

## Evidence Gaps Research Taxonomy Table

### Topic: Research Gaps for Interventions to Prevent Falls in Community-Dwelling Older Adults

To fulfill its mission to improve health by making evidence-based recommendations for preventive services, the USPSTF routinely highlights the most critical evidence gaps for creating actionable preventive services recommendations. The USPSTF often needs additional evidence to create the strongest recommendations for everyone and especially for persons with the greatest burden of disease. In some cases, clinical preventive services have been well studied, but there are important evidence gaps that prevent the USPSTF from making recommendations for specific interventions and for specific populations. In this table, the USPSTF summarizes the gaps in the evidence for interventions to prevent falls in community-dwelling older adults.

The research taxonomy is intended to provide general guidance to investigators. Investigators are encouraged to develop research designs that are responsive to the research taxonomy outlined in the table, in collaboration with their research teams and areas of expertise and experience. The research developed will be reviewed according to standard USPSTF criteria for inclusion in its evidence report; inclusion criteria are summarized in the final Research Plan (<https://www.uspreventiveservicestaskforce.org/uspstf/document/final-research-plan/falls-prevention-community-dwelling-older-adults-interventions>) and Procedure Manual (<https://www.uspreventiveservicestaskforce.org/uspstf/about-uspstf/methods-and-processes/procedure-manual>).

Research Gap	Key Questions* or Contextual Questions	Direct/ Indirect Pathway†	Type of Gap	Study Characteristics	Population	Intervention/ Comparison	Outcomes/ Timing	Setting
Research is needed to develop and validate primary care–feasible risk assessment tools that accurately predict risk for falls in community-dwelling adults age 65 years or older.	CQ1	N/A	General gap, Health equity gap	Large, nationally representative observational cohorts for risk assessment tool creation. Cohorts should include populations at higher risk of falls and fall-related injuries, such as Native Americans  Prospective, large, nationally representative cohorts for risk assessment tool validation. Cohorts should include populations at higher risk of falls and fall-related injuries, such as Native Americans	Community-dwelling, ambulatory adults age 65 years or older	N/A	Falls	Settings applicable to U.S. primary care
Studies are needed that compare the benefits and harms of exercise plus multifactorial interventions with exercise interventions alone.	KQ1, KQ2	Direct	Grade change	Randomized, comparative effectiveness trials	Community-dwelling, ambulatory adults age 65 years or older who are unselected for risk or at increased risk for falls	Interventions that are primary care feasible or referable  Compare multifactorial assessment and	KQ1 (benefits): <ul style="list-style-type: none"> <li>Falls</li> <li>Mortality (all-cause and fall-related)</li> <li>Fall-related morbidity, defined as:</li> </ul>	Primary care settings

Research Gap	Key Questions* or Contextual Questions	Direct/ Indirect Pathway <sup>†</sup>	Type of Gap	Study Characteristics	Population	Intervention/ Comparison	Outcomes/ Timing	Setting
						intervention plus exercise intervention (supervised or unsupervised, individual or group) with exercise alone (supervised or unsupervised, individual or group)	<ul style="list-style-type: none"> <li>○ Fall-related injuries and fractures</li> <li>○ Disability (as measured by instrumental activities of daily life instruments)</li> <li>○ Quality of life (validated instruments)</li> <li>○ Hospitalizations for fall-related injuries</li> <li>○ Emergency department visits for fall-related injuries</li> <li>○ Institutionalizations (e.g., transition from community dwelling to nursing or care homes, or other long-term care facilities)</li> </ul> <p>KQ 2: Harms outcomes as reported in studies</p>	
Studies are needed on the effectiveness and harms of interventions in different functional and risk groups (e.g., persons with frailty, persons age 85 years or older).	KQ1, KQ2	Direct	Health equity (by risk group)	Randomized, controlled trials	Community-dwelling, ambulatory adults age 65 years or older who are selected based on functional status, age, or other indicator of increased fall risk	Interventions that are primary care feasible or referable  Categories of included interventions: <ul style="list-style-type: none"> <li>• Exercise (supervised or unsupervised, individual or group)</li> <li>• Multifactorial assessment and</li> </ul>	<p>KQ1 (benefits):</p> <ul style="list-style-type: none"> <li>• Falls</li> <li>• Mortality (all-cause and fall-related)</li> <li>• Fall-related morbidity, defined as: <ul style="list-style-type: none"> <li>○ Fall-related injuries and fractures</li> <li>○ Disability (as measured by instrumental activities of daily life instruments)</li> </ul> </li> </ul>	Primary care settings

Research Gap	Key Questions* or Contextual Questions	Direct/ Indirect Pathway <sup>†</sup>	Type of Gap	Study Characteristics	Population	Intervention/ Comparison	Outcomes/ Timing	Setting
						intervention (i.e., studies that administer an initial multicomponent assessment and then provide customized interventions or referrals based on the risk factors identified in the initial assessment. These could include exercise, psychological interventions, nutrition therapy, education, medication management, environmental assessment and modification, and others).	<ul style="list-style-type: none"> <li>○ Quality of life (validated instruments)</li> <li>○ Hospitalizations for fall-related injuries</li> <li>○ Emergency department visits for fall-related injuries</li> <li>○ Institutionalizations (e.g., transition from community dwelling to nursing or care homes, or other long-term care facilities)</li> </ul> <p>KQ 2: Harms outcomes as reported in studies</p>	
More studies are needed on the benefits and harms of educational and psychological interventions.	KQ1, KQ2	Direct	Grade assignment	Randomized, controlled trials	Community-dwelling, ambulatory adults age 65 years or older who are unselected for risk or at increased risk for falls	Interventions that are primary care feasible or referable  Categories of included interventions: <ul style="list-style-type: none"> <li>• Psychological (individual or group)</li> <li>• Knowledge/ education compared with minimal control (i.e., provision of</li> </ul>		Primary care settings

Research Gap	Key Questions* or Contextual Questions	Direct/ Indirect Pathway <sup>†</sup>	Type of Gap	Study Characteristics	Population	Intervention/ Comparison	Outcomes/ Timing	Setting
						education via written materials, video, or lecture) or usual care		
Studies are needed on methods to improve the availability and accessibility of effective fall prevention interventions (e.g., remote provision of intervention).	N/A	N/A	General gap, Health equity gap (implementation)	Studies (e.g., pragmatic trials) that investigate strategies to improve the availability and accessibility of effective fall prevention interventions	Community-dwelling, ambulatory adults age 65 years or older who are at increased risk for falls  Studies should include populations at higher risk of falls and fall-related injuries, such as Native Americans			U.S.-based primary care or primary care–referrable settings

\* Key questions are an integral part of the approach to conducting systematic reviews that the USPSTF uses in its recommendation process. Along with the analytic framework, these questions specify the logic and scope of the topic, and are critical to guiding the literature searches, data abstraction, and analysis processes (<https://www.uspreventiveservicestaskforce.org/uspstf/about-uspstf/methods-and-processes/procedure-manual>).

† The direct pathway is typically derived from RCTs of the targeted screening or preventive intervention that adequately measure the desired health outcomes in the population(s) of interest. If certainty for net benefit cannot be derived from the direct pathway, then the USPSTF determines if the evidence is sufficient across the key questions and linkages in the indirect pathway to determine overall certainty.

**Abbreviations:** CQ=contextual question; KQ=key question; N/A=not applicable; RCT=randomized, controlled trial; USPSTF=U.S. Preventive Services Task Force.