

**MINISTRY OF PUBLIC HEALTH OF UKRAINE
BUKOVINIAN STATE MEDICAL UNIVERSITY
DEPARTMENT OF OBSTETRICS, GYNECOLOGY AND PERYNATOLOGY**

**ALGORITHMS OF PROFESSIONAL MEDICAL
MANIPULATIONS PERFORMING IN OBSTETRICS AND
GYNECOLOGY**

(Educational manual)

Chernivtsi – 2025

UDC 618.1/2-072(075.8)
IO 64

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IO 64 Yurieva LN Algorithms of Professional Medical Manipulations Performing in Obstetrics and Gynecology: Educational manual / [LN Yurieva]; Eng. Bukovinian State Medical University - Chernivtsi: BSMU, 2025. (1,39 MB)

Educational manual was designed to improve the acquisition of practical knowledge, skills and abilities of professional medical manipulations performing in Obstetrics and Gynecology of the medical undergraduates of the 4th-6th years of study in the specialty Medicine second (master's) educational degree.

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Recommended by the Academic Council at Bukovinian State Medical University as a Educational manual (protocol №9 _dated _29/05/2025).

ISBN 978-617-519-189-7

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PREFACE

Qualitative training of future doctors is an extremely important issue worldwide and in Ukraine, in particular.

Special emphasis is placed on algorithms for the implementation of professional competencies in gynecology (clinical breast examination, speculum examination, obtaining swabs for bacterioscopic exam, obtaining swabs for cytological exam, bimanual exam, rectal and rectovaginal exam) and obstetric (external obstetric examination, pelviometry, Leopold's maneuvers, auscultation of the fetus Internal obstetric inspection, the technique of early «skin-to-skin contact» (SSC) of newborn infants) which facilitate the formation of a systematic approach to diagnosis and treatment in higher education students.

Methods for performing practical skills are presented in the form of algorithms. The structure indicates the purpose of performing a particular manipulation, the necessary tools, technique, sequence of execution, and interpretation of results, which will give the user of the manual confidence in the correctness of the work performed and the ability to independently reproduce a specific type of medical and diagnostic work.

Educational manual was designed to improve the acquisition of practical knowledge, skills and abilities of professional medical manipulations performing in Obstetrics and Gynecology of the medical undergraduates of the 4th-6th years of study foreign students taking their medical education in the Ukraine in the specialty Medicine second (master's) educational degree.

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CLINICAL BREAST EXAMINATION (CBE)

The **CBE** is carried out by **gynecologist or GP**.

This palpation examination is part of the annual check-up.

The best moment to perform a breast exam is right after the end of the menstruation, when benign lesions are smaller and less tender.

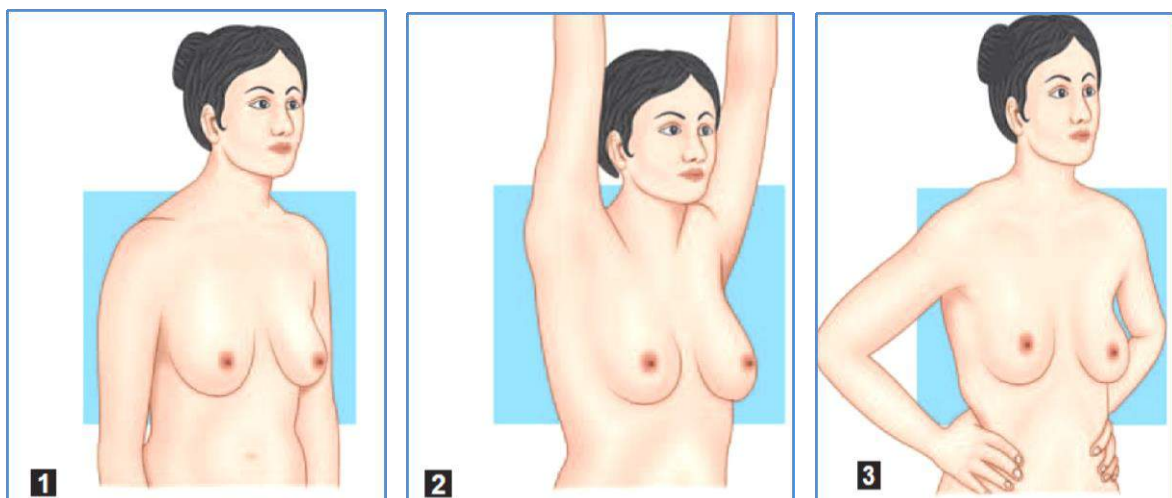
The efficacy of CBE is dependent upon a number of factors that include proper positioning of the patient, thoroughness of the search and accurate movement of the fingers on each breast for a duration of 5 minutes.

The patient should be examined in both the upright and supine positions. She must be disrobed from the waist up allowing the examiner to visualize the breasts thoroughly.

The physical exam of the breast divided into three components:

- inspection,
- palpation
- lymph node exam.

INSPECTION: should be performed while the patient assumes three standing positions (Fig. 1): arm relaxed at the sides (1), arms over the head (2) allowing the lower part of the breast to be inspected and hands pressed firmly on the waist (3) (to contract the pectoral muscles).



Inspection with the arms at her sides

Inspection with the arms raised above the head

Inspection with hands at the waist (with contracted pectoral muscle)

Fig. 1. Examination of the breasts - standing positions.

During the inspection of the breasts observe:

- **size** (it is considered normal if one gland is slightly larger);
- **shape**,
- **any asymmetric findings, especially:**
 - swelling, asymmetry or changes in breast contour: size or shape,
 - changes in skin color (darkness, redness or abnormal vascularity),
 - dimpling or puckering of the skin,
 - nipple-areolar complex dimpling, excoriation, crust retractions or abnormal direction,
 - «lemon peel» or "orange peel" symptom (Peau d'orange),
 - spontaneous nipple discharge specifically if bloody.

PALPATION

Patient Positioning: patient supine.

Ask the patient to lie supine on the examination table with both hands behind the head and repeat the palpation on both sides.

