Question 1

Which of the following blood donors is eligible for allogeneic whole blood donation?

- A. 88yo F, Hgb=12.5g/dL, weight 116 lbs
- B. 36 yo M, HR 60, BP 160/90, RR 12/min, temperature 99.6F
- C. 22 yo F, HR 48, long distance runner, Hgb=11.8g/dL
- D. 15 yo F, HR 78, BP 120/80, RR 13/min, temperature 99.0F, donating at high school drive
Explanation

- **Age:**
  - Must be at least 17 yo, or 16 yo with parental consent in some states.
  - No upper age limit

- **Physical Requirements**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Requirement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>$\geq 110 \text{ lbs (50 Kg)}$</td>
</tr>
<tr>
<td>Temperature</td>
<td>$\leq 99.5^\circ \text{ F (37.5 C)}$</td>
</tr>
<tr>
<td>Pulse</td>
<td>50-100 bpm (unless athlete)</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>$\leq 180/100$</td>
</tr>
<tr>
<td>Hemoglobin or Hematocrit</td>
<td>$\geq 12.5 \text{ g/dl or 38%}$</td>
</tr>
</tbody>
</table>
Question 1

Which of the following blood donors is eligible for allogeneic whole blood donation?

- **A. 88yo F, Hgb=12.5g/dL, weight 116 lbs**
- **B. 36 yo M, HR 60, BP 160/90, RR 12/min, temperature 99.6F**
- **C. 22 yo F, HR 48, long distance runner, Hgb=11.8g/dL**
- **D. 15 yo F, HR 78, BP 120/80, RR 13/min, temperature 99/0F, donating at high school drive**
Question 2

Which of the following is NOT a cause for permanent donor deferral?

- A. IV drug use
- B. Male-to-male sex, once in 1976
- C. History of Babesiosis or Chagas’ Disease
- D. Received drugs for sex once in 1996
- E. History of viral hepatitis at the age of 13
Explanation

- Causes of Permanent Deferrals:
  - High-risk behavior for HIV/viral hepatitis infection:
    - IVDA
    - Male-male sex after 1977
    - Prostitution
    - Viral hepatitis after 11th birthday
    - Tested positive for any of the HIV, HBV, HCV, HTLV tests, except anti-HBc
  - History of babesiosis or Chagas’ Disease
  - Malignancy: leukemia or lymphoma (more on that later)
  - High risk for CJD or vCJD
    - See next slide
CJD/vCJD Deferral Criteria

a) Spent more than 3 months cumulative in the UK, 1980 to 1996
b) Lived in France for over 5 years, 1980 to now
c) Received dura mater transplant, pituitary growth hormone injections, or bovine insulin injection
d) Were transfused in the UK, 1980 to now
e) Lived in Europe for over 5 years cumulative between 1980 and now
f) Have family history of CJD or vCJD
g) Were military members/dependents:
   i) Stationed at Northern Europe bases (Germany, UK, Belgium, Netherlands) for 6 months from 1980 to 1990
   ii) Stationed at other Europe bases (Greece, Turkey, Spain, Portugal, Italy) for 6 months from 1980 to 1996
Question 2

Which of the following is NOT a cause for permanent deferral?

- A. IV drug abuse
- B. **Male-to-male sex, once in 1976**
- C. History of Babesiosis or Chagas’ Disease
- D. Received drugs for sex once in 1996
- E. History of hepatitis at the age of 13
Question 3

Which of the following donors should not be deferred:

A. 18 yo college woman. Until 3 months ago, she was living with her mom (close household contact), who had active hepatitis B

B. Surgeon who had a needle stick injury 6 months ago, needle was contaminated by a patient who tested negative for hepatitis B, C and HIV

C. A man who was arrested after visiting a prostitute 6 months ago, and then released 48h later

D. A woman who had a sexual encounter with a IV drug user 3 months ago.

E. Young man who got a tattoo 15 months ago
Explanation

- One year deferral: “indirect” risk factors for HIV/viral hepatitis;

**Infectious Risks**
- Needle sticks or other contact with blood
- Sex contact with person with HIV or hepatitis
- Sex contact with person who used needles for drugs
  - Rape victims
  - Incarcerated > 72 consecutive hours
  - Paying money/drugs for sex
  - Blood transfusion (Allogeneic); *including plasma/clotting factors in nonhemophiliacs*
  - Allogeneic transplant of organ/skin/bone
  - Living with person with active hepatitis
  - Receiving HBIG
- Tattoos/piercings (unless by regulated entity)
  - Travel to malaria-endemic areas
  - Syphilis or gonorrhea
  - Non-prophylactic rabies vaccination
  - “Travel” to Iraq
Question 3

