Compact Clinical Guide to Cancer Pain Management
An Evidence-Based Approach for Nurses

Pamela Stitzlein Davies, MS, ARNP, ACHPN • Yvonne D’Arcy, MS, CRNP, CNS

“[This] text is full of ‘clinical pearls’ based on [the authors’] extensive clinical experience with effective and ineffective pain management interventions.…The scope of the content in this text is extremely comprehensive…newer content on the effect of opioid polymorphisms, cancer pain emergencies, myofascial pain, and chronic pain in cancer survivors places this text at the forefront in terms of cutting-edge issues in cancer pain management.”

From the Foreword by Christine Miaskowski, PhD, RN, FAAN
Professor and Associate Dean for Academic Affairs
American Cancer Society Clinical Research Professor
Sharon A. Lamb Endowed Chair in Symptom Management Research
Department of Physiological Nursing
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Although the prevalence of uncontrolled cancer pain remains unnecessarily high, research has indicated that 90% of cancer patients with pain can be successfully treated with standard therapies. This concise yet extremely comprehensive guide to managing cancer pain will enable nurses on the frontlines of pain assessment and management to incorporate effective strategies into their daily practice. To facilitate quick information retrieval, the text is designed in a consistently organized, bulleted format with highlighted key information and tools for assessment and standardized treatment. It also serves as an important review for the ONS and HPNA Certification exam.

This book focuses on all aspects of cancer pain, including assessment and screening tools, pharmacologic and nonpharmacologic treatment options, current national guidelines for pain management, regional anesthesia techniques, patient-controlled anesthesia, and epidural pain management. It also includes updated information on the effect of opioid polymorphisms, cancer pain emergencies, myofascial pain, and chronic pain in cancer survivors. The text additionally provides information on managing pain with difficult-to-treat populations.

KEY FEATURES:
• Provides current, evidence-based information on all aspects of cancer pain assessment and management
• Describes interventional techniques for managing severe pain situations
• Organized for speedy information retrieval

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Yvonne D’Arcy, MS, CRNP, CNS

Yvonne D’Arcy, MS, CRNP, CNS
Series Editor
This book is dedicated to the memory of my mother, 

Josephine Anne Griffin Stitzlein, 

who struggled with severe and difficult-to-control 
cancer pain at diagnosis, at recurrence of disease, and in her final days.

And to 

Betsy Donahue, RN, CHPN, 

Group Health Hospice, Seattle, Washington, 

who provided the highest level of expertise, compassion, and caring 
to my family in our mother’s final days. Betsy taught me so much 
about end-of-life cancer pain and symptom management. 
We should all aspire to her example.

In addition, I am so grateful to 

Christine Miaskowski, PhD, RN, FAAN, 

whose contagious vision for the essential role of nurses in cancer 
pain care inspired me to specialize in pain management. 
Her mentorship, guidance, and confidence in my skills have 
been invaluable to my career.

Pamela Jane Stitzlein Davies, MS, ARNP, ACHPN

I would like to dedicate this book to two very special nurses who helped me at the 
very beginning of my career, Betty Ferrell, PhD, RN, and Mary Layman Goldstein 
RN, NP. Although they may not have been aware of their influence, they gave me 
very high standards to aspire to and models of practice that helped to form my own 
practice in pain management.

Treating pain in cancer patients is a calling for Betty. She helped me teach nurses 
to treat pain and demonstrates such an inspiring dedication to her patients and 
their families. Mary helped me learn that being a nurse treating patients with 
cancer pain meant having a practice that demonstrates clinical excellence and 
a commitment to the patient. To both of these nurses I owe a tremendous debt 
of gratitude for helping me to understand right from the beginning that helping 
patients with cancer who had pain was the best job any nurse could have. Please 
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and teaching me the importance of treating pain in patients who have cancer.

