

**Supplement Table 1. Prevalence of disease combinations among participants with dementia in each study year**

	<b>2001</b>	<b>2003</b>	<b>2007</b>	<b>2010</b>	<b>2014</b>	<b>2018</b>
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Hypertension & heart disease	21.6 (81)	26.3 (115)	22.1 (97)	25.0 (135)	32 (223)	37.6 (289)
Hypertension & diabetes	5.6 (21)	5.5 (24)	5.7 (25)	6.3 (34)	10.5 (73)	15.1 (116)
Hypertension & osteoarthritis	10.4 (39)	11.2 (49)	14.6 (64)	18.3 (99)	24.2 (169)	27.2 (209)
Hypertension & hip fracture	4.8 (18)	7.1 (31)	5.5 (24)	8.0 (43)	10.3 (72)	10.3 (79)
Hypertension & depression	11.2 (42)	12.8 (56)	10.5 (46)	13.9 (75)	13.8 (96)	17.8 (137)
Heart disease & cancer	7.7 (29)	7.3 (32)	6.4 (28)	-	9.3 (65)	8.3 (64)
Heart disease & diabetes	9.6 (36)	14.4 (32)	6.4 (28)	7.6 (41)	8.7 (61)	11.7 (90)
Heart disease & osteoarthritis	20.8 (78)	21.5 (94)	16.4 (72)	22.9 (124)	24.2 (169)	25.4 (195)
Heart disease & hip fracture	9.1 (34)	11.2 (49)	7.1 (31)	11.3 (61)	10.7 (75)	9.6 (74)
Heart disease & depression	18.9 (71)	19.9 (87)	14.1 (62)	16.5 (89)	14.3 (100)	14.8 (114)
Cancer & osteoarthritis	4.5 (17)	4.1 (18)	3.9 (17)	-	6.9 (48)	6.5 (50)
Osteoarthritis & hip fracture	5.9 (22)	8.7 (38)	4.3 (19)	8.7 (47)	10.0 (70)	8.2 (63)
Osteoarthritis & depression	11.5 (43)	13.5 (59)	10.5 (46)	13.7 (74)	13.6 (95)	13.3 (102)
Hypertension, heart disease & osteoarthritis	7.2 (27)	9.6 (42)	8.2 (36)	11.8 (64)	15.9 (111)	18.8 (144)
Hypertension, heart disease & depression	7.7 (29)	9.6 (42)	6.4 (28)	8.7 (47)	8.3 (58)	11.7 (90)
Hypertension, osteoarthritis & depression	4.5 (17)	5.7 (25)	5.2 (23)	7.0 (38)	8.3 (58)	9.4 (72)
Heart disease, osteoarthritis & depression	6.7 (25)	9.1 (40)	5.7 (25)	9.6 (52)	8.2 (57)	8.1 (62)

**Supplement Table 2. Association of combinations of chronic conditions with dementia in the six study waves. Logistic regression analysis with odds ratios (OR) and 95% Confidence Intervals (CI) adjusted for age and gender. Odds >1.00 indicate higher prevalence among people with dementia**

