comparison between types of studies

	cross sectional	case-control	cohort	Randomised Controlled Trials (RCT)
charectiristics & concept	- take at time of study , no period of time , at a single point - measurements of exposure and effect are made at the same time. - has analytical and descriptive types - measure trends (intermittent repeated measumenents) - can be used to explore etiology. - used to assess the burden of disease or health needs of a population and are particularly useful in informing the planning and allocation of health resources. - In sudden outbreaks of disease, a CSS to measure several exposures can be the most convenient first step in investigating the cause	- concept : identification of a group of cases (مريض) in a given population and a group of controls (مش مريض) to be included in the study , then compare between the prevalence of exposure to a potential risk factor between cases and controles . - data collected retrospectively and as a result may give rise to bias. - CCSs are longitudinal studies , in contrast to cross sectional studies.	- concept : begins with group of people free of disease & classified into subgroups a group of individuals exposed to a risk factor a group who are unexposed to the risk factor are followed over time (often years) - Also called: follow up studies , or incidence studies - Cases are excluded at the beginning - Cohort studies are a form of longitudinal study design that flows from the exposure to outcome. - Cohort studies be prospective , which is also called concurrent cohort study (prospective cohort study)	- The main intervention study design - Subjects are followed prospectively to compare the intervention vs. the control (standard treatment, no treatment or placebo). - individuals are assigned to one of two or more competing interventions - concept : the subjects are first assigned to the treatment group and, after a brief interval for cessation of residual effect of the drug (washout period to get rid of the effect of the first intervention and to allow each participant to return to the baseline state) , shifted into the placebo /alternative group. Thus, the subjects act as their own control at the end of the study. - considered as the most rigorous method of determining whether cause-effect relationship exists between an intervention and outcome - The strength of the RCT lies in the process of randomisation that is unique to this type of epidemiological study design. - groups are then followed prospectively to assess the effectiveness of the intervention compared with the standard or placebo treatment.
outecme measure	prevelance (not related to period of time) Prevalence = Number of cases in a defined population at one point in time / Number of persons in a defined population at the same point in time	odds ratio (OR) OR = a/c = ad / b/d bc which is the ratio of the odds of exposure among the cases to the odds of exposure among the controls. 2x2 table Cases | Controls | Total Exposed: a | b | a+b Unexposed: c | d | c+d Total: a+c | b+d | a+b+c+d	relative risk (RR) , also attributable risk Relative risk (RR) RR= a/(a+b) / c/(c+d) Exposure | +Ve Out com | no outcome | Total positive: a | b Negative: c | d Total RR Used in cohort study The risk is the relative incidence in the exposed and non exposed group	Subtopic 9
Bias	recall bias , because of Non-response	1. cases and controls may recall past exposure differently (recall bias). 2. the recording of exposure information may vary depending on the investigator's knowledge of an individual's disease status (interviewer/observer bias). 3. Selection bias , when : - cases or controls are included in or excluded from a study because of some characteristic they exhibit which is related to exposure to the risk factor under evaluation . - when those individuals selected as controls are unrepresentative of the population that produced the cases. - when cases and controls are recruited exclusively from hospital or clinics. - when exposed cases are more likely to be selected than unexposed cases.	potential bias , due to : 1- losses to follow-up (Cohort members may; die, Migrate, Change jobs or · Refuse to continue to participate in the study. In addition, losses to follow-up may be related to the exposure, outcome or both) 2- The degree of accuracy with which subjects have been classified with respect to their exposure or disease status.	Volunteer bias
