

# Interventions to improve participation amongst underserved population groups in young person and adult national screening programmes in the UK: a systematic review

## Appendix 5: Results plotted by broad intervention type

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## Abbreviations used in presentation of results

<b>Screening programme</b>		<b>Underserved group</b>		
		<b>Category</b>	<b>Code</b>	
<b>AAA</b>	Abdominal Aortic Aneurysm			
<b>BCSP</b>	Bowel Cancer Screening Programme	Socioeconomic	<b>IMD20, SIMD20</b>	Most deprived quintile (English IMD or Scottish IMD)
<b>BSS</b>	Bowel Scope Screening		<b>IMD40, SIMD40</b>	Two most deprived quintiles (English IMD or Scottish IMD)
<b>BSP</b>	Breast Screening Programme		<b>IMD33</b>	Most deprived tertile (English)
<b>CSP</b>	Cervical Screening Programmes		<b>SES33</b>	Most deprived tertile (Townsend score or measure not reported)
<b>DES</b>	Diabetic Eye Screening		<b>NoQual</b>	No formal qualifications
			<b>Unemp</b>	Unemployed
			<b>Tenant</b>	Housing status (renting)
<b>Basis of underserved group result</b>		Ethnicity	<b>ETH</b>	Minority ethnicity
.w	whole trial population		<b>ASIAN</b>	Asian family origin
.s	subgroup of whole trial population		<b>PAK</b>	Pakistani family origin
.i	individual demographic		<b>BGD</b>	Bangladeshi family origin
.a	area-based demographic	Age	<b>&lt;65</b>	Under 65
			<b>70+</b>	Over 70
			<b>50-54, 55-60</b>	Age range as specified
		Sex	<b>MEN</b>	Men
		Screening history	<b>FTI</b>	First-time invitee
			<b>pNON</b>	Previous non-attender
			<b>ItNON</b>	Long-term non-attender
		Current screening status	<b>rNON</b>	Recent non-attender (population recruited to trials of reminders)
<b>Intervention description</b>				
<b>Event / stage of screening pathway</b>		<b>Type of intervention</b>		<b>Mode of intervention</b>
<b>I</b>	invitation	<b>NFA</b>	no further action	<b>PO</b> post
<b>A</b>	appointment	<b>INV</b>	standard invite	<b>TEL</b> telephone
<b>K</b>	home test kit	<b>PIL</b>	patient information leaflet	<b>TXT</b> text message
<b>R</b>	reminder	<b>SWI</b>	simplified patient information	<b>F2F</b> face-to-face
<b>2R</b>	second reminder	<b>EWI</b>	enhanced patient information	<b>GP</b> general practice
<b>LT</b>	long-term non-responder	<b>PNL</b>	pre-notification letter	
		<b>HCP</b>	healthcare professional	
<b>pre.</b>	prefixes to modify the event	<b>PSY</b>	psychological/barriers	
<b>post.</b>	codes where needed	<b>AR</b>	anticipated regret	
		<b>REM</b>	(standard) reminder	<b>Other</b>
		<b>ERM</b>	enhanced reminder	<b>ICC</b> intra-cluster correlation coefficient
		<b>Combi</b>	combined invites or leaflets	
		<b>GPE</b>	GP endorsed	
		<b>GPL</b>	GP letter	
		<b>HTK</b>	home test kit	
		<b>IMP</b>	implementation intentions	
		<b>INDIV</b>	tailored to the individual	
		<b>HLOC</b>	health locus of control	
		<b>svy</b>	survey (not an intervention)	
		<b>ann</b>	annual (prefix)	

# 1 HPV self-test kits for recent non-responders (CSP)

Figure 1 RD (HPV self-test kits for recent non-responders)