Yvonne D’Arcy, MS, CRNP, CNS

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Contents

Foreword by Christine Miaskowski, PhD, RN, FAAN xi
Preface xiii
Acknowledgments xvii

SECTION I: OVERVIEW OF CANCER PAIN

1. Overview of Cancer Pain 1
   Yvonne D’Arcy
2. Assessing Pain in Patients With Cancer 13
   Yvonne D’Arcy

SECTION II: COMMON MEDICATIONS AND TREATMENT OPTIONS FOR CANCER-RELATED PAIN

3. Using Nonopioid Medications for Cancer Pain Management 41
   Yvonne D’Arcy
4. Opioid Medications for Cancer Pain 55
   Yvonne D’Arcy
5. Coanalgesics for Additive Pain Relief in Cancer Patients 75
   Yvonne D’Arcy
6. Management of Side Effects From Pain Medications 89
   Pamela Stitzlein Davies
   Yvonne D’Arcy

SECTION III: INTERVENTIONAL OPTIONS FOR MANAGING PAIN IN PATIENTS WITH CANCER

8. Infusions and Regional Techniques  139
   Yvonne D’Arcy
9. Specialty Blocks and Implanted Techniques for Cancer Pain Management  147
   Yvonne D’Arcy
10. Palliative Chemotherapy, Radiotherapy, and Surgery for Pain Control  159
    Pamela Stitzlein Davies

SECTION IV: SPECIAL TREATMENT CONSIDERATIONS

11. The Effect of Opioid Polymorphisms and Other Physiologic Factors on Treating Cancer Pain  177
    Yvonne D’Arcy
12. Opioid Addiction, Dependency, and Tolerance in Patients With Cancer  195
    Yvonne D’Arcy
13. Developing a Comprehensive Plan of Care and Prescribing Safely  207
    Yvonne D’Arcy

SECTION V: MANAGING CANCER-RELATED PAIN CONDITIONS

    Pamela Stitzlein Davies
15. Neuropathic Pain  227
    Pamela Stitzlein Davies
16. Myofascial Pain 253
   Pamela Stitzlein Davies

17. Chronic Pain in the Cancer Survivor 271
   Pamela Stitzlein Davies

SECTION VI: PALLIATIVE CARE, HOSPICE, AND END-OF-LIFE CARE

18. Palliative Care and Hospice: Care When There Is No Cure 301
    Pamela Stitzlein Davies

19. Pain Management at the End of Life 329
    Pamela Stitzlein Davies

20. Psychosocial Aspects of Cancer Pain 351
    Yvonne D’Arcy

Appendices

A. Selected Websites for Additional Information 361

B. Equianalgesic Conversion Table 363

Index 367
One can reasonably ask the question: Is another text on cancer pain management needed in 2012? After a careful evaluation of the *Compact Clinical Guide to Cancer Pain Management: An Evidence-Based Approach for Nurses* by Davies and D’Arcy, the answer is a resounding YES! A number of reasons solidify my enthusiasm and endorsement of this new and exciting text.

First and foremost, unrelieved cancer pain remains a significant clinical problem for approximately 50% of patients during cancer treatment. In addition, approximately 25% to 50% of cancer survivors experience chronic pain related to cancer and its treatment or from other chronic medical conditions. Finally, approximately 80% of patients in the terminal phases of cancer report unrelieved pain. Of note, these percentages have not changed for over 30 years! Therefore, a moral imperative exists to provide the most up-to-date information to frontline clinicians who do pain assessments and develop pain management plans on a daily basis.

Second, a text designed specifically for nurses provides essential and practical information to the very clinicians who are most likely to have the greatest impact on improving the management of pain in oncology patients. Nurses have taken the lead in cancer pain management for the past three decades. They are intimately involved in all aspects of care for oncology patients across the trajectory of the patient’s condition. Nurses are focused on the assessment and management of single and multiple symptoms. Often, they take a detailed history of the patient’s pain and its impact on the patient’s functional status and quality of life. They monitor the patient’s level of adherence with the pain management plan, including any side effects associated with analgesic medications. They serve as the intermediary between the patient and the physician to optimize the patient’s pain management plan. The evidence-based information in this text will provide nurses with strategies that they can recommend to their physician colleagues to optimize the oncology patient’s pain management plan.

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The third reason for my unqualified enthusiasm for this book is its emphasis on evidence-based approaches. All health care is focused on the need to implement evidence-based interventions into clinical practice. However, Davies and D’Arcy are experienced nurse practitioners who have devoted a substantial portion of their clinical careers to the care of patients in acute and chronic pain. Therefore, in addition to the evidence-based recommendations found in the book, the text is full of “clinical pearls” based on the authors’ extensive clinical experience with effective and ineffective pain management interventions.