advantages (strength)	1. Relatively quick and easy to conduct (no long periods of follow-up). 2. Data on all variables is only collected once. 3. Able to measure prevalence for all factors under investigation. 4. Multiple outcomes & exposures can be studied. 5. important in public health for assessing the burden of disease in a specified population and in planning and allocating health resources. 6. Good for descriptive analyses and for generating hypotheses	1. Cost effective relative to other analytical studies such as cohort studies. 2.CCS are retrospective, and cases are identified at the beginning of the study; therefore there is no long follow up period (as compared to cohort studies) 3. Efficient for the study of diseases with long latency periods. 4. Efficient for the study of rare diseases 5. Good for examining multiple exposures.	1. Multiple outcomes can be measured for any one exposure. 2. Can look at multiple exposures. 3. Exposure is measured before the onset of disease 4. Good for measuring rare exposures 5. Demonstrate direction of causality. 6. Can measure incidence	1. A well designed RCT provides the strongest evidence of any epidemiological study design that a given intervention has a postulated effectiveness and is safe. 2. RCT provides the best type of epidemiological study from which to draw conclusions on CAUSALITY 3. Randomisation provides a powerful tool for controlling (wash out) for confounding, even by factors that may be unknown or difficult to measure 4. if well designed and conducted, a RCT minimizes the possibility that any observed association is due to confounding. 5. Clear temporal sequence - exposure clearly precedes outcome. 6. Provides a strong basis for statistical inference , it is : - Enables blinding and therefore minimizes bias. - Can measure disease incidence and multiple outcomes
disadvantages (weak)	1. Difficult to determine whether the outcome followed exposure in time or exposure resulted from the outcome. 2. Not suitable for studying rare diseases or diseases with a short duration.. 3. Unable to measure incidence. 4. Associations identified may be difficult to interpret. 5. Susceptible to bias due to low response and misclassification due to recall bias.	1. Particularly prone to bias especially recall ,selection, and observer bias. 2. CCS limited to examining one outcome. 3. Unable to estimate incidence rates of disease 4. Poor choice for the study of rare exposures 5. The temporal sequence between exposure and disease may be difficult to determine.	1. Costly and time consuming. 2. Prone to bias due to loss to follow-up. 3. Prone to confounding. 4. Participants may move between one exposure category 5. Knowledge of exposure status may bias classification of the outcome. 6. Being in the study may alter participant's behaviour. 7. Poor choice for the study of a rare disease. 8. Classification of individuals (exposure or outcome status) can be affected by changes in diagnostic procedures.	1. Ethical constraints - for example, it is not always possible or ethical to manipulate exposure at random. 2.Expensive and time consuming. 3. Requires complex design 4. Loss to follow-up attributed to treatment 5. Inefficient for rare diseases or diseases with a delayed outcome 6. Generalizability - subjects in a RCT may be more willing to comply with the treatment regimen and therefore may not be representative of all individuals who might be given the treatment. 7. Volunteer biases: the population that participates may not be representative of the whole
	هيك الامور تمام ان شاء الله ، بس باقي عليك تقرأ (السلايدات المقدمة وسلايدات الابحاث الوصفية discriptive) لانه مش مشمولات هون الطب والجراحة لجنة	اقرأ من سلايد ٩ الى سلايد ١٤ لانه مش مشمولات هون ما عرفت اضيفهم ، سهلات هم بيحكوا عنه انه انت بما انك بدك تعمل علاقة بين اشخاص مريضين واشخاص مش مريضين وبين عامل معين ، فبدك تعرف الناس اللي بتختارهم من كل فئة كيف تختارهم ، مهمات كثير فلازم تشوفهم	اقرأ من سلايد ٢٨ الى سلايد ٣١ في الملف الثاني ، ما عرفت اشملهم ، مهمات كثير وسهلات ، بيحكيلك بما انك بدك تعمل علاقة بين عامل معين وبين نتيجة وبين المتابعة اللي بينهم ، فبدك تعرف كيف تختار كل واحد منهم وكيف تساويه بالضبط ، مهم كثير ينقرأ ويندرس .	Randomization: * The aim of randomisation is to ensure that any observed differences between the treatment groups are due to differences in the treatment alone and not due to the effects of confounding (known or unknown) or bias , so all all study participants have the same chance of allocation to the treatment or control group , and that the likelihood of receiving an intervention is equal regardless of when the participant entered the study. ** disadvantages are : Does not guarantee comparable groups as differences in confounding variables may arise by chance. Cont…Randomisation ❑ Advantages of randomisation ❖ Eliminates confounding ➢ tends to create groups that are comparable(similar) for all factors that influence outcome, known, unknown or difficult to measure. ❖ Therefore, the only difference between the groups ✓ should be the intervention. ❖ •Eliminates selection bias. ❖ •Gives validity in statistical tests based on probability theory. ❖ Any baseline differences that exist between study groups are attributable to chance rather than bias. Though this should still be considered as a potential concern. ضايل عليك تقرأ السلايدات ٢٣ ، ٢٤ ، ٢٥ ... مهمات كثير بس ما عرفت اضيفهم عالتلخيص وفي السلايدات من ١٦ الى ١٩ بس هذول مش هالاهمية ، اقراهم مش غلط

