TIMBY'S
INTRODUCTORY

Medical-Surgical Nursing

Loretta A. Donnelly-Moreno, DNP, RN, MSN
Nurse Faculty

Brigitte Moseley, MSN, RN
Adjunct Nurse Faculty
BSN Nursing Department
Blackfeet Community College
Browning, Montana
Staff Nurse
Angels of Care Pediatric Home Health
San Antonio, Texas

FOURTEENTH EDITION

Wolters Kluwer

Philadelphia • Baltimore • New York • London
Buenos Aires • Hong Kong • Sydney • Tokyo

Brief Contents

Vice President and Publisher: Julie K. Stegman
Manager, Nursing Education and Practice Content: Jamie Blum
Senior Acquisitions Editor: Jodi Rhomberg
Development Editor: Emily Schlapp
Editorial Coordinator: Visali Kannan
Marketing Manager: Wendy Mears
Manager, Graphic Arts & Design: Stephen Druding
Art Director, Illustration: Jennifer Clements
Senior Production Project Manager: Catherine Ott
Manufacturing Coordinator: Margie Orzech
Prepress Vendor: S4Carlisle Publishing Services

Fourteenth Edition

9 8 7 6 5 4 3 2 1

Printed in Mexico

Library of Congress Cataloging-in-Publication Data

ISBN-13: 978-1-975254-12-4

Library of Congress Control Number: 2025915231

shop.lww.com

This textbook is dedicated to all current and future nursing students in their quest to comprehend diseases and disorders that continue to plague the human body, and to learn how to care for them with understanding and compassion.

—LADM & BM

Contributor

Rikke Sorensen, RN, BSN, MBA

Features and Learning Tools

The 14th edition includes updated features that long-time users of *Timby's Introductory Medical-Surgical Nursing* love:

A **user-friendly design** along with images of diseases, procedures, signs, symptoms, and normal-versus-abnormal comparisons helps visual learners understand the whole picture.

NEXT-GENERATION NCLEX-STYLE REVIEW QUESTIONS

1. A nurse observes that the client who is experiencing abdominal pain is curled in a fetal position and rocking back and forth. What nursing action is best at the present time?

a. Ask the client to rate the pain on a scale from 0 to 10.
b. Determine if the client can stop moving about.
c. Give the client a prescribed pain-relieving drug.
d. Observe if the client is breathing heavily.

NEXT-GENERATION NCLEX-STYLE Review Questions and Clinical Scenario Review Questions found at the end of each chapter help the students understand how the National Council Licensure Examination for Practical Nurses (NCLEX-PN) examination relates to the chapter content they just read.

Words To Know listed at the beginning of each chapter along with the chapter **Learning Objectives** help focus student reading and identify important information to learn in each chapter.

Words To Know

barium enema
barium swallow
cholangiography
cholecystography
colonoscopy
enteroclysis
esophagogastroduodenoscopy
flexible sigmoidoscopy
gallbladder series
lower gastrointestinal series
panendoscopy
percutaneous liver biopsy
peristalsis

Learning Objectives

On completion of this chapter, you will be able to:

1. Identify major organs and structures of the gastrointestinal system.
2. Discuss important information to ascertain about gastrointestinal health.
3. Identify facts in the client's history that provide pertinent data about the present illness.
4. Discuss physical assessments that are pertinent to gastrointestinal tract function.
5. Describe common diagnostic tests performed on clients with gastrointestinal disorders.
6. Describe nursing measures after liver biopsy.

KEY POINTS

- Pain Management
  - Types of pain
    - Nociceptive pain—noxious stimuli transmitted from point of cellular injury to the brain
      - Somatic pain—caused by mechanical, chemical, thermal, or electrical injuries or disorders
      - Visceral pain—arises from internal organs

Key Points are at the end of each chapter. Important information is included in outline form to assist the reader with studying key information from each chapter.

Stop, Think, and Respond exercises encourage rapid recall and practical assimilation of contents. These questions are found in every chapter and require students to apply content as they read.

››› Stop, Think, and Respond 11-2

A medical order states meperidine hydrochloride 50 to 100 mg IM q3h prn for pain. If a client does not experience adequate pain relief after receiving 50 mg, what dose should the nurse administer?

Concept Mastery Alerts highlight and clarify fundamental nursing concepts to improve understanding of difficult topics that are identified by Misconception Alerts in Lippincott's Adaptive Learning Powered by PrepU, an adaptive quizzing platform. Data from hundreds of actual students using this program in medical-surgical courses across the United States identified common misconceptions for the authors to clarify in this feature.

Concept Mastery Alert

Acute pain is discomfort that has a short duration (from a few seconds to less than 6 months). It is associated with tissue trauma, including surgery, or some other recent identifiable etiology. Although severe initially, acute pain eases with healing and eventually disappears.

Clinical Scenarios, related to Nursing Care Plans and Nursing Process sections, introduce the reader to a client's problem and include a clinical judgment question to help students begin to think through each situation.

Clinical Scenario A client arrives at the emergency department of a hospital at 4 p.m. They report that they have a "throbbing" pain in their left side that started this morning and hasn't stopped. They state that they have never felt this intense pain before today. "Please make it stop!" How does the nurse assess this client and plan for their care? What data are needed for this assessment? See Nursing Care Plan 11-1.

Nursing Care Plans provide an overview of nursing care (with rationales) for clients experiencing common conditions. Each Nursing Care Plan relates to the client introduced in the Clinical Scenario. (See Quick Reference to Nursing Care Plans on p. xix.)

NURSING CARE PLAN 11-1 The Client With Acute Pain

Assessment

- Determine the following:
  - Source of client's pain; when it began; its intensity, location, characteristics, and related factors such as what makes the pain better or worse
  - How client's pain interferes with life, such as diminishing the ability to meet their own needs for hygiene, eating, sleep, activity, social interactions, emotional stability, concentration, and so forth
  - At what level client can tolerate pain
  - Pain-related behaviors such as grimacing, crying, moaning, and assuming a guarded position
  - Measure vital signs.
- Perform a physical assessment, taking care to gently support and assist client to turn as you examine various structures. Use light palpation in areas that are tender. Show concern when assessment techniques increase client's pain.
- Postpone nonpriority assessments until client's pain has been reduced.

Nursing Diagnosis. Acute pain related to cellular injury or disease as manifested by stating, "I'm in severe pain"; rating pain at 10 using a numeric scale; pointing to the lower left abdominal quadrant; describing the pain as "continuous, throbbing, and starting this morning" without any known cause.

Expected Outcome. Client will rate the pain intensity at their tolerable level of "5" within 30 minutes of implementing a pain management technique.

Interventions	Rationales
Assess client's pain and its characteristics at least every 2 hours while awake and 30 minutes after implementing a pain management technique.	*Quick interventions prevent or minimize pain.*
Modify or eliminate factors that contribute to pain such as a full bladder, uncomfortable position, pain-aggravating activity, excessively warm or cool environment, noise, and social isolation.	*Multiple stressors decrease pain tolerance.*
Determine client's choice for pain relief techniques from among those available.	*Encourage and respect client's participation in decision making.*
Administer prescribed analgesics or alternative pain management techniques promptly.	*Suffering contributes to the pain experience and can be reduced by eliminating delays in nursing response.*
Advocate on client's behalf for higher doses of prescribed analgesics or addition of adjuvant drug therapy if pain is not satisfactorily relieved.	*The Joint Commission standards mandate that nurses and other healthcare providers facilitate pain relief for clients.*
Administer a prescribed analgesic before a procedure or activity that is likely to result in or intensify pain.	*Prophylactic interventions facilitate keeping pain at a manageable level.*
Plan for periods of rest between activities.	*Fatigue and exhaustion interfere with pain tolerance.*
Reassure client that there are many ways to modify the pain experience.	*Suggesting that there are additional untried options helps alleviate frustration or despair that there is no hope for pain relief.*
Interventions	**Rationales**
Assist client to visualize a pleasant experience.	*Imaging interrupts pain perception.*
Help client focus on deep breathing, relaxing muscles, watching television, putting together a puzzle, or talking to someone on the phone.	*Diverting attention to something other than pain reduces pain perception.*
Apply warm or cool compresses to a painful sensory site.	*Flooding the brain with alternative stimuli closes the spinal gates that transmit pain.*
Gently massage a painful area or the same area on the opposite side of the body (contralateral massage).	*Massage promotes the release of endorphins and enkephalins that moderate the sensation.*
Promote laughter by suggesting that client relate a humorous story or watch a video or comedy of their choice.	*Laughter releases endorphins and enkephalins that promote a feeling of well-being.*

Evaluation of Expected Outcomes

- Client reports that pain is gone or is at a tolerable level of "5" within 30 minutes.
- Client perceives the pain experience realistically and copes effectively.
- Client participates in self-care activities without undue pain.

NURSING PROCESS FOR THE CLIENT UNDERGOING PROCEDURAL SEDATION

The client undergoing procedural sedation requires special considerations for intraoperative nursing management.

Assessment

Before sedation, the nurse gathers important client data, records baseline vital signs and oximeter readings, and provides education to clients and their families. Education includes instructions specific to the procedure, preparations for the procedure, likely sensations (pain, discomfort, cramping, gagging, nausea), and common side effects of medications.

During sedation, the nurse continuously evaluates the client. Monitoring during all phases includes assessment of heart rate, respiratory rate, BP, oxygen saturation, and level of consciousness. The nurse monitors cardiac rhythm in clients who are at risk for arrhythmias or cardiovascular compromise. If vital signs deviate significantly during sedation, the nurse collects additional information to help determine if those deviations are secondary to an adverse reaction to the sedation or to the procedure itself. When the client shows signs of distress (i.e., deviation in vital signs, respiratory compromise), the nurse immediately reports these signs to the primary provider and provides interventions such as suctioning, gentle tactile stimulation, or administration of oxygen. They continue to monitor the client's response until the level of consciousness and vital signs are at baseline. The nurse documents these observations at intervals specified by the institution.

Analysis, Planning, and Interventions

Altered Breathing Pattern: Related to effect of sedative medications
Expected Outcome: Client will maintain an effective breathing pattern without signs of cyanosis, hypoxia, and with arterial blood gases in normal range.

- Position client in an upright or semi-Fowler's position. *These positions facilitate lung expansion and oxygenation.*
- Observe for signs and symptoms of distress related to inappropriate head position (stridor, increased respiratory effort); reposition head as indicated. *Early intervention prevents further complications.*
- Encourage client to take deep breaths and cough at least every hour. *Deep breathing and coughing improve oxygenation and assist in clearing the effects of anesthesia.*

Perioperative Injury Risk: Related to sensory/perceptual disturbances due to anesthesia
Expected Outcome: Client will remain safe and free of injury while recovering from the effects of anesthesia.

- Provide safety by preventing client from falling out of bed, stretcher, or recliner; assisting with ambulation; and carefully monitoring all activities. *Clients recovering from sedation may have impaired judgment and reflexes; the nurse must protect them from injury.*
- Monitor client for return to presedation level of consciousness. *Until client is fully responsive, they continue to be at risk for a perioperative injury.*
- Discharge client to the care of a person who has received instructions regarding client safety. *Sedative effects may last for several more hours; the client requires continued care after discharge.*

Evaluation of Expected Outcomes

The client has a patent airway and effective breathing patterns. They are alert and oriented and able to follow instructions related to deep breathing and coughing and maintaining safety.

The client has not experienced any perioperative injury. The client's caregiver verbalizes the need to keep the client safe while recovering from the effects of anesthesia.

Nursing Process sections also relate to a specific client introduced in the Clinical Scenario. These sections emphasize a nursing process approach to care and provide rationales in italics for all interventions.

Evidence-Based Practice 14-1

The Nurse's Role in Informed Consent

Clinical Question

What is the nurse's role in informed consent of a client?

Evidence

A hospital in Italy conducted a research study (Strini et al., 2021) to determine the role that the nurses felt they performed related to informed consent for treatment. With this observational study, there were initially 300 nurses involved, with 206 nurses completing the study over 13 wards in the facility. The average work experience was 15 years, with 27 nurses being males and 179 nurses being female.

The results of the study showed that the nurses felt that there were issues with lack of privacy when providing information to clients and their caregivers, lack of time to ensure that information is provided appropriately, and conferring with other nurses and caregivers regarding the diagnostic and therapeutic procedures for the client. The nurse may be the person responsible for providing medical information to the patient and the family members and may be asked questions by these people that are not nursing related. In conclusion, nurses do take a fundamental role in the patient process of informed consent. They advocate for the patient and their family members, care directly for the patients, and are able to help empower the patient to make the best decision for each situation while remaining within their scope of practice.

Nursing Implications

Interdisciplinary communication takes place in nursing with different staff and practitioners. Nurses have a role responsibility in informed consent of a client. Nurses should be current in their state law on ethics and standards of practice in informed consent. In the nursing role, it is also important to know the primary provider's role responsibilities to make sure that the client is informed correctly before any type of care or treatment occurs. Increasing nurse communication in an interdisciplinary approach may decrease gaps, barriers, and ultimately the client's experience.

Evidence-Based Practice boxes include a Clinical Question, Evidence, and Nursing Implications to help students understand how research relates to current nursing practice.

