Montana
Chronic Disease Prevention
& Health Promotion Bureau

Increased Risk for Falls Among those with Diabetes

Clinical Recommendations

- **Provide diabetes education to patients at each visit**
- **Assess medication adherence and ensure no medications interact to increase fall risk**
- **Consider referring patients with diabetes to a fall prevention class.**

Montana Chronic Disease Prevention Bureau

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MONTANA DPHHS
Healthy People. Healthy Communities.
Department of Public Health & Human Services

Diabetes is a serious chronic disease

Diabetes is a complex illness needing on-going medical care. Self-management education and continuous clinical care are required to prevent complications such as retinopathy, nephropathy, heart disease, cerebrovascular disease, and lower extremity amputations. In 2013, 7.7% of Montana adults had diabetes and an estimated 6.8% had pre-diabetes (MT BRFSS).

Falls are common and preventable

Falls are the leading cause of injury-related death among people aged 65 years and older and are common in other age groups, including children. Falls can lead to disability, loss of independence, and fear of performing activities. However, they are preventable.

Diabetes can increase risk for falling

Falls are common among people with diabetes. In Montana:

- 43% of adults with diabetes fell in the last year compared to 32% of adults without diabetes (Figure 1).
- Of those who fell, nearly half (46%) of people with diabetes were injured. One third (33%) of those without diabetes experienced an injury due to their fall (Figure 1).

Figure 1. Percent of adults aged 45 years and older with and without diabetes who have fallen at least once in the last three months, BRFSS, Montana, 2012

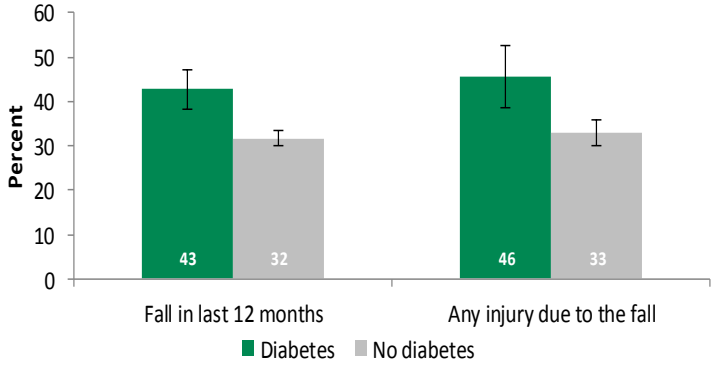


Figure 2. Fall prevalence among adults with and without diabetes by age group and sex, BRFSS, Montana, 2012

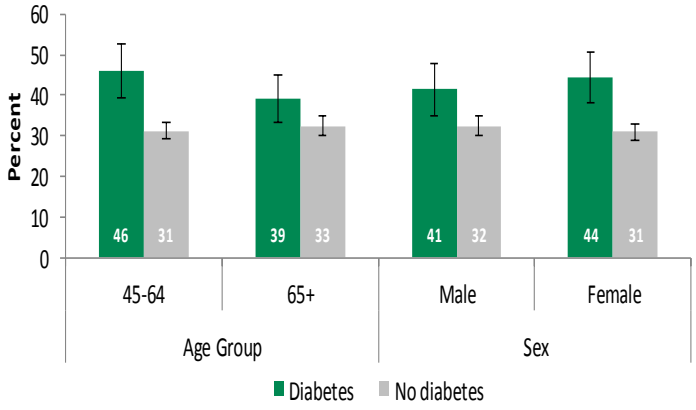
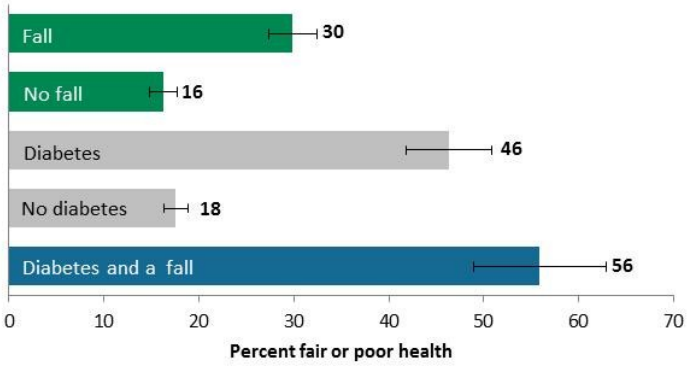


Figure 3. Prevalence of reporting fair or poor health among people with and without diabetes or a recent fall, Montana, BRFSS, 2012



Characteristics of adults with diabetes who fell

- People with diabetes aged 45-64 years had a higher frequency of falling than people of the same age group without diabetes (Figure 2).
- Both men and women with diabetes experienced increased frequency in falling (Figure 2).
- People reporting a fall in the last year or having diabetes had a higher prevalence of reporting they had fair or poor health compared to people who did not fall or did not have diabetes (Figure 3).
- An even larger percent (56%) of adults reported fair or poor health if they had fallen and had diabetes (Figure 3).

Risk for hospitalization or emergency department visit due to a fall

Falls can lead to serious injuries requiring urgent medical care.

