FRAX® WHO Fracture Risk Assessment Tool

Portugal - 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 Portugal. 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	7.0	3.6	1.9	0.9	0.5	0.2	0.1	0.1	0.0	0.0	0.0
1	11 (7.3-14)	5.8 (3.8-7.6)	3.0 (1.9-3.9)	1.5 (1.0-2.0)	0.8 (0.5-1.0)	0.4 (0.3-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.1)	0.1 (0.0-0.1)	0.0 (0.0-0.0)	0.0 (0.0-0.0)
2	17 (10-25)	9.2 (5.3-14)	4.8 (2.8-7.3)	2.5 (1.4-3.8)	1.3 (0.7-1.9)	0.6 (0.4-1.0)	0.3 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.1)	0.0 (0.0-0.1)	0.0 (0.0-0.0)
3	26 (15-40)	14 (8.1-23)	7.5 (4.2-12)	3.9 (2.2-6.5)	2.0 (1.1-3.3)	1.0 (0.6-1.7)	0.5 (0.3-0.9)	0.3 (0.2-0.5)	0.1 (0.1-0.2)	0.1 (0.0-0.1)	0.0 (0.0-0.1)
4	37 (25-54)	21 (14-32)	12 (7.2-18)	6.1 (3.7-9.7)	3.2 (1.9-5.1)	1.6 (1.0-2.6)	0.8 (0.5-1.3)	0.4 (0.3-0.7)	0.2 (0.1-0.4)	0.1 (0.1-0.2)	0.1 (0.0-0.1)
5	52 (42-66)	31 (24-43)	18 (13-25)	9.4 (6.9-13)	4.9 (3.6-7.1)	2.5 (1.8-3.7)	1.3 (0.9-1.9)	0.7 (0.5-1.0)	0.4 (0.3-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.2)
6	68	44	26	14	7.5	3.9	2.0	1.0	0.6	0.3	0.2

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

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	7.3	4.0	2.2	1.2	0.6	0.3	0.2	0.1	0.1	0.0	0.0
1	11 (7.7-14)	6.3 (4.2-7.7)	3.4 (2.3-4.2)	1.8 (1.2-2.3)	1.0 (0.7-1.2)	0.5 (0.4-0.7)	0.3 (0.2-0.4)	0.2 (0.1-0.2)	0.1 (0.1-0.1)	0.0 (0.0-0.1)	0.0 (0.0-0.0)
2	17 (11-25)	9.8 (5.9-14)	5.4 (3.2-7.8)	2.9 (1.7-4.2)	1.6 (0.9-2.3)	0.8 (0.5-1.2)	0.5 (0.3-0.7)	0.3 (0.2-0.4)	0.1 (0.1-0.2)	0.1 (0.1-0.1)	0.0 (0.0-0.1)
3	26 (16-38)	15 (8.9-23)	8.3 (4.9-13)	4.5 (2.6-7.2)	2.5 (1.4-4.0)	1.3 (0.8-2.1)	0.7 (0.4-1.2)	0.4 (0.2-0.6)	0.2 (0.1-0.4)	0.1 (0.1-0.2)	0.1 (0.0-0.1)
4	37 (26-52)	22 (15-33)	13 (8.3-19)	7.0 (4.5-11)	3.8 (2.5-6.0)	2.1 (1.3-3.2)	1.1 (0.7-1.8)	0.6 (0.4-1.0)	0.3 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.2)
5	51 (43-65)	32 (26-43)	19 (15-26)	11 (8.3-15)	5.8 (4.6-8.4)	3.2 (2.5-4.6)	1.7 (1.3-2.5)	1.0 (0.7-1.4)	0.5 (0.4-0.8)	0.3 (0.2-0.4)	0.2 (0.1-0.2)
6	66	45	27	16	8.8	4.8	2.6	1.5	0.8	0.5	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	8.6	4.9	2.7	1.5	0.9	0.5	0.3	0.2	0.1	0.1	0.0
1	13 (9.0-15)	7.5 (5.1-8.9)	4.3 (2.9-5.1)	2.4 (1.6-2.9)	1.3 (0.9-1.6)	0.7 (0.5-0.9)	0.4 (0.3-0.5)	0.2 (0.2-0.3)	0.1 (0.1-0.2)	0.1 (0.1-0.1)	0.0 (0.0-0.1)
2	20 (13-26)	11 (7.2-16)	6.6 (4.1-9.0)	3.7 (2.3-5.1)	2.1 (1.3-2.9)	1.2 (0.7-1.6)	0.7 (0.4-0.9)	0.4 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.2)	0.1 (0.0-0.1)
3	28 (19-40)	17 (11-25)	9.9 (6.1-15)	5.7 (3.5-8.6)	3.2 (1.9-4.9)	1.8 (1.1-2.8)	1.0 (0.6-1.6)	0.6 (0.4-0.9)	0.3 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.2)
4	40 (30-54)	25 (18-36)	15 (10-22)	8.6 (5.9-13)	4.9 (3.3-7.4)	2.7 (1.9-4.2)	1.6 (1.1-2.4)	0.9 (0.6-1.4)	0.5 (0.4-0.8)	0.3 (0.2-0.5)	0.2 (0.1-0.3)
5	53 (47-66)	35 (30-46)	22 (18-30)	13 (10-18)	7.3 (6.0-10)	4.2 (3.4-5.9)	2.4 (1.9-3.4)	1.4 (1.1-2.0)	0.8 (0.6-1.1)	0.5 (0.4-0.7)	0.3 (0.2-0.4)
6	68	48	31	19	11	6.2	3.6	2.1	1.2	0.7	0.4

