Lisa A. Bellner, MD, has been a distinguished member of the Medical Impairment Rating Registry since 2007. Her commitment to mastering the AMA Guides, 6th Edition is reflected in her attendance at multiple training seminars and her exemplary MIR Reports.

Dr. Bellner practices physical medicine and rehabilitation in Knoxville, Tennessee. Her specialties are musculoskeletal medicine, pain management, and electrodiagnosis. After relocating to Tennessee from Connecticut in 2002, she worked at Hovis Orthopaedic Clinic at Fort Sanders Regional Medical Center and Baptist West Hospital (now Covenant and Tennova Healthcare Systems) in Knoxville. In 2005, she started her own physical medicine and rehabilitation practice, PM&R Associates, emphasizing an individualized approach to rehabilitation, musculoskeletal medicine, and pain manage-
ment. She has established a very successful multidisciplinary model of rehabilitation to deal with the many special needs of the injured worker and other individuals.

The PM&R practice model has made Dr. Bellner’s practice unique in the field of physical medicine and rehabilitation. Along with two physical therapists on her staff, she utilizes a biomechanical approach to care that emphasizes hands-on manual therapy and individualized core strengthening and flexibility. Her team offers balance and vestibular training as well.

Dr. Bellner’s career spans 21 years. In Connecticut she worked alongside neurosurgery and orthopedics at a multidisciplinary spine center, Tribury Orthopedics, providing physiatric supervision for inpatient and outpatient therapy services, post-surgical care, and non-operative spine care. She served as Medical Director of Physical Medicine and Rehabilitation at the Middlesex Hospital and Charlotte Hungerford Hospital, in Middletown and Torrington, Connecticut, establishing outpatient physiatric and pain management services. She was directly responsible for supervision of inpatient and outpatient occupational therapy, physical therapy, and speech therapy services, as well as technical education in the field of musculoskeletal and rehabilitative medicine for medical staff, therapists and nurses in the Middlesex County and Litchfield County medical communities.

Raising the standards of therapy in geriatric medicine settings is a priority for Dr. Bellner. Her interest is reflected in her service as medical director of many subacute rehabilitation programs where she emphasized educating the clinical staff, therapists, and exercise physiolo-
WHEN TO USE ROM

Range of Motion (ROM) is used for helping calculate the physical examination modifier when employing the Diagnosis Based Impairment (DBI) method (Table 15-8, p. 408; Table 16-7, p. 517). It can also be used as a stand-alone rating. The DBI is the preferable method for calculating upper and lower extremity ratings; however, in instances specified by the regional grid, the evaluator may choose to use the ROM method, typically because it yields a higher impairment rating relative to the DBI method. Most grids in the upper extremity chapter allow for ROM as an alternative rating method. Most grids in the lower extremity chapter do not. In rare lower limb cases when the injury is not fully articulated by the regional grid (such as severe crushes, burns, and scarring) ROM may be used instead of diagnosis. In cases of amputation, you may use ROM for the remaining portion of the limb and combine it with the amputation rating (p.461). Otherwise, ROM is a stand-alone rating.

PREPARING FOR THE EVALUATION

If you receive MIR referrals for musculoskeletal injuries, you should obtain a goniometer. Your MIR Report should be based on the measurements that you record during the evaluation, not measurements of another physician or physical therapist. To systematically record ROM measurements during the exam, consider photocopying Figure 15-3, “Upper Extremity Range of Motion Record” (p.462), or Figure 16-12 “Lower Extremity Range of Motion Record” (p.551). You may also want to bring a copy of the AMA Guides into the exam room with tabbed pages marking the relevant neutral-position diagrams. (Continued on page 4)
NEUTRAL ZERO REFERENCE SYSTEM

In the AMA *Guides*, the extended anatomic position is 0 degrees rather than 180 degrees. This extended, neutral position is the starting point for measuring the angles of maximum joint motion (p.463). Each plane of each joint has its own diagram in the *Guides* to show you exactly where this neutral position is.

NEUTRAL POSITION DIAGRAMS

Thumb Joints: p. 467
Finger Flexion/Extension MCP Joint: p. 471
Finger Flexion/Extension DIP Joint: p. 470
Finger Flexion/Extension PIP Joint: p. 470
Wrist Flexion/Extension: p. 472
Wrist Radial Deviation/Ulnar Deviation: p. 473
Elbow Flexion/Extension: page 474
Forearm Pronation/Supination: p. 475
Shoulder Flexion/Extension: p. 475
Shoulder Abduction/Adduction: p. 476
Shoulder External/Internal Rotation: p. 476
Lower Extremity Joints: pgs. 545-548

ACTIVE VS PASSIVE ROM

Active ROM is when the patient makes the entire effort to move the joint in question. Passive ROM is when the evaluator moves the joint without help from the patient (p.464).