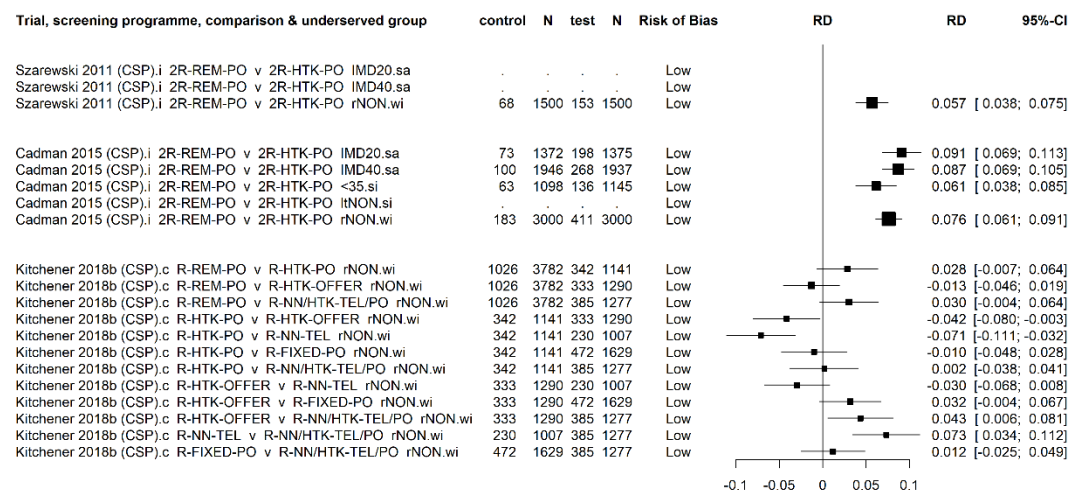
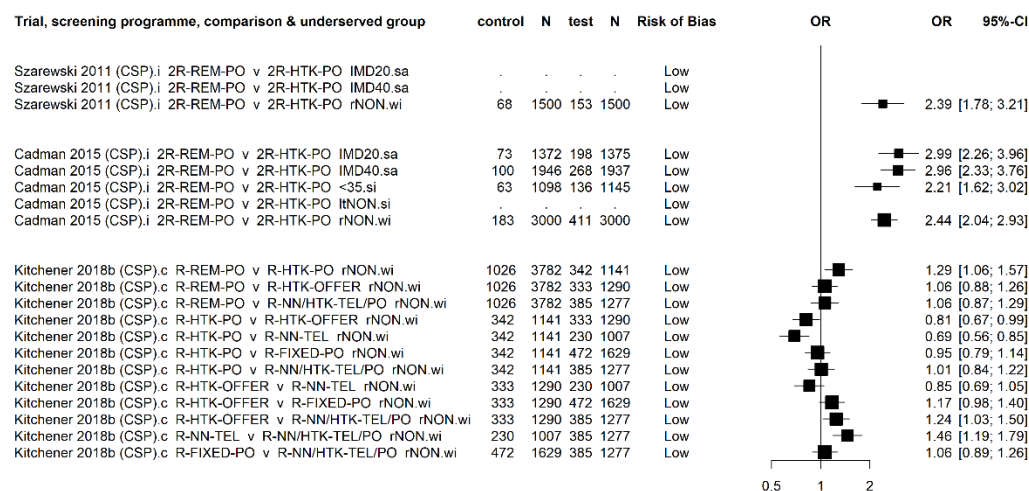


Figure 2 OR (HPV self-test kits for recent non-responders)

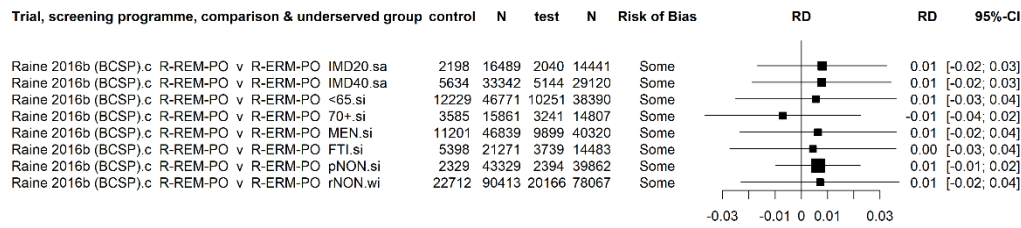


Note that Kitchener 2018b included five intervention arms compared to a standard (open invitation) reminder. The extremely heterogeneous results in the plot are due to different comparators, with HPV self-test kits (posted or offered) taking the ‘control’ position in lines 4 to 10 of these plots. The fifth arm was a choice of HPV self-test kit or nurse navigator and so HPV self-test kits appear in three of the five intervention arms (the other two being fixed appointments or a phone call from a nurse navigator).