Palpation Technique

Correct palpation technique:

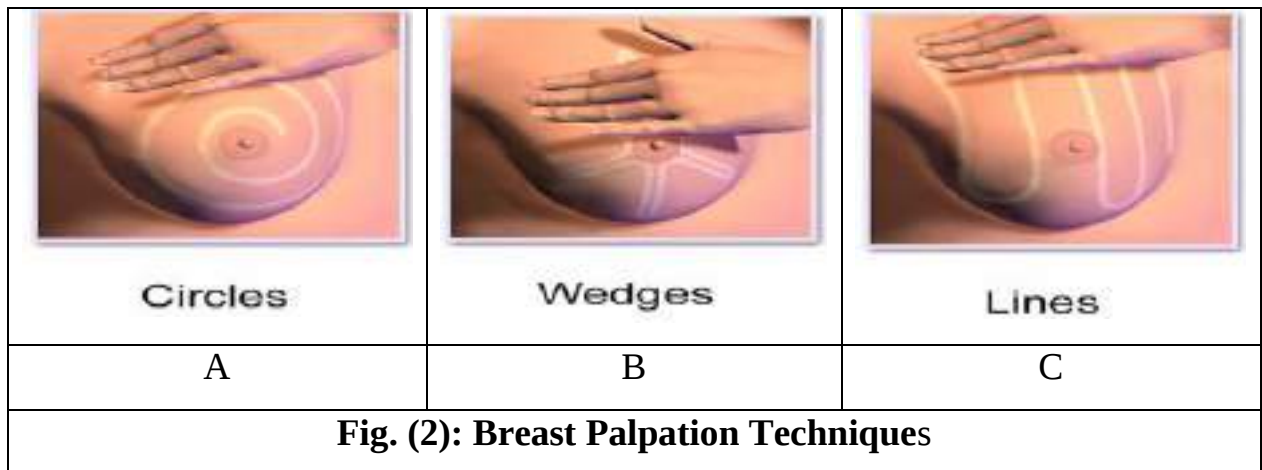
- Palpation is done by using the fingers pads.
- One hand palpates the breast for any abnormalities while the other one sustains and stabilizes the breast.
- It is important to thoroughly and systematically palpate all the areas of the breast, including the tail of spence in the upper outer quadrant.

Breast Palpation Techniques (Fig. 2):

- moving **in circles** starting from the nipple and going towards the periphery (Fig. (1), A);
- moving following imaginary lines that divide the breast **in wedges**, always from the nipple outwards (Fig. (1), B);
- the “lawnmower” method where the hand moves up and down, from one side to the other, **describing vertical lines** all across the breast (Fig. (1), C).

Remember to press the nipple against the chest wall to elicit any discharges if not spontaneously present.

If tenderness is present on one side, always start the exam on the nontender side.



When palpating the breasts, it is important to pay attention to the following features of any identified masses:

- Shape.
- Consistency.
- Relation to the skin.
- Changes over time.
- Tenderness.

Example of a conclusion: 2-cm, well-circumscribed, dense mass in the right mammary gland, located 3 cm from the edge of the areola, at the 6:00 position.

LYMPH NODE EXAM

Patient Positioning: patient sitting upright on the examination table.

Correct Technique.

1. With support the arm on the examined side ask the patient to fully relax the arm.
2. The arm is held in slight abduction at an angle of approximately 45° degrees.
3. Palpate (Fig. 3) the axilla (4), supraclavicular (5) and infraclavicular lymph nodes, too, with your free hand using the tips of your 2nd, 3rd and 4th fingers.

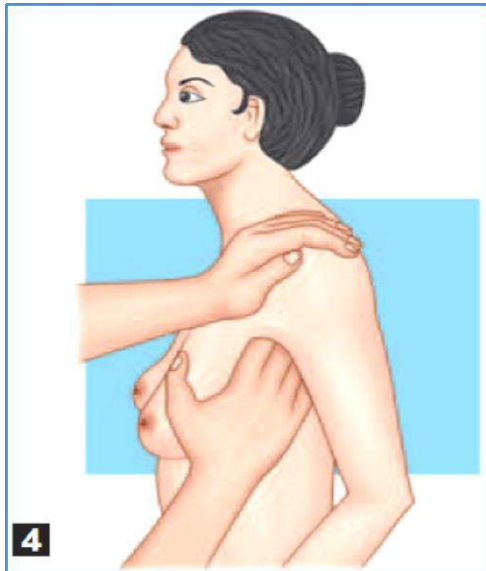


Fig. 3. Lymph Node Correct Technique Palpation of the axillary (1) and supraclavicular (5) lymph nodes

Fig. 1, 3 from Textbook of Gynecology Enlarged & Revised Reprint of Sixth Edition/ - p. 117.
ISBN 978-93-5152-068-9

SPECULUM EXAMINATION

Speculum examination done in all sexually active patients to obtain specimens for diagnostic testing, and to visualize and inspect the vagina and vaginal portion of the cervix. This examination should preferably be done prior to bimanual examination.

Equipment:

- gloves,
- lubricant,
- speculum (for example Cusco's speculum).

Speculum examination technique:

1	Ask the patient to lie on the couch on their back, with knees bent and apart (Dorsal position).
2	Put on gloves.
3	Lubricate the speculum
4	By 1 st and 2 nd fingers of left hand part the labia
5	Gently insert the speculum with your right hand:
6	Insert closed blades in a downward motion, then rotated to 90° (Fig.4, Fig.5).
	
Fig. 4. Insertion of Cusco's speculum.	
7	Open up the blades slowly, until cervix visualized & turn lock to secure in place.



Fig. 5. Open blades of Cusco's speculum.

9	Look for:
	➤ the size of the cervix (normal, hypertrophic, atrophic); ➤ the shape of the cervix (conical, cylindrical) ; ➤ the shape of the external ostium (dot-like, in the form of a slit); ➤ color of the mucous membrane of the cervix (pale pink, cyanotic, hyperemic); ➤ the presence of pathological processes on the cervix (Erosions, Ulcerations, Growths, Inflammation, Bleeding, Polyps, Ectropion); ➤ type of cervical and vaginal secretions (mucous, cheesy, foamy, greenish-purulent, bloody, with an unpleasant odor and without an odor).
10	Unscrew lock
11	Slowly withdraw speculum, closing blades and rotating 90°
12	Vaginal wall inspection The condition of the vagina is assessed by the folding of the walls, the color of the mucous membrane, the presence of pathology (ulcers, growths, tumors, etc.).

OBTAINING SWABS FOR BACTERIOSCOPIC EXAM

Material is taken from the urethra, cervical canal and posterior vaginal fornix for bacterioscopic examination, which is used to diagnose inflammatory processes, as well as to determine the type of microbial factor and the degree of vaginal cleanliness, which is necessary before gynecological operations and diagnostic manipulations.

