Appendix 1: Benefits of screening to prevent fragility fractures

Outcome	Study approach; Population	Included	Anticipated absolute effects*			Hazard	Certainty
		Sample size; Follow-up	Assumed population risk [*]	Risk with screening (95% CI)	Absolute difference (95% Cl)	ratio (95% Cl)	
Hip fractures	Offer-to-screen in "self- selected" population; <u>Females ≥65</u> years	3 RCTs + 1 CCT (1–4); n=43,736; Follow-up: 3-5 years	Control even 31 per 1000 General pop 20 per 1000	t rate (study data) 24.8 per 1000 (22.0 to 28.2) ulation risk 16.0 per 1000 (14.2 to 18.2)	6.2 fewer per 1000 (9.0 fewer to 2.8 fewer) 4.0 fewer per 1000 (5.8 fewer to 1.8 fewer)	0.80 (0.71 to 0.91)	Moderate to High ^c
	"All eligible" / offer-to- screen; <u>Females ≥65</u>	1 RCT (2); n=34,229; Follow-up: 5 years	Control even 35 per 1000 General pop 20 per	t rate (study data) 34.7 per 1000 (30.8 to 38.9) ulation risk 19.8 per 1000 (17.6 to 22.2)	0.3 fewer in 1000 (4.2 fewer to 3.9 more) 0.2 fewer in 1000 (2.4 fewer to 2.2 more)	0.99 (0.88 to 1.11)	Low ^{a-c}
	"All eligible" / offer-to- screen; <u>Females 45-54</u> vears	1 RCT (5); n=2,797; Follow-up: 9 years	Control even 2 per 1000 General pop 8 per 1000	t rate (study data) 1.9 per 1000 (0.4 to 9.42) ulation risk 7.6 per 1000 (1.5 to 37.7)	0.1 fewer in 1000 (1.6 fewer to 7.4 more) 0.4 fewer in 1000 (6.5 fewer to 29.7 more)	0.95 (0.19 to 4.71)	Very Low ^{a-d}
	Acceptors of screening; Females 45-54 years	1 RCT (5); n=2,604; Follow-up: 9 years	Control even 2 per 1000 General pop 8 per 1000	t rate (study data) 0.7 per 1000 (0.1 to 7.0) ulation risk 3.0 per 1000 (0.3 to 28.2)	1.3 fewer per 1000 (1.9 fewer to 5.0 more) 5.0 fewer per 1000 (7.7 fewer to 20.2 more)	0.37 (0.04 to 3.52)	Very Low ^{a-d}
	Offer-to-screen in "self- selected" population; <u>Males ≥65</u> years	1 CCT (4); n=1,380; Follow-up: 4.9 years	Control even 30 per 1000 General pop 16 per 1000	t rate (study data) 20.4 per 1000 (9.6 to 42.9) ulation risk 10.9 per 1000 (5.1 to 22.9)	9.6 fewer per 1000 (20.4 fewer to 12.9 more) 5.1 fewer per 1000 (10.9 fewer to 6.9 more)	0.68 (0.32 to 1.43)	Very Low to Low ^{a-d}
All clinical fragility fractures	Offer-to-screen in "self- selected" population; <u>Females ≥65</u> <u>years</u>	3 RCTs (1–3); n=42,009; Follow-up: 3-5 years	Control even 84 per 1000 General pop 168 per 1000	t rate (study data) 78.1 per 1000 (73.1 to 83.2) ulation risk 156.2 (146.2 to 166.3)	5.9 fewer per 1000 (10.9 fewer to 0.8 fewer) 11.8 fewer per 1000 (21.8 fewer to 1.7 fewer)	0.93 (0.87 to 0.99)	Moderate ^c
	"All eligible" / offer-to- screen; <u>Females ≥65</u> <u>years</u>	1 RCT (2); n=34,229; Follow-up: 5 years	Control even 100 per 1,000 General pop 168 per 1,000	t rate (study data) 99.0 per 1000 (92.0 to 106.0) ulation risk 166.3 per 1,000 (154.6 to 178.1)	1.0 fewer per 1,000 (8.0 fewer to 6.0 more) 1.7 fewer per 1,000 (13.4 fewer to 10.1 more)	0.99 (0.92 to 1.06)	Low ^{a-c}
	"All eligible" / offer-to- screen;	1 RCT (5); n=2,797;	Control even 34 per 1,000 General pop	t rate (study data) 34.3 per 1000 (23.1 to 51.0) ulation risk	0.3 more per 1,000 (10.9 fewer to 17.0 more)	1.01 (0.68 to 1.50)	Very Low ^{a-d}

Appendix 1, as supplied by the authors. Appendix to: Thériault G, Limburg H, Klarenbach S, et al. Recommendations on screening for primary prevention of fragility fractures. *CMAJ* 2023. doi: 10.1503/cmaj.221219. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca.

Outcome	Study	Included studies:	Anticipated	absolute effects	Hazard	Certainty	
	approach; Population	Sample size; Follow-up	Assumed population risk [*]	Risk with screening (95% Cl)	Absolute difference (95% CI)	ratio (95% CI)	
	<u>Females 45-54</u> <u>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 even 34 per 1,000	t rate (study data) 24.8 per 1,000 (15.6 to 38.8)	9.2 fewer per 1,000 (18.4 fewer to 4.8 more)	0.73 (0.46 to 1.14)	Very Low ^{a-d}
	<u>Females 45-54</u> <u>years</u>	Follow-up: 9 years	General population risk 67 per 48.9 per 1,000 18.1 fewer per 1,000 1,000 (30.8 to 76.4) (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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