The scope of the content in this text is extremely comprehensive. Traditional content on pain assessment and on pharmacologic and nonpharmacologic interventions form the foundation for the text. Davies and D’Arcy also include content on interventional options for managing chronic pain. In addition, newer content on the effect of opioid polymorphisms, cancer pain emergencies, myofascial pain, and chronic pain in cancer survivors places this text at the forefront in terms of cutting-edge issues in cancer pain management.

The final reason for my unqualified support of this text is the emphasis on “compact.” Given the hectic pace in inpatient, outpatient, and home care settings, nurses need to be equipped with texts that provide essential information that is readily available and presented in a user-friendly format. Compact Clinical Guide to Cancer Pain Management: An Evidence-Based Approach for Nurses fulfills this mandate.

On a personal note, I have known Pam Davies and Yvonne D’Arcy for over 20 years. Both are extremely passionate about providing optimal pain management to every patient they care for on a daily basis. In addition, both are equally passionate in their quest to educate nurses about optimal approaches to assess and manage pain in oncology. Their new book is required reading for all nurses who care for oncology patients.
Nursing management of cancer pain has come a long way since I started my first job in 1978 as the night nurse on Ward 7. Back then, the only nonoral route of administration for opioids was intramuscular (IM) injections. I vividly recall a young man dying of melanoma who was experiencing terrible pain. His orders were the standard of the day: Demerol 25–50 mg with Vistaril 25 mg IM every 4 to 6 hours as needed for pain. This was not only a bad drug choice, it was significantly underdosed for his needs. Additionally, in his cachectic state, all of his major muscles were rock hard from the repeated IM shots. I doubt if much of the drug was even being absorbed. His profound suffering was evident to other patients on the 52-bed open-bay ward, and throughout the night, they came to the nurse’s station begging that I give him more medicine. The resident would not increase the dose despite my repeated pleas, citing concerns about addiction. So, feeling like a criminal, and worried that I might be killing him, I increased the dose to 75 mg every 3 hours, then to 100 mg every 2½ hours. Finally, he started to get a bit of relief. He died 2 days later, most of that time in severe pain.

This was a tragic and avoidable situation. The amount of agony this young man went through was indescribable, and still burns in my memory. Being a neophyte, I had not yet learned how to be an assertive advocate for the patient. Moreover, in my attempt to provide some humane relief, I put my nursing license at risk. Fortunately for me, on morning rounds the attending physician agreed to write orders to cover the increased doses.

One would hope that, three decades later, this heartbreaking story is a relic from days past. Many things are better now: We use the intravenous route for uncontrolled pain rather than the intramuscular route; meperidine (Demerol) is removed from most formularies, banned due to risk of buildup of the dangerous metabolite normeperidine; nursing and medical schools provide...
required education on pain; and institutional policies support improved pain management, much of it driven by the The Joint Commission standards on pain. In addition, we can be proud of the leadership and accomplishment of many nurses in the national and international field of pain management.

Since those early times working nights, I have learned not only the vital responsibility that nurses hold in pain management, but also the importance of patient advocacy for better treatment. This was highlighted for me by two additional interactions.

First, I had the wonderful opportunity to be mentored by Christine Miaskowski, PhD, RN, FAAN, in the early 1990s, while attending graduate school at the University of California, San Francisco, School of Nursing. She shared a poignant story from her early career of a patient with lung cancer. In the final months, he developed a new, severe back pain that spread in a band around his thorax, associated with new, mild lower extremity weakness and urinary retention. He sought care from his oncologist, but an evaluation was not done. Experienced oncology nurses will recognize these symptoms as an imminent spinal cord compression (SCC). This occurs when growing vertebral metastasis applies pressure on the spinal cord, resulting in paralysis if not addressed promptly. By the time the condition was recognized, the patient was permanently paralyzed, which resulted in a great deal of physical and psychic suffering. Had this been caught in time, and treated with steroids and radiation, he could have remained ambulatory for the last several months of life.

Dr. Miaskowski told this story with an evangelistic fervor, emphasizing the need for early recognition of the hallmark symptoms of SCC, and the importance of rapid treatment, while describing the essential role of nurses in the evaluation and management of cancer pain conditions. Her leadership and vision inspired me to specialize in pain management.

