

Cosmina Bondor

Recapitulation

A

ALWAYS

S

SEEK

K

KNOWLEDGE

Outline

About the theoretical test

About the final mark

Examples of questions for the theoretical test

- Recapitulation

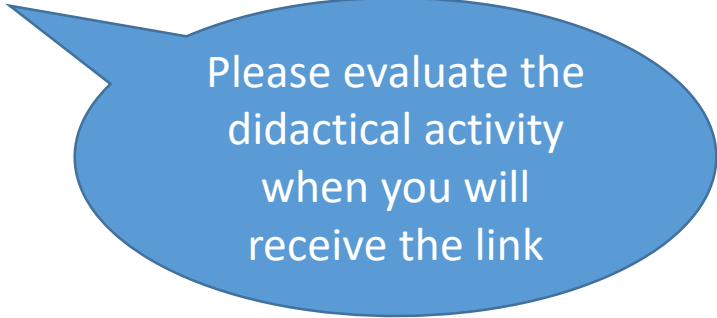
period 13.May.2025 - 8.June.2025 ... 2026?....

The evaluation of the didactic activity - sem I

- student receives a **link** in the institutional e-mail box (...@elearn.umfcluj.ro),

Complete two forms to evaluate:

- (1) course
- (2) practical work or clinical internship.



Please evaluate the
didactical activity
when you will
receive the link

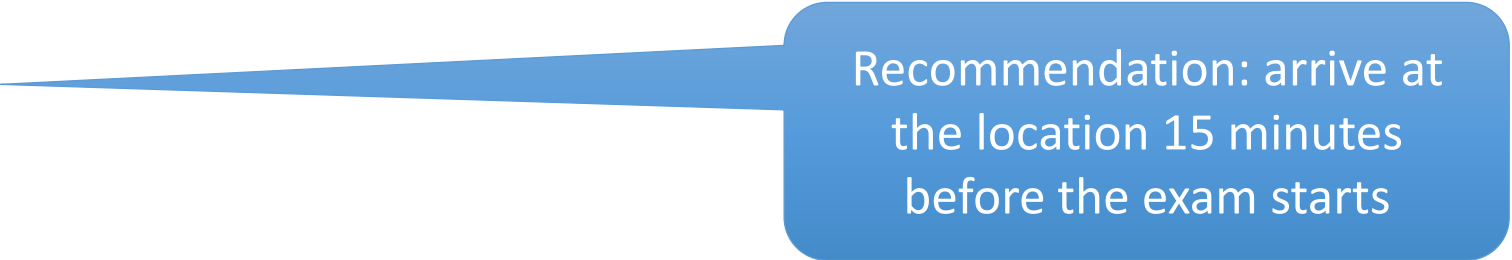
To access the institutional e-mail box (@elearn.umfcluj.ro) use the Outlook e-mail service (<https://outlook.office.com/mail/>) and enter the data used for Microsoft Teams.

- **The evaluations are confidential, the answers provided cannot be associated with the students' personal data.**
- If you encounter difficulties in carrying out the evaluations, or you want to send us aspects that need changes or additions, please send a message to dep.calitate@umfcluj.ro

Theoretical exam

Friday 26.June.2026

14 o'clock



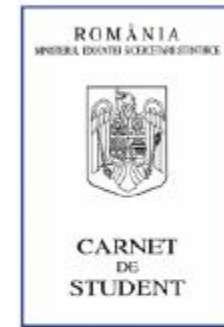
Recommendation: arrive at
the location 15 minutes
before the exam starts



Aleman

Must have at the theoretical/practical exam

- ID or Passport
- Student ID
- without phone (in the bag, close)
- without smart watch, tablet, laptop, etc. (in the bag, close)
- pen



Optional to have at the theoretical/practical exam

- office calculator
- white paste



- Students who didn't took the practical exam **cannot** enter to the theoretical exam.
- The students, who pass practical exams, are not obliged to take that part of the exam once again in the same academic year.
- The students who have **difference exams (transfer from another faculty)** should plan the exam with the teacher and also pay the university fee for the exam.

Catedra de Informatică Medicală

Facultate, an, grupă: _____

Numele: _____

Prenumele: _____

Data examenului: _____ (completați cu majuscule)

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Varianta 1

●
Varianta chestionar
de examinare

1

2

3

4

ABOUT theoretical test

- Theoretical test (60 minutes):
- 30 questions each worth 1 point
 - Multiple choice questions
 - Five possible response (A, B, C, D & E);

Question with * - only one correct answer

About Exam - Exam Policy

- Questions with one correct answer:
 - 5 concordances = 1 point
 - < 5 concordances = 0 point
- Questions with 2 correct answers :
 - 5 concordances = 1 point
 - 4 concordances = 0.8 point
 - < 4 concordances = 0 point

17.* The 99% confidence interval ($Z_{\alpha} = 2.579$) associated to systolic blood pressure for a sample of 169 persons with an arithmetic mean of 135 mg/dl and a standard deviation of 20 mg/dl is:

A. [132 - 138]

B. [132 - 138]

C. [83 - 187]

D. [131 - 139]

E. Could not be determined based on provided data

Only one correct !

16) Let be a statistical series with the following data: 40, 60, 20, 20, 60, 80, 80, 40, 60, and 80. The relative frequency of 0.3 corresponds to:

a) 20

b) 40

c) 60

d) 80

e) None is correct

Two correct answers !

About Exam - Exam Policy

- Questions with > 2 correct answers:
 - 5 concordances = 1 point
 - 4 concordances = 0.8 point
 - 3 concordances = 0.3 point
 - < 3 concordances = 0 point

7) The following data represent the age of first episode of myocardial infarction on a series of male patients: 38, 50, 23, 45, 70, 33, 25, 40, 50, 62, and 59. The values of quartiles are as follows: $Q1 = 35.5$, $Q2 = 45$ and $Q3 = 54.5$. The following statements are true:

a) $Q2 - Q1 = 9.5$

b) $Q3 - Q2 = 9.5$

c) Data are asymmetrical distributed

d) Data are symmetrical distributed

e) Data are approximately symmetrical distributed

>2 answers correct !

Type of activity	Evaluation criteria	Type	Mark	Weight in final mark
Lecture	Theoretical exam	Compulsory	1-10	70%
Practical activity	Practical exam	Compulsory	1-10	30%

Mark – 30 questions with multiple choice

Maximum points 30 = Maximum mark 10.

If the obtained points ≥ 12 then

- Mark at theoretical test = $1 + \text{Obtained point} * 9/30$
- If the obtained points < 12 then
- Mark at theoretical test = 4

If theoretical test mark ≥ 5 **and** practical test mark ≥ 5 than

- weighted average = $0.70 * \text{theoretical test mark} + 0.30 * \text{practical test mark}$
- 3 Optional assignments (0.2 each)
- Final mark = weighted average + 0.6 (for optional assignments)

If theoretical test mark < 5 **or** practical test mark < 5 than

- Final mark = 4

Example

- 10 at practical test
- 8.5 at theoretical test
- 3 optional assignments

- Final mark = $0.7*8+0.3*10+0.6 = 5.95+3+0.6 = 9.55 \rightarrow 10$

Example

- 10 at practical test
- less than 12 points → 4 at theoretical test
- Final mark 4 (have to give only theoretical test in re-taken)


Example

- 4 at Practical test
- cannot enter to theoretical test
 - final mark 4 (have to give both tests in re-taken)

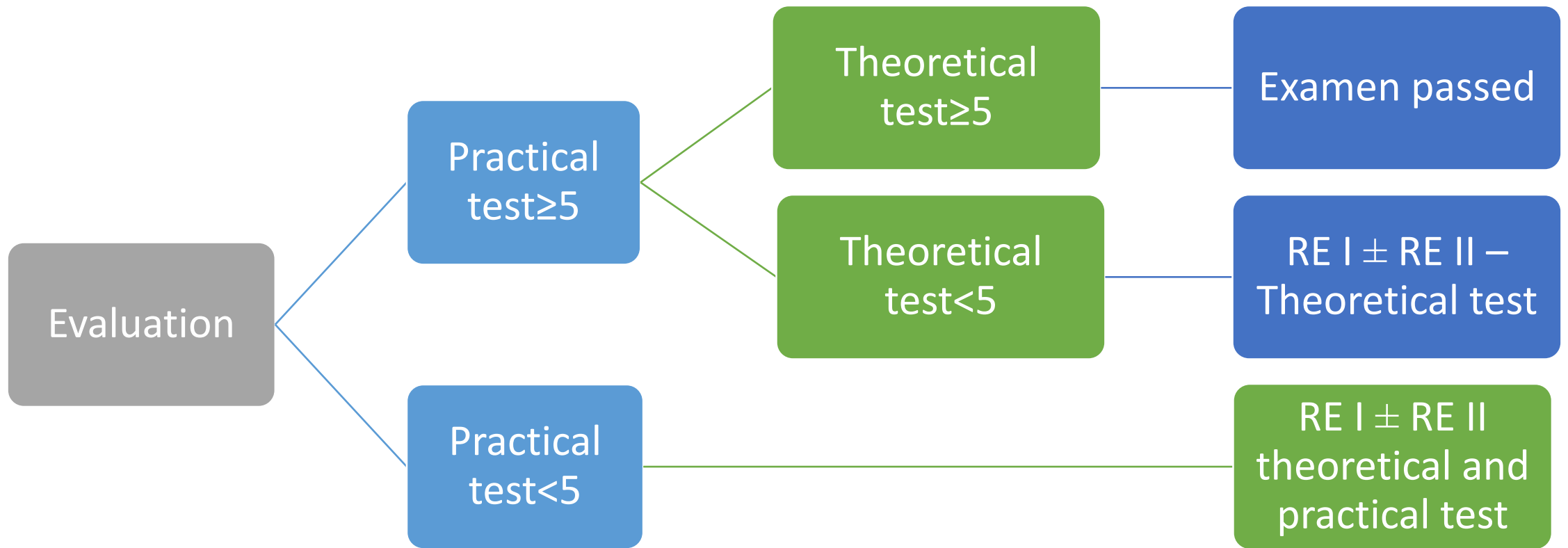


If you do not pass, no problem you can come

Re-examination session I
13 July 2026 – 17 July 2026



Re-examination session II
14 Septembre 2026 – 18 Septembre 2026



Results - Where?

- practical test – in the same day after the test on chat:
- theoretical test – 2-3 days after the theoretical test
- final mark – 2-3 days after the theoretical test

Where are the presentations from the lectures?

