Heart Pre-Transplant Education Class

Effective Date: 05/27/2022

Next Review Date: 05/27/2025

HC-TXC-201.05-FMT Rev. 052722

In this class we will:

- Review history of heart transplantation
- Discuss transplant:
  - Evaluation
  - Waitlist
  - Transplant surgery
  - Medication and considerations post transplant

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Celebrating 60 years of transplant at OHSU!

History of heart transplantation

- First heart transplant in 1967, South Africa
- First successful adult heart transplant in United States- January 6, 1968
- First heart transplant at OHSU -December 5, 1985

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Benefits of heart transplantation

- Quality of life
- Quantity of life
- More freedom to travel
- Return to work or school
- Most durable long-term solution

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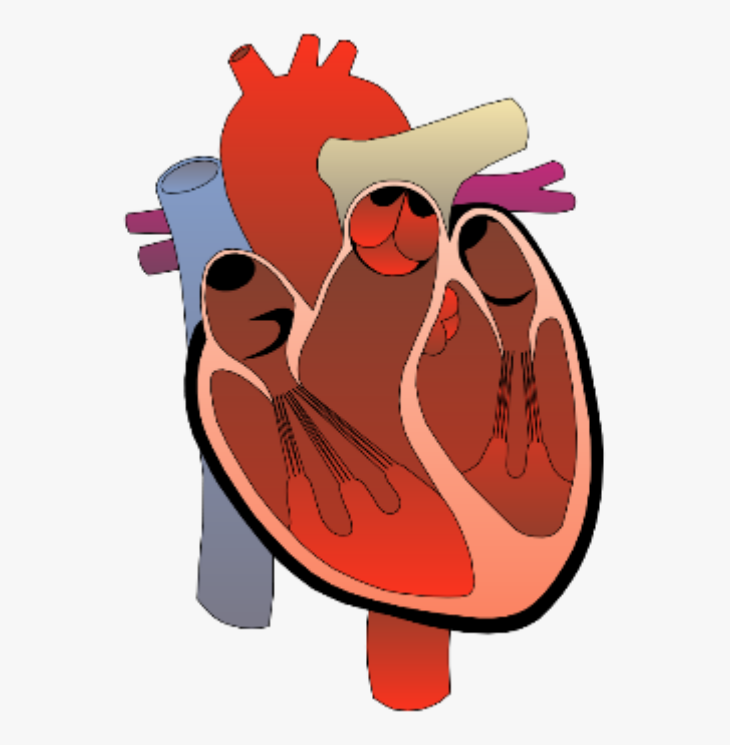
Risks of heart transplantation



- Medications
  - Life-long, many side effects, expensive
- Infections
- Rejection of new organ
- Cancer
- Coronary Artery Disease
- Surgical complications
- Financial concerns

Heart transplant is not a cure

- Heart transplant is a treatment option
- Other treatment options:
  - Left Ventricular Assist Device (LVAD)
    - Mechanical pump that circulates blood throughout the body
  - Inotropes
    - Common drugs: Dobutamine, milrinone
    - Chemically improve the cardiac pump function
  - No treatment
- ***You have the right to refuse transplantation at any time***

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Transplant evaluation

- History and Physical
- Laboratory
- Cardiac testing
- Chest X-ray
- Pulmonary Testing
- Abdominal Ultrasound
- Dietary Evaluation
- Social Work Evaluation

- Pharmacy Evaluation
- Patient/Family Education
- Financial Evaluation
- Immunizations
- Dental Evaluation
- Pap/Pelvic/Mammogram (if appropriate)
- Colonoscopy (if appropriate)
- ***Additional testing may be required***

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Transplant evaluation: Crucial consults

- Nurse Coordinator
  - Provides pre-evaluation education, performs intake assessment, assists in coordinating necessary steps to committee presentation
- Dental
  - Provides dental assessments and therapies needed to obtain dental clearance
- Social Work
  - Assesses for and assists in navigating social elements of transplant
- Cardiac Surgery
  - Assesses for anatomical and physiological considerations in transplant

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Transplant evaluation: Crucial consults

- Palliative Care
  - Reviews your goals of care/Understanding of what you have learned thus far
- Nutrition/Dietary
  - Evaluates for and recommends dietary changes that would help you have a better recovery from surgery
- Pharmacy
  - Reviews your medications, immunizations, and process for medication management

Post evaluation

Selection Conference

- Transplant team (physicians, coordinator, social worker, pharmacist, palliative care, and dietitian)
- Review results
- Determine your risks
- Determine if you are a transplant candidate
  - Declined
  - Deferred
  - Accepted

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Declined or *Deferred*

- Infection
- Cancer
- BMI > 35
- Medical nonadherence
- Do not meet criteria
- Body structure (anatomy) problems
- Active abuse of drugs or alcohol
- Untreated or inadequately treated mental illness

