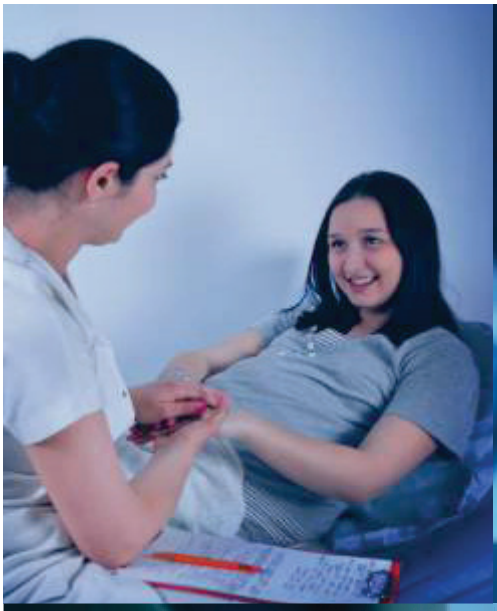


HCP CONNECTIONS | Nurses' Edition

For Indian healthcare professionals

An education initiative by Danone Nutricia India

Lower segment Cesarean section

-Perioperative Nursing Care

For Healthcare Professionals only

Dear Reader,

As science continuously evolves it is important that the healthcare professional keeps updated on the latest advancements in the field. Through continuous medical education programs one can maintain, develop, or increase the knowledge, skills and professional performance. We are glad to bring to you the new series of paramedic education programs which are designed keeping in mind your learning needs.

The current module will provide you basic knowledge on Lower segment Cesarean section nursing care. You may be involved in patient care during any of these phases of C-section i.e. pre-operative, intra-operative and post-operative period. This module will help you refresh knowledge on your roles and responsibilities in perioperative nursing care and in supporting the patients during their entire hospital stay.

Please note the content in this module is for general information and educational purpose only. While we strive to give you accurate, up to date information, follow your doctor's advice.

Thank you for participating. We hope you will enjoy learning with us.

NUTRICIA RESEARCH | DANONE NUTRICIA RESEARCH

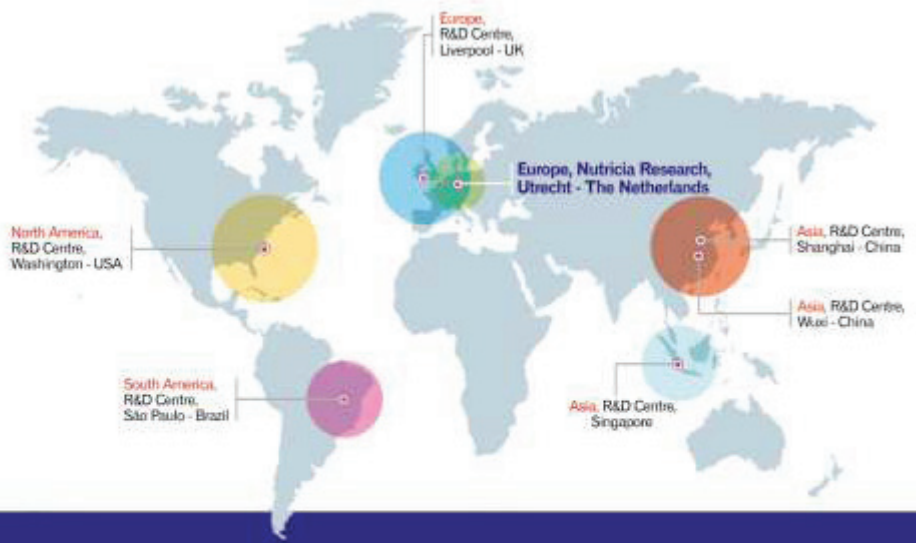
Science is at the heart of our nutrition and health commitment

Our focus

We focus our skills and resources on research and innovation to deliver evidence based specialized nutrition to infants, young children, patients and the elderly.

