**FRAX ®**    WHO Fracture Risk Assessment Tool

**The US (Caucasian) - The probabilities of a hip fracture in men**

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 the US (Caucasian). 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 | 15 | 7.9 | 4.2 | 2.2 | 1.2 | 0.6 | 0.3 | 0.2 | 0.1 | 0.1 | 0.0 |
| 1 | 22 (15-28) | 12 (8.3-16) | 6.7 (4.4-8.8) | 3.6 (2.3-4.7) | 1.9 (1.2-2.5) | 1.0 (0.7-1.3) | 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) |
| 2 | 33 (21-45) | 19 (12-28) | 10 (6.3-16) | 5.6 (3.3-8.5) | 3.0 (1.8-4.6) | 1.6 (0.9-2.4) | 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) |
| 3 | 45 (30-62) | 28 (17-41) | 16 (9.4-25) | 8.8 (5.0-14) | 4.7 (2.7-7.6) | 2.5 (1.4-4.1) | 1.3 (0.7-2.2) | 0.7 (0.4-1.1) | 0.4 (0.2-0.6) | 0.2 (0.1-0.3) | 0.1 (0.1-0.2) |
| 4 | 60 (45-75) | 40 (27-55) | 24 (15-35) | 13 (8.4-20) | 7.3 (4.5-11) | 3.9 (2.4-6.1) | 2.1 (1.3-3.3) | 1.1 (0.7-1.7) | 0.6 (0.4-0.9) | 0.3 (0.2-0.5) | 0.2 (0.1-0.3) |
| 5 | 74 (64-84) | 53 (43-67) | 34 (26-45) | 20 (15-28) | 11 (8.1-16) | 6.0 (4.3-8.6) | 3.2 (2.3-4.6) | 1.7 (1.2-2.4) | 0.9 (0.6-1.3) | 0.5 (0.4-0.7) | 0.3 (0.2-0.4) |
| 6 | 85 | 68 | 47 | 29 | 16 | 9.0 | 4.8 | 2.6 | 1.4 | 0.8 | 0.4 |

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

**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 | 15 | 8.5 | 4.7 | 2.6 | 1.4 | 0.8 | 0.4 | 0.2 | 0.1 | 0.1 | 0.0 |
| 1 | 22 (16-27) | 13 (8.9-16) | 7.4 (5.0-9.1) | 4.1 (2.7-5.1) | 2.2 (1.5-2.8) | 1.2 (0.8-1.5) | 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) |
| 2 | 32 (22-43) | 20 (12-27) | 11 (7.0-16) | 6.3 (3.9-9.1) | 3.5 (2.1-5.1) | 1.9 (1.2-2.8) | 1.1 (0.6-1.5) | 0.6 (0.3-0.8) | 0.3 (0.2-0.5) | 0.2 (0.1-0.3) | 0.1 (0.1-0.2) |
| 3 | 44 (31-59) | 28 (18-40) | 17 (10-25) | 9.6 (5.9-15) | 5.4 (3.2-8.3) | 3.0 (1.8-4.6) | 1.6 (1.0-2.6) | 0.9 (0.5-1.4) | 0.5 (0.3-0.8) | 0.3 (0.2-0.4) | 0.2 (0.1-0.3) |
| 4 | 58 (45-72) | 39 (29-53) | 24 (17-35) | 14 (9.6-21) | 8.2 (5.4-12) | 4.6 (3.0-7.0) | 2.5 (1.6-3.9) | 1.4 (0.9-2.1) | 0.8 (0.5-1.2) | 0.4 (0.3-0.7) | 0.2 (0.2-0.4) |
| 5 | 71 (64-81) | 52 (44-64) | 34 (28-45) | 21 (17-29) | 12 (9.5-17) | 6.9 (5.3-9.7) | 3.8 (3.0-5.5) | 2.1 (1.6-3.0) | 1.2 (0.9-1.7) | 0.7 (0.5-1.0) | 0.4 (0.3-0.5) |
| 6 | 82 | 66 | 47 | 30 | 18 | 10 | 5.7 | 3.2 | 1.8 | 1.0 | 0.6 |

