МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

УЖГОРОДСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ

СТОМАТОЛОГІЧНИЙ ФАКУЛЬТЕТ

 «ПРОПЕДЕВТИКА ТЕРАПЕВТИЧНОЇ СТОМАТОЛОГІЇ»

методичні розробки для практичних занять

для студентів ІІ курсу стоматологічного факультету

"PROPAEDEUTICS OF THERAPEUTIC DENTISTRY"

methodical recommendations for students of the 2ndcourse of dental faculty

Ужгород-2018

УДК 616.31 (076)

ББК Р66я73

0-75

Укладачі:

Білинський О.Я. – ст. викл. кафедри терапевтичної стоматології

Добровольська М.К. – к.мед.н., доц., зав. кафедри терапевтичної стоматології

Рецензенти:

Костенко Є.Я. - д.мед.н., проф., кафедри ортопедичної стоматології, стоматологічного факультету УжНУ

КулигінаВ.М. - д.мед.н., проф., кафедри терапевтичної стоматології, стоматологічного факультету УжНУ

Пропедевтика терапевтичної стоматології. Методичні рекомендації до практичних занять для студентів 2 курсу стоматологічного факультету

Propaedeutics of therapeutic dentistry: Methodical recommendation for students of dental faculties of higher medical education universities.

The material presented in the textbook corresponds to the new Program “Propaedeutics of therapeutic dentistry” and “Educational-Qualification Characteristic of Master”.

The textbook is intended for students of Medical Departments of higher medical institutions with IV level of accreditation.

Затверджено на засіданні вченою Радою стоматологічного факультету, протокол №11 від 06.06.18

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**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 1 (2 hours)**

Professional orientation of students: to learn histological structure and chemical composition of enamel.

Topic: Tooth structure: tissue topography and tooth formation. Histology of enamel

Aim: to acquire knowledge about histologicalstructure and chemical composition of enamel.

Task: be able to analyze histological structure and chemical composition of enamel;

1. Theoretical part:

1. Histological structure of teeth enamel.

2. Chemical composition of enamel.

3. Physiological features of enamel.

4. Structural and functional resistance of enamel.

2. References:

1.Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Illustrated Dental Embryology, Histology, and Anatomy, - 4th Edition/ Margaret J. Fehrenbach. – 2016. – 336p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Lecture materials of department.

3. Practical part

Task 1.To study and depict tooth structure.

Place: phantom room of the therapeutic dentistry department.

Object: dental phantom teeth models, study charts.

Task for the student: to get acquainted with tooth structure and draw it in copybook.To draw tooth structure and mark such parts of it as crown, neck, root, enamel, dentine, pulp, periodontium ligament, gums, alveolar bone.

Time: 20 min

Task 2. To study and depict tooth development.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to get acquainted with tooth development (bud, cap, bell phase) and draw it in copybook.

Time: 20 min

Task 3.To study and depict structure of enamel.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to depict structure of enamel (enamel prisms, Hunter-Schreder bands, Retzius lines, enamel lamellae, etc)

Time: 20 min

Individual Student Task.

To study composition, features and functions enamel.

4. Seminar discussion of theoretical issues and practical work.

Questions:

1. Histological structure of teeth enamel.

2. Chemical composition of enamel.

3. Physiological features of enamel.

4. Structural and functional resistance of enamel.

5. A student must know:

1. Histological structure of teeth enamel.

2. Chemical composition of enamel.

3. Physiological features of enamel.

4. Structural and functional resistance of enamel.

6. A student should be able:

1. To analyze histological structure and chemical composition of enamel.

2. To analyze clinical and anatomical features of the teeth structure of different groups.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 2 (2 hours)**

Professional orientation of students: to learn histological structure and chemical composition of cementum and dentine.

Topic: Tooth structure: topography and histology of cementum and dentine

Aim: to acquire knowledge about histological structure and chemical composition of cementum and dentine

Task: be able to analyze histological structure and chemical composition of cementum and dentine

1. Theoretical part:

1. Histological structure of dentin.

2. Chemical composition of dentin.

3. Physiological features of dentin.

4. Primary, secondary and tertiary dentin, peculiarities of its formation.

5. Histological structure, chemical composition, physiological features of cement.

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Illustrated Dental Embryology, Histology, and Anatomy, - 4th Edition/ Margaret J. Fehrenbach. – 2016. – 336p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Lecture materials of department.

3. Practical part

Task 1.To study and depict structure of dentine.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to depict structure of dentine (dentinal tubules, inter-globular dentine, granular layer of Tomes, odontoblast processes)

Time: 30 min

Task 2.To study and depict structure of cementum.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to depict structure of cementum (cellular and acellular cementum, cemento-enamel junction)

Time: 30 min

Individual Student Task.

To study composition, features and functions of cementum and dentine.

4. Seminar discussion of theoretical issues and practical work.

Questions:

1. Histological structure of dentin.

2. Chemical composition of dentin.

3. Physiological features of dentin.

4. Primary, secondary and tertiary dentin, peculiarities of its formation..

5. Histological structure, chemical composition, physiological features of cement.

5. A student must know:

1. Histological structure of dentin.

2. Chemical composition of dentin.

3. Physiological features of dentin.

4. Primary, secondary and tertiary dentin, peculiarities of its formation.

5. Histological structure, chemical composition, physiological features of cement.

6. A student should be able:

1. To analyze histological structure and chemical composition of dentine and cementum.

2. To analyze clinical and anatomical features of the teeth structure of different groups.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 3 (2 hours)**

Professional orientation of students: to learn histological structure and chemical composition of pulp and periodontium

Topic: Structure of pulp and periodontum. Age changes in them. The concept of periodontium, its functions.

Aim: to acquire knowledge about histological structure and chemical composition of pulp and periodontium.

Task: be able to analyze histological structure and chemical composition of pulp and periodontium

1. Theoretical part:

1. Structure and functions of pulp.

2. Age- and decease-related changes in pulp.

3. Structure and functions of periodontium.

4. Age-related and pathological processes in periodontium.

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Illustrated Dental Embryology, Histology, and Anatomy, - 4th Edition/ Margaret J. Fehrenbach. – 2016. – 336p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Lecture materials of department.

3. Practical part

Task 1.To study and depict structure of pulp.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to depict structure of pulp (odontoblastic layer, cell-poor zone)

Time: 30 min

Task 2.To study and depict scheme of periodontal ligament basic fibers.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to depict periodontal ligament basic fibers and draw it in notebook.

1) The gingival fibers groups of the periodontal ligament:

- Dentino-gingival fibers (free gingival fibers) are attached to the cementum and fan out into the gingival tissue.

- Trans-septal fibers run horizontally from the cervical area of one tooth to the adjacent tooth.

- Alveolo-gingival fibers arise from the alveolar crest and run coronally into the attached and free gingiva.

- Circumferential fibers (circular) encircle the neck of the tooth.

- Alveolar crest fibers run from the cervical cementum to the alveolar crest.

2) The principal fibers groups of the periodontal ligament are:

- Oblique fibers which run obliquely from alveolar bone to tooth.

- Apical fibers which radiate from the apex of the tooth to the adjacent alveolar bone.

- Horizontal fibers which run horizontally from the cementum to the adjacent alveolar bone.

- Inter-radicular fibers which are found between the roots of multi-rooted teeth and run from the root to the adjacent alveolar bone.

Time: 30 min

Individual Student Task.

To study composition, features and functions of cementum and dentine.

4. Seminar discussion of theoretical issues and practical work.

Questions:

1. Structure and functions of pulp.

2. Age- and decease-related changes in pulp.

3. Structure and functions of periodontium.

4. Age-related and pathological processes in periodontium.

5. A student must know:

1. Structure and functions of pulp.

2. Age- and decease-related changes in pulp.

3. Structure and functions of periodontium.

4. Age-related and pathological processes in periodontium.

6. A student should be able:

1. To analyze histological structure and chemical composition of pulp and periodontium, age-related changes in pulp and functions of pulp and periodontium

2. To analyze clinical and anatomical features of the teeth structure of different groups.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 4 (2 hours)**

Professional orientation of students: to learn composition, properties and functions of saliva and oral fluid

Topic: Saliva, oral liquid: composition, properties, functions

Aim: to acquire knowledge about composition, properties and functions of saliva and oral fluid

Task: be able to analyze composition, properties and functions of saliva and oral fluid

1. Theoretical part:

1. Composition of saliva and oral fluid.

2. Minor and mayor salivary glands

3. Functions of saliva

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Illustrated Dental Embryology, Histology, and Anatomy, - 4th Edition/ Margaret J. Fehrenbach. – 2016. – 336p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Lecture materials of department.

3. Practical part

Task 1.To study and depict structure of mayor salivary glands.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to depict structure of mayor salivary glands

Time: 30 min

Task 2. To study and note in copybook functions of saliva.

Place: phantom room of the therapeutic dentistry department.

Object: study schemes

Task for the student: to note in copybook functions of saliva.

Time: 20 min

Individual Student Task.