Contact: cbondor@umfcluj.ro or Teams on chat

• Web page:

<http://www.info.umfcluj.ro/index.php/en/>





Review



Variable
types.
Statistical
methods

Example Question: Variables type

The variable Diabetes (Yes/No) is a

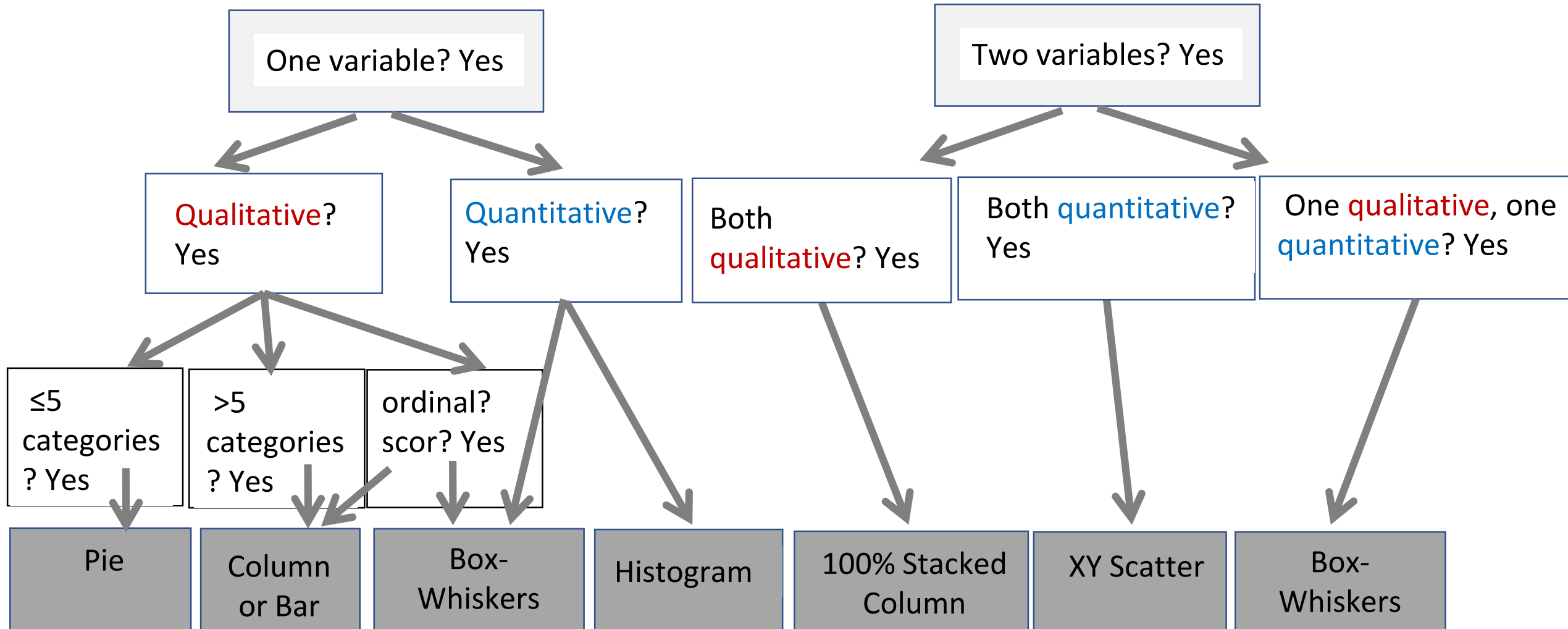
- A. Discrete quantitative variable
- B. Continuous quantitative variable
- C. Nominal qualitative variable
- D. Dichotomous qualitative variable
- E. Ordinal qualitative variable

Exemple Question: Variables type

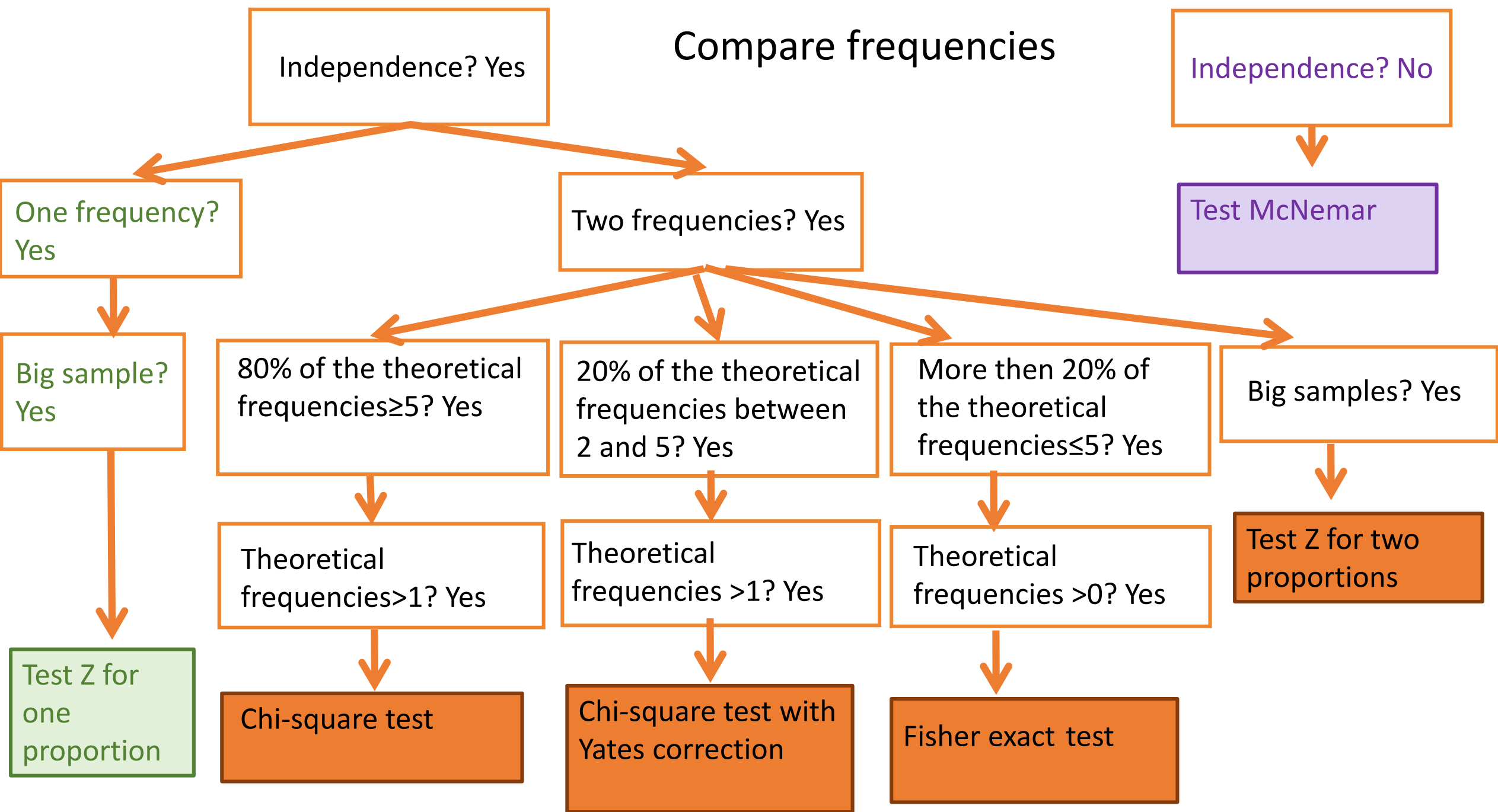
The variable Diabetes (Yes/No) is a

- A. Discrete quantitative variable
- B. Continuous quantitative variable
- C. Nominal qualitative variable
- D. Dichotomous qualitative variable
- E. Ordinal qualitative variable

How to choose the right chart?