**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 | 14 | 8.6 | 5.1 | 3.0 | 1.7 | 1.0 | 0.6 | 0.3 | 0.2 | 0.1 | 0.1 |
| 1 | 21 (15-24) | 13 (9.0-15) | 7.7 (5.3-9.0) | 4.5 (3.1-5.3) | 2.7 (1.8-3.1) | 1.5 (1.1-1.8) | 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) |
| 2 | 30 (20-38) | 19 (13-25) | 11 (7.5-15) | 6.9 (4.4-9.4) | 4.0 (2.6-5.5) | 2.4 (1.5-3.3) | 1.4 (0.9-1.9) | 0.8 (0.5-1.1) | 0.5 (0.3-0.7) | 0.3 (0.2-0.4) | 0.2 (0.1-0.2) |
| 3 | 40 (29-52) | 27 (18-36) | 17 (11-24) | 10 (6.6-15) | 6.1 (3.9-8.9) | 3.6 (2.3-5.3) | 2.1 (1.3-3.1) | 1.2 (0.8-1.8) | 0.7 (0.5-1.1) | 0.4 (0.3-0.7) | 0.3 (0.2-0.4) |
| 4 | 52 (42-64) | 37 (28-48) | 24 (18-33) | 15 (11-21) | 9.0 (6.4-13) | 5.4 (3.7-7.9) | 3.2 (2.2-4.7) | 1.8 (1.3-2.8) | 1.1 (0.8-1.7) | 0.7 (0.5-1.0) | 0.4 (0.3-0.6) |
| 5 | 64 (59-74) | 48 (42-59) | 33 (28-43) | 21 (18-29) | 13 (11-18) | 7.9 (6.6-11) | 4.7 (3.9-6.6) | 2.8 (2.3-3.9) | 1.7 (1.4-2.4) | 1.0 (0.8-1.4) | 0.6 (0.5-0.9) |
| 6 | 75 | 61 | 44 | 30 | 19 | 12 | 6.9 | 4.1 | 2.5 | 1.5 | 0.9 |

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

**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 | 14 | 8.7 | 5.5 | 3.4 | 2.1 | 1.3 | 0.8 | 0.5 | 0.3 | 0.2 | 0.1 |
| 1 | 20 (14-22) | 13 (9.1-15) | 8.1 (5.8-9.4) | 5.1 (3.6-5.9) | 3.2 (2.2-3.7) | 2.0 (1.4-2.3) | 1.2 (0.8-1.4) | 0.8 (0.5-0.9) | 0.5 (0.3-0.6) | 0.3 (0.2-0.4) | 0.2 (0.1-0.2) |
| 2 | 27 (20-34) | 18 (13-23) | 12 (8.1-15) | 7.5 (5.1-9.7) | 4.7 (3.1-6.1) | 2.9 (1.9-3.8) | 1.8 (1.2-2.4) | 1.1 (0.7-1.5) | 0.7 (0.5-0.9) | 0.5 (0.3-0.6) | 0.3 (0.2-0.4) |
| 3 | 37 (28-45) | 25 (19-32) | 17 (12-22) | 11 (7.6-15) | 6.9 (4.7-9.4) | 4.3 (2.9-6.0) | 2.7 (1.8-3.7) | 1.7 (1.1-2.4) | 1.1 (0.7-1.5) | 0.7 (0.5-1.0) | 0.4 (0.3-0.6) |
| 4 | 47 (40-57) | 34 (28-44) | 23 (18-31) | 16 (12-21) | 10 (7.5-14) | 6.3 (4.7-8.9) | 4.0 (2.9-5.6) | 2.5 (1.8-3.6) | 1.6 (1.2-2.3) | 1.0 (0.8-1.5) | 0.6 (0.5-0.9) |
| 5 | 58 (54-66) | 44 (40-54) | 32 (28-40) | 22 (19-28) | 14 (12-19) | 9.1 (7.8-12) | 5.8 (4.9-7.9) | 3.6 (3.1-5.0) | 2.3 (2.0-3.2) | 1.5 (1.3-2.1) | 1.0 (0.8-1.3) |
| 6 | 68 | 55 | 42 | 29 | 20 | 13 | 8.3 | 5.3 | 3.4 | 2.2 | 1.4 |

