

Appendix 1: Benefits of screening to prevent fragility fractures

Outcome	Study approach; Population	Included studies; Sample size; Follow-up	Anticipated absolute effects*			Hazard ratio (95% CI)	Certainty
			Assumed population risk*	Risk with screening (95% CI)	Absolute difference (95% CI)		
Hip fractures	Offer-to-screen in "self-selected" population; <u>Females ≥65 years</u>	3 RCTs + 1 CCT (1–4); n=43,736; Follow-up: 3-5 years	Control event rate (study data)			0.80 (0.71 to 0.91)	Moderate to High ^c
			31 per 1000	24.8 per 1000 (22.0 to 28.2)	6.2 fewer per 1000 (9.0 fewer to 2.8 fewer)		
			General population risk				
	"All eligible" / offer-to-screen; <u>Females ≥65 years</u>	1 RCT (2); n=34,229; Follow-up: 5 years	Control event rate (study data)			0.99 (0.88 to 1.11)	Low ^{a-c}
			35 per 1000	34.7 per 1000 (30.8 to 38.9)	0.3 fewer in 1000 (4.2 fewer to 3.9 more)		
			General population risk				
	"All eligible" / offer-to-screen; <u>Females 45-54 years</u>	1 RCT (5); n=2,797; Follow-up: 9 years	Control event rate (study data)			0.95 (0.19 to 4.71)	Very Low ^{a-d}
			2 per 1000	1.9 per 1000 (0.4 to 9.42)	0.1 fewer in 1000 (1.6 fewer to 7.4 more)		
			General population risk				
	Acceptors of screening; <u>Females 45-54 years</u>	1 RCT (5); n=2,604; Follow-up: 9 years	Control event rate (study data)			0.37 (0.04 to 3.52)	Very Low ^{a-d}
			2 per 1000	0.7 per 1000 (0.1 to 7.0)	1.3 fewer per 1000 (1.9 fewer to 5.0 more)		
			General population risk				
Offer-to-screen in "self-selected" population; <u>Males ≥65 years</u>	1 CCT (4); n=1,380; Follow-up: 4.9 years	Control event rate (study data)			0.68 (0.32 to 1.43)	Very Low to Low ^{a-d}	
		30 per 1000	20.4 per 1000 (9.6 to 42.9)	9.6 fewer per 1000 (20.4 fewer to 12.9 more)			
		General population risk					
All clinical fragility fractures	Offer-to-screen in "self-selected" population; <u>Females ≥65 years</u>	3 RCTs (1–3); n=42,009; Follow-up: 3-5 years	Control event rate (study data)			0.93 (0.87 to 0.99)	Moderate ^c
			84 per 1000	78.1 per 1000 (73.1 to 83.2)	5.9 fewer per 1000 (10.9 fewer to 0.8 fewer)		
			General population risk				
	"All eligible" / offer-to-screen; <u>Females ≥65 years</u>	1 RCT (2); n=34,229; Follow-up: 5 years	Control event rate (study data)			0.99 (0.92 to 1.06)	Low ^{a-c}
			100 per 1,000	99.0 per 1000 (92.0 to 106.0)	1.0 fewer per 1,000 (8.0 fewer to 6.0 more)		
			General population risk				
	"All eligible" / offer-to-screen;	1 RCT (5); n=2,797;	Control event rate (study data)			1.01 (0.68 to 1.50)	Very Low ^{a-d}
			34 per 1,000	34.3 per 1000 (23.1 to 51.0)	0.3 more per 1,000 (10.9 fewer to 17.0 more)		
			General population risk				

Outcome	Study approach; Population	Included studies; Sample size; Follow-up	Anticipated absolute effects*			Hazard ratio (95% CI)	Certainty
			Assumed population risk*	Risk with screening (95% CI)	Absolute difference (95% CI)		
	<u>Females 45-54 years</u>	Follow-up: 9 years	67 per 1,000	67.7 per 1000 (45.6 to 100.5)	0.7 more per 1,000 (21.4 fewer to 33.5 more)		
	Acceptors of screening;	1 RCT (5); 2,604;	Control event rate (study data)			0.73 (0.46 to 1.14)	Very Low ^{a-d}
			34 per 1,000	24.8 per 1,000 (15.6 to 38.8)	9.2 fewer per 1,000 (18.4 fewer to 4.8 more)		
	<u>Females 45-54 years</u>	Follow-up: 9 years	General population risk				
			67 per 1,000	48.9 per 1,000 (30.8 to 76.4)	18.1 fewer per 1,000 (36.2 fewer to 9.4 more)		

CCT: clinical controlled trial; CI: confidence interval; RCT: randomized controlled trial

*The absolute effect (and its 95% CI) without screening (i.e., assumed population risk) is based on the estimated risk in the comparison group; the risk with screening is based on applying the relative effect (hazard ratio) of the intervention (and its 95% CI) to the assumed population risk. Study data refers to the median control events rates across trials. The assumed population risk for the general risk (Canadian) population are estimated from Prior et al., 2015 based on 10 year follow-up (6)

a=risk of bias; b=inconsistency; c=indirectness; d=imprecision

References

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