

**Ministry of Health of Ukraine
National Medical University Named after O.O. Bohomolets
Department of Forensic Medicine and Medical Law**

N.M. ERHARD

**FORENSICS EXAMINATION OF A LIVING
PERSON ON THE TRAUMA SEVERITY.
DEFINING STATE OF HEALTH.
EXAMINATION OF DISPUTABLE SEXUAL
STATES AND SEXUAL ASSAULT**

Methodologic materials



Educational edition

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These methodologic materials contain tasks for a practical class in English, based on a competent approach with students of higher medical and justice education institutions with III-IV level of accreditation in module topic № 4 «Forensics» discipline.

These methodologic recommendations can be of use for medical workers, employees of all entities of Ministry of Internal Affairs, students, interns, teaching professors of higher Medical and Law educational institutions

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Conclusions

A modern approach for materials presentation for a practical seminar (class) with specifically identified core concept that correlated to the topic and also by using interactive cooperation with students (using clinical cases and illustrations), new technologies – will not only bring audience to life but also is highly suitable to motivate millennials and “Z” generation representatives to attend class.

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1. FORENSICS EXAMINATION OF A LIVING PERSON ON THE TRAUMA SEVERITY. DEFINING STATE OF HEALTH. EXAMINATION OF DISPUTABLE SEXUAL STATES AND SEXUAL ASSAULT.

1.1. FORENSICS EXAMINATION OF A LIVING PERSON ON THE TRAUMA SEVERITY

Task № 1. Define terms given:

Bruise – is
An injury is
Fracture – is

Task № 2. Finish a sentence:

From a Forensics point of view a physical trauma is a.....

Task № 3. Fill in the table with a classification of types of injury and fill in examples:

Injury's classification	Examples

Task № 4. Fill in the table with specifics of different types of trauma from dull objects and fill in examples:

Mechanism of injury	Characteristics	Examples
Punch		
Compression		
Strains		
Friction		

Task № 5. List a sequence of actions required during the conduct of a Forensics examination of victim (accused) person:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Task № 6. Fill in the table with morphologic characteristics of soft tissue hemorrhages:

Type of injury	Morphologic characteristics
Mucosal hemorrhage	
Bruise	
Hematoma	

Task № 7. Using examples given in the description of bruises on below presented pictures (1, 2, 3, 4, 5, 6) describe the injury presented:

Examples description sequence: «In the left periorcular area (*localization*) an uneven oval bruise (*shape*), which is 2×3 cm in size (*size*), with its center being blue-violet in color and sides having a shade of green (*color*)»

« On the front surface of the upper third of the right thigh (*localization*) strip shaped bruise (*shape*), being 1.5×2 cm in size (*size*), greenish color in the center with a yellowish shade on the periphery (*color*)».

« On the back of the middle third of the left tibia (*localization*) oval shaped bruise (*shape*), being 1×1.5 cm in size (*size*), yellow in color (*color*)».

« On the lateral surface of the upper third of the right shoulder (*localization*) oval shaped bruise (*shape*), being 2×1.5 cm in size (*size*), yellow in color (*color*)».

« On the anterior surface of the chest on the right in the III intercostal space alongside the middle-clavicular line (*localization*) oval shaped bruise (*shape*), being 1.5×1.5 cm in size (*size*), greenish color in the center with a yellowish shade on the periphery (*color*)».

« On the back surface of the back on the left in the III intercostal space along the shoulder line (*localization*) oval shaped bruise (*shape*), being 1×1 cm in size (*size*), greenish color in the center with a yellowish shade on the periphery (*color*)».

« In the frontal area on the left, at a distance of 3 cm from the median line of the body and 1 cm from the body of the left eyebrow (*location*) oval shaped bruise (*shape*), being 1.5×1.5 cm in size (*size*), yellow in color (*color*)».