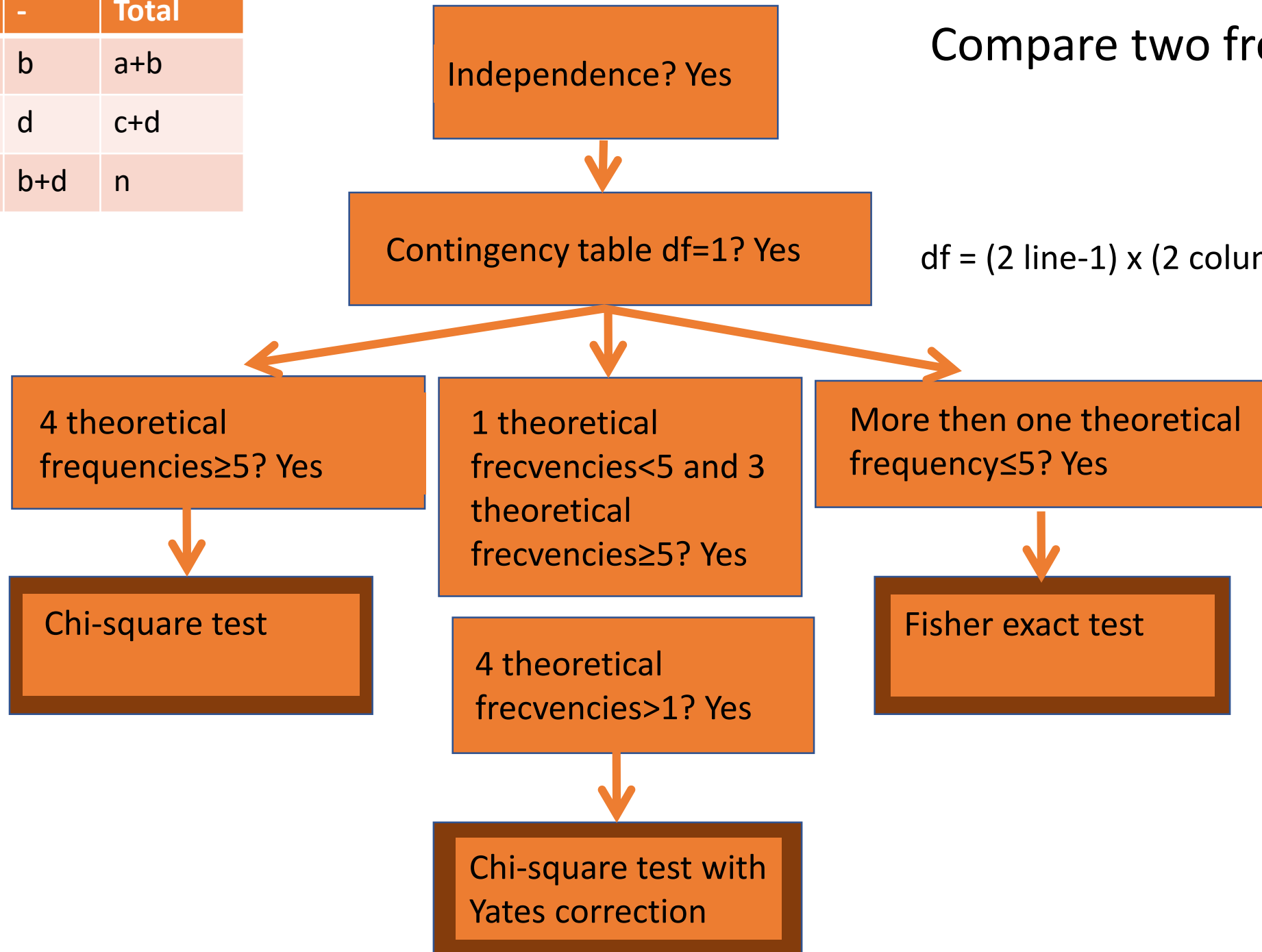


Compare frequencies



	+	-	Total
+	a	b	a+b
-	c	d	c+d
Total	a+c	b+d	n

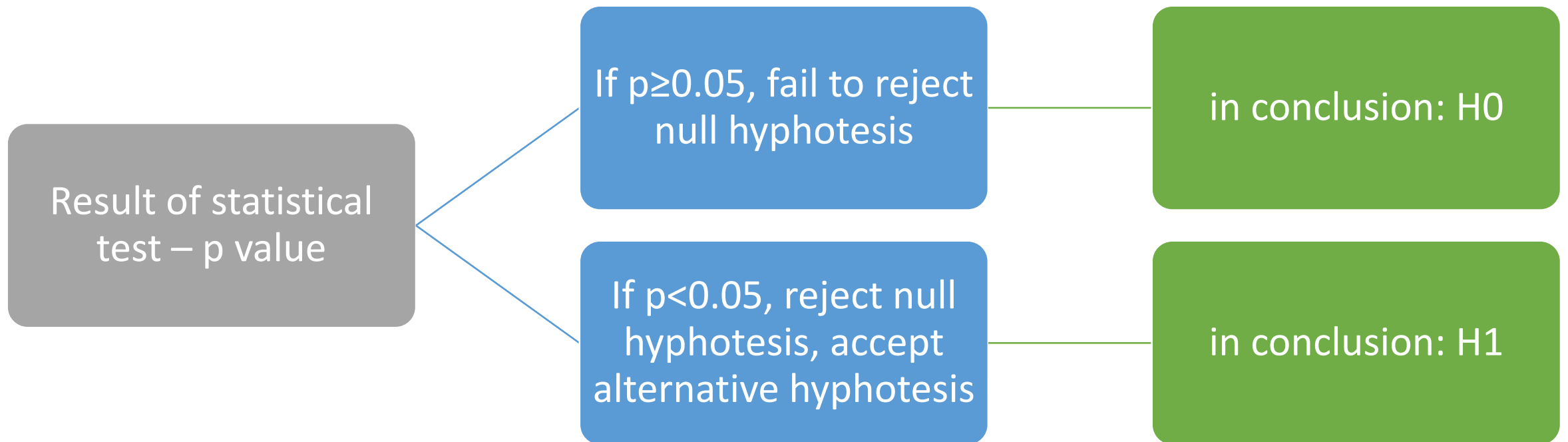
Compare two frequencies



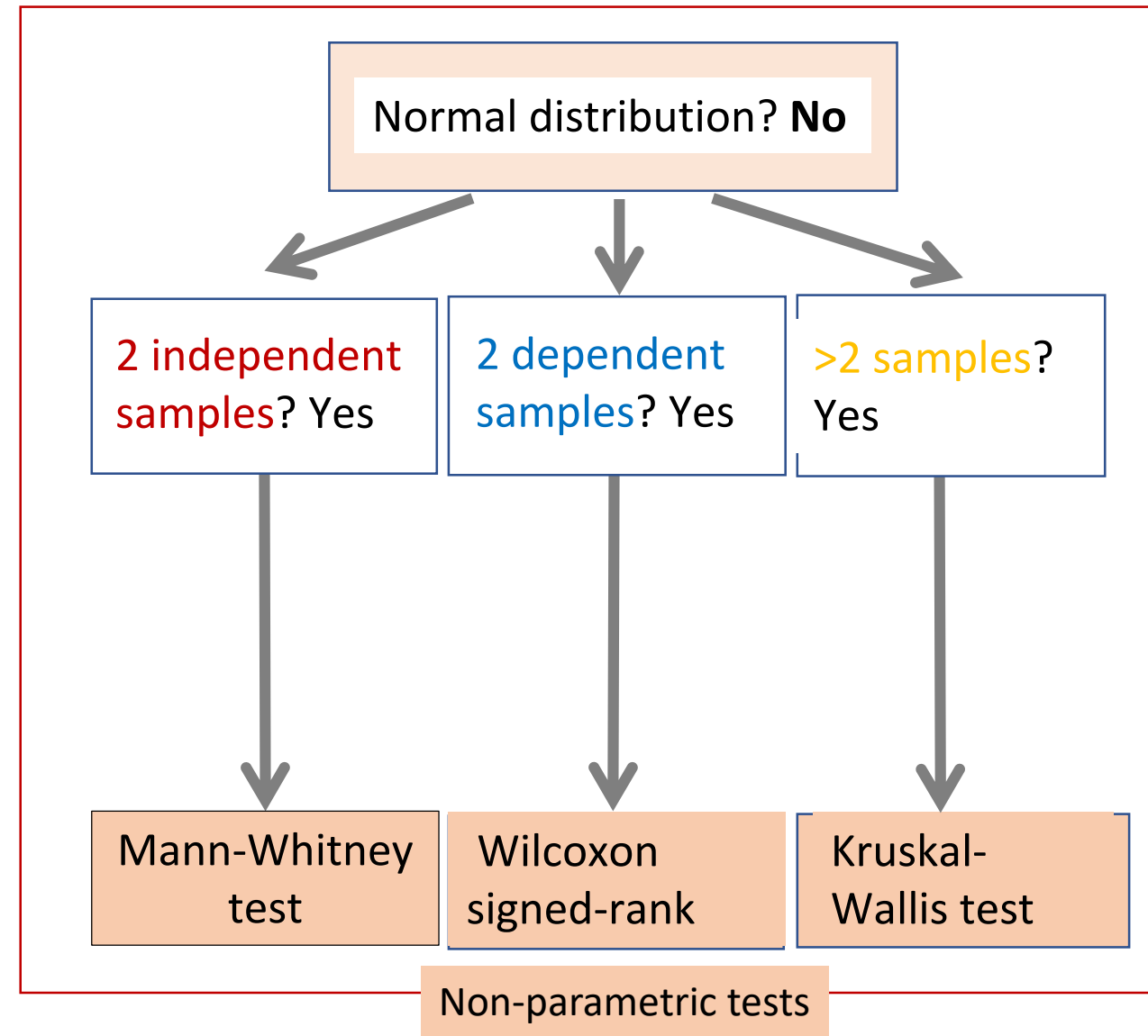
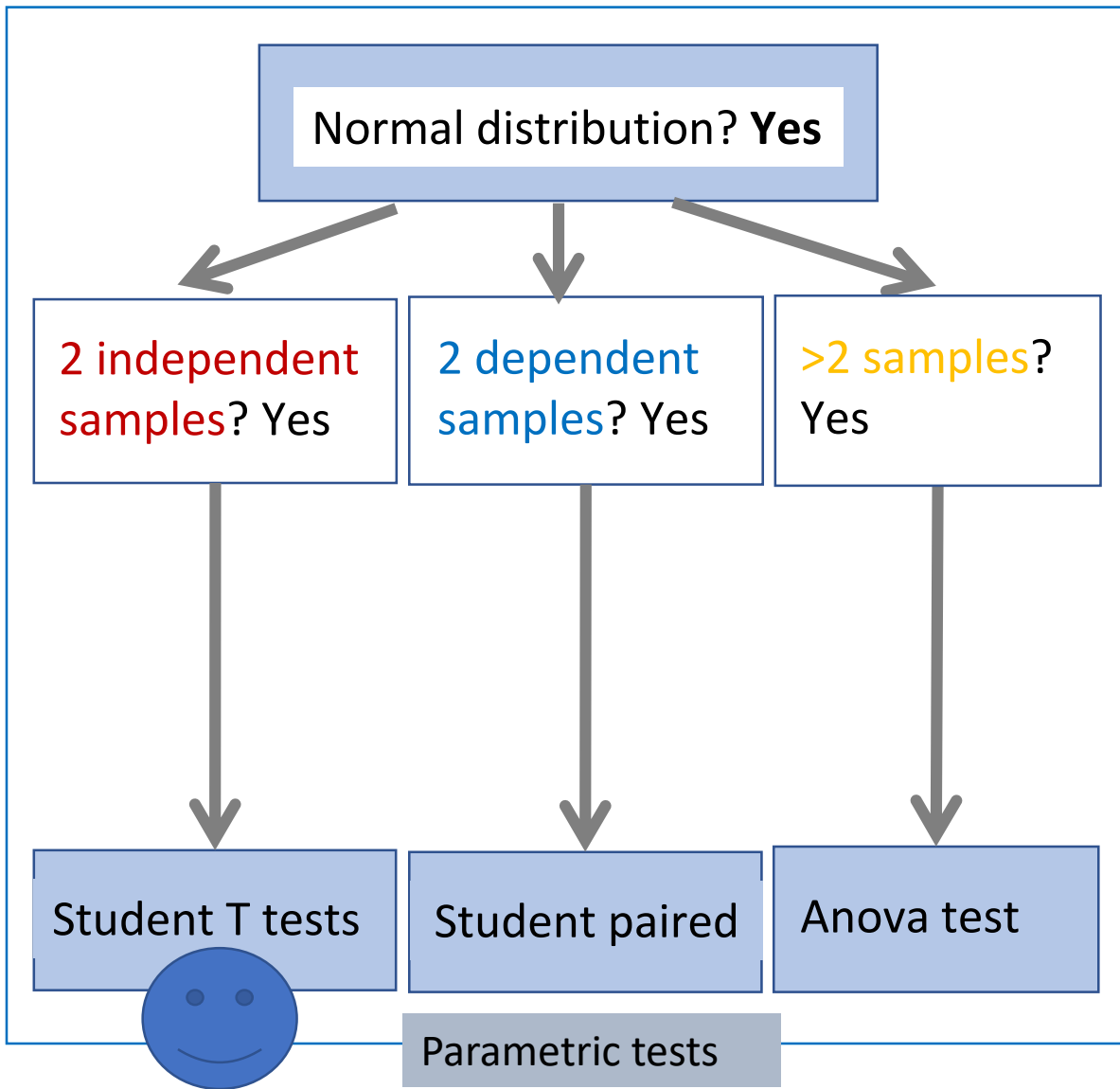
$$df = (2 \text{ line} - 1) \times (2 \text{ columns} - 1) = 1$$