DRUG THERAPY TABLE 14-2 Types of Regional Anesthesia

Type of Anesthesia	Administration and Intended Use	Drug Examples
Local anesthesia	Administered topically or by local infiltration. Palliative pain management may be delivered by pump into subcutaneous tissue. Provides local loss of sensation. Used with epinephrine to keep in local tissue and reduce bleeding Used primarily for dental, eye, and minor surgeries	Lidocaine (Xylocaine), procaine (Novocaine), tetracaine
Spinal anesthesia	Local anesthetic injected into the subarachnoid space of the lumbar area Used for surgery involving the abdomen, perineum, and lower extremities	Bupivacaine (Marcaine), lidocaine (Xylocaine), tetracaine
Conduction nerve block	Local anesthetic injected into or near a specific nerve trunk Uses vary widely—Epidural for obstetrics or brachial plexus block for arm/hand surgeries, trigeminal facial pain	Bupivacaine (Marcaine), lidocaine (Xylocaine)

Drug Therapy tables provide an overview of the major categories of drugs used for common conditions ensuring safe, effective practice.

NURSING GUIDELINES 14-1

Resuming Oral Fluids After Surgery

- Most clients can begin to take fluids within 4 to 24 hours after surgery (except when surgery involves the GI tract). Check primary provider's orders to ensure that fluids can be given.
- If not allowed oral fluids, provide the client with mouth rinses and a cool, wet cloth or ice chips against the lips to relieve dryness.
- Before giving fluids, assess that the client has recovered sufficiently from anesthesia to swallow. Ask the client to try swallowing without drinking anything. If the client can do so, offer a small sip of water or a few ice chips.
- Give only a few sips of water or ice chips at a time. Introduce fluids slowly and give them in small amounts to prevent vomiting. The client can take fluids through a straw so they do not have to sit up. Once the client can sit up, however, straws are discouraged because clients tend to swallow air as well, which can lead to abdominal distention and gastric discomfort.
- If the client vomits, reassure them that it should cease shortly. Offer mouthwash to remove the taste of anesthetics and vomitus. Administer antiemetics as indicated.

Nursing Guidelines present essential information nurses need to perform specific nursing skills or to manage care for a client with a particular disorder.

Client and Family Teaching boxes present instructions and information the nurse can give to the client and family to help improve client outcomes.

Client and Family Teaching 14-2
Postoperative Instructions

The nurse develops a teaching plan to meet the client's needs. Points may include the following:

- Follow primary provider's instructions about cleaning the incision, applying the dressing, bathing, diet, and physical activity.
- Notify primary provider of any of the following: chills or fever; drainage from the incision (some drainage may be expected in certain instances); foul odor or pus from the incision; redness, streaking, pain, or tenderness around the incision; other symptoms not present at discharge (e.g., vomiting, diarrhea, cough, or chest or leg pain).
- Take medications as prescribed, including pain medications. Do not omit or change the dose unless the primary provider advises to do so.
- Do not take nonprescription medications unless approved by the primary provider.
- Follow dietary advice and drink fluids liberally, unless directed otherwise.
- Do not drive or operate machinery until cleared by the primary provider.
- Keep all postoperative appointments.
- Tell the primary provider about any problems during recovery.

Gerontologic Considerations

- Approximately 60% to 75% of people over the age of 65 years report having persistent pain. The percentage is believed to be considerably higher for people who are in assisted living or nursing homes (Larsson et al., 2017). About 20% take pain medications several times per week for joint- or muscle-related pain, lingering pain from previous injuries, cancer pain, and other types of chronic pain. Pain is reported to be described as being in multiple sites by 60% to 70% of this population, and multiple types of pain are described by more than 60% of these people (Miaskowski et al., 2020).
- Lack of an adequate pain assessment can contribute to undertreatment of pain in institutionalized older adults, especially those from cultural backgrounds that differ from those of care providers.
- Older adults may hesitate to relate pain, considering it a part of aging or from fear of being labeled as "difficult." Pain assessment must include attention to nonverbal and body positioning cues that conflict with verbal messages.
- Older adults frequently experience constipation from decreased fluid, decreased mobility secondary to pain with movement, or as an adverse reaction to pain medication. Providing fluid, fiber, or a stool softener along with pain medication can prevent discomfort from a prolonged lack of bowel movement or impaction.

Gerontologic Considerations are now located at the beginning of each chapter so that the student can incorporate these considerations into their thinking as they read the chapter. Students can reflect on current research and theory as they read and think about how pathophysiology, signs and symptoms, or nursing care differs for the older population.

Pharmacologic Considerations

- Antibiotics to prevent or fight infection may be ordered before as well as after surgery. The drugs must be given at specified intervals to maintain consistent therapeutic blood levels.

Pharmacologic Considerations highlight special considerations nurses need to remember when administering or caring for clients receiving specific drugs.

Nutrition Notes

The Postoperative Client

- Progress the diet as soon as possible after surgery to promote an adequate oral intake.
- Encourage clients who are anorexic or nauseated to consume small, frequent feedings. They may tolerate high-protein, low-fat liquids better than traditional meals.
- If possible, schedule pain medications enough in advance to allow the client a pain-free mealtime.
- Normal weight loss during the early postoperative period is about half a pound daily. Weight gain during this period signifies fluid accumulation.
- Protein, calories, vitamins A and C, and zinc are important for wound healing and immune system functioning; actual requirements depend on the client's nutritional status, extent of surgery, and development of complications.
- Unlike the stomach, which does not regain motility for 24 to 48 hours after surgery, the small intestine resumes peristalsis and the ability to absorb nutrients within several hours after surgery.

Nutrition Notes pinpoint key nutrition information for clients with certain types of conditions.

CLINICAL JUDGMENT EXERCISES

1. The nurse is checking to ensure that a client's surgical consent form is signed and on the medical record the evening before surgery. When the nurse assesses this client, the client reports that they are uncertain about having the surgery and does not understand what is expected or its long-term consequences. What steps should the nurse take? What must the nurse document?
2. A client reports to the nurse that their family has lost several family members unexpectedly during surgery. The client is very scared about their upcoming surgery. What actions should the nurse take? What should the nurse document?

Clinical Judgment Exercises, at the end of each chapter, challenge students to apply the content they have read.

Preface

In today's changing healthcare environment, nurses continue to face many challenges and opportunities. *Timby's Introductory Medical-Surgical Nursing* provides the necessary information to help nurses meet these challenges and embrace expanding opportunities. The textbook addresses common adult disorders that are treated medically and surgically and also covers basic concepts student nurses need to know to care for clients with these disorders. Written at a level appropriate for the practical/vocational nursing student, this textbook provides comprehensive information about medical-surgical nursing that is easy to understand.

For the 14th edition, the textbook was revised and updated to reflect current medical and nursing practice. **Key Points** are found at the end of each chapter. These important learning points from the chapter are presented in an outline of bulleted points that highlight important concepts for students to master. This edition continues to include methodology for planning nursing care. Each of the **Nursing Process** sections, **Nursing Care Plans**, is preceded by a **Clinical Scenario** to assist students in relating the plan of care to a specific client. Other highlights of this edition include **Evidence-Based Practice** boxes. Also updated in this edition are **Concept Mastery Alerts**, which clarify fundamental nursing concepts to improve the reader's understanding of potentially confusing topics, as identified by Misconception Alerts in Lippincott's Adaptive Learning Powered by PrepU. Data from thousands of actual students using this program in courses across the United States identified common misconceptions to be clarified in this new feature.

Information in this text is updated to include and discuss new goals for Healthy People 2030. The worldwide pandemic related to COVID-19 is addressed in several areas, as it does affect nursing care throughout the world.

CLINICAL JUDGMENT

Clinical judgment is an important part of the nursing process. Clinical judgment allows a person to think like a nurse in preparation for becoming a nurse. To achieve clinical judgment, the nurse must first obtain the knowledge, analyze the data provided, prioritize the information, determine which action should be taken first, take the needed actions, and then evaluate the outcomes and determine if the process needs to start again.

Clinical judgment is supported in this textbook in multiple areas, such as the Case Studies, Evidence-Based Practice, and the Stop, Think, and Respond sections. Reviewing, processing, and mastering this information will help one become more confident with clinical judgment skills.

ORGANIZATION OF THE TEXT

The 14th edition of *Timby's Introductory Medical-Surgical Nursing* continues to provide readability and clarity. Information is presented in a logical and informative manner with 72 chapters organized into 17 units.

- ***Unit 1*, Nursing Roles and Responsibilities,** includes foundational chapters covering concepts and trends in healthcare, nursing roles and settings, the nursing process (including mention of concept care mapping), interviewing and physical assessment, legal and ethical issues, and leadership and management.
- ***Unit 2*, Client Care Concerns**, explores areas in which nurses interact and work with clients to manage their health. Topics include nurse–client relationships, culture, complementary and alternative therapies, and end-of-life care.
- ***Unit 3*, Foundations of Medical-Surgical Nursing,** includes chapters on frequent and regular topics in medical-surgical nursing care. These include pain, infection, intravenous therapy, perioperative care, and disasters.
- ***Unit 4*, Caring for Clients With Multisystem Disorders,** includes chapters on fluid, electrolyte, and acid–base imbalances; shock; and cancer.
- ***Units 5 through 16*** present information on disorders according to body systems. Each unit begins with an introductory chapter that includes a general review of anatomy and physiology, a discussion of client assessment, and common diagnostic and laboratory tests that pertain to particular disorders.
- ***Unit 17*, Caring for Clients With Psychobiologic Disorders,** contains chapters on frequently encountered emotional and behavioral issues: anxiety disorders, mood disorders, eating disorders, chemical dependency, and dementia and thought disorders.

At the end of the textbook, Appendix A lists commonly used abbreviations and acronyms. A glossary provides a quick reference to definitions for Words to Know that appear throughout the textbook.

TEACHING AND LEARNING RESOURCES

The 14th edition of *Timby's Introductory Medical-Surgical Nursing* features a compelling and comprehensive complement of additional resources to help instructors teach and students learn.

Resources for Instructors on thePoint®

Tools to assist you with teaching your course are available upon adoption of this textbook at https://thePoint.lww.com/.

- Test Bank, completely revised for this edition by expert NCLEX-PN test writers to help you assess your students' understanding of the material.
- PowerPoint Presentations provide an easy way for you to integrate the textbook with your students' classroom experience, either via slide shows or through handouts. Multiple-choice and true/false questions are integrated into the presentations to promote class participation and allow you to use i-clicker technology.
- An Image Bank lets you use the photographs and illustrations from this textbook in your PowerPoint slides or as you see fit in your course.
- Pre-Lecture Quizzes (and answers) are quick, knowledge-based assessments that allow you to check student reading.
- Guided Lecture Notes walk you through the chapters, objective by objective, and provide you with corresponding PowerPoint slide numbers.
- Answers to Questions in the Book (Next-Generation NCLEX-Style Review Questions and Next-Generation NCLEX-Style Clinical Scenario Questions) are provided for each chapter. Instructors are free to share these with their students to enhance student self-learning.
- A Sample Syllabus provides guidance for structuring your medical-surgical nursing course.
- Competency maps link key competency knowledge, skills, and abilities (KSAs) to the textbook to ensure quality assurance.

LIPPINCOTT® COURSEPOINT

Lippincott CoursePoint

Lippincott® CoursePoint is an integrated, digital curriculum solution for nursing education that provides a completely interactive and adaptive experience geared to help students understand, retain, and apply their course knowledge and be prepared for practice. The time-tested, easy-to-use, and trusted solution includes engaging learning tools, evidence-based practice, case studies, and in-depth reporting to meet students where they are in their learning, combined with the most trusted nursing education content on the market to help prepare students for practice. This easy-to-use digital learning solution of *Lippincott® CoursePoint*, combined with unmatched support, gives instructors and students everything they need for course and curriculum success!

Lippincott® CoursePoint includes:

- Engaging course content with a variety of learning tools to engage students of all learning styles
- Adaptive and personalized learning helps students learn the critical thinking and clinical judgment skills needed to help them become practice-ready nurses.
- Immediate, evidence-based, online nursing clinical decision support with Lippincott Advisor for Education
- Unparalleled reporting provides in-depth dashboards with several data points to track student progress and help identify strengths and weaknesses.

Unmatched support includes training coaches, product trainers, and nursing education consultants to help educators and students implement *Lippincott® CoursePoint* with ease.

Acknowledgments

We the authors wish to thank all those who helped in the preparation of this edition. We remain grateful to the skilled and knowledgeable professionals at Wolters Kluwer. Although we never meet most of them, we appreciate their expert ability to keep us on track and in turn respond to our many requests and needs when this textbook was in production.

We hope that *Timby's Introductory Medical-Surgical Nursing*, 14th edition, provides the readers with the practical knowledge and skills to manage the nursing care of clients in today's changing healthcare environments. We also hope that our contributions provide students with similar joys and rewards that we have experienced in our nursing careers.

Loretta A. Donnelly-Moreno, DNP, RN, MSN
Brigitte Moseley, MSN, RN

Contents

Quick Reference to Nursing Care Plans

UNIT 3
Foundations of Medical-Surgical Nursing

11

Pain Management

Words To Know

acute pain
adjuvant drugs
allodynia
breakthrough pain
chronic pain
cognitive behavioral therapy
cordotomy
endogenous opiates
endogenous opioids
equianalgesic dose
fifth vital sign
hyperalgesia
intractable pain
modulation
neuropathic pain
neuropeptides
nociceptive pain
nociceptors
opioid analgesics
pain
pain management
pain threshold
pain tolerance
palliative sedation
perception
percutaneous electrical nerve stimulation (PENS)
percutaneous neuromodulation therapy (PNT)
physical dependence
placebo
referred pain
rhizotomy
somatic pain
spinal cord stimulator
substance use disorder
tolerance
transcutaneous electrical nerve stimulation (TENS)
transduction
transmission
visceral pain
withdrawal symptoms

Learning Objectives

On completion of this chapter, you will be able to:

1. Define the term *pain*.
2. Compare nociceptive pain with neuropathic pain.
3. Give characteristics distinguishing acute from chronic pain.
4. Describe the four phases of pain transmission.
5. Differentiate between pain perception, pain threshold, and pain tolerance.
6. List at least three pain theories.
7. Describe the essential components of pain assessment.
8. Explain why assessing pain is difficult.
9. Give examples of tools for assessing the intensity of pain.
10. Discuss The Joint Commission's standards on pain assessment and pain management.
11. Explain pain management and list examples of techniques commonly used.
12. Name categories of drugs used to manage pain.
13. Describe methods of administering analgesic drugs.
14. Discuss the issues of substance use disorder, tolerance, and physical dependence associated with pain medication.
15. List examples of noninvasive techniques used to manage pain.
16. Identify three surgical procedures performed on clients with intractable pain.
17. Discuss the nursing management of clients with pain.
18. Describe information pertinent to teach clients and family about pain management.

