FRAX® WHO Fracture Risk Assessment Tool

Thailand - The probabilities of a hip fracture in women

The following tables give the 10-year probability (%) of a hip 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 Thailand. 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	8.2	4.3	2.2	1.1	0.6	0.3	0.2	0.1	0.0	0.0	0.0
1	13 (8.6-17)	6.8 (4.5-8.9)	3.5 (2.3-4.7)	1.8 (1.2-2.4)	0.9 (0.6-1.2)	0.5 (0.3-0.6)	0.2 (0.2-0.3)	0.1 (0.1-0.2)	0.1 (0.0-0.1)	0.0 (0.0-0.1)	0.0 (0.0-0.0)
2	20 (12-29)	11 (6.3-16)	5.6 (3.3-8.5)	2.9 (1.7-4.4)	1.5 (0.9-2.3)	0.8 (0.4-1.2)	0.4 (0.2-0.6)	0.2 (0.1-0.3)	0.1 (0.1-0.2)	0.1 (0.0-0.1)	0.0 (0.0-0.1)
3	29 (18-44)	16 (9.5-26)	8.8 (5.0-14)	4.6 (2.6-7.6)	2.4 (1.3-3.9)	1.2 (0.7-2.0)	0.6 (0.3-1.0)	0.3 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.2)	0.0 (0.0-0.1)
4	42 (29-59)	25 (16-37)	14 (8.4-21)	7.2 (4.4-11)	3.7 (2.3-5.9)	1.9 (1.2-3.1)	1.0 (0.6-1.6)	0.5 (0.3-0.8)	0.3 (0.2-0.4)	0.1 (0.1-0.2)	0.1 (0.1-0.1)
5	57 (46-71)	35 (27-48)	20 (15-28)	11 (8.0-16)	5.7 (4.2-8.3)	3.0 (2.2-4.3)	1.5 (1.1-2.2)	0.8 (0.6-1.2)	0.4 (0.3-0.6)	0.2 (0.2-0.3)	0.1 (0.1-0.2)
6	73	49	30	16	8.7	4.6	2.4	1.2	0.7	0.3	0.2

Ten year probability of hip fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in women from Thailand.

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	9.1	5.0	2.7	1.5	0.8	0.4	0.2	0.1	0.1	0.0	0.0
1	14 (9.6-17)	7.8 (5.3-9.6)	4.3 (2.9-5.3)	2.3 (1.5-2.9)	1.3 (0.8-1.6)	0.7 (0.4-0.8)	0.4 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.1)	0.1 (0.0-0.1)	0.0 (0.0-0.0)
2	21 (13-29)	12 (7.4-17)	6.7 (4.0-9.6)	3.6 (2.2-5.3)	2.0 (1.2-2.9)	1.1 (0.6-1.6)	0.6 (0.3-0.8)	0.3 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.1)	0.1 (0.0-0.1)
3	31 (20-44)	18 (11-27)	10 (6.1-16)	5.6 (3.3-8.9)	3.1 (1.8-4.9)	1.7 (1.0-2.7)	0.9 (0.5-1.4)	0.5 (0.3-0.8)	0.3 (0.2-0.4)	0.2 (0.1-0.3)	0.1 (0.1-0.1)
4	43 (31-59)	27 (18-38)	15 (10-23)	8.6 (5.6-13)	4.7 (3.1-7.4)	2.6 (1.7-4.0)	1.4 (0.9-2.2)	0.8 (0.5-1.2)	0.4 (0.3-0.7)	0.2 (0.2-0.4)	0.1 (0.1-0.2)
5	57 (49-71)	38 (31-50)	23 (18-31)	13 (10-18)	7.2 (5.6-10)	3.9 (3.1-5.7)	2.1 (1.7-3.1)	1.2 (0.9-1.7)	0.7 (0.5-1.0)	0.4 (0.3-0.5)	0.2 (0.2-0.3)
6	72	51	32	19	11	6.0	3.2	1.8	1.0	0.6	0.3