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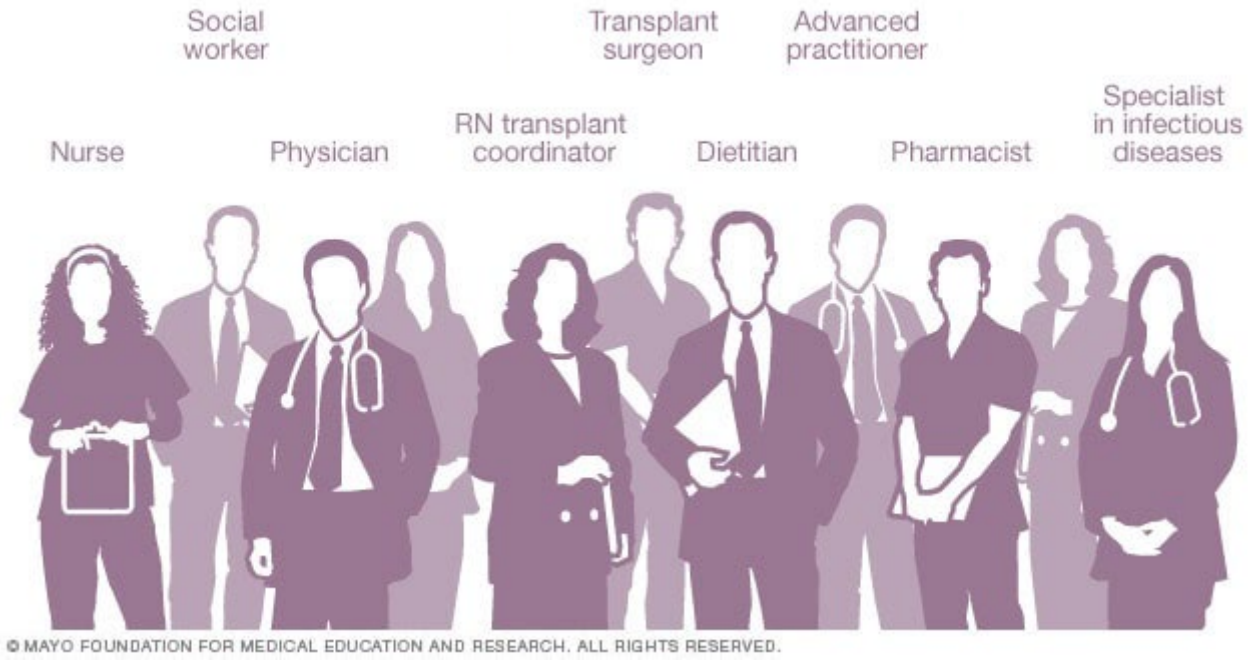
Accepted for transplant

- You will be notified of your results, risks, and recommendations (your “to do” list)
- It is your responsibility to keep us informed of your progress



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Planning ahead and finding support

- **Support**
  - Lifting restrictions
  - Driving restrictions/ transportation needs
  - Partner in care
    - 24/7 commitment for 3 months following discharge
    - Inpatient teaching
    - Outpatient appointments
- **Time off work**
- **Housing**
  - **Must remain within one hour d**istance from OHSU
- **Equipment**
  - Home blood pressure monitor
  - Personal scale
  - Thermometer
  - Glucometer (blood sugar checks)
- **Finances**

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When do I go on the list?

- Accepted by the selection committee for transplant
- Completed “to do” list
- Current blood sample
- Insurance authorization
- UNOS registration
- ***A coordinator will call you once you are listed***

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COVID-19

- ***All transplant candidates must be vaccinated against COVID-19***
- We also strongly encourage all support persons to be vaccinated against COVID-19

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How long will I wait?

- **Wait time depends on:**
  - Blood type
  - Antibody level
  - Recipient height and weight
  - Time on waitlist
  - Waitlist status (urgency)

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Potential deceased donor

- Brain dead
- No known transmittable cancer
- No known communicable diseases
- Good heart function
- *Thoroughly screened, but not risk free*

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Finding a donor

- Blood type
- Tissue typing (genetic markers)
  - ➢ Crossmatch
  - ➢ Panel Reactive Antibody (PRA)
    - ➢ Must be repeated every 28 days while listed

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Blood types

ABO Blood Groups				
Antigen (on RBC)	Antigen A 	Antigen B 	Antigens A+B 	Neither A or B 
Antibody (in plasma)	Anti-B Antibody 	Anti-A Antibody 	Neither Antibody –	Both Antibodies 
Blood Type	**Type A** Cannot have B or AB blood Can have A or O blood	**Type B** Cannot have A or AB blood Can have B or O blood	**Type AB** Can have any type of blood Is the universal recipient	**Type O** Can only have O blood Is the universal donor