Finally, I witnessed the profound importance of the bedside nurse in managing pain in a personal way when my mother died of retroperitoneal leiomyosarcoma. Mom's pain was unusually difficult to control, requiring a variety of management strategies and frequent dose increases. The wisdom, resourcefulness, and dedication of the hospice nurse, Betsy Donahue, RN, CHPN, in her tireless search for pain relief, affected me immensely. What a difference this nurse made to my mother and our family! I will never forget her example. It inspired me to learn how to be an active presence in the midst of suffering and dying, to be kind and patient with demanding caregivers, and to honor and respect each person as a unique individual.

Pamela Stitzlein Davies, MS, ARNP, ACHPN

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Much has been done in cancer pain management, but there is still much improvement needed. Research shows that cancer pain continues to be a significant problem worldwide. In a 2007 meta-analysis of 52 studies on cancer pain prevalence, 64% of those with advanced disease, 59% of patients on anticancer treatment, and 33% of those cured of cancer, reported pain. In addition, one third of the patients graded their pain as moderate to severe in intensity (van den Beuken-van Everdingen et al., 2007).

It is clear that we still have more to learn. The *Compact Clinical Guide to Cancer Pain Management: An Evidence-Based Approach for Nurses* is a unique volume from two experts in cancer pain management, both with decades of experience. It is intended for nurses or nurse practitioners working in oncology, surgery, medicine, rehabilitation medicine, or pain fields. Whether practicing in an outpatient oncology clinic, ambulatory infusion center, inpatient unit, ICU, primary care clinic, or palliative and hospice care, this text is intended to be a practical resource for use on a day-to-day basis at work. The compact design allows it to travel easily, and specifics of management are provided throughout to ensure appropriate understanding of treatment strategies.

It is hoped that this text will educate, as well as inspire, nurses to provide the best possible care for the patient in pain.

Pamela Stitzlein Davies, MS, ARNP, ACHPN  
Yvonne D’Arcy, MS, CRNP, CNS

REFERENCE

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- And most of all, my ever-patient husband of 26 years, Bob Davies

Pamela Stitzlein Davies, MS, ARNP, ACHPN
One of the most important concerns of a patient who is diagnosed with cancer is pain. In addition to questions about the diagnosis, the prognosis, and treatment options, patients will inevitably ask “Will I have pain that can be controlled?” Some patients remember friends or family with cancer who, in the past, had unrelieved pain at the end of life. That picture of unrelieved pain colors the patient’s concern about pain management, even though the patient has a good prognosis for cure. Although the fear of the disease itself and the treatment options are paramount in the patient’s mind, pain and the fear of pain are concomitant concerns. Some patients may not voice their concerns, not wanting to distract the health care provider from the diagnosis and treatment. Other patients do not open a discussion about pain management, fearing that they will be told that pain will be expected and that little can be done to control the pain.

What we know now is that pain relief is possible for patients with cancer. Although complete freedom from pain is not realistic, pain control that allows the patient to maintain a reasonable level of function is possible, especially with a multimodal approach. We also know that some patients have pain when they are diagnosed with cancer, while other patients develop pain from tumor progression or nerve impingement, and yet other patients develop pain from treatments such as chemotherapy or radiation. Additionally, there are many patients being seen in primary care clinics with chronic cancer pain that require attention to not only the pain but a continued focus on maintaining functionality and the highest possible level of quality of life.
PREVALENCE OF CANCER PAIN

The prevalence of pain from cancer is somewhat difficult to quantify. There are several different ways that is presented. The American Pain Society’s (APS) Guidelines on Cancer Pain (2005) reports that 1.2 million Americans are diagnosed with cancer each year, while 500,000 die each year from cancer. The guidelines also indicate that pain is the problem that patients fear most when diagnosed with cancer.

The World Health Organization (WHO) reports that cancer is the leading cause of death worldwide, accounting for approximately 13% of all deaths (WHO, n.d.). Reports from the National Cancer Institute (NCI) indicate that over 1.5 million people were diagnosed with cancer in 2010 (NCI, n.d.). In another analysis, the NCI estimates that 41% of people will be diagnosed with cancer in their lifetime.