Our Expertise

Through our multi-disciplinary approach, we bring science, technology and consumer experience to develop the best products.



Our Presence:

The main centre for Nutricia Research is located at Utrecht Science Park, the Netherlands. In addition we have R&D satellites all over the world.

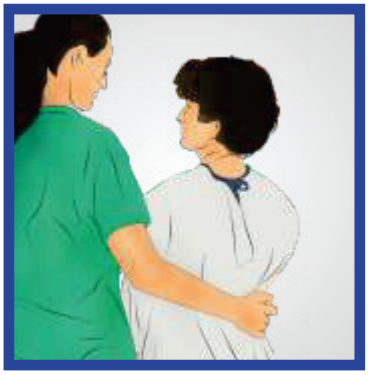
Visit us: www.nutriciaresearch.com

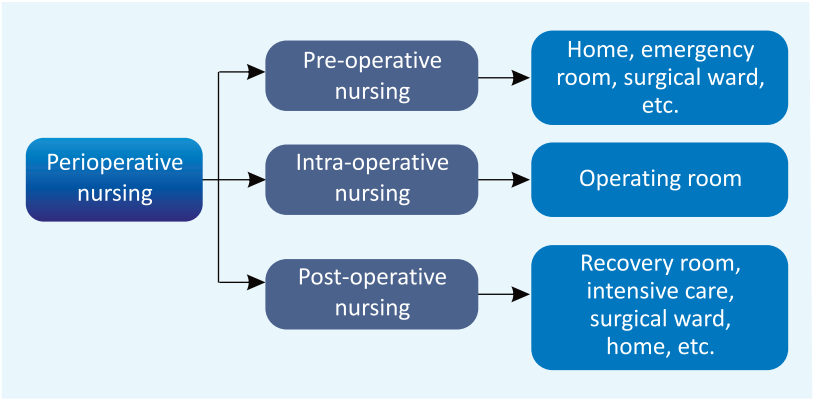
CONTENTS

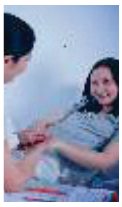
Dr. Shakuntla Kumar
MBBS, DGO, Dip Endoscopy, FICOG.
Consultant, Nulife hospital, Fortis hospital
Delhi

Perioperative nursing

Perioperative nursing includes pre-, intra- and post-operative phases of a patient's surgical journey.[1] A perioperative nurse provides care to patients who are in high-dependency situation. These nurses play an important role in supporting the patients during their perioperative experience.[2] You may be involved in pre-operative care to prepare the women for surgery or in post-operative care i.e. after surgery. As a scrub nurse or circulating nurse you may also be a part of the intra-operative care.







What is pre-operative period?

The pre-operative phase begins at the point in time when the patient or someone acting on the patients behalf makes the decision to have surgery. During the pre-operative phase, the patient is prepared physically and psychologically for the surgery. Diagnostic studies and medical regimens are initiated in the pre-operative period. Information obtained from the pre-operative assessment and interview in this period is used to prepare a plan of care for the patient. This phase ends when the patient is transferred to the operating room bed.[3]

Things to consider when you are preparing a woman for C-section[1,4-6]

1. Greet the patient by name and introduce yourself to the patient
2. Help the patient in answering the questions in consent form
3. Document height and weight of the patient (helps to calculate dose)
4. Obtain detailed patient history; ask about any previous surgeries and anesthetics, about medication allergies, etc.
5. Assess organ systems (pulmonary, hepatic and renal systems, central nervous and cardiovascular systems)
6. Monitor maternal vital signs and monitor fetal heart beat with cardiotocography (CTG) if required
7. Perform urine analysis. Any abnormalities must be reported immediately

Table 1. ASA physical status classification

Physical status	Definition
I	Healthy patient with no systemic disease
II	Mild systemic disease without functional limitations
III	Severe systemic disease associated with definite functional limitations
IV	Severe systemic disease that is an ongoing threat to life
V	Patient unlikely to survive for more than 24 hours with or without surgery
VI	Brain dead patient awaiting organ removal for donation

