FRAX® WHO Fracture Risk Assessment Tool

Australia - The probabilities of a major osteoporotic fracture in men

The following tables give the 10-year probability (%) of a major osteoporotic fracture (hip, clinical spine, forearm or proximal humerus fracture) according to the T-score for femoral neck BMD , the number of clinical risk factors (CRF) and age. Each table provides a mean estimate and a range, based on the epidemiology of Australia. The range is not a confidence interval, but because the weight of different risk factors varies, is a true range.

Note that the BMI is set at 24 kg/m².

Age = 50 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	-3.5	-3.0	-2.5	-2.0	-1.5	-1.0	-0.5	0	0.5	1.0
0	8.7	5.3	3.4	2.4	1.7	1.4	1.1	1.0	0.9	0.8	0.8
1	13 (11-17)	8.3 (7.3-11)	5.3 (4.6-6.8)	3.6 (3.0-4.6)	2.7 (2.1-3.4)	2.1 (1.5-2.6)	1.7 (1.2-2.2)	1.4 (1.0-2.0)	1.3 (0.8-1.8)	1.2 (0.8-1.7)	1.2 (0.8-1.6)
2	20 (15-29)	13 (9.7-18)	8.1 (6.4-12)	5.5 (4.1-7.9)	4.0 (2.7-5.9)	3.1 (1.9-4.9)	2.5 (1.5-4.2)	2.2 (1.2-3.6)	1.9 (1.0-3.3)	1.8 (0.9-3.2)	1.7 (0.9-3.1)
3	30 (20-41)	19 (13-26)	12 (8.6-16)	8.3 (5.6-12)	6.0 (3.7-9.6)	4.6 (2.6-7.9)	3.7 (1.9-6.8)	3.2 (1.6-5.9)	2.8 (1.3-5.4)	2.7 (1.2-5.1)	2.5 (1.2-4.9)
4	42 (29-55)	27 (18-36)	18 (12-23)	12 (7.9-16)	8.8 (5.7-13)	6.7 (4.4-10)	5.4 (3.3-8.7)	4.6 (2.6-7.6)	4.0 (2.2-6.9)	3.8 (2.0-6.6)	3.6 (1.9-6.3)
5	56 (45-66)	38 (30-46)	26 (20-30)	18 (13-20)	13 (9.5-16)	9.6 (7.2-12)	7.7 (5.8-10)	6.5 (4.8-9.0)	5.7 (4.1-8.1)	5.4 (3.7-7.7)	5.1 (3.5-7.4)
6	70	51	36	25	18	14	11	9.0	8.0	7.5	7.1

Ten year probability of osteoporotic fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in men from Australia.

Age = 55 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	**-3.5**	**-3.0**	**-2.5**	**-2.0**	**-1.5**	**-1.0**	**-0.5**	**0**	**0.5**	**1.0**
0	9.7	6.1	4.1	2.8	2.1	1.6	1.3	1.1	1.0	0.9	0.9
1	15 (12-18)	9.4 (8.4-11)	6.2 (5.5-7.6)	4.3 (3.6-5.3)	3.2 (2.5-3.9)	2.5 (1.8-3.1)	2.0 (1.4-2.6)	1.7 (1.1-2.2)	1.5 (1.0-2.1)	1.4 (0.9-1.9)	1.3 (0.8-1.8)
2	22 (17-30)	14 (11-19)	9.3 (7.5-13)	6.5 (4.9-8.9)	4.8 (3.3-6.7)	3.7 (2.4-5.6)	2.9 (1.8-4.7)	2.5 (1.4-4.0)	2.2 (1.2-3.7)	2.0 (1.1-3.5)	1.9 (1.0-3.3)
3	31 (22-41)	21 (15-27)	14 (10-18)	9.6 (6.8-14)	7.0 (4.5-11)	5.4 (3.2-9.0)	4.3 (2.3-7.6)	3.6 (1.8-6.5)	3.2 (1.6-6.0)	3.0 (1.4-5.6)	2.8 (1.3-5.3)
4	43 (31-54)	29 (20-37)	20 (14-24)	14 (9.4-18)	10 (6.8-14)	7.7 (5.2-12)	6.2 (3.9-9.7)	5.1 (3.0-8.4)	4.6 (2.6-7.7)	4.2 (2.3-7.2)	4.0 (2.1-6.9)
5	56 (48-66)	40 (33-47)	28 (22-32)	20 (16-23)	14 (11-18)	11 (8.5-14)	8.7 (6.8-12)	7.2 (5.5-10)	6.4 (4.7-9.1)	5.9 (4.2-8.5)	5.6 (3.8-8.0)
6	70	53	38	27	20	15	12	10	8.9	8.2	7.7

