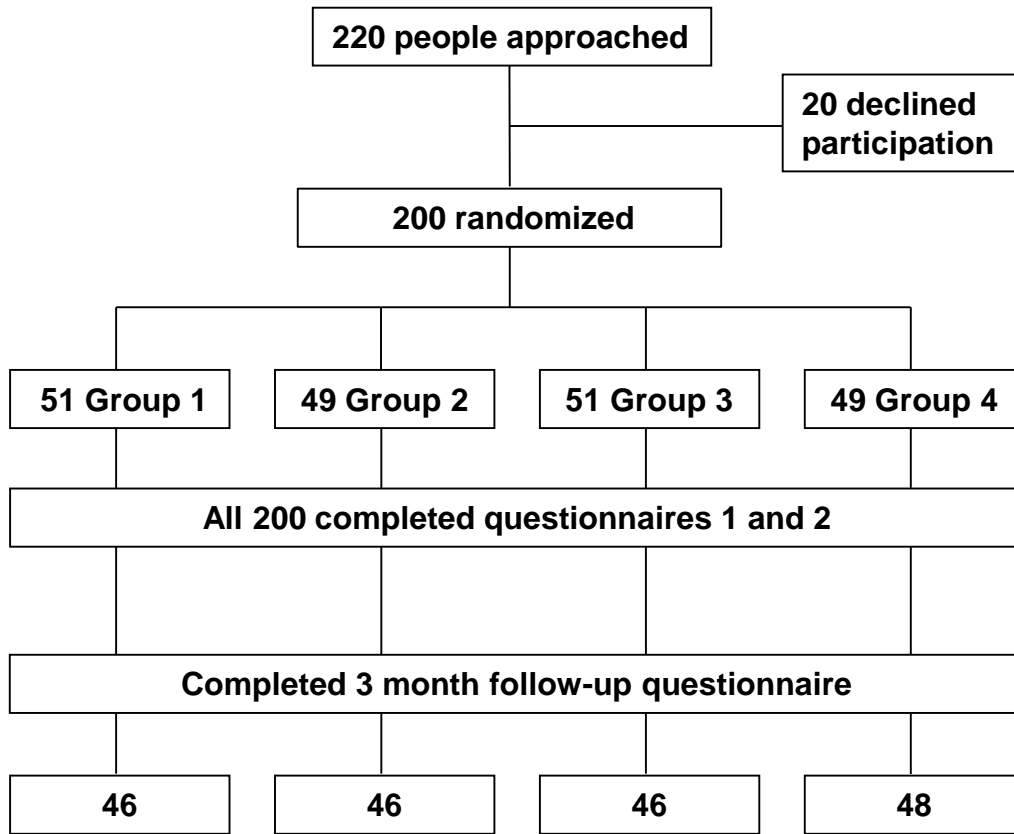


Appendix:

Table 1: characteristics and results for participants grouped by their initial views about taking osteoporosis medicine

