FRAX ® WHO Fracture Risk Assessment Tool

The UK - The probabilities of a hip fracture in men

The following tables give the 10-year probability (%) of a hip 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 the UK. 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	0.4	0.2	0.1	0.1	0.1	0.1	0.1
1	0.9 (0.6-1.7)	0.5 (0.3-0.9)	0.3 (0.2-0.5)	0.2 (0.1-0.4)	0.2 (0.1-0.3)	0.1 (0.1-0.2)	0.1 (0.1-0.2)
2	1.6 (0.8-3.4)	0.9 (0.5-2.0)	0.5 (0.3-1.1)	0.4 (0.2-0.8)	0.3 (0.2-0.7)	0.2 (0.1-0.5)	0.2 (0.1-0.4)
3	3.1 (1.2-6.0)	1.7 (0.7-3.4)	1.0 (0.4-1.9)	0.8 (0.3-1.5)	0.6 (0.2-1.2)	0.5 (0.2-0.9)	0.3 (0.1-0.7)
4	5.5 (2.2-9.0)	3.2 (1.2-5.2)	1.8 (0.7-2.9)	1.4 (0.5-2.3)	1.1 (0.4-1.8)	0.8 (0.3-1.4)	0.6 (0.3-1.1)
5	9.6 (4.4-13)	5.6 (2.5-7.5)	3.2 (1.4-4.3)	2.5 (1.1-3.3)	1.9 (0.9-2.6)	1.5 (0.7-2.0)	1.2 (0.5-1.6)
6	16	9.7	5.6	4.4	3.4	2.6	2.0

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Ten year probability of hip fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in men from the UK.

Age = 55 years

Number of CRFs	BMI (kg/m²)						
	15	**20**	**25**	**30**	**35**	**40**	**45**
0	0.8	0.4	0.2	0.2	0.1	0.1	0.1
1	1.4 (1.0-2.5)	0.8 (0.6-1.5)	0.5 (0.3-0.8)	0.4 (0.2-0.6)	0.3 (0.2-0.5)	0.2 (0.2-0.4)	0.2 (0.1-0.3)
2	2.6 (1.4-5.0)	1.5 (0.8-3.0)	0.9 (0.5-1.7)	0.7 (0.4-1.3)	0.5 (0.3-1.0)	0.4 (0.2-0.8)	0.3 (0.2-0.6)
3	4.7 (2.2-8.6)	2.8 (1.3-5.2)	1.6 (0.7-3.0)	1.2 (0.6-2.3)	0.9 (0.4-1.8)	0.7 (0.3-1.4)	0.6 (0.3-1.1)
4	8.1 (3.8-13)	4.9 (2.2-7.8)	2.8 (1.3-4.5)	2.2 (1.0-3.5)	1.7 (0.8-2.7)	1.3 (0.6-2.1)	1.0 (0.5-1.6)
5	14 (7.2-17)	8.4 (4.4-11)	4.9 (2.6-6.5)	3.8 (2.0-5.1)	3.0 (1.5-3.9)	2.3 (1.2-3.0)	1.8 (0.9-2.4)
6	22	14	8.5	6.6	5.1	4.0	3.1

Age = 60 years

Number of CRFs	BMI (kg/m²)						
	15	**20**	**25**	**30**	**35**	**40**	**45**
0	1.3	0.8	0.4	0.3	0.3	0.2	0.2
1	2.3 (1.7-3.7)	1.4 (1.0-2.2)	0.8 (0.6-1.3)	0.6 (0.4-1.0)	0.5 (0.3-0.8)	0.4 (0.3-0.6)	0.3 (0.2-0.5)
2	4.0 (2.3-6.9)	2.5 (1.4-4.3)	1.4 (0.8-2.6)	1.1 (0.6-2.0)	0.9 (0.5-1.5)	0.7 (0.4-1.2)	0.5 (0.3-0.9)
3	6.8 (3.5-12)	4.3 (2.2-7.5)	2.5 (1.3-4.5)	2.0 (1.0-3.5)	1.5 (0.8-2.7)	1.2 (0.6-2.1)	0.9 (0.5-1.6)
4	11 (6.2-17)	7.3 (3.8-11)	4.4 (2.2-6.8)	3.4 (1.7-5.3)	2.6 (1.3-4.1)	2.0 (1.0-3.2)	1.6 (0.8-2.4)
5	18 (11-22)	12 (7.2-15)	7.4 (4.4-9.6)	5.8 (3.4-7.4)	4.5 (2.7-5.8)	3.5 (2.0-4.5)	2.7 (1.6-3.4)
6	28	19	12	9.6	7.5	5.8	4.5

