



# Falls in South Australia 2008 & 2015

Prepared For:

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## Introduction

Falls are a common problem for older people and are the most numerous reported incident during health care, often resulting in admission to hospital or a move to a nursing home or hostel<sup>1</sup>. Falls are a national safety and quality priority. Many falls are preventable and older people are encouraged to minimise their risk of falling<sup>1</sup>. The purpose of this report is to provide an analysis of falls in South Australia from 2008 and 2015 focusing on the characteristics of survey respondents and their beliefs about reducing their risk of falling. Quality of life data are also presented.

## Methods

**This report contains data from two population health surveys in South Australia – Health Monitor (2008 data) and Health Omnibus (2015 data). While the questions across both surveys were consistent, there are methodological differences described below.**

### Health Monitor

The Health Monitor (HM) Survey is a service provided by Population Research Outcome Studies (PROS) at the University of Adelaide which allows government and non-government organisations to collect population data focusing on the health and wellbeing of the South Australian community.

HM is a user-pays population CATI (Computer Assisted Telephone Interviewing) survey which is usually conducted twice per year (based on demand) in April/May and October/November. Generally, HM surveys sample around 5000 households per survey, yielding approximately 2000 completed interviews with South Australians aged 18 years and over.

#### > Weighting and Processing of Data

Data are weighted by the inverse of the individual's probability of selection and the number of times their telephone number(s) is (are) listed in the white pages, then re-weighted to age group by sex by section of state (metropolitan/country) benchmarks derived from the Australian Bureau of Statistics Estimated Resident Population.

### Health Omnibus

The Health Omnibus (HO) Survey is a service provided by Harrison Health Research to a number of government and non-government organisations responsible for servicing the health needs of the South Australian community.

HO is a user-pays face-to-face survey conducted in Spring each year. Generally, the HO survey samples around 5300 randomly selected households per year, yielding approximately 3000 interviews with South Australians aged 15 years and over.

#### > Weighting and Processing of Data

Data were weighted by the inverse of the individual's probability of selection, as well as the response rate in metropolitan and country regions and then re-weighted to benchmarks derived from the Australian Bureau of Statistics Estimated Resident Population.

**Note: The weighting of data can result in rounding discrepancies or totals not adding**

**Note: Only adults aged 50 years and over completed the falls related questions.**

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<sup>1</sup> South Australian Department for Health and Ageing. Don't fall for it, falls can be prevented! A guide to preventing falls for older people in South Australia. 2008

## Results

Respondents were asked how many falls they had in the past year. They were then categorised into having no falls, one fall or two or more falls. The majority of respondents reported having no falls in 2008 (70%) and 2015 (65%). There was a significant decrease in the proportion of respondents who did not report a fall in the past year, between 2008 and 2015 as shown in Table 1. There was an increase in the proportion of people who reported at least one fall from 30.3% in 2008 to 35.3% in 2015.

**Table 1:** Number of falls reported in the past 12 months

	2008 HM		2015 HO	
	n	% (95% CI)	n	% (95% CI)
<b>No Falls</b>	546	69.7 (66.4-72.8)*	871	64.7 (62.2-67.3)*
<b>One Fall</b>	130	16.7 (14.2-19.4)	254	18.9 (16.9-21.1)
<b>≥2 Falls</b>	106	13.6 (11.3-16.1)	220	16.4 (14.5-18.4)
<b>Total</b>	<b>783</b>	<b>100.0</b>	<b>1345</b>	<b>100.0</b>

\*p<0.05 compares equality of proportions between 2008 and 2015.

Note: excludes 'don't know' and 'not stated'. CI: Confidence Interval. HM: Health Monitor. HO: Health Omnibus

Among those respondents who did report having a fall in the past 12 months (2008 n=237, 2015 n=474), the mean number of falls did not change over time (Table 2). It should be noted the large standard deviations observed in 2015 were due to the large range (1-365) of responses.