Which of the following donors should not be deferred:

- A. 18 yo college woman. Until 3 months ago, she was living with her mom (close household contact, who had active hepatitis B
- B. surgeon who had a needle stick injury 6 months ago, needle was contaminated by a patient who tested negative for hepatitis B, C and HIV
- C. A man who was arrested after visiting a prostitute, and then released 48h later 6months ago
- D. A woman who had a sexual encounter with a IV drug user 3 months ago.
- E. Young man who got a tattoo 15 months ago
Question 4: Which donor is eligible?

- A. 32 yo missionary, returned from a 2 year trip to a malaria endemic region in S America 14 months ago
- B. 20 yo college student, born and lived in malaria endemic region in Mexico until 2 years ago. Now studying at UCLA
- C. 36 yo male, completed a course of malarial treatment 33 months ago after a trip to Africa. Now entirely symptom-free.
- D. 22 yo UCLA student visited malaria endemic area in Vietnam for 3 months, came back 9 months ago
Explanation:

- One year deferral: after visiting (staying less than 5 years) a malaria endemic region (refer to the CDC annual “yellow book”) http://cdc-malaria.ncsa.uiuc.edu/

- Three year deferral:
  - A former resident of an malaria endemic region
    - “resident” = lived 5 consecutive years or more in the area
  - After completing therapy for malaria
Question 4: Which donor is eligible?

- **A.** 32 yo missionary, returned from a 2 year trip to a malaria endemic region in S America 14 months ago
- **B.** 20 yo college student, born and lived in malaria endemic region in Mexico until 2 years ago. Now studying at UCLA
- **C.** 36 yo male, completed a course of treatment 33 months ago after a trip to Africa. Now entirely symptom free.
- **D.** 22 yo UCLA student visited malaria endemic area in Vietnam for 3 months, came back 9 months ago
Question 5

Which donor can donate?

- A. A 72yo man who had Hodgkin’s lymphoma when he was 35, no recurrence after treatment
- B. 32 yo woman with breast cancer, treated with surgical excision 9 months ago
- C. 67 yo woman, had basal cell carcinoma lesion excised from cheek a month ago
Explanation:

- Can malignant cells/clones be transfusion transmitted?
  - No evidence that malignancy can be transmitted by blood transfusion: never been documented and highly unlikely
  - Risk further mitigated by host immune response, leukofiltration and irradiation.
  - Currently, institutional policies vary:
    - “permanent deferral if treated with chemo or XRT”
    - “one to five years after completion of treatment”
    - “refer to medical director”
Generally...

- Most centers accept donors with localized tumors who have been treated; including BCC and localized SCC of skin, cervical carcinoma-in-situ.

- Most centers defer donor non-hematological malignancies for 1 to 5 years after completion of treatment if symptom free and no relapse.

- Permanent deferral usually if history of hematological (leukemia/lymphoma) malignancies. Some centers accept donors with childhood leukemia or lymphoma if treated over 10 years ago.
Question 5

Which donor can donate?

- A. A 72yo man who had Hodgkin’s lymphoma when he was 35, no recurrence after treatment
- A 32 yo woman with breast cancer, treated with surgical excision 9 months ago
- B. 67 yo woman, had basal cell carcinoma lesion excised from cheek a month ago
Question 6

Which donor can donate?

- A. Got seasonal IM flu vaccine 10 days ago
- B. Got MMR 3 weeks ago
- C. Got oral polio vaccine last week
- D. Enrolled in a research vaccine trial, got the vaccine 6 months ago
- E. Got chicken pox (varicella) vaccine 3 weeks ago
1. Basic principle of vaccination deferrals: If a vaccine is recombinant, killed or toxoid, there is no deferral. If the vaccine is made of live/attenuated virus or experimental, there is a deferral.

2. * Some places defer donors who received HBV vaccine for 2-4 weeks due to false positive HBSAg donor screening test results
Question 6

Which donor can donate?

- A. *Got seasonal IM flu vaccine 10 days ago*
- B. Got MMR 3 weeks ago
- C. Got oral polio vaccine last week
- D. Enrolled in a research vaccine trial, got the vaccine 6 months ago
- E. Got chicken pox (varicella) vaccine 3 weeks ago
Question 7

Which **autologous** donor cannot donate?