To study composition, properties and functions of saliva and oral fluid

4. Seminar discussion of theoretical issues and practical work.

Questions:

1. Composition of saliva and oral fluid.

2. Minor and mayor salivary glands

3. Functions of saliva

5. A student must know:

1. Composition of saliva and oral fluid.

2. Minor and mayor salivary glands

3. Functions of saliva

6. A student should be able:

1. To analyze composition, properties and functions of saliva and oral fluid

2. To interpret the age-related changes, affection of salivary glands and saliva on the condition of dental hard tissues

3. To analyze clinical and anatomical features of the teeth structure of different groups.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 5 (2 hours)**

Professional orientation of students: to acquaint with anatomical, clinical, World Health Organization teeth charting, signs of the angle of crown, curvature of the crown surface and clinical-anatomical signs of maxilla and mandible teeth.

Topic: Dental numbering systems. Signs of teeth.Clinical and anatomical signs of maxilla and mandible teeth.Clinical and anatomical peculiarity of maxillary and mandibular incisors

Aim: to learn different kinds of dental notations, signs of teeth, clinical and anatomical signs of maxilla and mandible teeth. Clinical and anatomical peculiarity of maxillary and mandibular incisors

Task: to be able to reproduceincisors (using plastic and hard materials), to know anatomical, clinical and WHO notations of teeth.

1. Theoretical part:

1. Teeth charting: anatomical, clinical and WHO.

2. Signs of teeth: angle, curvature of crown, curvature of root, contact surfaces.

3. Clinical and anatomical peculiarity of maxillary incisors.

4. Clinical and anatomical peculiarity of mandibular incisors.

2. References:

1. Woelfel's Dental Anatomy// Rickne C. Scheid/ Lippincott Williams & Wilkins.- 2012. - 504 p.

2. Simplifying Posterior Dental Anatomy TechBook/ Productivity Training Corporation//John C. Ness.– 2007.-189 p.

3. Anterior Anatomy and the Science of a Natural Smile TechBook//John C. Ness.- 2007.- 149 p.

4. Wheeler's Dental Anatomy, Physiology, and Occlusion// W.B. Saunders. – 2003. - 523 p.

5. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part.

Task 1: To reproduce maxillary and mandibular incisors using plastic materials.

Place: phantom class- room of the therapeutic dentistry department.

Object: dental teeth models, literature, charts

Instruments for the student: spatula, plastic material, scalpel.

Time: 40 min.

Individual Student Task.

To learn dental notations (clinical, anatomical, WHO) of permanent occlusion; anatomical peculiarity of maxillary and mandibular incisors.

4. Seminar discussion of theoretical issues and practical work

Questions:

1. Teeth charting: anatomical, clinical and WHO.

2. Signs of teeth: angle, curvature of crown, curvature of root , contact surfaces.

3. Clinical and anatomical peculiarity of maxillary incisors.

4. Clinical and anatomical peculiarity of mandibular incisors.

5. A student must know:

1. Teeth charting: anatomical, clinical and WHO.

2. Signs of teeth: angle, curvature of crown, curvature of root , contact surfaces.

3. Clinical and anatomical peculiarity of maxillary incisors.

4. Clinical and anatomical peculiarity of mandibular incisors.

6. A student should be able:

1. To prepare working place for the work.

2. To reproduce maxillary and mandibular teeth with using plastic materials.

3. To write all kinds of dental notations.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 6 (2 hours)**

Professional orientation of students: to acquaint with anatomical, clinical, World Health Organization teeth charting, signs of the angle of crown, curvature of the crown surface and clinical-anatomical peculiarity of maxillary and mandibular canines and premolars

Topic: Clinical and anatomical peculiarity of maxillary and mandibular canines and premolars.

Aim: to learn clinical and anatomical peculiarity of maxillary and mandibular canines and premolars

Task: to be able to reproduce canines and premolars (using plastic and hard materials)

 1. Theoretical part:

1. Clinical and anatomical peculiarity of maxillary canines.

2. Clinical and anatomical peculiarity of mandibular canines.

3. Clinical and anatomical peculiarity of maxillary premolars.

4. Clinical and anatomical peculiarity of mandibular premolars.

2. References:

1. Woelfel's Dental Anatomy// Rickne C. Scheid/ Lippincott Williams & Wilkins.- 2012. - 504 p.

2. Simplifying Posterior Dental Anatomy TechBook/ Productivity Training Corporation//John C. Ness. – 2007.-189 p.

3. Anterior Anatomy and the Science of a Natural Smile TechBook//John C. Ness.- 2007.- 149 p.

4. Wheeler's Dental Anatomy, Physiology, and Occlusion // W.B. Saunders. – 2003. - 523 p.

5. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part

Task 1: To reproduce maxillary and mandibular canines using plastic materials.

Place: phantom class- room of the therapeutic dentistry department.

Object: dental teeth models, literature, charts

Instruments for the student: spatula, plastic material, scalpel.

Time: 40 min.

Task 2: To reproduce maxillary and mandibular premolars with using plastic materials.

Place: clinical room of the therapeutic dentistry department.

Object: dental teeth models, literature, charts

Instruments for the student: spatula, plastic material, scalpel.

Time: 40 min.

Individual Student Task.

To learn anatomical peculiarity of maxillary and mandibular canines and premolars.

4. Seminar discussion of theoretical issues and practical work

Questions:

1. Clinical and anatomical peculiarity of maxillary canines.

2. Clinical and anatomical peculiarity of mandibular canines.

3. Clinical and anatomical peculiarity of maxillary premolars.

4. Clinical and anatomical peculiarity of mandibular premolars.

5. A student must know:

1. Teeth notations: anatomical, clinical and WHO.

2. Signs of teeth: angle, curvature of crown, curvature of root , contact surfaces.

3. Clinical and anatomical peculiarity of maxillary canines.

4. Clinical and anatomical peculiarity of mandibular canines.

5. Clinical and anatomical peculiarity of maxillary premolars.

6. Clinical and anatomical peculiarity of mandibular premolars.

6. A student should be able:

1. To prepare working place for the work.

2. To reproduce maxillary and mandibular teeth with using plastic materials.

3. To write all kinds of dental notations.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 7 (2 hours)**

Professional orientation of students: to acquaint with anatomical, clinical, World Health Organization teeth charting, signs of the angle of crown, curvature of the crown surface and clinical-anatomical peculiarity of maxillary and mandibular molars

Topic: Clinical and anatomical peculiarity of maxillary and mandibular molars.

Aim: to learn dental notations, signs of teeth, clinical and anatomical signs of maxilla and mandible molars.

Task: to be able to reproduce maxillary and mandibular molars (using plastic and hard materials)

1. Theoretical part:

1. Clinical and anatomical peculiarity of maxillary molars.

2. Clinical and anatomical peculiarity of mandibular molars.

2. References:

1. Woelfel's Dental Anatomy// Rickne C. Scheid/ Lippincott Williams & Wilkins.- 2012. - 504 p.

2. Simplifying Posterior Dental Anatomy TechBook/ Productivity Training Corporation//John C. Ness. – 2007.-189 p.

3. Anterior Anatomy and the Science of a Natural Smile TechBook//John C. Ness.- 2007.- 149 p.

4. Wheeler's Dental Anatomy, Physiology, and Occlusion // W.B. Saunders. – 2003. - 523 p.

5. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part:

Task 1: To reproduce maxillary and mandibular molars using plastic materials.

Place: phantom class- room of the therapeutic dentistry department.

Object: dental teeth models, literature, charts

Instruments for the student: spatula, plastic material, lamp, scalpel.

Time: 40 min.

Individual Student Task.

To learn anatomical peculiarity of maxillary and mandibular molars.

 4. Seminar discussion of theoretical issues and practical work

Questions:

1. Signs of teeth: angle, curvature of crown, curvature of root , contact surfaces.

2. Clinical and anatomical peculiarity of maxillary molars.

3. Clinical and anatomical peculiarity of mandibular molars.

5. A student must know:

1. Teeth charting: anatomical, clinical and WHO.

2. Signs of teeth: angle, curvature of crown, curvature of root , contact surfaces.

3. Clinical and anatomical peculiarity of maxillary molars.

4. Clinical and anatomical peculiarity of mandibular molars.

6. A student should be able:

1. To prepare working place for the work.

2. To reproduce maxillary and mandibular teeth with using plastic materials.

3. To write all kinds of dental notations.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 8 (2 hours)**

Professional orientation of students: to understand the sense of proper organization of working place for qualitative student’s practical work. To learn the purpose of dental instruments. Technics of safety work on dentist’s working place.

Topic: Workplace of the student, its equipment. Types of drills. Safety is working on them. Dental Instruments, its purpose. Sterilization.

Aim: To learn the main equipment and instruments used by dentist. To learn all the types of handpieces and dental units. To learn the main types of dental instruments and its appointment.

Task: to learn the purpose of all dental instruments and equipment.

1. Theoretical part:

1. Equipment of dental clinic.

2. Safety at the working place of dentist during the practical and clinicalwork.

3. Principles of work with compressors (air-turbine machine).

6. Working place of the student during the propaedeutic course.

7. Dental instruments and their purpose.

8. Dental handpieces. Dental burs.Dental units.

9. Rules of sterilization of dental instruments.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.-2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011.– 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. –192 p.

5. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

6. Lecture materials of department.

3. Practical part

Task 1: Acquaintance with dental cabinet, technics of safety work, equipment.