**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 | 14 | 9.4 | 6.3 | 4.1 | 2.7 | 1.8 | 1.2 | 0.8 | 0.5 | 0.4 | 0.2 |
| 1 | 21 (19-27) | 15 (13-19) | 10 (8.8-13) | 6.7 (5.8-8.6) | 4.4 (3.8-5.7) | 2.9 (2.5-3.8) | 1.9 (1.7-2.5) | 1.3 (1.1-1.7) | 0.9 (0.7-1.1) | 0.6 (0.5-0.8) | 0.4 (0.3-0.5) |
| 2 | 31 (27-39) | 22 (19-29) | 16 (13-20) | 11 (8.7-14) | 7.2 (5.8-9.5) | 4.8 (3.8-6.4) | 3.1 (2.5-4.2) | 2.1 (1.7-2.8) | 1.4 (1.1-1.9) | 1.0 (0.8-1.3) | 0.6 (0.5-0.9) |
| 3 | 43 (36-50) | 33 (27-39) | 24 (19-29) | 17 (13-21) | 11 (8.8-14) | 7.6 (5.9-9.6) | 5.1 (3.9-6.4) | 3.4 (2.6-4.4) | 2.3 (1.7-3.0) | 1.6 (1.2-2.0) | 1.1 (0.8-1.4) |
| 4 | 55 (48-62) | 45 (37-51) | 34 (27-39) | 25 (19-29) | 17 (13-21) | 12 (8.9-14) | 8.1 (6.0-9.6) | 5.5 (4.0-6.6) | 3.8 (2.7-4.5) | 2.6 (1.9-3.1) | 1.7 (1.3-2.1) |
| 5 | 66 (59-70) | 57 (49-60) | 46 (38-49) | 35 (28-38) | 26 (20-28) | 18 (14-20) | 13 (9.7-14) | 8.7 (6.6-9.8) | 6.0 (4.6-6.8) | 4.1 (3.1-4.7) | 2.8 (2.1-3.2) |
| 6 | 74 | 67 | 58 | 47 | 37 | 27 | 19 | 14 | 9.5 | 6.6 | 4.5 |

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

**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 | 10 | 7.4 | 5.2 | 3.6 | 2.5 | 1.7 | 1.2 | 0.9 | 0.6 | 0.5 |
| 1 | 24 (20-45) | 18 (14-35) | 13 (10-27) | 9.7 (7.2-20) | 6.9 (5.1-15) | 4.8 (3.5-10) | 3.4 (2.5-7.3) | 2.4 (1.8-5.3) | 1.7 (1.3-3.8) | 1.2 (0.9-2.7) | 0.9 (0.6-1.9) |
| 2 | 37 (26-56) | 29 (20-47) | 22 (14-38) | 17 (10-29) | 12 (7.2-22) | 8.7 (5.0-16) | 6.2 (3.5-12) | 4.5 (2.5-8.6) | 3.2 (1.8-6.2) | 2.3 (1.3-4.5) | 1.7 (0.9-3.3) |
| 3 | 50 (34-65) | 42 (26-57) | 34 (20-49) | 26 (14-39) | 20 (10-31) | 15 (7.4-23) | 11 (5.2-17) | 7.8 (3.8-13) | 5.7 (2.7-9.3) | 4.1 (1.9-6.8) | 3.0 (1.4-4.9) |
| 4 | 62 (43-72) | 54 (35-65) | 46 (28-58) | 38 (21-49) | 30 (15-39) | 23 (11-31) | 17 (7.8-23) | 13 (5.7-18) | 9.6 (4.1-13) | 7.0 (2.9-9.8) | 5.1 (2.1-7.2) |
| 5 | 72 (53-77) | 66 (45-72) | 59 (37-66) | 51 (29-58) | 43 (22-49) | 34 (16-39) | 27 (12-30) | 21 (8.8-24) | 16 (6.5-18) | 12 (4.7-14) | 8.5 (3.4-10) |
| 6 | 79 | 75 | 70 | 63 | 56 | 47 | 38 | 31 | 24 | 18 | 14 |

**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 | 14 | 11 | 8.0 | 5.9 | 4.4 | 3.2 | 2.4 | 1.8 | 1.4 | 1.0 | 0.8 |
| 1 | 23 (18-43) | 18 (14-36) | 14 (10-29) | 11 (7.7-22) | 8.1 (5.7-17) | 6.1 (4.2-13) | 4.5 (3.1-9.8) | 3.4 (2.4-7.5) | 2.6 (1.8-5.7) | 2.0 (1.3-4.4) | 1.5 (1.0-3.3) |
| 2 | 34 (23-54) | 28 (18-46) | 23 (14-38) | 18 (11-31) | 14 (8.0-25) | 10 (5.9-19) | 8.0 (4.4-15) | 6.1 (3.3-12) | 4.7 (2.5-9.1) | 3.6 (1.9-7.0) | 2.7 (1.4-5.3) |
| 3 | 46 (30-62) | 40 (24-56) | 33 (19-49) | 27 (15-41) | 22 (11-34) | 17 (8.4-27) | 13 (6.3-21) | 10 (4.8-17) | 8.0 (3.7-13) | 6.1 (2.8-10) | 4.7 (2.1-8.0) |
| 4 | 58 (39-69) | 52 (32-64) | 45 (26-57) | 38 (21-50) | 32 (16-42) | 26 (12-35) | 20 (9.4-28) | 16 (7.2-23) | 13 (5.5-18) | 10 (4.2-14) | 7.8 (3.2-11) |
| 5 | 68 (48-74) | 63 (42-69) | 57 (35-63) | 50 (28-57) | 43 (23-49) | 37 (18-42) | 30 (14-35) | 25 (11-29) | 20 (8.4-24) | 16 (6.5-19) | 12 (5.0-15) |
| 6 | 76 | 72 | 67 | 62 | 55 | 49 | 42 | 35 | 29 | 24 | 19 |

