

**Federal State Budgetary Educational Institution higher education NORTH
OSSETIAN STATE MEDICAL ACADEMY Ministry of Health of the Russian Federation**

Department of Dentistry No. 2

APPROVED

at the meeting of the Central coordination
educational and methodological council
dated 05/23/2023, protocol No. 5

**ASSESSMENT MATERIALS
for the discipline “Local anesthesia and anesthesiology in dentistry”**

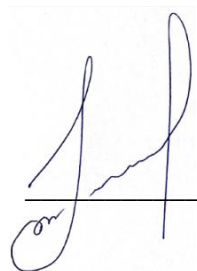
the main professional educational program of higher education -
specialty programs in the specialty 31.05.03 Dentistry,
approved on May 24, 2023

For students specialty 31.05.03 Dentistry

Reviewed and approved at a department meeting

dated May 18, 2023, protocol No. 1

Head of the department
Doctor of Medical Sciences



G.V. Toboev

Vladikavkaz, 2023

STRUCTURE OF ASSESSMENT MATERIALS

1. Title page
2. Structure of assessment materials
3. Reviews of assessment materials
4. Passport of assessment materials

5. *Set of assessment materials:*

- questions for the module
- questions for testing
- bank of situational tasks
- standards of test tasks
- tickets for competition

**FEDERAL STATE BUDGETARY EDUCATIONAL INSTITUTION OF
HIGHER EDUCATION "NORTH OSSETIAN STATE MEDICAL ACADEMY"
OF THE MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION**

REVIEW

of assessment materials on the discipline “Local anesthesia and anesthesiology in dentistry”

for 3rd year students in specialty 31.05.03 Dentistry

Assessment materials were compiled at the Department of Dentistry No. 2 on the basis of the work program of the academic discipline approved on May 24, 2023 and comply with the requirements of the Federal State Educational Standard for Higher Education in the specialty 31.05.03 Dentistry, approved by the Ministry of Education and Science of the Russian Federation on August 19, 2020, No. 984.

Assessment materials include a bank of test tasks, which includes the following elements: test tasks, variants of test tasks, answer templates. All tasks correspond to the work program of the discipline “Local anesthesia and anesthesiology in dentistry” and cover all its sections. The difficulty of the tasks varies. The number of tasks for each section of the discipline is sufficient for testing knowledge and eliminates repeated repetition of the same question in different versions. The bank contains answers to all test items and tasks. The number of exam tickets is sufficient to conduct the exam and eliminates the repeated use of the same ticket during the exam in the same academic group on the same day.

Examination tickets are made on uniform forms in a standard form, on paper of the same color and quality. The exam ticket includes two questions. The wording of the questions coincides with the wording of the list of questions submitted for the exam. The content of the questions on one ticket relates to various sections of the program, allowing you to more fully cover the material of the academic discipline.

The difficulty of the questions in the exam papers is evenly distributed.

There are no comments on the peer-reviewed assessment materials.

In general, assessment materials in the discipline “Local anesthesia and anesthesiology in dentistry” contribute to a qualitative assessment of the students’ level of proficiency in general cultural and professional competencies. Peer-reviewed assessment materials can be recommended for use for intermediate certification at the Faculty of Dentistry for 3rd year students.

Reviewer:

Head of the Department of Dentistry No. 1

FSBEI HE NOGMA of the Ministry of Health of Russia,

MD, Associate Professor

 M. G. Dzgoeva

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REVIEW

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for 3rd year students in specialty 31.05.03 Dentistry

The assessment materials were compiled at the Department of Dentistry No. 2 on the basis of the work program of the discipline approved on May 24, 2023 and comply with the requirements of the Federal State Educational Standard for Higher Education in the specialty 31.05.03 Dentistry, approved by the Ministry of Education and Science of the Russian Federation on 08/19/2020, No. 984.

Assessment materials include: questions for the module, questions for the test, standards of test tasks, situational tasks. Test task standards include the following elements: test tasks, test task options, answer templates. All tasks correspond to the work program of the discipline “Local anesthesia and anesthesiology in dentistry”, the competencies formed during its study and cover all its sections. The difficulty of the tasks varies. The number of tasks for each section of the discipline is sufficient for testing knowledge and eliminates repeated repetition of the same question in different versions. The standards contain answers to all test tasks. The number of exam tickets is sufficient to conduct the exam and eliminates the repeated use of the same ticket during the exam within one day. Examination tickets/test tickets are made on uniform forms according to a standard form, on paper of the same color and quality. The exam/test ticket includes two questions. The wording of the questions coincides with the wording of the list of questions submitted for the exam/test. The content of the questions on one ticket relates to various sections of the work program of the discipline, allowing you to more fully cover the material of the discipline.