Pain is a privately experienced, unpleasant sensation usually associated with disease or injury. Pain also has an emotional component referred to as *suffering*. Extensive research is being conducted to discover more about various types of pain, pain transmission, and treatment. This chapter provides information about pain and the role of nursing and other disciplines in pain management. The American Nurses Association states in their position statement that "Nurses have an ethical responsibility to relieve pain and the suffering it causes" (2018).

Gerontologic Considerations

- Approximately 60% to 75% of people over the age of 65 years report having persistent pain. The percentage is believed to be considerably higher for people who are in assisted living or nursing homes (Larsson et al., 2017). About 20% take pain medications several times per week for joint- or muscle-related pain, lingering pain from previous injuries, cancer pain, and other types of chronic pain. Pain is reported to be described as being in multiple sites by 60% to 70% of this population, and multiple types of pain are described by more than 60% of these people (Miaskowski et al., 2020).
- Lack of an adequate pain assessment can contribute to undertreatment of pain in institutionalized older adults, especially those from cultural backgrounds that differ from those of care providers.
- Older adults may hesitate to relate pain, considering it a part of aging or from fear of being labeled as "difficult." Pain assessment must include attention to nonverbal and body positioning cues that conflict with verbal messages.
- Older adults frequently experience constipation from decreased fluid, decreased mobility secondary to pain with movement, or as an adverse reaction to pain medication. Providing fluid, fiber, or a stool softener along with pain medication can prevent discomfort from a prolonged lack of bowel movement or impaction.
- An older adult who receives pain medication around the clock (ATC) must have careful urine and bowel elimination assessment and documentation. Medication levels can increase to dangerous levels from prolonged absorption, metabolism, or elimination times. A change in level of consciousness may be an initial indicator of increasing medication levels.
- Some people assume that pain sensitivity and perception decrease with aging. Such an assumption can cause inaccurate assessment and undertreatment, leading to unnecessary suffering in older adults. All older clients should be asked about pain. Multiple factors may contribute to pain in older adults, causing difficulty determining individual causes (Larsson et al., 2017).
- Some older adults may be reluctant to report pain; they may prefer to describe pain as discomfort, burning, or aching.
- Older adults with cognitive impairments may be unable to report pain; comparison of current behavior with previous behavior patterns and reports from caregivers can help in assessing pain in these clients.
- Pain may manifest as agitation; aggression; withdrawal; or changes in behavior, positioning, or sleep patterns.
- The client's use of distraction techniques such as television viewing or reading does not indicate they are not experiencing pain.
- Pain is the number one complaint of older Americans who take analgesics regularly. Some older adults skip doses or split their doses of prescribed medications to reduce their expense.
- A reduced dose of analgesics, especially opioid analgesics, may be prescribed for the older adult initially; the initial dose may be one half to two thirds the usual adult dose. Older adults experience a higher peak effect and longer duration of pain relief from an opioid. The risk of increased accumulation of narcotics, benzodiazepines, or antidepressants also increases the potential for falls from sedation and changes in cognitive functioning.
- Because constipation is a common side effect of opioid use, a bowel regimen to prevent constipation should be started when any older adult is treated with opioids. Older adults taking medications for multiple chronic or acute conditions have an increased susceptibility to drug reactions and interactions. Older adults taking nonsteroidal antiinflammatory drugs (NSAIDs) are at increased risk for renal toxicity and gastric ulceration.
- Analgesics given intramuscularly (IM) to older adults are less effective because of their diminished muscle mass.
- Older adults may avoid taking medication, especially opioids, out of fear of developing a substance use disorder or drug side effects. Nurses can educate older clients about opioids, facts about substance use disorder, and effective treatment options for any breakthrough pain or side effects such as constipation.
- In older adults who experience diminished sensation, risk for burns can be minimized by careful monitoring of applications using heat. Monitoring is similarly required for cold pack applications to prevent hypothermia.

TYPES OF PAIN

Pain can be classified into categories according to (1) its source or (2) its onset, intensity, and duration. When classified according to its source, pain can be categorized as either nociceptive or neuropathic. When classified according to its onset, intensity, and duration, pain can be categorized as either acute or chronic.

Nociceptive Pain

Nociceptive pain is the noxious stimuli that are transmitted from the point of cellular injury over peripheral sensory nerves to pathways between the spinal cord and thalamus and eventually from the thalamus to the cerebral cortex of the brain (Fig. 11-1). Nociceptive pain is subdivided into somatic and visceral pain.

Somatic Pain

Somatic pain is caused by mechanical, chemical, thermal, or electrical injuries or disorders affecting bones, joints, muscles, skin, or other structures composed of connective tissue. *Superficial somatic pain*, also known as *cutaneous pain* (such as that from an insect bite or a paper cut), is perceived as sharp or burning discomfort. *Deeper somatic pain* such as that caused by trauma (e.g., a fracture) produces localized sensations that are sharp, throbbing, and intense. Dull, aching, diffuse discomfort is more common with long-term disorders such as arthritis.

Visceral Pain

Visceral pain arises from internal organs such as the heart, kidneys, and intestine that are diseased or injured. Causes for visceral pain are varied and include ischemia (reduced arterial blood flow to an organ), compression of an organ (as may be the case from a tumor), intestinal distention with gas, or contraction (spasm) as occurs with gallbladder or kidney

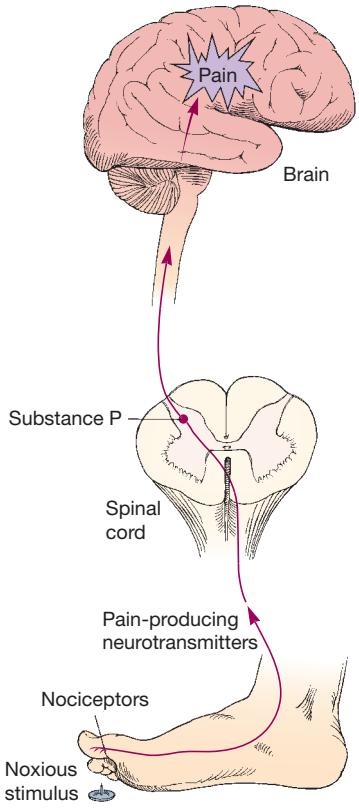


Figure 11-1 Nociceptive pain transmission pathway.

stones. Visceral pain usually is diffuse, poorly localized, and accompanied by autonomic nervous system symptoms such as nausea, vomiting, pallor, hypotension, and sweating. **Referred pain** is a term used to describe discomfort that is perceived in a general area of the body but not in the exact site where an organ is anatomically located (Fig. 11-2).

Neuropathic Pain

Neuropathic pain is pain that occurs from a direct consequence of a disease or lesion that affects the peripheral nerves or pain-processing centers in the brain (Pușcașu et al., 2024). One theory is that the neurotransmitter glutamate, when released from a presynaptic neuron, activates postsynaptic neuron receptors for *N*-methyl-D-aspartate (NMDA), which sensitizes pain circuits in the spinal cord and brain. The outcome is a heightened level of pain.

An example of neuropathic pain is *phantom limb pain* or *phantom limb sensation*, in which people with an amputated arm or leg perceive that the limb still exists and that sensations such as burning, itching, and deep pain are located in tissues that have been surgically removed. Other examples include pain that is experienced by people with spinal cord injuries, strokes, diabetes, and herpes zoster (shingles).

Cancer pain may be either nociceptive or neuropathic. Nociceptive pain occurs when a tumor creates pressure in the organ or on adjacent tissue from its increased size. Neuropathic pain occurs when drugs or radiation used to treat the cancerous tumor causes nerve damage.

Acute Pain

Acute pain is discomfort that has a short duration (from a few seconds to less than 6 months). It is associated with tissue trauma, including surgery, or some other recent identifiable etiology. Although severe initially, acute pain eases with healing and eventually disappears. The gradual reduction in pain promotes coping with the discomfort because there is a reinforcing belief that the pain will resolve in time.

Acute and chronic pain both result in physical and emotional distress. Both also may be interrupted by pain-free periods, but that is where the similarities end.

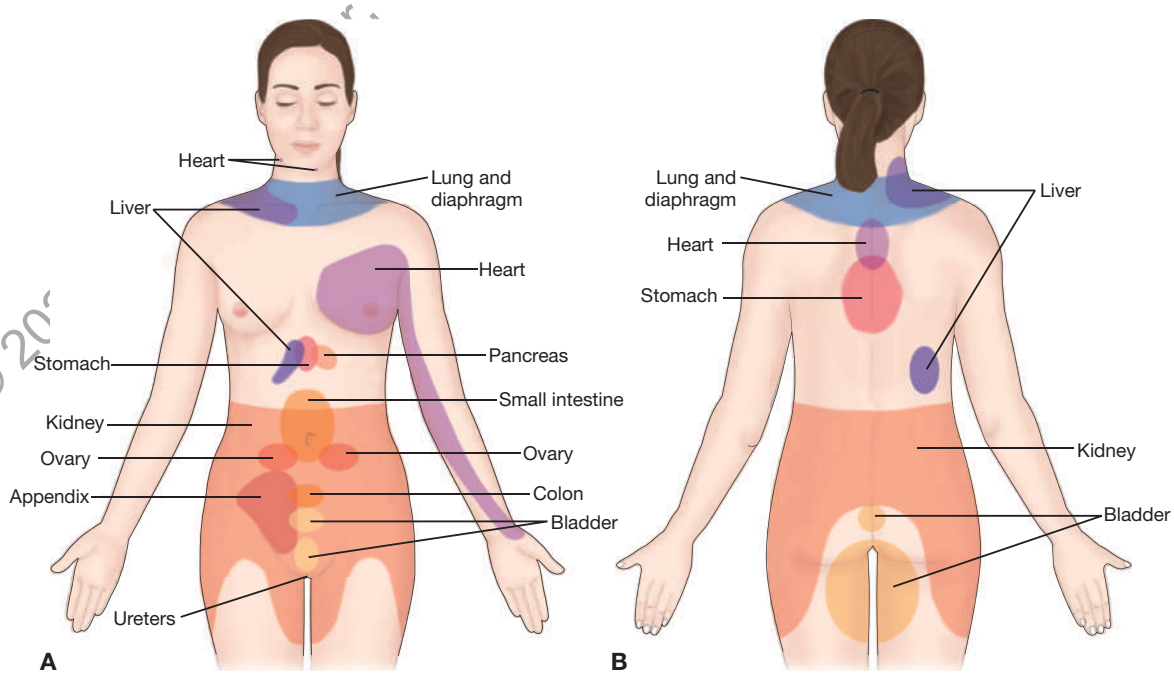


Figure 11-2 Common areas of referred pain. **(A)** Anterior view. **(B)** Posterior view.

Chronic Pain

The characteristics of **chronic pain**, discomfort that lasts longer than 6 months, are almost totally opposite from those of acute pain (Table 11-1). Chronic pain sufferers may have periods of acute pain, which is referred to as **breakthrough pain**. The longer the pain exists, the more far-reaching its effects on the sufferer (Box 11-1). Others begin to show negative reactions to the chronic pain sufferer, such as the following:

- Anger for thinking the person with pain is not trying hard enough
- Anger with the medical system for not having answers
- Anger at insurance companies for denying or delaying approvals for procedures
- Guilt for being angry
- Guilt for wanting out of the relationship
- Feelings of being trapped
- Loneliness from social isolation
- Resentment for having to assume extra burdens
- Questioning if the person with pain is exaggerating to shirk responsibilities
- Becoming less attentive and withdrawing from intimacy (Packham et al., 2020)

See Evidence-Based Practice 11-1 for research on assessing pain in older adults.

Concept Mastery Alert

Acute pain is discomfort that has a short duration (from a few seconds to less than 6 months). It is associated with tissue trauma, including surgery, or some other recent identifiable etiology. Although severe initially, acute pain eases with healing and eventually disappears.

TABLE 11-1 Characteristics of Acute and Chronic Pain

ACUTE PAIN	CHRONIC PAIN
Recent onset	Remote onset
Symptomatic of primary injury or disease	Uncharacteristic of primary injury or disease
Specific and localized	Nonspecific and generalized
Severity associated with the acuity of the injury or disease process	Severity out of proportion to the stage of the injury or disease
Lasts less than 6 months	Lasts longer than 6 months
Responds favorably to drug therapy	Responds poorly to drug therapy
Requires gradually decreased drug therapy	Requires increasing drug therapy
Diminishes with healing	Persists beyond healing stage
Suffering decreases	Suffering intensifies
Associated with sympathetic nervous system responses such as hypertension, tachycardia, restlessness, anxiety	Absence of autonomic nervous system responses; manifests depression and irritability

BOX 11-1 Quality-of-Life Activities Affected by Chronic Pain

- Exercising
- Working around the house
- Sleeping
- Enjoying hobbies and leisure time
- Socializing
- Walking
- Concentrating
- Having sex
- Maintaining relationships with family and friends
- Working a full day at employment
- Caring for children

Evidence-Based Practice 11-1

Pain Assessment in Older Adults

Clinical Question

What challenges do nurses experience when assessing pain in older adults?

