolled psychiatric disorder
- Active substance abuse
- Demonstrated non-compliance w/ meds
- ABO blood group mismatch
- Positive crossmatch

Statistics

- Two out of every 1,000 adult Filipinos have end-stage renal disease - National Nutrition and Health Survey in 2008
- Only 11,000 patients received dialysis while only 400 patients had kidney transplants - the Philippine Renal Disease Registry, 2011

Philhealth Z Package

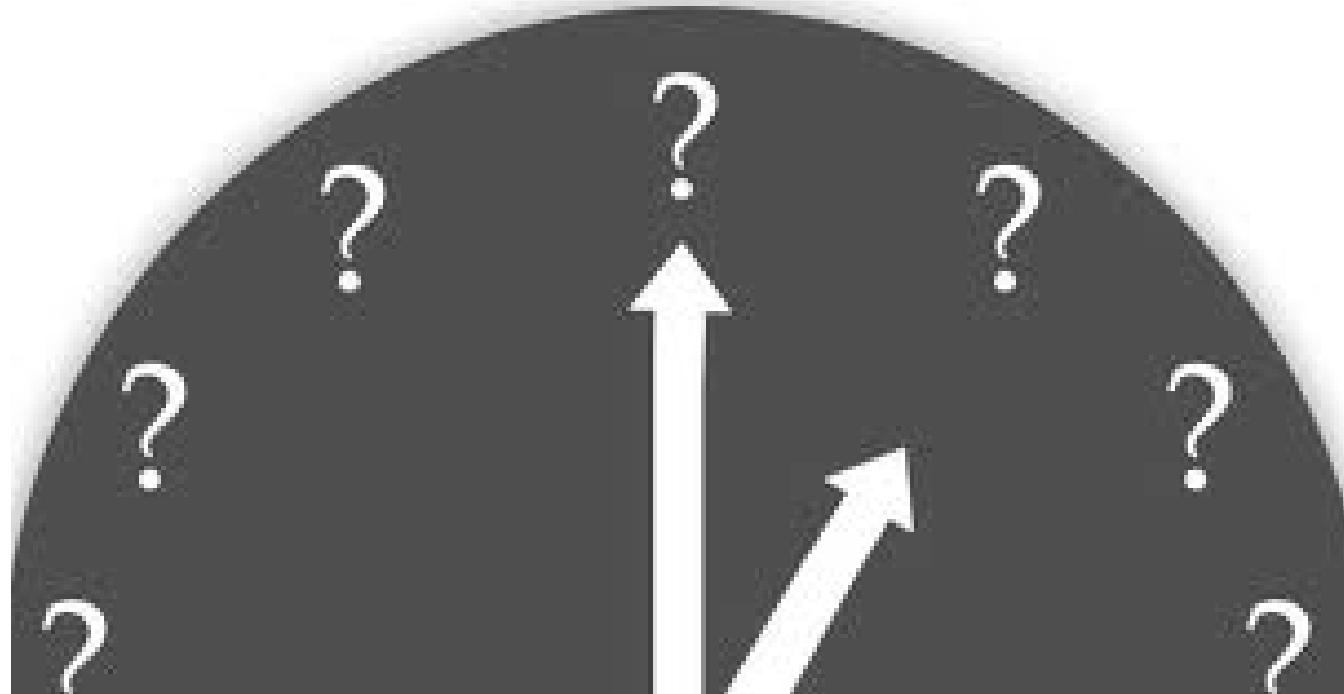


- Payment for hospital services:
 - Hospital room and board
 - Drugs
 - Laboratory exams
 - Operating room and professional fees for the entire course of treatment

EVALUATION AND PREPARATION OF RENAL TRANSPLANT CANDIDATES

When to start preparing?

- From the time of recognition of progressive CKD.



What are the benefits of early referral?

Cardiovascular risk is
recognized/avoided



Decrease in morbidity and
mortality

Improve post-KT and graft
and patient survival

THE EVALUATION PROCESS

Patient Education

Medical
assessment of
the recipient

Assessment by the
patients of KT
option and its
relevance to their
well-being

Information Session

- Risks and benefits
- The surgical procedure and its complications
- Graft survival and morbidity statistics
- Nature of rejection
- Side effects and risks of immunosuppression
- Increased risk of infection
- Post-transplant tissue malignancy, and mortality
- The importance of compliance to dialysis and prescribed diet while waiting for the transplant
- The post-transplant pregnancy should be discussed with women of childbearing age
- The cost of kidney transplantation and immunosuppression

The Routine Evaluation

- History and physical examination
- Laboratory/diagnostic studies



Pre-KT Diagnostics

Laboratories:

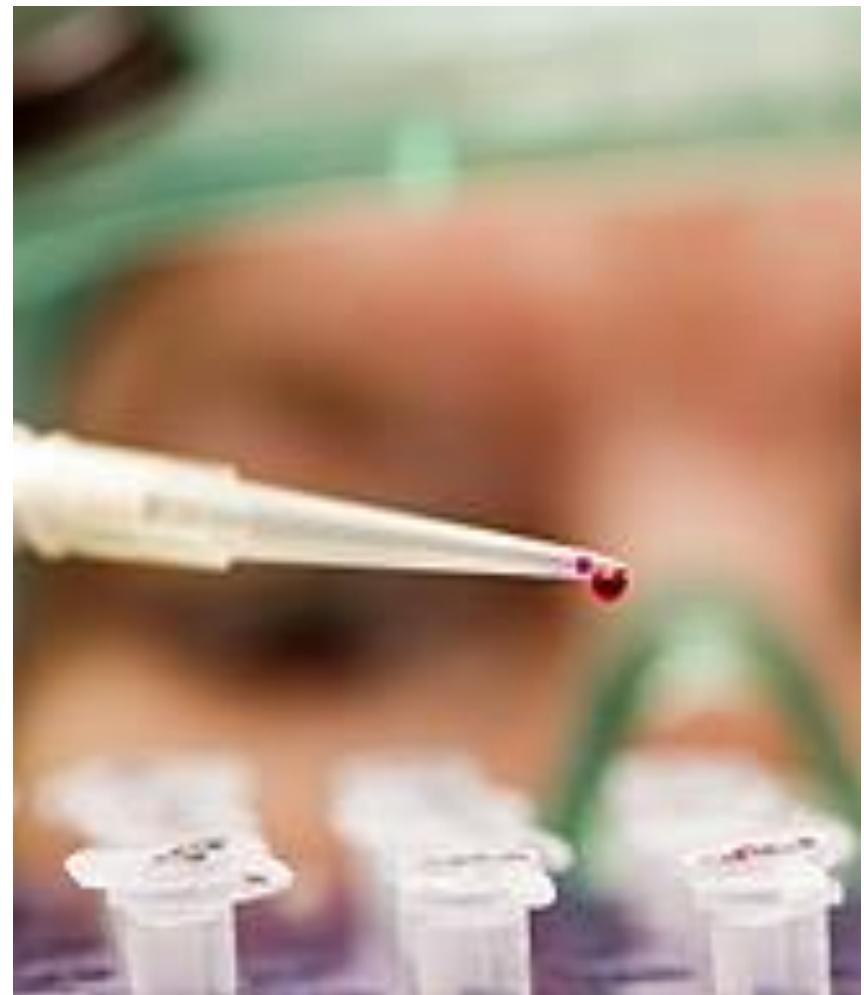
- Urine Test
- CBC
- Electrolyte studies
- Coagulation studies
- Hepatitis Profile
- HACT Referral (HIV)
- Malaria screening



Pre-KT Diagnostics

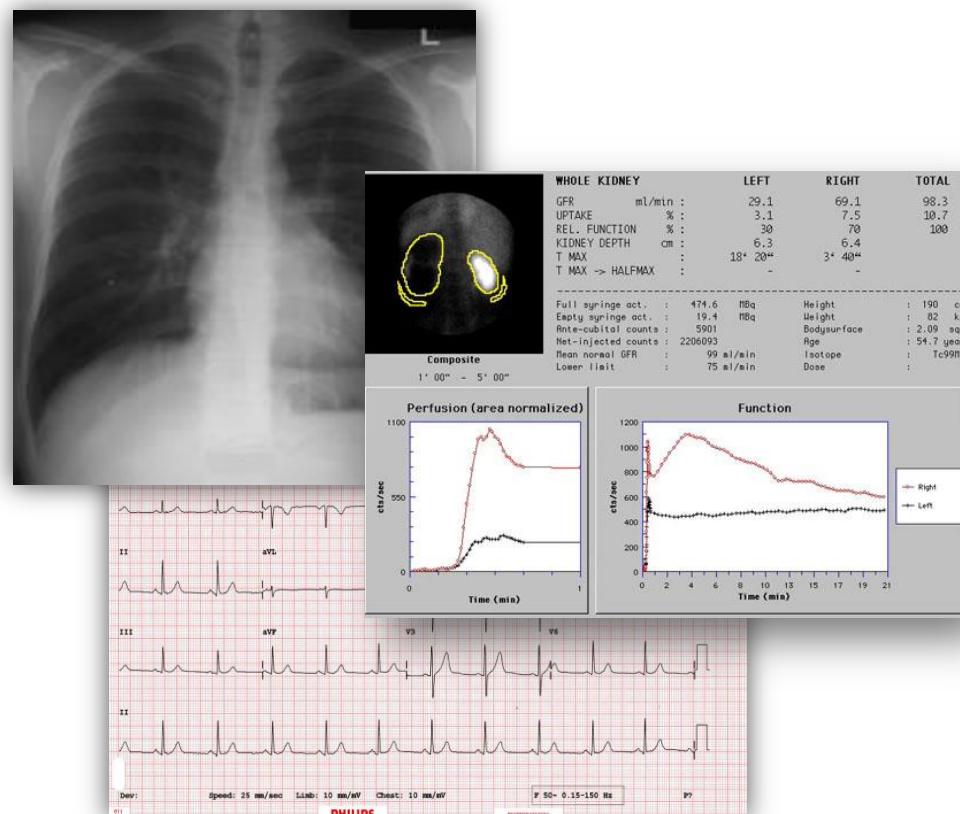
Laboratories:

- Syphilis test
- CMV/EBV
- Stool exam
- Tissue Typing (HLA)
- Tissue cross-matching
- PRA Screening
- Pregnancy Test



Pre-KT Diagnostics

- ECG
- Chest X-ray
- Whole abdomen ultrasound (optional)
- CT Stonogram (optional)
- Nuclear GFR



The Routine Evaluation

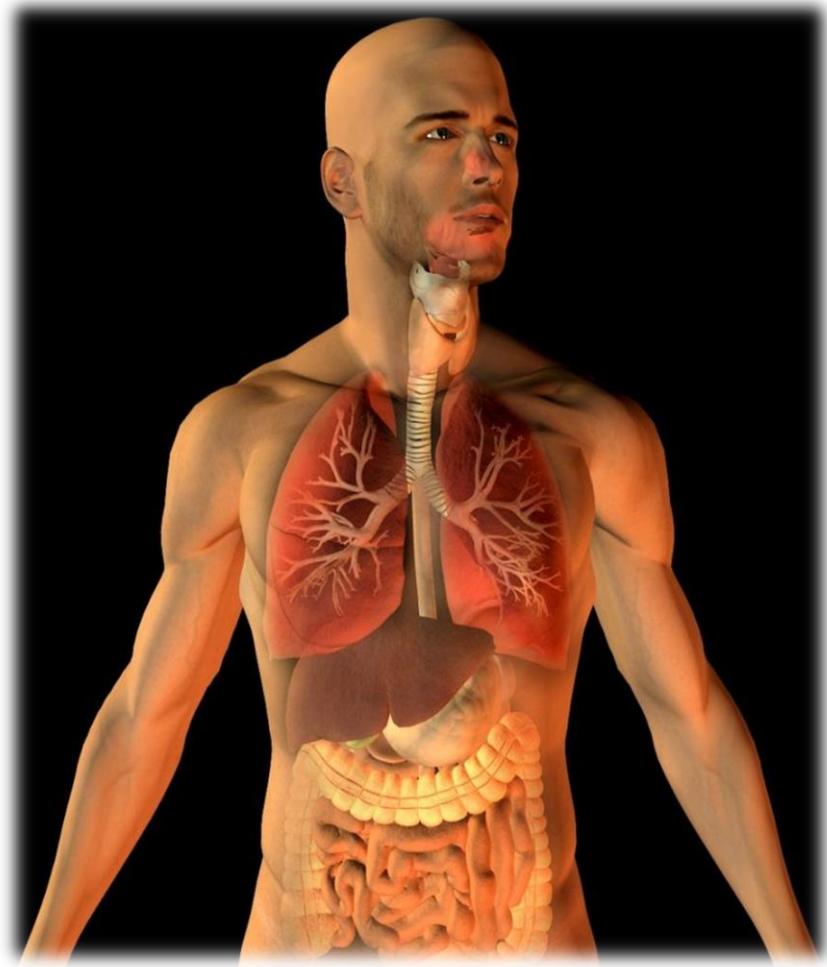
- Specific transplant risk factors related to organ system disease:
 - Cardiovascular disease
 - Cerebrovascular and peripheral vascular disease
 - Malignancy
 - Infections
 - Gastrointestinal disease
 - Pulmonary disease
 - Urologic evaluation
 - Renal osteodystrophy and metabolic bone disease
 - Hypercoagulable states

The Routine Evaluation

- Risk factors related to specific patient characteristics:
 - Transplantation in the aged
 - Obesity
 - Highly sensitized patients
 - Previously transplanted candidates
 - Etiology of renal disease

Clearances

- Cardiology
- Pulmonology
- Endocrinology
- Psychiatric
- OB-Gyne
- Dental
- Gastrointestinal
- Urology



Other requirements

- Psychological evaluation and preparation
- Ethics certificate
- Source of funds

PREPARATION PRIOR TO OPERATION

Physical Preparation

- Fasting time.
- Breathing exercises.
- Bowel preparation.
- Shaving of surgical incision site.
- Post procedure equipment needed to support a good recovery.
- People with special needs needing particular equipment.

