CE

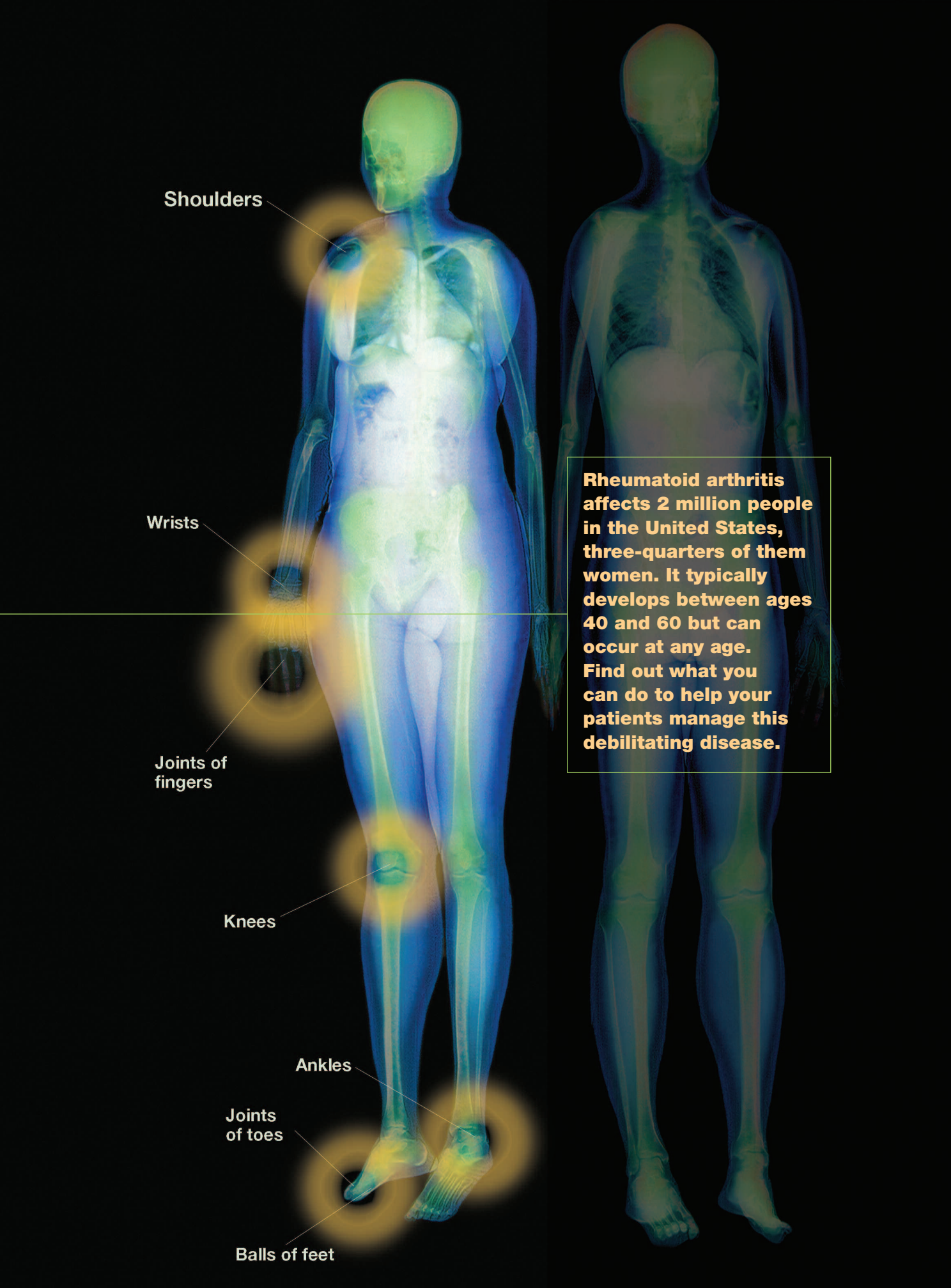
2.0
CONTACT HOURS

Caring for a patient with rheumatoid arthritis

RICHARD L. PULLEN, Jr., RN, EdD, Professor
THERESA EDWARDS, RN, MSN, Instructor
D'DEE GROVE, RN, MSN, Assistant Professor
Amarillo College • Amarillo, Tex.