Pain can be present when the patient is first diagnosed with cancer. It is a presenting symptom in close to half of the patients diagnosed with cancer, occurring at rates from 20% to 50% (Fischer, Villines, Kim, Epstein, & Wilkie, 2010). Pain is present in approximately 20% to 75% of adult patients diagnosed with cancer (APS, 2005). Additional data indicate that 17% to 57% of patients in active treatment for cancer and 23% to 100% of patients with advanced cancer and in the terminal stages of cancer report pain (APS, 2005). Unfortunately the same types of results are found in pediatric cancer patients where cancer pain can be present at the time of diagnosis and can be found at all stages of the treatment (APS, 2005).

There are also concerns that cancer pain is being undertreated. In an early cancer pain guideline, the Agency for Healthcare Policy and Research (AHCPR) states that 90% of all patients who had cancer pain could be treated for pain with the currently available methods for pain relief (AHCPR, 1994). Pain intensities in 100 patients with cancer pain was reported to be moderate to severe for 73% of the patients, while 47% reported continuous pain, and intermittent pain was reported by 53% (Marcus, 2011). This continuing high level of pain indicates that, for some patients, getting adequate treatment for their pain remains problematic.

As people live longer, cancer is also becoming a disease of older age. In a study of 96 patients in three groups by age (40 and younger, 41 to 50, and 60 or older), constant pain was similar, while breakthrough pain episodes, and pain flares in previously controlled pain, were more common in the younger group (Green & Hart-Johnson, 2010). Although disparities in health care have been previously recognized for older adults, the impact of pain with cancer spanned all three of the study groups. The oldest group,
however, had better emotional function while they had worse physical functioning (Green & Hart-Johnson, 2010). Overall, the pain related to cancer had a highly negative impact on quality of life.

The prevalence of cancer is increasing, with one estimate indicating that 17 million new cases could be expected by 2020 (Kanavos, 2006). This means that pain from cancer-related sources and treatments will be increasing dramatically as well. The impact of cancer is widespread. Depression and decreased quality of life are common. In the Indiana Cancer Pain Depression study, patients were disabled, on average, 12 to 20 days in the previous 4 weeks, while 28% to 55% reported being unable to work related to their health care issues (Kroenke et al., 2010).

The results of cancer pain itself, the undertreatment of cancer pain, and frequent breakthrough pain episodes can cause the following:

- Depression
- Needless suffering
- Anxiety
- Impaired quality of life
- Decreased functionality
- Fear of pain and the inability to control pain

In order to help patients with cancer minimize the negative impact of cancer pain and cancer pain–related conditions, aggressive treatment for cancer pain is recommended (APS, 2005). The subsequent chapters of this book will discuss treatment options, medications, and ways to improve the quality of pain relief for cancer patients of all types.

**TYPES OF PAIN FROM CANCER**

There are two main types of cancers: solid tumor cancers such as sarcomas, and liquid tumor cancers such as leukemia. Tumors can grow and displace organs and impinge on nerves, causing several different types of pain, while treatments for liquid cancers such as chemotherapy can cause painful neuropathies. No matter what the cause of the cancer pain is, it can be treated with some form of medication, interventions such as radiation, or surgery.

**Acute pain** can be the result of surgery, tissue injury, or treatment. It is a type of pain that occurs suddenly and reflects tissue injury. The patient can expect that this type of pain will not last long. It serves the purpose of letting the body know it has been injured (APS, 2008).

**Chronic pain,** now more correctly called persistent pain, is pain that lasts for a longer period of time, more than 3 months. This type of pain really is a result of tumor growth or treatment-related pain such as...
chemotherapy-related neuropathy (APS, 2008). It is a type of pain that can cause anxiety and depression as the time goes on and if relief is not adequate, the patient becomes less certain that relief can be achieved.

**Neuropathic pain** is pain that is the result of damage to the nervous system. Nerve damage can result in physiologic changes that activate higher levels of pain facilitation such as neuronal plasticity and wind-up, activation of NMDA receptors that heighten pain response, and allodynia and hyperalgesia. More in-depth information on neuropathic pain will be provided in Chapter 15.