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	10	6.0	3.4	1.9	1.1	0.6	0.3	0.2	0.1	0.1	0.0
1	16 (11-18)	9.1 (6.3-11)	5.2 (3.5-6.1)	2.9 (2.0-3.5)	1.6 (1.1-2.0)	0.9 (0.6-1.1)	0.5 (0.4-0.6)	0.3 (0.2-0.4)	0.2 (0.1-0.2)	0.1 (0.1-0.1)	0.1 (0.0-0.1)
2	23 (15-30)	14 (8.8-19)	7.9 (5.0-11)	4.5 (2.8-6.2)	2.5 (1.6-3.5)	1.4 (0.9-2.0)	0.8 (0.5-1.1)	0.5 (0.3-0.7)	0.3 (0.2-0.4)	0.2 (0.1-0.2)	0.1 (0.1-0.1)
3	33 (22-45)	20 (13-29)	12 (7.5-17)	6.9 (4.3-10)	3.9 (2.4-5.9)	2.2 (1.4-3.3)	1.2 (0.8-1.9)	0.7 (0.4-1.1)	0.4 (0.3-0.6)	0.2 (0.2-0.4)	0.1 (0.1-0.2)
4	45 (34-59)	29 (21-40)	17 (12-25)	10 (7.2-15)	5.9 (4.1-8.8)	3.3 (2.3-5.0)	1.9 (1.3-2.9)	1.1 (0.8-1.7)	0.6 (0.4-1.0)	0.4 (0.3-0.6)	0.2 (0.2-0.3)
5	58 (52-70)	40 (35-51)	25 (21-34)	15 (13-21)	8.8 (7.3-12)	5.0 (4.1-7.1)	2.9 (2.4-4.1)	1.7 (1.4-2.4)	1.0 (0.8-1.4)	0.6 (0.5-0.8)	0.3 (0.3-0.5)
6	72	53	35	22	13	7.4	4.3	2.5	1.5	0.9	0.5

Ten year probability of hip fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in women from Thailand.

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	11	6.9	4.0	2.4	1.4	0.8	0.5	0.3	0.2	0.1	0.1
1	17 (12-19)	10 (7.2-12)	6.1 (4.3-7.2)	3.6 (2.5-4.3)	2.1 (1.5-2.5)	1.2 (0.9-1.5)	0.7 (0.5-0.9)	0.4 (0.3-0.5)	0.3 (0.2-0.3)	0.2 (0.1-0.2)	0.1 (0.1-0.1)
2	24 (17-30)	15 (10-19)	9.0 (6.0-12)	5.4 (3.5-7.0)	3.2 (2.1-4.2)	1.9 (1.2-2.4)	1.1 (0.7-1.5)	0.7 (0.4-0.9)	0.4 (0.3-0.5)	0.2 (0.2-0.3)	0.1 (0.1-0.2)
3	33 (24-43)	21 (15-29)	13 (9.0-18)	8.0 (5.3-11)	4.7 (3.1-6.7)	2.8 (1.8-4.0)	1.7 (1.1-2.4)	1.0 (0.7-1.5)	0.6 (0.4-0.9)	0.4 (0.2-0.5)	0.2 (0.2-0.3)
4	44 (36-56)	30 (23-40)	19 (14-26)	12 (8.7-17)	7.0 (5.2-10)	4.1 (3.0-6.0)	2.5 (1.8-3.7)	1.5 (1.1-2.3)	0.9 (0.7-1.4)	0.6 (0.4-0.8)	0.3 (0.2-0.5)
5	56 (51-67)	40 (35-50)	26 (23-35)	17 (14-22)	10 (8.5-14)	6.1 (5.1-8.4)	3.7 (3.1-5.2)	2.3 (1.9-3.2)	1.4 (1.1-1.9)	0.8 (0.7-1.2)	0.5 (0.4-0.7)
6	68	52	36	23	15	8.9	5.5	3.3	2.0	1.2	0.8