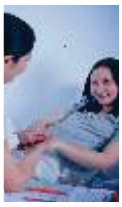
8. Assess physical status rating of the patient (Table 1)
9. Ensure that jewellery, hairpins, prosthetic devices, spectacles, contact lenses or hearing aids are removed and stored safely
10. Assist the woman in wearing appropriate clothing
11. Administer pre-operative medications
12. Check patient's identity, consent form, patient notes, etc, before the patient is transferred to theatre
13. Complete the pre-operative checklist in accordance with the hospital policy (Table 2)

Table 2. The preoperative checklist

Name and date of birth of the patient	Ensure that this is the correct patient with the correct notes. The date of birth acts as an additional check, as patients with the same name may be on the same ward
Consent	Written consent is preferred as it provides documentary evidence. The consent form should clearly state the operative procedure and should be signed by the patient and a qualified practitioner competent to carry out the procedure
Last ate or drank	Fasting times for fluids should not normally be less than 2 hours or more than 4 hours and that for solids fasting should be not less than 4 hours or more than 6 hours. Prolonged fasting preoperatively can result in dehydration, hypoglycemia and confusion. Reducing fasting times may improve wound healing, comfort and postoperative outcomes
Allergies	Identify allergies to minimize risk for patient during surgery
Jewellery	Some items of jewellery are worn for religious or cultural reasons and may cause offence if removed, so perioperative nurses must respect patient needs. Some body piercings may interfere with the surgery or compromise the airway and may be removed if required
Medical and nursing records	All medical and nursing records should accompany the patient to the operating theatre so that an accurate assessment of the patient's history can be made for the delivery of safe perioperative care

What is intra-operative period?

The intra-operative phase begins when the patient is transferred to the operating room bed. During the intra-operative period the patient is monitored, anesthetised, prepped and draped and the operation is performed. Nursing activities in intra-operative period center on patient safety, prevention of infection and



satisfactory physiologic response to anesthesia and surgical intervention. This phase ends when the patient is transferred to post-anesthesia care unit or other area where immediate post-surgical care is given.[3]

The surgery of C-section

Cesarean section (C-section) is the surgical procedure whereby the fetus is delivered through an incision in the uterus after 26 weeks of gestation.[7]

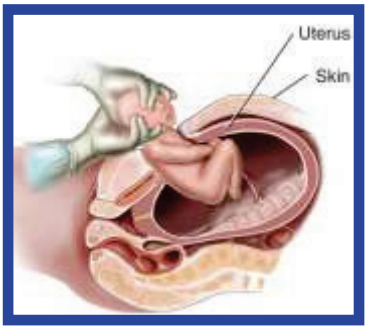
During a C-section surgery:[8]

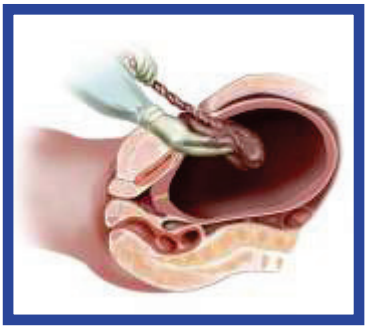
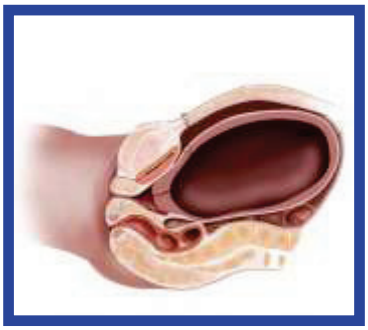
1. Paint the skin of the mother's abdomen with an antiseptic solution.
2. Cover the skin with drapes and sterile plastic and the surgeon begins to make the first cut.
3. The surgeon exposes the uterus by cutting through the exterior skin, through layers of fat, through the tough sheath covering the abdominal muscles and through the peritoneum.
4. The incision may be made vertically or horizontally. Once the uterus has been exposed, the surgeon begins the C-section itself.