The top line of the Kitchener 2018b results are directly comparable to the bottom lines of Cadman 2015 and Szarewski 2015, in terms of both control arm and underserved group (although we cannot be sure that open reminders were the “standard” control in Cadman 2015 and Szarewski 2015).

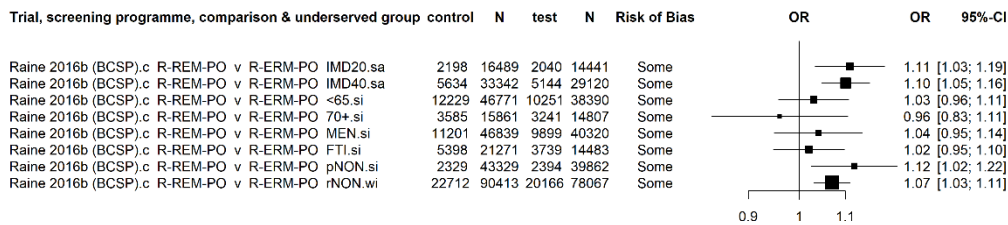
## 2 Enhanced reminders for recent non-responders (BCSP)

Figure 3 RD (enhanced reminders for recent non-responders)



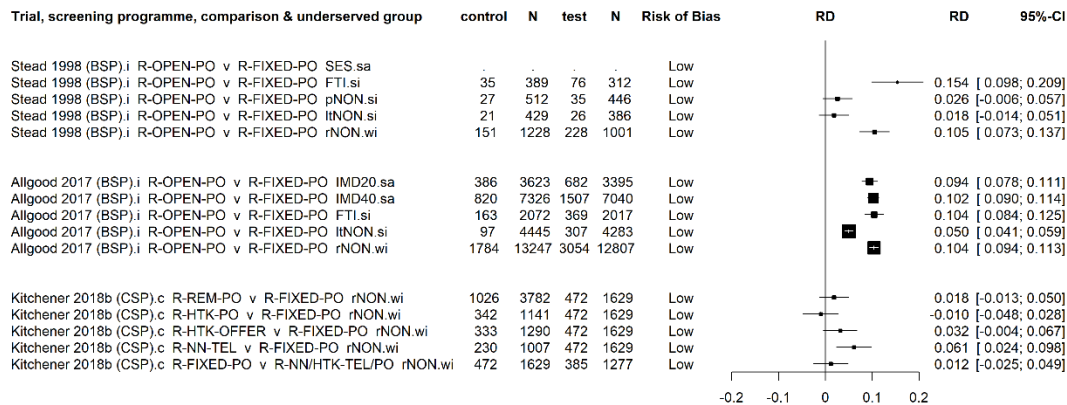
Assumes ICC of 0.03 because ICC not reported (estimate of 0.03 used, based on rounding up ICCs reported by other included cluster trials).

Figure 4 Adjusted OR (enhanced reminders for recent non-responders)

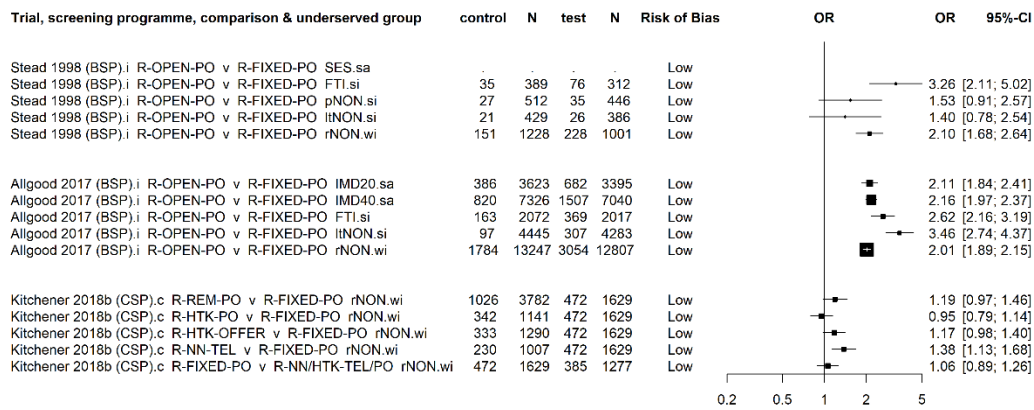


## 3 Fixed vs open reminders (BSP, CSP)

Figure 5 RD (fixed vs open reminders)