Place: phantom class- room of the Therapeutic Dentistry Department.

Object: rules of safety work in clinical dental room.

Task for the student: to learn technics of safety, equipment.

Time: 20 min.

Task 2: to prepare working place for a dentist in the clinical room.

Place: clinical room of the Therapeutic Dentistry Department.

Object: dental unit, handpieces, instruments.

Task for the student: to prepare working place of the dentist in the clinical room.

Time: 20 min

Methodic implementation of practical work:

1. To switch on dental unit.

2. To check readiness of unit.

3. To connect the handpieces to dental unit.

Task 3: to acquaint with the main types of dental instruments. To group burs depending on use.

Place: phantom class- room of the Therapeutic Dentistry Department.

Object: dental instruments, burs.

Task for the student:

1. To acquaint with dental instruments for examination.

2. To acquaint with instruments for filling of carious cavities.

3. Technique of practical work with flat-plastic instruments, excavators.

4. To acquaint with burs depending on use.

Task 4: Rules of sterilization of dental instruments.

Place: phantom class- room of the Therapeutic Dentistry Department.

Object: rules of sterilization.

Time: 20 min

Task for the student: To acquaint students with stages of dental instruments sterilization (disinfection, pre-sterilization, sterilization). Types and use of antiseptic solutions.

Individual Student Task.

Endodontic handpieces: speed mode preparation, factors affecting the mode of preparation.

4. Seminar discussion of theoretical issues and practical work.

Questions:

1. Requirements for dental office equipment.

2. Rules of safety work during practical work in clinical rooms.

3. Dental handpieces (structure, performance, classification). Dental tools for diagnostics and treatment purposes.

4. Dental burs, classification according to international standards (ISO).

5. Terms of sterilization of dental instruments.

5. A student must know:

1. Requirements for dental office equipment.

2. Rules of safety work during practical work in phantom rooms.

3. The principle of dental compressors operations.

4. Dental handpieces (structure, performance, classification).

5. Dental tools for diagnostics and treatment purposes.

6. Dental burs, according to international standards (ISO).

7. Sterilization of dental instruments.

7. A student should be able to:

1. Turn on and turn off dental unit.

2. Connect turbine handpiece to dental unit.

3. Connect a slow-speed handpiece to the dental unit.

4. Check dental unit readiness for practical work.

5. Prepare a tray for the oral cavity examination.

7. Prepare tools for filling of carious cavities.

8. Differentiate burs by group and purpose.

9. Sterilize dental handpieces and instruments.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 9 (2 hours)**

Professional orientation of students: to learn reasons and prevention of professional diseases of a dentist. Concept of ergonomics in dentistry

Topic: Professional diseases of a dentist, their prevention. Concept of ergonomics in dentistry

Aim: to acquire knowledge about professional diseases of a dentist and their prevention. Concept of ergonomics in dentistry

Task: be able to analyze the reasons of professional diseases of a dentist, their prevention.

1. Theoretical part:

1. Safety rules at the working place of dentist during the practical work at the clinic rooms.

2. Ergonomic environment in dentistry.

3. Professional diseases and their prevention.

4. Ethics in dentistry.

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

3. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

4. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

5. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

6. Lecture materials of department.

3. Practical part

Task 1. To study and list professional diseases by categories.

Place: phantom room of the therapeutic dentistry department.

Object: dental phantom teeth models, study charts.

Task for the student: to get acquainted with professional diseases and their reasons by categories and notethem in copybook.

Time: 20 min

Individual Students Program.

Endodontic handpieces; care of handpieces, speed mode preparation, factors affecting the mode of preparation.Reasons of professional diseases.

4. Seminar discussion of theoretical issues and practical work.

Questions:

1. Safety rules at the working place of dentist during the practical work at the clinic rooms.

2. Ergonomic environment in dentistry.

3. Professional diseases and their prevention.

4. Ethics in dentistry.

5. A student must know:

1. Safety rules at the working place of dentist during the practical work at the clinic rooms.

2. Ergonomic environment in dentistry.

3. Professional diseases and their prevention.

4. Ethics in dentistry.

7. A student should be able to:

1. Turn on and turn off dental unit.

2. Connect turbine handpiece to dental unit.

3. Connect a slow-speed handpiece to the dental unit.

4. Check dental unit readiness for practical work.

5. Prepare a tray for the oral cavity examination.

6. Sterilize dental handpieces and instruments.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 10 (2 hours)**

Professional orientation of students: to manage module №1

Topic: Manual skills review. Module control №1

Aim: to complete theoretical part and show practical part of module one.

Task: be able to show main manual skills of module one.

1. Theoretical part:

1. Therapeutic dentistry: definition, task, connection with other disciplines. Achievements problems.

2. Historical stages of the development of therapeutic dentistry. Contribution of Ukrainian scientists to its development / Yu.M.Gofung, I.I.Novik, A.Behelman, M.F. Danilevsky and others.

3. Achievements in therapeutic dentistry. Dental magazines.

4. Typical equipment of the dentist's office. Dental Instruments. Methods of sterilization.

5. Tooth development. Morphogenesis of tooth tissues, periodontum and periodontal ligament.

6. Histological structure, chemical composition, physiological features of enamel.

7. Stages of mineralization of enamel, its solubility

8. Histological structure, chemical composition, physiological features of dentin.

9. Histological composition, structure, physiological features of cement.

10. Mouth fluid: mechanism of formation, composition, functional significance.

11. Saliva: chemical composition, functions. Dependence of saliva composition of exogenous and endogenous factors.

12. Physiological properties of saliva. The role of saliva in pathological processes of the oral cavity.

13. Clinical and anatomical features of the structure of incisors, icons, premolars and molars.

14. Classification of carious cavities by Black, atypical carious cavities

15. Stages of preparation of carious cavities. Principles of biological feasibility and technical rationality.

16. Modern methods for the preparation of carious cavities. Dental burs: varieties, sizes, etc.

17. Modern equipment for the work of a doctor-dentist. Universal dental units. The rhythm of work. Ergonomics of a doctor -dentist.

18. Modern endodontic tools for cleaning, expanding and sealing root canals. ISO Standards

19. Dental instruments for examination of a patient and preparation of carious cavities of teeth: varieties, purpose and application peculiarities.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Illustrated Dental Embryology, Histology, andAnatomy, - 4th Edition/ Margaret J. Fehrenbach. – 2016. – 336p.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part.

1. Schematically depict the tooth. Mark anatomical and histological formations and tissues in the tooth pattern.

2. Record dental formulas: anatomical, clinical, and WHO.

3. Draw and reproduce from the plastic materials incisors, canines, premolars, molars of the upper and lower jaw with the anatomical features of the structure of the crown and the roots.

4. To differentiate clinical and anatomical signs incisors, canines, premolars, molars of the upper and lower jaws.

5. To differentiate, to know the purpose and to be able to use dental instruments.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 11 (2 hours)**

Topic: Classification of carious cavities by Black. Principles and modes of classical preparation.

Aim: to learn the classification of carious cavities and the basic principles and stages of carious cavities preparation.

Task: to analyze all surfaces with caries process on extracted teeth, to diagnose the class of cavity according to the classification by Black.

1. Theoretical part:

1. Classification of carious cavities by Black.

2. Stages of cavity preparation.

3. Basic principles of preparation and formation of cavities.

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

3. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

4. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

5. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

6. Lecture materials of department.

3. Practical part

Tasks 1.To depict all classes of carious cavities by Black.

Place: phantom class-room of the therapeutic dentistry department.

Object : dental teeth models, literature, tables

Task for the student: to depict classes of carious cavities by Black in album.

Time: 15 minutes

Task 2. To depict stages of carious cavities preparation

Place: phantom class-room of the therapeutic dentistry department.

Object: dental teeth models, literature, tables

Task for the student: to depict stages of carious cavities preparation in album

Time: 15 minutes

Individual Student Task.

Dental caries: etiology, pathogenesis.

4. Seminar discussion of theoretical issues and practical work

Questions:

1. Classification of carious cavities by Black.

2. Stages of cavity preparation.

3. Basic principles of preparation and formation of cavities.

4. Mistakes and complications during preparation.

5. A student must know:

1. Classification of carious cavities by Black.

2. Stages of cavities preparation

3. Basic principles of preparation and formation of cavities.

4. Instruments for carious cavities preparation.

6. A student should be able:

1. To diagnose the class of cavity according to the classification by Black.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 12 (2 hours)**

Topic: Features of the preparation of carious cavities of classes I and V by Black

Aim: to learn the classification of carious cavities and the basic principles and stages of carious cavities preparation of class I and V.

Task: to analyze all surfaces with caries process on extracted teeth, to diagnose the class of cavity according to the classification by Black. To learn stages of preparation of class I, V.

1. Theoretical part:

1. Classification of carious cavities by Black.

2. Stages of cavity preparation.

3. Features of class I cavity preparation.

4. Features of class V cavity preparation.

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

3. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

4. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

5. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

6. Lecture materials of department.

3. Practical part

Task 1.To prepare I class by Black.

Place: phantom class-room of the therapeutic dentistry department.