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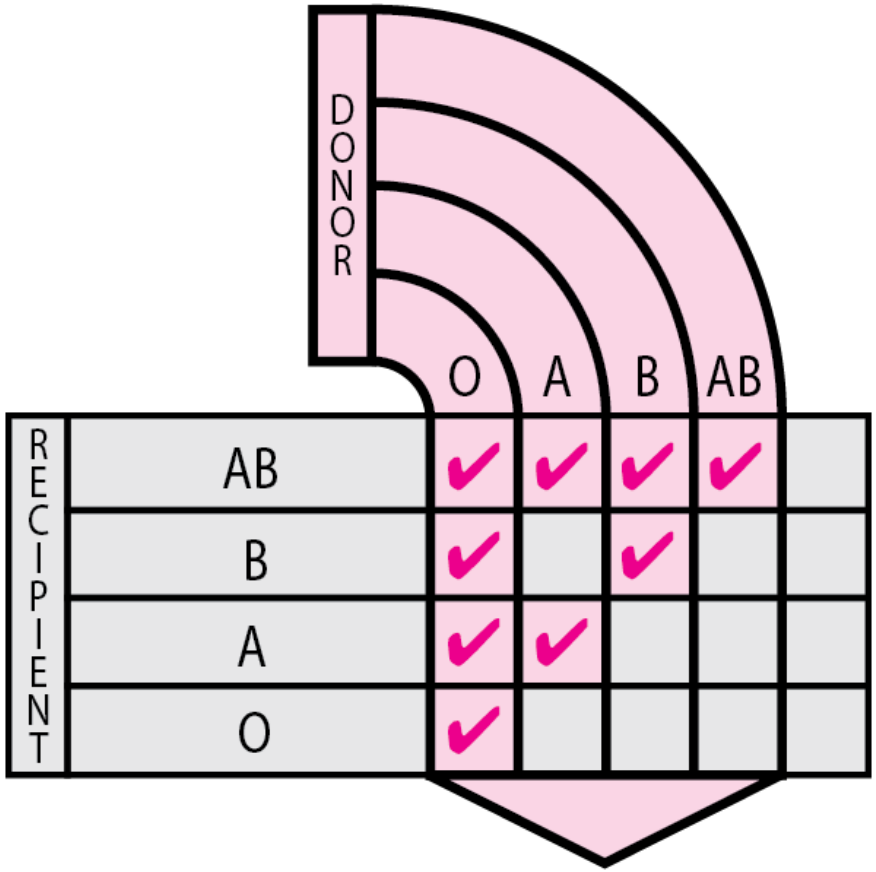
Blood type matching for heart transplant



*Note: Because type “O” is the least common donor, type “O” donors are generally assigned to type “O” recipients before other types

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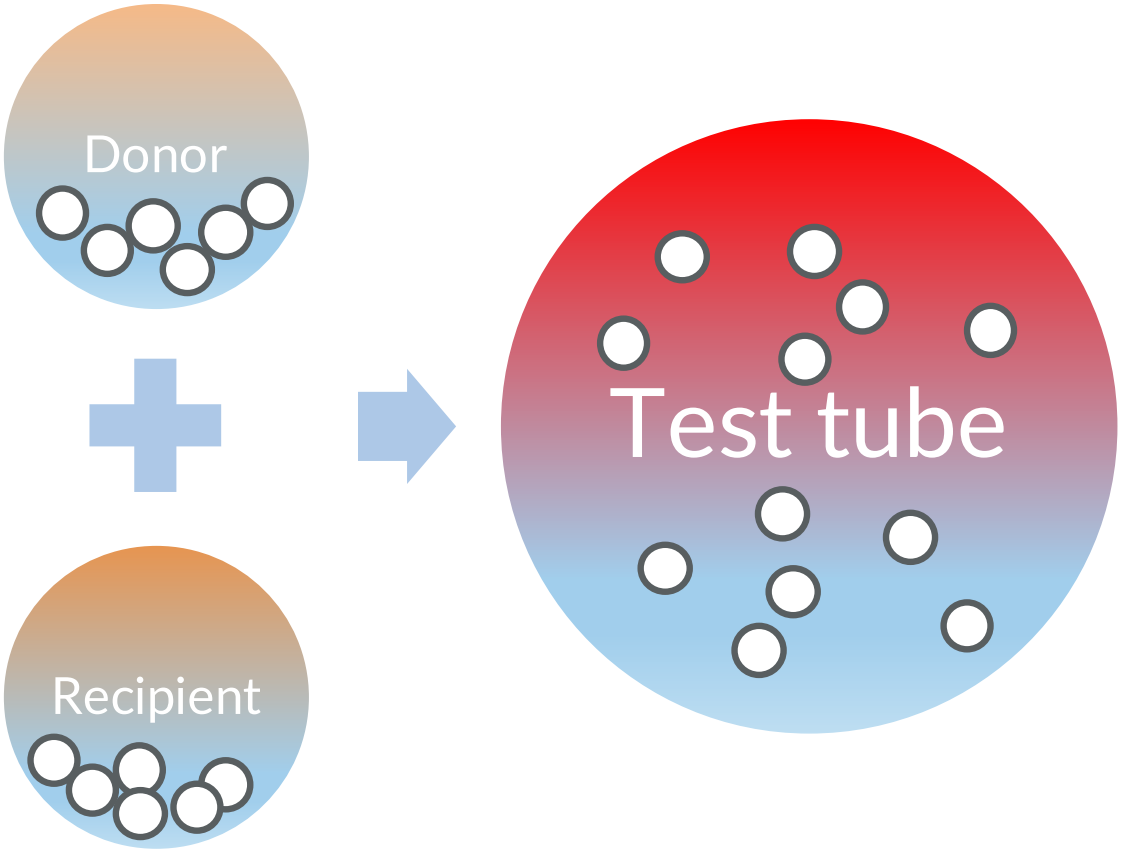
Crossmatching