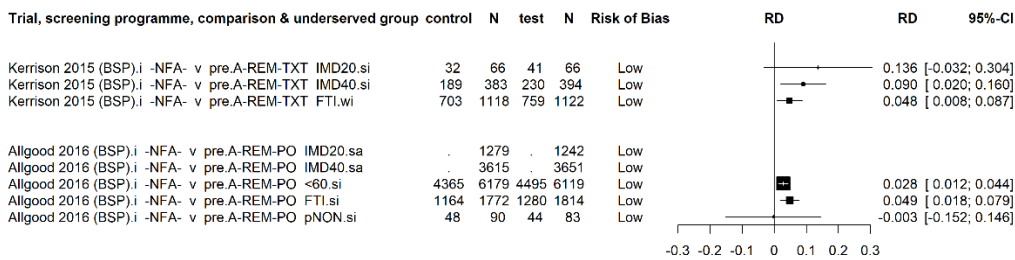
**Figure 6 OR (fixed vs open reminders)**



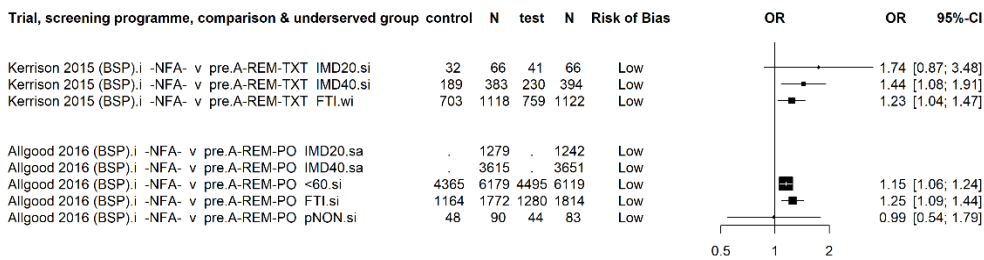
Note that Kitchener 2018b includes results against a number of different control arms, with the top line of the results being directly comparable to the bottom line of the other trials, in terms of control arm and underserved group.

## 4 Pre-appointment reminders (BSP)

**Figure 7 RD (pre-appointment reminders)**



**Figure 8 OR (pre-appointment reminders)**



## 5 Annual reminders for one-time screens (BSS)

Figure 9 RD (annual reminders for one-time screens)

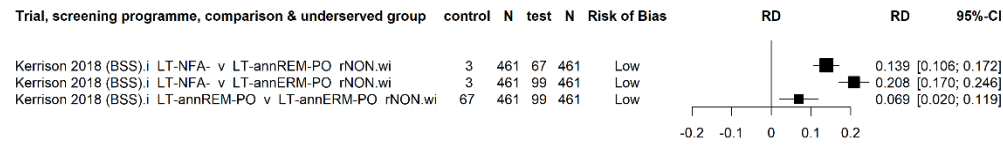
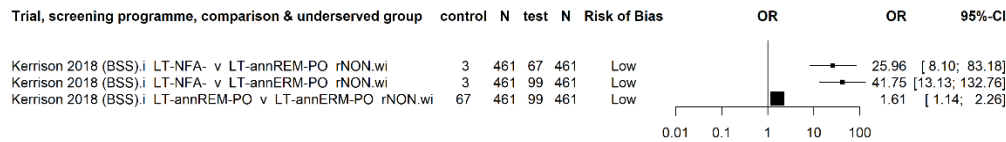
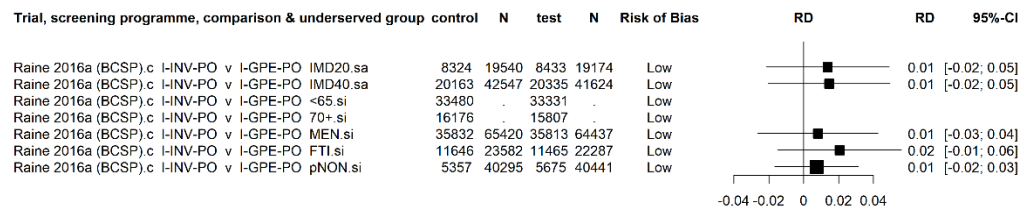