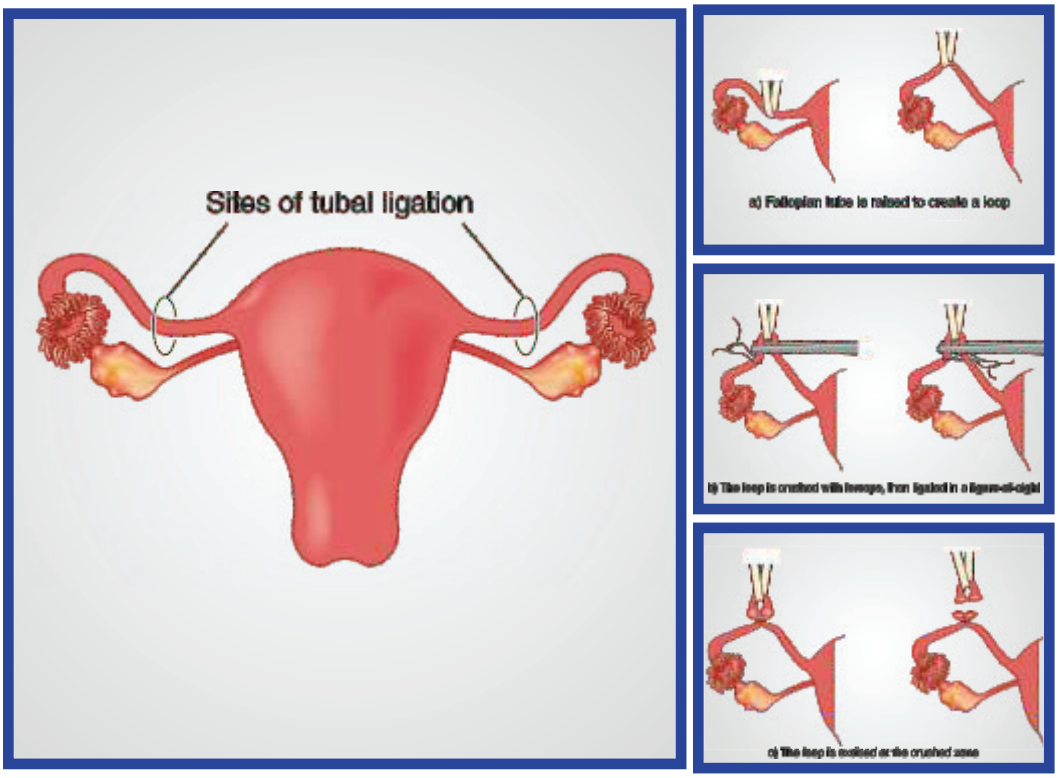
Two types of C-sections are performed; classical and lower segment transverse cesarean section (LSCS).[8]

LSCS alone:[8]

1. It is the most commonly performed type of C-section.
2. The incision here is made horizontally, in the shape of a curve located roughly at the top of the pubic hairline.
3. Once the uterus is exposed, the lower end of the uterus is cut in the curved shape. The baby can then be lifted out of the uterus.
4. Once the baby is removed, the uterus is stitched; the interlacing fibers of the uterine muscle contract and act as living ligatures to seal off the cut blood vessels.

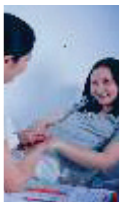


LSCS with ligation:

Tubal ligation is surgery performed to close a woman's Fallopian tubes. The Fallopian tubes connect the ovaries to the uterus. A woman who undergoes this surgery can no longer get pregnant.