Equipment:

- gloves,
- -lubricant,
- speculum (for example Cusco's speculum), the urogenital probe (type A) (Fig. 6);
- Slide with the marks "C", "V", "U" (Fig. 7);
- Wooden Ayre's spatula (Fig. 8);
- Forceps for gauze.



Fig. 6. Urogenital probe (type A).



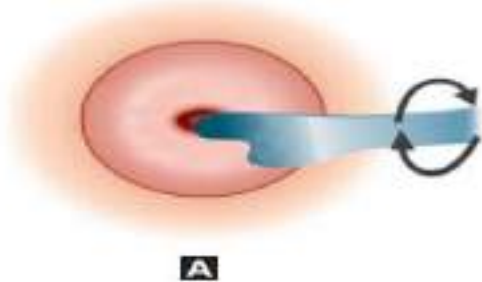
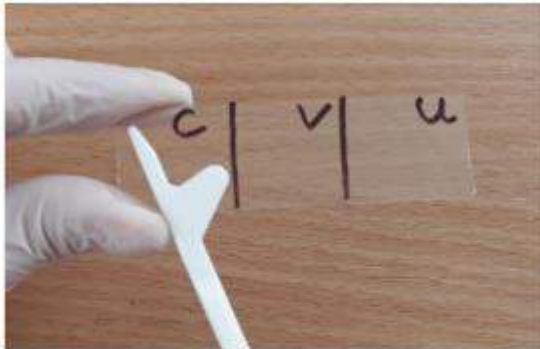
Fig. 7. Slide with the marks "C", "V", "U"

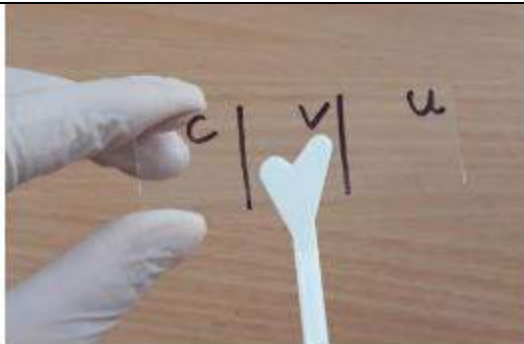


Fig. 8. Cervical scrapers, Ayre spatula

Technique

1	Ask the patient to lie on the couch on their back, with knees bent and apart (Dorsal position).
2	Put on non-sterile gloves.
3.	With a sterile gloved finger, the urethra is squeezed against the symphysis pubis from behind forwards (Fig. 9).
	 Fig. 9 Technique: urethra squeezing.
4.	Remove the first portion of discharge from the urethra with a cotton ball (Fig. 10).
	 Fig. 10 Technique: removing of the first portion of discharge from the urethra.
5.	Insert the urogenital probe (type A) into the urethra by 1.5-2 cm, while simultaneously pressing lightly on the side and back walls, and take the material (Fig. 11).
	 Fig. 11 Technique: taking material from urethra
6.	Spread the material with a thin stroke on to a slide marked "U" (Fig. 12)

	 Fig. 12 Tachnique: spreading of the material on to a slide marked "U"
7.	Part the labia using your left hand (with using 1s ^t and 2 nd fingers)
8.	Insert closed blades in a downward motion, then rotated to 90° and open up.
	 Fig. 13 Insertion of Cusco's speculum
9	The material from the cervical canal collected using Ayre's spatula. Pass the curved tip of the Ayre's spatula into the cervical canal, rotate it for 180-360° to taking the material
	 Fig. 14: Collection of smear: (A) Using Ayre's spatula from external os.
10	Spread the material with a thin stroke on to a slide marked "C" (Fig. 12)
	 Fig. 15 Tachnique: spreading of the material on to a slide marked "C".
11.	With the opposite wide end of the Eyre spatula (E2 - classic type), take

	material from the posterior vaginal fornix.
12.	Spread the material with a thin stroke on to a slide marked "V" (Fig. 16)
	 Fig. 16 Technique: spreading of the material on to a slide marked "V".
10	Unscrew lock
11	Slowly withdraw speculum, closing blades and rotating 90°.

Identification of Organism in Slide

- at points "C" and "U" - the causative agent of gonorrhea (intracellular diplococci);
- at point "V" - coccal flora (staphylococci, streptococci, enterococci), rod flora (Doderlein's lactic acid bacteria), trichomonads, mycelium of fungi of the genus *Candida*;
- at all points - a certain number of leukocytes and epithelium (depending on the presence of an inflammatory process).

Depending on the microflora and the nature of the cellular content	
4 degrees of vaginal cleanliness are distinguished:	
I degree.	Epithelial cells and a pure culture of facultative lactobacilli are found in the smears.
II degree.	A small number of leukocytes, rods, less facultative lactobacilli, other saprophytes are present, mainly gram-positive cocci.
III degree.	A large number of epithelial cells, leukocytes. Facultative lactobacilli in small quantities, diverse coccal flora.
IV degree.	Epithelial cells, many leukocytes, diverse gram-negative and gram-positive flora with the complete absence of vaginal rods, lactobacilli.

OBTAINING SWABS FOR CYTOLOGICAL EXAMINATION

A smear for cytology is a screening method for diagnosing cervical cancer.

The main purpose of taking a cytological smear (syn. Papanicolaou analysis, Pap test) is to detect changes in cervical cells, which can later develop into cancerous formations.

Benefits: The objective of screening is to reduce the incidence and mortality from cervical cancer.

Pap smear test has been effective reducing the incidence of cervical cancer by 80% and the mortality by 70%.

Intervals : All sexually active women should be screened starting from the age of 21 years or after 3 years of vaginal sex with no upper age limits. Screening should be yearly till the age of 30.

Thereafter, it should be done at an interval of every 2–3 years after three consecutive yearly negative smears (ACOG 2024).

The high risk group should be screened with **HPV DNA testing combined with cytology.**

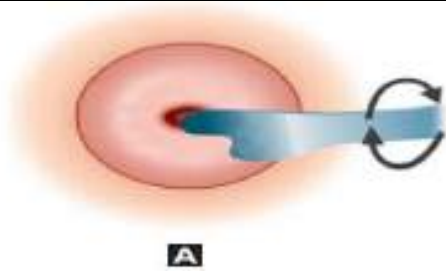
The negative predictive value of one negative HPV DNA test and two negative cytology tests are almost 100%.

The collection of biomaterial is carried out before colposcopy, the use of iodine and acetic acid preparations.