Evidence

"The global population is growing and aging. By 2035, projections estimate 20% of Americans (77 million) will be over the age of 65 years" (Aragaki & Brophy, 2021). As the population of older adults increases, nurses will likely care for an older adult client in their care settings. Barriers can exist that challenge the nurse in performing a pain assessment such as a client who underreports pain; confusion; poor memory; cost of medication; anxiety, sometimes depression; and multiple health issues. The barriers can lead to poor treatment and management of acute and chronic pain. As this population increases, the ability for nurses to assess clients and report findings to the healthcare team is crucial.

Nursing Implications

Nurses must understand how to do a thorough pain assessment in older adults and understand the barriers to an assessment for this population. Pain management for this population can be ensured with a thorough assessment, communication, and working with the healthcare team.

Reference

Reprinted from Aragaki, D., & Brophy, C. (2021). Chapter 10—Geriatric pain management. In S. Pangarkar, Q. G. Pham, & B. C. Eapen (Eds.), *Pain care essentials and innovations* (pp. 137–150). Elsevier. https://doi.org/10.1016/B978-0-323-72216-2.00010-7, with permission from Elsevier.

PAIN TRANSMISSION

The transmission of pain takes place in four phases: transduction, transmission, perception, and modulation (Fig. 11-3).

Transduction

Transduction is the conversion of chemical information in the cellular environment to electrical impulses that move toward the spinal cord. This phase is initiated by cellular disruption, during which affected cells release various

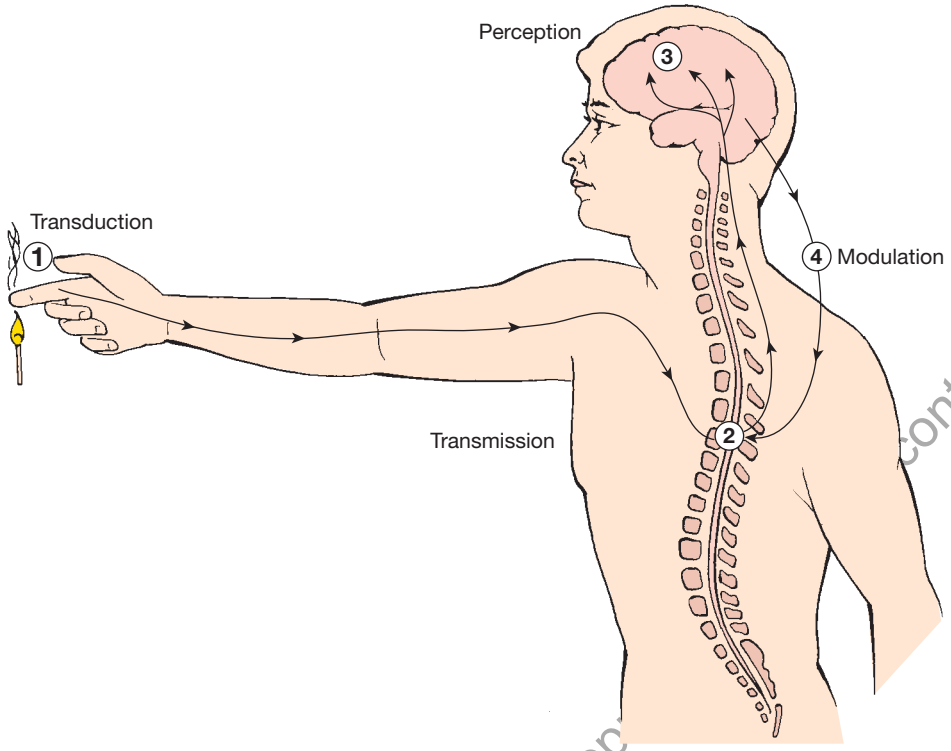


Figure 11-3 The phases of pain transmission.

noxious chemical mediators, collectively referred to as **neuropeptides**, for example, prostaglandins, bradykinin, serotonin, histamine, substance P, and others. The neuropeptides stimulate **nociceptors**, specialized pain receptors located in the free nerve endings of peripheral sensory nerves (Dafny, n.d.) (Fig. 11-4). Nociceptors are located in the skin, bones, joints, muscles, and internal organs.

Nociceptors carry pain impulses by fast and slow nerve fibers. *A-delta fibers*, which are large and myelinated, carry impulses rapidly at a rate of approximately 5 to 30 m/s (Norris, 2020). Impulses transmitted by the fast pain pathway result in sharp, acute initial sensations such as those that are felt when touching a hot iron. The result is that the person withdraws from the pain-provoking stimulus. After the fast transmission, impulses from small unmyelinated fibers known as *C-fibers* carry impulses at a slower rate of 0.5 to 2.0 m/s. They are responsible for the throbbing, aching, or burning sensation that persists after the immediate discomfort.

Transmission

Transmission is the phase during which peripheral nerve fibers form synapses with neurons in the spinal cord. With the help of substance P, pain impulses move to sequentially higher levels in the brain, such as the reticular activating system, thalamus, cerebral cortex, and limbic system. Prostaglandin, a chemical released from injured cells, speeds up the transmission. As the pain impulses are transmitted, pain receptors become increasingly sensitized, making established pain more difficult to suppress.

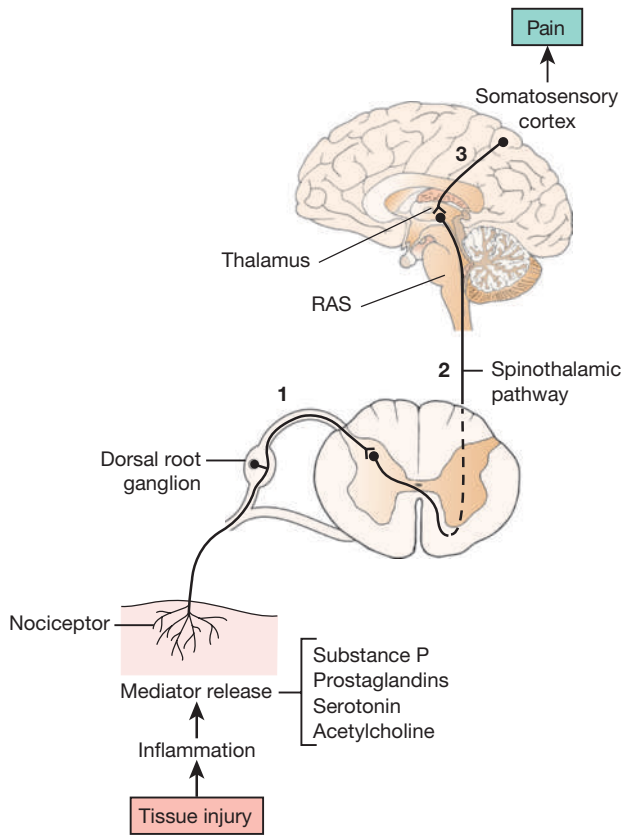


Figure 11-4 Mechanisms of acute pain. RAS, renin–angiotensin system. (Reprinted with permission from Norris, T. L. [2020]. *Porth's essentials of pathophysiology* [5th ed.]. Wolters Kluwer.)

When pain impulses reach the thalamus within the brain, two responses occur. First, the thalamus transmits the message to the cortex, where the location and severity of the injury are identified. Second, it notifies the nociceptors that the message has been received and that continued transmission is no longer necessary. A malfunction in this secondary process may be one reason why chronic pain lingers.

Perception

Perception refers to the phase of impulse transmission during which the brain experiences pain at a conscious level, but many concomitant neural activities occur almost simultaneously. In addition to perceiving pain, the brain structures in the pain pathway also help to discriminate the location of the pain, determine its intensity, attach meaningfulness to the event, and provoke emotional responses (Peng et al., 2019). Perception, the conscious experience of discomfort, occurs when the pain threshold is reached.

Pain Threshold and Tolerance

The **pain threshold** is the point at which the pain-transmitting neurochemicals reach the brain, causing conscious awareness. **Hyperalgesia**, a lowered pain threshold, may occur when excitatory neurotransmitters such as glutamate sensitize the spinal cord to nociceptive input. In other words, the pain signals become amplified (French, n.d.). People tolerate or bear the sensation of pain differently.

Pain tolerance is the amount of pain a person endures once the threshold has been reached. The ability to endure a great deal of pain indicates a high pain tolerance; a low pain tolerance refers to very little ability to endure pain. Various factors can affect pain tolerance. For example, fatigue diminishes the ability to cope with pain and heightens the perception of pain. Anticipatory fear, the expectation of pain such as that accompanying an injection or root canal procedure, can lower pain tolerance. Concurrently dealing with multiple or accumulating stressors and depression decreases a person's ability to tolerate pain. Pain intolerance also is associated with social isolation or feeling socially abandoned. Cultural beliefs and values affect how a person deals with pain; some may be stoic, whereas others may be verbally and physically demonstrative in response to pain.

Research indicates that there are also sex differences in pain tolerance (Goldey et al., 2019; Templeton, 2020). Males tend to report lower pain intensity and demonstrate higher pain tolerance; females tend to rate their pain at higher levels and report pain in more body regions than males. Some believe that estrogen increases pain perception (Athnaiel et al., 2023). These differences must be viewed with caution because they may be examples of learned responses such as those associated with gender roles rather than physiologic differences.

Modulation

Modulation is the last phase of pain impulse transmission during which the brain transmits a response down the spinal nerves to the point where the pain transmission originated to alter the pain experience. At this point, the painful sensation is reduced with the release of pain-inhibiting neurochemicals such as endogenous opioids, which are discussed later in this chapter, and gamma-aminobutyric acid (GABA).

Theories of Pain

Several theories attempt to explain how pain is transmitted and reduced. No one theory is all-encompassing.

Specificity Theory

The specificity theory was one of the earliest explanations for how pain is transmitted. Its hypothesis, which originated in the 1800s, proposed that one type of sensory nerves were continuous from the periphery to the brain and functioned specifically to transmit pain signals. This theory has been discounted because the transmission and perception of pain and other sensations involve sensory nerves in the periphery and structures in the spinal cord before eventually reaching the brain.

Pattern Theory

The pattern theory proposed that sensory stimuli such as touch, heat, cold, and pain produce various patterns. Once a pattern develops, it is transmitted to the brain where the pattern is perceived as being either damaging or nondamaging.

Gate Control Theory

In the mid-1960s, Ronald Melzak, a Canadian psychologist, and his physiologist colleague, Patrick Wall, revolutionized the thinking of the scientific community with their gate control theory. Together they proposed that sensory information travels over slow small fibers as well as fast large fibers. Slow fibers, through which pain stimuli travel, open gates within the spinal cord allowing its transmission toward the brain. Fast fibers that are responsible for transmitting other types of sensory information can close the gates through which pain stimuli travel (Fig. 11-5). The gating mechanism helps to explain why competing sensory stimuli, such as heat, cold, massage, acupressure, and so on, can decrease the perception of pain or its intensity (Isa & Chetty, 2021).

Neuromatrix Theory

In 1999, Melzak offered another dimension to the pain experience when he introduced the neuromatrix theory. The neuromatrix theory expanded the original treatise on pain by incorporating biopsychosocial variables. Melzak indicated that the perception and modulation of the pain experience are affected by each person's unique psychological and cognitive thought processes. For example, past memories, current stressors, anxiety, and so on can either enhance or inhibit the experience of pain.

Endogenous Opioid Theory

The endogenous opioid theory is based on the fact that nociceptors contain receptors that can bind with morphinelike neurotransmitters called **endogenous opioids**—endorphins, dynorphins, and enkephalins—that modulate pain. When endogenous opioids are released, they are thought to attach to sites on the nerve cell's membrane, blocking the

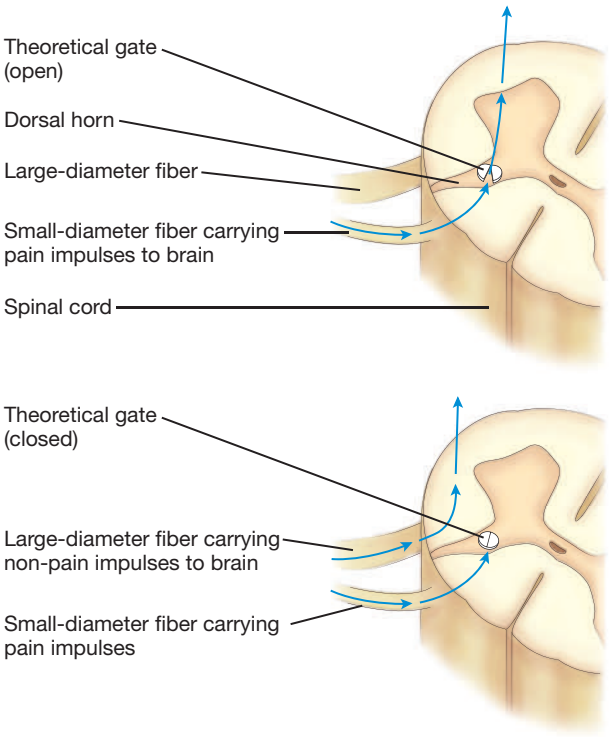


Figure 11-5 Pain impulse transmission and blocking according to the gate control theory. (Reprinted with permission from Taylor, C. R., Lynn, P., & Bartlett, J. L. [2019]. *Fundamentals of nursing: The art and science of person-centered care* [9th ed.]. Wolters Kluwer.)

transmission of pain-conducting chemicals such as substance P and prostaglandin (Fig. 11-6). If endogenous opioid production or storage is suppressed, pain of varying degrees will be experienced.

