Range-of-Motion Testing: A Fresh Look

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Editor's Note: ACA Coding Policy on Testing and Measurement supports the position of this author. ROM is inclusive in the E&M procedure unless the patient is tested for an impairment rating where measurements are recorded and a written report documents physical findings.

Impairment rating of spinal dysfunction was initially based on range-of-motion (ROM) testing. This changed with the publication of the American Medical Association's *Guides to the Evaluation of Permanent Impairment, Fourth Edition.*[1] Impairment rating by range of motion then became secondary to the Diagnosis-Related Estimates (DRE) method. Range-of-motion testing is now used only if the patient does not fit any of the DRE categories. This policy shift was carried forward with the publication of the fifth edition of the *Guides.*[2]

The shift in policy was needed to correct several flaws in the range-of-motion system. The degrees of normal movement listed for testing are not "ranges" but maximum numbers for each plane of movement. Anything less than the full range could lead to impairment. No consideration, however, is made for differences in flexibility between age groups or between males and females. Many instruments are available for measuring range of motion. Minimal literature, however, is available on the accuracy of these instruments or their reliability with regard to how they are used in the field. Finally, range-of-motion testing is useless when the patient moves only as far as he chooses. The DRE method is an improvement since it avoids these pitfalls and is much easier to perform.

Still, range-of-motion testing is an established standard that many insurance companies and other third parties rely upon. It is difficult to meet the requirements (bullets) for CPT coding of mid- to upper-level new/established evaluation and management codes without including ROM testing.[3] This means that health care providers must record ROM findings, despite low specificity and sensitivity of testing. In order to comply with documentation and evaluation standards and avoid spending excessive time on an inaccurate procedure, examiners must rethink ROM testing. It is the author's contention that the solution is to perform ROM testing by observation while proceeding with other orthopedic, neurological, and chiropractic tests.

Table 1 lists orthopedic and neurological tests that duplicate various spinal ranges of motion during their performance.[4] During examination, these tests give the examiner considerable information about a patient's active range of motion, without specifically performing range-of-motion testing. This also adds a new dimension to range-of-motion testing because the patient is not aware that the degree of his movement is being assessed. This is similar to the procedure taught in physical diagnosis for recording pulse and respiration, in which the examiner takes the patient's pulse on one side, then switches to the other side—telling the patient he is double-checking the pulse. Instead of taking the pulse a second time, however, the examiner is counting the patient's respirations. This keeps the patient from being conscious of his breathing, which could alter his rate or

Table 1–Orthopedic and Neurological Tests that Duplicate Spinal Ranges of Motion During Performance

Movement	Test or Sign
1. Lumbosacral Flexion	Slump, Bechterew's, SLR, CSLR, Kernig, Knee Bends
2. Lumbosacral Extension	Sphinx, Nachlas, Kemp's
3. Lumbar Lateral Flexion	Kemp's
4. Cervical Flexion	Slump, Soto-Hall, Lindner's, Lhermette's, Brudzinski's, Eden's
5. Cervical Extension	Hautant, Slump, Adson, Halstead, George's Functional Maneuver, Sphinx
6. Cervical Lateral Flexion	Brachial Plexus Tension Test, Shoulder Distraction
7. Cervical Rotation	Hautant, Adson, Halstead, George's Functional Maneuver

*Adapted from Practical Assessment of the Chiropractic Patient[4]

rhythm.[3] Patients with unconscious psychological manifestations and conscious deliberate magnifications of symptoms often move well during orthopedic and neurological testing, but their degree of movement can become compromised once patients become aware that that is the focus of the examiner's attention.

Additional considerations regarding range-of-motion testing are billing and reimbursement. Since range of motion is included in new and established evaluation and management codes, the doctor cannot charge for an examination and range-of-motion testing during the same visit.[3] This may upset doctors who have invested in high-tech inclinometers and other equipment for assessing range of motion. They typically feel that the use of a high-tech instrument goes beyond the standard of range-of-motion evaluation, and that a separate procedure code is justified. Unfortunately, the codes do not differentiate between visual assessment and levels of instrumentation. If the doctor utilizes assessment by observation during the performance of other tests and establishes that range of motion is limited, a separate, more detailed range-of-motion study

Range of Motion

Table 2

Lumbosacral ROM	WNL	Observed	Measured	Aberrant Motion		Crepitus		Pain	
Flexion	60			Pos	Neg	Pos	Neg	Pos	Neg
Extension	25			Pos	Neg	Pos	Neg	Pos	Neg
Right Lateral Flexion	25			Pos	Neg	Pos	Neg	Pos	Neg
Left Lateral Flexion	25			Pos	Neg	Pos	Neg	Pos	Neg

"Adapted from Practical Assessment of the Chiropractic Patient"

(instrumentation) may be warranted. The more detailed study can be performed and billed separately soon after the initial evaluation.

Some will insist that instrumentation is far preferable to, and more accurate than, visual assessment. A study by Youdas,[6] however, comparing inclinometer, Goniometer, and visual assessments, found poor reliability—both among instruments and among those who used the instruments. Visual assessment also showed poor interexaminer reliability, but this type of assessment was shown to be reliable as long as the same examiner performed the follow-up assessments.

Some may, on the other hand, criticize the tests listed in Table 1. If a practitioner does not utilize all or part of these tests, assessment by observation may be difficult. If that is the case, it is recommended that the reader review his current examination process and determine which tests duplicate spinal ranges of motion during performance. Reviewing an orthopedic and neurological text for additional tests that fit his practice methods is also recommended. Many orthopedic, neurological, chiropractic, and postural tests duplicate spinal ranges of motion during testing.

In addition to assessing limitations of movement during range of motion, the examiner must also note pain, crepitus, and aberrant motion. Pain and limited movement, of course, tend to be found together. Crepitus is often noted during spinal motion. Patients with joint dysfunction and/or spondylosis often report grinding or popping noises during history and examination.

Aberrant motion refers to the manner in which a patient moves through a range of motion. The patient may be able to achieve full range of motion, but does so through a series of movements that compensate for pain and restrictions. Common examples of aberrant motion occur in the jaw, the shoulder, and the lower extremities. Using the mentum as a reference point, the jaw opens and closes in a C-shaped pattern when joint hypermobility is present unilaterally, or in an S-shaped pattern when muscle imbalance is present.[7] The patient with a frozen shoulder will shrug the shoulder to increase arm abduction (reversed glenohumeral rhythm).[8] A seated patient will extend at the waist and lean back on his hands (tripod/flip sign) when asked to extend his legs when sciatic tension or tight hamstring muscles are present.[9] These compensations (aberrant motions) occur in the spine, as well. A patient moving from cervical flexion back to neutral may incorporate lateral bending to the side opposite a sprained swollen facet joint. McGee[7] refers to aberrant motion as "trick movements." McNabb[10]

refers to this phenomenon in the lumbosacral region as "reversal of spinal rhythm."

Table 2 represents a section of an examination form. Observed or measured range of motion, aberrant motion, crepitus, and pain can be recorded for lumbosacral range of motion here. Normal ranges are included for reference. A similar chart can be developed for any joint or region with the current availability of desktop publishing.

With all the other considerations involved in running a modern practice, field practitioners may have a tendency to go on "automatic pilot" when it comes to measuring and recording spinal range of motion and related findings. All of us, however, would do well to occasionally rethink our examination procedures to stay current and productive. JCA

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