Equipment:

- gloves,
- Cusco's speculum
- Slide;
- Wooden Ayre's spatula (Fig. 8);
- a Wallach brush (Fig. 18).

Technique

1	Ask the patient to lie on the couch on their back, with knees bent and apart (Dorsal position).
2	Put on non-sterile gloves.
3.	Part the labia using your left hand (with using 1 st and 2 nd fingers)
4.	Insert closed blades in a downward motion, then rotated to 90° and open up.
	 Fig. 13 Insertion of Cusco's speculum
5	The material from the cervical canal collected using Ayre's spatula. Pass the curved tip of the Ayre's spatula into the cervical canal, rotate it for 180-360° to taking the material. Whole of the squamocolumnar junction has to be scrapped to obtain good material.
	 Fig. 14: Collection of smear: (A) Using Ayre's spatula from external os.
6	Spread the material with a thin stroke on to a slide.
	 Fig. 17 Tachnique: spreading of the material on to a slide.
7	The material so collected should be immediately spread over a microscopic slide and at once put into the fixative ethyl alcohol (95%) before drying.
8	After fixing for about 30 minutes, the slide is taken out, air dried and sent to the laboratory with proper identification. The slide so sent is stained either with Papanicolaou's method.

TECHNIQUE OF LIQUID-BASED CYTOLOGY	
1	The material from the cervical canal collected using a Wallach brush (Fig. 18). Pass the curved tip of the Ayre's spatula into the cervical canal, rotate it for 180-360° to taking the material. Whole of the squamocolumnar junction has to be scrapped to obtain good material.
	 Fig. 18. Collecting of material from the cervix by Wallach brush
2.	To snips the tip of the collection device into the vial containing ethanol-based preservative [Figure 19, 20] which preserves and fixes the sample simultaneously.
	 Fig. 19. Liquid-based cytology (SurePath) vial. Fig. 20. Tip of collection device (Cervex-Brush) in the vial containing ethanol.
3.	Sample vials along with a requisition form containing complete details of the patient are received at the laboratory.
4	Unscrew lock
5.	Slowly withdraw speculum, closing blades and rotating 90°.

Reporting system: Reporting system on the grading basis (Papanicolaou's) is replaced by some with two remarks only—normal or abnormal.

Abnormal cytology is an indication of colposcopic evaluation and directed biopsy.

BI-MANUAL EXAM

The information obtained by bimanual examination includes:

- Palpation of the uterus
- Palpation of the uterine appendages
- Pouch of Douglas.

Technique

1. Ask the patient to lie on the couch on their back, with knees bent and apart (Dorsal position).
2. Treat the external genitalia with a disinfectant solution.
3. Put on gloves.
4. Part the labia using your left hand (with using 1st and 2nd fingers)

5. PALPATION OF THE UTERUS

The two internal fingers, which are placed in the anterior fornix exert a pushing force at the uterocervical junction in an upward direction towards the lumbar vertebrae and not towards the symphysis pubis. The pressure exerted by the left hand should be not only downwards but from behind forwards. The uterine outline between the two hands can thus be palpated clearly **as anteverted**.

If the uterus is **retroverted**, it will not be so felt but can be felt if the internal fingers push up the uterus through the posterior fornix. After the uterine outline is defined, one should note its position, size, shape, consistency and mobility. **Normally**, the uterus is anteverted, pearshaped, firm and freely mobile in all directions.

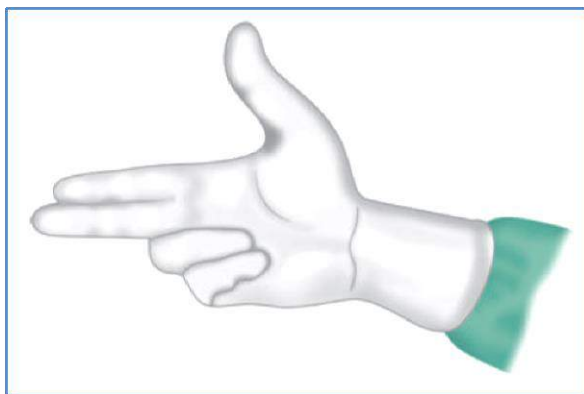


Fig. 21 Position of the fingers during bimanual examination

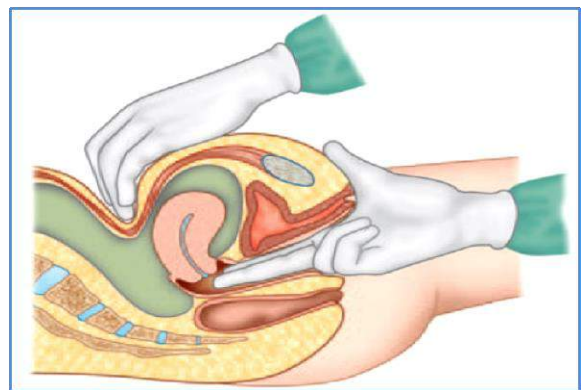


Fig. 22 Bimanual examination of the uterus

6. PALPATION OF THE UTERINE APPENDAGES

For palpation of the adnexa, the vaginal fingers are placed in the lateral fornix and are pushed backwards and upwards. The counter pressure is applied by the abdominal hand placed to one side of the uterus in a backward direction.

The normal uterine tube cannot be palpated.

A normal ovary may not be felt. If it is palpable, it is mobile and sensitive to manual pressure.

7. THE POUCH OF DOUGLAS

The pouch of Douglas can be examined effectively through the posterior fornix. Normally, the fecal mass in the rectosigmoid or else the body of a retroverted uterus is only felt. Some pathology detected in the pouch of Douglas should be supplemented by rectal examination.

8. Gently move the cervix from side to side to check for cervical tenderness (important sign with ectopic pregnancy or pelvic inflammatory disease).

9. Remove fingers gently and inspect for discharge or blood.

Interpretation of examination results

Bimanual examination assesses:

1. Position of the uterus. Normally, the uterus is located in the pelvis, tilted anteriorly (anteversio). The cervix and body of the uterus form an angle that is open anteriorly (anteflexio). There is no displacement of the uterus along the horizontal axis. The normal vertical position of the uterus is characterized by the location of the external opening of the cervical canal at the level of the interspinous line.

The position of the uterus can change relative to the frontal axis (retroversio, retroflexio), relative to the horizontal axis (latero positio dexter et sinister), relative to the vertical axis (elevatio, prolapsus, descensus).

