Appendix F: Summary of Findings — Approaches and Tools for Assessing Falls Risk

Table 13 summarizes findings from the systematic review regarding approaches and tools used to assess risk for falls. It is important to note **that this is not a comprehensive list of all possible tools available**. Below the table is a list of websites that list additional tools.

Health-care organizations may review the findings below to support decision-making about the selection of approaches or tools for the setting and population(s) served.

Tools and approaches are ordered alphabetically in three categories: gait and/or balance, general falls risk, and fear of falling; there is no specific ranking of tools or approaches. Inclusion of a tool in this list does not constitute an endorsement by RNAO.

Table 13: Summary of Findings—Approaches and Tools for Assessing Falls Risk

NAME OF TOOL/ APPROACH	SETTING OR POPULATION	DESCRIPTION OF TOOL/ APPROACH	FINDINGS AND FUTURE CONSIDERATIONS
GAIT AND/OR BALANCE			
10-Meter Walk Test (10-MWT)	Setting: rehabilitation Population: patients in post-stroke rehabilitation	A clinical performance screening tool that measures the time it takes for a patient to walk 10 metres.	May be used in conjunction with clinical evaluation to assess falls risk (Lee, Geller, & Strasser, 2013).
Berg Balance Test	Setting: rehabilitation Population: patients in post-stroke rehabilitation	A clinical performance test of balance that rates the ability of an individual to maintain balance while performing ADL-related tasks. Components include balance, and lower and upper extremity strength.	May contribute to detailed assessment and diagnosis. Requires time, equipment, and clinical expertise. Appropriate for comprehensive assessment with interprofessional team (NICE, 2013). May be used in conjunction with clinical evaluation to assess falls risk (Lee et al., 2013).

NAME OF TOOL/ APPROACH	SETTING OR POPULATION	DESCRIPTION OF TOOL/ APPROACH	FINDINGS AND FUTURE CONSIDERATIONS
Dual- or single-task testing	Setting: community Population: older adults	Approaches used to assess the interaction between cognition and mobility. These include assessing a person's gait, either alone (single task) or while they perform a secondary motor or cognitive activity, such as walking and talking at the same time (dual task).	Single- and dual-task tests of gait speeds may help to identify people likely to fall (Menant, Schoene, Sarofim, & Lord, 2014). Deterioration in gait during dual-task testing is associated with an increased risk for falls, especially compared with single-tasks alone (Muir-Hunter & Wittwer, 2016). Mental tracking tests (e.g., that examine sustained attention, information processing and memory), together with the Timed Up and Go (TUG) Test, can help determine falls risk (Chu, Tang, Peng, & Chen, 2013).
Dynamic Gait Test	Setting: not provided Population: older adults	A test used to rate the ability of an individual to modify gait in response to changing task demands.	May contribute to detailed assessment and diagnosis. Requires time, equipment, and clinical expertise. Appropriate for comprehensive assessment with the interprofessional team (NICE, 2013).

NAME OF TOOL/ APPROACH	SETTING OR POPULATION	DESCRIPTION OF TOOL/ APPROACH	FINDINGS AND FUTURE CONSIDERATIONS
Functional Gait Assessment (FGA)	Setting: community outpatients Population: older adults	A falls screening tool that measures 10 items on a score of 0-3 (0 = most impaired; 3 = least impaired). The items are: Walking 1. at normal speeds, 2. fast, 3. at slow speeds, 4. with vertical head turns 5. with horizontal head turns, 6. with eyes closed, 7. over obstacles, 8. in tandem, 9. backward, 10. ascending and descending stairs.	May be used in conjunction with clinical evaluation to assess falls risk (Lee et al., 2013).
Functional reach	Setting: not specified Population: older adults	An assessment of balance challenges that may contribute to risk of falling. Measures, in inches/ centimetres, the distance between the arm's length and maximal forward reach using a fixed base of support.	May contribute to detailed assessment and diagnosis. Requires time, equipment, and clinical expertise. Appropriate for comprehensive assessment with interprofessional team (NICE, 2013). Feasible for primary care (U.S. Preventive Services Task Force, 2012).
Gait speed as a falls risk screening tool	Setting: community Population: older adults	Gait speed measurements taken as a screening tool for falls risk. In this review, the categories were: ■ <0.6 m/s as slow ■ 0.6–1.0 m/s as intermediate ■ 1.0–1.3 m/s as normal performance walker ■ >1.3 m/s as fast performance walker.	Although study results suggest that decreased gait speed may be associated with an increased risk of falls, it is unclear that gait speed can be used as a screening tool among community-dwelling older adults (Abu Samah, Mohd Nordin, Shahar, & Singh, 2016).