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

**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 | 12 | 9.1 | 7.1 | 5.6 | 4.3 | 3.3 | 2.6 | 2.1 | 1.6 | 1.3 | 1.0 |
| 1 | 20 (15-38) | 16 (12-32) | 13 (9.2-26) | 10 (7.2-21) | 7.9 (5.6-17) | 6.2 (4.4-13) | 4.9 (3.4-11) | 3.9 (2.7-8.6) | 3.1 (2.2-6.9) | 2.5 (1.7-5.5) | 2.0 (1.4-4.4) |
| 2 | 30 (20-49) | 25 (16-42) | 21 (13-35) | 17 (9.9-30) | 13 (7.8-24) | 11 (6.1-20) | 8.6 (4.8-16) | 6.9 (3.8-13) | 5.6 (3.0-11) | 4.5 (2.4-8.6) | 3.6 (1.9-6.9) |
| 3 | 42 (26-58) | 36 (21-52) | 31 (17-46) | 26 (14-39) | 21 (11-33) | 17 (8.5-28) | 14 (6.8-23) | 12 (5.4-19) | 9.4 (4.4-16) | 7.6 (3.5-13) | 6.1 (2.8-10) |
| 4 | 54 (34-65) | 48 (29-60) | 42 (24-54) | 37 (19-48) | 31 (16-42) | 26 (13-35) | 22 (10-30) | 18 (8.1-25) | 15 (6.5-21) | 12 (5.3-17) | 10 (4.2-14) |
| 5 | 65 (44-71) | 60 (38-66) | 55 (32-61) | 49 (27-55) | 43 (22-49) | 37 (18-43) | 32 (15-37) | 27 (12-32) | 23 (9.8-27) | 19 (8.0-23) | 16 (6.4-19) |
| 6 | 73 | 70 | 66 | 61 | 55 | 49 | 44 | 38 | 33 | 28 | 24 |

**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 | 7.3 | 6.0 | 4.9 | 4.0 | 3.2 | 2.6 | 2.2 | 1.8 | 1.5 | 1.2 | 1.0 |
| 1 | 13 (9.5-26) | 11 (7.8-22) | 8.9 (6.3-19) | 7.3 (5.2-16) | 6.0 (4.2-13) | 4.9 (3.4-11) | 4.1 (2.8-8.9) | 3.4 (2.4-7.5) | 2.8 (2.0-6.3) | 2.4 (1.6-5.3) | 2.0 (1.4-4.4) |
| 2 | 21 (13-36) | 18 (10-31) | 15 (8.6-26) | 12 (7.1-22) | 10 (5.8-19) | 8.5 (4.7-16) | 7.1 (3.9-13) | 6.0 (3.3-11) | 5.0 (2.8-9.6) | 4.2 (2.3-8.1) | 3.5 (1.9-6.8) |
| 3 | 31 (17-45) | 27 (14-40) | 23 (12-35) | 19 (9.8-31) | 16 (8.1-26) | 14 (6.6-22) | 12 (5.5-19) | 10 (4.7-16) | 8.5 (3.9-14) | 7.1 (3.3-12) | 6.0 (2.7-10) |
| 4 | 42 (24-54) | 38 (20-49) | 33 (17-44) | 29 (14-39) | 25 (12-34) | 21 (9.7-29) | 18 (8.2-25) | 16 (7.0-22) | 14 (5.9-19) | 12 (4.9-16) | 9.8 (4.1-14) |
| 5 | 54 (32-60) | 50 (28-56) | 45 (24-51) | 40 (20-46) | 35 (17-41) | 31 (14-36) | 27 (12-32) | 24 (10-28) | 21 (8.7-24) | 18 (7.4-21) | 15 (6.2-18) |
| 6 | 65 | 61 | 57 | 52 | 48 | 43 | 38 | 34 | 30 | 26 | 23 |