2. The size of the uterus:

- normally the length of the uterus together with the cervix is 7-10 cm. In a nulliparous woman, it is somewhat smaller than in a woman who has given birth.
- enlargement – fibroid, pregnancy. The uterus becomes palpable during normal pregnancy, with the top emerging above the pelvic brim at approximately 12-14 weeks gestation.
- atrophy - in infantilism, in the climacteric period. Reduction of the uterus is possible, atrophy of the uterus is observed in tumors (fibroid, uterine cancer), during.

3. The shape of the uterus:

- normally - pear-shaped, somewhat flattened from front to back.
- spherical - during pregnancy, the uterus is, with tumors in shape.
- irregular – leiomyoma.

4. The consistency of the uterus:

- normally – firm;
- soft - during pregnancy and metroendometrial disease;
- dense - with myomas. In some cases, the uterus may experience fluctuations in the uterine wall, which is typical for hematometra and pyometra.

5. Uterine mobility:

- normally - freely mobile in all directions;
- excessive mobility - uterus prolapses;
- limited mobility - infiltrates around the uterine tissue, uterine tumors, etc.

6. Uterine tenderness:

- normally the uterus is painless on palpation.
- painful – in case of inflammatory diseases, complications of uterine fibroids, etc.

Uterine tumor (Fig. 22)

- Uterus is not separated from the mass.
- Movements of the mass felt per abdomen are transmitted to the cervix and vice versa, the exception being one of subserous pedunculated fibroid.

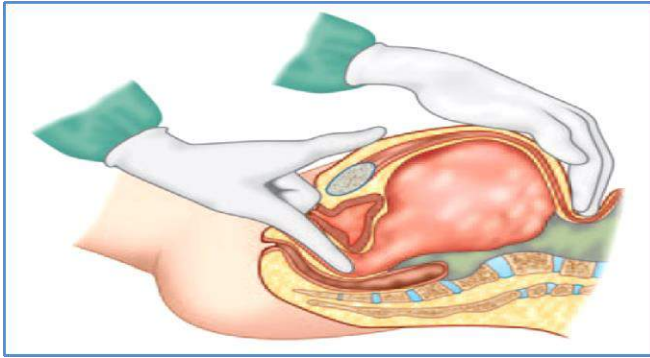


Fig. 22. Identification of an uterine tumor in bimanual examination

Assessment of the uterine appendages:

Unchanged **fallopian tubes** are thin and soft, normally not palpable.

In pathological conditions enlarged, limitedly mobile and painful (inflammatory processes, sactosalpinx, pyosalpinx and ectopic tubal pregnancy).

The ovaries are palpated to the right and left of the body of the uterus in the form of formations measuring 3x4 cm in size, almond-shaped, quite mobile and sensitive. Compression of the ovaries during examination causes a painful reaction, which, with good mobility, does not indicate the presence of an inflammatory process.

The ovaries usually increase before ovulation and during pregnancy.

During menopause, long-term amenorrhea, the ovaries decrease significantly.

Adnexal mass

- The uterus is separated from the mass (Figs 23)
- Movements of the mass (tumor) are not transmitted to the cervix, the exception being one if the mass is fixed with uterus.

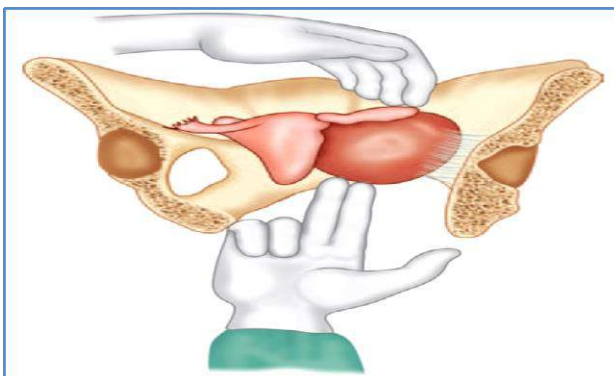


Fig. 23. Identification of an adnexal mass in bimanual examination

Assessment of the condition of the vaults. The vaults of the vagina are normally deep, free, painless. In pathological conditions (violated ectopic pregnancy, ovarian apoplexy) they can be shortened, drooping, and sharply painful.

RECTAL and RECTOVAGINAL EXAMINATION

Rectal examination can be done in isolation or as an adjunct to vaginal examination.

Indications of Rectal Examination

- Children or in adult virgins
- Painful vaginal examination
- Carcinoma cervix—to note the parametrial involvement (base of the broad ligament and the uterosacral ligament can only be felt rectally) or involvement of the rectum
- To corroborate the findings felt in the pouch of Douglas by bimanual vaginal examination
- Atresia (agenesis) of vagina
- Patients having rectal symptoms
- To diagnose rectocele and differentiate it from enterocele.

The lower bowel should preferably be empty.

The rectoabdominal procedure is almost the same as that of vaginal examination except that only the gloved index finger smeared with vaseline is to be introduced into the rectum (Fig. 24).

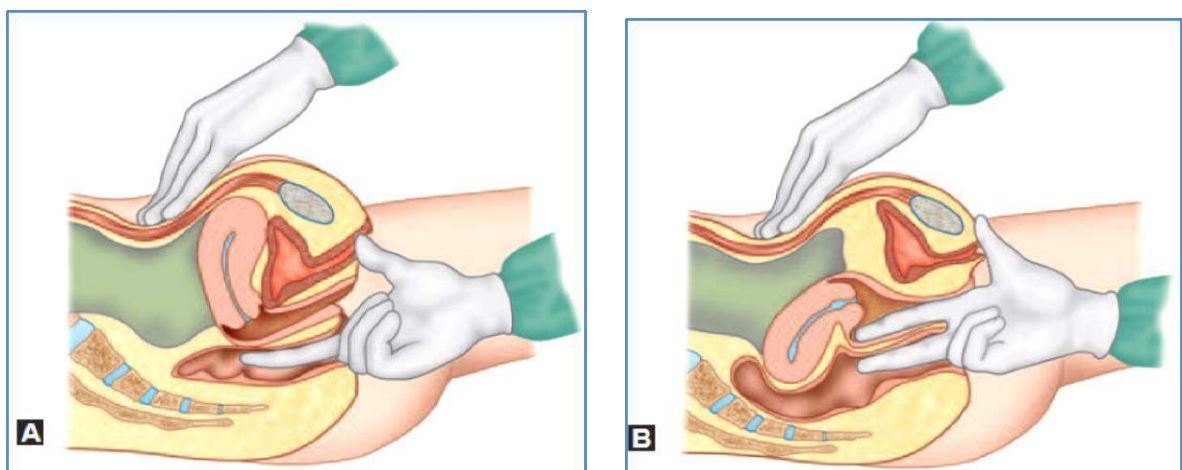


Fig. 24 Rectoabdominal (A) and rectovaginal (B) examination.