Age = 60 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	**-3.5**	**-3.0**	**-2.5**	**-2.0**	**-1.5**	**-1.0**	**-0.5**	**0**	**0.5**	**1.0**
0	11	7.1	4.9	3.5	2.7	2.1	1.7	1.4	1.3	1.1	1.1
1	16 (14-18)	11 (9.7-12)	7.4 (6.5-8.7)	5.3 (4.5-6.3)	4.0 (3.2-4.7)	3.1 (2.3-3.8)	2.5 (1.8-3.2)	2.1 (1.4-2.7)	1.8 (1.2-2.5)	1.7 (1.1-2.4)	1.6 (1.0-2.2)
2	23 (18-30)	16 (13-20)	11 (8.9-14)	7.8 (6.0-10)	5.9 (4.2-8.1)	4.5 (3.0-6.7)	3.6 (2.3-5.6)	3.0 (1.8-4.8)	2.7 (1.5-4.4)	2.5 (1.4-4.1)	2.3 (1.2-3.9)
3	32 (24-40)	22 (17-28)	16 (12-21)	11 (8.3-16)	8.5 (5.7-13)	6.6 (4.1-11)	5.3 (3.0-8.9)	4.3 (2.3-7.6)	3.9 (2.0-7.0)	3.6 (1.8-6.6)	3.3 (1.6-6.2)
4	43 (33-52)	31 (23-37)	22 (16-27)	16 (11-21)	12 (8.5-17)	9.4 (6.5-14)	7.5 (5.0-11)	6.1 (3.8-9.8)	5.5 (3.2-9.0)	5.0 (2.8-8.4)	4.7 (2.6-7.9)
5	55 (49-63)	41 (35-47)	30 (25-34)	22 (18-26)	17 (14-21)	13 (11-17)	10 (8.3-14)	8.6 (6.7-12)	7.7 (5.7-11)	7.0 (5.0-9.9)	6.5 (4.5-9.3)
6	67	53	40	30	23	18	14	12	10	9.6	8.9

Ten year probability of osteoporotic fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in men from Australia.

Age = 65 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	-3.5	-3.0	-2.5	-2.0	-1.5	-1.0	-0.5	0	0.5	1.0
0	13	8.8	6.3	4.7	3.5	2.8	2.2	1.8	1.6	1.5	1.3
1	18 (17-20)	13 (12-14)	9.3 (8.2-10)	6.9 (5.8-7.8)	5.2 (4.2-6.0)	4.0 (3.1-4.9)	3.2 (2.4-4.1)	2.7 (1.9-3.5)	2.4 (1.6-3.2)	2.1 (1.4-3.0)	2.0 (1.3-2.8)
2	25 (21-31)	18 (15-23)	13 (11-17)	9.9 (7.8-13)	7.5 (5.6-10)	5.9 (4.1-8.2)	4.7 (3.1-6.9)	3.9 (2.4-6.0)	3.4 (2.0-5.4)	3.1 (1.8-5.0)	2.8 (1.6-4.7)
3	34 (27-41)	25 (20-31)	19 (15-24)	14 (11-19)	11 (7.6-16)	8.3 (5.5-13)	6.7 (4.1-11)	5.5 (3.2-9.3)	4.9 (2.7-8.5)	4.4 (2.3-7.8)	4.0 (2.0-7.3)
4	45 (36-51)	34 (27-39)	26 (20-31)	19 (15-25)	15 (11-20)	12 (8.5-17)	9.3 (6.7-14)	7.7 (5.2-12)	6.9 (4.3-11)	6.2 (3.7-10)	5.6 (3.2-9.3)
5	56 (51-61)	44 (39-49)	34 (30-38)	26 (23-31)	20 (17-25)	16 (13-20)	13 (11-17)	11 (8.6-14)	9.4 (7.2-13)	8.5 (6.2-12)	7.7 (5.5-11)
6	66	55	44	35	27	21	17	14	13	11	10