Figure 10 OR (annual reminders for one-time screens)



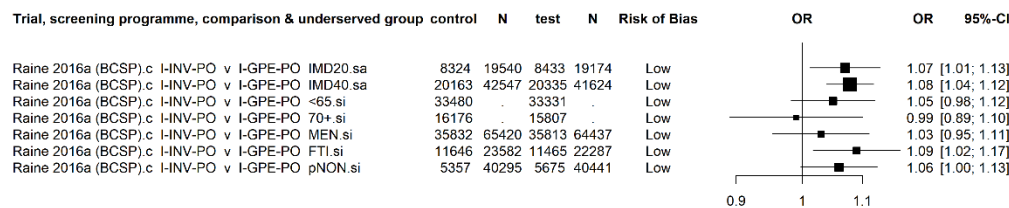
## 6 GP endorsed invitations (BCSP)

Figure 11 RD (GP endorsed invitations)



Assumes ICC of 0.03 because ICC not reported.

Figure 12 Adjusted OR (GP endorsed invitations)



## 7 Text or telephone reminders (BCSP, BSP)

Figure 13 RD (text or telephone reminders)

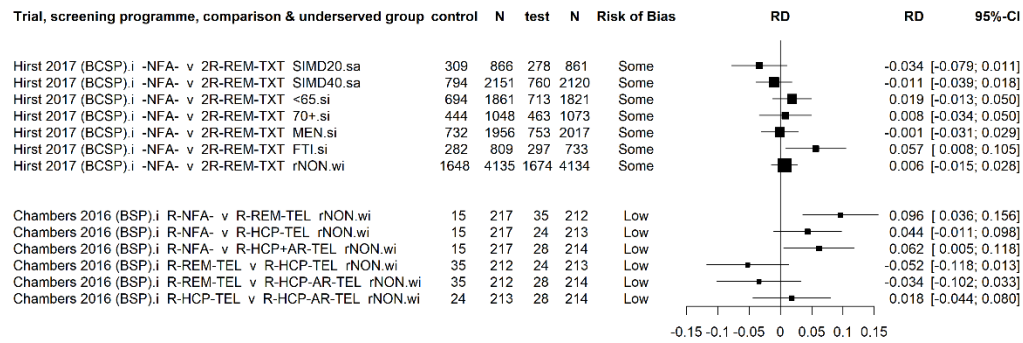
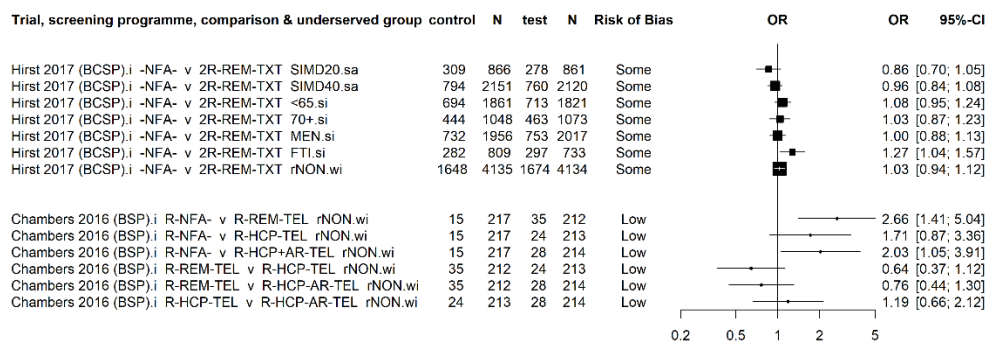