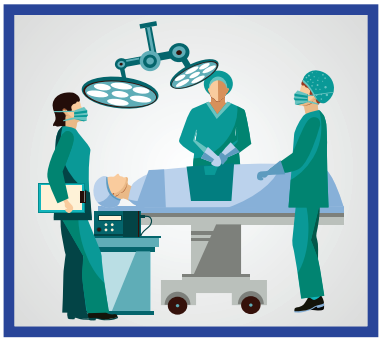
- Is usually performed after a C-section[8]
- It may consume a little more time, with no added risks and avoids the need for another abdominal procedure[8]
- Tubal ligation is also carried out by laparoscopy or hysteroscopy. After the laparoscope is inserted, the fallopian tubes are visualized and may be coagulated, sutured or ligated with silicone bands[9]

LSCS with myomectomy: Myomas are benign clonal tumors arising from the muscle cells of uterus, which contain increased amount of extracellular matrix. They can be asymptomatic or associated with serious complications such as cesarean birth, malpresentation and postpartum hemorrhage. Major complications, such as spontaneous abortion, preterm labor, abruption and postpartum hemorrhage are more frequently



related to the fact whether the placenta is adjacent to or in contact with the myoma.[10] Myomectomy during C-section avoids multiple surgeries. It reduces the risk of anesthetic complications, multiple surgeries, adhesions and intra- or postoperative hemorrhage, exorbitant costs of operative procedures and hospital stay.[11]

Know about the urgency of the surgery



Elective C-section: Elective C-section is a planned C-section where the decision is made during pregnancy and the operation is performed prior to the onset of labor. During an elective C-section, the nurse should ensure that no food or drink is given six hours prior to the operation. Metoclopramide may be administered to facilitate emptying of the stomach as this is delayed in pregnant woman.[12]

Emergency C-section: Emergency C-section includes procedures done within minutes to save the life of a woman or baby. A clear classification of degree of urgency is given below:[12]

- **Category I:** Immediate threat to the life of the woman or fetus – aim for delivery of baby within 20 minutes
- **Category II:** Maternal or fetal compromise which is not immediately life-threatening – aim for delivery of baby within 30 minutes
- **Category III:** No maternal or fetal compromise but needs early delivery. For this category the time to delivery must be decided by the obstetrician and communicated clearly to all those involved and documented in the health records.
- **Category IV:** Delivery timed to suit woman or staff with no urgency for delivery

In the operation theatre

Intra-operative phase begins when the woman enters the operation theatre. During the procedure, infection may result from the contact with contaminated instruments and instrumentation that fails to function properly can result in patient injury.[13] All personnel who enter the operation theatre should wear clean scrub outfits, hair covers and shoe covers, with additional sterile gowns, gloves, masks and eye protection during procedures. Strict surgical asepsis is mandatory throughout the surgical area and all persons in the operating room must be alert to possible contamination of sterile items.[5]

Role of a nurse during anesthesia

A perioperative nurse should know about medications used to provide general anesthesia and regional anesthesia, as well as agents that may be used to reverse the effects of these agents. It is important for a nurse to note that all inhalation agents are respiratory depressants and thus all the patients will require oxygen therapy and monitoring. All patients require assessment of their airway and ventilator status, and the nurse should encourage deep breathing. She should assist the anesthetist during preparation, induction, maintenance and emergence phases of the anesthesia.

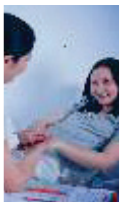
There are two kinds of paramedic staff in the operation theatre: Scrub nurse and Circulating nurse.

Who is a scrub nurse?

The scrub nurse is the one who assumes primary responsibility and accountability for all items used during the surgical procedure. The instrument nurse sets up all sterile instruments and supplies and hands instruments to the operating team anticipating their needs.[14]

Role of a scrub nurse[5,13,14]

1. Prepare and arrange sterile drapes, instruments and supplies
2. Sterilize instruments and devices used in the procedure
3. Assemble surgical instruments according to surgeon's preference and the requirements of surgical procedure
4. Assist the surgeon and assistants throughout the operation by providing the sterile instruments and supplies required
5. Anticipate surgeon's requirements and keep one step ahead of surgeon in passing instruments, sutures, sponges and receiving specimen throughout surgical procedure