Object: dental teeth models, literature, tables

Task: To prepare I class by Black. Form the cavity in shape of rectangular, rhomboid , oval, box-shape with straight walls and flat bottom. Carious cavities should be prepared using fissures, round-shaped, cylindrical, cone-shaped burs.

Time for one student: 20 minutes

Tasks 2.To prepare V class by Black.

Place: phantom class-room of the therapeutic dentistry department.

Object: dental teeth models, literature, tables

Task: To prepare V class by Black. Form the cavity in oval shape with straight walls and convexbottom. Carious cavities should be prepared using fissures, round-shaped, cylindrical, cone-shaped burs.

Time for one student: 20 minutes

Individual Student Task.

Dental caries: etiology, pathogenesis.

4. Seminar discussion of theoretical issues and practical work

Questions:

1. Classification of carious cavities by Black.

2. Basic principles of preparation and formation of cavities.

3. Features of V class cavity preparation.

4. Features of I class cavity preparation.

5. A student must know:

1. Classification of carious cavities by Black.

2. Stages of cavities preparation

3. Features of I class cavity preparation.

4. Features of V class cavity preparation.

5. Instruments for carious cavities preparation.

 6. A student should be able to:

1. Prepare I class of carious cavity by Black

2. Prepare V class of carious cavity by Black.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 13 (2 hours)**

Topic: Features of the preparation of carious cavities of classes II by Black

Aim: to learn the classification of carious cavities and the basic principles and stages of carious cavities preparation of class II.

Task: to analyze all surfaces with caries process on extracted teeth, to diagnose the class of cavity according to the classification by Black. To learn stages of preparation of class II.

1. Theoretical part:

1. Stages of cavity preparation.

2. Basic principles of preparation and formation of carious cavities: II class by Black.

3. Features of additional cavity formation of II class by Black.

4. Complications during the preparation of II class by Black.

5. The definition of "contact point".

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

3. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

4. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

5. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

6. Lecture materials of department.

3. Practical part

Tasks 1.To prepare II class by Black.

Place: phantom class-room of the therapeutic dentistry department.

Object: dental teeth models, literature, tables

Task: To prepare II class by Black. Form the main cavity in rectangular or box-shape and additional cavity on occlusal surface with straight walls and flat bottom. Carious cavities should be prepared using fissures, round-shaped, cylindrical, cone-shaped burs.

Time for one student: 10 minutes

Individual Student Task.

Dental caries: etiology, pathogenesis.

4. Seminar discussion of theoretical issues and practical work

Questions:

1. Classification of carious cavities by Black.

2. Basic principles of preparation and formation of cavities.

3. Features ofII class cavity preparation.

4. Complications during the preparation of II class by Black.

5. The definition of "contact point".

5. A student must know:

1. Classification of carious cavities by Black.

2. Stages of cavities preparation

3. Features of II class cavity preparation.

4. Features of additional cavity formation during the preparation of II class by Black.

5. Complications during the preparation of II class by Black.

6. Instruments for carious cavities preparation.

 6. A student should be able to:

1. Prepare II class of carious cavity by Black

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 14 (2 hours)**

Topic: Features of the preparation of carious cavities of classes III by Black

Aim: to learn the classification of carious cavities and the basic principles and stages of carious cavities preparation of class III.

Task: to analyze all surfaces with caries process on extracted teeth, to diagnose the class of cavity according to the classification by Black. To learn stages of preparation of class III.

1. Theoretical part:

1. Stages of cavity preparation.

2. Basic principles of preparation and formation of carious cavities: III class by Black.

3. Features of additional cavity formation of III class by Black.

4. Complications during the preparation of III class by Black.

5. The definition of "contact point".

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

3. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

4. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

5. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

6. Lecture materials of department.

3. Practical part

Tasks 1.To prepare III class by Black.

Place: phantom class-room of the therapeutic dentistry department.

Object: dental teeth models, literature, tables

Task: To prepare III class by Black. Form the main cavity in triangular shape and additional cavity on palatal surface with straight walls and flat bottom. Carious cavities should be prepared using fissures, round-shaped, cylindrical, cone-shaped burs.

Time for one student: 10 minutes

Individual Student Task.

Dental caries: etiology, pathogenesis.

4. Seminar discussion of theoretical issues and practical work

Questions:

1. Classification of carious cavities by Black.

2. Basic principles of preparation and formation of cavities.

3. Features of III class cavity preparation.

4. Complications during the preparation of III class by Black.

5. The definition of "contact point".

5. A student must know:

1. Classification of carious cavities by Black.

2. Stages of cavities preparation

3. Features of III class cavity preparation.

4. Features of additional cavity formation during the preparation of III class by Black.

5. Complications during the preparation of III class by Black.

6. Instruments for carious cavities preparation.

 6. A student should be able to:

1. Prepare class III of carious cavity by Black

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 15 (2 hours)**

Topic: Features of the preparation of carious cavities of classes IV by Black

Aim: to learn the classification of carious cavities and the basic principles and stages of carious cavities preparation of class IV.

Task: to analyze all surfaces with caries process on extracted teeth, to diagnose the class of cavity according to the classification by Black. To learn stages of preparation of class IV.

1. Theoretical part:

1. Stages of cavity preparation.

2. Basic principles of preparation and formation of carious cavities: IV class by Black.

3. Features of additional cavity formation of IV class by Black.

4. Complications during the preparation of IV class by Black.

5. The definition of "contact point".

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

3. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

4. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

5. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

6. Lecture materials of department.

3. Practical part

Tasks 1.To prepare IV class by Black.

Place: phantom class-room of the therapeutic dentistry department.

Object: dental teeth models, literature, tables

Task: To prepare IV class by Black. Form the main cavity in triangular shape and additional cavity on palatal surface with straight walls and flat bottom. Carious cavities should be prepared using fissures, round-shaped, cylindrical, cone-shaped burs.

Time for one student: 10 minutes

Individual Student Task.

Dental caries: etiology, pathogenesis.

4. Seminar discussion of theoretical issues and practical work

Questions:

1. Classification of carious cavities by Black.

2. Basic principles of preparation and formation of cavities.

3. Features of IV class cavity preparation.

4. Complications during the preparation of IV class by Black.

5. The definition of "contact point".

5. A student must know:

1. Classification of carious cavities by Black.

2. Stages of cavities preparation

3. Features of IV class cavity preparation.

4. Features of additional cavity formation during the preparation of IV class by Black.

5. Complications during the preparation of IV class by Black.

6. Instruments for carious cavities preparation.

 6. A student should be able to:

1. Prepare IV class of carious cavity by Black

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 16 (2 hours)**

Topic: Modern methods of preparation of carious cavities for composite materials: classical, micro-preparation technique (MI-therapy), ART-technique (non-invasive), tunnel preparation and others.

Aim: to knowthe basic principles and stages of the miсro-preparation technique: system Carisolv, ART-technique, noninvasive methods, tunnel preparation.

Task: to learn the basic principles and stages of the miсro-preparation technique: system Carisolv, ART-technique, noninvasive methods, tunnel preparation.

1. Theoretical part:

1. Features, principles and techniques of preparation cavities by – ART- technique.

2. Features, principles and techniques of tunnel method preparation.

3. Features principles and techniques of treatment by Heal Ozone system.

4. Features and principles of non-invasive treatment of caries.

5. Noninvasive method of cavity preparation.

6. System Carisolv: principle of use, features, methods.

2. References:

1. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

3. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

4. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

5. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

6. Lecture materials of department.

3. Practical part

Task1. Preparation carious cavity by tunnel method

Place: phantom class- room of the therapeutic dentistry department.

Object: dental teeth models, literature, tables

Task: Prepare carious cavity, creating access from the chewing surface in a shape of tunnel, which going through solid tissues and reach carious cavities.

Time for one student: 10 minutes

Task 2. Preparation of carious cavities by ART technique.

Place: phantom class- room of the therapeutic dentistry department.

Object:dental teeth models, literature, tables

Time for one student: 10 minutes

Task:Prepare cavity only by excavator. (ART - method - is atraumatic restorative treatment, which makes filling carious cavities without preparation (only necrectomy by excavator)

Individual Student Task.

Features of micro-preparation in the treatment of dental caries.

4. Seminar discussion of theoretical questions and practical work

Questions:

1. Features, principles and techniques of preparing cavities by ART technique.

2. Features, principles and techniques of tunnel method preparation.

3. Features and methods of dental caries treatment with system Heal Ozone.

4. Features and principles of non-invasive treatment of caries.

5. System Carisolv: principle of use, features, methods.

5. A student must know:

1. Tools for preparation of cavities.

2. Classification of carious cavities by Black.

3. Features, principles and techniques of preparing cavities by ART technique.

4. Features, principles and techniques of tunnel method preparation.

5. Features and methods of dental caries treatment with system Heal Ozone.

6. Features and principles of non-invasive treatment of caries.

7. System Carisolv: principle of use, features, methods.

6. A student should be able to:

1. Prepare cavities by tunnel method.

2. Carry out preparation and treatment of cavities of different classes by ART technique.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 17 (2 hours)**

Professional orientation of students: to manage module №2

Topic: Manual skills review. Module №2

Aim: to complete theoretical part and show practical part of module two.

Task: be able to show main manual skills of module two.