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**Clinical Pearl**

*Allodynia* is the production of a painful response to a normally nonpainful stimulus or sensation such as light touch. *Hyperalgesia* is a heightened painful response to a stimulus that is painful, such as extreme pain with an intravenous catheter insertion.

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**Breakthrough pain** is associated with episodes of extreme pain (pain flares) in patients with well-controlled pain. This pain can be the result of increased activity or it can just occur periodically with no cause. Usually, this type of pain requires additional medication for control.

Cancer pain can occur at any time in the disease progression. To name a few examples, it can be the result of the following:

- Tumor growth
- Bony involvement
- Infections
- Surgery
- Chemotherapy
- Nerve compression
- Mucositis
- Bowel obstruction
- Ischemia
- Capsule distension
- Ascites
- Post-radiation
- Procedural pain

No matter the source or type of pain, it is important to address the pain with a multifaceted plan of care to obtain the highest level of relief possible.
PAIN TRANSMISSION

1. Injury occurs in the body.

2. Nerves pick up the injury and send the message to the brain.
   - Dashed line shows message flow from pain site to brain.
   - Dotted line shows message going from brain to pain site.

3. Brain processes the message and alerts the body of pain.

Figure 1.1 ■ Pain transmission—Exemplar. Source: Used by permission of Anatomical Charts, Park Ridge, IL.

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The Concept of Nociception

How is pain really felt? The concept of nociception can help us determine just how pain moves through the nervous system and it can also provide us with ideas about how we can interfere with pain facilitation and inhibition. Nociception is defined as the perception of pain by sensory pain receptors called *nociceptors* located in the periphery (Sorkin, 2005). In the theory of nociception, there are four stages or levels of pain transmission (D’Arcy, 2011):

1. Transduction: A noxious stimuli converts energy into a nerve impulse, which is detected by sensory receptors called *nociceptors*.
2. Transmission: The neural pain signal moves from the periphery to the spinal cord and brain.
3. Perception: The pain impulse is transmitted to the higher areas of the brain where it is identified as pain.
4. Modulation: Facilitating and inhibitory input from the brain modulates or influences the sensory transmission at the level of the spinal cord (Berry, Covington, Dahl, Katz, & Miaskowski, 2006).

The transmission of pain is basically the passing along of a pain stimulus from the peripheral nervous system into the central nervous system, where it is translated and recognized as pain (Figure 1.1). The afferent nerve fibers are the means of moving the stimulus along the neuronal pathways.

Nociception can come from various locations: *visceral*, which is pain from body organs and is identified as crampy or gnawing pain, or *somatic*, which is pain from skin, muscles, bones, and joints identified by patients as sharp pain (Berry et al., 2006). There are several different types of receptors that can trigger a pain response:

- Mechanoreceptors—activated by pressure
- Thermal receptors—activated by heat or cold
- Chemoreceptors—activated by chemicals, e.g., inflammatory substances (American Society for Pain Management Nursing [ASPMN], 2010)

Peripheral Pain Transmission

Pain can first be experienced by free nerve endings or nociceptors located in the periphery of the body. When a person cuts a hand or fractures an extremity, the pain stimulus is first perceived in the nerves closest to the injury. In order for a pain stimulus to be created, the sodium ions on the nerve fiber must depolarize, which causes the pain stimulus to be produced and passed along the neural circuitry. There are two main types of nerves that transmit pain impulses or stimuli:
1. A-delta fibers are small diameter thinly myelinated nerve fibers that transmit a pain impulse rapidly. The pain transmitted on an A-delta fiber is easily localized and the patient may describe the pain as sharp or stabbing.

2. C fibers are smaller and unmyelinated, and the pain impulse is conducted at a much slower rate. Pain that is produced by C fibers is identified by patients as achy or burning in nature (ASPMN, 2010; Sorkin, 2005).