6. Plan, organize and maintain neatness and tidiness of instruments in the sterile working area, mayo tray and trolley
7. During the procedure, instruments should be periodically wiped and/or rinsed with a moist sponge immersed in sterile water to prevent blood and other debris from drying on instrument
8. Used instruments should be returned to their sets, and instrument sets should be intact
9. Adhere to and maintain aseptic technique throughout the procedure
10. Monitor any breach in aseptic technique and initiate corrective action
11. Perform the surgical count with the circulating nurse
12. Handle the surgically removed human tissue and implanted items correctly
13. Document intra-operative nursing care

Your voice is important!

Always remember you are a patient's advocate. Speak up if the surgical counts are incorrect or if you see any breach in aseptic procedure! Many patient injuries can be prevented by voicing your concerns.

Who is a circulating nurse?

A circulating nurse is the one who is responsible to assist the scrub nurse by providing the sterile supplies needed for the operation, maintaining the integrity of the sterile area and safety of the patient throughout the operation.[14]

Role of a circulating nurse[14]

1. Assist with patient transfer and positioning before and after surgery. Cleans and helps in draping the patient
2. Record all vitals of the patients. Apply monitors to watch blood pressure, pulse, and level of oxygenation
3. Support the woman in positioning during insertion of spinal/epidural anesthesia
4. Check the operating theatre for the cleanliness, functioning of the electrical machines and other equipment before start of surgery
5. Ensure operating light for focus, intensity and movement
6. Prepare the correct position of operating table and always check that operating table is always locked

7. Assist scrub nurse by providing sterile items as needed according to surgeon preference and surgical requirements procedure
8. Aseptic technique must be maintained strictly throughout the surgical procedure
9. Fasten the scrub nurse, surgeon and other sterile team member's gown
10. Place stools and kick bucket in the suitable place
11. Make sure that the waste is handled correctly and is disposed to proper bins
12. Collect and separate discarded sponges by using forceps or gloves
13. All specimens must be handled correctly and confirmed with scrub nurse as per standard of practice
14. Perform final count of sponges, sharps and instruments with circulating nurse when surgeon starts the wound closure
15. Removes drape from patient's body and cleans the patient
16. Check that patient's dressing and drainage tube are well secured, if any
17. Open neck and back closure of sterile gown of surgeons and scrub nurse
18. Make sure that the baby after birth is kept warm and dry, all the nares of the baby are clear for breathing, assists the pediatrician in resuscitation and baby's first check-up is done, initiate interaction and skin to skin contact between mother and baby
19. Check and complete the recording of all necessary documents
20. Supervise and assist with safe transfer of patient to recovery room or intensive care unit

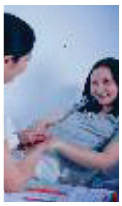
What is post-operative nursing care?

The post-operative phase begins with the patients transfer to the recovery unit and ends with the resolution of surgical squeal. Perioperative nursing activities in the immediate post-operative phase should focus on support of the patient's physiologic system.[3]

Role of nurse in post-operative care

Check for:[6]

- Redivac/s and record the amount and type of drainage
- Intravenous infusion and site and check the IV fluid prescription
- Patient-controlled analgesia/patient-controlled epidural analgesia prescription on pump
- Dose of previous analgesia administered, level of pain and prescription for further analgesia
- Epidural site
- Appropriate venous thrombo prophylaxis prevention in place
- Oxygen administration



- Patency of urinary catheter, color and amount of urine
- Wounds for ooze
- Amount of lochia: During the Cesarean birth, the surgeon thoroughly cleans inside the uterus. Therefore, there is less lochia flow than after a vaginal delivery. Check for postpartum hemorrhage if lochia flow is moderate or heavy
- If breastfeeding has been initiated

Optimum ventilation and hemodynamic status should be maintained.