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

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	10	6.0	3.5	2.1	1.2	0.7	0.4	0.3	0.2	0.1	0.1
1	15 (11-18)	9.1 (6.3-11)	5.4 (3.7-6.5)	3.2 (2.2-3.8)	1.8 (1.3-2.2)	1.1 (0.7-1.3)	0.6 (0.4-0.8)	0.4 (0.3-0.5)	0.2 (0.2-0.3)	0.1 (0.1-0.2)	0.1 (0.1-0.1)
2	22 (15-28)	14 (8.9-18)	8.1 (5.3-11)	4.8 (3.1-6.4)	2.8 (1.8-3.7)	1.6 (1.0-2.2)	1.0 (0.6-1.3)	0.6 (0.4-0.8)	0.4 (0.2-0.5)	0.2 (0.1-0.3)	0.1 (0.1-0.2)
3	31 (22-42)	20 (13-28)	12 (7.9-17)	7.2 (4.7-10)	4.2 (2.7-6.2)	2.5 (1.6-3.6)	1.5 (1.0-2.2)	0.9 (0.6-1.3)	0.5 (0.3-0.8)	0.3 (0.2-0.5)	0.2 (0.1-0.3)
4	43 (34-56)	28 (21-39)	18 (13-25)	11 (7.7-15)	6.3 (4.5-9.3)	3.7 (2.6-5.5)	2.2 (1.6-3.3)	1.4 (1.0-2.0)	0.8 (0.6-1.2)	0.5 (0.4-0.7)	0.3 (0.2-0.4)
5	56 (49-68)	39 (33-50)	25 (21-33)	15 (13-21)	9.3 (7.6-13)	5.5 (4.5-7.7)	3.4 (2.7-4.7)	2.0 (1.6-2.9)	1.2 (1.0-1.7)	0.7 (0.6-1.1)	0.4 (0.4-0.6)
6	69	51	35	22	14	8.1	5.0	3.0	1.8	1.1	0.7