RHEUMATOID ARTHRITIS (RA) is a chronic systemic inflammatory autoimmune disease that attacks the synovium, the membrane that surrounds joints and creates a protective sac. Within this sac is synovial fluid that lubricates the joints. In addition to cushioning joints, synovial fluid supplies nutrients and oxygen to cartilage, a slippery tissue coating the ends of bones. Cartilage is composed primarily of collagen, a protein that forms a mesh to provide support and flexibility to joints.

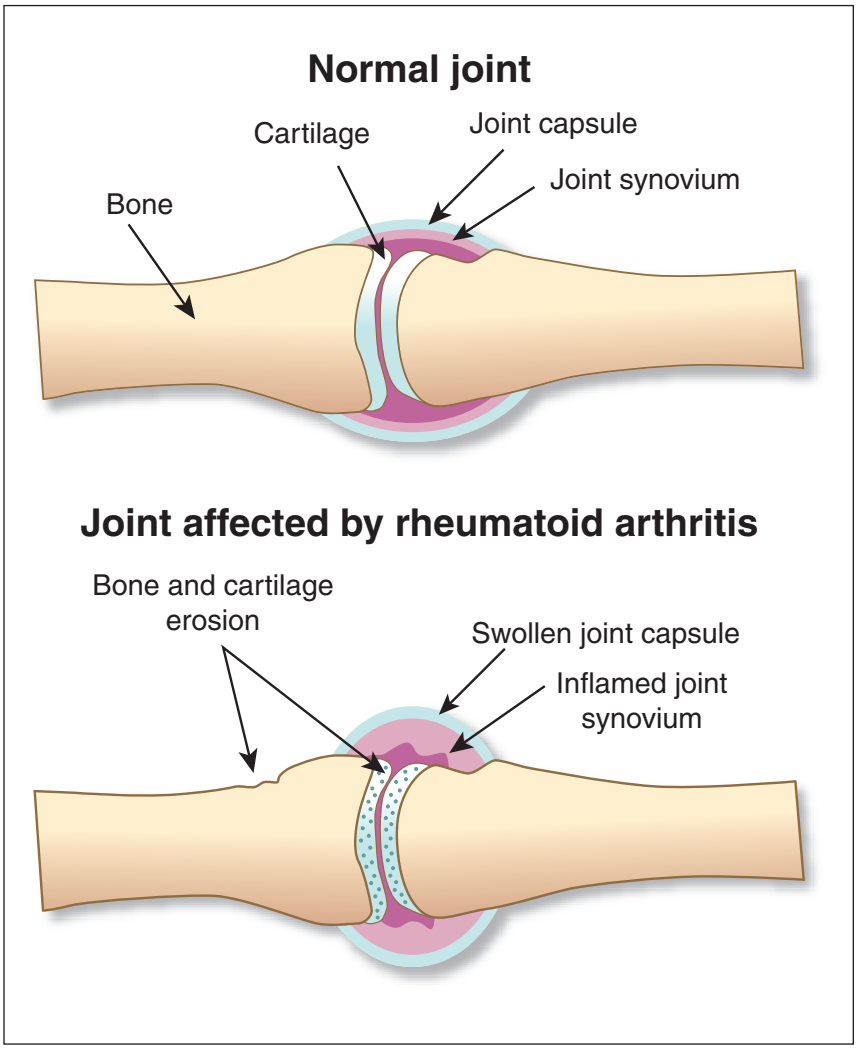
In RA, an abnormal immune response produces destructive molecules that cause continuous inflammation of the synovium (synovitis). Collagen is gradu-


Shoulders
Wrists
Joints of fingers
Knees
Ankles
Joints of toes
Balls of feet
Rheumatoid arthritis affects 2 million people in the United States, three-quarters of them women. It typically develops between ages 40 and 60 but can occur at any age. Find out what you can do to help your patients manage this debilitating disease.

ally destroyed, narrowing the joint space and eventually damaging bone. As the disease progresses, destruction to the cartilage accelerates, forming a pannus (a growth of thickened synovial tissue that invades bone and cartilage, leading to damage and joint deformity).