PAIN ASSESSMENT

There is no perfect way to determine if pain exists and how severe it is. In 1968, McCaffery, a nursing expert on pain, stated that pain is whatever the person says it is and exists whenever the person says it does. People in pain may demonstrate a variety of nonverbal behaviors, such as the following:

- Positioning to avoid pain or being resistant to repositioning
- Rocking, fidgeting, or squirming
- Protective or guarding gestures
- Clenched jaw

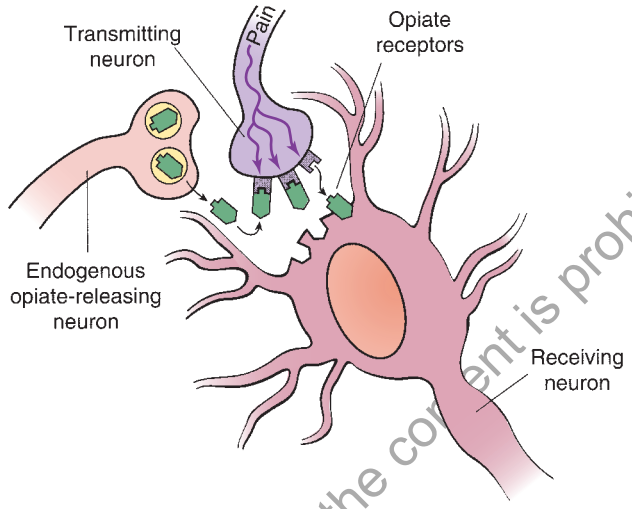


Figure 11-6 Opioid pain interference. (Reprinted with permission from Moreno, L. [2020]. *Timby's fundamental nursing skills and concepts* [12th ed.]. Wolters Kluwer.)

- Frowning
- Sleep disturbances: increased sleep due to exhaustion or decreased sleep due to repeated awakening
- **Allodynia**, an exaggerated pain response due to increased sensitivity to stimuli such as air currents, pressure of clothing, or vibration
- Loss of interest in eating
- Moaning, crying, or sighing
- Emotional irritability
- Impaired thinking, confusion, or combativeness
- Reduced social interactions

A pain assessment includes the client's description of its onset, quality, intensity, location, and duration (Table 11-2). In addition, nurses assess for accompanying symptoms, such as nausea or dizziness, and what makes the pain better or worse. The American Pain Society has proposed that pain assessment should be considered the **fifth vital sign**. In other words, the nurse should check and document the client's pain every time they assess the client's temperature, pulse, respirations, and blood pressure.

Assessment Biases

Despite the fact that the client is the only reliable source for quantifying pain, nurses do not respond consistently to the client's description of pain intensity with pain-relieving

TABLE 11-2 Basic Components of Pain Assessment

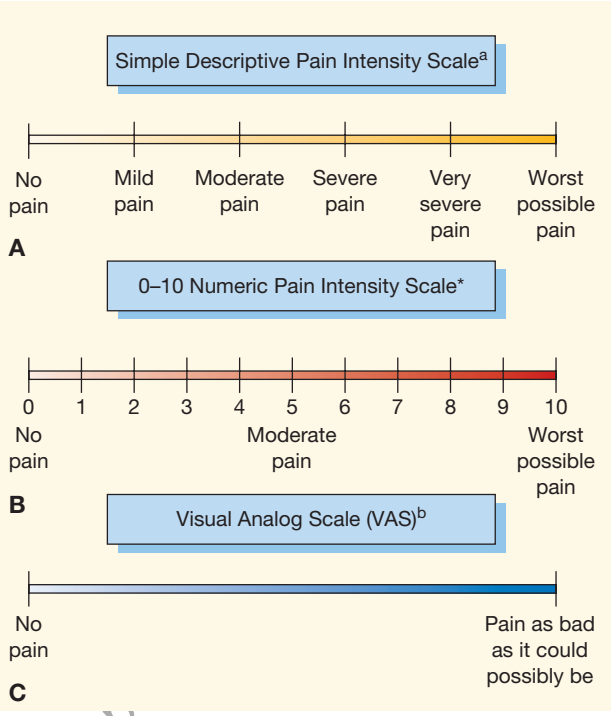
CHARACTERISTIC	DESCRIPTION	EXAMPLES
Onset	Time or circumstances under which the pain appeared	After eating, while shoveling snow, during the night
Quality	Sensory experiences and degree of suffering	Throbbing, crushing, agonizing, annoying
Intensity	Magnitude of the pain, such as moderate or severe; or a quantifying scale, such as from 0 to 10	None, slight, mild; a level of "7"
Location	Anatomic site	Chest, abdomen, jaw
Duration	Time span of the pain	Continuous, intermittent, hours, weeks, months

interventions. McCaffery and Ferrell (1999) observed that most nurses expect someone in severe pain to *look* as if they are suffering. Neither behavior nor other physiologic data such as vital signs, however, are reliable indicators of pain. Responses to pain and coping techniques are learned, and clients may express them in a variety of ways. If a client's expressions of pain do not match the nurse's expectations, pain management may not be readily forthcoming. Consequently, the client's pain may be undertreated.

Assessment Tools

Because there are no reliable objective indicators for pain, assessment tools are necessary. Common assessment tools for quantifying pain intensity include a numeric scale, a word scale, and a linear scale (Fig. 11-7). Clients identify how their pain compares with the choices on the assessment tool. One tool is not better than another. A numeric scale is commonly used when assessing adults. When using the numeric rating scale, the clients are asked to identify how much pain they are having by choosing a number from 0 (*no pain*) to 10 (*the worst pain imaginable*). A horizontal pain assessment tool can be used to determine a client's pain when a visual chart is needed (Fig. 11-8), especially for clients that are pediatric, culturally diverse, and cognitively impaired. The use of pictures of faces showing more and more pain allows the assessment tool to be used for young children

Pain intensity scales



[a]If used as a graphic rating scale, a 10-cm baseline is recommended.
[b]A 10-cm baseline is recommended for VAS.

Figure 11-7 Pain assessment tools: **(A)** word scale, **(B)** numeric scale, and **(C)** linear scale.

››› Stop, Think, and Respond 11-1

When assessing the pain of two postoperative clients, the nurse is told by each client that incisional pain is a "10" using the numeric scale, in which "0" equals no pain and "10" is the most pain the person has ever felt. One of the clients is lying quietly in bed watching television. The other is restless and has placed both hands over the incisional area. Both have medical orders for 50 to 75 mg of meperidine IM every 3 to 4 hours as needed for pain. Both clients received 75 mg of meperidine IM 3 hours ago. What is the best nursing action at this time?

Assessment Standards

Since well over the previous decade, The Joint Commission (2020) has continued to address standards for pain assessment and management. All accredited healthcare organizations must comply with these standards. Table 11-3 lists components of an initial comprehensive pain assessment. Other aspects that are incorporated in the standards include the following:

- Everyone cared for in an accredited hospital, long-term care facility, home healthcare agency, outpatient clinic, or

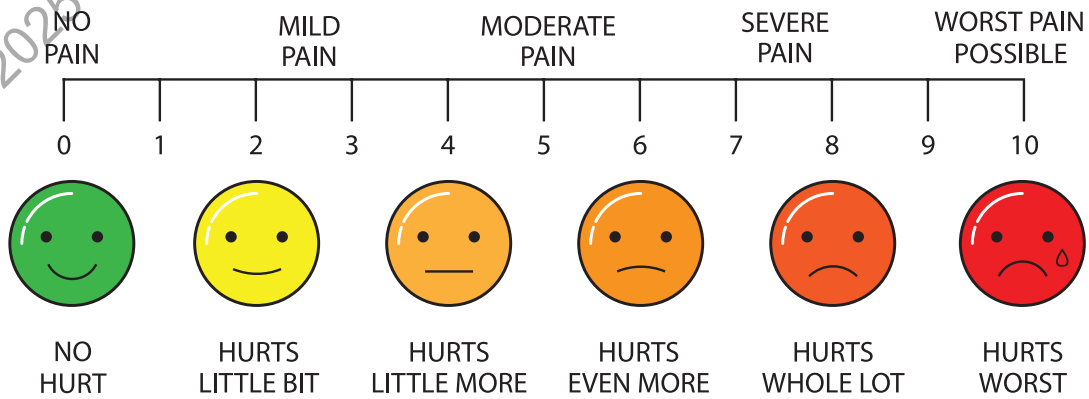


Figure 11-8 Faces Pain Scale, Revised. (shutterstock .com/Oxy_gen)

TABLE 11-3 The Joint Commission's Components of a Comprehensive Pain Assessment

COMPONENT	FOCUS OF ASSESSMENT
Intensity	Rating for present pain, worst pain, and least pain using a consistent scale
Location	Site of pain or identifying mark on a diagram
Quality	Description in client's own words
Onset	Time the pain began
Duration	Period that pain has existed
Variations	Pain characteristics that change
Patterns	Repetitiveness or lack thereof
Alleviating factors	Techniques or circumstances that reduce or relieve the pain
Aggravating factors	Techniques or circumstances that cause the pain to return or escalate in intensity
Present pain management regimen	Approaches used to control the pain and results and effectiveness
Pain management history	Past medications or interventions and responses; manner of expressing pain; personal, cultural, spiritual, or ethnic beliefs that affect pain management
Effects of pain	Alterations in self-care, sleep, dietary intake, thought processes, lifestyle, and relationships
Person's goal for pain control	Expectations for level of pain relief, tolerance, or restoration of functional abilities
Physical examination of pain	Assessment of structures that relate to the site of pain

Note: If clients have pain in more than one area, assessment data are collected for each.

managed care organization has the right to assessment and management of pain.

- Pain is assessed using a tool that is appropriate for the person's age, developmental level, health condition, and cultural identity.
- Pain is regularly reassessed throughout healthcare delivery.
- Pain is treated in the healthcare agency or the client is referred elsewhere; both pharmacologic and nonpharmacologic strategies may be used. When pharmacologic strategies are proposed, both the benefits to the client as well as the risks of dependency, substance use disorder, and misuse of opioids are considered.
- Healthcare providers are educated regarding pain assessment and management.
- Clients and their families are educated about effective pain management as an important part of care.
- The client's choices regarding pain management are respected.

PAIN MANAGEMENT

Pain management refers to the techniques used to prevent, reduce, or relieve pain. Achieving an optimum outcome often involves a multidisciplinary approach using drug and nondrug interventions (Fig. 11-9). The following are five general techniques for achieving pain management:

1. Blocking brain perception
2. Interrupting pain-transmitting chemicals at the site of injury
3. Combining analgesics with adjuvant drugs
4. Substituting sensory stimuli over shared pain neuropathways
5. Altering pain transmission at the level of the spinal cord

Any one or a combination of these techniques may be used.

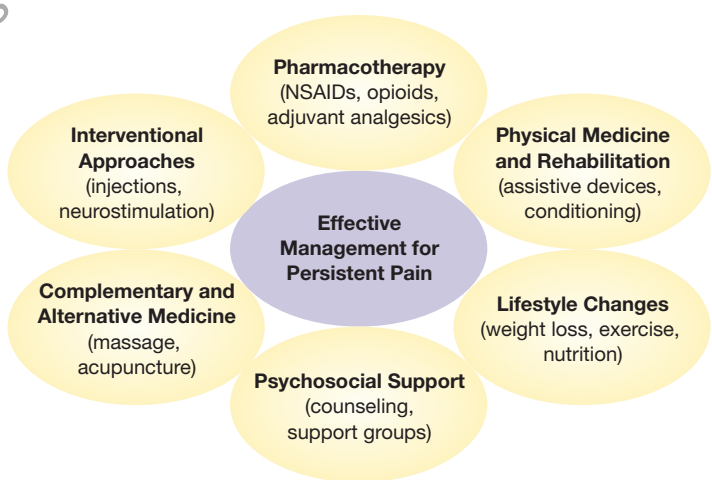


Figure 11-9 Multidisciplinary interventions for achieving pain management. NSAIDs, nonsteroidal antiinflammatory drugs. (From the American Pain Foundation. [2008]. *A reporter's guide: Covering pain and its management*. https://assets.documentcloud.org/documents/277606/apf-reporters-guide.pdf)

Drug Therapy

Drug therapy is the cornerstone for managing pain. The World Health Organization (WHO) recommends following a three-tiered approach, according to the client's pain intensity and response to selected drug therapy (Fig. 11-10). A fourth step being considered for terminally ill clients with **intractable pain** (pain that is unresponsive to conventional treatment options) may include nerve blocks, analgesics administered *intrathecally* (in the subarachnoid or epidural spaces of the spine), electrical stimulation in the spinal cord, neurosurgical analgesic techniques, and palliative sedation. Examples of palliative sedation and neurosurgical analgesic techniques are discussed later in this chapter.

Opioid and opiate analgesics such as morphine and fentanyl are controlled substances often referred to as narcotics. Although the terms *opioid* and *narcotic* were once interchangeable, law enforcement agencies have generalized the term *narcotic* to mean a drug that is addictive and misused or used illegally. Healthcare providers use the term **opioid analgesics** to describe drugs used in pain relief. Opioids interfere with pain perception centrally (at the brain). Nonopioid analgesics relieve pain by altering neurotransmission at the peripheral level (site of injury) (Drug Therapy Table 11-1).