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	13	7.9	4.9	3.0	1.9	1.1	0.7	0.5	0.3	0.2	0.1
1	20 (17-25)	13 (11-16)	8.0 (6.9-10)	5.0 (4.3-6.4)	3.1 (2.6-3.9)	1.9 (1.6-2.4)	1.2 (1.0-1.6)	0.8 (0.7-1.0)	0.5 (0.4-0.6)	0.3 (0.3-0.4)	0.2 (0.2-0.2)
2	30 (25-37)	20 (16-26)	13 (10-17)	8.1 (6.4-11)	5.0 (4.0-6.8)	3.1 (2.5-4.3)	2.0 (1.6-2.7)	1.3 (1.0-1.7)	0.8 (0.6-1.1)	0.5 (0.4-0.7)	0.3 (0.3-0.4)
3	42 (35-50)	30 (24-36)	20 (15-25)	13 (9.8-16)	8.1 (6.1-10)	5.1 (3.8-6.6)	3.3 (2.4-4.3)	2.1 (1.5-2.7)	1.3 (1.0-1.8)	0.8 (0.6-1.1)	0.5 (0.4-0.7)
4	56 (48-62)	42 (34-48)	30 (23-34)	20 (15-24)	13 (9.5-15)	8.2 (6.0-10)	5.3 (3.9-6.5)	3.4 (2.5-4.2)	2.2 (1.6-2.7)	1.4 (1.0-1.7)	0.9 (0.6-1.1)
5	68 (61-71)	56 (48-59)	42 (35-46)	30 (24-33)	20 (16-22)	13 (10-15)	8.6 (6.6-9.7)	5.5 (4.3-6.3)	3.6 (2.7-4.1)	2.3 (1.7-2.6)	1.4 (1.1-1.7)
6	77	68	56	42	30	20	13	8.9	5.7	3.7	2.4

Ten year probability of hip fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in women from Thailand.

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	14	9.1	5.9	3.8	2.5	1.6	1.1	0.7	0.5	0.3	0.2
1	24 (19-44)	16 (13-32)	11 (8.3-23)	7.4 (5.4-15)	4.8 (3.5-10)	3.2 (2.3-6.9)	2.2 (1.5-4.7)	1.4 (1.0-3.1)	1.0 (0.7-2.1)	0.6 (0.5-1.4)	0.4 (0.3-0.9)
2	36 (25-56)	27 (17-45)	19 (12-34)	13 (7.6-24)	8.7 (4.9-16)	5.9 (3.3-11)	4.0 (2.2-7.8)	2.7 (1.5-5.3)	1.8 (1.0-3.5)	1.2 (0.6-2.4)	0.8 (0.4-1.6)
3	50 (34-67)	40 (24-56)	30 (17-45)	21 (11-33)	15 (7.4-24)	10 (5.0-17)	7.1 (3.3-12)	4.8 (2.2-7.9)	3.2 (1.5-5.4)	2.2 (1.0-3.6)	1.4 (0.6-2.4)
4	63 (45-74)	54 (34-65)	43 (24-54)	33 (17-42)	24 (11-32)	17 (7.6-23)	12 (5.1-17)	8.3 (3.5-12)	5.6 (2.3-8.0)	3.8 (1.5-5.5)	2.5 (1.0-3.7)
5	73 (55-79)	66 (45-72)	57 (34-63)	47 (25-52)	36 (17-40)	27 (12-31)	19 (8.3-23)	14 (5.7-16)	9.4 (3.8-11)	6.5 (2.6-7.7)	4.4 (1.7-5.2)
6	81	76	69	60	50	39	30	22	15	11	7.3

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	12	8.6	5.9	4.0	2.8	1.9	1.3	0.9	0.7	0.5	0.3
1	21 (16-41)	15 (11-31)	11 (7.7-23)	7.5 (5.3-16)	5.3 (3.6-11)	3.7 (2.5-8.1)	2.6 (1.8-5.7)	1.8 (1.2-4.0)	1.3 (0.9-2.8)	0.9 (0.6-2.0)	0.6 (0.4-1.4)
2	33 (22-52)	25 (15-42)	18 (11-33)	13 (7.4-24)	9.3 (5.1-18)	6.7 (3.6-13)	4.7 (2.5-9.3)	3.4 (1.8-6.6)	2.4 (1.2-4.7)	1.7 (0.9-3.3)	1.2 (0.6-2.3)
3	45 (29-63)	37 (21-53)	28 (15-43)	21 (11-33)	15 (7.5-25)	11 (5.3-19)	8.2 (3.8-14)	5.8 (2.7-9.9)	4.1 (1.9-7.0)	2.9 (1.3-5.0)	2.0 (0.9-3.5)
4	58 (38-70)	50 (29-62)	40 (22-53)	32 (16-42)	24 (11-33)	18 (8.0-25)	13 (5.7-19)	9.7 (4.0-14)	7.0 (2.8-10)	5.0 (2.0-7.3)	3.5 (1.4-5.2)
5	69 (49-75)	62 (39-68)	54 (30-60)	44 (23-51)	35 (17-41)	28 (12-33)	21 (8.9-25)	16 (6.4-19)	11 (4.6-14)	8.2 (3.2-10)	5.8 (2.3-7.3)
6	77	73	66	57	48	40	31	24	18	13	9.5