	Participant believed they should take osteoporosis medication prior to bone density measurement		
	Yes	No	Don't know
n (%)	30 (15)	67 (34)	101 (51)
Age (y)	69.6 (8.0)	68.2 (5.4)	69.8 (6.5)
Body mass index (kg/m²)	25.9 (4.5)	26.5 (5.1)	26.9 (4.8)
Female (%)	77	87	78
European descent (%)	90	99	94
Fracture after 50y (%)	40	31	32
Bone mineral density T-score			
Lumbar spine	-0.2 (-1.6, 0.6)	-0.8 (-1.4, 0.6)	-0.6 (-1.5, 0.8)
Total hip	-1.4 (-2.6, -0.4)	-1.0 (-1.5, -0.3)	-1.1 (-2.0, -0.3)
Femoral neck	-1.8 (-2.5, -1.5)	-1.5 (-2.0, -0.8)	-1.6 (-2.1, -0.9)
<u>Participant estimates at baseline</u>			
5y risk high enough to consider taking medications (tablet/intravenous) to prevent fracture (any/hip) (%)			
Any fracture/ tablets (%)	50 (30, 70)	40 (15, 70)	50 (40, 70)
Any fracture/ intravenous (%)	64 (40, 80)	50 (20, 80)	60 (40, 80)
Hip fracture/ tablets (%)	35 (10, 60)	20 (10, 25)	30 (10, 50)
Hip fracture/ intravenous (%)	28 (10, 50)	10 (5, 25)	20 (10, 50)
Estimated risk ≥ treatment threshold (%)	47	43	48
<u>Garvan fracture risk calculator estimates</u>			
5y Osteoporotic fracture risk	8.8 (5.6, 14.9)	6.6 (5.3, 10.2)	7.7 (5.6, 11.9)
5y Hip fracture risk	2.1 (0.9, 4.1)	1.1 (0.7, 2.5)	1.5 (0.8, 3.0)
<u>Participant estimates and views after information on fracture risk and treatment benefits provided</u>			
5y risk high enough to consider taking medications (tablet/intravenous) to prevent fracture (any/hip) (%)			
Any fracture/ tablets (%)	50 (20, 80)	48 (20, 70)	50 (22, 60)
Any fracture/ intravenous (%)	45 (20, 80)	40 (20, 68)	50 (23, 70)
Hip fracture/ tablets (%)	14 (10, 35)	10 (8, 20)	15 (9, 30)
Hip fracture/ intravenous (%)	10 (4, 30)	10 (0, 15)	10 (3, 20)
Estimated risk ≥ treatment threshold (%)	33	30	43

Figure 1:



Flow of participants

Questionnaires 1-3

Written information sheets on fracture risk and treatment benefits provided to participants in each randomised group, with 20% 5y osteoporotic fracture and 5% 5y hip fracture risk used for illustrative purposes.

Questionnaire 1:

As explained in the information sheet, this study is designed to gather information about your perceptions of your bone health.

The questionnaire asks about your views of your bone health and your perceptions of treatments that influence bone health.

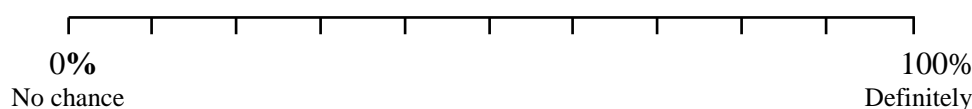
All of the information you provide is strictly *confidential* to the researchers, and will only be used for this study. This research will not affect your ongoing healthcare.

Please remember that there are no right or wrong answers to the questions – an answer is correct if it is true for you. We are interested in your experience and perception, as well as the way you evaluate risk. Please choose the responses that feel right for you.

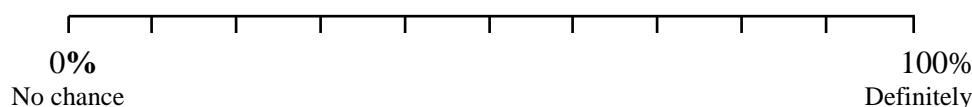
Your risk of fracture (breaking a bone):

1. How would you rate your risk of having any fracture in the next 5 years on a scale from 0% to 100%? (0% means no chance of fracture, 100% means you will definitely have a fracture)?

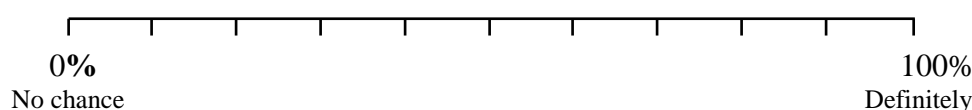
Mark on the line to indicate your risk



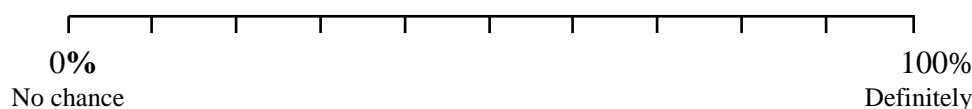
2. How would you rate your risk of having a *hip* fracture in the next 5 years?



3. How would you rate the risk of the average woman/man your age of having any fracture in the next 5 years?



4. On the same scale, how would you rate the risk of the average woman/man your age having a *hip* fracture in the next 5 years?