1. Theoretical part:

1. Purpose, technology, tools for conducting I and II stages of preparation

2. Purpose, technology, toolkit for the III stage of preparation.

3. Purpose, technology, toolkit for the IV stage of preparation.

4. Variants of localization of carious cavities. Peculiarities of preparation and tools for class I cavities by Black.

5. Variants of localization of carious cavities. Features of the preparation and toolkit for the II class cavities by the Black.

6. Variants of localization of carious cavities. Peculiarities of preparation and tools for III class of cavities by Black.

7. Variants of localization of carious cavities. Peculiarities of preparation and tools for IV class of cavities by Black.

8. Variants of localization of carious cavities. Peculiarities of preparation and tools for class V cavities by Black.

9. Features of the preparation of atypical carious cavities. Reaction of the tooth to the preparation.

10. Errors and complications in the preparation of hard tooth tissues.

11. Features, principles and techniques of preparing cavities by ART technique.

12. Features, principles and techniques of tunnel method preparation.

13. Features and methods of dental caries treatment with system Heal Ozone.

14. Features and principles of non-invasive treatment of caries.

15. System Carisolv: principle of use, features, methods.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Illustrated Dental Embryology, Histology, and Anatomy, - 4th Edition/ Margaret J. Fehrenbach. – 2016. – 336p.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part.

1. Determine the affiliation of carious cavities to a certain class by Black.

2. Observe the mode of preparation during working on phantom.

3. To make carious cavities of class 1 by Black of different localization on phantoms and removed teeth.

4. To make carious cavities of class 2 by Black on phantoms.

5. To make carious cavities of class 3 by Black on phantoms.

6. To make carious cavities of class 4 by Black on phantoms.

7. To make carious cavities of class 5 by Black on phantoms.

8. To make carious cavities with unconventional methods: tunnel preparation, microinvasive preparation.

9. To make carious cavities for composite materials

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 18 (2 hours)**

Topic: Sealing materials. Classification. Requirements for filling materials. Materials for temporary seals and sealing bandages. Medical lining.

Aim: a student should be able to prepare and apply the dental lining in various clinical situations.

Task: to learn techniques of dental cements mixing.

1. Theoretical part:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Indications for use of different kinds of filling materials.

4. Classification of dental cements.

5. Materials for temporary filling

6. Isolating and medical lining

7. Materials for treatment linings based on calcium hydroxide. Composition, properties, characteristics and technology of use.

8. Materials for treatment linings based on zinc oxide-eugenol cements. Composition, properties and application features.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

3. Practical part

Task 1.To mix a zinc-sulfate cement (dentine).

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom models.

Task for students: to learn how to mix zinc-sulfate cement and how to fill cavities with zinc sulfate cement.On the glass plate is placed a necessary amount of powder and distillated water in a ratio of 2:1. A powder is gradually added to the water and with circular motions of spatula it is necessary to achieve thick plastic consistency. The prepared cement is placed into cavities and condensed with a ball-ended burnisher. Before filling, the cavity must be dried.

Time for one student: 15 minutes.

Task 2. Placement of treatment lining, based on calcium hydroxide.

Place of classes: phantom room of Therapeutic Dentistry Department.

Object: dental phantom models.

Task for a student: to mix a material that is based on calcium hydroxide and apply it in cavities as insulating lining.On paper pad, in equal parts a base paste and catalyzing material that is based on calcium hydroxide is placed.Mixed two parts with a spatula.With the help of flat plastic place the materialto the bottom of carious cavity. Thickness should be no more than 0,3 mm.

Time for one student: 15 minutes.

Individual Student Task.

Glass ionomer cement, its types, chemical composition, indications for use, mixing and filling instruments.

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Indications for use of different kinds of filling materials.

4. Classification of dental cements.

5. Materials for temporary filling

6. Isolating and medical lining

7. Materials for treatment linings based on calcium hydroxide. Composition, properties, characteristics and technology of use.

8. Materials for treatment linings based on zinc oxide-eugenol cements. Composition, properties and application features.

5. A student must know:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Indications for use of different kinds of filling materials.

4. Classification of dental cements.

5. Zinc sulfate cements, chemical composition, indications for use, mixing and filling instruments.

6. Isolating and medical lining

7. Materials for treatment linings based on calcium hydroxide. Composition, properties, characteristics and technology of use.

8. Materials for treatment linings based on zinc oxide-eugenol cements. Composition, properties and application features.

6. A student should be able:

1. To choose tools for mixing cements.

2. To learn the technique of mixing cement and its placement into prepared carious cavities.

3. To learn the technique of mixing calcium hydroxide lining and its placement into the cavities

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 19 (2 hours)**

Topic: Dental cements, their classification. Zinc-phosphate cement: composition, positive and negative sides, indications and rules of application.

Aim: a student should be able to prepare and apply thezinc-phosphate cement

Task: to learn techniques of zinc-phosphate cementmixing.

1. Theoretical part:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Classification of dental cements.

4. Materials for temporary filling

5. Zinc – phosphate cement. Composition, positive and negative sides, indications.

6. Technique of mixing and rules of application of Zinc – phosphate cement

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part

Task 1: Mixing of zinc-phosphate cement

Place of classes: phantom room of Therapeutic Dentistry Department.

Object: dental phantoms model.

Task for a student: to mix a zinc-phosphate cement. On glass plate powder and liquid is placedin the ratio 4:1. Cement powder is divided into 4 parts (1/2, 1/4, 1/8, 1/16). The powder is to be mixed into the liquid by iron spatula. After a homogeneous mass occurs- during thorough gradually mixing, add rest amount of powder to obtain the necessary consistency of cement. The working time is approximately 2 minutes.With the help of ball-ended burnisher, material placed into the carious cavity.

Time for one student: 15 minutes.

Task 2: Placement of insulating glass ionomer cement lining.

Place of classes: phantom room of Therapeutic Dentistry Department.

Object: dental phantoms model.

Task for a student: to mix a glass ionomer cement and apply it in cavities as insulating lining. On paper pad for mixing 1 measuring spoon of powder divide into two parts. Mix one part of powder by spatula with 1 drop of liquid. After a homogeneous mass occurs, add the rest amount of the powder, mix thoroughly during 30 seconds. With the help of ball-ended plastic put material to the bottom and walls of carious cavities to the border of enamel-dentine junction. Thickness of materials should be 0,5-1,0 mm

Time for one student: 15 minutes.

Individual Student Task.

Amalgam, its types, chemical composition, indications for use, mixing and filling instruments.

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Classification of dental cements.

4. Materials for temporary filling

5. Zinc – phosphate cement. Composition, positive and negative sides, indications.

6. Technique of mixing and rules of application of Zinc – phosphate cement

5. A student must know:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Classification of dental cements.

4. Materials for temporary filling

5. Zinc – phosphate cement. Composition, positive and negative sides, indications.

6. Technique of mixing and rules of application of Zinc – phosphate cement

6. A student should be able to:

1. Choose tools for mixing cements.

2. Learn the technique of zinc phosphate cement mixing and its placement into prepared carious cavities.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 20 (2 hours)**

Topic: Silicate and silico-phosphate cements: composition, indications and methods of application.

Aim: a student should be able to prepare and apply the silicate and silico-phosphate cement

Task: to learn techniques of silicate and silico-phosphate cements mixing.

1. Theoretical part:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Classification of dental cements.

4. Silico-phosphate cement. Composition, positive and negative sides, indications.

5. Technique of mixing and rules of application of silico – phosphate cement

6. Silicate cement. Composition, positive and negative sides, indications.

7. Technique of mixing and rules of application of silicate cement

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

3. Practical part

Task 1: Mixing of silicate cement

Place of classes: phantom room of Therapeutic Dentistry Department.

Object: dental phantoms model.

Task for students: to learn how to mix silicate cement and how to fill cavities with silicate cement.

On the glass plate previously chilled is placed one scoop of powder and two drops of liquid. A powder is added to the liquid by big portions and with circular motions of plastic spatula it is necessary to achieve thick plastic consistency. Mixing time 45-60 seconds.The prepared cement is placed into cavities with ball-ended plastic by one portion and not be condensed. Before filling, the cavity must be dried.

Time for one student: 15 minutes.

Individual Student Task.

Amalgam, its types, chemical composition, indications for use, mixing and filling instruments.

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Classification of dental cements.

4. Silico-phosphate cement. Composition, positive and negative sides, indications.

5. Technique of mixing and rules of application of silico – phosphate cement

6. Silicate cement. Composition, positive and negative sides, indications.

7. Technique of mixing and rules of application of silicate cement

5. A student must know:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Classification of dental cements.

4. Silico-phosphate cement. Composition, positive and negative sides, indications.

5. Technique of mixing and rules of application of silico – phosphate cement

6. Silicate cement. Composition, positive and negative sides, indications.

7. Technique of mixing and rules of application of silicate cement

6. A student should be able to:

1. Choose tools for mixing cements.

2. Learn the technique of silicate cement mixing and its placement into prepared carious cavities.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 21 (2 hours)**

Topic: Glass ionomer cements. Composition, properties, positive and negative sides, indications for use.The concept of the contact point.Dental accessories for its restoration.Polishing of fillings: tools, techniques.