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Ten year probability of hip fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in men from the UK.

Age = 65 years

Number of CRFs	BMI (kg/m²)						
	15	**20**	**25**	**30**	**35**	**40**	**45**
0	2.0	1.3	0.8	0.6	0.5	0.3	0.3
1	3.4 (2.6-4.9)	2.2 (1.7-3.1)	1.3 (1.0-1.9)	1.0 (0.8-1.4)	0.8 (0.6-1.1)	0.6 (0.5-0.9)	0.5 (0.4-0.7)
2	5.6 (3.5-8.6)	3.7 (2.3-5.8)	2.3 (1.4-3.7)	1.7 (1.1-2.8)	1.3 (0.8-2.2)	1.0 (0.6-1.7)	0.8 (0.5-1.3)
3	9.1 (5.3-15)	6.1 (3.5-10)	3.8 (2.1-6.4)	3.0 (1.7-4.9)	2.3 (1.3-3.8)	1.8 (1.0-2.9)	1.3 (0.8-2.2)
4	14 (8.9-21)	9.9 (6.0-15)	6.4 (3.8-9.5)	4.9 (2.9-7.4)	3.8 (2.2-5.7)	2.9 (1.7-4.4)	2.3 (1.3-3.4)
5	22 (15-26)	16 (11-19)	10 (7.1-13)	8.1 (5.5-10)	6.3 (4.2-7.8)	4.8 (3.2-6.0)	3.7 (2.5-4.6)
6	31	24	17	13	10	7.8	6.0

Age = 70 years

Number of CRFs	BMI (kg/m²)						
	15	**20**	**25**	**30**	**35**	**40**	**45**
0	3.0	2.0	1.3	1.0	0.8	0.6	0.4
1	5.1 (3.7-6.2)	3.5 (2.7-4.3)	2.3 (1.8-2.7)	1.8 (1.3-2.1)	1.3 (1.0-1.6)	1.0 (0.8-1.2)	0.8 (0.6-0.9)
2	8.6 (5.6-13)	6.1 (4.0-8.8)	4.1 (2.7-5.7)	3.1 (2.0-4.4)	2.4 (1.6-3.4)	1.8 (1.2-2.6)	1.4 (0.9-2.0)
3	14 (8.7-21)	10 (6.7-15)	7.1 (4.7-10)	5.4 (3.6-8.0)	4.2 (2.7-6.2)	3.2 (2.1-4.7)	2.4 (1.6-3.6)
4	22 (15-30)	17 (11-24)	12 (8.2-17)	9.3 (6.3-14)	7.2 (4.8-11)	5.5 (3.7-8.1)	4.2 (2.8-6.3)
5	32 (27-40)	26 (22-33)	20 (16-25)	15 (13-20)	12 (9.9-15)	9.4 (7.6-12)	7.2 (5.9-9.4)
6	44	38	31	25	20	15	12

Ten year probability of hip fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in men from the UK.