MEASURING ROM

1) If the opposite extremity is not injured and not being rated, it *must* be used to define what is normal ROM for the patient (p.461). If you, as the MIR Physician, fail to establish this baseline under these circumstances, your MIR Report might be overturned. Start the rating process by measuring the active ROM for the normal limb.

2) To get a general impression, ask the patient to move the injured limb and normal limb through
their full ranges of motion. Observe abilities and limitations. Mentally compare results.

3) Start measuring the active ROM of the normal, uninjured limb by conducting a warm-up in which the patient moves the joint through its maximum range of motion three or four times.

4) Record active ROM measurements from the next three separate efforts. Round each measurement to the nearest number ending in zero (p.464). The maximum measurement is the one that is used.

5) After you have obtained active ROM measurements for the normal limb, measure active ROM on the injured limb by going through the same process: Take the patient through a warm-up and record the maximum of three measurements. Each plane of movement for the joint should be measured and recorded using the same methodology.

INVALID RESULTS

1) If, after three consecutive efforts, the three measurements for a given plane of motion vary more than 10 degrees from the average (mean) of these three measurements, ROM cannot be rated in that plane on that day. The rating process can be tried on another day (p. 465). Unless you want to reschedule the MIR, the DBI method should be used instead of ROM. Other motions that can be reliably measured that day can be rated that day.

2) Since you are issuing an MIR, the patient is likely to have had at least two other impairment ratings in the past. If there is gross inconsistency in the measurements among the various evaluators, and these inconsistencies cannot be clinically explained, then “the results are considered invalid and cannot be used for impairment” (p.407). Clinical explanations for inconsistencies should be articulated in the “COMMENTS ON IMPAIRMENT RATING” section at the end of your MIR report. For ex-
ample, “Dr. X noted better motion, but those measurements were obtained immediately after physical therapy ceased. With time, Mr. Y admits he stopped doing range of motion home exercises, and his motion has probably permanently stabilized at these measurements.” Whatever your reasoning for accepting motion measurements that are significantly different from prior measurements, articulate your reasoning.

3) If the patient has full range of active joint motion, obtaining passive range of motion measurements are not necessary. If, however, the joint has impaired active motion, passive range of motion should be measured as well. If active measurements differ significantly from the passive measurements, the active motion measurements may be invalid, unless you can articulate a rational pathological explanation. Suboptimal efforts and symptom magnification should be considered.

CONVERTING MEASUREMENTS TO IMPAIRMENT

1) After you have obtained the maximum ROM for each plane of the joint, use the appropriate Table in the AMA Guides to covert the ROM values, as listed in degrees, into upper or lower extremity impairments, as listed in percentages.

2) Subtract the “IMPAIRMENT” derived from measurements of the normal limb from the impairment derived from measurements of the abnormal limb, as demonstrated in Figure 15-13 (pgs. 462-3) and Figure 16-12 (p. 551). The result is the patient’s active ROM measurement for that particular plane of movement.

3) Numerically add (not combine) the impairments for loss of motion in every direction a joint
moves. This is the final impairment for loss of motion in this joint. The exception is the wrist in which flexion, extension, radial deviation, and ulnar deviation from Table 15-31 are added, and then, if there is also loss of pronation and/or supination from the wrist injury, the impairments for loss of pronation and supination from Table 15-33 are added, and the result is combined with the rating derived from Table 15-31 for the wrist motion loss.

4) For upper extremities, use Tables 15-11 and 15-12 (pgs. 420-421) to convert upper extremity impairment to whole person impairment. For lower extremities, use Table 16-10 (pgs. 530-531).