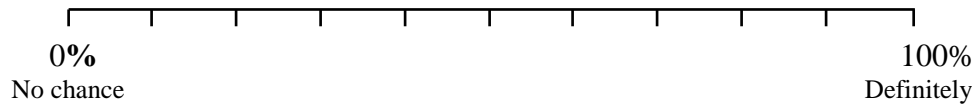
5. How would you best describe your risk of sustaining any fracture in the next 5 years?

Circle one:

1 **2** **3** **4** **5**
None/Very low **Low** **Moderate** **High** **Very High**

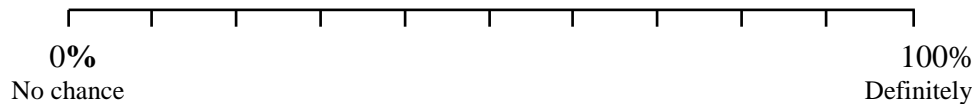
How effective are osteoporosis treatments?

6. By how much do you think medications for osteoporosis are able to reduce the chance of fracture on a scale of 0% to 100%? (0% means not at all- the treatment prevents no fractures, 50% means that half of fractures would be prevented, and 100% means completely effective- all fractures are prevented)?

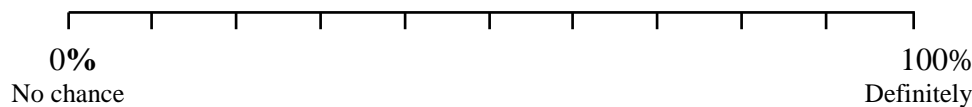


7. What risk of breaking a bone in the next 5 years, on a scale from 0% (no chance) to 100% (definitely will have a fracture), would you regard as high enough to consider taking a preventative medicine?

- a. If it was a tablet taken once per week, first thing in the morning, with a full glass of water, and after the tablet is taken, a person must remain upright for about 45 minutes and not eat during that time.



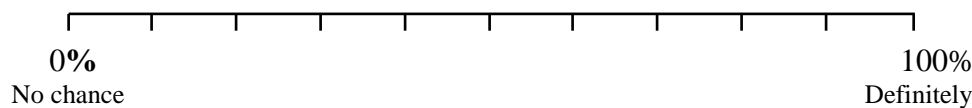
- b. If it was given by an intravenous infusion (drip) every one or two years at your local doctor's clinic.



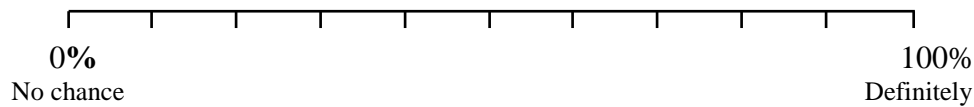
8. Hip fractures are the generally regarded as the most serious type of broken bone. They most commonly occur in older people. The average age someone sustains a hip fracture is 75-80 years. A person with a hip fracture almost always needs an operation, and many people will spend several weeks in hospital after a hip fracture. A substantial number of people will have ongoing pain, or difficulty walking for some time after a hip fracture.

What risk of *hip* fracture in the next 5 years would you regard as high enough to consider taking a preventative medicine?

- a. If it was a tablet taken once per week, first thing in the morning, with a full glass of water, and after the tablet is taken, a person must remain upright for about 45 minutes and not eat during that time.



- b. If it was given by an intravenous infusion (drip) every one or two years at your local doctor's clinic.



9. Do you think osteoporosis treatments are better at preventing hip fractures than other types of fractures?

Circle one:

Yes - osteoporosis medications are better at preventing hip fractures

No difference - osteoporosis medications prevent hip fractures as well as other types of fractures

No- osteoporosis medications are better at preventing fractures other than hip fractures

The National Osteoporosis Foundation in the United States recommends that individuals should take osteoporosis medications if their risk of a fracture over 5 years is greater than 10% (more than 10 people out of 100 will suffer a fracture in the next 5 years) **or** their risk of hip fracture over 5 years is greater than 2% (more than 2 people out of 100 will suffer a hip fracture in the next 5 years). We are interested in your views of these recommendations.

10. Do you think these thresholds (10% for osteoporotic fracture and 2% for hip fracture) are:

Circle one:

Too high (People at lower risk of fracture should be advised to take medication)

About right

Too low (People should not be treated until their risk of fracture is higher)

Please turn over the page for Question 11

13. Which statements do you think most accurately describes osteoporosis medications.

Circle one:

1. Osteoporosis medications are **highly** effective in preventing fractures
2. Osteoporosis medications are **moderately** effective in preventing fractures
3. Osteoporosis medications are **not very** effective in preventing fractures.