**Table 2:** Mean number of falls by select demographics

	2008 HM (n=237)			2015 HO (n=474)		
	Mean	SD	Median	Mean	SD	Median
<b>Gender</b>						
Male	2.60	5.51	1.00	1.87	1.75	1.00
Female	2.11	2.54	1.00	2.71	14.02	2.00
<b>Age</b>						
50-54	2.34	3.60	1.00	1.99	1.80	1.00
55-64	2.77	5.90	1.00	2.88	17.97	1.00
65-74	1.89	1.66	1.00	1.90	1.37	1.00
75+	2.01	2.29	1.00	2.29	2.38	1.00
<b>Place of residence</b>						
Metro	2.30	3.61	1.00	2.45	11.91	1.00
Country SA	2.35	4.94	1.00	1.95	1.75	1.00
<b>Household Income</b>						
Up to \$20,000	2.47	4.50	1.00	4.46	28.35	2.00
\$20,001 - \$40,000	1.99	1.38	2.00	2.01	1.83	1.00
\$40,001 - \$60,000	2.87	7.36	2.00	2.56	3.03	2.00
\$60,001 - \$80,000	2.63	3.44	1.00	1.91	2.12	1.00
\$80,001 - \$100,000	1.82	1.83	1.00	1.82	1.94	1.00
More than \$100,000	2.01	1.97	1.00	1.54	1.08	1.00
<b>Total</b>	<b>2.32</b>	<b>4.07</b>	<b>1.00</b>	<b>2.33</b>	<b>10.43</b>	<b>1.00</b>

HM: Health Monitor, HO: Health Omnibus. SD: Standard Deviation

## Demographics

All Survey respondents were asked a series of questions to describe their characteristics. The characteristics provided here are listed below:

- > Age
- > Gender
- > Place of residence (metropolitan vs rural)
- > Marital Status
- > Housing
- > Country of Birth
- > Household Income
- > Work Status
- > Education

The weighted sample of respondents from the 2008 HM and 2015 HO surveys, by number of falls, one fall or two or more falls (in the past 12 months) are provided in Table 3. Characteristics that resulted in a higher number of respondents reporting falls include having a work status of 'unable to work due to injury or disability' and 'other/unemployed/student', and reporting living in a community or retirement village.

When comparing those who reported falling (either one fall, or two or more falls) there was a significant increase between 2008 and 2015 for:

- > respondents living in Metropolitan SA who had one fall;
- > respondents with an annual household income of \$20,001 - \$40,000 who had one fall;
- > respondents who are retired and had one fall;
- > respondents born in Australia who had two or more falls
- > respondents who left school aged 16 years or less who had two or more falls

**Table 3:** Weighted Demographic Sample, by number of falls within the past 12 months

	2008 HM (n = 783)			2015 HO (n = 1345)		
	n (%)			n (%)		
	No falls	One Fall	≥ 2 Falls	No Falls	One fall	≥ 2 Falls
<b>Gender</b>						
Male	263 (72.4)	56 (15.3)	45 (12.3)	424 (66.4)	129 (20.2)	86 (13.5)
Female	282 (67.4)	75 (17.9)	62 (14.7)	447 (63.2)	126 (17.8)	134 (19.0)
<b>Age</b>						
50-54	111 (68.5)	28 (17.3)	23 (14.2)	187 (68.5)	46 (16.8)	40 (14.7)
55-64	187 (69.5)	43 (16.0)	39 (14.5)	294 (65.3)	87 (19.3)	69 (15.3)
65 -74	128 (73.6)	26 (14.9)	20 (11.5)	228 (64.4)	64 (18.1)	62 (17.5)
75 and over	120 (67.0)	34 (19.0)	25 (14.0)	162 (60.4)	57 (21.3)	49 (18.3)
<b>Place of residence</b>						
Metro	408 (71.6)	85 (14.9)*	77 (13.5)	611 (62.9)	192 (20.6)*	156 (16.8)
Country SA	138 (64.7)	46 (21.5)	29 (13.9)	260 (69.7)	60 (16.1)	53 (14.2)