RECTOVAGINAL EXAMINATION: The procedure consists of introducing the index finger in the vagina and the middle finger in the rectum.

This examination may help to determine whether the lesion is in the bowel or between the rectum and vagina. Any thickening or beading of uterosacral ligaments or presence of endometriotic nodules are noted. **This is of special help** to differentiate a growth arising from the ovary or rectum (Fig. 24 B).

MEDICAL MANIPULATION IN OBSTETRIC

EXTERNAL OBSTETRIC EXAMINATION

PELVIOMETRY – measuring the size of the pelvis.

Purpose: to determine the shape and size of the pelvis, as the main part of the birth canal, in order to prevent the development of possible complications during pregnancy and childbirth.

Equipment: pelvimeter.

Performance conditions: during pelvimetry, the examinee lies on a couch (bed), namely, on her back, legs straightened.

The doctor is on the side of the woman, facing her.

The pelvimeter is held with the left and right hands by the corresponding branches, at the level of the buttons, and its scale is turned upwards.

The dimensions of the large pelvis

Four main dimensions of the pelvis are usually measured: three transverse and one direct.

Measurement of the Distantia spinarum

Distantia spinarum is the distance between the anterosuperior spines of the iliac bones. This dimension is equal to **25-26 cm**.



Fig. 1. Measurement of the distantia spinarum

Execution sequence:

1. Palpate the the anterior-superior spines of the iliac bones.
2. Put the buttons of the pelvimetr to the external edges of the anterior-superior spines of the iliac bones.
3. Evaluate the indicators of the pelvimeter scale.

Measurement of the distantia cristarum

Distantia cristarum is the distance between the most distant points of the iliac crests. This dimension makes **28-29 cm**.

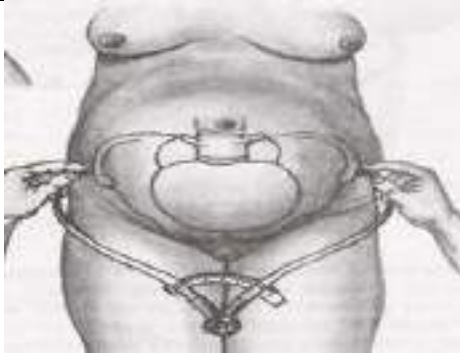


Fig. 2. Measurement of the distantia cristarum

Execution sequence:

1. After measuring the distantia spinarum, the buttons of the tape measure are moved along the external edge of the crests of the iliac bones until the greatest distance is determined.
2. Evaluate the indicators of the pelvimeter scale.

Measurement of the distantia trochanterica (Fig.3).

Distantia trochanterica is the distance between the greater trochanters. This dimension makes **30-31 cm**.

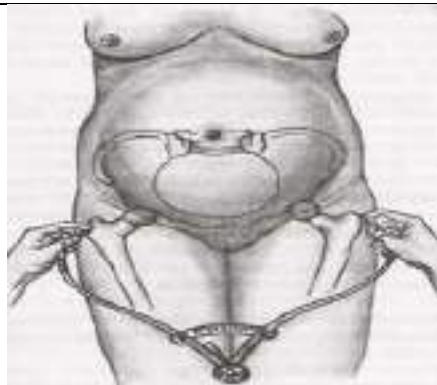


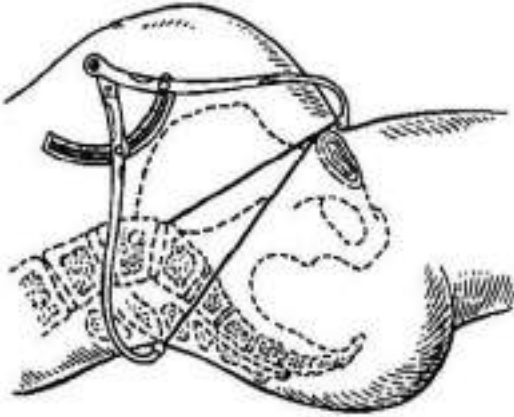
Fig. 3. Measurement of the distantia trochanterica

Execution sequence:

1. The most prominent points of the greater trochanters of the femoral bones are palpated.
2. Buttons of the pelvimeter are attached to them.
3. Evaluate the indicators of the pelvimeter scale.

Measurement of the conjugata exsterna

Conjugata exsterna (external conjugate) is the distance from the depression below the last lumbar spine to the middle of the upper anterior margin of the symphysis pubis. This dimension makes **20 -21 cm**.

 Fig. 4. Measurement of the conjugata externa	Performance conditions: - the woman is placed on her side; - the leg lying below is bent at the hip and knee joints, and - the leg lying above is straightened. Execution sequence: 1. One button of the pelvimeter is set in the middle of the superior-external border of the symphysis, the other button is pressed to the supersacral fossa, which is situated between the process of the fifth lumbar vertebra and the beginning of the first sacral vertebra (the upper corner of the Michaelis rhombus). The external conjugate is equal to 20-21 cm.
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Measurement of the conjugata diagonalis

Conjugate diagonalis – the distance from the inferior margin of symphysis to the most protrudent point of the sacral bone promontory (**Fig. 5**).

Performance conditions: the diagonal conjugate is measured by means of vaginal examination.

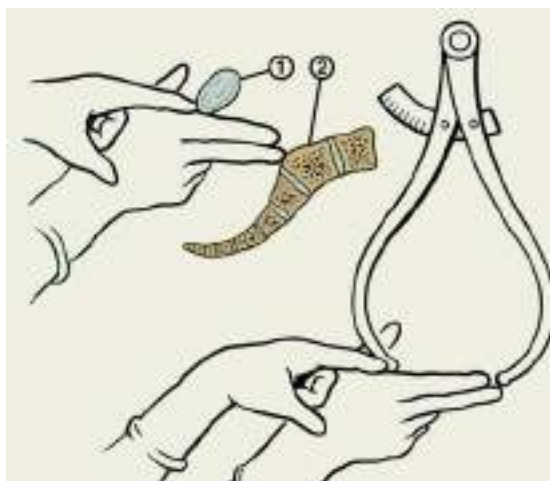


Fig. 5. Measurement of the diagonal conjugate

Diagonal conjugate measurement sequence:

- 1) Insert into the vagina, the index and middle fingers move through the sacral cavity to the promontorium;
- 2) The tip of the middle finger is fixed on the tip of the promontorium, and the edge of the palm rests on the lower edge of the symphysis.
- 3) The place where the doctor's hand touches the lower edge of the symphysis is marked with the finger of the other hand.
- 4) After the fingers are removed from the vagina, measure the distance from the tip of the middle finger to the marked point of contact of the rib of the palm with the lower edge of the symphysis with a pelvimeter or centimeter tape.