Circle one:

1. In New Zealand, osteoporosis medications are prescribed **too often**
2. In New Zealand, osteoporosis medications are prescribed **about right (not too much and not too little)**
3. In New Zealand, osteoporosis medications are **not prescribed often enough**

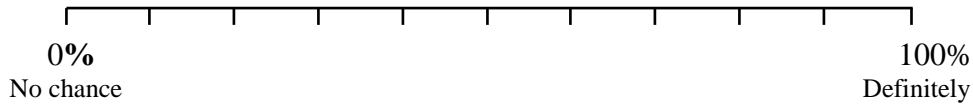
Questionnaire 2:

Option 1, 2, 3, or 4 for written information on fracture risk and treatment benefits and icon arrays.

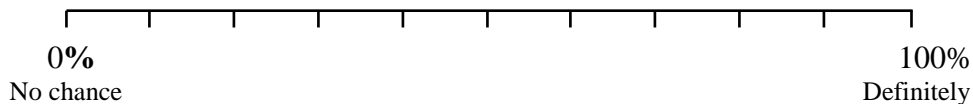
Based on this information:

Your risk of fracture (breaking a bone):

1. How would you rate your risk of having any fracture in the next 5 years on a scale from 0%- 100%? (0% means no chance of fracture, 100% means you will definitely have a fracture)?



2. How would you rate your risk of having a *hip* fracture in the next 5 years?



3. How would you best describe your risk of sustaining any fracture in the next 5 years?

Circle one:

1 2 3 4 5
None/Very low Low Moderate High Very High

4. Do you think that you should take osteoporosis medication?

Circle one:

Yes No Don't know

5. What factors influenced your answer to question 4? Circle the number that best represents your views

My risk of breaking bones in the near future is:

1 2 3 4 5
None/Very low Low Moderate High Very High

My bone density is probably

1 2 3 4 5
None/Very low Low Moderate High Very High

I don't think that I need to take osteoporosis medications

1 2 3 4 5
Strongly disagree Strongly agree

I am concerned about taking long-term osteoporosis medications

1 **2** **3** **4** **5**
Strongly **Strongly**
disagree **agree**

I am worried about side-effects of taking long-term osteoporosis medications

1 **2** **3** **4** **5**
Strongly **Strongly**
disagree **agree**

Osteoporosis medications stop people breaking bones

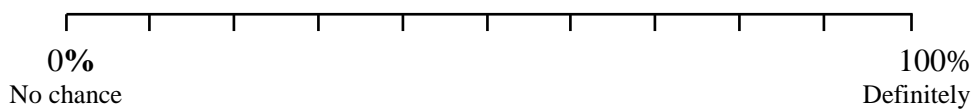
1 **2** **3** **4** **5**
Strongly **Strongly**
disagree **agree**

Osteoporosis medications increase bone density

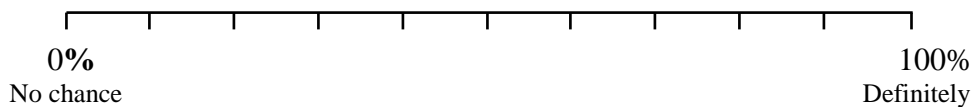
1 **2** **3** **4** **5**
Strongly **Strongly**
disagree **agree**

6. What risk of breaking a bone in the next 5 years, on a scale from 0% (no chance) to 100% (definitely will have a fracture), would you regard as high enough to consider taking a preventative medicine?

a. If it was a tablet taken once per week, first thing in the morning, with a full glass of water, and after the tablet is taken, a person must remain upright for about 45 minutes and not eat during that time.

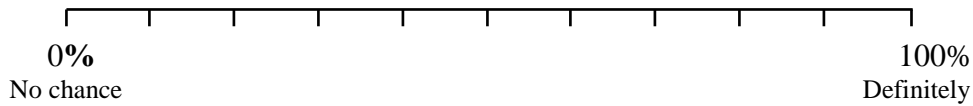


b. If it was given by an intravenous infusion (drip) every one or two years at your local doctor's clinic.