\*p < 0.05 – compares equality of proportions between 2008 and 2015 within falls category.  
HM: Health Monitor. HO: Health Omnibus

**Table 1 continued:** Weighted Demographic Sample, by number of falls within the past 12 months

	2008 HM (n = 783)			2015 HO (n = 1345)		
	n (%)			n (%)		
	No falls	One Fall	≥ 2 Falls	No Falls	One fall	≥2 Falls
<b>Marital Status</b>						
Married/De Facto	411 (71.4)	95 (16.5)	69 (12.1)	621 (65.4)	185 (19.5)	144 (15.2)
Separated/Divorced/Widowed	43 (65.6)	11 (17.4)	11 (17.0)	115 (64.6)	32 (18.0)	31 (17.4)
Never Married	18 (68.6)	2 (7.3)	6 (24.1)	36 (61.0)	13 (22.0)	10 (16.9)
<b>Housing</b>						
Owned/being purchased by the occupants	483 (71.1)	116 (17.2)	80 (11.8)	720 (65.6)	216 (19.7)	161 (14.7)
Rented from Housing SA or privately	41 (62.7)	8 (12.4)	16 (24.9)	117 (59.1)	31 (15.7)	50 (25.3)
Community /Retirement village	13 (56.8)	4 (18.2)	6 (25.0)	23 (60.5)	7 (18.4)	8 (21.1)
<b>Country of Birth</b>						
Australia	401 (69.8)	100 (17.4)	74 (12.9)*	583 (62.6)	192 (20.6)	156 (16.8)*
Other	123 (70.1)	27 (15.5)	25 (14.4)	287 (69.3)	63 (15.2)	64 (15.5)
<b>Household Income</b>						
Up to \$20,000	126 (67.7)	31 (16.5)	29 (15.8)	82 (56.6)	28 (19.3)	35 (24.1)
\$20,001 - \$40,000	122 (74.0)	21 (12.6)*	22 (13.4)	165 (60.7)	55 (20.2)*	52 (19.1)
\$40,001 - \$60,000	67 (68.2)	14 (14.1)	18 (17.7)	90 (65.2)	22 (15.9)	26 (18.8)
\$60,001 - \$80,000	51 (75.1)	11 (16.2)	6 (8.8)	72 (66.7)	22 (20.4)	14 (13.0)
\$80,001 - \$100,000	27 (65.6)	8 (20.3)	6 (14.1)	77 (70.0)	23 (20.9)	10 (9.1)
More than \$100,000	61 (66.5)	21 (22.5)	10 (11.0)	171 (69.0)	51 (20.6)	26 (10.5)
Refused/Don't know	91 (69.3)	25 (18.9)	16 (11.8)	215 (66.2)	53 (16.3)	57 (17.5)
<b>Work Status</b>						
Full-time	154 (71.2)	41 (19.0)	21 (9.8)	245 (72.7)	58 (17.2)	34 (10.1)
Part-time/casual	65 (64.1)	15 (15.1)	21 (20.8)	142 (66.7)	40 (18.8)	31 (14.6)
Home duties	31 (71.5)	7 (16.9)	5 (11.6)	28 (70.0)	7 (17.5)	5 (12.5)
Retired	270 (71.1)	60 (15.8)*	50 (13.1)	390 (61.8)	132 (20.9)*	109 (17.3)
Unable to work due to injury or disability	15 (66.2)	3 (12.9)	5 (21.0)	32 (50.0)	5 (7.8)	27 (42.2)
Other/Unemployed/Student	11 (56.5)	4 (19.4)	5 (24.0)	33 (55.9)	12 (20.3)	14 (23.7)
<b>Level of Education</b>						
Left school at 16 years or less <sup>‡</sup>	191 (68.7)	46 (16.4)	42 (14.9)*	128 (62.1)	32 (15.5)	46 (22.3)*
Left school after 16 years <sup>‡</sup>	113 (68.0)	31 (18.3)	23 (13.7)	223 (64.5)	71 (20.5)	52 (15.0)
Trade/ Apprenticeship/ Certificate/Diploma	139 (69.7)	33 (16.4)	28 (13.9)	354 (65.1)	106 (19.5)	84 (15.4)
Bachelor degree or higher	97 (74.3)	21 (16.4)	12 (9.2)	164 (66.4)	45 (18.2)	38 (15.4)
<b>TOTAL</b>	<b>546 (69.7)</b>	<b>130 (16.7)</b>	<b>106 (13.6)</b>	<b>871 (64.8)</b>	<b>254 (18.9)</b>	<b>220 (16.4)</b>