Two primary substances can help facilitate the transmission of pain from the periphery. Substance P is a neurotransmitter secreted by the free nerve endings of C fibers, whose function is to speed the transmission of the pain impulse. Bradykinin is a second type of neurotransmitter, that promotes the inflammatory response and hyperalgesia (ASPMN, 2010). Nociception can stimulate both A and C fibers for pain transmission. Other substances that participate in the facilitation of pain include the following:

- Histamine is a substance released from mast cells, and is produced in response to tissue trauma.
- Serotonin can be released from platelets, and is produced in response to tissue trauma.
- COX products include prostaglandins E₂ and thromboxane E₂, which act to sensitize and excite C fibers, causing hyperexcitability.
- Cytokines-interleukins and tumor necrosis factor can sensitize C fiber terminals and participate in the inflammatory and infection process involving mast cells.
- The calcitonin gene-related peptide (CGRP) is located at C fiber nerve endings and produces local cutaneous vasodilatation, plasma extravasation, and skin sensitization in collaboration with substance production (ASPMN, 2010; Berry et al., 2006; Sorkin, 2005).

Once transduction takes place, the nerve impulse is passed through a synaptic junction from the peripheral nervous system to the central nervous system. This synaptic junction has a variety of functions with various substances being released. Some medications, for example, pregabalin, act by blocking calcium channels. This, in turn, can reduce the amount of neuronal firing and decrease the passage of pain stimuli. The synapse is between the peripheral neuron into the central nervous system via the dorsal root ganglion.

Central Nervous System Pain Transmission

As the pain stimulus is passed from the peripheral nervous system into the central nervous system, the signal passes through the dorsal root ganglion to a synaptic junction in the substantia gelatinosa located in the dorsal horn of the spinal cord. As the stimulus pushes the pain impulse forward and overcomes

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any opposing or inhibiting forces, the “gate” is opened, which allows the pain impulse to proceed up the spinal cord to the limbic system and brain.

The opening of the gate is controlled by a summing of all the forces involved in the conduction of the pain impulse. If the facilitating forces—neural excitability and pain-facilitating substances such as Substance P—predominate, the pain impulse is passed on. If pain-inhibiting forces predominate, the signal is blocked and the gate does not open. If, by chance, the pain impulse is perceived as potentially life-threatening, a reflex arc across the spinal cord will fire, causing an immediate response to protect the affected area; for example, touching a hot surface causes the body to retract and remove the hand from the hot surface. This event can take place before any central processing of the neural signal (Cervaro, 2005).

Centrally active pain-facilitating and inhibitory substances are shown in the following:

Facilitating substances include:
- Substance P
- Glutamate—responsible for communication between the peripheral and central nervous systems (Rowbotham, Kidd, & Porecca, 2006); also plays a role in activating the NMDA receptors (Mersky, Loeser, & Dubner, 2005)
- Aspartate
- Cholecystokinin
- CGRP
- Nitric oxide

Inhibitory substances include:
- Dynorphin, an endogenous opioid
- Enkephalin
- Norepinephrine
- Serotonin
- B-Endorphin, an endogenous opioid
- Gamma-aminobutyric acid (GABA) (ASPMN, 2010; Sorkin, 2005)

Also performing an inhibitory role are the opioid receptors located both presynaptically and postsynaptically that are available for binding opioid substances such as morphine and for producing analgesia. Although there are opioid receptors located at other sites in the body, we have the most information about how they function from those that are located inside the spinal cord.

As the pain impulse passes through the dorsal horn, it crosses the spinal cord to the lateral spinothalamic tracts, and ascends impulse to proceed up to the thalamus and limbic system. Here, the pain impulse activates the emotions and memories associated with pain and then proceeds...
to the cerebral cortex, where the pain impulse or stimulus is recognized as pain. Although this process seems complicated, the body can conduct a pain impulse in only milliseconds.

Within the central nervous system, two pain substances—norepinephrine and serotonin—are active. Current drug therapies such as tricyclic antidepressants (TCAs) and serotonin norepinephrine reuptake inhibitors (SNRIs) are aimed at this process to modulate neuronal firing at synaptic junctions. The synaptic junctions have a variety of functions: They are important not only for producing pain, but they are also critical sites for reducing pain by controlling the production of pain-facilitating substances and actions.

Once the pain stimulus reaches the cerebral cortex, the afferent pathway is completed. At that time, the efferent nerve fibers pass the neuronal response identified as pain back to the periphery. Descending nerve fibers from the locus coeruleus and periaqueductal gray matter are activated and the pain stimulus is passed back down the efferent pathway, where a response to the pain stimulus is produced, such as moving the affected area away from the pain.