- A. Hemoglobin of 12g/dL
- B. Age 13
- C. Age 78
- D. History of MI 5 years ago. S/p 3 vessel CABG. Now only on aspirin, asymptomatic, no exercise restrictions
- E. Has large open decubitus ulcer over sacral area
- F. Confirmed HIV positive by serology and NAT
- G. Unit is intended for hip surgery in 4 days
Autologous donors undergo abbreviated questionnaire. Physical parameters more lenient (see below)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Allogeneic</th>
<th>Autologous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donation Interval</td>
<td>8 weeks</td>
<td>72 hours</td>
</tr>
<tr>
<td>HB/HCT</td>
<td>≥ 12.5 or 38%</td>
<td>≥ 11 or 33%</td>
</tr>
<tr>
<td>Weight</td>
<td>≥ 110 lbs (50 Kg)</td>
<td>None</td>
</tr>
<tr>
<td>Age</td>
<td>≥ 16 or 17 (varies)</td>
<td>None</td>
</tr>
<tr>
<td>Infectious Disease Screening</td>
<td>Required</td>
<td>Not required unless shipped</td>
</tr>
<tr>
<td>History of Disease or Positive Test</td>
<td>Not eligible</td>
<td>Potentially eligible</td>
</tr>
</tbody>
</table>
Explanation (2)

- Collection of autologous unit(s) must be completed 72hr before anticipated surgery
- Must be ordered by patient’s physician
- Absolute Contraindications:
  - Donor/pt has cardiopulmonary condition and cannot tolerate blood loss well: e.g. recent MI, severe aortic stenosis, ongoing respiratory distress.
  - Donor/pt has high risk of bacteremia
- Autologous units can NEVER be crossed in to the general inventory even if infectious disease tests are all negative
Question 7

Which autologous donor cannot donate?

- A. Hemoglobin of 12g/dL
- B. Age 13
- C. Age 78
- D. 50 yo male with history of heart attack 5 years ago, s/p 3 vessel CABG. Now only on aspirin, asymptomatic, no exercise restrictions
- E. Has large open decubitus ulcer
- F. Confirmed HIV positive by serology and NAT
- G. Unit is intended for hip surgery in 4 days
Question 8

- Which donor can donate now?
  - A. donated whole blood 7 weeks ago
  - B. donated two units of RBCs by apheresis 12 weeks ago
  - C. donated one unit of platelets by apheresis 3 days ago
  - D. donor will be making the 25th platelet donation within the past 365 days
Explanation

- Required intervals from last donation;
  - 8 weeks after whole blood/single RBC by apheresis donation
  - 16 weeks after double RBC collections
  - 2 days after donating single unit of platelets by apheresis; 7 days after donating double/triple units of platelets by apheresis
  - Up to 2 apheresis platelet donations within 7 days; up to 24 apheresis platelet donations within a year (365 days)
Question 8

Which donor can donate now?

- A. donated WB 7 weeks ago
- B. donated two units of RBCs by apheresis 12 weeks ago
- **C. donated one unit of platelets by apheresis 3 days ago**
- D. will be making the 25\(^{th}\) platelet donation within the past 365 days
Question 9

Which donor can donate now?

- A. 79 male taking aspirin for joint pain yesterday, who wishes to donate platelets
- B. Donor who took Tegison (etretinate), last dose 3 yrs ago
- C. Donor who took Avodart (dutasteride) 7 months ago
- D. Donor who took Ticlid (ticlopidine), last dose 10 days ago, wants to donate platelets
- E. Donor who took human pituitary source growth hormone, last dose five years ago
The uniform donor questionnaire (UDHQ) only requires questioning about a limited number of medications.

Some facilities add more questions and medications to the list.
Teratogens

- **30 day deferral**
  - Accutane, Amnesteem, Claravis, Sotret (isotretinoin)
  - Proscar, Propecia (finasteride)
- **6 month deferral**
  - Avodart, Jalyn (dutasteride)
- **3 year deferral**
  - Soriatane (acitretin)
- **Permanent deferral**
  - Tegison (etretinate)
Anti-platelet Agents

- No deferral if donating plasma, RBC or WB
- Deferral when donating apheresis platelets:
  - Aspirin, Feldene: Two full medication-free days since last dose
  - Plavix (clopidogrel), Ticlid (ticlodipine): 14 full medication-free days since last dose
Drugs/Therapies with infectious disease risks

- Growth hormone (human pituitary), bovine insulin: permanent (no case of CJD/vCJD transmission reported to date)
- HBIG: 1 year (no deferral for IVIG and RhIG)
- Unlicensed vaccine: 1 year
- Transfusion: 1 year if transfused in the US, permanent deferral if transfused in the UK
What about antibiotics?