NAME OF TOOL/ APPROACH	SETTING OR POPULATION	DESCRIPTION OF TOOL/ APPROACH	FINDINGS AND FUTURE CONSIDERATIONS
Sensor-base falls technologies to predict falls risk	Setting: not specified, but included laboratory settings Population: older adults	Sensors attached to a person to monitor movement during daily activities (e.g., postural sway, functional mobility).	Sensors appear to detect differences between people who fall and those who do not fall (Ejupi, Lord, & Delbaere, 2014) and may help identify those most at risk (Howcroft, Kofman, & Lemaire, 2013). Further research is needed regarding the feasibility of these technologies in daily life settings (Ejupi et al., 2014; Howcroft et al., 2013).
Step Test	Setting: rehabilitation Population: patients in post-stroke rehabilitation	A clinical test of balance that requires stepping one foot on and off a 7.5-cm step as quickly as possible for 15 seconds and recording the number of completed steps (testing both legs and recording the lowest score).	May be used in conjunction with clinical evaluation to assess falls risk (Lee et al., 2013).
Timed Up and Go (TUG) Test	Setting: any setting, but most often in community Population: most often among older adults	A test that observes the time it takes a person to rise from an arm chair, walk three metres, turn, walk back, and sit down again.	One of the most frequently used tools to test balance and gait; appears to be useful in any setting (NICE, 2013). Clinical judgment is required to determine appropriate timed cut-off values (NICE, 2013). Should not be used in isolation to determine risk (Barry, Galvin, Keogh, Horgan, & Fahey, 2014). Predictive ability for future falls is limited (Beauchet, Fantino et al., 2011).

NAME OF TOOL/ APPROACH	SETTING OR POPULATION	DESCRIPTION OF TOOL/ APPROACH	FINDINGS AND FUTURE CONSIDERATIONS
Tinetti Scale	Setting: not specified Population: older adults	A scale that rates the ability of an individual to maintain balance while performing ADL-related tasks. Components include balance, and lower and upper extremity strength.	May contribute to detailed assessment and diagnosis. Requires time, equipment, and clinical expertise. Appropriate for comprehensive assessment with the interprofessional team (NICE, 2013).
Turn 180 Degrees	Setting: any setting Population: not specified	Observation and counting of steps taken to turn 180 degrees.	One of the most frequently used tools to test balance and gait. Appears to be useful in any setting, although predictive ability is unclear. Clinical judgment required to determine appropriate timed cut-off values (NICE, 2013).
GENERAL FALLS RISK			
Hendrich Fall Risk Model II	Setting: hospital Population: medical inpatients	A risk factor assessment and clinical performance screening tool that measures: confusion, disorientation, impulsivity, symptomatic depression, altered elimination, dizziness or vertigo, male gender, prescribed anti-epileptics, prescribed benzodiazepines, and *Get Up and Go Test*.	May be used in conjunction with clinical evaluation to assess falls risk (Lee et al., 2013).
St Thomas Risk Assessment Tool (STRATIFY)	Setting: hospital Population: medical inpatients < 65 years old and surgical inpatients	A falls screening tool questionnaire that includes history of falls, mental status, vision, toileting, transfers, and mobility.	May be used in conjunction with clinical evaluation to assess falls risk (Lee et al., 2013).

NAME OF TOOL/ APPROACH	SETTING OR POPULATION	DESCRIPTION OF TOOL/ APPROACH	FINDINGS AND FUTURE CONSIDERATIONS
FEAR OF FALLING			
Falls Efficacy Scale (FES-1)	Setting: mostly community Population: older adults with or without a history of falling	Measures level of concern carrying out both easy and more difficult physical activities and social activities without falling using a Likert-type scale.	The FES-1 long form is appropriate to assess fear of falling among high-risk older adults living in the community who are eligible for long-term care and functionally dependent (Greenberg, 2012).

Websites with additional tools

RNAO recognizes that many other tools are used in clinical settings to assess falls risk or to support comprehensive assessments (e.g., tools that assess incontinence, impaired vision, malnutrition, home environment, etc.).

The following websites are provided for information purposes of various tools and in some cases provide information about validity and/or reliability[G] of tools. RNAO is not responsible for the quality, accuracy, reliability, or currency of the information provided through these websites. Questions regarding tools should be directed to the source.

- The Regional Geriatric Program of Eastern Ontario: http://www.rgpeo.com/en/health-care-practitioners/falls-prevention-program/fall-risk-assessment-and-intervention.aspx
- The Senior Friendly Hospitals, clinical tools for falls: http://seniorfriendlyhospitals.ca/toolkit/processes-care/falls
- NICE, Appendix E: Evidence Table 9, Clinical practice guideline for the assessment and prevention of falls in older people: https://www.nice.org.uk/guidance/cg161/evidence/cg21-appendix-e-evidence-table-9-rehabilitation-other-key-documents-2004-pdf-190033746