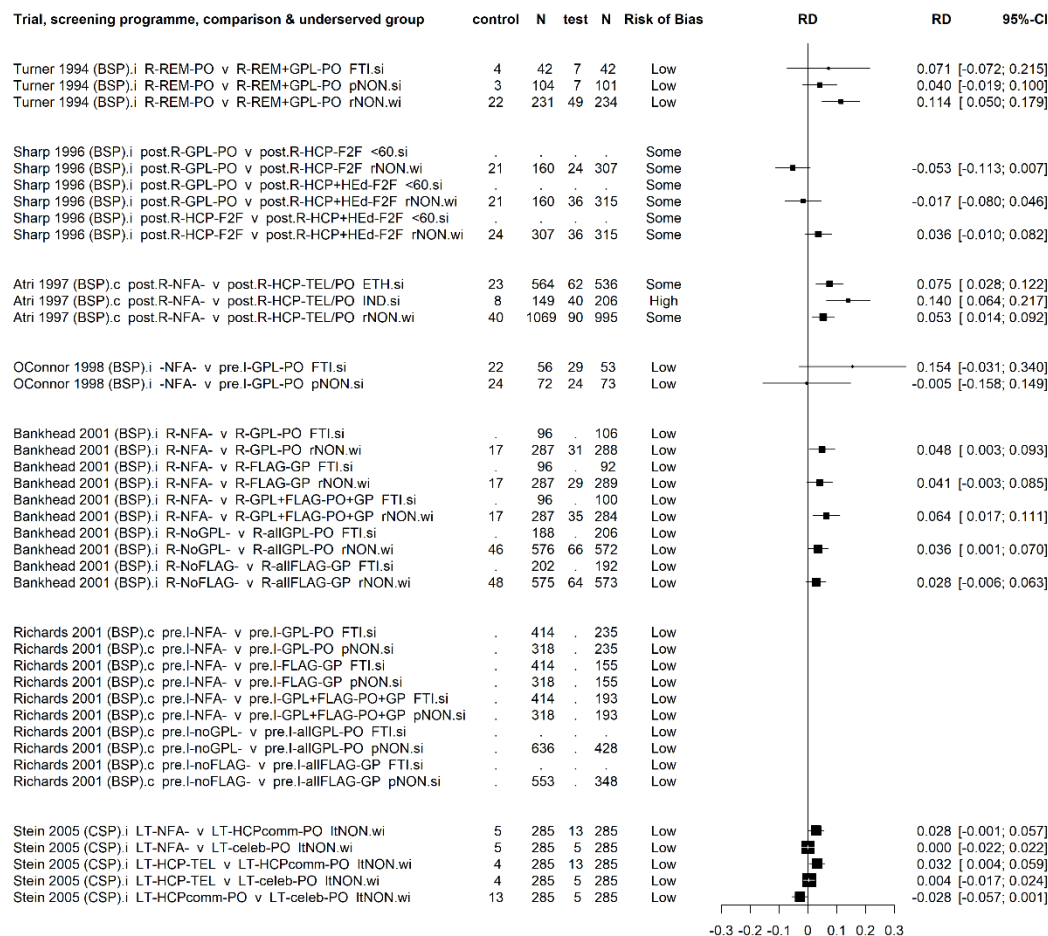
Figure 14 OR (text or telephone reminders)



Note that the bottom half of the results for Chambers 2016 use telephone reminders as the control arm compared to more intensive phone interventions. The final line compares the two more intensive interventions to each other.

## 8 GP letters and other GP-based interventions (BSP)

Figure 15 RD (GP letters and other GP-based interventions)



Note that Sharp 1996 has GP letters as the control arm against more intensive home visits.

