

TABLE 6-16. COMPONENTS OF THE GAIT ASSESSMENT RATING SCORE (GARS)**A. General Categories**

1. Variability—a measure of inconsistency and arrhythmicity in stepping and arm movements.
 - 0 = fluid and predictably paced limb movements.
 - 1 = occasional interruptions (changes in velocity), approximately <25% of time.
 - 2 = unpredictability of rhythm approximately 25–27% of time.
 - 3 = random timing of limb movements.
2. Guardedness—hesitancy, slowness, diminished propulsion and lack of commitment in stepping and arm swing.
 - 0 = good forward momentum and lack of apprehension in propulsion.
 - 1 = center of gravity of head, arms, and trunk (HAT) projects only slightly in front of push-off, but still good arm-leg coordination.
 - 2 = HAT held over anterior aspect of foot, and some moderate loss of smooth reciprocation.
 - 3 = HAT held over rear aspect of stance-phase foot, and great tentativeness in stepping.
3. Weaving—an irregular and wavering line of progression.
 - 0 = straight line of progression on frontal viewing.
 - 1 = a single deviation from straight (line of best fit) line of progression.
 - 2 = two to three deviations from line of progression.
 - 3 = four or more deviations from line of progression.
4. Waddling—a broad-based gait characterized by excessive truncal crossing of the midline and side-bending.
 - 0 = narrow base of support and body held nearly vertically over feet.
 - 1 = slight separation of medial aspects of feet and just perceptible lateral movement of head and trunk.
 - 2 = 3–4" separation feet and obvious bending of trunk to side so that cog of head lies well over ipsilateral stance foot.
 - 3 = extreme pendular deviations of head and trunk (head passes lateral to ipsilateral stance foot), and further widening of base of support.
5. Staggering—sudden and unexpected laterally directed partial losses of balance.
 - 0 = no losses of balance to side.
 - 1 = a single lurch to side.
 - 2 = two lurches to side.
 - 3 = three or more lurches to side.

B. Lower Extremity Categories

1. % Time in Swing—a loss in the percentage of the gait cycle constituted by the swing phase.
 - 0 = approximately 3:2 ratio of duration of stance to swing phase.
 - 1 = a 1:1 or slightly less ratio of stance to swing.
 - 2 = markedly prolonged stance phase but with some obvious swing time remaining.
 - 3 = barely perceptible portion of cycle spent in swing.
2. Foot Contact—the degree to which heel strikes the ground before the forefoot.
 - 0 = very obvious angle of impact of heel on ground.
 - 1 = barely visible contact of heel before forefoot.
 - 2 = entire foot lands flat on ground.
 - 3 = anterior aspect of foot strikes ground before heel.
3. Hip ROM—the degree of loss of hip range of motion seen during a gait cycle.
 - 0 = obvious angulation of thigh backwards during double support (10°).
 - 1 = just barely visible angulation backwards from vertical.
 - 2 = thigh in line with vertical projection from ground.
 - 3 = thigh angled forward from vertical at maximum posterior excursion.
4. Knee Range of Motion—the degree of loss of knee range of motion seen during a gait cycle.
 - 0 = knee moves from complete extension at heel-strike (and late-stance) to almost 90° (@ 70°) during swing phase.
 - 1 = slight bend in knee seen at heel-strike and late-stance and maximal flexion at midswing is closer to 45° than 90°.
 - 2 = knee flexion at late stance more obvious than at heel-strike, very little clearance seen for toe during swing.
 - 3 = toe appears to touch ground during swing, knee flexion appears constant during stance, and knee angle during stance, and knee angle during swing appears 45° or less.

C. Trunk, Head, and Upper Extremity Categories

1. Elbow Extension—a measure of the decrease of elbow range of motion.
 - 0 = large peak-to-peak excursion of forearm (approximately 20°), with distinct maximal flexion at end of anterior trajectory.
 - 1 = 25% decrement of extension during maximal posterior excursion of upper extremity.
 - 2 = almost no change in elbow angle.
 - 3 = no apparent change in elbow angle (held in flexion).
2. Shoulder Extension—a measure of the decrease of shoulder range of motion.
 - 0 = clearly seen movement of upper arm anterior (15°) and posterior (20°) to vertical axis of trunk.
 - 1 = shoulder flexes slightly anterior to vertical axis.
 - 2 = shoulder comes only to vertical axis or slightly posterior to it during flexion.
 - 3 = shoulder stays well behind vertical axis during entire excursion.
3. Shoulder Abduction—a measure of pathological increase in shoulder range of motion laterally.
 - 0 = shoulders held almost parallel to trunk.
 - 1 = shoulders held 5–10° to side.
 - 2 = shoulders held 10–20° to side.
 - 3 = shoulders held greater than 20° to side.

(continued)

TABLE 6-16. (CONTINUED)

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4. Arm-Heel Strike Synchrony—the extent to which the contralateral movements of an arm and leg are out of phase.
 - 0 = good temporal conjunction of arm and contralateral leg at apex of shoulder and hip excursions all of the time.
 - 1 = arm and leg slightly out of phase 25% of the time.
 - 2 = arm and leg moderately out of phase 25–50% of time.
 - 3 = little or no temporal coherence of arm and leg.
 5. Head Held Forward—a measure of the pathological forward projection of the head relative to the trunk.
 - 0 = earlobe vertically aligned with shoulder tip.
 - 1 = earlobe vertical projection falls 1" anterior to shoulder tip.
 - 2 = earlobe vertical projection falls 2" anterior to shoulder tip.
 - 3 = earlobe vertical projection falls 3" or more anterior to shoulder tip.
 6. Shoulders Held Elevated—the degree to which the scapular girdle is held higher than normal.
 - 0 = tip of shoulder (acromion) markedly below level of chin (1–2")
 - 1 = tip of shoulder slightly below level of chin.
 - 2 = tip of shoulder at level of chin.
 - 3 = tip of shoulder above level of chin.
 7. Upper Trunk Flexed Forward—a measure of kyphotic involvement of the trunk.
 - 0 = very gentle thoracic convexity, cervical spine flat, or almost flat.
 - 1 = emerging cervical curve, more distant thoracic convexity.
 - 2 = anterior concavity at mid-chest level apparent.
 - 3 = anterior concavity at mid-chest level very obvious.
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GARS score > 18 / 48 indicates increased fall risk -- Wolfson