Normally, conjugata diagonalis **is 12.5-13 cm.**

If the tip of the sacrum cannot be reached with the end of the outstretched finger, the size of the diagonal conjugate is considered to be close to normal.

For clinical purposes, the **OBSTETRICAL CONJUGATE** is estimated indirectly; the methods are:

1. By **external conjugate**, which is measured by external pelvimetry (normally 20-21 cm). One should subtract 9 cm from the length of the external conjugate to assess the length of true conjugate. For example: 20 cm - 9 cm = 11 cm.
2. By **diagonal conjugate**. Normally diagonal conjugate measures 12,5-13 cm. To obtain the length of the obstetrical conjugate subtract 1.5-2 cm from the diagonal conjugate, depending on the circumference of the articulation radialcarpal (Solovyov's index): with a circumference of up to 16 cm - 1.5 cm, and at 16 cm and more - 2 cm. is direct size of the pelvis.

LEOPOLD'S MANEUVERS

I Leopold's maneuver (Fig. 6)

Purpose: to determine the height of the uterine fundus and the part of the fetus that is located in the area of the uterine fundus.

Execution sequence:

1. Place the palms of both hands on the uterus in such a way that they tightly cover its uterine fundus and areas of the uterine corners, and the fingers of the hands are turned with the nail phalanges towards each other.
2. By carefully pressing down, bring the fingers together, determine the height of the uterine fundus of the uterus.



Fig. 6. Conducting the I maneuver of Leopold

II Leopold's maneuver (Fig. 7)

Purpose: to determine the fetal lie, position and view of position.

Execution sequence:

1. The palms are placed on either side of the uterus, at the level of the navel.
2. Fixing the left hand on the right side wall of the uterus, carefully palpate (pressing) the left side wall of the uterus with the palm and fingers of the right hand, then fix the right hand on the left side wall of the uterus, and palpate with the palm and fingers of the left hand on the right side surface uterus

The back is recognizable by its wide and curved surface. Small parts are defined from the side opposite to the back in the form of small, mobile humps. If the back of the fetus is turned to the left side wall of the uterus - the position of

the fetus is the first, to the right side wall of the uterus - the position of the fetus is the second.



Fig. 7. Conducting the II maneuver of Leopold

III Leopold's maneuver (Fig. 8).

Purpose: to determine the nature of the presenting part of the fetus (presentation) and if the presentation is the cephalic one, then we determine the symptom of head ballot.

Execution sequence:

1. One hand (usually the right) is placed slightly above the pubic joint so that the thumb is on one, and the other four are on the opposite side of the lower part of the uterus.

2. With slow and careful movements, the fingers dip deep and cover the presenting part:

- a) palpation of a dense, rounded part of the fetus with clear contours, which is capable of balloting, indicates the cephalic presentation. If the head floats, it means that it is above the plane inlet to the small pelvis. If the head does not float, it means that it is either a small or a large segment in the plane inlet to the small pelvis.

- b) palpation of a less dense, voluminous part, without clear contours, not able to ballot - characteristic signs of pelvic presentation;

- c) the presenting part is not palpable above the entrance to the small pelvis - the position of the fetus is transverse or oblique.



Fig. 8. Conducting the III maneuver of Leopold

IV Leopold's maneuver (Fig. 9).

Purpose: to determine the degree of insertion of the head into the pelvis.

Execution sequence:

1. The doctor turns to face the woman's feet.
2. The palms of the hands are placed on both sides of the lower part of the uterus (the fingers of the hands are turned with the nail phalanges to each other and to the entrance to the pelvis) between the presenting part and the upper branches of the pubic bones. Carrying out a sliding movement on the head up and in the direction of oneself, the location of the hands is evaluated:

a) the hands of the obstetrician diverge - the head is a small segment at the entrance to the small pelvis;

b) the obstetrician's hands converge - the head is a large segment at the entrance to the small pelvis.



Fig. 9. Conducting the IV maneuver of Leopold

FETAL AUSCULTATION

The heart activity of the fetus is determined with an obstetric stethoscope *after 20 weeks of pregnancy*. The stethoscope is placed in the place where the fetal heartbeat can be most clearly heard, perpendicular to the anterior abdominal wall. The wide end of the stethoscope canister is tightly pressed to the belly of the pregnant woman, the examiner puts his ear to the other end of the stethoscope (do not hold the stethoscope with your hands while listening) (Fig. 10).

Sound phenomena emanating from the fetus include: fetal heart tones, umbilical cord noise, dull, non-rhythmic, shock-like movements of the fetus.

The state of the fetus is also determined by heart tones, which is of particular importance during labor.



Fig. 10. Listening to the fetal heartbeat with an obstetric stethoscope

The number of fetal heartbeats is counted within ***1 minute***.

The normal fetal heart rate is ***110-170 bpm***. Heart tones are double, rhythmic, do not coincide with the pulse of the pregnant woman. The heartbeat is most clearly heard from the side of the back of the fetus.

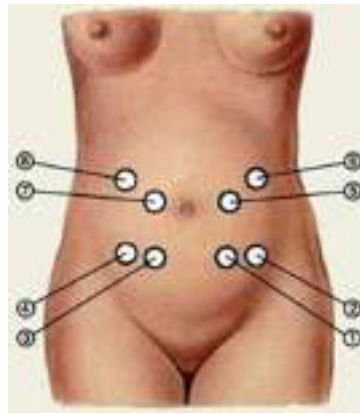


Fig. 11. Points for listening to the fetal heartbeat

- 1 - cephalic presentation, I position, anterior view** - below the navel, left, closer to the linea alba;
- 2 - cephalic presentation, I position, posterior view** - below the navel, left, lateralis from the linea alba;
- 3 - cephalic presentation, II position, anterior view** - below the navel, right, closer to the linea alba;
- 4 - cephalic presentation, II position, posterior view** - below the navel, right, lateralis from the linea alba;
- 5 - breech presentation, I position, anterior view** - above the navel, left, closer to the linea alba;
- 6 - breech presentation, I position, posterior view** - above the navel, left, lateralis from the linea alba;
- 7 - breech presentation, II position, anterior view** - above the navel, right, closer to the linea alba;
- 8 - breech presentation, II position, posterior view** - above the navel, right, lateralis from the linea alba.