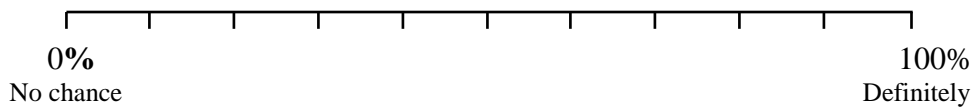


7. What risk of *hip* fracture in the next 5 years would you regard as high enough to consider taking a preventative medicine?

a. If it was a tablet taken once per week, first thing in the morning, with a full glass of water, and after the tablet is taken, a person must remain upright for about 45 minutes and not eat during that time.



b. If it was given by an intravenous infusion (drip) every one or two years at your local doctor's clinic.



The National Osteoporosis Foundation in the United States recommends that individuals should take osteoporosis medications if their risk of a fracture over 5 years is greater than 10% or their risk of hip fracture over 5 years is greater than 2%.

8. Do you think these thresholds (10% for osteoporotic fracture and 2% for hip fracture) are:

Circle one:

Too high (People at lower risk of fracture should be advised to take medication)

About right

Too low (People should not be treated until their risk of fracture is higher)

Questionnaire 3:

About 3 months ago you had a bone density scan and answered several questions about risk of fracture (breaking bones) and effectiveness of osteoporosis treatments. This is a short series of follow-up questions.

1. Have you discussed your bone density result with your GP/specialist?

Circle one:

Yes No

2. Have you started taking osteoporosis medication (or do you intend to start medication in the near future)?

Circle one:

Yes No

3. Who made the decision to start or not to start osteoporosis medication?

Circle one:

Myself

My GP/Specialist

Joint decision between myself and my GP/specialist

Other- please explain _____

4. How would you best describe your risk of sustaining a fracture in the next 5 years?

Circle one:

1 2 3 4 5
None/Very low Low Moderate High Very High

5. Which statements do you think most accurately describes osteoporosis medications.

Circle one:

Osteoporosis medications are **highly** effective in preventing fractures

Osteoporosis medications are **moderately** effective in preventing fractures

Osteoporosis medications are **not very** effective in preventing fractures.

Circle one:

In New Zealand, osteoporosis medications are prescribed **too often**

In New Zealand, osteoporosis medications are prescribed **about right (not too much and not too little)**

In New Zealand, osteoporosis medications are **not prescribed often enough**

Group 1

Based on the information in your questionnaire and your bone density:

Participant Number 1

Your estimated risk of **osteoporotic** fracture (that is all fractures except fractures of the skull, face, hands and feet) in the next **5** years is: **20%**

Your estimated risk of **hip** fracture in the next **5** years is: **5%**

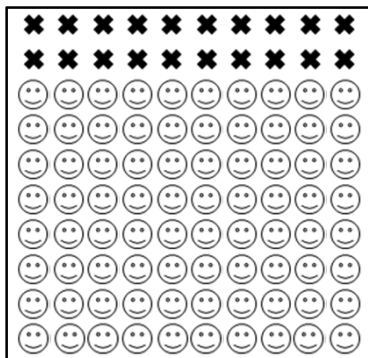
This means that in a group of **100** people of the same age and gender as you, who had similar risk factors for fracture as you, **20** would have an **osteoporotic** fracture within the next **5** years, and **5** would have a **hip** fracture within the next **5** years.

These pictures show your risk of fracture visually.

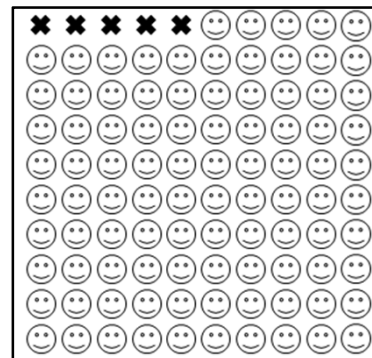
Out of **100** people, the crosses indicate those who have a fracture within **5** years.

The smiley faces indicate those who do not have a fracture.

Osteoporotic fracture



Hip fracture



Osteoporosis medication reduces osteoporotic fractures by **33%**, and hip fractures by **40%**.