The cause of RA is unknown. Genetic and environmental factors may play important roles in development of the disease. The incidence of the disease in immediate and extended families of patients with RA is high. Most recently, RA is thought to be initiated by T lymphocytes recognizing antigens in the synovial tissue. Activated T cells, macrophages, and fibroblasts produce proinflammatory cytokines that play a key role in synovitis and tissue destruction in RA.

Now that we know what RA is, let's take a look at how to recognize it in your patients.



JAKE PALMER

How RA affects your patient

Signs and symptoms of RA usually begin with the small joints in the hands, wrists, and feet (see Figure 1). As the disease progresses, the knees, shoulders, hips, elbows, ankles, cervical spine, and temporomandibular joints are affected (see Figure 2). The onset of symptoms is usually acute. In addition to joint pain and swelling, another classic sign of RA is joint stiffness, especially after arising from a period of rest or sleep lasting more than 30 minutes.

Deformities of the hands and feet are common in RA. The deformity may be caused by swelling, progressive joint destruction, or the subluxation (partial dislocation) that occurs when a bone slips over another and eliminates the joint space. Weight loss, loss of appetite, fatigue, and fever are other common symptoms. Fatigue usually results from chronic pain and decreased production of red blood cells due to the inflammatory process. Although arthritis represents the major manifestation of RA, the disease may involve other body organs as well (see *Extra-articular manifestations of RA*).

ACR criteria for classification of RA

Four or more of these are necessary for a diagnosis of RA:

- Morning stiffness in and around joints lasting at least 1 hour before maximal improvement
- Soft tissue swelling of three or more joint areas joints observed by a health care provider
- Swelling of the proximal interphalangeal, metacarpophalangeal, or wrist joints
- Symmetric arthritis
- Subcutaneous nodules
- Positive test for RF rheumatoid factor
- Radiographic erosions or periarticular osteopenia in hand or wrist joints.

Adapted from Arnett FC, et al. The American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis. *Arthritis and Rheumatism*. 31(3):315-324, March 1988.

Figure 1. Advanced RA with swan-neck deformity. Swan-neck deformity is a bending in (flexion) of the base of the finger, a straightening out (extension) of the middle joint, and a bending in (flexion) of the outermost joint.

Figure 2. Swelling of both knees, particularly the left knee.

PHOTOS: RICHARD PULLEN

Reaching a diagnosis

To be classified as having RA, a patient must meet four or more criteria established by the American College of Rheumatology (ACR). (See *ACR criteria for classification of RA.*) The criteria for diagnosis must be present for 6 weeks or longer. Evaluating the patient's lab and imaging study results is important to determine a diagnosis of RA and monitor the patient's progress.

X-rays. An X-ray will show bony erosions and narrowed joint spaces as the disease progresses. Keep abreast of any changes in radiographic findings that demonstrate progressive erosion of joint surfaces.

Analysis of synovial fluid. Aspirating fluid from a joint that has significant buildup is often necessary. The synovial fluid typically appears cloudy, milky, or dark yellow. Lab studies on the fluid commonly indicate many inflammatory components such as polymorphonuclear leukocytes and complement. Cultures for microorganisms are usually negative.

Blood work. Serologic testing is a key component of diagnosing and monitoring RA. About three-quarters of patients with RA have a positive rheumatoid factor test. About 30% of patients also have antibodies against antinuclear antigen. The antibody anticyclic citrullinated peptide is highly specific for a diagnosis of RA.

Assessing for anemia is important because chronic inflammation tends to reduce the patient's red blood cell (RBC) count and hemoglobin and hematocrit levels. A decreased RBC count may be connected with the fatigue that sometimes accompanies RA. Increased C-reactive protein, erythrocyte sedimentation rate, white blood cell count, and immunoglobulin levels often indicate an acute or chronic inflammatory response associated with the disease. Liver enzymes such as alkaline phosphatase may be elevated as well. During the early phases of inflammation, you may see an elevated serum complement (C3 and C4), while chronic inflammation often leads to a decrease in these levels.