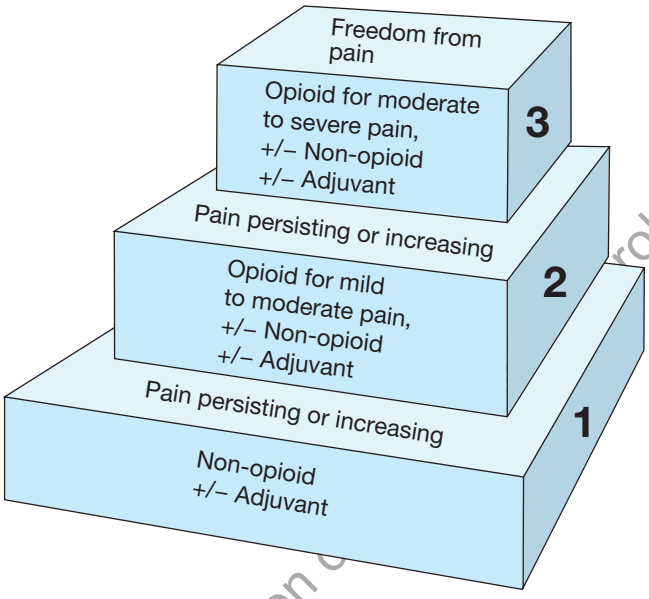


Figure 11-10 World Health Organization (WHO) analgesic ladder. (World Health Organization. [2012]. *WHO's pain ladder.* https://www.who.int/images/default-source/infographics/cancer/guidelines-for-the-management-of-cancer-pain.jpg?sfvrsn=c9f27a68_6. Redrawn with permission.)

Pharmacologic Considerations

- Nonopioids are serious drugs. Instruct clients to consult their healthcare providers when using pain relievers for more than a few doses.
- Acetaminophen's effect on the liver makes drug overdose the primary cause of acute liver failure in children. To prevent hepatic damage, no more than 3,250 to 4,000 mg of acetaminophen should be taken per day. People often are not aware they have exceeded the daily recommended dose when fever and pain relief drugs are coupled with over-the-counter cough and cold remedies that also contain acetaminophen.
- Likewise, some adults do not realize the anticoagulant (bleeding) effect of salicylate-based pain medications. Instruct clients taking the following drugs to tell all healthcare providers when procedures are expected:
- Aspirin, including low-dose self-therapy (anticoagulant)
- Cold and cough product use (contains salicylates)
- NSAIDs such as ibuprofen and naproxen (increase gastrointestinal [GI] bleeding risk)

Pharmacologic Considerations

- The drug meperidine is less frequently used in a patient-controlled analgesia (PCA) machine. Some primary providers are less apt to prescribe the drug because it can potentially cause convulsions. Meperidine is metabolized into normeperidine by the body. When this metabolite is not excreted quickly, it builds up and can cause seizures.

Methods of Administration

Analgesic drugs are administered by oral, rectal, transdermal, or parenteral (injected) routes, including a continuous infusion that may be instilled into the spinal canal or self-administered intravenously by clients. When changing from a parenteral to an oral route, it is best to administer an **equianalgesic dose**, an oral dose that provides the same level of pain relief as when the drug is given by a parenteral route (Table 11-4).

Patient-Controlled Analgesia

PCA allows clients to self-administer their own narcotic analgesic by means of an intravenous pump system (Fig. 11-11). The client infuses the drug by pressing a handheld button. The dose and time intervals between doses are programmed into the device to prevent inadvertent overdose.

Intraspinal Analgesia

In intraspinal analgesia, a narcotic or local anesthetic is infused into the subarachnoid or epidural space of the spinal cord through a catheter inserted by a primary provider (Fig. 11-12). Depending on state nurse practice acts, registered nurses who are qualified as being competent may administer intraspinal medications through a catheter inserted by a primary provider or nurse anesthetist. The intraspinal analgesic is administered several times per day or as a continuous low-dose infusion. This method of analgesia relieves pain with minimal systemic drug effects. When used for clients who require long-term analgesia, there is less chance of affecting the subcutaneous tissues with repeated injections that may eventually lessen drug absorption.

DRUG THERAPY TABLE 11-1 Analgesic Drug Therapy

Category and Common Generic (Brand) Drugs	Intended Use	Common Side Effects	Safety Warnings for Nurses
Analgesics			
Opioids			
Opium derivatives Codeine Morphine (MS Contin) *Synthetics* Fentanyl (Sublimaze, Duragesic) Hydrocodone (Hysingla ER) Hydromorphone (Dilaudid) Meperidine (Demerol) Oxycodone (OxyContin) Tapentadol (Nucynta) Tramadol (Ultram)	Moderate-to-severe pain Acute pain only Neuropathic pain	Sedation, hypotension, vertigo, euphoria, nausea, vomiting, urinary retention, constipation (tolerance is not developed)	Watch for respiratory depression in opiate-naïve clients. Treat constipation early with laxatives and fiber. Use transdermal patches only when pain is not reduced by other routes, fold patches before disposal.
Nonopioids			
Salicylate Aspirin or acetylsalicylic acid (Ascriptin, Bufferin)	Mild pain, antipyretic, antiinflammatory, stroke prevention in males (and females older than 65 years only)	Nausea, vomiting, epigastric distress	Anticoagulant; watch for bleeding and bruising. Do not use in children under 12 years of age, due to risk of Rey syndrome. Tinnitus (ringing in ears) can indicate overmedication use.
Non-salicylate Acetaminophen (Tylenol)	Mild pain, antipyretic	Rare to see SE, itching	Liver toxicity with doses over 3,500–4,000 mg/day Used in cough/cold remedies, easy to go over daily max if taking with pain reliever
Nonsteroidal antiinflammatory drugs (NSAIDs) Celecoxib (Celebrex) Ibuprofen (Motrin) Indomethacin (Indocin) Naproxen (Naprosyn)	Mild-to-moderate pain, antipyretic, antiinflammatory, rheumatoid disorders, dysmenorrhea	Nausea, dyspepsia, constipation	Risk of cardiovascular thrombosis, MI, and stroke Should not be used for postoperative cardiac surgery
Serotonin 5-HT Receptor Agonists			
Sumatriptan (Imitrex) Zolmitriptan (Zomig)	Acute migraine headache	Dizziness, fatigue, nausea, dry mouth, flushing	If taking with SSRI/SNRI antidepressant, monitor for serotonin syndrome. Do not use injectable form if cloudy or yellow.
Topical Analgesics			
Capsaicin cream (Zostrix) Lidocaine 5% patch (Lidoderm)	Minor aches, joint pain, nerve pain	Skin redness, irritation, or swelling	Avoid direct heat, e.g., heating pad, hot tub increases skin absorption. Fold patches before disposal.
Analgesic Adjuvants			
Anticonvulsants			
Carbamazepine (Tegretol) Levetiracetam (Keppra) Topiramate (Topamax) Valproic acid (Depakote) *Calcium Channel Binders* Gabapentin (Neurontin) Pregabalin (Lyrica)	Migraine headache Fibromyalgia, neuropathic pain syndromes, phantom limb pain	Dizziness, somnolence, nausea Weight gain	Increased fall risk due to sedative side effects Dose must be titrated down when stopping drug.

(*continued*)

DRUG THERAPY TABLE 11-1 Analgesic Drug Therapy (*continued*)

Category and Common Generic (Brand) Drugs	Intended Use	Common Side Effects	Safety Warnings for Nurses
Antidepressants			
SNRI and Dopamine–Norepinephrine Reuptake Inhibitors (DNRIs) Duloxetine (Cymbalta) Venlafaxine (Effexor) *Tricyclics* Desipramine (Norpramin) Nortriptyline (Pamelor)	Used to treat migraine headaches, neuropathy, fibromyalgia	Dizziness, somnolence, dry mouth, nausea, flushing	Screen for suicidal ideation. Dose must be titrated down when stopping drug. Taking the herbal St. John's wort can increase the risk of serotonin syndrome.
Glucocorticosteroids			
Dexamethasone Prednisone	Antiinflammatory pain reduction	Bruising, acne, increased appetite and weight gain, insomnia	Dose must be titrated down when stopping drug. Alters blood glucose levels
***N*-methyl-D-aspartate (NMDA) receptor antagonists**			
Amantadine (Symmetrel) Ketamine (Ketalar) Memantine (Namenda) Methadone (Dolophine) Dextromethorphan	Chronic neuropathic pain, pain with opioid tolerance	Lightheadedness, dizziness	Strong CNS effects such as hallucinations, sensory changes, and nightmares Do not take with other CNS depressant drugs.

5-HT, 5-hydroxytryptamine; CNS, central nervous system; MI, myocardial infarction; SE, side effects; SNRI, serotonin–norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor.
The drugs in column 1 indicate the drug that matches up with explanations in columns 2 through 4.

Palliative Sedation

Palliative sedation is the controlled administration of sedative medication to eliminate an imminently dying client's intractable pain and suffering (American Academy of Hospice and Palliative Medicine, 2025; Bhyan et al., 2024). The aim of this approach is not to shorten survival or be completely irreversible, in other words, "to kill the pain—not the patient" (Doerflinger & Gomez, 2016).

Palliative sedation is used only when there is no other means available to alleviate suffering without speeding up or slowing down the dying process. In some instances, it may be used for only a predetermined period of time. Once awakened, the client's capacity to endure suffering is reassessed. Sedation may then be withheld for the time being or reestablished. Palliative sedation is used to relieve symptoms of distress in terminally ill clients but is not used to shorten the lifespan of the person. Legal and ethical issues must be reviewed by the medical team and the family members, surrogates, and clinicians need to address the concerns prior to use (Bhyan et al., 2024). Drugs that are commonly administered for palliative sedation include benzodiazepines, such as midazolam (Versed); neuroleptics, such as haloperidol (Haldol); general anesthetics, such as propofol (Diprivan); and barbiturates, such as pentobarbital (Nembutal).

TABLE 11-4 Examples of Adult Equianalgesic Doses

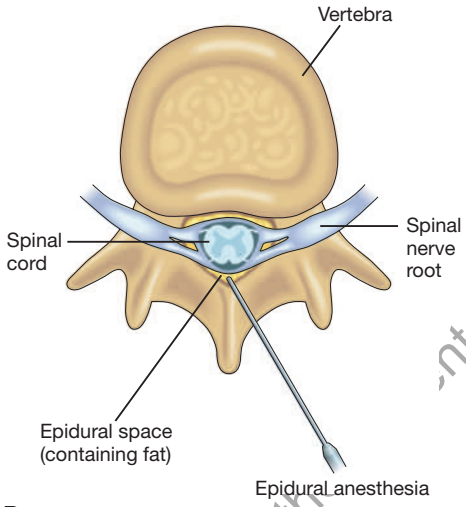
OPIOID AGONIST	PARENTERAL DOSE (mg)	ORAL DOSE (mg)	DURATION OF ACTION (hours)
Morphine	10	30	3–4
Hydromorphone (Dilaudid)	1.5	7.5	2–3
Oxymorphone (Opana)	1	10	3–6

Adapted from Kishner, S. (2022). Opioid equivalents and conversions. *Medscape*. http://emedicine.medscape.com/article/2138678-overview

Substance Use Disorder, Tolerance, and Physical Dependence

One of the leading factors interfering with adequate pain management is the fear of developing a substance use disorder. The American Society for Pain Management Nursing describes **substance use disorder** as a chronic, relapsing, treatable disease—characterized by:

Figure 11-11 Patient-controlled analgesia allows the client to self-administer medication to control pain.



A B

Figure 11-12 Intraspinal anesthesia. **(A)** Epidural catheter insertion. **(B)** Epidural catheter placement. ([A] Reprinted with permission from Ricci, S. S. [2017]. *Essentials of maternity, newborn, and women's health nursing* [4th ed.]. Wolters Kluwer.)

- Craving
- Dysfunctional behaviors
- Inability to control impulses regarding consumption of a substance
- Compulsive use despite harmful consequences (Sowicz et al., 2023)

Substance use disorders are a worldwide problem. The treatment and prescribing of opioid medications have been reduced due to the addictive properties of the drugs. Per the CDC's National Center for Health Statistics (2025), in January 2024 there were approximately 79,000 deaths in the United States related to opioids (Ahmad et al., 2025). Unfortunately, the fear of developing a substance use disorder causes many clients to refuse or self-limit prescribed drug therapy. Nurses often assume that a client's desire to experience a drug's pleasant effects motivates their desire for frequent doses of narcotics. What may be happening is that the prescribed dose or frequency of administration is not controlling the pain. Clients with severe, unrelieved pain may be falsely labeled as having a substance use disorder because they are focused on receiving analgesics, when in reality they are only seeking relief from unrelenting discomfort. Consequently, nurses may administer subtherapeutic doses or may convince the primary provider to prescribe a **placebo**, an inactive substance intended to produce a beneficial effect without any physiologic alteration.

Although substance use disorders rarely develop, tolerance is common. **Tolerance** is a condition in which a client needs increasingly larger doses of a drug to achieve the same effect as when the drug was first administered. Activation of NMDA receptors is believed to decrease the effect of opioids and the need to administer higher doses to achieve a therapeutic effect.

Although responses to drug therapy differ among people, tolerance may not develop until a client has taken an opioid drug regularly for 4 weeks or more (McCaffery & Ferrell, 1999). The development of tolerance is not an indication of substance use disorder. The most appropriate nursing action is to consult with the primary provider regarding the need for an increased dose of the drug and not to reduce its dosage or frequency of administration. As a rule of thumb, an ineffective dose should be increased by 25% to 50% (McCaffery & Ferrell, 1999).

Because opioids depress the respiratory center in the brain, some nurses fear giving larger and larger doses of narcotic analgesics. In reality, respiratory depression is rare in those receiving opioids for prolonged periods of time. However, even if large doses of opioid analgesics coincidentally hasten death, the primary intention for their administration is controlling pain. The Hospice and Palliative Nurses Association (2025) and other professional organizations, therefore, acknowledge that it is an ethically acceptable intervention.