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	12	7.7	4.7	2.9	1.8	1.1	0.7	0.4	0.3	0.2	0.1
1	20 (17-25)	13 (11-16)	7.9 (6.7-9.9)	4.8 (4.1-6.1)	3.0 (2.5-3.7)	1.8 (1.5-2.3)	1.1 (1.0-1.5)	0.7 (0.6-0.9)	0.5 (0.4-0.6)	0.3 (0.2-0.4)	0.2 (0.2-0.2)
2	31 (25-39)	20 (16-26)	13 (%10.0-17)	8.0 (6.2-11)	4.9 (3.8-6.7)	3.0 (2.3-4.2)	1.9 (1.5-2.6)	1.2 (0.9-1.7)	0.8 (0.6-1.1)	0.5 (0.4-0.7)	0.3 (0.2-0.4)
3	45 (35-54)	31 (23-39)	20 (15-26)	13 (9.4-17)	8.1 (5.8-11)	5.0 (3.6-6.8)	3.2 (2.3-4.4)	2.0 (1.4-2.8)	1.3 (0.9-1.8)	0.8 (0.6-1.1)	0.5 (0.4-0.7)
4	61 (50-67)	45 (35-52)	31 (24-37)	20 (15-25)	13 (9.5-16)	8.3 (6.0-10)	5.3 (3.8-6.7)	3.4 (2.4-4.3)	2.1 (1.5-2.7)	1.3 (1.0-1.7)	0.8 (0.6-1.1)
5	75 (68-78)	61 (52-65)	45 (37-50)	31 (25-35)	21 (16-23)	13 (10-15)	8.6 (6.7-%10.0	5.5 (4.3-6.4)	3.5 (2.7-4.1)	2.2 (1.7-2.6)	1.4 (1.1-1.6)
6	85	75	61	45	31	21	14	9.0	5.8	3.7	2.3

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

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	15	10	6.5	4.2	2.7	1.8	1.2	0.8	0.5	0.3	0.2
1	27 (21-49)	19 (14-36)	12 (9.1-25)	8.1 (5.9-17)	5.3 (3.8-11)	3.5 (2.5-7.4)	2.3 (1.6-5.0)	1.5 (1.1-3.3)	1.0 (0.7-2.2)	0.7 (0.5-1.4)	0.4 (0.3-0.9)
2	42 (28-65)	31 (19-52)	22 (13-39)	15 (8.3-27)	9.7 (5.3-19)	6.5 (3.5-13)	4.4 (2.3-8.6)	2.9 (1.5-5.8)	1.9 (1.0-3.9)	1.3 (0.7-2.6)	0.8 (0.4-1.7)
3	58 (39-76)	46 (28-65)	35 (19-51)	25 (12-39)	17 (8.0-27)	12 (5.3-19)	7.9 (3.5-13)	5.3 (2.3-9.1)	3.5 (1.5-6.2)	2.3 (1.0-4.1)	1.6 (0.7-2.7)
4	72 (52-82)	62 (39-74)	50 (28-63)	38 (19-51)	28 (13-38)	20 (8.5-28)	14 (5.7-20)	9.3 (3.8-14)	6.3 (2.5-9.2)	4.2 (1.7-6.2)	2.8 (1.1-4.2)
5	82 (66-86)	75 (54-81)	66 (41-72)	54 (30-61)	42 (21-48)	31 (14-36)	22 (9.8-26)	16 (6.6-19)	11 (4.4-13)	7.2 (2.9-8.8)	4.8 (2.0-5.9)
6	88	84	79	70	59	46	35	25	18	12	8.2