p value interpretation

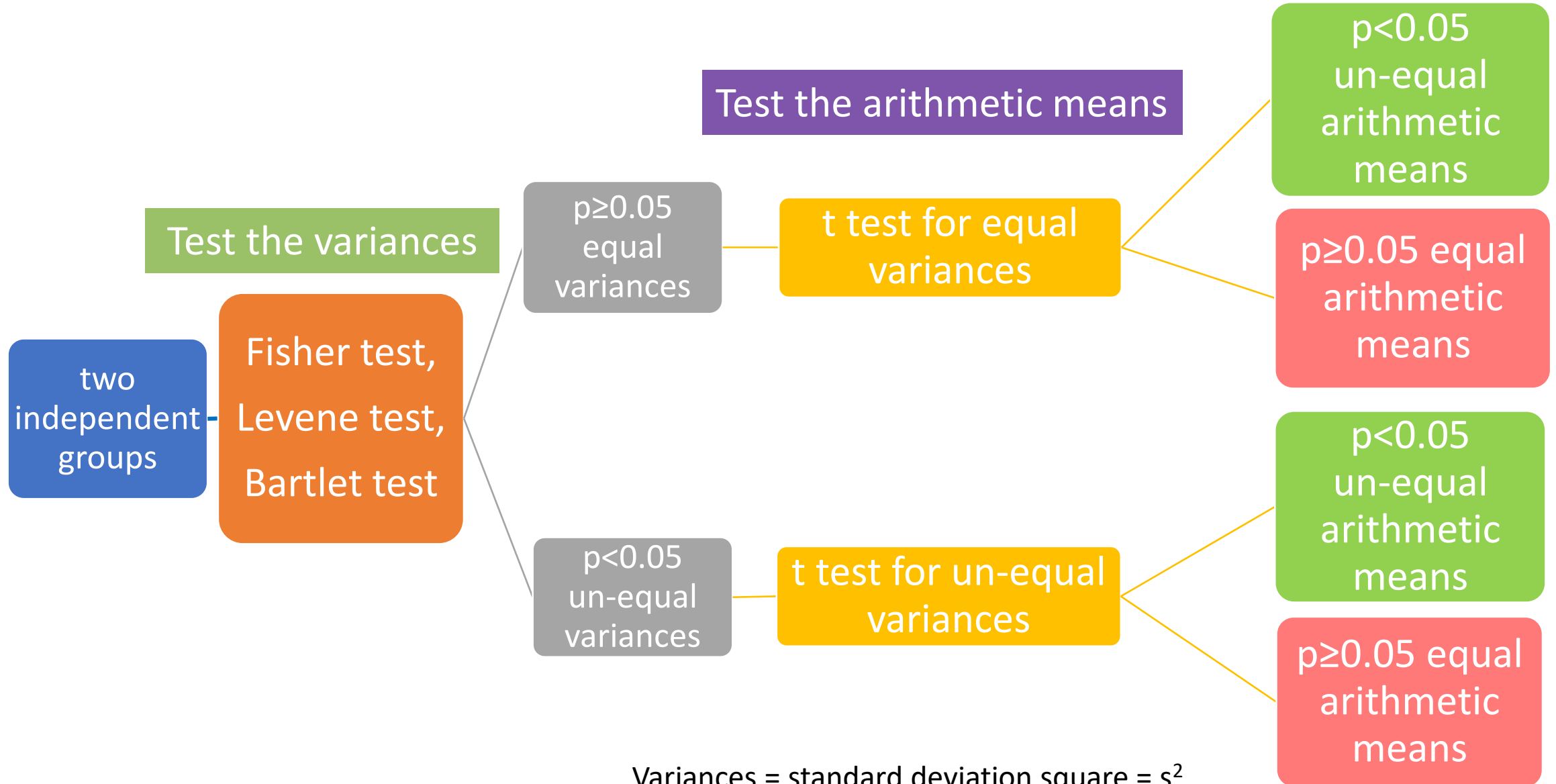
- H0 – null hypothesis
- H1 – alternative hypothesis



Comparing quantitative variables grouped by a qualitative variable. How to choose the right statistical test?

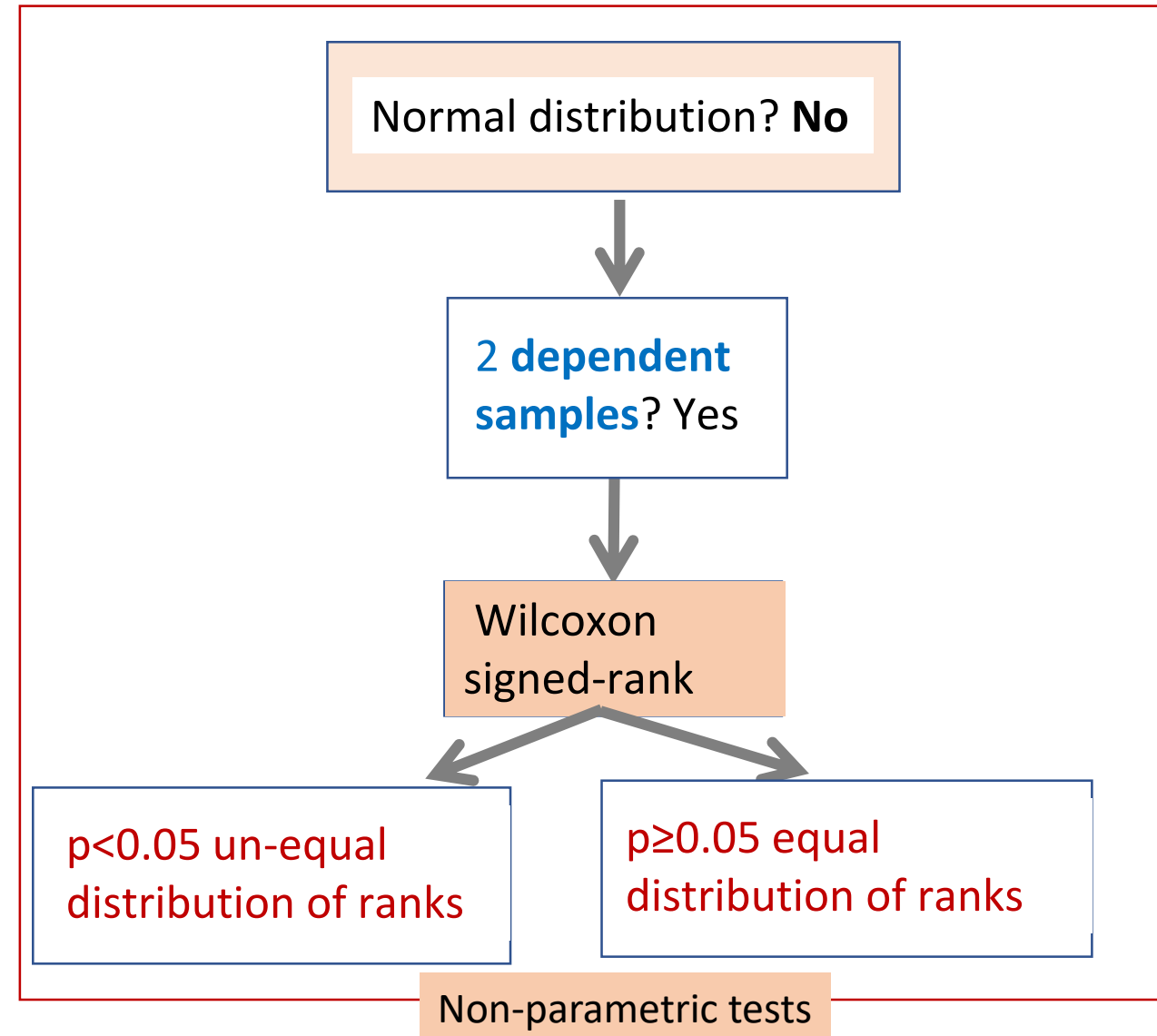
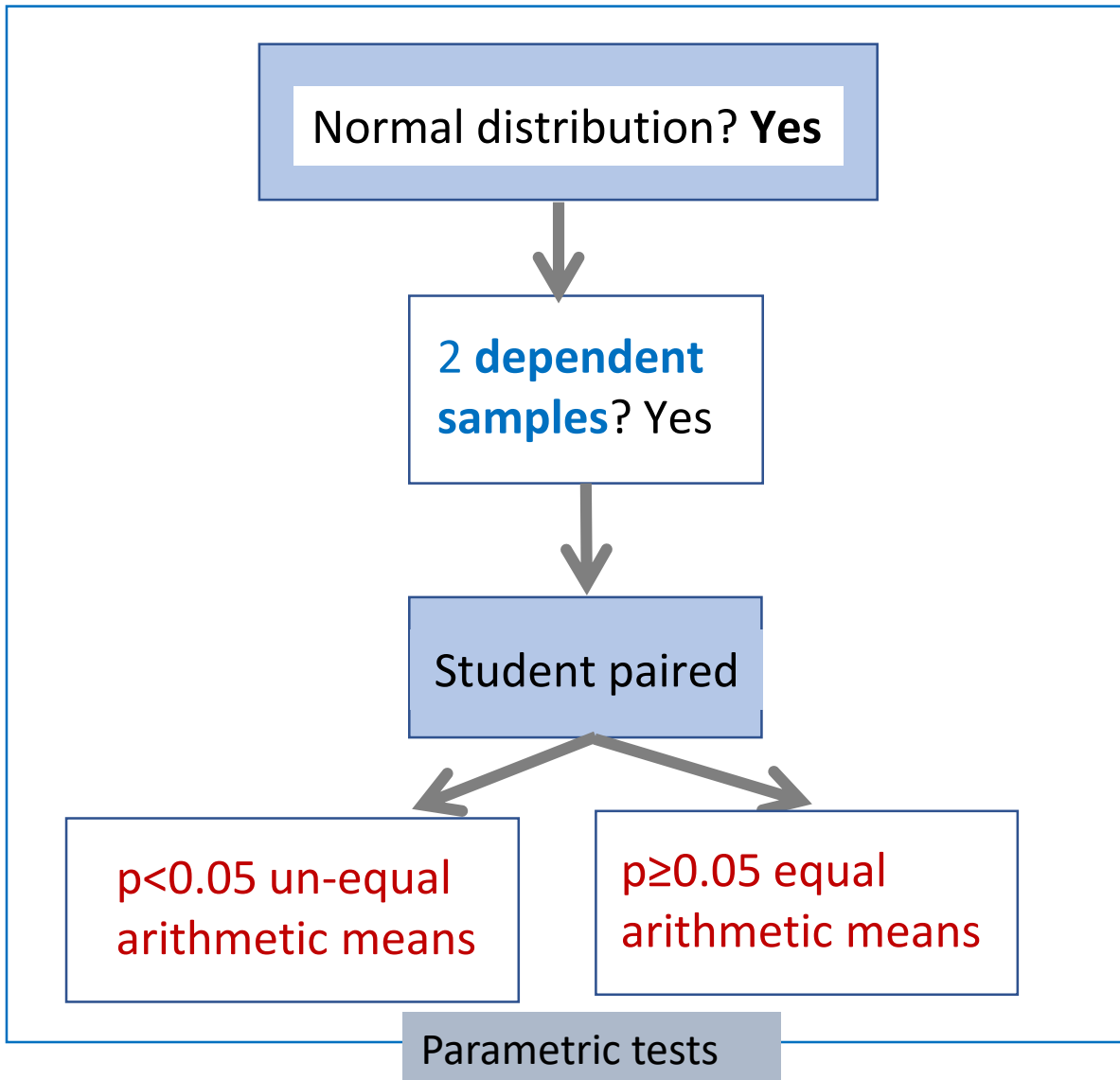


Comparing quantitative variables grouped by a qualitative variable – two independent groups with normal distributions – Comparing means