\*p < 0.05 – compares equality of proportions between 2008 and 2015 within falls category

<sup>‡</sup> 2015 response category was changed to 15 years. HM: Health Monitor. HO: Health Omnibus

## Beliefs about reducing the risk falls

Respondents were asked what actions (from a list provided) they thought would reduce the risk of falls. Tables 4, 5 and 6 below show these results by respondents who did not have a fall, respondents who had one fall, and respondents who had two or more falls respectively, in the last 12 months. Only response categories consistent between 2008 and 2015 were compared. Overall, the increase of proportions between 2008 and 2015 in the majority of actions demonstrates a greater understanding of falls risk.

### Respondents who had no falls in the previous 12-months

Among people who reported having no falls in the past 12 months, the two most common actions thought to reduce the risk of falls in 2008 was 'Taking more care or paying more attention' (72%) and 'Removing obstacles such as electrical cords' (59%). In 2015, the most common actions thought to reduce the risk of falls was 'Modifying your home' (77%) and 'Taking more care or paying more attention' (76%). There was a significant increase in many of the actions between 2008 and 2015 such as those listed below:

- > Modifying your home
- > Changing medication
- > Using a walking aid
- > Having an assessment of balance, walking, and/or muscle strength
- > Doing balance exercises
- > Having eyesight/glasses checked
- > Increasing physical activity levels
- > Removing obstacles such as electric cords

**Table 4:** Actions which respondents who did not report falling think would reduce the risk of falls

	2008 HM (n=546)		2015 HO (n=871)	
	n	% (95% CI)	n	% (95% CI)
Modifying your home (e.g. rails, ramps, non-slip surfaces installed)	289	53.0 (48.9–57.3)*	667	76.6 (73.7-79.3)*
Taking more care or paying more attention	392	71.9 (67.9-75.4)	663	76.1 (73.2-78.8)
Changing medication	139	25.5 (22.1-29.5)*	286	32.8 (29.8-36.0)*
Using a walking aid	217	39.8 (35.9-44.2)*	554	63.3 (60.4-66.7)*
Having a medical check-up	295	54.0 (49.8-58.2)	427	49.0 (45.7-52.3)
Limiting activity	153	28.0 (24.3-31.8)	204	23.4 (20.7-26.3)
Having assessment of balance, walking and/or muscle strength	209	38.3 (34.6-42.8)*	456	52.4 (49.0-55.7)*
Doing balance exercises	204	37.4 (33.7-41.9)*	488	56.1 (52.7-59.3)*
Having eyesight/glasses checked	298	54.6 (50.4-58.7)*	553	63.6 (60.2-66.6)*
Increasing physical activity levels	203	37.2 (33.2-41.3)*	436	50.1 (46.7-53.4)*
Removing obstacles such as electric cords	324	59.3 (55.3-63.5)*	642	73.7 (70.7-76.5)*
Taking Vitamin D supplements <sup>‡</sup>	-	-	193	22.2 (19.5-25.0)
Other	23	4.2 (2.8-6.2)	23	2.6 (1.8-3.9)
None of these	23	4.2 (2.8-6.2)*	1	0.1 (0.02-0.6)*