- Place the woman in the semi-recumbent position
- Record blood pressure, temperature and pulse half hourly for 4 hours or until stable
- Encourage deep breathing, coughing and leg exercises
- Begin ambulation within 6–12 hours

Fluid and electrolyte balance should be maintained

- Administer the IV regimen as prescribed and document on the fluid balance record
- Administer regular anti-emetics
- Record initial micturition following removal of indwelling catheter (normally 12 hours post delivery)
- Catheterize the woman if she is unable to pass urine after 6 hours or bladder palpable following removal of catheter
- While indwelling catheter *in situ* measure urinary output on fluid balance record. Notify the obstetrician of any concerns regarding fluid balance

Comfort should be maintained

- Introduce sips of water as tolerated by the woman
- Introduce diet as desired
- Evaluate location/type of pain and administer analgesia as charted and assess effectiveness
- Assist with baby care and feeding
- Assist the woman to position herself whilst breastfeeding to maximize comfort

Breastfeeding after C-section

Breastfeeding should ideally start soon after the baby is born. Breastfeeding may be difficult after a C-section for many reasons. These include maternal

pain and fatigue, delayed access to baby, increased supplementary feedings, separation of mother and baby, blood loss causing anemia, mechanical problems in feeding, interference from medications, etc. Fortunately, although these can place significant barriers in front of the cesarean mom, many women manage to go on and breastfeed their child anyhow, in spite of the difficulties. Breastfeeding immediately after a C-section is possible, but may require help.[15,16]

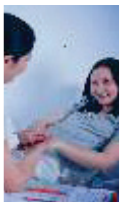
Role of nurses:

- Inform the mother about the advantages of breastfeeding to herself and her baby
- Aid the mother in her first contact with the baby and reassure the mother who has a C-section birth, or a premature or sick infant, that she too can nurse
- Teach her how to position the baby and help her in managing breastfeeding difficulties
- Help breastfeeding to continue by providing frequent maternal-infant contact during the mother's hospital stay

The nurse's role in support of breastfeeding varies with the time and place where patient care is provided. In each setting, however, the nurse plays a significant role in helping the mother to begin breastfeeding and to enjoy it, at the same time providing her infant with optimum nutrition for his/her early growth and development.

References

1. Glimour D. Perioperative care. Available at http://www.us.elsevierhealth.com /media/us/ samplechapters/9780702027574/9780702027574.pdf. Accessed on November 25, 2016.
2. Richardson-Tench M, Gillespie B. Perioperative nursing. Chapter 1. In: Perioperative Nursing: An Introductory Text. 2009. Elsevier. Pg:1–19.
3. Jones and Bartlett. Introduction to perioperative nursing. Chapter 1. In: Essentials of Perioperative Nursing.2009. Medical. Pg:1–10.
4. Litwack K. Preoperative Assessment and Care. Chapter 1. In: Clinical coach for effective perioperative nursing care. 2009. Medical. Pg:1–28.
5. Stilo K. Perioperative nursing. Chapter 41. In: Tabbner's Nursing Care: Theory and Practice, 6th ed. 2013. Elsevier. Pg:963–979.
6. Caesarean Section (CS) – Pre, Peri and Post-Op Care. Available at http://nationalwomenshealth .adhb.govt.nz/Portals/0 /Documents/Policies/Caesarean%20Section_.pdf. Accessed on November 25, 2015.
7. Kock JD, Van der Walt C. Maternal and Newborn Care: A Complete Guide for Midwives and Other Health Professionals. Juta and Company Ltd, 2004 - Health and Fitness.
8. Moore MC, de Costa CM. Cesarean Section: Understanding and Celebrating Your Baby's Birth. JHU Press, 01-Dec-2004 - Health & Fitness.
9. Suzanne C. O'Connell Smeltzer, Brenda G, et al. Brunner & Suddarth's Textbook of Medical-surgical Nursing, Volume 1. Lippincott Williams & Wilkins, 2010 – Medical.
10. Agarwal K. Cesarean Myomectomy. South Asian Federation of Obstetrics and Gynecology. 2010;2(3):183–185.
11. Awoleke JO. Myomectomy during Caesarean Birth in Fibroid-Endemic, Low-Resource Settings. Obstet Gynecol Int. 2013;2013:520834.
12. Clinical guideline for emergency caesarean section. Available at http://www.rcht.nhs.uk /DocumentsLibrary/ RoyalCornwallHospitalsTrust/Clinical /MidwiferyAndObstetrics/EmergencyCaesarianSectionClinicalGuidelinesFor.pdf. Accessed on November 25, 2015.
13. Goodman T, Spry C. Prevention of infection: Preparation of instruments and items used in surgery: Sterilization and disinfection. Chapter 3. In: Essentials of Perioperative Nursing. Jones & Bartlett Publishers, 2013 – Medical. Pg: 37–60.
14. Manual of nursing policies and procedures. Available at http://www.moh.gov.sa/depts/NursingDepts/ Policiesandprocedures/Inhospitals/ Documents/ORN.pdf. Accessed on November 25, 2015.
15. KMom. Breastfeeding After A Cesarean. Available at http://www.plus-size-pregnancy.org/CSANDVBAC /bfaftercesarean.htm#. Accessed on November 25, 2015.
16. Breastfeeding - when to start. Available at https://www.betterhealth.vic.gov.au/health/healthyliving /breastfeeding-when-to-start. Accessed on November 25, 2015.
17. Auerbach KG. The role of the nurse in support of breast feeding. J Adv Nurs. 1979;4(3):263–285.