Aim: a student should be able to prepare and apply the glass ionomer cement

Task: to learn techniques of glass ionomer cement mixing.

1. Theoretical part:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Indications for use of different kinds of filling materials.

4. Classification of dental cements.

5. Glass ionomer cement, types, chemical composition, indications for use, mixing and filling instruments.

6. The concept of the contact point, its improper restoration in periodontal pathology. Instruments for its restoration.

7. Polishing of fillings: instruments, tools, methods.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part

Task 1: Mixing of glass ionomer cement.

Place of classes: phantom room of Therapeutic Dentistry Department.

Object: dental phantoms model.

Task for a student: to mix a glass ionomer cement and apply it in cavity.

1 measuring scoop of powder and 1 drop of liquid are placed on paper pad for mixing. Cement powder is divided into two parts. Mix one part of powder by spatula with liquid. After a homogeneous mass occurs, add the rest amount of the powder, mix thoroughly during 30 seconds.With the help of flat plastic,material is placedin cavity and condense with ball-ended burnisher.

Time for one student: 20 minutes.

Individual Student Task.

Amalgam, its types, chemical composition, indications for use, mixing and filling instruments.

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Indications for use of different kinds of filling materials.

4. Classification of dental cements.

5. Glass ionomer cement, types, chemical composition, indications for use, mixing and filling instruments.

6. The concept of the contact point, its improper restoration in periodontal pathology. Instruments for its restoration.

7. Polishing of fillings: instruments, tools, methods.

5. A student must know:

1. The classification of filling materials.

2. Physical and chemical properties of filling materials.

3. Indications for use of different kinds of filling materials.

4. Classification of dental cements.

5. Glass ionomer cement, types, chemical composition, indications for use, mixing and filling instruments.

6. The concept of the contact point, its improper restoration in periodontal pathology. Instruments for its restoration.

7. Polishing of fillings: instruments, tools, methods.

6. A student should be able to:

1. Choose tools for mixing cements.

2. Learn the technique of glass ionomer mixing and its placement into prepared carious cavities.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 22 (2 hours)**

Topic: Silver and copper amalgams: composition, properties, rules of application. Features of polishing of the seal

Aim: a student should be able to prepare and apply amalgam

Task: to learn techniques of amalgam mixing.

1. Theoretical part:

1. The classification of amalgam.

2. Physical and chemical properties of amalgam.

3. Indications for use of amalgam.

4. Positive and negative sides of amalgam.

5. Technique of mixing and placement of amalgam.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Seminar discussion of theoretical questions and practical work.

Questions:

1. The classification of amalgam.

2. Physical and chemical properties of amalgam.

3. Indications for use of amalgam.

4. Positive and negative sides of amalgam.

5. Technique of mixing and placement of amalgam.

Individual Student Task.

Silver and copper amalgams. Advantages and disadvantages.

5. A student must know:

1. The classification of amalgam.

2. Physical and chemical properties of amalgam.

3. Indications for use of amalgam.

4. Positive and negative sides of amalgam.

5. Technique of mixing and placement of amalgam.

6. A student should be able to:

1. Choose tools for mixing cements.

2. Learn the technique of amalgam mixing and its placement into prepared carious cavities.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 23 (2 hours)**

Topic: Composite materials: classification, composition. Composite materials of the chemical curing method: positive and negative sides, indications for use, method of application

Aim: a student should be able to prepare and apply chemical curing composite

Task: to learn techniques of chemical curing composite mixing.

1. Theoretical part:

1. Composite filling materials. Classification, composition, properties and application features.

2. Chemical hardening composite filling materials. Theirs types.

3.Properties and indications for use of chemical hardening composite.

4. Features of carious cavity filling with chemical hardening composite materials.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

3. Practical part

Task 1. Filling of carious cavities by chemical hardening composite material.

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to learn how to prepare carious cavities and fill cavities by chemical hardening composite material.

Isolate and make dried carious cavity. Apply 37% phosphoric acid gel for 15-30 sec in prepared cavity. Wash off the gel with water during 20-40 sec. Dry the cavity by air. Etched surface must be chalky color (white). Mix together during 30 sec on a paper pad 1 drop of base and 1 drop of catalyzing agents of adhesive systems. With a micro-brush apply adhesive system into the cavity. Dry it slightly by the light stream of air. On a paper pad with a plastic spatulain equal parts of base and catalyzing paste mix them together during 30 sec. Place material by one or two portions with help of flat plastic instrument.A formation and condensation of material must be done by ball-ended burnisher and dental carver.

Time for one student: 20 minutes.

Individual Student Task.

Adhesive systems: composition, principle of interaction with tooth tissues, application technique. Acid etching, conditioning, purpose, technique, mistakes and complications

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. Composite filling materials. Classification, composition, properties and application features.

2. Chemical hardening composite filling materials. Theirs types.

3. Properties and indications for use of chemical hardening composite.

4. Features of carious cavity filling with chemical hardening composite materials.

5. A student must know:

1. Composite filling materials. Classification, composition, properties and application features.

2. Chemical hardening composite filling materials. Theirs types.

3. Properties and indications for use of chemical hardening composite.

4. Features of carious cavity filling with chemical hardening composite materials.

6. A student should be able to:

1. Choose tools for mixing cements.

2. Learn the technique of chemical curing composite mixing and its placement into prepared carious cavities.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 24 (2 hours)**

Topic: Photopolymers: types, composition, properties. Photopolymerisation lamps: purpose, physical and technical characteristics. Safety in working with them. Adhesive systems: composition, principle of interaction with tooth tissues, application technique. Acid etching, conditioning, purpose, technique, mistakes and complications.

Aim: a student should be able to prepare and apply light curing composite, prepare and apply different kinds of adhesive systems.

Task: to learn techniques of light curing composite mixing.

1. Theoretical part:

1. Composite filling materials. Classification, composition, properties and application features.

2. Light hardening composite filling materials. Theirs types.

3. Properties and indications for use of light hardening composite.

4. Features of carious cavity filling with light hardening composite materials.

5. Types of light-curing lamps: purpose, physical and technical characteristics. A safety rules while working with light-curing lamps.

6. Adhesive systems. Classification.

7. Adhesive systems of 4th generation. Composition, technique of use.

8. Adhesive systems of 5th generation. Composition, technique of use.

9. Adhesive systems of 6th generation. Composition, technique of use.

10. Adhesive systems of 7th generation. Composition, technique of use.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

3. Practical part

Task 1. Filling of carious cavities by light hardening composite material.

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to learn how to prepare carious cavities and fill cavities by light hardening composite material.

Isolate and make dried carious cavity. Apply 37% phosphoric acid gel for 15-20 sec in prepared cavity. Wash off the gel with water during 20-40 sec. Dry the cavity by air. Etched surface must be chalky color (white). With a micro-brush apply adhesive system into the cavity, on enamel and dentine. Dry it slightly by the light stream of air.Light-cure for 10-20 sec. Put thin layer (not more than 2 mm) of material to the cavity by the flat plastic. Light-cure each layer of material within 20-40 sec.. Replace the shape of the tooth.

Individual Student Task.

Adhesive systems: composition, principle of interaction with tooth tissues, application technique. Acid etching, conditioning, purpose, technique, mistakes and complications

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. Composite filling materials. Classification, composition, properties and application features.

2. Light hardening composite filling materials. Theirs types.

3. Properties and indications for use of light hardening composite.

4. Features of carious cavity filling with light hardening composite materials.

5. Types of light-curing lamps: purpose, physical and technical characteristics. A safety rules while working with light-curing lamps.

6. Adhesive systems. Classification.

7. Adhesive systems of 4th generation. Composition, technique of use.

8. Adhesive systems of 5th generation. Composition, technique of use.

9. Adhesive systems of 6th generation. Composition, technique of use.

10. Adhesive systems of 7th generation. Composition, technique of use.

5. A student must know:

1. Composite filling materials. Classification, composition, properties and application features.

2. Light hardening composite filling materials. Theirs types.

3. Properties and indications for use of light hardening composite.

4. Features of carious cavity filling with light hardening composite materials.

5. Types of light-curing lamps: purpose, physical and technical characteristics. A safety rules while working with light-curing lamps.

6. Adhesive systems. Classification.

7. Adhesive systems of 4th generation. Composition, technique of use.

8. Adhesive systems of 5th generation. Composition, technique of use.

9. Adhesive systems of 6th generation. Composition, technique of use.

10. Adhesive systems of 7th generation. Composition, technique of use.

6. A student should be able to:

1. Choose tools for mixing cements.

2. Learn the technique of light curing composite mixing and its placement into prepared carious cavities.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 25 (2 hours)**

Topic: Module 3

Aim: to complete theoretical part and show main manual skills of module three.

Task: be able to show main manual skills of module three.

Theoretical part:

1. Classification of sealing materials, requirements to them.

2. The concept of temporary seals and sealing dressings: indications for use, material, methods of overlay, terms, rules for removal.

3. Isolation lining: definition, purpose, requirements for overlap.

4. Medical lining: definition, purpose, materials, terms of the overlay.

5. Dental cements, their composition, properties, indications for application, mixing and sealing technology.

6. Silico-phosphate dental cements, their composition, properties, indications for application, mixing and sealing technology.