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	18	12	8.4	5.7	3.9	2.7	1.9	1.3	0.9	0.6	0.4
1	29 (22-53)	22 (16-41)	15 (11-31)	11 (7.4-22)	7.4 (5.1-16)	5.2 (3.6-11)	3.7 (2.5-7.9)	2.6 (1.7-5.6)	1.8 (1.2-3.9)	1.2 (0.8-2.7)	0.9 (0.6-1.9)
2	43 (30-65)	34 (21-55)	25 (15-44)	18 (10-34)	13 (7.1-25)	9.4 (5.0-18)	6.7 (3.5-13)	4.7 (2.4-9.4)	3.3 (1.7-6.6)	2.3 (1.2-4.7)	1.6 (0.8-3.2)
3	57 (40-74)	48 (30-66)	38 (22-56)	29 (15-45)	22 (11-34)	16 (7.5-26)	12 (5.3-19)	8.3 (3.7-14)	5.9 (2.6-10)	4.1 (1.8-7.2)	2.9 (1.2-5.0)
4	69 (51-80)	62 (41-74)	52 (31-65)	42 (22-55)	33 (16-45)	25 (11-36)	19 (8.2-27)	14 (5.8-20)	9.9 (4.0-15)	7.1 (2.8-11)	5.0 (2.0-7.6)
5	78 (62-83)	73 (53-78)	66 (43-72)	57 (33-64)	47 (24-54)	38 (18-45)	29 (13-35)	22 (9.5-27)	16 (6.7-20)	12 (4.8-15)	8.4 (3.3-11)
6	84	81	76	70	62	52	43	33	25	19	14

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

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	17	12	8.7	6.2	4.6	3.4	2.5	1.8	1.3	1.0	0.7
1	27 (21-50)	21 (15-40)	16 (11-31)	11 (8.1-24)	8.6 (6.0-18)	6.4 (4.4-14)	4.7 (3.2-10)	3.5 (2.4-7.6)	2.6 (1.7-5.6)	1.9 (1.3-4.1)	1.4 (0.9-3.0)
2	40 (28-61)	32 (21-52)	25 (15-43)	19 (11-34)	15 (8.3-27)	11 (6.2-21)	8.5 (4.5-16)	6.3 (3.3-12)	4.7 (2.4-9.2)	3.4 (1.8-6.8)	2.5 (1.3-5.0)
3	54 (36-70)	46 (28-63)	37 (22-55)	30 (16-45)	24 (12-37)	19 (9.1-30)	14 (6.8-23)	11 (5.0-18)	8.1 (3.7-14)	6.0 (2.7-10)	4.5 (2.0-7.6)
4	66 (47-76)	59 (38-71)	51 (30-64)	43 (23-55)	35 (18-47)	29 (13-38)	23 (10-31)	18 (7.6-25)	13 (5.6-19)	10 (4.2-15)	7.6 (3.1-11)
5	75 (58-80)	70 (49-76)	64 (41-70)	56 (33-63)	49 (26-55)	41 (20-48)	34 (16-40)	27 (12-32)	21 (9.0-26)	16 (6.7-20)	12 (5.0-15)
6	82	79	74	69	62	55	47	39	32	25	20

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	9.4	7.1	5.4	4.2	3.3	2.6	2.0	1.5	1.2	0.9
1	21 (16-40)	16 (12-32)	13 (9.2-26)	9.9 (7.0-21)	7.8 (5.5-17)	6.2 (4.3-13)	4.8 (3.3-11)	3.8 (2.6-8.3)	2.9 (2.0-6.5)	2.3 (1.6-5.0)	1.8 (1.2-3.9)
2	31 (21-51)	26 (16-43)	21 (13-36)	17 (9.8-29)	13 (7.7-24)	11 (6.0-20)	8.5 (4.7-16)	6.7 (3.7-13)	5.3 (2.8-10)	4.1 (2.2-8.0)	3.2 (1.7-6.3)
3	44 (27-61)	37 (22-54)	31 (17-47)	26 (14-40)	21 (11-33)	17 (8.6-28)	14 (6.8-23)	11 (5.3-19)	9.0 (4.2-15)	7.1 (3.2-12)	5.5 (2.5-9.4)
4	56 (36-68)	50 (30-62)	43 (24-56)	37 (19-49)	32 (16-42)	27 (13-36)	22 (10-30)	18 (7.9-25)	14 (6.2-20)	12 (4.9-16)	9.2 (3.8-13)
5	67 (47-73)	62 (40-68)	56 (33-62)	50 (27-56)	44 (23-50)	38 (18-44)	32 (15-38)	27 (12-32)	22 (9.6-27)	18 (7.6-22)	15 (6.0-18)
6	76	72	68	62	57	51	45	39	33	27	22