Urine studies. Systemic inflammation may cause microscopic hematuria (blood in the urine) and proteinuria (excess albumin in the urine) in a 24-hour urine specimen.

Once RA has been diagnosed, you'll play a crucial role in the treatment and management of the disease. Let's review what you can do to help your patient manage and live with RA.

Treating and managing RA

An interdisciplinary team of nurses, a rheumatologist, physical and occupational therapists, social workers, health educators, health psychologists, pain management specialists, and orthopedic physicians may be involved in comprehensive management of a patient's RA. The ultimate goals are to:

- prevent or control joint damage
- prevent loss of function
- decrease pain.

The initial approach to managing RA begins with teaching the patient and her family about the disease and the benefits and adverse effects of the treatments available. It's important to obtain a complete health history while performing a head-to-toe assessment. Also listen to the patient's report of pain and assess her pain with a reliable pain scale.

Common medications used to treat RA include nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, disease-modifying antirheumatic drugs (DMARDs), and biologic response modifiers

Extra-articular manifestations of RA

General	• fever • lymphadenopathy • weight loss • fatigue
Dermatologic	• palmar erythema • subcutaneous (rheumatoid) nodules • small vessel vasculitis
Ocular	• scleritis • retinal nodules
Pulmonary	• pleuritis • interstitial lung disease • bronchiolitis
Cardiac	• pericarditis • myocarditis • coronary vasculitis • nodules on valves
Neuromuscular	• peripheral neuropathy
Hematologic	• anemia • lymphoma
Other	• Sjögren's syndrome (an autoimmune disease where the immune system attacks moisture-producing glands)

(BRMs). (See *Medications commonly used to treat RA*.) The use of NSAIDs helps decrease the inflammatory response and improve the patient's levels of pain and function. Intra-articular injections of corticosteroids are sometimes helpful when a patient has inflammation, swelling, and pain in a joint. Some patients may also require oral or I.V. corticosteroids if the joint inflammation is severe or the disease affects other organs.

To slow the progression of RA, DMARDs may be prescribed. A combination of DMARDs and NSAIDs is used when joint inflammation and swelling are persistent. The newer class of drugs known as BRMs have been used to slow the progression of RA by targeting the immune system response that causes inflammation and joint and tissue damage.

Muscle relaxants, anticonvulsants, antidepressants, and nonopioid analgesics are sometimes used when the patient's pain interferes with activities of daily living. When a patient is experiencing an exacerbation (flare) of the disease, opioids such as morphine and oxycodone (Oxycontin) are sometimes necessary to provide relief.

Opioids should be used only when pain isn't being controlled by other medications and is significantly interfering with the quality of the patient's life. Teach patients the possible adverse effects of these medications and tell them to report any adverse effects to their health care provider. Encourage patients to keep a journal of their pain experience, including pain level. A journal is a good way for the health care team to evaluate the patient's pain experience as well as an effective way for the patient to cope with pain and frustration.

More than medication for relief

A number of nonpharmacologic approaches are also used to relieve pain and joint stiffness in RA. Many patients get relief from hot packs and warm baths. Ice packs, cold packs, and iced water, particularly for warm swollen joints, can also provide relief. Besides helping to relieve joint pain and stiffness, techniques such as exercise, hydrotherapy, splinting, biofeedback, meditation, acupressure, acupuncture, yoga, hypnosis, and massage may produce a sense of psychological well-being and relaxation.

An occupational therapist can teach the patient ways to help prevent trauma to her joints. Common techniques include:

- avoiding activities that cause pain or discomfort
- avoiding gripping things tightly
- avoiding positions that push the joints toward deformity
- using stronger and more stable joints for any activity.

Regular aerobic exercise programs can help the patient improve joint mobility, muscle strength, aerobic fitness and function, and psychological well-being without increasing fatigue or joint symptoms.

Surgery is considered as a treatment for RA only when the patient's pain is unacceptable, loss of mobility is significant, or functional impairment is severe. Surgical options include synovectomy (removal of inflamed joint tissue), arthroplasty (replacing all or part of a hip or knee joint), and arthroscopy (using a small lighted instrument to remove debris or inflamed tissue from the synovial sac). More patients are electing to have joint replacement when pain and immobility become unbearable.