Pic. 1



Pic. 2

Forensics examination of a state of health

Simulation – відтворення неіснуючої хвороби recreation of an unexisting disease

Dissimulation – hiding disease presence

Aggravation – exaggeration of symptoms or manifestations of an injury

Artificial diseases –injuries created artificially using non hazardous methods

Selfharm – physical harm to ones own body

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Thank you for your attention!

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2. Mental health issues

An injury that led to a development of a mental trauma (panic attacks, PTSD)

3. A health disorder which led to a stable loss of labour capacity on one-third or over 33%

4. Pregnancy termination

Injury that led to pregnancy termination at any time or part of the term

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5. Permanent facial distortion

Smoothing of an injury - a decrease of pathologic changes with time or due to non-surgical measures (applicable for bruises and abrasions)

If a surgery is required (plastics of facial scars) than the face can be considered distorted **permanently**.

Attention! Facial distortion can only be state by the **court**

Forensics expert defines:

- type of injury
- its characteristics and mechanism
- defines whether a defect is permanent or not

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Pic. 3



Pic. 4



Pic. 5



Pic. 6

Task № 8. Using examples given in the description of abrasion on below presented pictures (1, 2, 3) describe the injury presented:

Examples of abrasion description sequence: «On the front of a left knee (location) lineal abrasion (shape), 1,5×2 cm in size (size), abrasion's surface is covered with a crust brown in color (color), placed on the level of undamaged surrounding skin (crust's location) »

« On the front surface of the upper third of the right thigh (localization), a strip shaped abrasion (*shape*), being 1.5×2 cm in size (*size*), the surface of the abrasion is covered with a crust of brown color (color), located at the level of the intact surrounding skin (location of the crust) ».

«On the back of the middle third of the left shin (localization) of a strip shaped abrasion (shape), 1 × 1.5 cm (in size), the surface of the abrasion is covered with a crust of brown color (color) located above the level of the intact surrounding skin with a certain peripheral detachment (location of the crust) ».



Pic. 1



Pic. 2



Pic. 3



Pic. 4

Task № 9. Fill in the table with physical injury criteria according to the trauma severity:

Physical harm classification	Criteria	Examples
Minor trauma		
Minor trauma with a short-term health disorder		
Moderate trauma		
Severe trauma		

Task № 10. Read the task and determine the mechanism and the prescription of damages, as well as substantiate the degree of their severity «A male citizen, Mr. M., 40 years old, seeking medical care, went to the emergency care room, having complaints of pain in the area of his left ear. From the anamnesis it is known that two days ago his wife, on the ground of jealousy, bit his left ear. At inspection: in the area of the left ear is imposed bandage with antibacterial ointment. After removing the bandage, it was fixed: the upper half of the auricle is absent, on the other part - the wound surface with uneven shroud-shaped coarse festonchymal edges of light red color and yellowish cartilage shreds up to 0.6 cm. The wound covers the upper part of the helix and antihelix, as well as part of the antitragus. The earlobe is not damaged. The hearing is saved. Re-examination in a month: the wound healed completely, the ear flap is deformed - the upper edge is absent. In other areas of the posterior margin, rough dense wrinkled scars of pinkish-blue color. A team of investigators should identify and substantiate issues that fall within the competence of forensic experts in relation to the task indicated by the issuer of the task; a group of forensic experts should provide reasoned answers to the questions posed to them by a group of investigators and a medical examination of victims to define severity of trauma; a group of victims should indicate any damage that they have in accordance with the method of describing the injury (anatomical localization, shape, size, color, etc.) ".