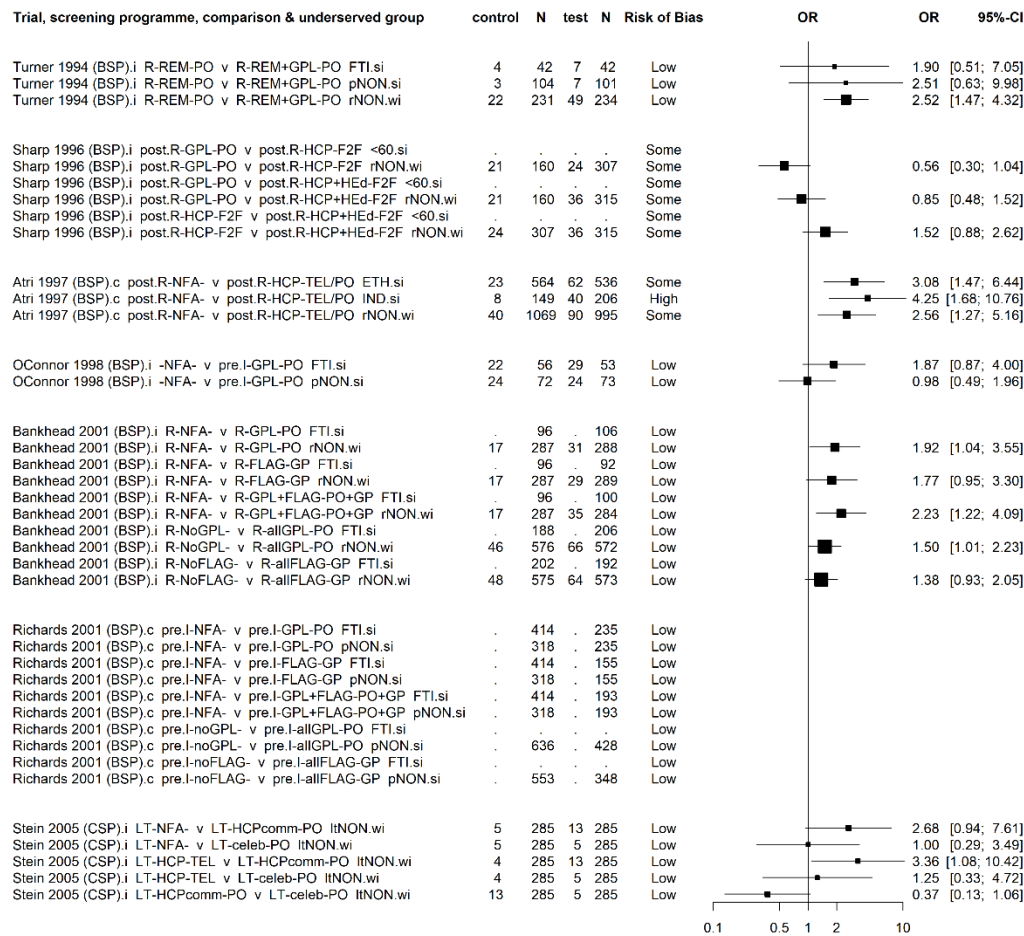
Note that Atri 1997 asked GP receptionists to contact recent non-responders by telephone if possible and by letter if no contact could be made by telephone. Assumes ICC of 0.03 because ICC not reported.

Stein 2005 did not use GP letters but the intervention (letters from a local screening commissioner) was comparable enough to include within this group of trials. The control arm was no further action, with a nurse phone call and a letter from a celebrity (Claire Rayner) being the other two interventions.

Richards 2001 was conducted in parallel with Bankhead 2001 but did not report sufficient information within underserved groups to provide information for these plots; the results in the general population due to be screened were similar to the results for Bankhead 2001 in a group of recent non-responders. Both trials included a factorial randomisation with flags in (pre-computerised) GP notes.



**Figure 16 OR (GP letters and other GP-based interventions)**



Note that Sharp 1996 has GP letters as the control arm against more intensive home visits.

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# 9 Link worker or nurse phone calls (BCSP, CSP, DES)

Figure 17 RD (link worker or nurse phone calls)