Physical symptoms aren't the only manifestation of RA—it can have a devastating psychological impact too. Let's look at how RA can affect a patient and her family.

Medications commonly used to treat RA

Medication	Patient teaching
NSAIDs • Celecoxib (Celebrex) • Ibuprofen (Advil, Motrin) • Naproxen (Anaprox, Naprosyn)	• Report worsening pain or discomfort. • Take with food, water, or milk to reduce stomach irritation. • Report any signs of bleeding. • Report tinnitus and nausea and vomiting. • Have regular liver function and serum creatinine tests. • Report a fever or other signs of infection.
Corticosteroids Prednisone	• Take with food or milk to minimize stomach irritation. • Don't abruptly stop taking the medication; contact your health care provider before you stop. • Report any changes in mood or behavior. • Report any bruising or bleeding. • Have regular blood pressure checks and weigh yourself daily. Report any changes to your health care provider. • Have regular eye exams to monitor for cataracts. • Report a fever, sore throat, or other signs of infection. • Have routine complete blood cell (CBC) count and liver function tests.
DMARDs • Azathioprine (Azasan, Imuran) • Cyclosporine (Neoral, Sandimmune) • Gold sodium thiomalate (Myochrysine) • Hydroxychloroquine (Plaquenil) • Leflunomide (Arava) • Methotrexate (Rheumatrex, Trexall) • Minocycline (Dinacin, Minocin) • Sulfasalazine (Azulfidine)	• Have routine CBC and liver function tests. • Have routine blood urea nitrogen (BUN) and creatinine tests. • Report a fever, sore throat, or other signs of infection to your health care provider. • Take oral doses with food to reduce stomach upset. • Drink plenty of water when taking these medications. • Methotrexate causes photosensitivity, so use a sunscreen with an SPF of at least 30 daily. • Methotrexate can cause pneumonitis. Have a baseline chest X-ray and report any chest pain. • Report any vision problems to your health care provider if you're taking hydroxycholoroquine. Have routine eye exams every 6 months.
BRMs • Abatacept (Orencia) • Adalimumab (Humira) • Anakinra (Kineret) • Etanercept (Enbrel) • Infliximab (Remicade) • Rituximab (Rituxan)	• Have routine CBC, platelet, BUN, and creatinine tests. • Have routine antinuclear antibody tests to assess degree of inflammation. • Report a fever, sore throat, or other signs of infection to your health care provider. • Report any chest pain or difficulty in breathing. • Watch for lack of energy and strength. Weakness is a common side effect of these medications.

Depression and RA

Depression is a primary psychological symptom associated with RA. The causes are related to increased pain, reduced ability to engage in activities of daily living, sleep deprivation, living with a chronic illness, and lack of a supportive social network.

If your patient shows signs of depression, encourage her to seek counseling to help her cope with the stress of the disease. Talking about the frustration of pain, disfigurement, and immobility can help. The ability to share and read about others with RA helps the patient and her family cope with their overwhelming anxiety, frustration, and social isolation. Encourage the patient's family to be a part of the counseling process.

Difficulties in sexual performance are usually related to problems of overall disability and hip involvement, while diminished desire and satisfaction are influenced more by pain, age, and depression. Encourage the patient to get plenty of rest. Tricyclic antidepressants such as amitriptyline are very effective in promoting sleep and addressing depression that's secondary to coping with a chronic illness. Selective serotonin reuptake inhibitors are effective in managing pain, anxiety, and depression.

Rheumatoid arthritis also affects family relationships. The impact of RA can be a financial and social burden on the patient and family. Encourage the patient and family to be involved in self-help groups and be aware of the most recent

research and clinical trials in RA (see *On the Web*).

Mind, body, and spirit

The journey through RA involves the patient's mind, body, and spirit. Your knowledge of RA, chronic pain management, and the demonstration of caring behaviors can help the patient and family to cope with this chronic illness. **LPN**

Selected references

American College of Rheumatology. **http://www.rheumatology.org**. Accessed April 8, 2008.

Berrington J. Biologic treatments for rheumatoid arthritis. *Journal of Orthopaedic Nursing*. 10(3):159-165, August 2006.