There are no comments on the peer-reviewed assessment materials.

In general, assessment materials in the discipline “Local anesthesia and anesthesiology in dentistry” contribute to a qualitative assessment of students’ level of proficiency in general and professional competencies. Peer-reviewed assessment materials in the discipline “Local anesthesia and anesthesiology in dentistry” can be recommended for use for ongoing monitoring of progress and intermediate certification at the Faculty of Dentistry for 3rd year students.

Reviewer:

Manager LLC “Julia Smile”



Y. V. Maskurova

Passport of the fund of assessment materials in the discipline “Local anesthesia and anesthesiology in dentistry”

№	Name of the controlled section (topic) of the discipline/module	Code of the competence (stage) being formed	Name of the assessment tool
1	2	3	4
Type of control	Intermediate		
1.	Preparations for local anesthesia	OPK-11 OPK-8	S, T, Pr, DZ
2.	Methods of local anesthesia	PC-5 PC-6	S, T, Pr, DZ
3.	Methods of general anesthesia. Combined general anesthesia	PC-5 PC-6	S, T, Pr, DZ
4.	Local and general complications of local and general anesthesia, methods of their prevention and treatment	OPK-5	S, T, Pr, DZ
5.	Resuscitation measures in the practice of a dentist. Methods of providing assistance in emergency conditions	PC-10	S, T, Pr, DZ

Set of assessment materials

Questions for the module lesson

1. Physico-chemical properties, classification and mechanism of action of local anesthetics.
2. Vasoconstrictors: mechanism of action, classification, indications and contraindications for use as part of a local anesthetic solution.
3. Types of local anesthesia. Indications and contraindications for local anesthesia in the oral cavity and face.
4. Injection methods of pain relief. Direct and indirect infiltration anesthesia.
5. Methods of conduction anesthesia on the upper jaw.
6. Methods of conduction anesthesia on the lower jaw.
7. Periodontal methods of local anesthesia. Indications for use, advantages and disadvantages.
8. Potentiated local anesthesia, premedication. Indications and contraindications.
9. Local complications that arise during local anesthesia on the upper and lower jaw.
10. General complications that arise during local anesthesia.
11. General anesthesia. Indications and features of general anesthesia during operations on the face and oral cavity.
12. Anesthesia. Types of anesthesia, pharmacological agents (general anesthetics).
13. Signs of clinical death. Principles of cardiopulmonary resuscitation.
14. Combined general anesthesia.
15. Choosing pain relief and preparing the patient for intervention in various somatic diseases.

Questions for testing

1. Local anesthetics used in dentistry: classification by chemical structure, mechanism of action, requirements.
2. Carpuled local anesthetics, their composition. Purpose of the main components of local anesthetic solutions.
3. Vasoconstrictors: mechanism of action, concentration in local anesthetic solutions, indications and contraindications for use.
4. Chemical structure of local anesthetics. Distinctive features of the metabolism of local anesthetics of the ester and amide series.

5. Equipment for local anesthesia. Injection needles, choice of length and diameter. Lidocaine - characteristics, methods of application, doses.
6. Comparative characteristics of local anesthetics of the ether and amide series. Articaine – characteristics, method of administration, doses.
7. Classification of local anesthetics by duration of action. Mepivacaine – characteristics, method of administration, doses.
8. Types of local anesthesia. Indications and contraindications for local anesthesia in the oral cavity and face.
9. Types of local anesthesia. Methods of non-injection pain relief.
10. Topical anesthesia: definition, methods of use of various dosage forms of surface anesthetics, indications and contraindications.
11. Types of local anesthesia. Injection methods of pain relief. Direct and indirect infiltration anesthesia (distinctive features).
12. Methods of conduction anesthesia on the upper jaw. Infraorbital anesthesia: technique, zone of anesthesia, possible complications.
13. Methods of conduction anesthesia on the upper jaw. Palatal anesthesia: technique, zone of anesthesia, possible complications.
14. Methods of conduction anesthesia on the upper jaw. Anesthesia of the nasopalatine nerve: technique, zone of anesthesia, possible complications.
15. Tuberal anesthesia: technique, zone of anesthesia, possible complications. Aspiration test.
16. Features of infiltration anesthesia in the upper jaw.
17. Features of infiltration anesthesia on the lower jaw.
18. Methods of conduction anesthesia on the lower jaw. Mandibular anesthesia: technique, zone of anesthesia, possible complications.
19. Methods of conduction anesthesia on the lower jaw. Torus anesthesia: technique, zone of anesthesia, possible complications.
20. Methods of conduction anesthesia on the lower jaw. Mental anesthesia: technique, zone of anesthesia, possible complications.
21. Anesthesia using the Go-Gates method: technique, zone of anesthesia, advantages and disadvantages.
22. Anesthesia according to Bershe-Dubov: technique, indications for use, possible complications.
23. Stem (central) anesthesia of the second and third branches of the trigeminal nerve at the base of the skull.