Age = 70 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	-3.5	-3.0	-2.5	-2.0	-1.5	-1.0	-0.5	0	0.5	1.0
0	15	11	8.4	6.3	4.8	3.8	3.0	2.5	2.2	1.9	1.7
1	23 (20-28)	17 (15-20)	12 (11-15)	9.3 (7.7-11)	7.0 (5.7-8.6)	5.4 (4.3-6.6)	4.3 (3.3-5.1)	3.5 (2.6-4.2)	3.0 (2.2-3.6)	2.7 (1.9-3.1)	2.4 (1.7-2.8)
2	32 (26-40)	24 (19-31)	18 (14-23)	14 (10-18)	10 (7.7-13)	7.9 (5.8-10)	6.1 (4.3-8.1)	5.0 (3.4-6.7)	4.3 (2.8-5.8)	3.7 (2.4-5.1)	3.3 (2.1-4.5)
3	44 (35-53)	34 (27-43)	26 (20-34)	20 (14-26)	15 (10-20)	11 (7.8-16)	8.7 (5.8-13)	7.1 (4.6-10)	6.0 (3.8-9.0)	5.1 (3.2-7.9)	4.5 (2.7-7.0)
4	56 (48-63)	46 (37-53)	36 (28-43)	28 (21-34)	21 (16-27)	16 (12-21)	12 (9.1-17)	9.9 (7.2-14)	8.3 (5.9-12)	7.1 (4.9-10)	6.1 (4.2-9.1)
5	67 (60-71)	58 (50-62)	48 (40-52)	38 (31-43)	30 (24-34)	23 (18-27)	17 (14-21)	14 (11-17)	12 (9.3-15)	9.7 (7.9-13)	8.3 (6.8-11)
6	75	68	59	50	40	31	24	19	16	13	11

Ten year probability of osteoporotic fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in men from Australia.

Age = 75 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	-3.5	-3.0	-2.5	-2.0	-1.5	-1.0	-0.5	0	0.5	1.0
0	17	13	10	7.9	6.2	4.9	3.9	3.3	2.8	2.5	2.2
1	27 (21-44)	21 (16-35)	16 (12-27)	12 (9.4-21)	9.6 (7.2-16)	7.5 (5.5-12)	5.8 (4.3-8.8)	4.8 (3.5-6.9)	4.1 (2.9-5.5)	3.5 (2.5-4.4)	3.0 (2.1-3.6)
2	38 (28-56)	31 (21-47)	25 (16-38)	19 (13-30)	15 (9.6-23)	11 (7.4-18)	8.8 (5.7-14)	7.2 (4.6-11)	5.9 (3.8-8.6)	4.9 (3.2-7.0)	4.2 (2.7-5.7)
3	51 (36-65)	43 (29-57)	35 (22-48)	28 (17-40)	22 (13-32)	17 (10-25)	13 (7.7-19)	11 (6.2-15)	8.6 (5.1-13)	7.1 (4.2-10)	5.9 (3.6-8.5)
4	63 (46-73)	55 (38-66)	48 (30-58)	40 (24-50)	32 (19-41)	25 (14-33)	20 (11-26)	16 (9.2-21)	13 (7.6-17)	10 (6.4-14)	8.4 (5.4-11)
5	72 (56-78)	67 (48-73)	60 (40-67)	52 (33-59)	44 (26-50)	36 (21-41)	28 (17-33)	23 (14-27)	18 (11-22)	15 (9.6-18)	12 (8.2-15)
6	80	76	70	64	56	48	39	32	26	21	17

Age = 80 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	-3.5	-3.0	-2.5	-2.0	-1.5	-1.0	-0.5	0	0.5	1.0
0	17	13	11	8.6	6.9	5.6	4.6	4.0	3.4	3.0	2.7
1	25 (19-41)	20 (15-34)	16 (12-27)	13 (9.6-22)	11 (7.6-17)	8.4 (6.0-14)	6.8 (4.9-11)	5.8 (4.1-8.8)	4.9 (3.5-7.2)	4.2 (3.0-5.9)	3.7 (2.6-4.9)
2	35 (24-51)	29 (20-43)	24 (16-37)	19 (13-30)	16 (10-25)	13 (8.1-20)	10 (6.5-16)	8.5 (5.5-13)	7.1 (4.6-11)	6.0 (3.9-8.8)	5.2 (3.3-7.4)
3	46 (31-60)	39 (26-53)	33 (21-46)	28 (17-39)	23 (14-32)	18 (11-26)	15 (8.8-21)	12 (7.4-18)	10 (6.2-15)	8.6 (5.2-12)	7.3 (4.4-10)
4	57 (39-67)	50 (33-61)	44 (28-55)	38 (23-48)	31 (18-41)	26 (15-34)	21 (12-28)	18 (10-23)	15 (8.6-19)	12 (7.4-16)	10 (6.3-14)
5	67 (48-73)	61 (42-68)	55 (36-62)	49 (30-55)	42 (25-48)	35 (20-41)	30 (17-35)	25 (14-30)	21 (12-25)	17 (10-21)	14 (8.9-18)
6	75	71	66	60	53	46	40	34	29	24	20