- People with diabetes were 1.16 times (16%) more likely to experience a fall-related hospitalization and 1.90 (90%) more likely to experience an emergency department visit for a fall than people without diabetes (Table).

Table. Risk of experiencing a fall or hip fracture among people with diabetes compared to those without diabetes, MHDDS, Montana, 2010-2013

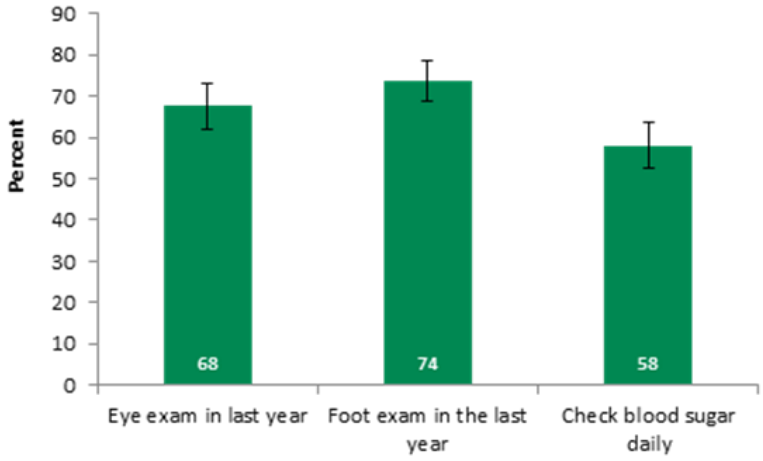
	Hospitalizations	95% CI	ED Visits	95% CI
Fall	**1.16**	**1.1 – 1.23**	**1.90**	**1.75 – 2.07**
Hip Fracture	**1.22**	**1.03 – 1.44**	N/A	N/A

CI=Confidence Interval

Diabetes management and clinical exams

Diabetes self-management and clinical care are key for a person with diabetes to stay in control of their risk factors for diabetes complications, as well as their risk for falls. Fluctuating or falling blood glucoses may place a person at risk for falls. Diabetes complications such as lower extremity neuropathy, poor vision, certain autonomic neuropathies (postural hypotension), these complications increate the risk for falling as well. Other factors, including diabetes medications, other medications, individual strength and balance, advancing age, and home hazards also can play a role in falling.

Figure 4. Percent of adults with diabetes who received key diabetes management exams, BRFSS, Montana, 2012



- Only 58% of people with diabetes reported checking their blood sugar daily. There are many factors to take into consideration regarding self-blood glucose monitoring, and a diabetes educator can help the patient find a monitoring plan to best suit them, taking into account personal diabetes self-management needs and goals, as well as insurance plans, etc. (Figure 4).

Stepping On

Stepping On is a multi-factorial fall prevention program consisting of seven weekly classes addressing multiple fall prevention topics. These topics include education on performing strength and balance exercises at home, assessing their risk for falls, addressing home and community safety, vision checks, and medication management. Three months later, participants attend a follow-up reunion meeting to revisit the prevention topics and ask questions. Eligible adults are 60 years of age and older with a history of a fall in the past 12 months or who reported a fear of falling.

- Participants who complete Stepping On reported half as many falls and a 56% decrease in having to see a doctor for a fall compared to before they started the program.

Fall prevention and clinical recommendations

- Refer patients to diabetes education to help improve self-management strategies and skills, and to help decrease risk of falling due to the inherent risk of diabetes medications, fluctuating blood sugars, and potentially diabetes complications that may place one at higher risk of falling.
- Perform clinical checks for patients with diabetes, including foot exams, vision exams, and teaching them how to monitor their glucose levels, but also discuss other items like medications, exercise, and the home environment.
- Teach patients how to self-monitor blood glucose, as appropriate.
- Discuss with patient his/her prescriptions for current, new or changing medications to avoid adverse drug reactions and potential falls.
- Consider referring patients with diabetes to a fall prevention class.
- The Montana Injury Prevention Program supports the Stepping On fall prevention program at many locations around the state. See their website for more information: http://dphhs.mt.gov/publichealth/EMSTS/prevention/falls.

Methods and Limitations

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based survey of noninstitutionalized adults aged 18 years and older who are asked about health risks and behaviors. Results are weighted to represent the state adult population.

The Montana Hospital Discharge Data System reports inpatient and ED data from participating hospitals on a yearly basis. These data are provided through a Memorandum of Agreement with the Montana Hospital Association. Data files from 2010 through 2013 were compiled and analyzed. Records with a primary diagnosis defined as diabetes (ICD9-CM 250) or injury as defined by CDC Injury Matrices were included. Analyses were limited to visits by Montana residents.

Diabetes complications and falls were not evaluated as part of this report due to limited data on diabetes complications and falls. The sequence of falls and diabetes exams cannot be determined from BRFSS.

Upcoming Events

- **Montana Diabetes Program Advisory Coalition Meeting**

  -July 17th Finlin Hotel, Butte 10am-3pm

Montana Diabetes Program
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