FRAX ®   WHO Fracture Risk Assessment Tool

Brazil - The probabilities of a major osteoporotic fracture in women

The following tables give the 10-year probability (%) of a major osteoporotic fracture (hip, clinical spine, forearm or proximal humerus fracture) according to body mass index (BMI kg/m2), the number of clinical risk factors (CRF) and age. Each table provides a mean estimate and a range, based on the epidemiology of Brazil. The range is not a confidence interval, but because the weight of different risk factors varies, is a true range.

Age = 50 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	2.6	2.4	2.3	2.0	1.8	1.5	1.3
1	4.2 (2.9-6.2)	3.8 (2.6-5.4)	3.6 (2.4-4.9)	3.1 (2.1-4.3)	2.7 (1.8-3.7)	2.4 (1.6-3.3)	2.1 (1.4-2.9)
2	6.7 (3.7-11)	5.9 (3.2-10)	5.5 (2.9-9.5)	4.8 (2.5-8.4)	4.2 (2.2-7.3)	3.7 (1.9-6.4)	3.2 (1.7-5.6)
3	11 (5.3-18)	9.2 (4.5-16)	8.4 (4.0-15)	7.3 (3.5-13)	6.4 (3.0-12)	5.6 (2.6-10)	4.9 (2.3-9.1)
4	16 (9.3-25)	14 (7.6-22)	13 (6.7-20)	11 (5.8-18)	9.5 (5.0-16)	8.3 (4.3-14)	7.3 (3.8-12)
5	25 (16-32)	21 (14-27)	18 (12-24)	16 (11-21)	14 (9.5-19)	12 (8.3-17)	11 (7.3-14)
6	37	30	26	23	20	18	15

Ten year probability of osteoporotic fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in women from Brazil.

Age = 55 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	3.1	2.8	2.6	2.3	2.0	1.7	1.5
1	4.9 (3.5-7.1)	4.4 (3.0-6.1)	4.1 (2.8-5.5)	3.5 (2.4-4.8)	3.1 (2.1-4.2)	2.7 (1.8-3.6)	2.4 (1.6-3.2)
2	7.9 (4.5-12)	6.8 (3.8-11)	6.3 (3.4-11)	5.4 (2.9-9.2)	4.7 (2.5-8.1)	4.1 (2.2-7.1)	3.6 (1.9-6.2)
3	12 (6.6-20)	10 (5.4-18)	9.5 (4.7-17)	8.2 (4.1-15)	7.2 (3.5-13)	6.2 (3.0-11)	5.4 (2.6-9.9)
4	19 (11-28)	16 (9.3-25)	14 (7.9-22)	12 (6.8-20)	11 (5.8-17)	9.3 (5.0-15)	8.1 (4.3-13)
5	28 (19-35)	23 (16-30)	21 (14-27)	18 (12-24)	16 (11-21)	14 (9.5-18)	12 (8.3-16)
6	41	34	29	26	22	20	17

Age = 60 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	3.8	3.3	3.0	2.6	2.3	2.0	1.7
1	6.2 (4.5-8.6)	5.2 (3.7-7.1)	4.7 (3.3-6.3)	4.1 (2.8-5.4)	3.5 (2.4-4.7)	3.1 (2.1-4.1)	2.7 (1.8-3.5)
2	9.8 (5.9-15)	8.2 (4.7-13)	7.2 (4.1-12)	6.3 (3.5-10)	5.4 (3.0-8.9)	4.7 (2.6-7.8)	4.1 (2.2-6.8)
3	15 (9.1-24)	13 (7.0-20)	11 (5.8-19)	9.5 (4.9-16)	8.2 (4.2-14)	7.1 (3.6-12)	6.1 (3.1-11)
4	23 (14-33)	19 (12-28)	16 (9.8-25)	14 (8.3-22)	12 (7.1-19)	11 (6.1-17)	9.1 (5.2-15)
5	34 (24-41)	28 (20-35)	24 (17-30)	20 (15-27)	18 (13-23)	15 (11-20)	13 (9.5-18)
6	48	39	34	29	25	22	19

Ten year probability of osteoporotic fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in women from Brazil.

Age = 65 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	5.0	4.1	3.5	3.0	2.6	2.2	1.9
1	8.0 (6.0-11)	6.4 (4.7-8.4)	5.5 (3.9-7.1)	4.7 (3.3-6.1)	4.0 (2.8-5.2)	3.5 (2.4-4.5)	3.0 (2.1-3.9)
2	13 (8.2-18)	10 (6.2-14)	8.4 (5.0-13)	7.2 (4.2-11)	6.2 (3.6-9.7)	5.3 (3.0-8.4)	4.5 (2.6-7.3)
3	19 (13-27)	15 (9.4-23)	13 (7.3-21)	11 (6.2-18)	9.3 (5.2-15)	8.0 (4.4-13)	6.8 (3.7-12)
4	28 (19-38)	23 (15-32)	19 (13-28)	16 (11-24)	14 (8.9-21)	12 (7.4-18)	10 (6.3-16)
5	41 (31-48)	33 (25-40)	27 (21-34)	23 (18-30)	20 (15-26)	17 (13-22)	15 (11-19)
6	55	46	38	33	29	25	21