Ten year probability of hip fractures (%) according to BMD, the number of clinical risk factors (CRF) and age in women from Thailand.

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	9.1	6.6	4.7	3.4	2.5	1.8	1.4	1.0	0.7	0.5	0.4
1	16 (12-32)	12 (8.5-24)	8.7 (6.2-18)	6.3 (4.4-14)	4.7 (3.3-10)	3.5 (2.4-7.7)	2.6 (1.8-5.8)	1.9 (1.3-4.3)	1.4 (1.0-3.2)	1.0 (0.7-2.3)	0.8 (0.5-1.7)
2	25 (16-42)	19 (12-34)	15 (8.6-26)	11 (6.2-20)	8.2 (4.6-15)	6.2 (3.4-12)	4.7 (2.5-9.0)	3.5 (1.9-6.8)	2.6 (1.4-5.1)	1.9 (1.0-3.8)	1.4 (0.7-2.8)
3	36 (21-52)	29 (16-44)	23 (12-36)	18 (8.7-28)	14 (6.5-22)	10 (4.9-17)	7.9 (3.6-13)	6.0 (2.7-10)	4.5 (2.0-7.6)	3.3 (1.5-5.7)	2.5 (1.1-4.2)
4	48 (29-61)	41 (22-53)	33 (17-44)	27 (13-36)	21 (9.7-29)	17 (7.3-23)	13 (5.5-18)	9.8 (4.1-14)	7.4 (3.0-11)	5.6 (2.3-8.0)	4.2 (1.7-6.0)
5	60 (38-67)	53 (31-60)	46 (24-51)	38 (18-43)	31 (14-36)	25 (11-30)	20 (8.3-24)	15 (6.3-19)	12 (4.7-14)	9.0 (3.5-11)	6.8 (2.6-8.4)
6	71	65	58	50	43	36	29	23	18	14	11

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	5.8	4.3	3.3	2.5	1.9	1.5	1.2	0.9	0.7	0.5	0.4
1	10 (7.5-22)	8.0 (5.7-17)	6.1 (4.3-13)	4.7 (3.2-10)	3.7 (2.5-8.0)	2.9 (2.0-6.3)	2.2 (1.5-4.9)	1.7 (1.2-3.9)	1.3 (0.9-3.0)	1.0 (0.7-2.3)	0.8 (0.5-1.8)
2	17 (10-30)	13 (7.8-24)	10 (6.0-19)	8.1 (4.6-15)	6.5 (3.6-12)	5.1 (2.8-9.7)	4.0 (2.2-7.7)	3.1 (1.7-6.1)	2.4 (1.3-4.8)	1.9 (1.0-3.7)	1.5 (0.8-2.9)
3	26 (14-40)	21 (11-33)	17 (8.3-27)	13 (6.4-22)	11 (5.0-18)	8.6 (4.0-14)	6.8 (3.1-11)	5.4 (2.4-9.0)	4.2 (1.9-7.1)	3.3 (1.5-5.6)	2.6 (1.1-4.4)
4	37 (20-49)	31 (16-42)	26 (12-35)	21 (9.5-29)	17 (7.5-24)	14 (5.9-19)	11 (4.7-16)	8.8 (3.7-12)	7.0 (2.9-9.9)	5.5 (2.2-7.8)	4.3 (1.7-6.2)
5	49 (28-56)	43 (22-49)	36 (18-42)	30 (14-35)	26 (11-30)	21 (9.0-25)	17 (7.1-21)	14 (5.6-17)	11 (4.4-14)	8.9 (3.5-11)	7.0 (2.7-8.6)
6	61	55	49	42	36	31	26	21	17	14	11