\*p <0.05 compared equality of proportions between 2008 and 2015. <sup>‡</sup> not a response option in 2008  
 Note: multiple responses allowed. CI: Confidence Interval. HM: Health Monitor. HO: Health Omnibus

## Respondents who had one Fall in the previous 12-months

Of those respondents who had one fall in the past 12 months, the most common actions thought to reduce the risk of falls was 'Taking more care or paying more attention' and 'Removing obstacles such as electric cords' in both 2008 (77% and 55% respectively) and 2015 (78% and 69% respectively) (Table 5). There was a significant increase in several actions across 2008 to 2015 such as those listed below:

- > Modifying your home
- > Changing medication
- > Using a walking aid
- > Having an assessment of balance, walking and/or muscle strength
- > Doing balance exercises
- > Removing obstacles such as electric cords

**Table 5:** Actions which respondents who had one fall think would reduce the risk of falls

	2008 HM (n=546)		2015 HO (n=871)	
	n	% (95% CI)	n	% (95% CI)
Modifying your home (e.g. rails, ramps, non-slip surfaces installed)	55	42.3 (34.2-50.9)*	172	67.7 (61.7-73.20)*
Taking more care or paying more attention	101	77.1 (69.8-84.0)	202	79.5 (74.1-84.0)
Changing medication	23	17.7 (12.2-25.3)*	72	28.3 (23.2-34.2)*
Using a walking aid	35	26.7 (20.2-35.4)*	129	50.8 (44.7-56.9)*
Having a medical check-up	60	45.8 (37.4-54.3)	97	38.2 (32.4-44.3)
Limiting activity	24	18.3 (12.8-26.2)	45	17.7 (13.5-22.9)
Having assessment of balance, walking and/or muscle strength	37	28.5 (20.9-36.2)*	110	43.3 (37.4-49.5)*
Doing balance exercises	41	31.3 (23.0-38.6)*	119	46.9 (40.8-53.0)*
Having eyesight/glasses checked	63	48.1 (39.6-56.6)	133	52.2 (46.2-58.4)
Increasing physical activity levels	42	32.1 (24.9-40.8)	104	40.9 (35.1-47.1)
Removing obstacles such as electric cords	72	55.4 (46.8-63.7)*	176	69.3 (63.4-74.6)*
Taking Vitamin D supplements <sup>‡</sup>	-	-	48	18.8 (14.6-24.2)
Other	4	3.1 (1.2-7.6)	12	4.7 (2.7-8.1)
None of these	9	6.9 (3.7-12.6)*	1	0.4 (0.07-2.2)*

\*p <0.05 compared equality of proportions between 2008 and 2015. <sup>‡</sup> not a response option in 2008

Note: multiple responses allowed. CI: Confidence Interval. HM: Health Monitor. HO: Health Omnibus

## Respondents who had two or more falls in the past 12-months

Of those respondents who had reported falling at least twice in the past 12 months, in 2008 the most common actions thought to reduce the risk of falls was 'Taking more care or paying more attention' (76%) and 'Removing obstacles such as electric cords' (48%). In 2015, the most common actions were 'Taking more care or paying more attention' (79%) and 'Modifying your home' (64%). Again, there was a significant increase in several actions between 2008 and 2015 such as those listed below:

- > Modifying your home
- > Changing medication
- > Using a walking aid
- > Having an assessment of balance, walking and/or muscle strength
- > Increasing physical activity levels
- > Removing obstacles such as electric cords