1.What is the real substance of epidemiology ?
Analytical epidemiology

2- All the followings are the advantages of a cross-sectional study, EXCEPT one? Select one:

a. Can be used to study several associations at once
b. Can be conducted over a short period of time
c. Produce prevalence data
d. Relative risk can be calculated
e. They are relatively fast and inexpensive

3-Residence of three villages with three different types of water supply were asked to participate in a study to identify cholera carriers. Because several cholera deaths had occurred in the recent past, virtually everyone present at the time submitted to examination. The proportion of residents in each village who were carriers was computed and compared. This study is a? Select one:

a. Case series study
b. Case-control study
c. Concurrent cohort study d. Ecological study
e. Cross- sectional study

4-In a study begun in 1995, a group of 3000 adults in New York were asked about alcohol consumption. The occurrence of cancer was studied in the group between 2010 and 2019. This is an example of? Select one:

a. Cross sectional study
b. Case-Control study
c. Clinical trial
d. Concurrent cohort study
e. Ecological study

5-The healthy worker effect is a? Select one:

a. Selection bias
b. Recall bias
c. Random bias
d. Confounding
e. Conflict of interest

6-Incidence rate is calculated from? Select one:

a. Case-control study
b. Case report
c. Retrospective study
d. Prospective study
e. Cross -Sectional study

7-Which of the following statements is not correct? Select one:

a. Cohort study is more appropriate when the disease or exposure under investigation is rare. In comparison to case control study
b. Cohort study is more expensive in comparison to case control study
c. cohort study starts with people exposed to risk factor or suspected cause while case control study starts with disease
d. A long follow-up period often needed with delayed results in a cohort study whereas a case control study yields relatively quick results
e. Cohort study needs large sample size in comparison to case control study

8-In a prospective study comprising 10000 subjects, 6000 subjects were put on beta carotene and 4000 were not. 3 out of the first 6000 developed lung cancer and 2 out ofthe second 4000 developed lung cancer. What is the interpretation of the above? Select one:

a. Beta carotene is not protective in lung cancer
b. Beta carotene is protective in lung cancer
c. The study design is not sufficient to draw any meaningful conclusions
d. Beta carotene is carcinogenic
e. Data is insufficient need a bigger sample size

9-The incidence rate is calculated from? Select one:

a. Case series study
b. Case report study
c. Prospective cohort study
d. Cross -Sectional study
e. Case-control study

10-What is NOT true about a case control study? Select one:

a. Provides quick results
b. Is less expensive relatively
c. Involves fewer subjects
d. Gives attributable risk.
e. Provides prevalence of exposure

11-Natural history of disease is best studied by? Select one:

a. Cross sectional study
b. Cohort study.
c. Case series study.
d. Case-control
e. Ecological study.

12-In a study of the cause of lung cancer, patients who had the disease were matched with cancer free individuals. The frequency of cigarette smoking was then compared in the two groups. What type of study was this? Select one:

a. Prospective cohort
b. Cross sectional
c. Experimental
d. Case-control
e. Case series

13-Situations in which financial considerations may compromise a researcher's professional judgment in conducting research?

a. Selection bias
b. Recall bias
c. Measurement bias
d. Confounding
e. Conflict of interest

Q	1	2	3	4	5	6	7
A		d	e	d	a	d	a
Qs	8	9	10	11	12	13	
As	a	c	d	b	d	a	

ماضيًا
في سبيل الله
ولو نزف جميعه!