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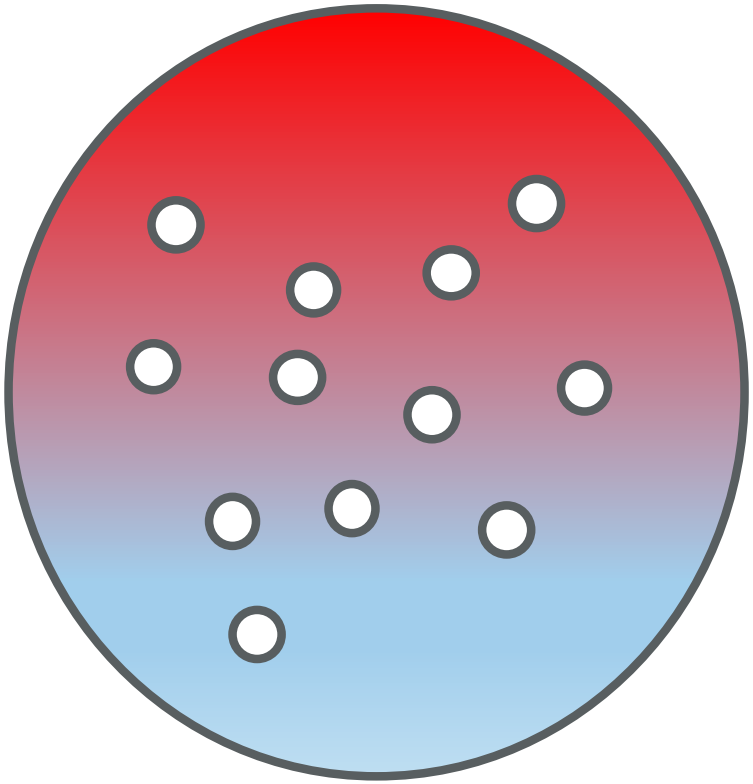
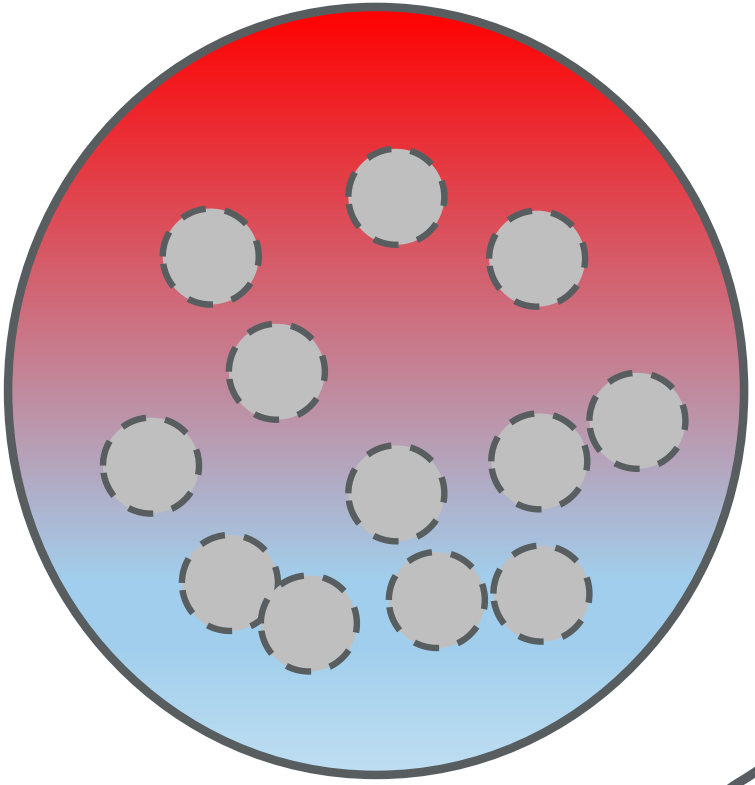
Crossmatching

Transplant in a test tube

Negative (Compatible)



Positive (Incompatible)



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Why would a donor be incompatible?

Antibodies: your body's reaction to others' genetic markers

- Previous transplant
- Pregnancies
- Blood transfusions

PRA: a measure of this reaction (0-100%)

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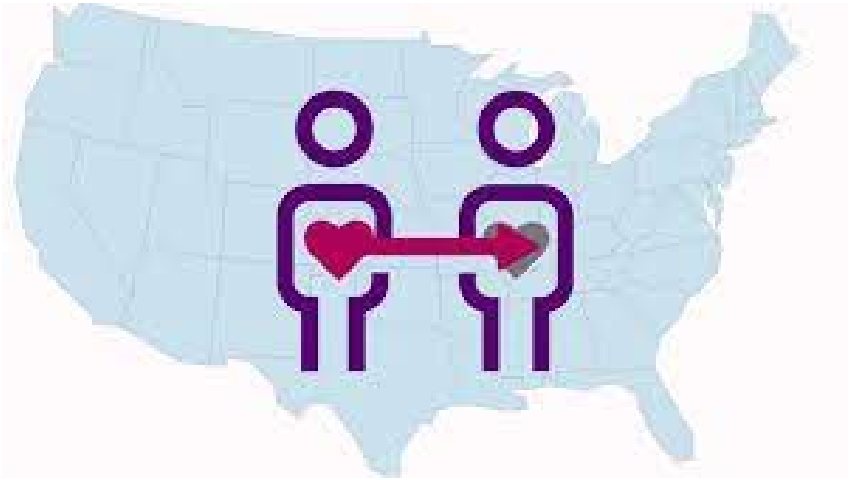
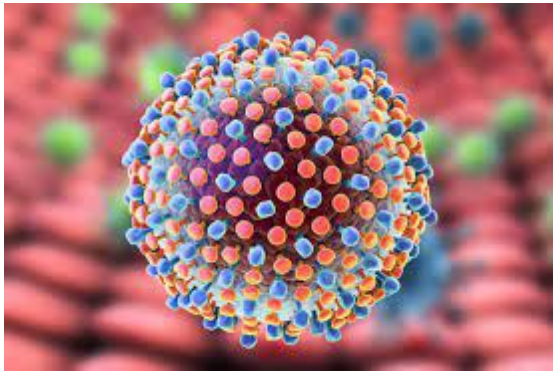
United Network for Organ Sharing (UNOS) Options