It is important to remember that pain transmission not only takes place when a stimulus is created and ascends the spinal cord, but the descending neural pathways can function to inhibit or limit the pain stimulus. In the case of neuropathic pain, the descending pathways do not inhibit the pain response and the pain is more difficult to control.

In patients with cancer pain, there may several types of pain occurring at one time. As a tumor grows, it may create pressure pain on other organs or body structures and may also impinge or compress nerves. This causes both a visceral pain and a neuropathic pain. Over time, cancer pain can become chronic, creating more complicated physiologic responses to the pain stimulus. If the cancer metastasizes, or spreads to other areas of the body, it can create other types of pain and add to the complex nature of the pain presentation. Additionally, patients with cancer who are on a well-controlled opioid regimen for pain relief can have breakthrough pain episodes (pain flares) that can be incapacitating and difficult to treat. All cancer patients should have a full assessment for all the types of pain they are experiencing so adequate treatment can be implemented.

**BARRIERS TO TREATING CANCER PAIN**

Although it seems like a simple concept that the pain experienced by patients with cancer should be treated aggressively, there are barriers...
1. Overview of Cancer Pain

to treating the pain that come from both patients and health care providers. For health care providers, the major barrier has been identified as inadequate knowledge about pain assessment and management strategies (APS, 2005). Other health care–related barriers have been identified:

■ Poor communication
■ Preferences for a weaker analgesic
■ Lack of quality pain assessment or inconsistent use of pain assessment tools
■ Lack of knowledge about opioid dosing
■ Excessive concerns about addiction, respiratory depression, and other side effects (Marcus, 2011)
■ Fear of regulatory scrutiny
■ Time and reimbursement pressures (APS, 2005)

From the patient’s side, there may be concerns that affect the quality of pain management. Since the patient has had a significant health care event with the diagnosis of cancer, the patient may be more focused on the cure for the cancer rather than treating pain. Barriers to adequate pain management that are related to the patient include:

■ Reluctance to report pain
■ Poor compliance with pain medications
■ Fear of addiction or tolerance
■ Belief that pain is just a part of having cancer and it is not treatable
■ Belief that the doctor should focus on the disease, not the pain
■ Cost of medications and lack of insurance coverage for pain medications
■ Fear of masking new symptoms
■ Concern about side effects such as constipation
■ Fear of negative feelings from family members or coworkers if opioids are being taken for pain relief
■ Lack of access to cancer pain specialists (APS, 2005; Marcus, 2011)

It is incumbent on the health care provider to open up a dialogue about pain management with patients and address any fears or concerns they may have about medications or treatments. Because the patient with cancer fears pain above all, it is important to bring the issue out and talk about what can be done to treat the pain and side effects. An open discussion about addiction and tolerance can also put the patient at ease when opioids are being used for pain relief. Some drug companies provide assistance for patients who cannot afford pain medications to get the analgesics they need for pain.

Above all, pain management should be prioritized for a patient with cancer pain. Allowing the pain to continue can lead to more chronic pain.
conditions that become more difficult to treat. Continued pain also causes depression, anxiety, and fears that can be alleviated with adequate pain management. The remaining chapters of this book will focus on pain assessment, medications, and other interventions that can all add to the pain management regimen for a patient with cancer and provide optimal pain relief.

Case Study

Selma Barnes is a 65-year-old patient who has had a mastectomy, completed her chemotherapy, and recently completed her radiation treatments. She had surgical pain that seemed to be significant and now she continues to complain of pain on her operative side. She describes the pain as “painful cold, aching” in her armpit and “shooting” down her arm periodically that has a severe-level pain intensity of 8 out of 10. The surgical site is very tender to touch and Selma reports that she cannot wear anything that is tight on her upper body. The pressure of the garment increases the pain. You diagnose Selma with postmastectomy pain syndrome and discuss treatment options with her. She tells you she is really concerned about continuing with her opioid medications because she is afraid of becoming addicted to them, adding that they do not seem to really help her pain anyway.

Questions to Consider

1. Does Selma have more than one type of pain? If so, how does it affect her treatment options?
2. What kinds of barriers might have affected Selma’s continued pain?
3. Is Selma’s fear of addiction a valid issue?
4. Why do you think Selma is telling you now that her pain medications have been ineffective?
REFERENCES