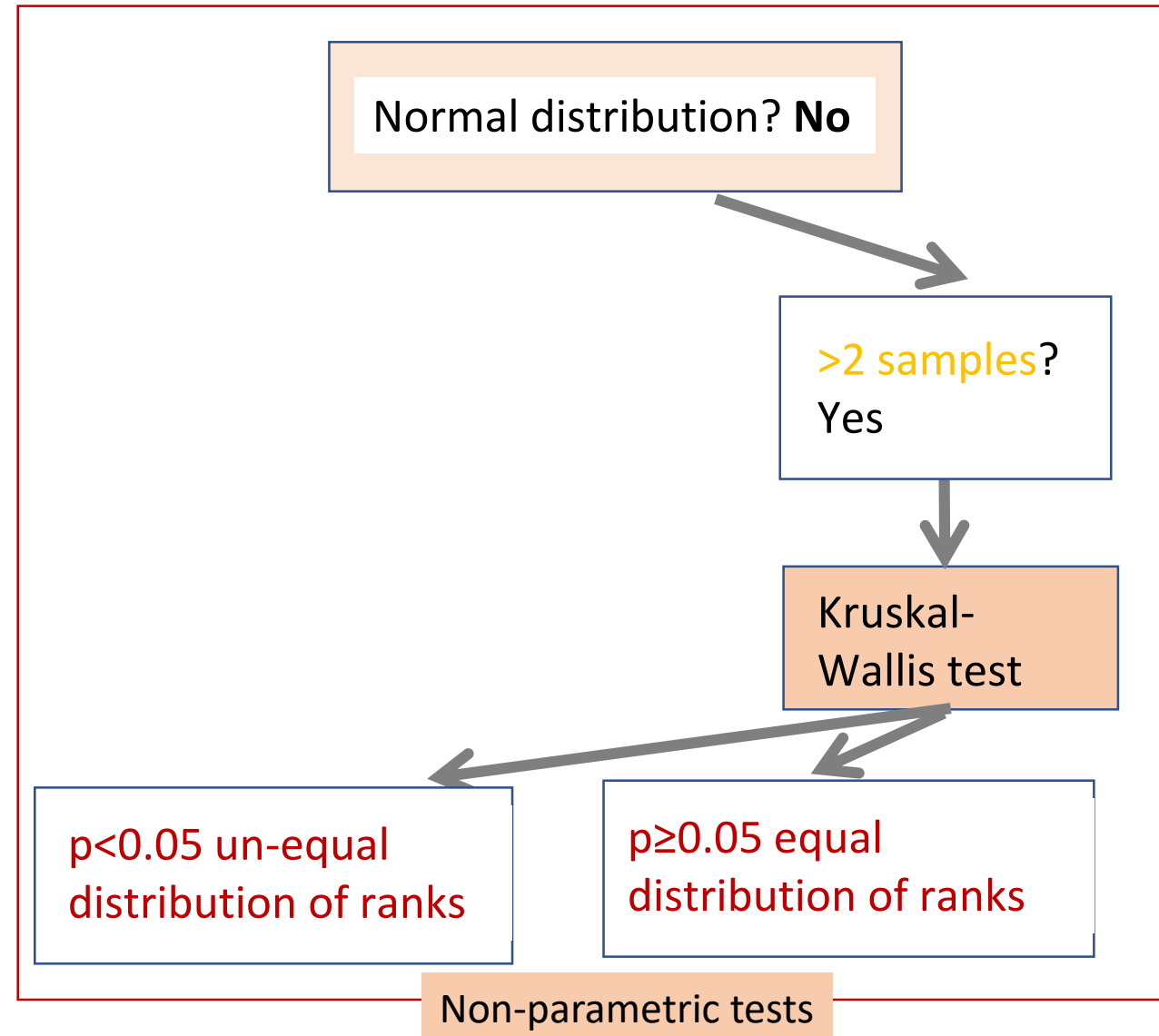
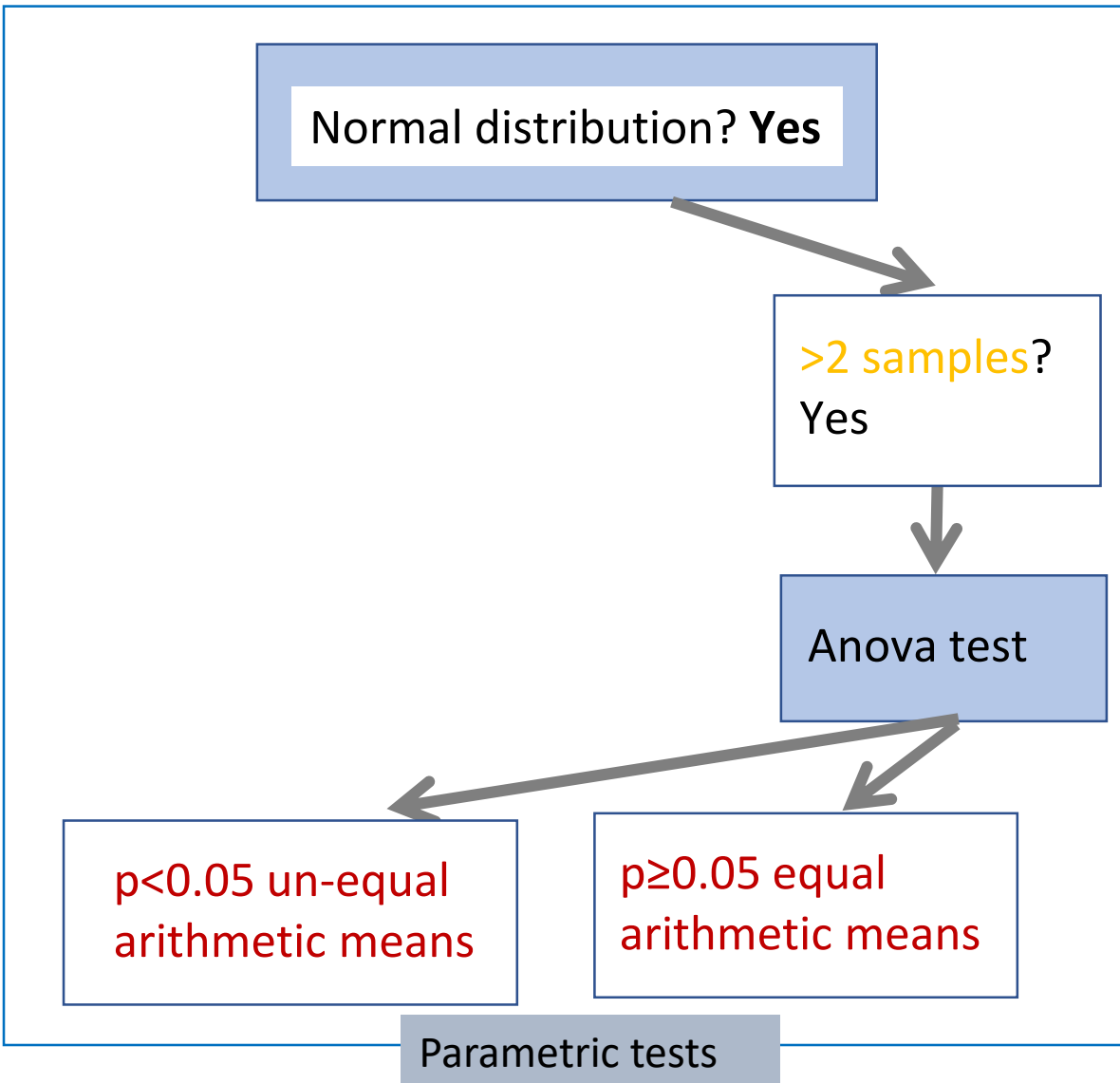


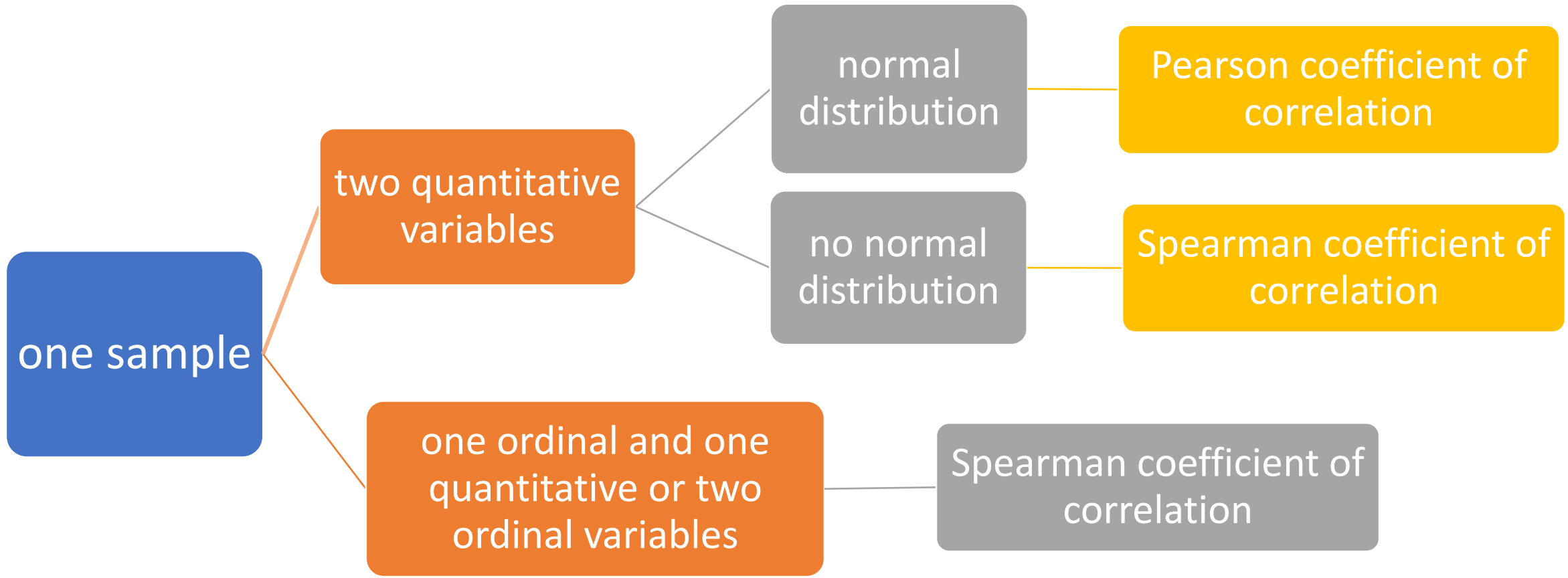
Variances = standard deviation square = s^2

Comparing quantitative variables grouped by a qualitative variable. Dependent samples