Pre-operative Fasting

- To ensure safety during induction of general anesthesia by preventing inhalation of acid stomach contents into the lungs when the gag reflex is lost.
 - Nothing per orem

Breathing Exercises

- **Incentive Spirometry**

- A method of encouraging voluntary deep breathing by providing visual feedback about inspiratory volume.
- Incentive spirometry reduces the risk of atelectasis and pulmonary consolidation.



Bowel Preparation

Bowel preparation prior to surgery aims to prevent:

- Defecation during anesthesia
- Fecal contamination during surgery
- Postoperative stress on wound
- Postoperative discomfort or constipation due to a full rectum

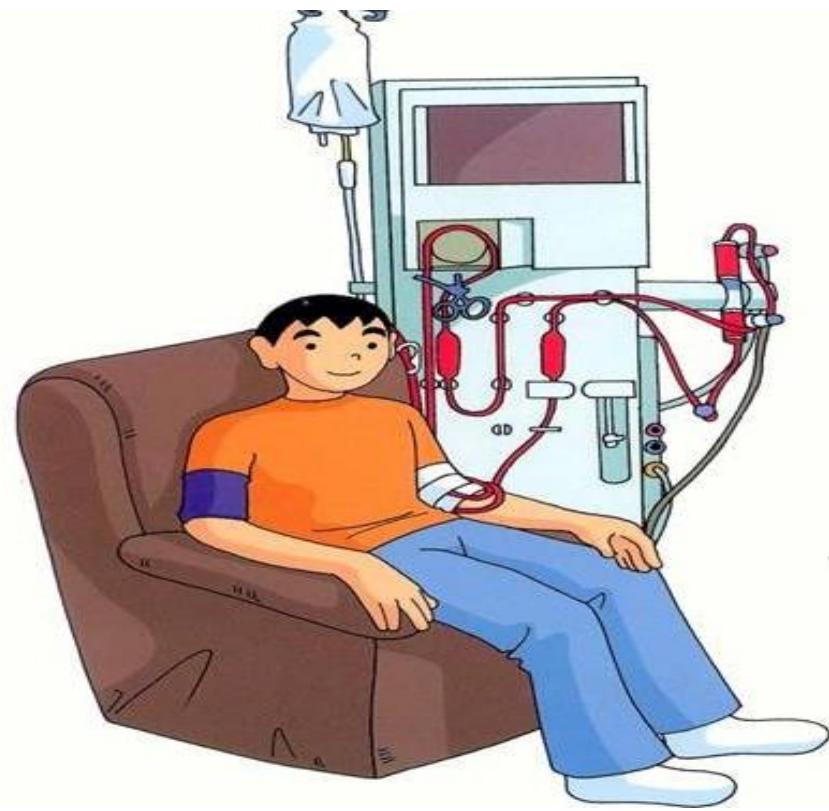
Skin Preparation

- To reduce the normal flora but also potentially harmful microorganisms that may be present on the skin or hair.



Dialysis

- Facilitate
Hemodialysis
peritoneal dialysis
if ordered.



Hygiene/IV Access

- full body bath
- oral prep
- iv insertion



Spiritual Preparation



- Know patient's
 - Religious affiliations
 - Beliefs
 - Wants to see a priest or pastor.

Pre Operative Health Teaching

- Pre-Op
 - deep breathing and coughing exercises,
 - turning to side of implant
 - early ambulation



Pre Operative Health Teaching

- Provide a clean environment / observe aseptic technique
- Handwashing
- Limit visitors
- Instruct patient to wear mask; visitors as well
- Instruct to eat well cooked food
- Diet/activity
- Possible complications



Final Preoperative Care

- Emptying the bladder
- Change of hospital gown
- Removal of cosmetics, jewelry and cosmetics
- Allergies
- Identity bands
- Premedication
- Final preoperative checks

Final preoperative checks

- IV insertion site, patency of IV line.
- Completed pre-operative checklist and other documentations.
- Availability of immunosuppression drugs.

THANK YOU!

Post Test

True or False

1. Kidney transplant is an optimal treatment for most patients with End Stage Renal Disease.
2. Preparation for kidney transplant should start 1-2 years of dialysis.
3. Kidney transplant is not an absolute contraindication for patients who demonstrated non-compliance w/ meds.
4. Cardiovascular risk is reduced or avoided when ESRD patients are referred early for kidney transplant.
5. The renal artery is anastomosed with external iliac vein in kidney transplantation.
6. The process of evaluation allows patients to assessment KT as an option and its relevance to their well-being.