**Quizzes Class 10: Overview of study designs.**

**Question 1**: Choose all characteristics of descriptive studies:

* 1. Driven by hypothesis or hypotheses
	2. Accept that associations may or may not be causal
	3. More often require new data collection
	4. No advance hypothesis
	5. Hypothesis usually proposes a causal link
	6. Often use pre-existing data

**Question** 2: Choose all characteristics of analytic studies:

1. Driven by hypothesis or hypotheses
2. Accept that associations may or may not be causal
3. More often require new data collection
4. No advance hypothesis
5. Hypothesis usually proposes a causal link
6. Often use pre-existing data

**Question** 4: In experimental studies:

1. Investigator assigns exposure status
2. Investigator observes exposure status
3. Not feasible or ethical for some exposures
4. More feasible and ethical for some exposures
5. “Gold standard” of epidemiology
6. Efficient for rare or long-delayed outcomes
7. Can estimate incidence in both groups

**Question** 5: In observational studies:

1. Investigator assigns exposure status
2. Investigator observes exposure status
3. Not feasible or ethical for some exposures
4. More feasible and ethical for some exposures
5. “Gold standard” of epidemiology
6. Efficient for rare or long-delayed outcomes
7. Can estimate incidence in both groups

**Question** 6: Please, choose all that are true for cohort study design

1. Efficient for rare exposures
2. Efficient for rare or delayed outcomes
3. Cannot estimate incidence directly
4. Can estimate incidence in both groups
5. Easy to study multiple outcomes
6. Easy to study multiple exposures

**Question** 7: Please, choose all that are true for case control study design

1. Efficient for rare exposures
2. Efficient for rare or delayed outcomes
3. Cannot estimate incidence directly
4. Can estimate incidence in both groups
5. Easy to study multiple outcomes
6. Easy to study multiple exposures

**Question** 8 In ecologic studies:

1. Use group level data
2. Use individual level data
3. Have information on BOTH exposure and disease for the same individuals
4. Use aggregate or average measure of exposure
5. Use disease or death rates in certain areas

**Question 9:** Ecologic fallacy is characterized by:

1. Incorrect inferences about the individual level are made from group-level data
2. Accept that associations may or may not be causal
3. Associations observed at the group level may not represent the exposure-disease relationship at the individual level
4. Suggesting hypotheses about potential causal associations
5. Identifying burden of disease and health behaviors in a given population

**Question 10** Disadvantages of cross-sectional studies:

* 1. Usually more expensive
	2. Cannot determine temporal relation between exposure and disease since both are measured at the same time
	3. Cases who die or recover are not captured, since only current (prevalent) cases included
	4. Can’t be used to test hypotheses about exposures that do not change over time
	5. Do not provide incidence data
	6. Cannot study low prevalence diseases
	7. Need to track persons over time

**Quiz # Experimental studies**

**Question 1:** Why to do randomization

1. To get adequate sample size
2. To avoid bias
3. To reduce confounding
4. To have similar distribution of other (including unknown) risk factors of outcome in both groups

**Question 2:** What is usually assigned to comparison group?

1. Usual care
2. New treatment
3. Placebo
4. Standard treatment or intervention
5. Nothing
6. New preventive intervention

**Question 3** What is true for crossover design

1. Two or more independent treatments are tested
2. Each subject serves as his or her own control
3. Only possible for certain treatments or exposures (won’t work if one treatment cures the disease, or treatment has residual effects )
4. “Washout period” between treatments is used
5. Anticipated outcomes of the two treatments must be different
6. Can also be used to test interactions of two treatments
7. Modes of action of two treatments are independent

**Question 4** What is true for factorial design

1. Two or more independent treatments are tested
2. Each subject serves as his or her own control
3. Only possible for certain treatments or exposures (won’t work if one treatment cures the disease, or treatment has residual effects )
4. “Washout period” between treatments is used
5. Anticipated outcomes of the two treatments must be different
6. Can also be used to test interactions of two treatments
7. Modes of action of two treatments are independent

**Question 5** Efficacy analysis

1. Groups are analyzed according to randomization regardless of actual compliance
2. Groups are analyzed according to actual treatment received
3. Reflects the potential effect of the treatment under ideal conditions (i.e., everyone adheres to treatment)
4. Preserves the benefits of randomization
5. Reflects what the effect of the treatment would be under “real world” conditions (effectiveness)
6. Effects of treatment are analyzed within subgroups of the study population (e.g., by age or gender)

**Quiz # Cohort studies**

**Question 1** Participants for cohort studies are selected based on:

* + - 1. Exposure status
			2. Outcome status

**Question 2** What is true for retrospective cohort study

1. More expensive, time consuming
2. Cheaper, faster
3. Not efficient for diseases with long latent periods
4. Efficient for diseases with long latent period
5. Less vulnerable to bias
6. Exposure data may be inadequate
7. Better exposure and confounder data
8. More prone to bias

**Question 3** What is true for prospective cohort study

1. More expensive, time consuming
2. Cheaper, faster
3. Not efficient for diseases with long latent periods
4. Efficient for diseases with long latent period
5. Less vulnerable to bias
6. Exposure data may be inadequate
7. Better exposure and confounder data

**Quiz # Case-control studies (Lecture 8)**

**Question 1:** What is the purpose of the control group in a case-control study?

1. To provide information on the disease distribution in the population that gave rise to the cases
2. To provide information on the exposure distribution in the population that gave rise to the cases

**Question 2.** Case-cohort (base) sampling:

A Select a control from the population at risk when a case is diagnosed

B Select controls from the non-diseased at the end of the follow-up period

C Select controls from the population at risk at the start of the follow-up period

Answer:

1B

2A

3C

**Question 3**: Recall bias may happen in case-control study when:

1. controls are more or less likely to be exposed than the cases,
2. Cases are more or less likely than controls to recall and report prior exposures
3. cases are selected for the study because they have the exposure of interest
4. Participation in the study is related to both exposure and disease

**Quiz #6 Random error. Bias (selection bias, information bias) (Lecture 9)**

Question 3: Bias

1. Due to sampling variability
2. Can be quantified through the use of p-values and confidence intervals
3. Occurs in the design and conduct of a study
4. can be evaluated but, once the study data are collected, it cannot be fixed
5. results in an incorrect (invalid) estimate of the measure of association

**Question 4:** Selection bias:

1. Different, or noncomparable, criteria are used to enroll study participants
2. Different, or noncomparable, information is obtained from the study groups

Question 5 Observation bias :

1. Different, or noncomparable, criteria are used to enroll study participants
2. Different, or noncomparable, information is obtained from the study groups