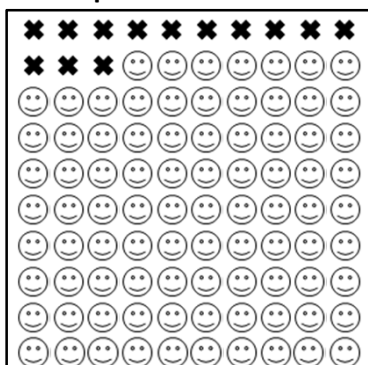
This means that if all these **100** people took osteoporosis medication for **5** years, the number of people who would have an **osteoporotic** fracture within those **5** years would decrease from **20** to **13**

The number who would have a **hip** fracture within those **5** years would decrease from **5** to **3**

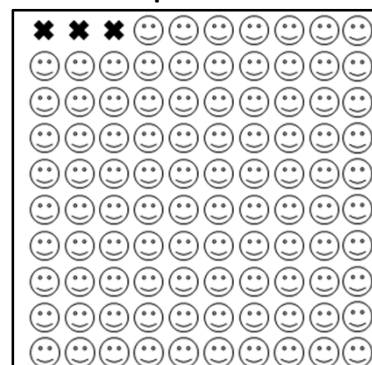
(Note: sometimes these numbers are the same because of rounding.)

The crosses indicate those **with** a fracture, if **100** people took osteoporosis medication for **5** years

Osteoporotic fracture



Hip fracture



Group 2

Based on the information in your questionnaire and your bone density:

Participant Number 1

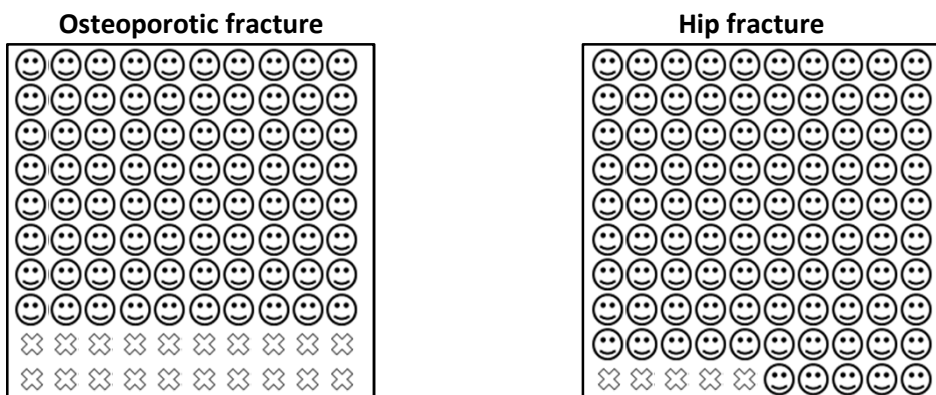
Your estimated risk of **osteoporotic** fracture (that is all fractures except fractures of the skull, face, hands and feet) in the next **5** years is: **20%**

Your estimated risk of **hip** fracture in the next **5** years is: **5%**

This means that in a group of **100** people of the same age and gender as you, who had similar risk factors for fracture as you, **80** will **NOT** have an **osteoporotic** fracture within the next 5 years, and **95** will **NOT** have a **hip** fracture within the next 5 years.

These pictures show your risk of fracture visually.

Out of **100** people, the smiley faces indicate those who do **NOT** have a fracture within 5 years. The crosses indicate those who have a fracture.



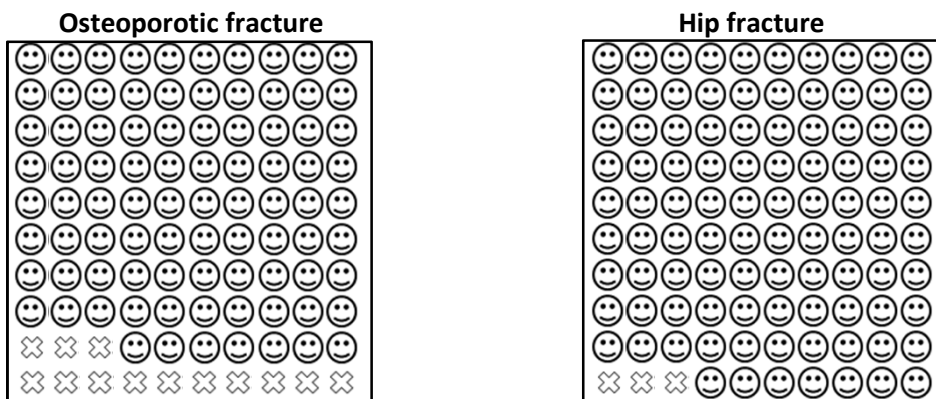
Osteoporosis medication reduces osteoporotic fractures by **33%**, and hip fractures by **40%**.