- Multiple listing
  - OHSU does not participate in multiple listing at this time
- Transfer of waiting time
  - May be utilized in relocation



Hepatitis C + Donors



- Patients in evaluation/on the waitlist may consent to reception of a heart from a hepatitis C+ donor
- Hepatitis C status would be disclosed with offer
- If a hepatitis C + transplant is performed, treatment would begin within 24 hours of surgery and close follow-up would occur
  - Blood would be drawn 3 days after transplant and at post transplant lab draws
  - Standard treatment lasts 4 weeks but treatment can be extended if needed
  - If there are any concerns, a specialist can be consulted

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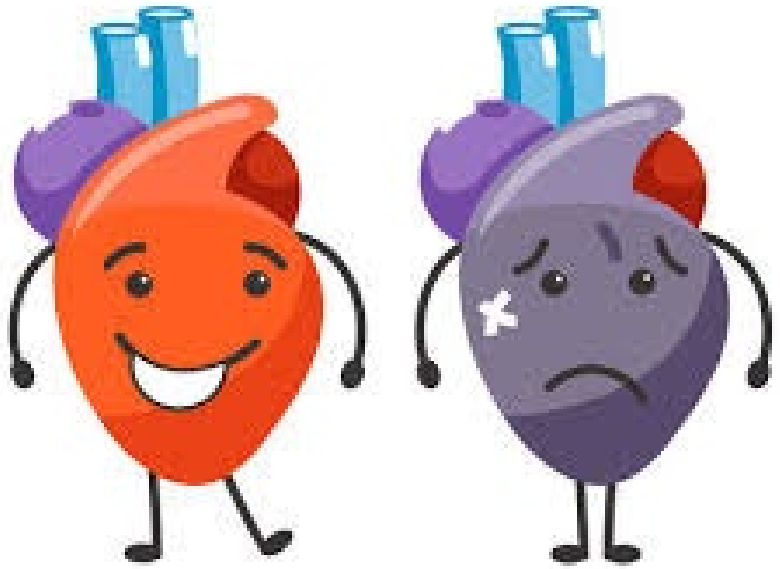
UNOS heart transplant listing status

- 1- Most critically ill, hospital bound
- 2- Very ill, hospital bound
- 3
- 4
- 5
- 6- Minimal limits to activities
- 7- Inactive status



What to expect on the wait list

- You WAIT and it can be a difficult time
- *Active status*
  - ➢ You are on the waiting list and available for donor offers
  - ➢ PRA blood draw every 28 days; you must track this
- *Inactive status*
  - ➢ You are still on the waiting list, but unable to receive donor offers
  - ➢ No PRA needed
- Some testing may need to be repeated during time on waitlist

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What to expect on the wait list

- **Promptly inform your healthcare team of any of the following:**
  - **Insurance changes**
  - Phone number & address changes
  - Changes in your health
  - Antibiotics
  - Hospital admissions
  - Travel

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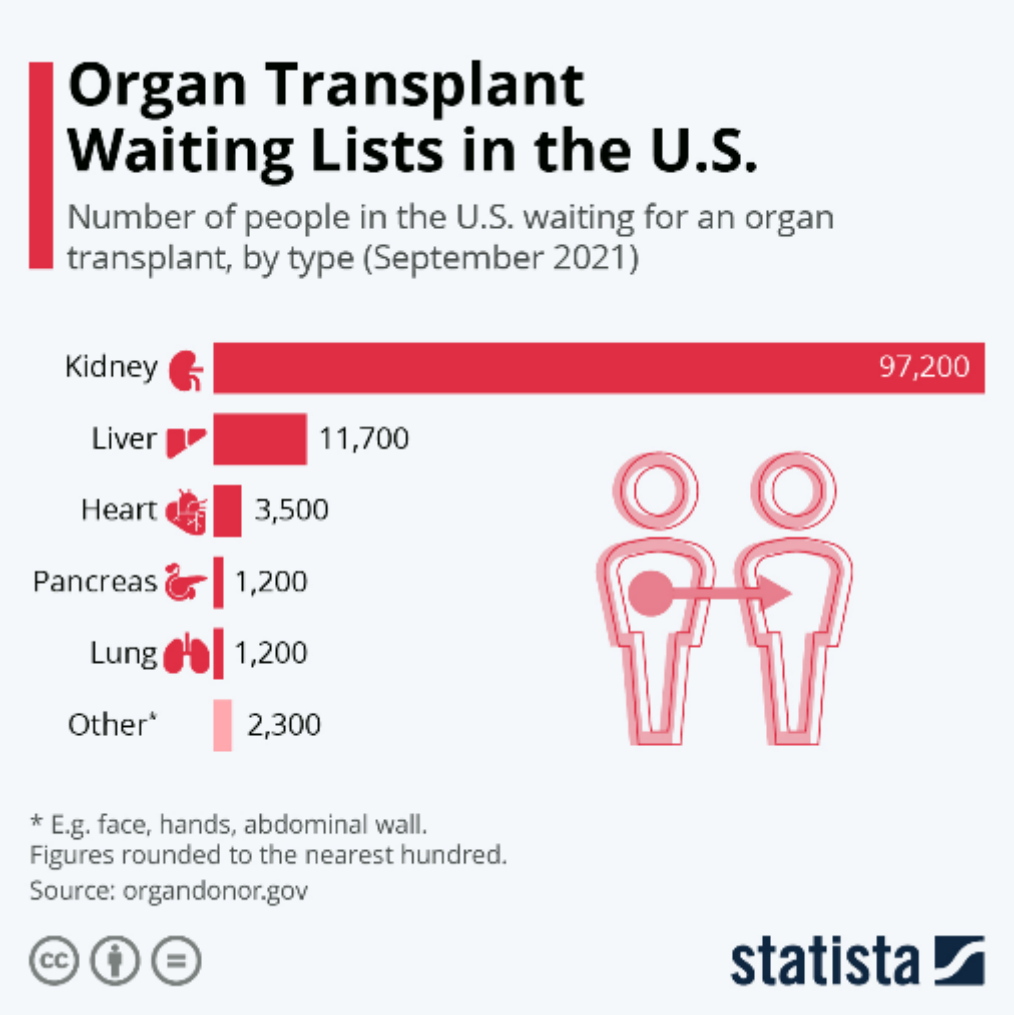
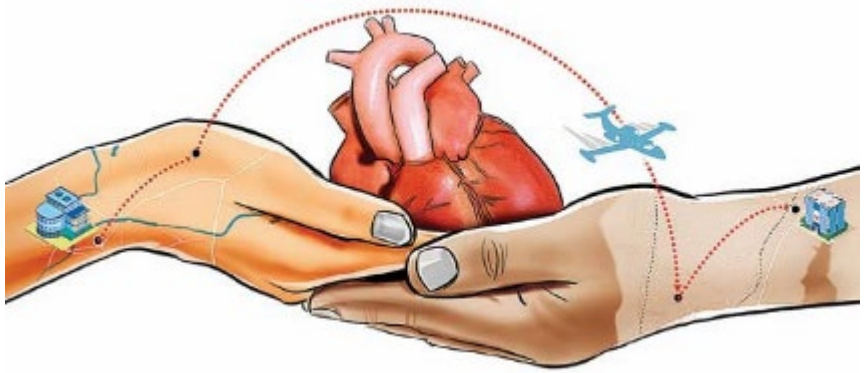
National donor gap