7. Silicate dental cements, their composition, properties, indications for use, mixing and sealing technology.

8. Polycarboxylate cements, their composition, properties, indications for application, mixing and sealing technology.

9. Glass ionomer cements, their composition, properties, indications for use, mixing and sealing technology.

10. Amalgam, its varieties. Composition, properties, indications for application, technology of sealing, polishing of seals.

11. Features of preparation and filling of carious cavities with amalgam. Positive and negative sides of amalgam.Errors and complications during filling.

12. Composite filling materials of chemical and light hardening. Macro- and microfilled and hybrid composites. Compomers. General characteristics.

13. Evikrol. Composition, properties, indications for use, method of mixing, sealing.

14. Consize. Composition, properties, indications for use. Mixing technique, sealing.

15. Harizma-photo, filtek. Composition, properties, indications for use.Methods of sealing and polishing of seals.

16. The mechanism of adhesion of various filling materials to the tissues of the tooth. Adhesive systems: composition, principles of interaction with tooth tissues, technology of application.

17. Features of the preparation of carious cavity for sealing with composite.

18. Errors and complications when working with composite materials.

19. Selection of sealing material depending on the class of carious cavity.

20. Sealing of a class I cavity by Black. Selection of material, overlay insulation, sealing technique.

21. Sealing the cavity of II class by Black. Selection of material, overlay insulation, sealing technique.

22. Sealing of cavity III class by Black. Selection of material, overlay insulation, sealing technique.

23. Sealing of IV cavity by Black. Selection of material, overlay insulation, sealing technique.

24. Sealing the V-class cavity by the Black. Selection of material, overlay insulation, sealing technique.

25. The concept of the contact point, the significance of its violation in the pathology of periodontal disease. Methods of its reproduction.

26. Grinding and polishing of seals. Toolkit. Modern technology. Restoration of the anatomical shape of a tooth with a cap, parapulpal pins.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. Lecture materials of department.

Practical part:

1. Prepare and apply sealing material for a temporary seal.

2. Prepare and apply medical paste and temporary seal.

3. To prepare and apply zinc-phosphate cement as an isolating lining in carious cavities of different classes by Black.

4. Prepare and apply silicate cement as a permanent seal in the carious cavity of different classes by Black on a phantom.

5. Prepare and apply silicone-phosphate cement as a permanent seal in the carious cavities of different classes by Black on a phantom.

6. Made the conditioning of the enamel, prepare and apply glass ionomer cement as a permanent seal in the carious cavities of different classes by Black on a phantom.

7. To restore contact point in carious cavities of 2-4 classes by Black.

8. Grind and polish seals of various sealing materials.

9. Prepare and apply a permanent seal with silver amalgams in the carious cavities of different classes by Black on a phantom.

10 Provide the etching of the enamel, prepare and apply adhesive, mix and apply a permanent seal from the composite material of the chemical method of hardening in the carious cavity on the phantom.

11. Provide the etching, prepare and apply adhesive, apply a seal from the photopolymer material in the 3rd, 4th and 5th class of cavities by the Black.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 26 (2 hours)**

Professional orientation of students: to learn structure, properties and usage of endodontic instruments.

Topic: Endodontics - its goals and objectives. Endodontic instruments. Classification. Properties. Methods of using

Aim: a student should be able classified and differentiate the varieties of endodontic instruments

Task: to learn structure, properties and usage of endodontic instruments

1. Theoretical part:

1. Endodontics, its goals and objectives.

2. Endodontic instruments, classification, rules of usage.

3. Hand instruments for root canal passing, enlargement and shaping.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

5. A Clinical Guide to Endodontics - 4th Edition - P Carrotte - BDJ Books. – 2014. – 179 p.

6. Lecture materials of department.

3. Practical part

Task 1. To learn varieties of endodontic instruments.

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to learn proper usage of hand endodontic instruments

Time for one student: 30 minutes.

Individual Student Task.

Learn structure and properties of K-file, H-file, K-reamer.

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. Endodontics, its goals and objectives.

2. Endodontic instruments, classification, rules of usage.

3. Hand instruments for root canal passing, enlargement and shaping.

5. A student must know:

1. Endodontics, its goals and objectives.

2. Endodontic instruments, classification, rules of usage.

3. Hand instruments for root canal passing, enlargement and shaping.

6. A student should be able to:

1. Choose hand endodontic instrument for instrumental root canal treatment.

2. Make proper movements of hand endodontic instruments in root canals.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 27 (2 hours)**

Topic: Anatomical and topographical features of the cavity of the tooth and root canals of incisors, canines, premolars and molars. Removing of the filling, trepanation of tooth cavity, imposition of the devitalizing substances. Mistakes and complications

Aim: to learn features of a topographical structure of the tooth cavity and root canals, to do a tooth cavity disclosure

Task: to learn features of a topographical structure of the tooth cavity and root canals. To learn stages of carious cavity and tooth cavity formation.

1. Theoretical part:

1. Endodontic instruments, classification, rules of usage.

2. Hand instruments for root canal passing, enlargement and shaping.

3. Topography of tooth cavities and root canals of permanent teeth of the maxilla

4. Topography of tooth cavities and root canals of permanent teeth of the mandible

5. Types of root canals in one-root and multi-root teeth.

6. Technique and instruments for tooth cavity trepanation

7. Types of devitalizing agents

8. Methods of imposition of the devitalizing substances

9. Mistakes and complications during and after tooth disclosure.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

5. A Clinical Guide to Endodontics - 4th Edition – P. Carrotte - BDJ Books. – 2014. – 179 p.

6. Lecture materials of department.

3. Practical part

Task 1.To depict in albumtopography of tooth cavities and root canals

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to learn proper usage of hand endodontic instruments

Time for one student: 30 minutes.

Task 2. To disclose tooth cavity and orifice of root canals

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to learn proper usage of hand endodontic instruments for disclosing of tooth cavity and root orifice

Time for one student: 20 minutes.

Steps of tooth cavity disclosure: 1) removing the roof of pulp chamber; 2) making straight access to root canal orifices; 3) forming of carious cavity and pulp cavity.

Individual Student Task.

Learn structure and properties of K-file, H-file, K-reamer.

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. Endodontic instruments, classification, rules of usage.

2. Hand instruments for root canal passing, enlargement and shaping.

3. Topography of tooth cavities and root canals of permanent teeth of the maxilla

4. Topography of tooth cavities and root canals of permanent teeth of the mandible

5. Types of root canals in one-root and multi-root teeth.

6. Technique and instruments for tooth cavity trepanation

7. Types of devitalizing agents

8. Methods of imposition of the devitalizing substances

9. Mistakes and complications during and after tooth disclosure.

5. A student must know:

1. Endodontic instruments, classification, rules of usage.

2. Hand instruments for root canal passing, enlargement and shaping.

3. Topography of tooth cavities and root canals of permanent teeth of the maxilla

4. Topography of tooth cavities and root canals of permanent teeth of the mandible

5. Types of root canals in one-root and multi-root teeth.

6. Technique and instruments for tooth cavity trepanation

7. Types of devitalizing agents

8. Methods of imposition of the devitalizing substances

9. Mistakes and complications during and after tooth disclosure.

6. A student should be able to:

1. Choose hand endodontic instrument for instrumental root canal treatment.

2. Make proper movements of hand endodontic instruments in root canals.

3. Disclosure tooth cavity of anterior and posterior teeth

4. Conduct imposition devitalizing substances in tooth cavity

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 28 (2 hours)**

Topic: Amputation, extirpation of the pulp. Medicinal treatment of root canals. Mechanical treatment of root canals. Modern methods of processing root canals. Preparation of channels for sealing. Step Back and Crown down technique.

Aim: to be able to remove the pulp from the root canal using barbed broaches. To learn the method of root canal orifices and root canals enlargement.

Task: to learn stages of instrumental and medicament treatment of root canals.

1. Theoretical part:

1. Endodontic instruments for root canal passing, enlargement and shaping.

2. “Step-back” technique.

3. “Crown-down” technique.

4. Medications of root canals.

5. Root canal irrigants.

6. Agents for chemical enlargement of root canals.

7. Errors and complications in canal preparation.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

5. A Clinical Guide to Endodontics - 4th Edition – P. Carrotte - BDJ Books. – 2014. – 179 p.

3. Practical part

Task 1.To do instrumental and medicament treatment of root canal, by using “Step-back” technique

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to learn proper usage of hand endodontic instruments for disclosing of tooth cavity and root orifice

Time for one student: 30 minutes.

“Step-back” technique: envisages treatment from the apical hole to canal orifices with gradually increasing of instrument diameter ( e.g. from №10 -№ 40). An apical part of the root canal is prepared first and the canal is then widened from apex to crown. Blockage of canals may occur using this technique, and irrigation can be difficult. Irrigation of root canal is done simultaneously with instrument treatment of root canal.

Task 2. To do instrumental and medicament treatment of root canal, by using “Crown-down” technique

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to learn proper usage of hand endodontic instruments for disclosing of tooth cavity and root orifice

Time for one student: 30 minutes.