Severe non-lifethreatening trauma also includes:

1. Loss of any organ (or part of the body) or loss of organ's function (loss of sight, hearing, speech, limbs functions, sexual/reproductive function)

Loss of sight – complete or partial blindness of both eyes or lowering of the eyesight to an extent that a victim sees the distance less than 2 m

Loss of sexual/reproductive function – loss of an ability to participate in a coitus or to conceive, or deliver an offspring

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Hearing loss - complete or partial hearing loss of both ears or a victim hears only at a distance of 3-5 cm shape his/her ear

Speech loss – a person cannot explain in an understandable way

Loss of a limb (arm, leg) — their separation from the main body or loss of their function

Attention! Considering anatomical loss of an arm or a leg you need to understand that an amputation is valid only as low as elbow or knee

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- 14. Injury involving damage to pleura, pericardium, or mediastinum's tissue
- 15. Damage to the abdominal wall with a penetration into the abdominal cavity
- 16. Opened fractures of diaphysis of humerus, femur, tibia
- 17. Pelvic fracture
- 18. Severe shock, massive bloodloss, coma, gas/fat embolism
- 19. Injury of a major blood vessel

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- 20. All types of mechanical asphyxia
- 21. Thermal burns of III-IV degree with the surface affected being over 15% of overall body surface
- 23. III degree burns— over 20% of overall body surface
- 24. II degree burns — over 30% of overall body surface
- 25. Poisoning from substances of any origin with local or generalized activity

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1.2. DEFINING STATE OF HEALTH.

Task № 1. Define terms given:

- Aggravation - is
- Simulation - is ...
- Dissimulation - is ...

1.3. EXAMINATION OF DISPUTABLE SEXUAL STATES AND SEXUAL ASSAULT.

Task № 1. Define given terms:

- Sexual maturity is
- Hermaphroditism. - is...

Task № 2. List issues that are solved by a forensic expert during an examination on sexual condition:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Task № 3. Fill in the table with sexual maturity traits for both male and female:

Male	Female

Task № 4. List the signs of passing through labor:

1. _____
2. _____
3. _____
6. _____
7. _____
8. _____

Task № 5. List signs of a criminal abortion:

1. _____
2. _____
3. _____
4. _____

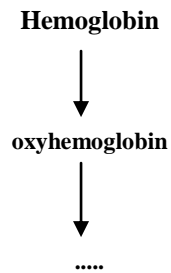
Task № 6. Give examples of methods used to cause a criminal abortion:

1. _____
2. _____
3. _____
4. _____
5. _____

Task № 7. Fill in the table with features of sexual assaults/crimes

Sexual crime	Features
Rape	
Child sex abuse	
Sexual intercourse with a person who is sexually immature	

Task № 8. Draw a scheme of hemoglobin oxidation in hemorrhages:



Injuries considered to be a severe trauma:

1. Opened and closed calvarial bones fractures
 2. Opened and closed skull base fractures
- Attention!** Fractures of facial bones are not in this group
3. Severe brain concussion
 4. Isolated intracranial heamorrhage
 5. Vertebrae's body fracture
 6. Onesided fracture of an arch of I or II cervical vertebrae or a fracture of a dens of axis

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7. Cervical vertebrae dislocation
8. Closed injury of a cervical spinal cord
9. A fracture of one or a few pectoral or lumbar vertebrae
10. Closed injury of pectoral, lumbar or sacral segments for spinal cord
11. Injury of a wall of pharynges, larynges, trachea, main bronchi, esophagus
12. Closed hyoid fractures
13. Closed and openned injury of endocrine glands of the kneck (thyroid, parathyroid, tymus)

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MODARETE TRAUMA CRITERIA

1. **Absence of life threatening trauma**
2. **A stable loss of one third of labour capacity** (loss of labour capacity from 10% to 33%)
3. **Long-lasting health disorder** (over 3 weeks)

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Severe trauma criteria

1. **Life-threatening conditions or non-life-threatening conditions that have severe manifestations and consequences**

Life-threatening severe trauma – is an injury that may cause a life-threatening conditions in clinical stage or after different amount of time

Non-life-threatening trauma – is an injury that are severe due to its manifestation and its end result/consequences

2. **A stable loss of labour capacity of more than 33%**

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2. An example of a PowerPoint presentation for a practical lesson

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Slide 1

FORENSICS EXAMINATION OF THE SEVERITY OF PHYSICAL DAMAGE.