When you get the call

- Be prepared to get on the road within 1 hour
- We will screen you for health concerns
  - Symptoms of illness, covid exposure, etc
- We will not discuss any personal donor information
- There is always the possibility that an offer will *not* result in transplant
  - "Dry run"
  - Additional testing of the donor organ may result in the organ being declined by your healthcare team



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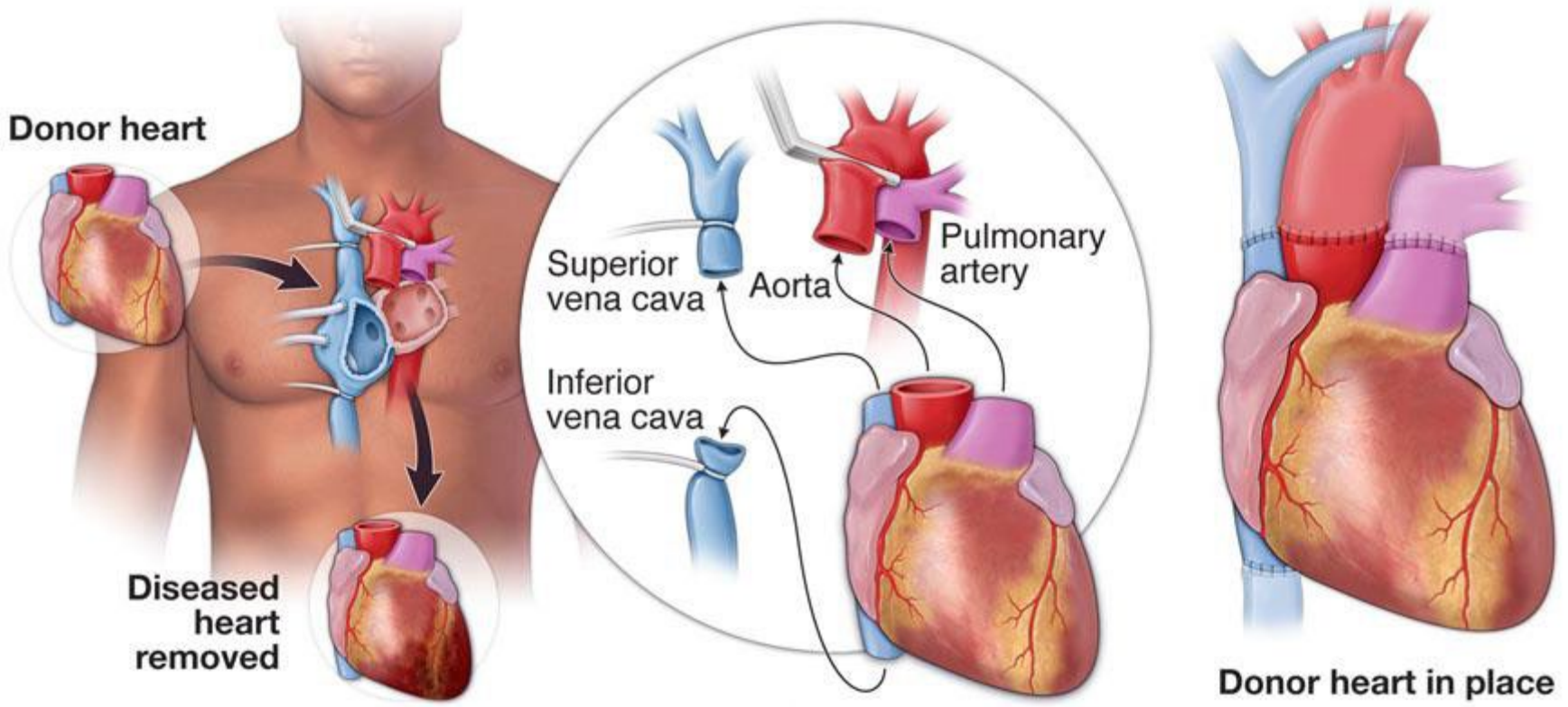
Heart transplant surgery