This means that if all these **100** people took osteoporosis medication for **5** years, the number of people who would **NOT** have an **osteoporotic** fracture within those 5 years would increase from **80** to **87**

The number who would **NOT** have a **hip** fracture within those 5 years would increase from **95** to **97**

(Note: sometimes these numbers are the same because of rounding.)

The smiley faces indicate those **without** a fracture, if **100** people took osteoporosis medication for 5 years



Group 3

Osteoporosis medication reduces osteoporotic fractures by **33%**, and hip fractures by **40%**.

This means that **15** people like you would need to be treated with osteoporosis medications for **5** years to prevent **1 osteoporotic** fracture.

50 people like you would need to be treated for 5 years to prevent 1 **hip** fracture.

These pictures show the benefits of treatment visually.

The smiley faces indicate those who benefited from treatment (by having an **osteoporotic** fracture prevented). The shaded faces indicate those who did not benefit from treatment.



The smiley faces indicate those who benefited from treatment (by having a **hip** fracture prevented). The shaded faces indicate those who did not benefit from treatment.



Group 4

Your estimated risk of **osteoporotic** fracture (that is all fractures except fractures of the skull, face, hands and feet) in the next **5** years is: **20%**

Your estimated risk of **hip** fracture in the next **5** years is: **5%**

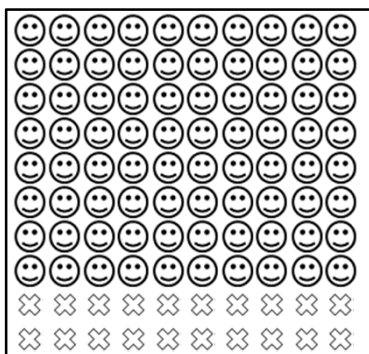
This means that in a group of **100** people of the same age and gender as you, who had similar risk factors for fracture as you, **80** will **NOT** have an **osteoporotic** fracture within the next 5 years, and **95** will **NOT** have a **hip** fracture within the next 5 years.

These pictures show your risk of fracture visually.

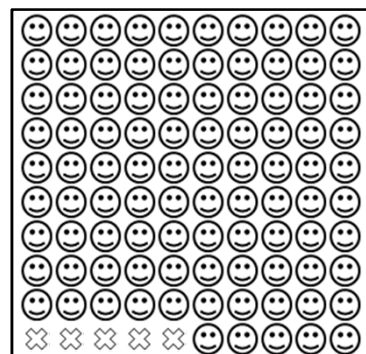
Out of **100** people, the smiley faces indicate those who do **NOT** have a fracture within **5** years.

The crosses indicate those who have a fracture.

Osteoporotic fracture



Hip fracture



Osteoporosis medication reduces osteoporotic fractures by **33%**, and hip fractures by **40%**.

This means that if **15** people like you were treated with osteoporosis medications for **5** years, **14** people would receive no benefit in terms of **osteoporotic** fracture prevention, and in **1** person, a fracture would be prevented.

If **50** people like you were treated for 5 years, **49** would receive no benefit in terms of **hip** fracture prevention, and in **1** person a **hip** fracture would be prevented.

These pictures show the benefits of treatment visually.

The shaded faces indicate those who did **NOT** benefit from treatment (ie. they did **NOT** have an **osteoporotic** fracture prevented). The smiley faces indicate those who benefited from treatment.



The shaded faces indicate those who did **NOT** benefit from treatment (ie. they did **NOT** have a **hip** fracture prevented). The smiley faces indicate those who benefited from treatment.