24. Periodontal methods of local anesthesia. Indications for use, advantages and disadvantages.
25. Intraligamentary anesthesia: technique, zone of anesthesia, indications and contraindications.
26. Intraseptal anesthesia: technique, zone of anesthesia, indications and contraindications.
27. Potentiated local anesthesia, premedication. Indications and contraindications.
28. Potentiated local anesthesia, premedication. Medicines used.
29. Local complications that arise during local anesthesia on the upper jaw. Causes, diagnosis, treatment, prevention.
30. Local complications that arise during local anesthesia on the lower jaw. Causes, diagnosis, treatment, prevention.
31. General complications that arise during local anesthesia. Fainting: clinic, assistance, prevention.
32. General complications that arise during local anesthesia. Collapse: clinic, assistance, prevention.
33. General complications that arise during local anesthesia. Hypertensive crisis: clinical picture, assistance, prevention.
34. General complications that arise during local anesthesia. Anaphylactic shock: clinical picture, assistance, prevention.
35. Clinical manifestations of an overdose of local anesthetics. Assistance, prevention.
36. Choosing pain relief and preparing the patient for intervention in hypertension.
37. Choosing pain relief and preparing the patient for intervention in chronic coronary insufficiency and coronary artery disease.
38. Choosing pain relief and preparing the patient for intervention for: bronchial asthma, emphysema, pneumosclerosis.
39. Choosing pain relief and preparing the patient for intervention for: diabetes mellitus, thyrotoxicosis.
40. Choosing pain relief and preparing the patient for intervention in cases of liver dysfunction: chronic hepatitis, liver cirrhosis, obstructive jaundice.
41. Choice of pain relief and preparation of the patient for intervention in case of a burdened allergic history.
42. Choosing pain relief and preparing the patient for intervention during: pregnancy, old age, childhood.
43. General anesthesia. Indications and features of general anesthesia during operations on the face and oral cavity.
44. General anesthesia. Types of general anesthesia. Neuroleptanalgesia (NLA).

45. General anesthesia. Types of general anesthesia. Ataralgesia, central analgesia.
46. Anesthesia. Types of anesthesia, pharmacological agents (general anesthetics).
47. Anesthesia. Types of anesthesia, features of endotracheal anesthesia.
48. Anesthesia. Types of anesthesia. Complications of anesthesia.
49. Signs of clinical death. Principles of cardiopulmonary resuscitation.
50. Combined general anesthesia. Definition, purpose, various methods of combined pain relief.

Situational tasks

Task 1.

Patient V., 42 years old, consulted a dental surgeon for surgical intervention - removal of papilloma of the mucous membrane of the palate in the area of teeth 1.1 and 1.2. To perform the operation, the doctor will have to choose a method of pain relief.

1. What type of local anesthesia should be used for pain relief during planned surgery?
2. What are the options for performing selected anesthesia?
3. Indicate the anatomical and topographic landmarks necessary to perform the selected anesthesia.

Task 2.

Patient V., 30 years old, was diagnosed with a radicular cyst from tooth 3.2 for an appointment with a dental surgeon. The doctor plans surgical interventions such as resection of the apex of tooth 3.2 and cystectomy. To perform the operation, the dental surgeon will have to choose a method of anesthesia.

1. What type of local anesthesia should be used for pain relief during planned surgery?
2. Indicate the anatomical and topographic landmarks necessary to perform the selected anesthesia.
3. What is the technique for performing the selected anesthesia?