Comparing quantitative variables grouped by a qualitative variable. More than 2 independent groups





one sample

two quantitative variables

normal distribution

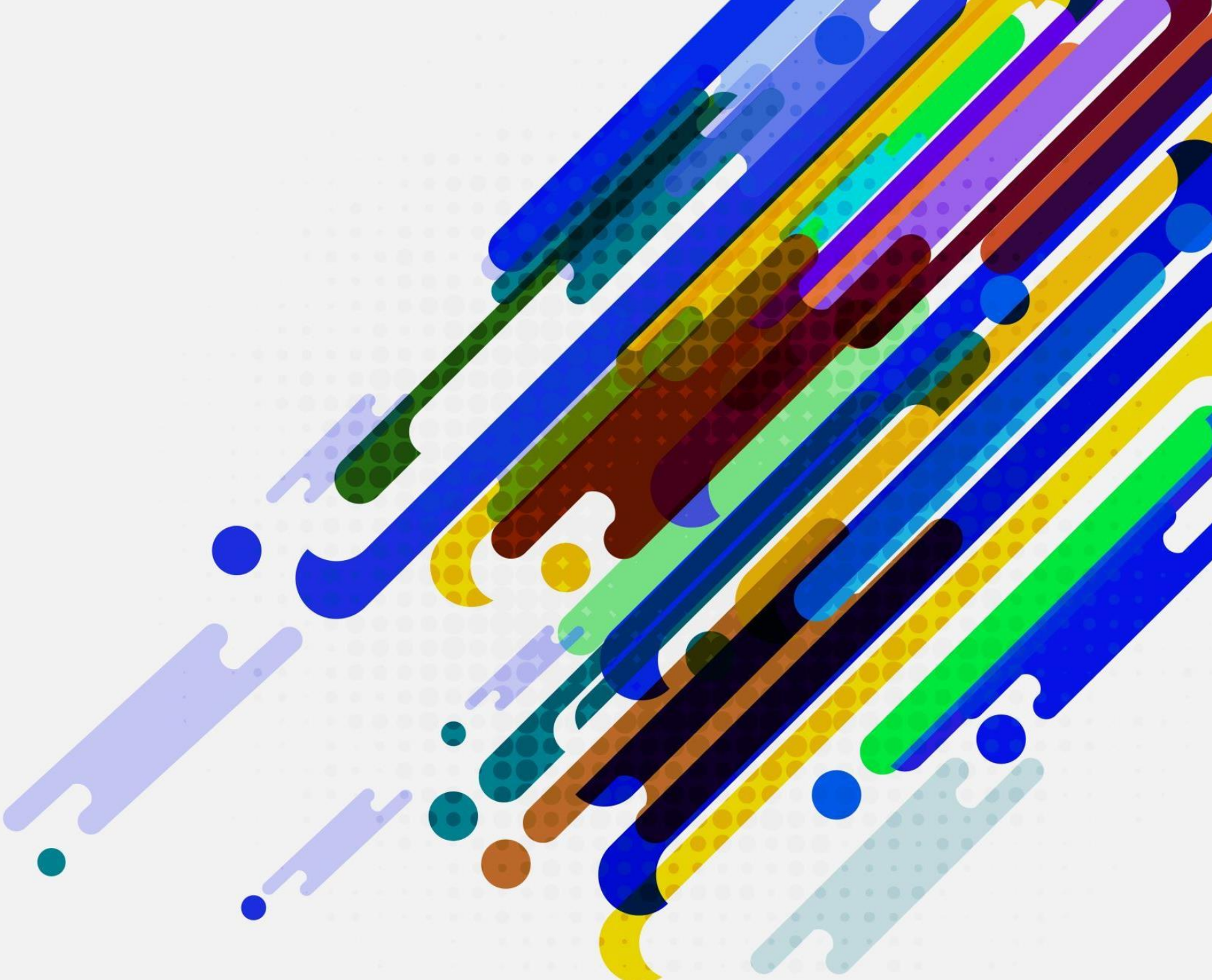
Pearson coefficient of correlation

no normal distribution

Spearman coefficient of correlation

one ordinal and one quantitative or two ordinal variables

Spearman coefficient of correlation



Bibliographic
study

Example:

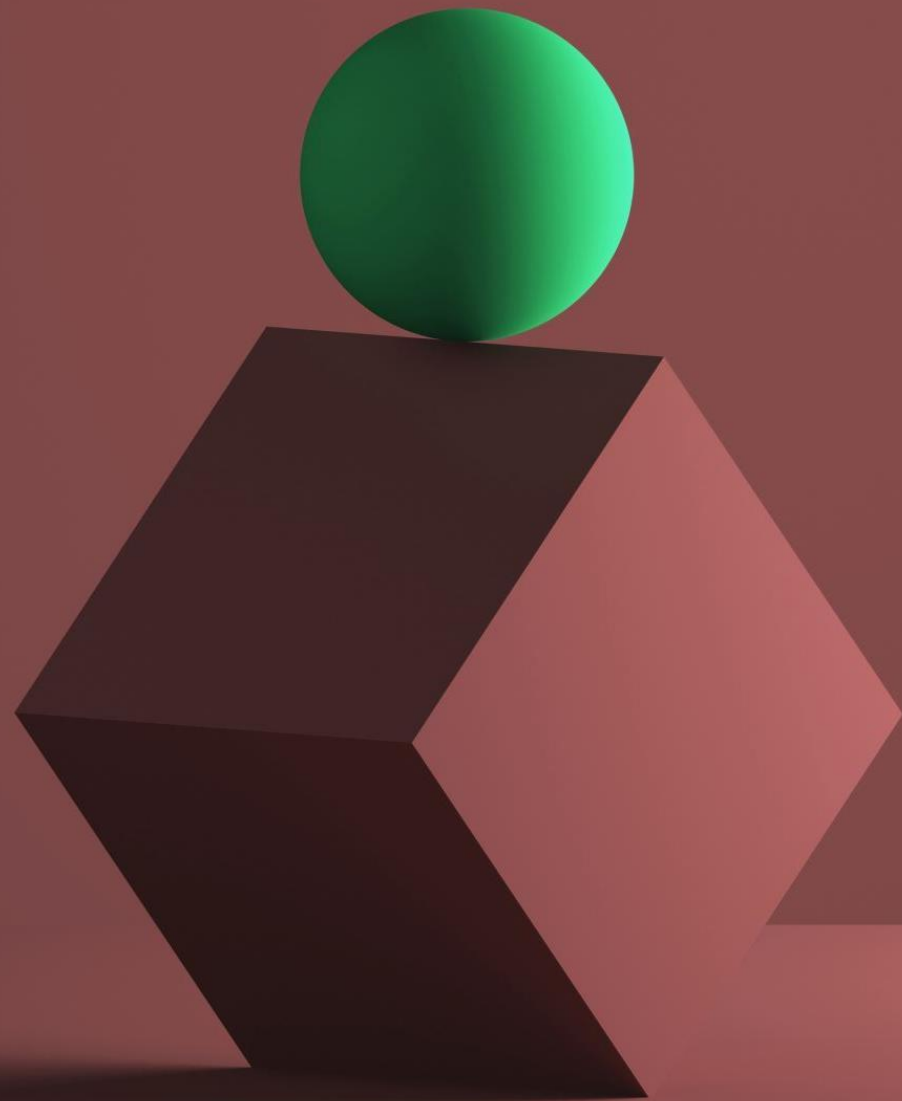
We want to make a bibliographic study to respond to the following question: What is the effectiveness of fluoride treatment in preventing dental caries in children aged 3 to 5 compared to fluoride varnish? Which of the following are a correct PICO search strategy?

- A. Dental caries in children aged 3 to 5 AllSolutions Fluoride Varnish Fluoride treatment Prevention
- B. Fluoride treatment Dental caries in children aged 3 to 5 AllSolutions Fluoride Varnish Prevention
- C. Dental caries in children aged 3 to 5 Fluoride treatment AllSolutions Fluoride Varnish Prevention
- D. Prevention Fluoride treatment AllSolutions Fluoride Varnish Dental caries in children aged 3 to 5
- E. Prevention in children aged 3 to 5 Fluoride treatment AllSolutions Fluoride Varnish Dental caries

Example:

*We want to make a bibliographic study to respond to the following question: What is the effectiveness of fluoride treatment in preventing dental caries in children aged 3 to 5 compared to fluoride varnish? Which of the following are a correct PICO search strategy?

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- D. Prevention Fluoride treatment AllSolutions Fluoride Varnish Dental caries in children aged 3 to 5
- E. Prevention in children aged 3 to 5 Fluoride treatment AllSolutions Fluoride Varnish Dental caries



Citing articles

Reference in Vancouver style

Example:

Which of the following variations of writing a reference to a book in print are in the Vancouver style?

- A. Petit M., Delon B.: The Anatomy of the Skull. 4th ed. Paris: Wiley; 2014.
- B. Petit M, Delon B. The Anatomy of the Skull. 4th ed. Paris: Wiley; 2014.
- C. M. Petit, Delon B. The Anatomy of the Skull. 4th ed. Paris: Wiley; 2014.
- D. Petit M., Delon B. The Anatomy of the Skull, 4th ed. Paris: Wiley; 2014.
- E. Petit M., Delon B. The Anatomy of the Skull. 4th ed. Paris: Wiley: 2014.

Example:

*Which of the following variations of writing a reference to a book in print are in the Vancouver style?

- A. Petit M., Delon B.: The Anatomy of the Skull. 4th ed. Paris: Wiley; 2014.
- B. Petit M, Delon B. The Anatomy of the Skull. 4th ed. Paris: Wiley; 2014.**
- C. M. Petit, Delon B. The Anatomy of the Skull. 4th ed. Paris: Wiley; 2014.
- D. Petit M., Delon B. The Anatomy of the Skull, 4th ed. Paris: Wiley; 2014.
- E. Petit M., Delon B. The Anatomy of the Skull. 4th ed. Paris: Wiley: 2014.

Research Protocol



*A study was conducted on a single sample of 100 subjects to assess whether diabetes influences the progression of periodontitis. They identified 50 subjects with diabetes mellitus and periodontitis, and 50 subjects without diabetes and periodontitis, and observed the progression of periodontitis at several medical visits after the start of the study. Which of the following characteristics are relevant to this study?

- A. clinical research area - description of a health phenomenon
- B. clinical research area - assessment of risk or prognostic factors
- C. clinical research area - evaluation of a diagnostic test
- D. clinical research area - evaluation of a therapeutic approach
- E. descriptive study

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- A. analytical study
- B. observational study
- C. experimental study
- D. cross-sectional data collection
- E. longitudinal data collection

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- A. retrospective data collection
- B. prospective data collection
- C. case-control data collection
- D. exposed-unexposed data collection
- E. representative sample data collection

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- A. case-control data collection
- B. exposed-unexposed data collection
- C. representative sample data collection
- D. exhaustive data collection
- E. sample data collection

A study was conducted on a single sample of 100 subjects to assess whether diabetes influences the progression of periodontitis. They identified 50 subjects with diabetes mellitus and periodontitis, and 50 subjects without diabetes and periodontitis, and observed the progression of periodontitis at several medical visits after the start of the study. Which of the following characteristics are relevant to this study?