Burton S, Lloyd M. An overview of rheumatoid arthritis. *Nursing Standard*. 20(24):46-49, February 22-28, 2006.

Cornell P. Management of patients with rheumatoid arthritis. *Nursing Standard*. 22(4):51-57, October 3-9, 2007.

Lupus Foundation of America. **http://www.lupus.org**. Accessed April 8, 2008.

National Institute of Arthritis and Musculoskeletal and Skin Diseases. **http://www.niams.nih.gov**. Accessed April 8, 2008.

Noonan K. Introduction to B-cell disorders. *Clinical Journal of Oncology Nursing*. 11(1):3-12, February 2007.

Oliver S. Best practice in the treatment of patients with rheumatoid arthritis. *Nursing Standard*. 21(42):47-56, June 27-July 3, 2007.

Palmer D, et al. Improving patient care: Measurement of outcome in rheumatoid arthritis. *British Journal of Nursing*. 16(16):1010-1015, September 13-27, 2007.

Rindfleisch JA, Muller D. Diagnosis and management of rheumatoid arthritis. *American Family Physician*. 72(6):1037-1047, September 15, 2005.

Shaw SM. Nursing and supporting patients with chronic pain. *Nursing Standard*. 20(19):60-65, January 8-24, 2006.

Smeltzer SC, et al. (eds). *Brunner & Suddarth's Textbook of Medical-Surgical Nursing*, 11th edition. Philadelphia, Pa., Lippincott Williams & Wilkins, 2008.

Smith HR. Rheumatoid arthritis. Emedicine. **http://www.emedicine.com/med/topic2024.htm**. Accessed April 8, 2008.

Swann J. Rheumatoid arthritis: Coping strategies. *Nursing and Residential Care*. 9(6):269-272, May 2007.

West S. *Rheumatology Secrets*. Philadelphia, Pa, Hanley and Belfus, 2002.

On the Web

American Autoimmune-Related Diseases Association: **www.aarda.org**
American College of Rheumatology: **www.rheumatology.org**
Arthritis Foundation: **www.arthritis.org**
National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS): **www.niams.nih.gov**
National Institutes of Health Clinical Trials for RA: **www.clinicaltrials.gov**

CE CONNECTION

Earn CE credit online:
Go to http://www.nursingcenter.com/ce/lpn and receive a certificate *within minutes.*

INSTRUCTIONS

Caring for a patient with rheumatoid arthritis

TEST INSTRUCTIONS

- To take the test online, go to our secure Web site at **http://www.nursingcenter.com/ce/lpn**.
- On the print form, record your answers in the test answer section of the CE enrollment form on page 35. Each question has only one correct answer. You may make copies of these forms.
- Complete the registration information and course evaluation. Mail the completed form and registration fee of $21.95 to: **Lippincott Williams & Wilkins, CE Group**, 2710 Yorktowne Blvd., Brick, NJ 08723. We will mail your certificate in 4 to 6 weeks. For faster service, include a fax number and we will fax your certificate within 2 business days of receiving your enrollment form.
- You will receive your CE certificate of earned contact hours and an answer key to review your results. There is no minimum passing grade.
- Registration deadline is August 31, 2010.

DISCOUNTS and CUSTOMER SERVICE

- Send two or more tests in any nursing journal published by Lippincott Williams & Wilkins together and deduct $0.95 from the price of each test.
- We also offer CE accounts for hospitals and other health care facilities on nursingcenter.com. Call **1-800-787-8985** for details.

PROVIDER ACCREDITATION

Lippincott Williams & Wilkins, publisher of *LPN2008*, will award 2.0 contact hours for this continuing nursing education activity.

Lippincott Williams & Wilkins is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

Lippincott Williams & Wilkins is also an approved provider of continuing nursing education by the American Association of Critical-Care Nurses #00012278 (CERP category A), District of Columbia, Florida #FBN2454, and Iowa #75. Lippincott Williams & Wilkins home study activities are classified for Texas nursing continuing education requirements as Type 1. This activity is also provider approved by the California Board of Registered Nursing, Provider Number CEP 11749, for 2.0 contact hours.

Your certificate is valid in all states.