- Defer if the donor is taking it as treatment or prophylaxis for possible bacteremia. Defer till at least 24-48hrs post completion of therapy.
- Accept donors taking antibiotics for acne, rosacea
What about anticoagulants and anti-hypertensives?

- Many centers defer donors on heparin, warfarin and other anticoagulants because efficacy of plasma is affected, and donor may have impaired hemostasis.
  - ARC: Defer for 7 days after discontinuation of warfarin/coumadin

- Anti-hypertensives: okay as long as BP is normal on PE
Question 9

- Which donor can donate now?
  - A. 79 male taking aspirin for joint pain yesterday, who wishes to donate platelets
  - B. Donor who took Tegison (etretinate), last dose 3 yrs ago
  - C. **Donor who took Avodart (dutasteride) 7 months ago**
  - D. Donor who took Ticlid(ticlopidine), last dose 10 days ago
  - E. Donor who took human pituitary source growth hormone, last dose 15 years ago
Question 10: Which of the following about donor testing is true?

- A. If a donor types as Rh(D) negative, a weak D test is always done to confirm that the patient is truly Rh(D) negative
- B. Tests done to screen for hepatitis B include HbSAg, anti-HBSAg, anti-HBc, and NAT (nucleic acid test) for HBV
- C. Tests done to screen for HIV include anti-HIV1/2, p24, western blot, NAT for HIV
- D. Antibody screen is only done on first time donors
- E. Serological tests are done to screen for antibodies against the following agents: parvo B19, West Nile Virus, Trypanosoma cruzi
Testing of Donor Blood

- ABO and Rh; Weak D is required if donor types as Rh negative
- Antibody screen: to check for RBC antibodies in donor serum. If positive, cannot use plasma or platelet units from the donor
Testing Donor Blood

Infectious Disease Testing

- HBsAg, anti-HBc are required. *HBV NAT not yet required but often done*
  - Why is anti-HBsAg not done?
- Anti-HCV, HCV NAT
- Anti-HIV ½, HIV NAT
- Anti-HTLV I/II,
- Serologic tests for syphilis (RPR, MHA-TP)
- Serologic tests for T. Cruzi (Chagas’ disease)
- NAT for WNV
Which of the following about donor testing is true?

- A. If a donor types as Rh(D) negative, a weak D test is always done to confirm that the patient is truly Rh(D) negative
- B. Tests done to screen for hepatitis B include HbSAg, anti-HBSAg, anti-HBc, and NAT (nucleic acid test) for HBV
- C. Tests done to screen for HIV include anti-HIV1/2, p24, western blot, NAT for HIV
- D. Antibody screen is only done on first time donors
- E. Serological tests are done to screen for antibodies against the following agents: parvo B19, West Nile Virus, Trypanosome cruzi
Question 11

- Which of the following about a “frequent” plasma donor is false?
- A. Donor donates plasma at least once every two weeks
- B. Serum protein level needs to be >6g/dL
- C. SPEP/quantitative immunodiffusion assay should be done once every 4 mo to ensure that plasma fractions are within normal limits
- D. Physical exam once every year
- E. At least 2 days between donations, and no more than 2 donations within 7 days.
Question 11

- Which of the following about a “frequent” plasma donor is false?
- A. **Donor donates plasma at least once every two weeks** – should be q 4wks or more frequently
- B. Serum protein level needs to be >6g/dL
- C. SPEP/quantitative immunodiffusion assay should be done once every 4 mo to ensure that plasma fractions are within normal limits
- D. Physical exam once every year
- E. At least 2 days between donations, and no more than 2 donations within 7 days.
Female donors who are pregnant should be deferred for ____ weeks after termination of the pregnancy.

True or False: United Kingdom includes N. Ireland but not Ireland.

Whole blood collected from donors should not exceed ___ml/kg of body weight, including samples.

An asymptomatic donor testing positive for WNV NAT should be deferred for _____ days, or ___ days after symptoms resolve, whichever is later.
Female donors who are pregnant should be deferred for 6 weeks after termination of the pregnancy.

True or False: United Kingdom includes N. Ireland but not Ireland. True – Ireland is considered as “Europe” for donor deferral purposes.

Whole blood collected from donors should not exceed 10.5ml/kg of body weight, including samples.

An asymptomatic donor testing positive for WNV NAT should be deferred for 120 days, or 120 days after symptoms resolve, whichever is later.