- A. case-control data collection
- B. exposed-unexposed data collection
- C. representative sample data collection
- D. exhaustive data collection
- E. sample data collection



Target population
Available population
Sampling method

- A sample was conducted among patients with high blood pressure. All patients with this diagnosis in a hospital over a one-month period were included in the study. Which of the following represents the sampling method used:
 - A. simple random
 - B. probabilistic
 - C. non-probabilistic
 - D. convenient
 - E. consecutive

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Case-control study

In risk factor studies with a representative sample collection of data, the following medical indicators can be calculated:

- A. RIE
- B. RA
- C. OR
- D. RR
- E. None of these indicators

* In risk factor studies with an expose non-expose sample of data, to quantify the significance of the relationship between a risk factor and a disease, the following medical indicators can be calculated:

- A. disease prevalence
- B. risk factor frequency
- C. disease frequency
- D. RR
- E. None of these indicators

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- You found two studies on PubMed that were conducted to assess the relationship between excessive tea consumption as a risk factor for the development of osteoporosis. They obtained the following odds ratio (OR) with confidence intervals: Study A: 5 (95% CI 0.9 - 9.5), and Study B: 5 (95% CI 2 – 14). Values above 2 are considered clinically important, and values below are considered not clinically important. Which of the following statements are correct?
 - A. The confidence interval of studies represents what happens in the target population
 - B. The confidence interval of Study A tells that there is no relationship between excessive tea consumption and the development of osteoporosis
 - C. Study A has a statistically significant result
 - D. Study B said about the risk factor that is of clinical importance
 - E. The confidence interval of Study B is not a generalization in the target population, but the specific situation in the study

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Cohort study

* In a study evaluating coffee as a risk factor for tooth discoloration, using a case-control data set, 60 of the 200 coffee drinkers had a significant change in tooth discoloration, and 20 of the 100 non-coffee drinkers had a significant change in tooth discoloration. Calculate the Risk of illness in those not exposed (RIN).

- A. 0.1
- B. 1.5
- C. cannot be calculated for this type of study
- D. 1.71
- E. 1.7%

* In a study evaluating coffee as a risk factor for tooth discoloration, using a cohort data set, 60 of the 200 coffee drinkers had a significant change in tooth discoloration, and 20 of the 100 non-coffee drinkers had a significant change in tooth discoloration. Calculate the Risk of illness in those exposed (RIE).

- 0.3
- 0.5
- cannot be calculated for this type of study
- 3%
- 5%

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A prospective cohort study was conducted to assess the relationship between cold exposure and the occurrence of respiratory infections. Which of the following statements are correct for the relative risk?

- A. Values close to 0 are small in strength of association
- B. Values close to (minus) - infinity are large.
- C. For the strength of association, 0 is equivalent to a + infinity as the magnitude of the association.
- D. For the strength of association, 0.8 is greater than 0.9 as the magnitude of the relationship.
- E. For the strength of association, 5 is less than 2.
- F. A value of 0.4 indicates a protective factor.
- G. A value of 1.3 indicates a risk factor.
- H. Values close to 1 are small as the strength of the association.

A prospective cohort study was conducted to evaluate the relationship between exposure to cold and the occurrence of respiratory infections. Which of the following statements are correct for the attributable risk?

- A. Values close to 0 are small in strength of association
- B. Values close to (minus) -80% are large in strength of association
- C. For strength of association, -5% is equivalent to +5% in strength of association
- D. For strength of association, 8% is greater than 9% in strength of relationship
- E. For strength of association, 8% is less than (minus) -9% in strength of relationship
- F. A value of (minus) -4% indicates a protective factor) A value of 5% indicates a risk factor
- G. Values close to 1 (100%) are very large in strength of association

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Diagnostic study

You work in a hospital and want to use a new diagnostic test. The test has a sensitivity of 0.91 and a specificity of 0.99. Which of the following statements are correct?

- A. The test is better as a screening test
- B. The test is better as an accuracy test
- C. The specificity is very good
- D. 99% of healthy subjects test negative
- E. 99% of healthy subjects test positive

In a collection of exposed-unexposed data for a diagnostic test, we can calculate the following medical indicators:

- A. Se
- B. Sp
- C. PPV
- D. NPV
- E. The percentage of correctly classified subjects

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You work in a hospital and want to use a new diagnostic test for disease M. Searching PubMed, you found two diagnostic tests. Diagnostic test A has an area under the receiver operator characteristic curve (AUROC or AUC) of 0.72 (95% CI 0.47–0.89), and diagnostic test B has an AUC of 0.58 (95% CI 0.39–0.76). The article provides a statistical comparison between diagnostic test A and B, which yields a p-value of 0.36. Which of the following statements are correct? a) The statistical test for the AUC of diagnostic test A is statistically significant

b) The statistical test for the AUC of diagnostic test A is not statistically significant

c) There is not a statistically significant difference between diagnostic test A and diagnostic test B

d) The statistical test for the AUC of diagnostic test B is statistically significant

e) The statistical test for the AUC of diagnostic test B is not statistically significant

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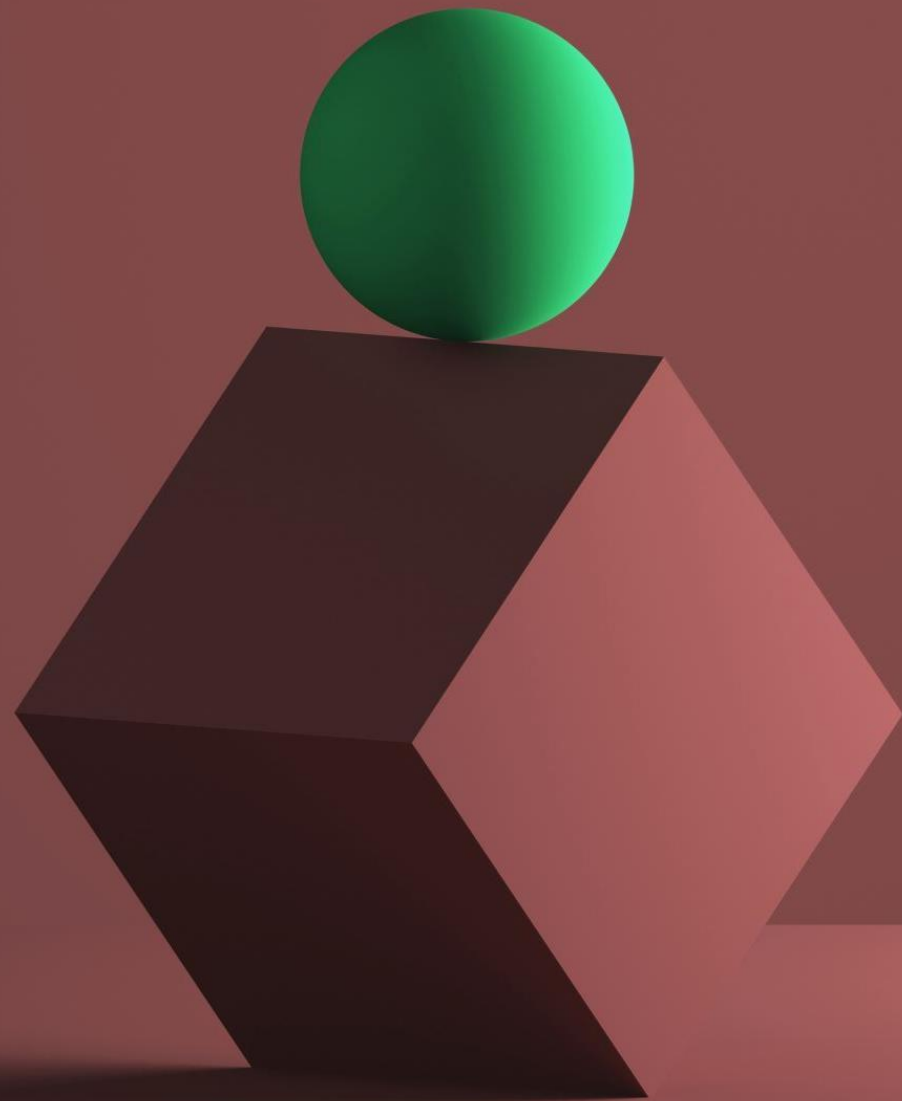
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Trial study

A randomized controlled trial was conducted to evaluate the reduction of fractures in subjects with osteoporosis, comparing Drug A with placebo. They obtained: RR = 1.5; OR = 1.9; REE (treated with Drug A) = 0.3 = 30%; REC (treated with placebo) = 0.20 = 20%. Fractures are common problems. Which of the following statements are correct?

- A. There is a 10% greater risk of fractures for those treated with Drug A compared to those treated with placebo.
- B. There is a 1.5 times greater risk of fractures for those treated with Drug A compared to those treated with placebo.
- C. There is a 10% greater chance of fractures for those treated with Drug A compared to those treated with placebo.
- D. There is a 30% greater chance of fractures for those treated with Drug A.
- E. There is a 20% greater chance of fractures for those treated with placebo.

A randomized controlled trial was conducted to evaluate the reduction of fractures in subjects with osteoporosis, comparing Drug A with placebo. They obtained: RR = 0.5; OR = 0.4; REE (treated with Drug A) = 0.15; REC (placebo-treated) = 0.30 = 30%. Fractures are common problems. Which of the following statements are correct? ARR = 30% - 15% = 15%

- A. There is a 15% greater risk of fractures for those treated with drug A compared to those treated with placebo
- B. There is a lower risk of fractures for those treated with drug A compared to those treated with placebo
- C. There is a greater risk of fractures for those treated with drug A compared to those treated with placebo
- D. There is a greater chance of fractures for those treated with drug A compared to those treated with placebo
- E. There is a 15% lower risk of fractures for those treated with drug A compared to those treated with placebo

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* In a retrospective study, they compared a new cholesterol-lowering drug A with a cholesterol-lowering drug B to reduce the incidence of heart attacks in subjects with hypercholesterolemia. Data collection was case-control. Of the 1,000 subjects who received treatment A, 50 had a heart attack, and of the 1,000 subjects who received treatment B, 75 had a heart attack. Calculate the relative risk.

- A. 2.5%
- B. cannot be calculated for this type of study
- C. -2.5%
- D. 0.67
- E. 5%

* In a therapeutic study with case-control data collection, the following medical indicators can be calculated:

- A. NNT
- B. ARR
- C. OR
- D. RR
- E. None of these indicators

In a therapeutic study with exposed-unexposed data collection, the following medical indicators can be calculated:

- A. NNT
- B. ARR
- C. OR
- D. REE
- E.>NNL

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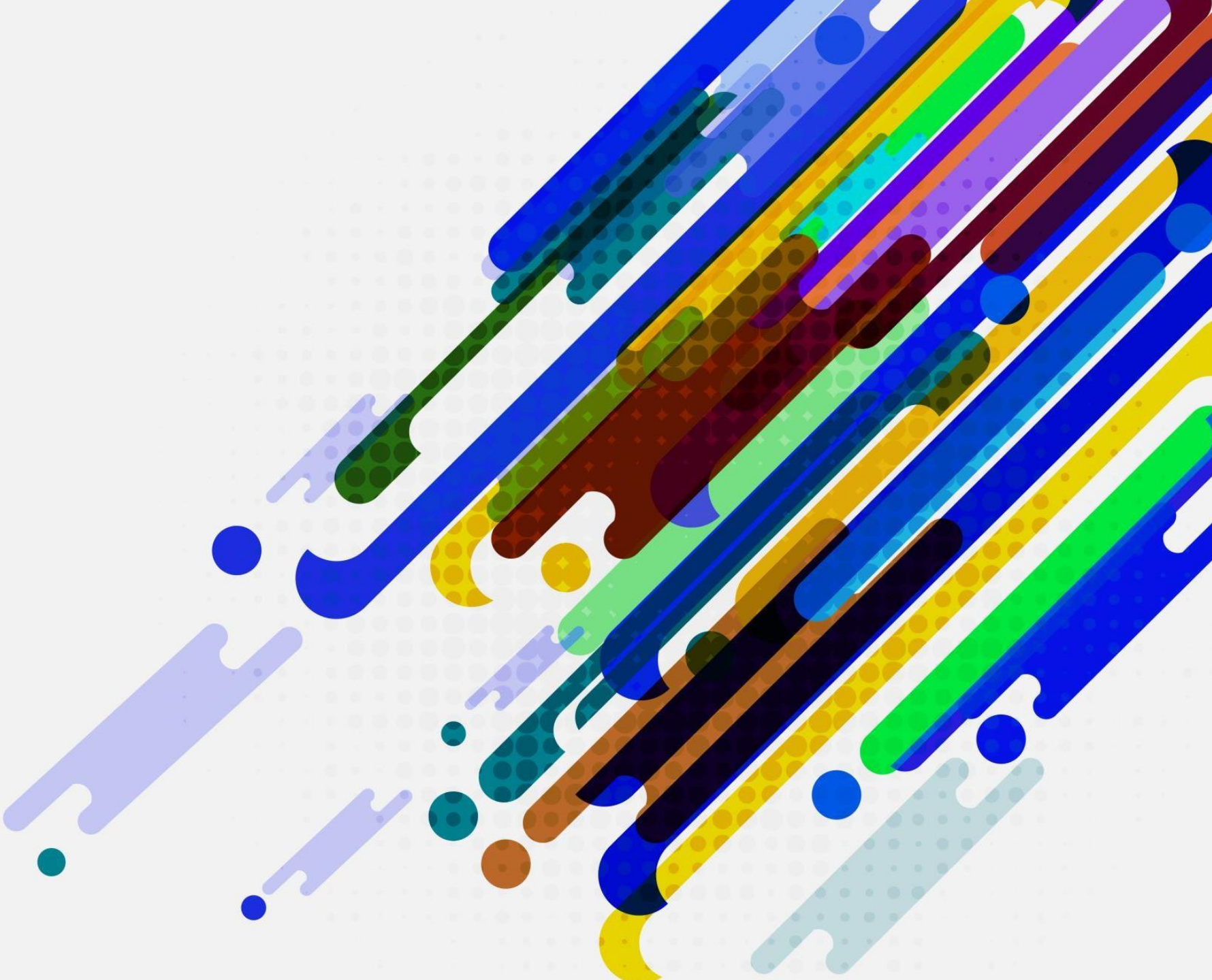
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Survival study

Which statements regarding Cox regression to assess the survival of patients with tongue cancer (with HR for the presence of metastases (yes/no) = 1.5) are correct:

- a) the dependent variable of the regression is the probability of survival as a function of time
- b) the dependent variable of the regression is the presence of metastases
- c) an independent (explanatory) variable is the presence of metastases
- d) there is a 1.5 times greater risk for those with metastases compared to those without
- e) None are correct

You found a study that assesses the survival of patients with tongue cancer treated with chemotherapy versus surgery. They obtained the following results: HR (chemotherapy versus surgery) of 0.5 (95% CI 0.3-0.9). Which of the following statements are correct?

- a) To assess the clinical significance of the difference in survival between chemotherapy and surgery, we need the result of a statistical test.
- b) To assess the statistical significance of the difference in survival between chemotherapy and surgery, we can use the result of a statistical test.
- c) To assess the statistical significance of the difference in survival between chemotherapy and surgery, we can use the p-value of a statistical test.
- d) To assess the clinical significance of the difference in survival between chemotherapy and surgery, we can use the HR.
- e) To assess the clinical significance of the difference in survival between chemotherapy and surgery, we can use the RR or OR.

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- d) To assess the clinical significance of the difference in survival between chemotherapy and surgery, we can use the HR.
- e) To assess the clinical significance of the difference in survival between chemotherapy and surgery, we can use the RR or OR.

The background features a vibrant, abstract design. It consists of a horizontal rainbow gradient that transitions from red on the left to purple on the right. Overlaid on this gradient are various semi-transparent geometric shapes, including triangles, squares, and circles, in shades of green, yellow, orange, and purple. The overall effect is a modern, multi-colored pattern.

Validity. Evidence based medicine

In a randomized controlled trial (RCT), the anesthetic morphine was evaluated against placebo in mechanically ventilated premature babies to determine the reduction in pain symptoms. All subjects were evaluated in this study (no subjects were withdrawn). Data analysis was by intention-to-treat. The researcher who enrolled the subjects chose to administer morphine primarily to subjects with a very low birth weight and placebo to subjects with a higher birth weight. The results were assessed by a physician who was not informed of the treatment allocation. Patients/parents were unaware of the treatment they were receiving. The two groups had similar characteristics at study entry. Which of the following statements are correct? a) the study is invalid

b) the study is valid

c) the study is superior in the hierarchy of evidence to a case-control study

d) the study is superior in the hierarchy of evidence to a cohort study

e) the study is superior in the hierarchy of evidence to a systematic report of randomized controlled trials

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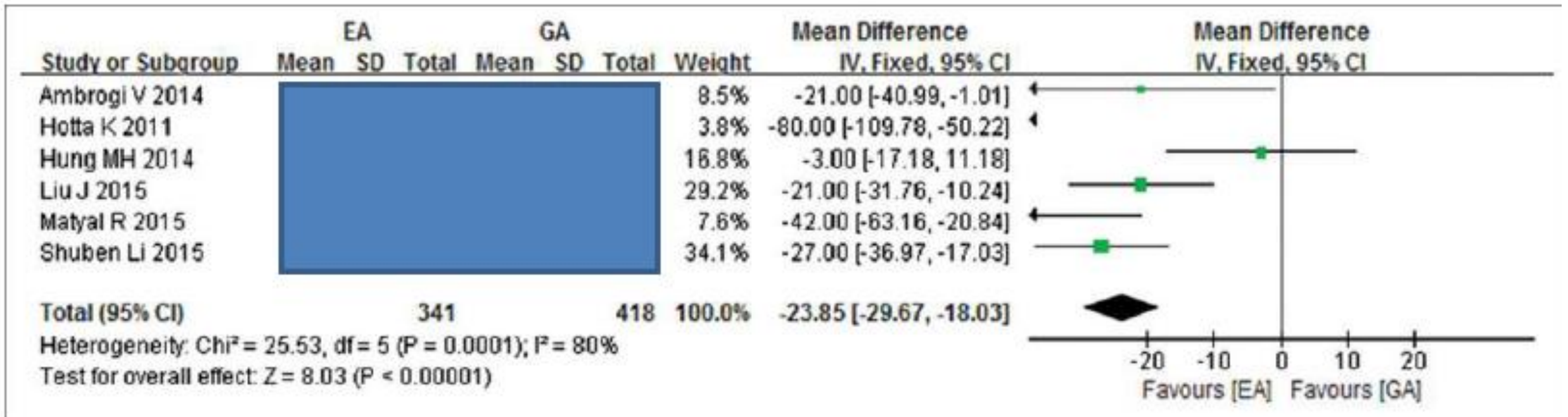
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Secondary research

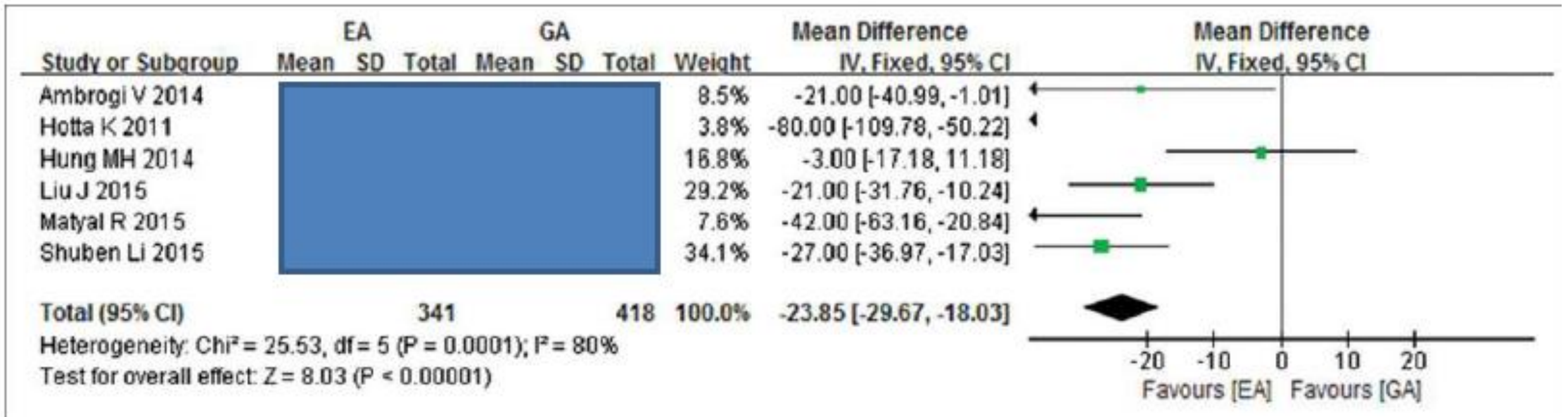
Look at the forest plot below, which compares epidural anesthesia (EA) with general anesthesia (GA) in terms of surgical time in lung surgery. Which of the following statements are correct?

- a) The Liu J et al. study has a smaller number of subjects than the Ambrogi V et al. study.
- b) The Liu J et al. study is more precise than the Ambrogi V et al. study.
- c) The Ambrogi V et al. study has a statistically significant result.
- d) The meta-analysis does not have a statistically significant result.
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Medical writing

Specify the scientific medical writing errors (if any) in the following statements in the Results chapter of a scientific article: "The mean systolic blood pressure of the subjects in the enalapril-treated group was 135 mmHg. This result is extraordinary. Literature values have been 150 mmHg [19] or 173 [20] mmHg in similar situations."

- a) Use of emotional expressions
- b) Use of the present tense
- c) Presence of references
- d) Presence of other authors' results
- e) There are no problems

Specify the scientific medical writing errors (if any) in the following statements in the Materials and Methods chapter of a scientific article: "The blood pressure of the study subjects was measured with a mercury sphygmomanometer column. Such a sphygmomanometer was used because Digital blood pressure monitors are unreliable."

- a) The use of emotional expressions
- b) The use of the past tense
- c) The absence of a reference
- d) The commentary
- e) There are no problems

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If you still not understand the learning objectives please



ALWAYS



SEEK



KNOWLEDGE

TEAMS - CHAT

Bondor Cosmina Ioana

- Contact:
 - email cbondor@umfcluj.ro



A close-up photograph of a laboratory setting. In the foreground, a multi-well plate is visible, with several wells containing a light-colored liquid. A pipette tip is positioned above one of the wells, ready to dispense liquid. The background is blurred, showing a person in a white lab coat and a blue lab coat, suggesting a busy laboratory environment. The lighting is bright and even.

Thank you for your dedication, your engagement, and
your hard work.

I wish you success, fulfillment, and to keep learning,
exploring, put questions, make improvements
wherever your professional journey takes you.