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Ten year probability of osteoporotic fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in men from Australia.

Age = 85 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	**-3.5**	**-3.0**	**-2.5**	**-2.0**	**-1.5**	**-1.0**	**-0.5**	**0**	**0.5**	**1.0**
0	14	12	10	8.4	7.0	5.8	4.9	4.3	3.8	3.4	3.0
1	21 (15-34)	18 (13-29)	15 (10-24)	12 (8.6-20)	10 (7.1-17)	8.5 (5.9-14)	7.2 (4.9-12)	6.3 (4.3-9.8)	5.4 (3.7-8.3)	4.8 (3.2-7.0)	4.2 (2.8-6.0)
2	29 (20-43)	25 (17-38)	21 (14-32)	18 (12-27)	15 (9.5-23)	12 (7.9-19)	10 (6.6-16)	9.0 (5.7-14)	7.8 (4.9-12)	6.7 (4.2-9.9)	5.9 (3.7-8.5)
3	38 (26-51)	34 (22-46)	29 (18-40)	25 (15-35)	21 (13-30)	18 (11-25)	15 (8.9-21)	13 (7.7-18)	11 (6.6-16)	9.6 (5.7-13)	8.2 (4.9-12)
4	49 (32-59)	44 (28-54)	38 (24-48)	33 (20-43)	29 (17-37)	25 (14-32)	21 (12-28)	18 (10-24)	16 (9.0-21)	13 (7.8-18)	12 (6.7-15)
5	59 (40-65)	54 (35-61)	49 (31-55)	43 (26-50)	38 (22-45)	33 (19-39)	29 (16-34)	25 (14-30)	22 (12-26)	19 (11-23)	16 (9.4-20)
6	68	64	59	54	49	43	38	34	29	26	22

Age = 90 years

Number of CRFs	BMD T-score (femoral neck)										
	-4.0	**-3.5**	**-3.0**	**-2.5**	**-2.0**	**-1.5**	**-1.0**	**-0.5**	**0**	**0.5**	**1.0**
0	12	10	8.5	7.2	6.1	5.1	4.5	4.0	3.5	3.1	2.8
1	17 (12-28)	15 (10-24)	12 (8.7-21)	11 (7.4-18)	9.0 (6.2-15)	7.6 (5.2-13)	6.6 (4.5-11)	5.9 (4.0-9.5)	5.2 (3.5-8.2)	4.6 (3.1-7.1)	4.0 (2.7-6.2)
2	24 (16-36)	21 (14-32)	18 (12-27)	15 (9.9-24)	13 (8.4-20)	11 (7.0-17)	9.7 (6.1-15)	8.6 (5.4-13)	7.5 (4.7-11)	6.6 (4.1-10)	5.8 (3.6-8.7)
3	32 (21-44)	28 (18-39)	25 (16-35)	22 (13-31)	19 (11-27)	16 (9.6-23)	14 (8.3-20)	12 (7.3-18)	11 (6.4-16)	9.6 (5.6-14)	8.4 (4.9-12)
4	42 (27-52)	38 (23-47)	34 (20-43)	30 (18-38)	26 (15-34)	23 (13-30)	20 (11-26)	18 (10-23)	16 (8.7-21)	14 (7.7-18)	12 (6.8-16)
5	52 (34-58)	47 (30-54)	43 (26-50)	39 (23-45)	35 (20-41)	31 (17-36)	27 (15-33)	24 (13-29)	22 (12-26)	19 (11-23)	17 (9.3-21)
6	61	57	53	49	45	40	36	33	30	26	23