››› Stop, Think, and Respond 11-2

A medical order states meperidine hydrochloride 50 to 100 mg IM q3h prn for pain. If a client does not experience adequate pain relief after receiving 50 mg, what dose should the nurse administer?

Just as tolerance is not a characteristic of substance use disorder, neither is physical dependence. **Physical dependence** means that a person experiences physical discomfort, known as **withdrawal symptoms**, when a drug that a person has taken routinely for some time is abruptly discontinued (see Chapter 71). To avoid withdrawal symptoms, drugs that are known to cause physical dependence are discontinued gradually. The dosage or the frequency of their administration is lowered over 1 week or longer.

Adjuvant Drug Therapy

Adjuvant drugs are medications that are ordinarily administered for reasons other than treating pain. When adjuvant drugs are combined with opioid and nonopioid analgesics, they may achieve any or all of the following: (1) improvement

of analgesic effect without an increased analgesic dosage; (2) control of concurrent symptoms, such as inflammation, that worsen the pain; and (3) moderation of side effects of analgesics, such as nausea or sedation. Examples of adjuvant drugs used to manage pain include tricyclic antidepressants, corticosteroids, anticonvulsants, psychostimulants, and NMDA receptor antagonists (see Drug Therapy Table 11-1).

Nondrug Interventions

The pain management standards established by The Joint Commission include using nonpharmacologic methods for managing pain (see Chapter 9). Some are independent nursing measures; others may require collaboration with the client's primary provider and services provided within integrative medicine by people who have specialized training and expertise. Examples include applications of heat and cold, transcutaneous and percutaneous electrical nerve stimulation (TENS and PENS, respectively), acupuncture, and acupressure. The latter interventions are more likely to be used for clients with chronic pain or those for whom acute pain management techniques have been unsuccessful or are contraindicated.

Research is ongoing to determine how nondrug interventions relieve pain. Some question whether their effectiveness is the result of the placebo effect (see Chapter 67) or something more physiologic. Pasero and McCaffery (1999, p. 22) report that "the brain can accommodate a limited number of sensory signals. When individuals use techniques such as distraction, relaxation, and imagery to control pain, they direct their attention away from the pain sensation." Some believe that these techniques stimulate the visual portion of the brain's cortex in the right hemisphere, where abstract concepts and creative activities take place. In response, the body releases neurotransmitters such as GABA and serotonin that calm the body and promote emotional well-being. This may explain how some adjuvant drugs for pain relief such as anticonvulsants and antidepressants effect their actions.

Techniques such as electrical nerve stimulation, acupuncture, and acupressure may support the gate control and neuromatrix theories. They achieve benefits by stimulating sensory nerve fibers that conduct tactile or vibratory sensations over pathways shared for transmitting pain. The result is inhibition of pain transmission. Others speculate that these and other nondrug methods like massage relieve pain by releasing **endogenous opiates** such as endorphins and enkephalins. Endogenous opiates are natural morphinelike substances in the body that modulate pain transmission by blocking receptors for substance P (see Fig. 11-6).

Heat and Cold

Applications of heat and cold (thermal therapy) are well-established techniques for relieving pain (Fig. 11-13). Pain associated with injury is best treated initially with cold applications such as an ice bag or chemical pack. A first aid measure following a soft tissue injury and for 24 to 48 hours thereafter is to follow the mnemonic **RICE**: **R**est, **I**ce, **C**ompression, **E**levation. The cold decreases vasodilation, which reduces localized swelling, which may be useful for minor or moderate pain. Cold applications using ice bags or compresses are repeatedly applied for 10 to 20 minutes, removed, and reapplied later. Regardless of whether hot or cold applications are used, they are never applied directly to the skin.

Applications of dry or moist heat, such as a heating pad, hot water bottle, warm baths, and hot tubs or whirlpools with water jets, are beneficial for chronic pain or several days following an injury. The heat reduces muscle tension and promotes relaxation; it increases blood flow, which brings healing blood cells to injured tissue.

Transcutaneous Electrical Stimulation

TENS is a pain management technique that delivers bursts of electricity to the skin and underlying nerves. It is safe

Figure 11-13 Examples of hot and cold applications. **(A)** Ice bag. **(B)** Warm compress covered by aquathermia pad. (**A** and **B,** reprinted with permission from Springhouse. [2009]. *Lippincott's visual encyclopedia of clinical skills.* Wolters Kluwer Health/ Lippincott Williams & Wilkins.)

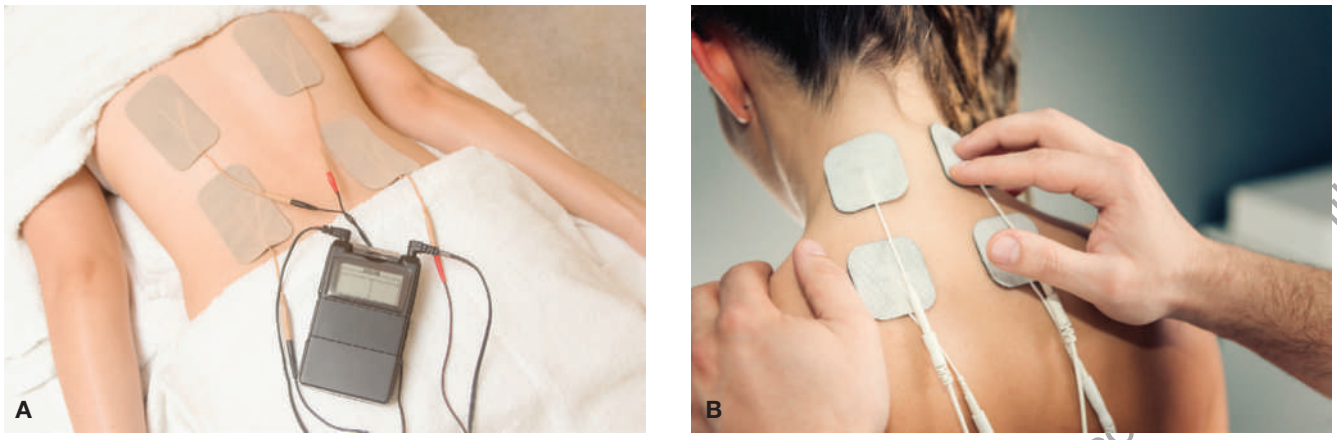


Figure 11-14 To activate various sensory nerves, a transcutaneous electrical nerve stimulation (TENS) unit **(A)** may be placed close to the pain source. The TENS unit floods the gates in the spinal cord, blocking pain perception. Site of placement **(B)** depends on the pain's location.

for managing acute and chronic pain and does not produce systemic side effects or substance use disorder. The electricity is delivered from a battery-operated TENS unit through electrode patches that are placed at appropriate sites, such as directly over the affected area, at areas along a nerve pathway, or at points distal to the painful area (Fig. 11-14). The client perceives the electrical stimulus as a pleasant tapping, tingling, vibrating, or buzzing sensation. Placement sites, intensity of electrical current, rate of electrical bursts, and duration can be changed according to the client's response.

Acupuncture and Acupressure

Acupuncture is a pain management technique in which long, thin needles are inserted into the skin. Acupressure uses tissue compression, rather than needles, to reduce pain. The location for needle placement and pressure is based on 2,000-year-old traditions practiced in Chinese medicine (see Chapter 9). Relief of pain, especially in chronic transmission pathways, is not permanent, and repeated treatments are almost always necessary.

Although both techniques have been demonstrated to prevent or relieve pain, their exact mechanism is not completely understood. Some speculate that the twisting, vibration, and pressure are forms of cutaneous stimuli that close the gates to pain-transmitting neurochemicals. Another theory is that acupuncture and acupressure stimulate the body to release endorphins and enkephalins.

Percutaneous Electrical Nerve Stimulation

Two of the newest innovations in acute and chronic pain management are **PENS**, a form of electroacupuncture (see Chapter 9), and **percutaneous neuromodulation therapy (PNT)**, a variant of PENS. They combine the use of acupuncture needles with TENS. The practitioner inserts the needles in soft tissue near the area of the spine or body that is causing pain, and an electrical stimulus is conducted through the needles. PENS is considered superior to TENS in providing pain relief because the needles are located closer to nerve endings. The general treatment regimen for PENS and PNT therapy is 5- to 30-minute sessions multiple times daily for up to 8 weeks or even much longer if for a postoperative reason (Kaye, 2021). The technique has been successful in research trials on clients with low back pain, pain caused by the spread of cancer to bones, shingles (acute herpes zoster viral infection), neuropathic pain among clients with diabetes or hemiplegia, and migraine headaches.

Other Noninvasive Techniques

Various other techniques are used alone or in addition to more traditional pain management techniques. Some include imagery, biofeedback, massage therapy, reflexology, chiropractic, and others (see Chapter 9). In addition, in some situations (e.g., clients with severe burns), hypnosis is used. Hypnosis is a technique in which a person assumes a trancelike state during which perceptions are altered. During hypnosis, a suggestion is made that a person's pain will be eliminated or that the client will experience the sensation in a more pleasant way.

Cotherapies also may include physical or occupational therapy and cognitive behavioral therapy. Physical therapy can help to strengthen muscles weakened by disuse. Occupational therapy may help inactive clients relearn to perform physical tasks without aggravating their preexisting condition. **Cognitive behavioral therapy** is a form of psychotherapy used to help clients change their unhealthy beliefs and behaviors.

Spinal Surgery Techniques

Intractable pain, pain that does not respond to analgesic medications, noninvasive nonpharmaceutical measures, or nursing management requires more drastic measures. Neurosurgical procedures that provide pain relief include implanting a spinal cord stimulator, rhizotomy, and cordotomy.

Spinal Cord Stimulation

A **spinal cord stimulator** is a pulse generator that is placed surgically under the client's skin and connects to a wire that leads to nerve fibers in the spinal cord (Fig. 11-15). The pulse generator transmits an electrical current that causes a tingling sensation, but ultimately interrupts pain transmission.

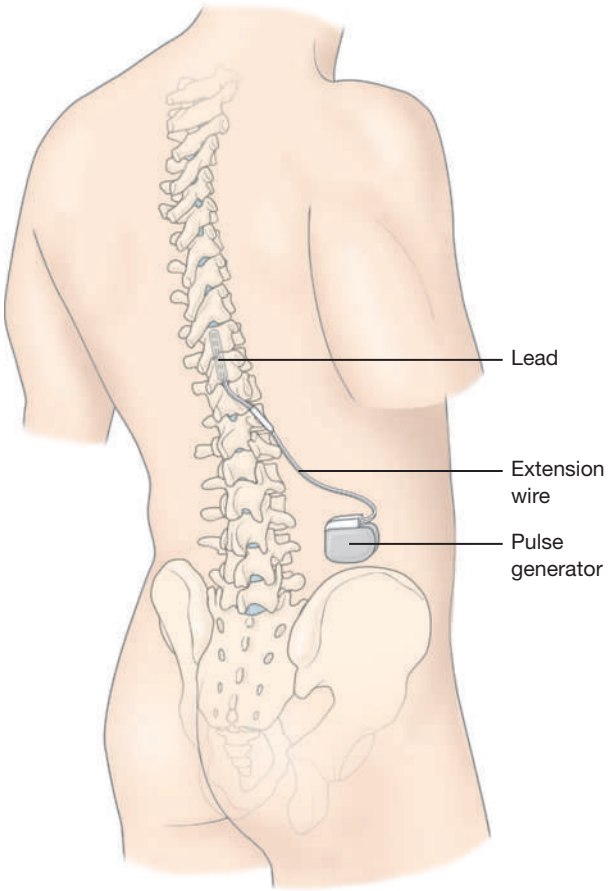


Figure 11-15 Spinal cord neurostimulator with percutaneous pulse generator.

Candidates for this device are clients for whom conservative pain management techniques have failed. Generally, most clients experience a 50% to 75% relief from pain. The battery for the pulse generator must be replaced every 2 to 5 years; however, some batteries are rechargeable and may be left in place for up to 10 years.

Rhizotomy

A **rhizotomy** is a procedure that destroys the medial branch sensory nerve that protrudes between spinal joints (Fig. 11-16). Destroying the spinal nerve prevents sensory impulses from entering the spinal cord and going to the brain. The result is relief of low back or cervical pain due to a loss of sensation in the area supplied by the affected nerve. More than one nerve may need to be sectioned to produce the desired results. Chemical rhizotomy (using chemicals such as alcohol or phenol to destroy the nerve) and percutaneous rhizotomy (using radiofrequency waves to destroy pain fibers) are alternatives to surgery that may provide the same result.