ADJUSTMENTS FOR FUNCTIONAL HISTORY

If ROM is the only rating method used, if you deem it reliable and consistent with the results from the Activities of Daily Living (ADL) questionnaire (or another valid functional report), and if you determine that the current ROM impairment does not adequately capture the full impairment, then an adjustment for functional history may be made. To do this for upper extremities: (1) determine the “Range of Motion Grade Modifier” using Table 15-35 on page 477, (2) determine the Functional History Grade Modifier using Table 15-7 on page 406, (3) apply your results from the previous two tables to Table 15-36, “Functional History Grade Adjustment: ROM,” on page 477. Any additional impairment will come by use of a multiplier, or percentage (0%, 5%, 10%, or 15%), of the original ROM impairment, and is based on the difference between the ROM Grade Modifier and Functional History Grade Modifier. The same criteria and process can be used for lower extremity impairments by taking the results from Table 16-25, “Range of Motion ICF Classification,” on page 550, and Table 16-6, “Functional History Adjustment on page 516, and applying them to Table 16-17, “Functional History Modifier,” on page 545. The example on pages 474-6 is a Grade 3 Functional History Modifier, a Grade 1 Physical Exam Modifier (determined by range of motion), and thus 3-1=2. In Table 15-
36 using the “2” results in a 10% multiplier. If the impairment determined by range of motion is 10% upper extremity impairment, and the “bonus” multiplier is 10%, then 10% (multiplier) of the 10% impairment results in an increase of 1% impairment. The original impairment was 10%, the increase is 1%, so the final impairment result would be 11% upper extremity impairment.

**ANNOTATION**

All ROM measurements should be rounded to the nearest number ending in zero (p.461). For joint planes measuring Flexion/Extension, a minus sign (-) is used to indicate extension lag. A plus sign (+) is used to indicate hyperextension. Extension lag is when the joint cannot be fully actively extended to the neutral, 0 degrees, position. Hyperextension is when the joint extends past the neutral, 0 degrees, position. The “+” and “-” symbols are shorthand, and not mathematical symbols permitting addition or subtraction. These symbols must be understood to compare the examiner’s measurements to the ranges of motion specified in the tables for thumb, digit, wrist, elbow, and shoulder motion.

**ANNOTATION EXAMPLES**

A fully extended MCP joint has the measurement 0 degrees.

An MCP join hyperextended by 20 degrees is annotated +20 degrees

An MCP joint with an extension lag of 20 degrees is annotated -20 degrees.

A fully flexed MCP join has the measurement of 90 degrees.

An arch of motion with 20 degrees hyperextension and 90 degrees flexion would be annotated +20 degrees to 90 degrees.

An arch of motion with 20 degrees extension lag and 70 degrees flexion would be annotated -20 degrees to 70 degrees.
gists in the care of older patients and maximizing gains during their stay.

Dr. Bellner was born and raised in New York City, where she laid an early foundation for her distinguished career. She graduated from the Bronx High School of Science in 1981. As an undergraduate at the University of Pennsylvania in Philadelphia in 1985, she graduated cum laude with a major in biomedical anthropology and a minor in chemistry.

After she earned the Doctor of Medicine degree in 1989 at the Albert Einstein College of Medicine of Yeshiva University in the Bronx, New York, Dr. Bellner served her residency training in the Department of Rehabilitation Medicine. She capped her last year of professional training as chief resident. In that position, she supervised and taught resident staff, coordinated the departmental lecture series, conducted consultations and electrodiagnostic evaluations, and served on the Quality Assurance, Morbidity, and Mortality and the Section Chiefs committees.

Dr. Bellner is certified by the American Board of Physical Medicine and Rehabilitation, holds Tennessee State Licensure in Medicine and Surgery, and is a Diplomat of the National Board of Medical Examiners. Her memberships include the American Medical Association; the American Academy of Physical Medicine and Rehabilitation; the American Academy of Pain Medicine; the Southern Society of Physical Medicine and Rehabilitation; and the Tennessee Society of Physical Medicine and Rehabilitation.

She has come a long way from her roots in the Bronx where Dr. Bellner recalls looking out a window in her childhood home at a brick wall of the next apartment building. Now she lives with her husband, Michael, and two children, Gabriel, age 7, and Lana, age 5, on a farm in Blount County. Dr. Bellner has a deep apprecia-
tion of the beautiful scenery and mountains that surround her. She enjoys collecting art that reflects the beautiful landscape of East Tennessee and exploring the music and culture of this wonderful part of the country. Her children ask her why she pronounces words so differently and takes them to museums and Broadway plays. As they’ve grown older, they’ve come to know the answer...because mommy is a New Yorker.

THE MIRR IS NOW ACCEPTING PHYSICIAN APPLICATIONS IN THE FOLLOWING AREAS OF EXPERTISE:

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