“Crown-down” method envisages root canal treatment that starts from canal orifices to apical hole with a gradual decrease in instrument diameter (e.g. from №40 –№ 10). At first prepares the coronal part of the canal before the apical part. Root canal orifices enlargement effectively, decrease the curvature in the coronal part of the root canal, allowing straighter access for files to the apical region. It allows improved access for the flow of irrigant solution within the canal; it reduces the probability of apical extrusion of infected material as most of the canal debris is removed before apical instrumentation takes place.

Individual Student Task.

Crown-down and Step-back technique

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. Endodontic instruments for root canal passing, enlargement and shaping.

2. “Step-back” technique.

3. “Crown-down” technique.

4. Medications of root canals.

5. Root canal irrigants.

6. Agents for chemical enlargement of root canals.

7. Errors and complications in canal preparation.

5. A student must know:

1. Endodontic instruments for root canal passing, enlargement and shaping.

2. “Step-back” technique.

3. “Crown-down” technique.

4. Medications of root canals.

5. Root canal irrigants.

6. Agents for chemical enlargement of root canals.

7. Errors and complications in canal preparation.

6. A student should be able to:

1. Do instrumental and medicament treatment of root canal.

2. Irrigate the root canal with a help of endodontic syringe.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 29 (2 hours)**

Topic: Materials for sealing the root canals. Silers: classification, requirements for them. Solid sealants for root canals. Their varieties. Methods of sealing the root canals. Modern technologies, their general characteristic.

Aim: to learn a technique of root canal filling by non-hardening and hardening paste and gutta-percha pins.

Task: to master the techniques of root canal sealing.

1. Theoretical part:

1. Materials for root canal filling. Their classification.

2. The principles of root canal filling by hardening pastes.

3. General characteristics of fillers.

4. Methods of root canal filling by gutta-percha pins.

5. Filling method of “single cone”.

6. Multi-cone methods of root canal filling:

a) Method of cold lateral condensation of gutta-percha;

b) Method of warm lateral condensation of gutta-percha;

7. Thermomechanical compaction of gutta-percha.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

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4. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

5. A Clinical Guide to Endodontics - 4th Edition – P. Carrotte - BDJ Books. – 2014. – 179 p.

6. Lecture materials of department.

3. Practical part

Task 1. To seal a root canal by the method of “single cone”.

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to seal a root canal by the method of “single cone”.

Time for one student: 20 minutes.

It is necessary to select a pin of the proper size. The size of the cone and the shape of the preparation are closely matched. At first, one injects sealer in the root canal with help of rotary paste-filler. Then root canal pin is entered, earlier dipped in sealer, and is pushed to the top of the root canal by using tweezers. An excess of filling material is removed from the tooth cavity. An excess of gutta-percha pin is cut by heated instrument (excavator).

Task 2. To seal a root canal by the method of cold lateral condensation of gutta-percha.

Place of classes: phantom classroom of Therapeutic Dentistry Department.

Object: dental phantom model.

Task for students: to seal a root canal by the method of cold lateral condensation of gutta-percha.

Time for one student: 20 minutes.

 Select a GP master point to correspond with the master apical file instrument. The point should be notched at the correct working length to guide its placement to the apical constriction. Coat walls of canal with sealer. Insert the master point, covered in material. Condense the GP laterally with a finger spreader to provide space into which accessory points can be inserted until the canal is full. Excess GP cut off with a hot instrument.

Individual Student Task.

Thermomechanical compaction of gutta-percha. Thermoplasticized injectable GP. Thermafil.

4. Seminar discussion of theoretical questions and practical work.

Questions:

1. Materials for root canal filling. Their classification.

2. The principles of root canal filling by hardening pastes.

3. General characteristics of fillers.

4. Methods of root canal filling by gutta-percha pins.

5. Filling method of “single cone”.

6. Multi-cone methods of root canal filling:

a) Method of cold lateral condensation of gutta-percha;

b) Method of warm lateral condensation of gutta-percha;

7. Thermomechanical compaction of gutta-percha.

5. A student must know:

1. Materials for root canal filling. Their classification.

2. The principles of root canal filling by hardening pastes.

3. General characteristics of fillers.

4. Methods of root canal filling by gutta-percha pins.

5. Filling method of “single cone”.

6. Multi-cone methods of root canal filling:

a) Method of cold lateral condensation of gutta-percha;

b) Method of warm lateral condensation of gutta-percha;

7. Thermomechanical compaction of gutta-percha.

6. A student should be able:

1. To prepare a different types of filling materials for root canal.

2. To seal root canal by hardening paste.

3. To seal root canal by gutta-percha pins.

**Methodical recommendation for students of propaedeutic dentistry**

**Faculty of dentistry UzhNU**

**Lesson № 30 (2 hours)**

Topic: Module 4

Aim: to complete theoretical part and show main manual skills of module four.

Task: be able to show main manual skills of module four.

1. Theoretical part:

1. Cavity of the tooth, its topography in the incisors, canines, premolars and molars of the upper and lower jaw.

2. Technique and stages of opening of the cavity of the tooth, tools, errors and complications.

3. Trepanation of crowns of premolars: features, stages, technique, tools, mistakes and complications.

4. Trepanation of crowns of molars: peculiarities, stages, technique, tools, mistakes and complications.

5. Trepanation of crowns of canines: features, stages, techniques, tools, mistakes and complications.

6. Trepanation of crowns of incisors: features, stages, technique, toolkits, errors and complications.

7. The concept of amputation and exterpation of pulp. Methods, tools.

8. Tool fracture in the root canal: reason, prevention, removal methods.

9. The technology of expansion of the root canal and apical foramen: the toolkit, the sequence of its use, errors and complications.

10. Modern toolkit for expansion and purification of root canals. Step-Back and Crown-Down technology.

11. Medical irrigation of root canals: tools, medicines, appliances.

12. Method of superimposition of the devitalization paste: tools, medicines, mistakes and complications.

13. Mummification and impregnation: concepts, meanings, indications, positive and negative sides of the method.

14. Root canal silvering by Pekker method: indications, complications.

15. Mummification of pulp: indications, techniques, complications. Mummifying paste.

16. Classification of materials for sealing of root canals. Requirements for them, comparative characteristics.

17. Technique of sealing with phosphate cement, zinc oxide-eugenol, etc.

18. Solid materials (pins) for sealing root canals, their varieties, positive and negative aspects. Modern technologies, their general characteristics.

19. Depophoresis of root canals: indications, contraindications, technique.

20. Errors and complications during endodontic treatment and sealing of root canals.

2. References:

1. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.- 2013. - 304 p.

2. Dental Instruments: A Pocket Guide to Identification/ Melanie Mitchell// Lippincott Williams & Wilkins. – 2011. – 591 p.

3. Oxford Handbook of Clinical Dentistry - 4th Ed. – 2005. – 413 p.

4. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. – 192 p.

5. Basic Guide to Dental Materials /Carmen Scheller-Sheridan / John Wiley & Sons. - 2013. - 288р.

6. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

7. A Clinical Guide to Endodontics - 4th Edition - P Carrotte - BDJ Books. – 2014. – 179 p.

8. Lecture materials of department.

3. Practical part:

1. To distinguish by type, structure, purpose endodontic tools.

2. To make access to the tooth cavity of different groups of teeth (trepanation).

3. To make cavities of teeth of different groups on phantoms or removed teeth.

4. Impose a devitalising paste.

5. Apply a temporary bandage.

6. To expand the entrance of the root canals.

7. Make amputation, extirpation of the pulp.

8. To carry out the necrotised pulp from the root canal.

9. Treat the root canal using the "Step-Back" technique.

10. Treat the root canal using the "CROWN-DOWN" technique.

11. To make the chemical expansion of the root canal.

12. Make the preparation of the root canal with rotary endodontic tools.

13. Prepare the root canal for sealing.

14. To seal the root canal with different groups of materials.

15. Prepare plastic non-hardening material for temporary sealing of the root canal.

16. Prepare plastic hardening material for temporary sealing of the root canal.

17. To seal the root canal with the help of a siler and a gutta-percha method of the central pin.

18. Prepare a mummifying mixture and mummify the contents of the root canal

19. Make the silvering of the root canal

20. Make the preparation of atypical carious cavities

21. Make the preparation and fixation of intra-channel pin constructions

22. To prepare and fix parapulpar pin constructions

23. Restore with filling materials atypical carious cavities

LITERATURE:

1. Anterior Anatomy and the Science of a Natural Smile TechBook//John C. Ness.- 2007.- 149 p.

2. Basic Guide to Dental Instruments/ Carmen Scheller-Sheridan// John Wiley & Sons.-2013. - 304 p.

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6. Dental Hygiene - E-Book: Theory and Practice/ Margaret Walsh, Michele Leonardi Darby// Elsevier Health Sciences. - 2014. –192 p.

7. Illustrated Dental Embryology, Histology, and Anatomy, - 4th Edition/ Margaret J. Fehrenbach. – 2016. – 336p.

8. Operative Dentistry: in 2 volumes. – Volume 1: Endodontics / А.В. Борисенко – Київ: Медицина, 2016. – 384 с.

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11. Wheeler's Dental Anatomy, Physiology, and Occlusion// W.B. Saunders. – 2003. - 523 p.

12. Woelfel's Dental Anatomy// Rickne C. Scheid/ Lippincott Williams & Wilkins.- 2012. - 504 p.