**Table 6:** Actions which respondents who had two or more falls think would reduce the risk of falls

	2008 HM (n=546)		2015 HO (n=871)	
	n	% (95% CI)	n	% (95% CI)
Modifying your home (e.g. rails, ramps, non-slip surfaces installed)	43	41.0 (31.7-50.1)*	140	63.6 (57.1-69.7)*
Taking more care or paying more attention	81	76.4 (67.5-83.5)	173	78.6 (72.8-83.5)
Changing medication	13	12.4 (7.3-19.9)*	58	26.2 (21.0-32.6)*
Using a walking aid	31	29.2 (15.7-31.5)*	106	48.4 (41.7-54.8)*
Having a medical check-up	42	40.0 (30.8-49.1)	82	37.6 (31.2-43.8)
Limiting activity	24	22.9 (15.7-31.5)	40	18.1 (13.6-23.8)
Having assessment of balance, walking and/or muscle strength	23	21.9 (14.9-30.5)*	98	44.5 (38.1-51.2)*
Doing balance exercises	30	28.3 (20.6-37.5)	101	46.1 (39.5-52.5)
Having eyesight/glasses checked	44	41.9 (32.6-51.0)	110	50.0 (43.4-56.6)
Increasing physical activity levels	27	25.7 (18.1-34.5)*	86	39.3 (32.9-45.7)*
Removing obstacles such as electric cords	50	47.6 (37.9-56.6)*	137	62.6 (55.7-68.4)*
Taking Vitamin D supplements <sup>‡</sup>	-	-	32	14.6 (10.5-19.9)
Other	3	2.8 (1.0-8.0)	11	5.0 (2.8-8.7)
None of these	5	4.7 (2.1-10.7)	0	0.0

\*p <0.05 compares equality of proportions between 2008 and 2015. <sup>‡</sup> not a response option in 2008

Note: multiple responses allowed. CI: Confidence Interval. HM: Health Monitor. HO: Health Omnibus

## Quality of Life and Falls

In 2015, respondents were also asked a series of validated questions to determine quality of life (SF-12)<sup>2</sup>. Results from the SF-12 are summarised into two summary scores, the Physical Component Summary (PCS) and the Mental Component Summary (MCS). The two scores range between 0 and 100, with increasing values equating to better health.

There were significant differences in the PCS and MCS scores depending on the number of falls a respondent reported. For the PCS, respondents who reported no falls or one fall, had significantly higher scores (indicating better physical function) compared to those who had two or more falls. Furthermore, respondents reporting one fall had a significantly better score compared to those who reported two or more falls. For the MCS, respondents reporting no falls had a significantly better score compared to those who reported one fall, and those who reported two or more falls.

Table 7: PCS and MCS scores of respondent aged 50 years and over by number of falls, 2015

	No falls M(SD) n=832	One Fall M(SD) n=238	≥ 2 Falls M(SD) n=197	p-value
PCS	47.3 (10.4)	43.9 (11.0)	39.5 (12.5)	<0.001*
MCS	54.6 (7.4)	54.2 (7.7)	50.7 (10.5)	<0.001*

\*p<0.05 significantly different (ANOVA)

PCS: Physical Component Score. MCS: Mental Component Score. M: Mean. SD: Standard Deviation

## Summary

This report shows the difference in reported falls from two different surveys conducted in 2008 (Health Monitor) and 2015 (Health Omnibus). While the questions remained the same across both surveys, there are methodological differences which need to be considered when interpreting the data.

There was a significant decrease in the proportion of respondent who did not report a fall in 2008 (70%) compared with 2015 (65%). Despite the increase in proportions of people who reported one fall or two or more falls over this time period, these alone were not significant, nor were there a change in the mean number of falls for each year. When respondents were asked what actions they think could reduce the risk of falls, many significant increases in opinions were seen over time, indicating a heightened awareness of falls risk.

In 2015, a new series of questions were asked to gauge the respondent's quality of life (SF-12). The results found there were differences in the physical and mental components of quality of life among respondents with varying degrees of falls.

<sup>2</sup> Ware J, Kosinski M, Keller S. A 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity. *Medical Care*. 1996; 34: 220-233

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