1. Perioperative nursing includes_____ phases of a patient's surgical journey.

a. Pre-operative
b. Intra-operative
c. Post-operative
d. All of the above

2. Before C-section surgery, the fasting time for solids should be _____

a. Not less than 4 hours or more than 6 hours
b. Not less than 2 hours or more than 4 hours
c. Not less than 6 hours or more than 8 hours
d. None of the above

3. Which one of the following is not included in pre-operative checklist?

a. Consent
b. Surgical count
c. Allergic history
d. Check medical and nursing records

4. What is the role of a scrub nurse in operation theatre?

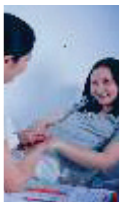
a. Prepare and arrange sterile drapes, instruments and supplies.
b. Sterilize instruments and devices used in the procedure.
c. Assemble surgical instruments according to surgeon's preference and the requirements of surgical procedure.
d. All of the above

5. What is your role as a nurse in post-operative care

a. Maintaining fluid and electrolyte balance
b. Maintaining ventillation
c. Maintaining comfort of the patients
d. All of the above

Answers: 1: d; 2: a; 3: b; 4: d; 5: d.

Notes



Notes

For Healthcare Professionals only

PEP/LBL/C-SECTION/012016/1

Nutricia International Private Limited
Office: 3rd Floor, Level 4, Centrium, Phoenix Market City Mall
LBS Road, Kurla (W), Mumbai- 400070.

Publisher: UMB Medica (CIMS) Pvt. Ltd.
Name of printer: Image Production
Date of printing: 2nd Feb 2016

Corporate Office: Boomerang (Kanakia Spaces), Wing-B1, #403, 4th Floor, Chandiwali Farm Road, Chandiwali, Powai, Mumbai - 400 072, Maharashtra, India.Tel: 022-6612 2600, Fax: 022-6612 2626 | **Registered Office:** Margosa Building,#02, 13th Cross, Margosa Road, Malleshwaram, Karnataka, India. Tel: 080-4346 4500, Fax: 080-4346 4529 | **Regional Office:** 13/29, Aadhunik Chamber, 3rd Floor, Office No.3, Near Siddharth Hotel, East Patel Nagar, New Delhi-110008, Board Line: 011 - 4285 4300 Fax:011 - 4285 4310**E-mail:** enquiry.in@ubmmedica.com | **URL:** www.ubmmedica.com