Age = 75 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	4.2	3.1	2.1	1.6	1.2	0.9	0.7
1	7.7 (5.1-14)	5.8 (3.9-10)	4.1 (2.8-7.2)	3.1 (2.1-5.5)	2.4 (1.6-4.2)	1.8 (1.2-3.2)	1.4 (0.9-2.5)
2	13 (7.6-22)	10 (5.9-18)	7.5 (4.2-13)	5.8 (3.2-9.8)	4.4 (2.5-7.6)	3.4 (1.9-5.8)	2.6 (1.4-4.5)
3	21 (11-34)	17 (9.1-28)	13 (7.0-21)	10 (5.3-16)	7.9 (4.1-13)	6.1 (3.1-10)	4.6 (2.3-7.7)
4	32 (18-44)	27 (15-39)	22 (12-32)	17 (9.1-26)	14 (7.0-21)	10 (5.3-16)	8.1 (4.0-13)
5	44 (29-54)	39 (24-49)	33 (20-42)	27 (16-35)	22 (12-29)	17 (9.4-23)	14 (7.2-18)
6	58	53	47	40	33	27	22

Age = 80 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	5.8	4.5	3.3	2.5	1.9	1.5	1.1
1	10 (6.8-18)	8.1 (5.5-14)	6.1 (4.2-11)	4.6 (3.2-8.5)	3.5 (2.4-6.5)	2.7 (1.8-4.9)	2.0 (1.4-3.8)
2	16 (9.9-28)	13 (8.1-23)	11 (6.3-18)	8.1 (4.8-14)	6.2 (3.6-11)	4.8 (2.7-8.5)	3.6 (2.1-6.5)
3	25 (14-37)	21 (12-32)	17 (9.5-27)	14 (7.3-21)	11 (5.6-17)	8.1 (4.2-13)	6.2 (3.2-10)
4	36 (21-47)	31 (17-42)	27 (14-37)	21 (11-30)	17 (8.5-24)	13 (6.5-19)	10 (4.9-15)
5	48 (31-57)	43 (27-52)	38 (23-47)	32 (18-40)	26 (14-33)	21 (11-27)	16 (8.4-21)
6	60	56	51	44	37	30	24

Ten year probability of hip fractures (%) according to BMI, the number of clinical risk factors (CRF) and age in men from the UK.

Age = 85 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	7.6	6.2	4.9	3.7	2.8	2.1	1.6
1	13 (8.8-22)	11 (7.3-19)	8.7 (5.9-16)	6.6 (4.5-12)	5.1 (3.4-9.3)	3.8 (2.5-7.1)	2.9 (1.9-5.4)
2	20 (13-34)	17 (11-29)	14 (8.7-25)	11 (6.6-20)	8.7 (5.0-15)	6.6 (3.8-12)	5.0 (2.8-9.2)
3	30 (18-44)	26 (15-39)	22 (13-34)	18 (9.8-28)	14 (7.5-22)	11 (5.7-18)	8.4 (4.3-14)
4	42 (26-54)	37 (22-49)	33 (19-44)	27 (14-37)	22 (11-30)	17 (8.6-25)	13 (6.5-19)
5	53 (38-62)	49 (33-58)	45 (29-54)	38 (23-47)	32 (18-40)	26 (14-33)	21 (11-27)
6	63	61	57	51	43	37	30

Age = 90 years

Number of CRFs	BMI (kg/m²)						
	15	20	25	30	35	40	45
0	10	8.1	6.2	4.7	3.6	2.7	2.0
1	17 (12-28)	14 (9.6-24)	11 (7.5-19)	8.4 (5.7-15)	6.4 (4.4-12)	4.9 (3.3-8.9)	3.7 (2.5-6.8)
2	26 (17-41)	22 (14-36)	18 (11-30)	14 (8.5-24)	11 (6.5-19)	8.5 (5.0-15)	6.5 (3.7-12)
3	37 (23-51)	32 (20-46)	28 (16-40)	22 (13-34)	18 (9.9-27)	14 (7.5-22)	11 (5.7-17)
4	48 (32-60)	44 (28-56)	39 (24-51)	33 (19-44)	27 (15-37)	22 (11-30)	17 (8.7-25)
5	57 (44-63)	56 (40-64)	52 (35-61)	45 (29-54)	38 (23-47)	32 (19-40)	26 (14-33)
6	61	64	63	58	51	44	37