	2001		2003		2007		2010		2014		2018	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Hypertension & heart disease	1.18	0.85-1.65	1.17	0.86-1.59	<b>0.62</b>	<b>0.46-0.83</b>	<b>0.60</b>	<b>0.47-0.77</b>	<b>0.78</b>	<b>0.63-0.96</b>	1.00	0.83-1.21
Hypertension & diabetes	<b>2.25</b>	<b>1.11-4.55</b>	1.48	0.80-2.73	0.72	0.43-1.22	<b>0.67</b>	<b>0.44-1.03</b>	1.05	0.76-1.45	1.11	0.86-1.45
Hypertension & osteoarthritis	0.78	0.51-1.19	<b>0.64</b>	<b>0.44-0.94</b>	<b>0.44</b>	<b>0.32-0.62</b>	<b>0.54</b>	<b>0.41-0.71</b>	<b>0.67</b>	<b>0.53-0.84</b>	<b>0.74</b>	<b>0.60-0.91</b>
Hypertension & hip fracture	0.98	0.52-1.84	1.00	0.60-1.66	<b>0.45</b>	<b>0.27-0.74</b>	0.80	0.54-1.20	1.05	0.75-1.46	1.33	0.96-1.84
Hypertension & depression	<b>2.49</b>	<b>1.48-4.20</b>	<b>2.10</b>	<b>1.32-3.32</b>	1.30	0.84-2.03	<b>2.04</b>	<b>1.40-2.97</b>	<b>1.99</b>	<b>1.43-2.76</b>	<b>3.26</b>	<b>2.39-4.44</b>
Heart disease & cancer	1.65	0.94-2.90	1.20	0.71-2.02	0.90	0.54-1.52	-	-	0.96	0.68-1.35	0.78	0.56-1.08
Heart disease & diabetes	<b>1.79</b>	<b>1.07-3.00</b>	1.17	0.69-1.99	0.96	0.57-1.63	1.00	0.65-1.52	1.05	0.74-1.49	1.26	0.93-1.69
Heart disease & osteoarthritis	0.91	0.65-1.26	1.01	0.73-1.38	<b>0.49</b>	<b>0.36-0.68</b>	<b>0.76</b>	<b>0.58-0.98</b>	0.84	0.67-1.06	0.94	0.76-1.17
Heart disease & hip fracture	1.02	0.63-1.64	1.25	0.81-1.92	<b>0.54</b>	<b>0.34-0.85</b>	1.17	0.81-1.70	1.18	0.85-1.65	1.34	0.96-1.88
Heart disease & depression	<b>2.3</b>	<b>1.55-3.43</b>	<b>2.39</b>	<b>1.63-3.52</b>	1.31	0.89-1.94	<b>2.76</b>	<b>1.89-4.02</b>	<b>2.32</b>	<b>1.67-3.24</b>	<b>2.94</b>	<b>2.12-4.08</b>
Cancer & osteoarthritis	1.09	0.57-2.11	0.80	0.43-1.49	0.79	0.42-1.48	-	-	1.01	0.68-1.49	<b>0.59</b>	<b>0.41-0.83</b>
Osteoarthritis & hip fracture	0.84	0.48-1.47	1.36	0.83-2.23	<b>0.32</b>	<b>0.19-0.54</b>	0.82	0.55-1.22	1.30	0.92-1.85	1.03	0.73-1.45
Osteoarthritis & depression	1.24	0.80-1.92	<b>2.02</b>	<b>1.30-3.15</b>	1.10	0.72-1.69	<b>2.11</b>	<b>1.44-3.09</b>	<b>1.94</b>	<b>1.40-2.69</b>	<b>2.7</b>	<b>1.92-3.79</b>
Hypertension, heart disease & osteoarthritis	0.91	0.54-1.51	0.92	0.60-1.42	<b>0.41</b>	<b>0.27-0.62</b>	<b>0.57</b>	<b>0.41-0.79</b>	0.77	0.59-1.00	0.95	0.75-1.20
Hypertension, heart disease & depression	<b>2.41</b>	<b>1.30-4.46</b>	<b>2.59</b>	<b>1.48-4.55</b>	0.98	0.58-1.66	<b>2.16</b>	<b>1.34-3.48</b>	<b>2.06</b>	<b>1.36-3.12</b>	<b>3.21</b>	<b>2.20-4.68</b>
Hypertension, osteoarthritis & depression	1.51	0.74-3.08	1.77	0.92-3.38	0.88	0.50-1.53	<b>1.73</b>	<b>1.05-2.84</b>	<b>1.76</b>	<b>1.18-2.64</b>	<b>2.82</b>	<b>1.88-4.25</b>
Heart disease, osteoarthritis & depression	1.15	0.66-2.01	<b>2.15</b>	<b>1.25-3.70</b>	0.83	0.49-1.42	<b>2.82</b>	<b>1.72-4.60</b>	<b>1.66</b>	<b>1.12-2.48</b>	<b>2.53</b>	<b>1.66-3.87</b>

Notes: Analyses were conducted for each combination separately.  
 Bolding indicates statistically significant association.

**Supplement Table 3. Prevalence of disease combinations among participants without dementia in each study year**

	<b>2001</b>	<b>2003</b>	<b>2007</b>	<b>2010</b>	<b>2014</b>	<b>2018</b>
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Hypertension & heart disease	18.8 (94)	23.3 (116)	31.4 (155)	36.3 (262)	37.6 (347)	37.4 (407)
Hypertension & diabetes	2.6 (13)	4.0 (20)	7.9 (39)	10 (72)	10.5 (97)	14.2 (154)
Hypertension & osteoarthritis	12.8 (64)	16.6 (83)	28.2 (139)	29.2 (211)	32.3 (298)	32.8 (357)
Hypertension & hip fracture	4.8 (24)	6.8 (34)	10.8 (53)	9.4 (68)	9.6 (89)	7.8 (85)
Hypertension & depression	4.8 (24)	6.4 (32)	8.7 (43)	7.3 (53)	7.6 (70)	6.3 (68)
Heart disease & cancer	4.8 (24)	6.0 (30)	6.9 (34)	-	9.8 (90)	10.3 (112)
Heart disease & diabetes	5.6 (28)	12.6 (33)	6.5 (32)	8.2 (59)	8.9 (82)	9.7 (106)
Heart disease & osteoarthritis	22.2 (111)	21.6 (108)	28.4 (140)	28.1 (203)	27.5 (254)	25.7 (280)
Heart disease & hip fracture	8.6 (43)	9.0 (45)	11.8 (58)	9.3 (67)	9.1 (84)	7.1 (77)
Heart disease & depression	9.4 (47)	9.4 (47)	11.6 (57)	6.7 (48)	7.0 (65)	5.6 (61)
Cancer & osteoarthritis	4.2 (21)	5.2 (26)	5.1 (25)	-	6.9 (64)	10.3 (112)
Osteoarthritis & hip fracture	6.8 (34)	6.4 (32)	12.4 (61)	9.7 (70)	7.6 (70)	7.6 (83)
Osteoarthritis & depression	9.4 (47)	7 (35)	10.1 (50)	6.9 (50)	7.9 (73)	5.3 (58)
Hypertension, heart disease & osteoarthritis	7.8 (39)	10.4 (52)	18.1 (89)	18.8 (136)	19.6 (181)	19.0 (207)
Hypertension, heart disease & depression	3.4 (17)	3.8 (19)	6.7 (33)	4.2 (30)	4.4 (41)	4.0 (43)
Hypertension, osteoarthritis & depression	3 (15)	3.2 (16)	6.3 (31)	4.2 (30)	5.1 (47)	3.5 (38)
Heart disease, osteoarthritis & depression	5.8 (29)	4.4 (22)	7.1 (35)	3.6 (26)	5.4 (50)	3.3 (36)