Cordotomy

A **cordotomy** is an interruption of pain pathways in the spinal cord. The procedure is primarily indicated for those with a terminal illness with a life expectancy of less than 12 months. A cordotomy can be performed in two different ways: an open surgical approach or percutaneously using x-ray computed tomography (CT) guidance radiofrequency

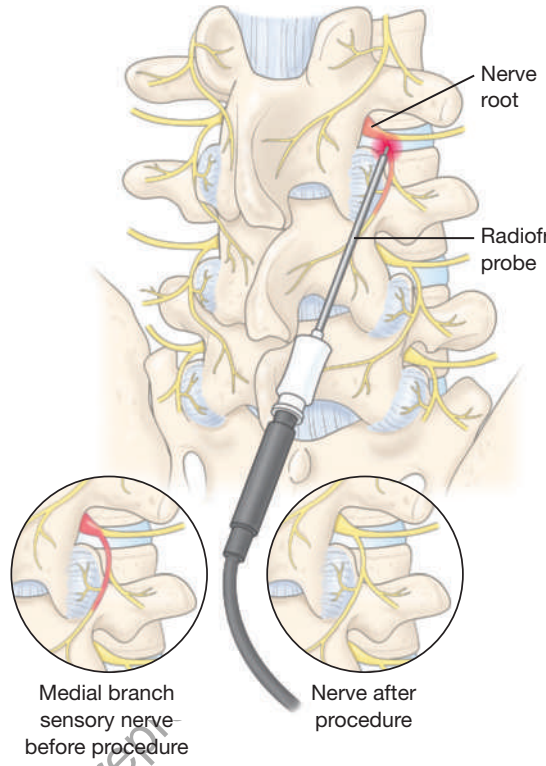


Figure 11-16 A sensory nerve root is destroyed to relieve pain when a rhizotomy is performed.

that destroys sensory nerve tracts in the vertebral column (Fig. 11-17). The outcome is that sensory nerve impulses are prevented from going to the brain. Loss of pain sensation is permanent, and there may be short-term limb weakness. Percutaneous cordotomy carries less risk and usually is better tolerated by terminally ill clients.

Nursing Management

The nurse performs a comprehensive assessment of each client's pain on admission as mandated by The Joint Commission (see Table 11-3). Regularly thereafter, the nurse determines the onset, quality, intensity, location, and duration of the client's pain. They explain the tool for assessing a client's pain so the client understands how to self-report their

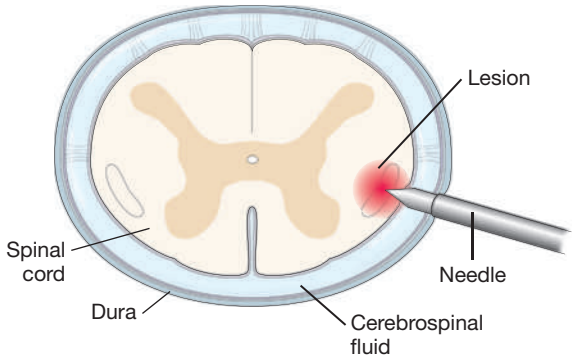


Figure 11-17 A percutaneous cordotomy creates a lesion within the spinal cord to eliminate the client's perception of pain.

level of pain when the assessment tool is used again. Giving assurance that pain management is a nursing and agency priority is essential throughout the client's care. The nurse informs the client of available pain management techniques and incorporates any preferences or objections to interventions for pain management that the client may have when establishing a plan of care.

The nurse collaborates with each client about their goal for a level of pain relief and implements interventions for achieving the goal. The nurse never doubts or minimizes the client's description of pain or need for pain relief. If a client's goal for pain relief is not reached, the nurse collaborates with members of the healthcare team for other approaches that may do so. Scheduling the administration of analgesics every 3 hours rather than on an as-needed (prn) basis often affords a uniform level of pain relief. Providing a client with equipment to self-administer analgesics, as with a PCA pump, also promotes a more consistent level of pain relief.

When medications are administered, the nurse monitors for and implements measures for managing side effects (see Drug Therapy Table 11-1). Problems that may develop with opioid and opiate therapy include Impaired Gas Exchange related to respiratory depression, Constipation related to slowed peristalsis, Injury Risk related to drowsiness and unsteady gait, Malnutrition Risk related to anorexia and nausea, Dehydration related to reduced oral intake, and Sleep Deprivation (interrupted sleep) related to depression of the central nervous system. Some general nutrition considerations are listed in Nutrition Notes.

The nurse may administer adjuvant drugs or implement nondrug alternatives for pain management to enhance the effect of opioid and nonopioid analgesics or as a substitute when drug side effects jeopardize the client's safety. When planning the client's discharge from the healthcare agency, the nurse includes interventions for pain relief to facilitate a comfortable transition to the next level of care. Box 11-2 summarizes nursing responsibilities for managing pain.

An important component of pain management is client and family teaching (Client and Family Teaching 11-1).

Nutrition Notes

The Client Receiving Drug Therapy for Pain

- Administering pain medications 30 to 45 minutes before meals may relieve pain, enabling the client to consume an adequate nutritional intake.
- Small, frequent meals may help maximize intake in clients with drug-related or pain-related anorexia. Solicit food preferences.
- A high-fiber diet (i.e., a diet rich in whole-grain breads and cereals, fresh fruits, and vegetables) along with increased fluids may help ease constipation, a possible side effect of opioids.

BOX 11-2 Nursing Responsibilities for Managing Pain

- Assess for pain on a frequent and regular basis.
- Respond quickly to a client's or family's report of pain.
- Acknowledge the client's pain.
- Explain available options for managing pain.
- Encourage the client's participation in pain management decisions.
- Respect the client's choice for managing the pain.
- Implement measures to relieve pain in a timely manner.
- Evaluate the effectiveness of an intervention.
- Advocate on the client's behalf if pain is unrelieved or insufficiently relieved.
- Provide pain-relieving alternatives.
- Communicate with healthcare members concerning approaches and outcomes of a client's pain management.

Client and Family Teaching 11-1 Pain

The nurse encourages the client and family to do the following:

- Discuss with the primary provider what to expect from the disorder, injury, or its treatment.
- Talk with the primary provider about any concerns that relate to drug therapy.
- Share information about what drugs or pain-relieving techniques have and have not been helpful during previous episodes.
- Identify drug allergies to avoid adverse effects.
- Inform the primary provider about other medications being taken to avoid drug–drug interactions.
- Take prescribed drugs exactly as directed and report untoward effects.
- Avoid taking over-the-counter drugs unless the primary provider has been consulted; follow label directions for administration.
- Avoid alcohol and sedative drugs if the analgesic causes sedation.
- Keep analgesic drugs out of the reach of children; request childproof caps.
- Never share medications with others or take someone else's medications for pain.

Clinical Scenario A client arrives at the emergency department of a hospital at 4 p.m. They report that they have a "throbbing" pain in their left side that started this morning and hasn't stopped. They state that they have never felt this intense pain before today. "Please make it stop!" How does the nurse assess this client and plan for their care? What data are needed for this assessment? See Nursing Care Plan 11-1.

NURSING CARE PLAN 11-1 The Client With Acute Pain

Assessment

- Determine the following:
  - Source of client's pain; when it began; its intensity, location, characteristics, and related factors such as what makes the pain better or worse
  - How client's pain interferes with life, such as diminishing the ability to meet their own needs for hygiene, eating, sleep, activity, social interactions, emotional stability, concentration, and so forth
  - At what level client can tolerate pain
  - Pain-related behaviors such as grimacing, crying, moaning, and assuming a guarded position
- Measure vital signs.
- Perform a physical assessment, taking care to gently support and assist client to turn as you examine various structures. Use light palpation in areas that are tender. Show concern when assessment techniques increase client's pain.
- Postpone nonpriority assessments until client's pain has been reduced.

Nursing Diagnosis. Acute pain related to cellular injury or disease as manifested by stating, "I'm in severe pain"; rating pain at 10 using a numeric scale; pointing to the lower left abdominal quadrant; describing the pain as "continuous, throbbing, and starting this morning" without any known cause.

Expected Outcome. Client will rate the pain intensity at their tolerable level of "5" within 30 minutes of implementing a pain management technique.

Interventions	Rationales
Assess client's pain and its characteristics at least every 2 hours while awake and 30 minutes after implementing a pain management technique.	*Quick interventions prevent or minimize pain.*
Modify or eliminate factors that contribute to pain such as a full bladder, uncomfortable position, pain-aggravating activity, excessively warm or cool environment, noise, and social isolation.	*Multiple stressors decrease pain tolerance.*
Determine client's choice for pain relief techniques from among those available.	*Encourage and respect client's participation in decision making.*
Administer prescribed analgesics or alternative pain management techniques promptly.	*Suffering contributes to the pain experience and can be reduced by eliminating delays in nursing response.*
Advocate on client's behalf for higher doses of prescribed analgesics or addition of adjuvant drug therapy if pain is not satisfactorily relieved.	*The Joint Commission standards mandate that nurses and other healthcare providers facilitate pain relief for clients.*
Administer a prescribed analgesic before a procedure or activity that is likely to result in or intensify pain.	*Prophylactic interventions facilitate keeping pain at a manageable level.*
Plan for periods of rest between activities.	*Fatigue and exhaustion interfere with pain tolerance.*
Reassure client that there are many ways to modify the pain experience.	*Suggesting that there are additional untried options helps alleviate frustration or despair that there is no hope for pain relief.*
Interventions	**Rationales**
Assist client to visualize a pleasant experience.	*Imaging interrupts pain perception.*
Help client focus on deep breathing, relaxing muscles, watching television, putting together a puzzle, or talking to someone on the phone.	*Diverting attention to something other than pain reduces pain perception.*
Apply warm or cool compresses to a painful sensory site.	*Flooding the brain with alternative stimuli closes the spinal gates that transmit pain.*
Gently massage a painful area or the same area on the opposite side of the body (contralateral massage).	*Massage promotes the release of endorphins and enkephalins that moderate the sensation.*
Promote laughter by suggesting that client relate a humorous story or watch a video or comedy of their choice.	*Laughter releases endorphins and enkephalins that promote a feeling of well-being.*

Evaluation of Expected Outcomes

- Client reports that pain is gone or is at a tolerable level of "5" within 30 minutes.
- Client perceives the pain experience realistically and copes effectively.
- Client participates in self-care activities without undue pain.

KEY POINTS

- Pain Management
  - Types of pain
    - Nociceptive pain—noxious stimuli transmitted from point of cellular injury to the brain
      - Somatic pain—caused by mechanical, chemical, thermal, or electrical injuries or disorders
      - Visceral pain—arises from internal organs
    - Neuropathic pain—pain that is processed abnormally by the nervous system
    - Acute pain—discomfort for a short duration—seconds to less than 6 months
    - Chronic pain—pain that lasts longer than 6 months
  - Pain transmission
    - Transduction—conversion of chemical information in the cellular environment to electrical impulses that move toward the spinal cord
    - Transmission—phase where peripheral nerve fibers form synapse with neurons in the brain
    - Perception—the phase of impulse transmission, where one feels the pain
    - Pain threshold—the point at which the pain is felt
    - Pain tolerance—the amount of pain a person endures
    - Modulation—last phase of pain impulse transmission
  - Theories of pain
    - Specific theory
    - Pattern theory
    - Gate control theory
    - Neuromatrix theory
    - Endogenous opioid theory
  - Pain assessment—includes the client's description of the pain onset, quality, intensity, location, and duration, accompanying symptoms, what makes the pain better, what makes the pain worse
    - Assessment biases
    - Assessment tools
    - Assessment standards
  - Pain management—techniques used to prevent, reduce, or relieve pain
    - Drug therapy
      - Methods of administration
      - Palliative sedation
      - Substance use disorder, tolerance, and physical dependence
      - Adjuvant drug therapy
    - Nondrug interventions
      - Heat and cold
      - Transcutaneous electrical nerve stimulation
      - Acupuncture and acupressure
      - Percutaneous electrical nerve stimulation
    - Spinal surgical techniques
      - Spinal cord stimulation
      - Rhizotomy
      - Cordotomy
  - Nursing management—The nurse performs a comprehensive assessment of pain upon admission, provides appropriate treatment, and reassesses routinely throughout the care of the client.

CLINICAL JUDGMENT EXERCISES

1. What questions should the nurse ask when a client states that they have pain?
2. Discuss how acute pain after surgery is different from pain experienced by a client with chronic back pain.
3. Discuss nursing interventions that are appropriate if a client does not experience adequate pain relief from a prescribed analgesic.
4. What actions should a nurse take if a client who they assume to be in pain cannot verbalize discomfort?
5. If a client has an order for morphine sulfate 5 mg IM q3 to 4h prn and ibuprofen (Motrin) 800 mg po tid prn and has not experienced pain relief 2 hours after receiving the morphine, what could the nurse do?

NEXT-GENERATION NCLEX-STYLE REVIEW QUESTIONS

1. A nurse observes that the client who is experiencing abdominal pain is curled in a fetal position and rocking back and forth. What nursing action is best at the present time?
   a. Ask the client to rate the pain on a scale from 0 to 10.
   b. Determine if the client can stop moving about.
   c. Give the client a prescribed pain-relieving drug.
   d. Observe if the client is breathing heavily.
2. A postoperative client requests pain medication. Following the administration of morphine sulfate, what information is most important for the nurse to collect?
   a. Color and temperature of the skin
   b. Presence and activity of bowel sounds
   c. Rate and depth of respirations
   d. Rhythm and force of the heart rate
3. A primary provider orders ketamine 1 mg/kg IM now. The client weighs 220 lb. The vial of ketamine has been diluted to contain 50 mg/mL. Fill in the blank with the volume the nurse should administer. Record your answer in a whole number.

   _____mL
4. A client has developed physical dependence on an opioid drug for pain relief. Which of the following interventions is appropriate first?
   a. Immediately discontinue all drug therapy.
   b. Replace the opioid with a nonopioid drug.
   c. Gradually decrease the dosage and frequency of the opioid.
   d. Increase the dosage but decrease the frequency of the opioid.
5. The nurse cares for a client with metastatic cancer who is receiving hospice care and who has an advance directive that requests no aggressive treatment. If there is a primary provider's order for pain medication every 3 to 4 hours as necessary, which action by the hospice nurse is most appropriate in order to provide the client with maximum comfort at this time?
   a. Administer the medication every 3 hours.
   b. Ask the primary provider to prescribe a high dose.
   c. Give the medication immediately upon request.
   d. Give the medication when the pain is severe.