Age = 70 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	7.2	5.7	4.8	4.1	3.5	2.9	2.5
1	12 (8.7-14)	8.9 (6.7-11)	7.3 (5.4-9.2)	6.1 (4.6-7.8)	5.2 (3.8-6.6)	4.4 (3.2-5.6)	3.7 (2.7-4.8)
2	18 (12-25)	14 (9.1-19)	11 (7.1-15)	9.3 (5.9-13)	7.8 (4.9-11)	6.6 (4.1-9.2)	5.5 (3.5-7.8)
3	28 (19-38)	21 (14-31)	17 (11-25)	14 (8.8-21)	12 (7.3-18)	9.9 (6.1-15)	8.3 (5.1-13)
4	41 (30-53)	32 (24-44)	25 (18-35)	21 (15-30)	18 (12-26)	15 (10-22)	12 (8.5-18)
5	55 (49-64)	46 (40-55)	37 (31-45)	31 (26-38)	26 (22-33)	22 (18-28)	18 (15-23)
6	69	62	52	45	38	32	27

Ten year probability of osteoporotic fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in women from Brazil.

Age = 75 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	11	8.5	7.0	5.9	4.9	4.2	3.5
1	18 (13-26)	14 (10-19)	11 (8.1-14)	9.1 (6.7-11)	7.5 (5.6-9.2)	6.3 (4.6-7.5)	5.3 (3.9-6.4)
2	28 (18-41)	22 (14-32)	17 (11-24)	14 (8.9-20)	12 (7.3-16)	9.6 (6.1-13)	8.0 (5.0-11)
3	41 (27-56)	34 (21-47)	26 (16-38)	22 (13-32)	18 (11-27)	15 (9.1-22)	12 (7.5-18)
4	55 (39-68)	48 (33-62)	39 (27-53)	33 (22-46)	28 (18-39)	23 (15-33)	19 (12-27)
5	67 (54-75)	63 (49-72)	55 (42-65)	48 (36-57)	41 (30-50)	34 (25-42)	29 (21-36)
6	77	75	71	64	56	49	42

Age = 80 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	14	12	9.7	8.1	6.7	5.6	4.7
1	22 (16-34)	18 (14-27)	15 (11-20)	12 (9.1-16)	10 (7.5-13)	8.4 (6.1-11)	6.9 (5.1-8.7)
2	33 (23-48)	28 (19-40)	23 (15-32)	19 (12-26)	15 (10-22)	13 (8.2-18)	10 (6.7-14)
3	45 (31-60)	40 (27-54)	34 (23-46)	28 (19-39)	23 (15-32)	19 (12-27)	16 (10-22)
4	57 (42-69)	53 (38-65)	47 (34-60)	40 (28-52)	34 (23-45)	28 (19-38)	23 (16-32)
5	68 (54-75)	65 (51-73)	61 (47-70)	54 (40-63)	47 (34-56)	40 (29-48)	34 (24-41)
6	76	75	73	67	60	53	46

Ten year probability of osteoporotic fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in women from Brazil.

Age = 85 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	16	14	13	11	9.0	7.5	6.2
1	25 (18-37)	22 (16-31)	19 (14-26)	16 (12-21)	13 (9.6-17)	11 (7.8-14)	9.0 (6.4-11)
2	35 (24-51)	32 (21-45)	28 (19-38)	23 (15-31)	19 (13-26)	16 (10-22)	13 (8.4-18)
3	47 (32-62)	43 (29-57)	39 (27-51)	33 (22-44)	28 (18-38)	23 (15-32)	19 (12-26)
4	59 (43-70)	56 (40-67)	52 (38-63)	45 (32-57)	38 (27-50)	32 (22-43)	27 (18-37)
5	69 (56-75)	67 (53-74)	64 (50-72)	57 (44-66)	51 (38-60)	44 (32-53)	37 (27-46)
6	76	76	74	69	63	56	49

Age = 90 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	16	16	16	13	11	9.4	7.8
1	24 (17-36)	23 (17-32)	22 (16-29)	19 (13-24)	16 (11-20)	13 (9.1-16)	11 (7.5-13)
2	34 (23-49)	32 (22-45)	31 (21-41)	26 (17-35)	22 (14-29)	18 (12-25)	15 (9.7-20)
3	45 (31-59)	43 (29-56)	41 (28-54)	35 (23-47)	30 (19-40)	25 (16-34)	21 (13-29)
4	56 (41-68)	54 (39-65)	52 (38-63)	45 (32-56)	39 (27-50)	33 (22-44)	28 (18-37)
5	65 (53-72)	64 (51-72)	62 (50-70)	56 (44-65)	50 (38-59)	43 (32-52)	37 (27-46)
6	72	72	72	67	61	54	48