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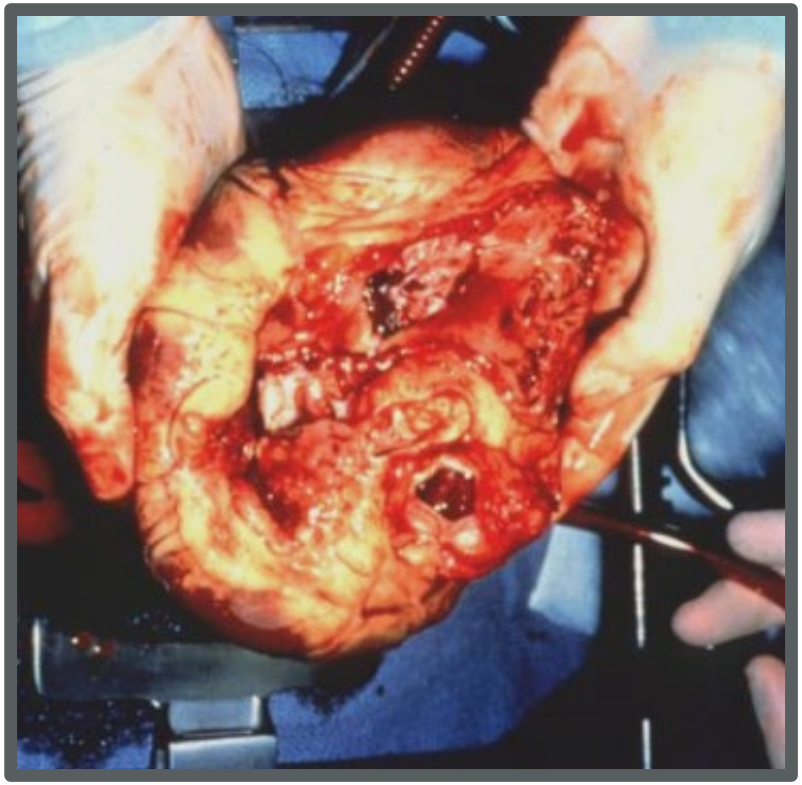
“Old” vs “New



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Hospital course

- 6 to 8 hours in the OR
- Incision about 10 inches along chest
- Intensive care unit stay 7 to 10 days
- Usual post-op activity
- Bladder catheter, wound drains, heart pacing wires, chest tubes, central line, IV line
- Total hospital stay 12 to 18 days
- ***Education, education, education!***

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Potential surgical risks

All surgeries have risks

- Anesthesia reaction
- Fluid collection/swelling
- Bleeding
- Blood clot formation
- Infection, including wound infection and pneumonia
  - Early mobilization/out of bed with assist
- Organ failure (may require re-transplant)
- Death

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Other potential risks

Psychosocial Risk

- Depression
- Post-Traumatic Stress Disorder (PTSD)
- Generalized anxiety, issues of dependence, & feelings of guilt

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Why do transplants stop working?

- Return of original disease
- Need to decrease antirejection medications because of other health issues or side effects related to prescribed medications
- Nonadherence with medical treatment
  - ***ALWAYS TAKE MEDICATIONS AS PRESCRIBED***
- Chronic rejection/changes over time
- Surgical complications

Transplant outcomes

- Please see handout included in educational packet which describes current patient outcome data

Acute rejection

- **Usually seen within the first six months**
  - Often no symptoms
  - Frequent heart biopsies in first year
  - Self monitoring essential (labs, weight, BP, temp)
  - Medication adherence a must
- **Treatment available**
  - May require admission to hospital, biopsy, and IV meds
  - *Most of the time reversible*

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Chronic rejection

- Usually seen *after* one year
- Treatment available to stall process
- *Not reversible*
- There are different stages of chronic rejection
  - Treatment may require increased visits, changes in medications, etc

Post-transplant commitments

- Daily self monitoring
  - Blood pressure
  - Weight
  - Temperature
  - Blood sugar
- Medications
  - **Must be taken exactly as prescribed**
- Clinic visits
  - Weekly for one month
  - Monthly for one year
  - Annual exams for life

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Post-transplant commitments

- Lab draws
  - Weekly for one month
  - Monthly for one year
  - Every three months for life
- Biopsies
  - May vary by patient
  - Frequency will decrease over time
- Communication
  - Share your concerns
  - Be an active part of your team!