Forensics examination of the severity of physical damage is conducted according to:

- Criminal Code of Ukraine (CCU)
- Criminal Procedure Code of Ukraine (CPCU)
- Civil Code of Ukraine (CCU)
- “Rules of forensics examination of severity of physical damage” (Order of the MOH of Ukraine from 17.01.1995 № 6 “On the development and modernization of Forensics Service of Ukraine”).

Slide 2

Forensics examination is conducted based on:

- Judgement of examining court.

Forensics medical examination is conducted based on:

- referral from prejudicial inquiry bodies (investigator);
- request of the victim party;
- Court judgment (judge's order).

Examination is conducted:

- in the forensics bureau in the department for victims, accused and others;
- in courthouse, medical facilities, detention facilities.

Attention! A forensics examination of people under 16 years of age is conducted only with a presence of a parent/guardian/teacher.

Slide 3

JUDICIAL CLASSIFICATION OF TRAUMA SEVERITY

1. Minor trauma
2. Moderate trauma
3. Severe trauma

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STAGES OF FORENSICS (MEDICAL) EXAMINATION OF A LIVING PERSON

1. Familiarization with case specifics that are included in the investigating judge's judgement or in the investigators referral.
2. Familiarization with medical documentation attached to the case.
3. Gathering patient's history of a person examined.
4. Medical examination.
5. All needed tests to be conducted if needed.
6. All results of examinations/tests conducted to be recorded into forensics documentation (Expert's conclusion or expert test's conclusion)

Slide 4

MINOR TRAUMA CRITERIA

1. **Absence of life threatening trauma**
2. **By the longevity of health disorders:**
 - 2.1. Minor trauma
(longevity of health disorder lasts between 6 to 10 days)
 - 2.2. Minor trauma with a short-term health disorder
(longevity of health disorder lasts between 10 to 21 days)
3. **Loss of general labour capacity is up to 10 %**

Slide 14

Abrasion

Abrasion description sequence :

1. Location
2. shape
3. Size
4. Color
5. Crust's location



Example:

«On the front of a left knee (*location*) lineal abrasion (*shape*), 1,5×2 cm in size (*size*), abrasion's surface is covered with a crust brown in color (*color*), placed on the level of undamaged surrounding skin (*crust's location*)»

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Issues solved by forensics examination

1. Presence of damage and its location
2. Type of physical damage (body injury)
3. Mechanism of trauma and its characteristics
4. Prescription of injury
5. Trauma severity

Slide 5

Wound

Wound description sequence:

1. Location
2. shape
3. Size
4. Wound edges
5. Wound ends
6. Tissues septs and hair bridges
7. Wound bed
8. Length orientation in comparison to the anatomical axis of the area



Slide 12

Physical damage clasification

1. Based on the factors of the environment trauma can be divided on:

1.1. Trauma from physical factors:

- a) **mechanical trauma** (dull and sharp objects, firearms, mechanical asphyxia)
- b) **thermal trauma** (high and low temperature)
- c) **electric trauma** (atmosphere and technical electricity)
- d) **radiation trauma** (ionizing radiation)
- e) **barotrauma** (atmospheric pressure)

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1.2. trauma from biological factors: infections, bacteriological toxins or forced food/water removal, due to which a health condition or death arises.

1.3. trauma due to psychology factors: phycotrauma from fear, startle, strong anxiety.

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3. Based on trauma characteristics:

3.1. Anatomical:

- Bruise
- Abrasion
- Wounds
- Bone fracture

3.2. Functional (pain, shock, brain concussion)

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2. Based on trauma results it can be divided on:

2.1. Lethal

2.2. Nonlethal (severe, moderate and minor)



Slide 8

Bruise

Bruise description sequence:

1. Localization
2. shape
3. Size
4. Color



Example:

«In the left periocular area (*localization*) an uneven oval bruise (*shape*), which is 2×3 cm in size (*size*), with its center being blue-violet in color and sides having a shade of green (*color*)»

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