Task 3.

Tooth 2.7 – diagnosis – exacerbation of chronic periodontitis, with pronounced inflammatory process along the transitional fold. Delete operation shown of this tooth.

Choose drugs for pain relief, concentration, maximum permissible and recommended dose, method of local anesthesia.

Standards of test tasks

1. To prevent vasoconstrictor oxidation, the following is added to the local anesthetic solution:

- a) preservative
- b) antioxidant sodium sulfate
- c) antioxidant sodium bisulfite
- d) sodium chloride

2. Articaine is a local anesthetic:

- a) average duration of action
- b) short acting
- c) long-acting

3. For superficial anesthesia the following is used:

- a) 15% lidocaine ointment
- b) 4% articaine solution without adrenaline
- c) 0.5% solution of bupivacaine with adrenaline
- d) 10% aerosol solution with lidocaine

4. Solutions of local anesthetics have a pH:

- a) 4.5 – 8.5
- b) 3.2 – 6.5
- c) 5.0 – 8.0
- d) 3.0 – 8.5

5. The classification of local anesthetic substances by chemical structure is based on the structure of which component of their molecule?

- a) aromatic group
- b) hydrophilic center
- c) aliphatic chain
- d) a carbon chain linking an aromatic group to an amino group

6. According to their chemical structure, local anesthetics are:

- a) acid salts
- b) non-salt-forming oxides
- c) amphoteric oxides
- d) weak bases

7. Anesthesia, carried out by soaking deep layers of tissue with an anesthetic solution injected through an injection needle:

- a) conductive
- b) application
- c) infiltration
- d) regional

8. Active ingredient when using cooling as a method of physical anesthesia:

- a) pyromecaine
- b) lidocaine
- c) chloroethyl
- d) perylene

9. For liver diseases, it is preferable to use:

- a) Ubistesin and other preparations based on articaine, ether anesthetics
- b) preparations based on bupivacaine
- c) local anesthetics with novocaine and lidocaine
- d) any local anesthetic substances from the amide group

10. What drugs are dangerous to use if you have a history of allergies or bronchial asthma:

- a) Мепивастесин
- b) Ubistesin
- c) Novocaine and Lidocaine
- d) Ультракаин D

11. To maintain optimal pH, the following is added to the local anesthetic solution:

- a) sodium bisulfite
- b) methylparaben
- c) distilled water with sodium chloride
- d) distilled water with sodium bisulfite

12. Bupivacaine is a local anesthetic:

- a) short acting
- b) average duration of action
- c) long-acting

13. Local anesthetics containing articaine:

- a) Ubistezin, Luan, Marcain
- b) Ubistezin, Septanest, Ultracaine
- c) Ultracaine, Xicaine, Scandonest
- d) Anestezin, Octocaine, Ultracaine

14. Conduction anesthesia refers to pain relief:

- a) local injection
- b) general
- c) local non-injectable
- d) combined

15. Which component of the local anesthetic molecule ensures its passive diffusion through the nerve fiber membrane and penetration of the drug to the site of action:

- a) aromatic group
- b) amino group
- c) intermediate part of the molecule
- d) hydrophilic center

16. Choose the correct statement:

- a) Esters are metabolized by liver enzymes, are slowly inactivated and have a longer lasting effect
- b) Amides are metabolized by liver enzymes, are quickly inactivated and act for a short time
- c) Esters are hydrolyzed by esterases in blood plasma and tissues, are slowly inactivated and act for a longer time
- d) Amides are metabolized by liver enzymes, are slowly inactivated and act longer

17. Anesthesia achieved by targeted administration of an anesthetic solution, in which the solution is concentrated around the nerve trunks and plexuses:

- a) appliqué
- b) infiltration
- c) regional
- d) terminal

18. The listed agents are used for topical anesthesia:

- a) Perylene, Dicaine, Lidocaine hydrochloride
- b) Chloroethyl, Dicaine, Lidocaine
- c) Pyromecaine, Bupicaine, Lidocaine
- d) Septanest, Lidocaine hydrochloride, Dicaine

19. During pregnancy the following should not be used:

- a) Ubistesin
- b) Septanest
- c) Felypressin
- d) Anesthetics without a vasoconstrictor

20. Local anesthetic substance that does not have a vasodilator effect:

- a) Articaine
- b) Lidocaine
- c) Mepivacaine
- d) Bupivacaine