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Transplant medications

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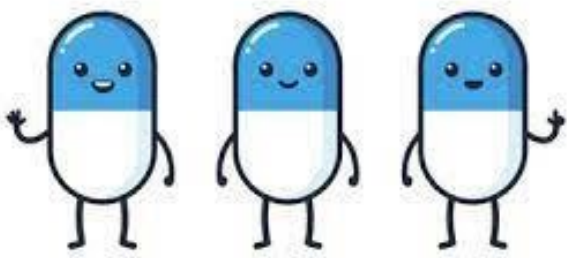
Medication guarantees

- ***Alter your medications and you can damage your heart***
- All medications can have drug-drug interactions
- You will have some medication side effects
- Some side effects decrease as doses decrease
- Doses are higher the first three months



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Medications

Side effects

All transplant medications increase your risk of:

- Cancer
- Infection
- Coronary artery disease
- ***Your healthcare team will work with you to balance rejection risk and side effects***

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Cancer prevention

Routine screening

- Pap/Mammogram
- Colonoscopy
- PSA

Skin care

- Sunscreen
- Regular checks
- Limit sun exposure

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Tacrolimus/“Tacro”

- *Potential side effects*
  - Tremors
  - Headache
  - Increased blood sugar/Diabetes
  - High blood pressure
  - GI problems
  - Kidney damage
- *Considerations*
  - Timed drug level blood tests
  - Take consistently with or without food
    - Either is fine, consistency is more important
  - Cost
  - Drug-drug interactions

Mycophenolate/Myfortic

- *Potential side effects*
  - Stomach upset
  - Diarrhea
  - Anemia
  - Low white blood cell count
- *Considerations*
  - Take with food
  - Cost
  - Women only: Use two forms of birth control
  - Call us if considering pregnancy or if you become pregnant (not recommended following transplant)

Prednisone

- ***Potential side effects***
  - Body image changes: weight gain, edema, hair growth
  - Increased blood sugar/diabetes
  - Weak bones & muscles
  - Delayed wound healing/thin skin
  - Increased cholesterol
  - Visual changes
  - Mood swings
  - Ulcers
- ***Considerations***
  - Take with food
  - Cost (inexpensive)
  - May be stopped at 6 months if no rejection
  - Large doses used to treat acute rejection

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Medicare and heart transplant

- If your transplant is not done in a Medicare-approved transplant center, it could affect your ability to have your immunosuppressive (anti-rejection) medications paid for under Medicare Part B
- ***OHSU is a Medicare-approved transplant center***

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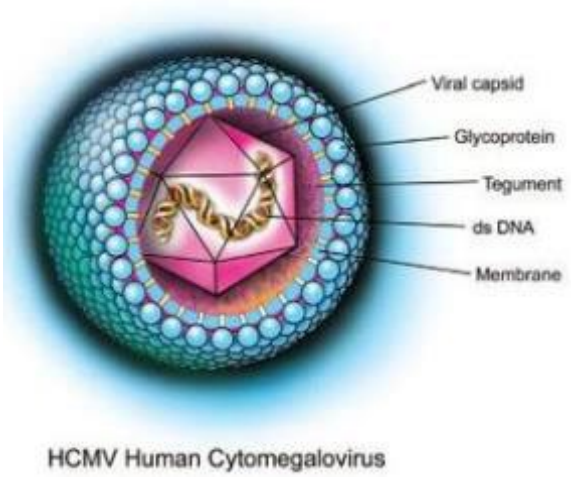
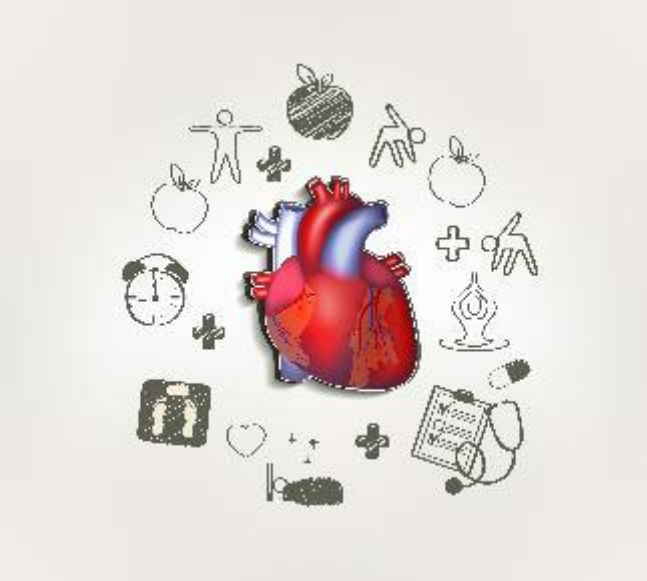
Cytomegalovirus (CMV)

- Most common infection post transplant
- A common virus in the human population
- The virus can be spread with the heart
- >50% have had the virus in the past (CMV +)
- May cause diarrhea, ulcers, infection, or rejection after transplant
- ***Medicine is available to prevent/treat the virus***



HCMV Human Cytomegalovirus

Lifestyle after transplant



- Heart healthy lifestyle
  - Heart healthy diet
  - Healthy weight
  - Exercise
  - Blood pressure monitoring
  - Cholesterol monitoring
  - Absence of use of unprescribed drugs or nicotine products
- Routine health maintenance exams
- Diligent infection prevention
  - Frequent handwashing
- Regular recommended immunizations

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Questions

1. Attending this class means you are on the heart transplant waiting list
   - True/False
2. I can adjust my transplant medications if a side effect is bothering me
   - True/False
3. Heart Transplant is a cure for heart failure
   - True/False
4. Once I am on the waiting list, I won't need to do anymore testing
   - True/False
5. After transplant, how long will you need to take transplant medications?

The end!

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