INTERNAL OBSTETRIC INSPECTION

(vaginal investigation (VI))

The internal obstetric inspection (vaginal investigation (VI)) gives an information about the peculiarities of the soft tissues of parturient canal (elasticity, extensibility; as for the uterine neck — about its form, length, dilatation degree), fetal sac, presenting part, location of its main landmarks relative to the pelvis, about the bony pelvis (exostoses, deformations, promontory accessibility).

The internal obstetric inspection procedure:

- examination of the external genital organs, and their development;
- detection of the vaginal orifice width, lumen, vaginal walls stretch, presence of scars, inflammatory alterations, tumors, condition of the perineum, filling of the rectal ampulla and urinary bladder;
- detection of the form and depth of vaults;
- position of the vaginal part of the uterine neck, its form, size, consistency, and presence of scars and ruptures;
- the state of the internal and external mouths, their permeability (dilatation in centimeters), shortening or flatness of the neck; detection of the ratio of the vaginal part of the uterine neck to the cervical canal of the uterus;
- detection of fetal sac presence, form, and density; its condition during and between birth pains: fills only during parodynia, remains filled after parodynia, too tense, weakens or does not fill at all during parodynia (flat sac), etc.;
- detection of the character of the presenting part (head, but-tocks), location of its landmarks,
- establishment of the relation of the presenting part to a small pelvis plane (above the area of brim, in the area of brim with the major or minor segment, in the wide part of small pelvis, in the narrow part or the pelvic outlet);
- whether with-in the orifice there are detected loops of cord, placental tissue, small parts of fetus, etc.;

- detection of pelvic capacity, exostoses presence, and the size of diagonal conjugate;
- the character of vaginal discharge.

VI determines the degree of uterine neck maturity. The following notions are differentiated: immature, insufficiently mature, and mature uterine neck.

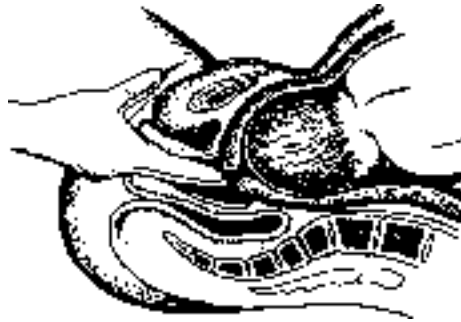


Fig.12 Vaginal investigation

**Determination of the ratio of the fetal head to the planes of the small pelvis
by the method of internal obstetric examination (Fig. 13)**

The head is above the area of brim.

The head is located high, it does not interfere with palpation of the unnamed line of the pelvis, promontory.

The pelvis is free, the sagittal suture is in the transverser size at equal distance from a symphysis and a promontory, the large and small fontanel - at one level.

The head in the area of brim with the minor segment. The sacral cavity is free, the promontory can be reached with a bent finger (if it is reachable). The inner surface of the symphysis is available for examination, the small fontanel below the large. The sagittal suture is located in a slightly oblique size.

The head in the area of brim with the major segment. The head occupies the upper third of the symphysis and sacrum. The promontory is inaccessible, ischial spines are easily palpated. The head is bent, the small fontanel is below the large one, the sagittal suture is in one of the oblique sizes.

The head at the wide part of the small pelvis. The head of the largest circle passed the plane of the wide part of the pelvis. Two thirds of the internal surface of the pubic joint and the upper half of the sacral cavity are occupied by the

head. IV and V sacral vertebrae and ischial spines are palpated freely. The sagittal suture is located in one of the oblique sizes, a small fontanel below the large one.

The head at the narrow part of the small pelvis. The two upper thirds of the sacral cavity and the entire internal surface of the pubic joint are occupied by the head. Ischial spines are difficult to reach. The head is close to the the pelvis floor, its internal rotation is not yet complete, the sagittal suture is in one of the oblique dimensions, close to direct. A small fontanel near the pubis below the large.

The head at the plane outlet of the pelvis. The sacral cavity is completely filled with the head, the ischial spines are not defined, the sagittal suture is located in the direct size of an exit from a small pelvis. A small fontanel near the pubis below the large.

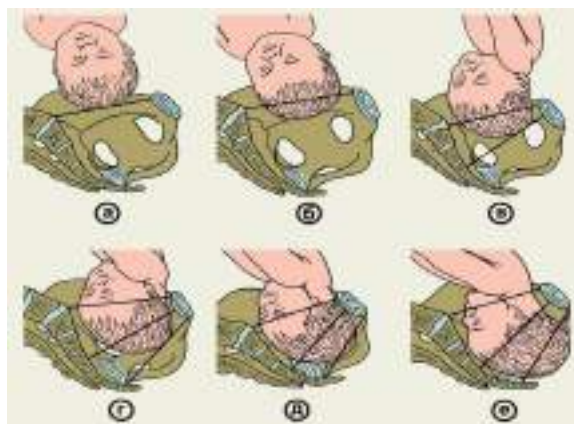


Fig. 13. The ratio of the fetal head to the planes of the pelvis is determined by internal obstetric examination in relation to the planes of the pelvis:

- a - head above the plane inlet;
- b - head with a small segment at the entrance to the small pelvis;
- c - the head of a large segment at the entrance to the small pelvis;
- g - head in a wide part of the cavity of the small ointment;
- d - head in the narrow part of the pelvic cavity;
- e - head at the plane outlet of the pelvis.

THE TECHNIQUE OF EARLY «SKIN-TO-SKIN CONTACT» (SSC) OF NEWBORN INFANTS

Skin-to-skin contact (SSC) supports infant physiology and transition to extra-uterine life and clinical stabilisation.

SSC prevents heat loss and promotes colonization of the child's body by the mother's microflora.

I. A baby is dried and laid directly on the mother's bare chest after birth, both of them covered in a warm blanket and left for **at least an 2 hour** or until after the first feed.

II. All mothers are encouraged to offer the first feed in skin contact when the baby shows signs of readiness to feed.

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