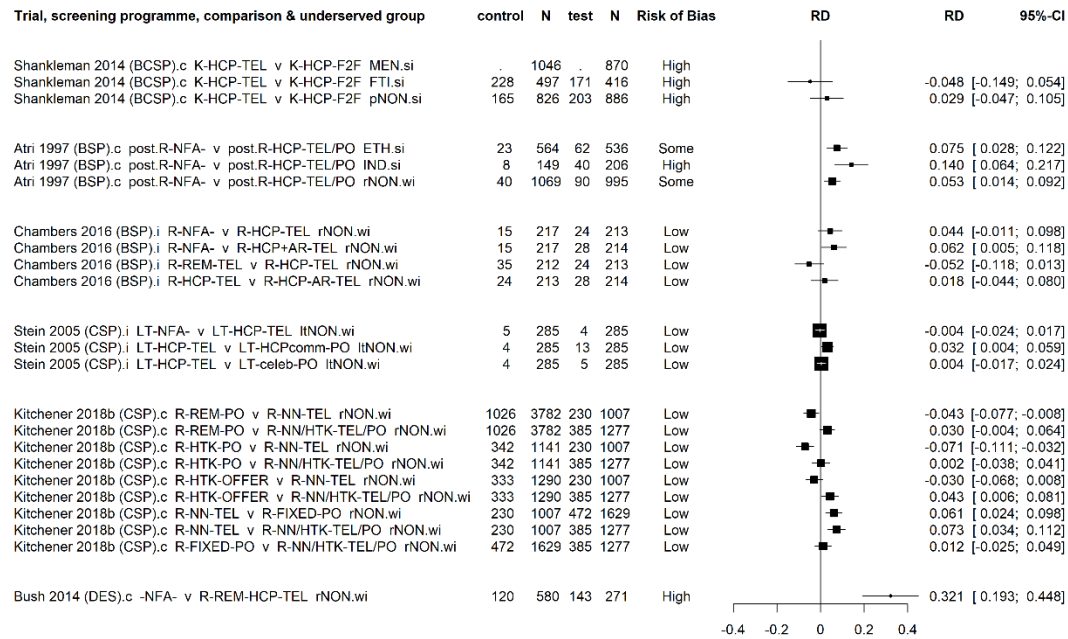
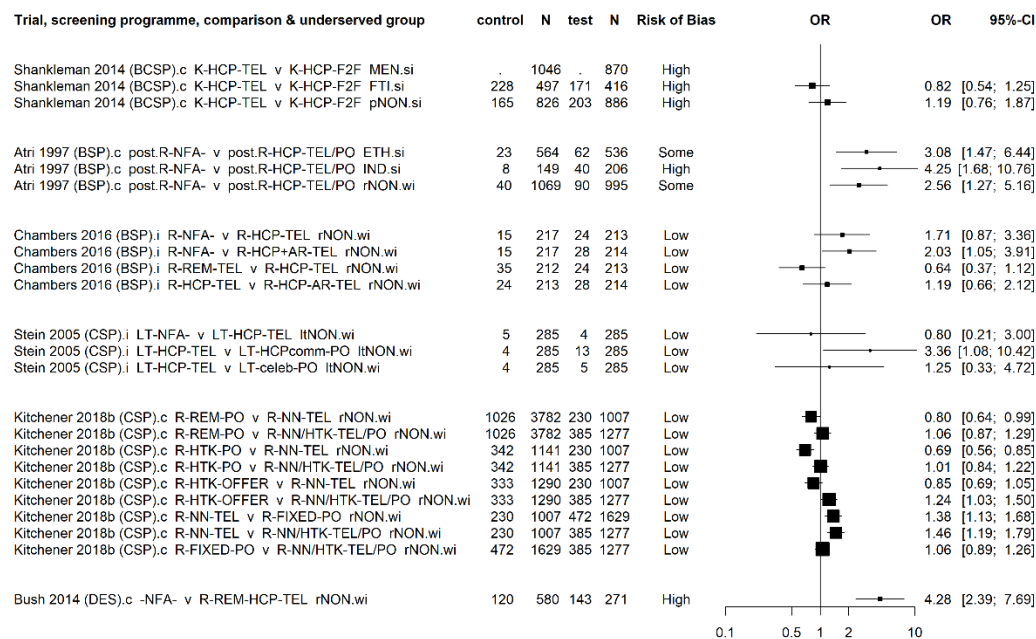


Figure 18 OR (link worker or nurse phone calls)



Note that Atri 1997 asked GP receptionists to contact recent non-responders by telephone if possible and by letter if no contact could be made by telephone.

Nurse telephone calls are the comparator against letter-based interventions for the second and third lines of Stein 2005.

For Atri 1997, Bush 2014 and Shankleman 2014, assumes ICC of 0.03 because ICC not reported (RD and OR plots).

## 10 Link worker or nurse home visits (BSP, CSP)

Figure 19 RD (link worker or nurse home visits)

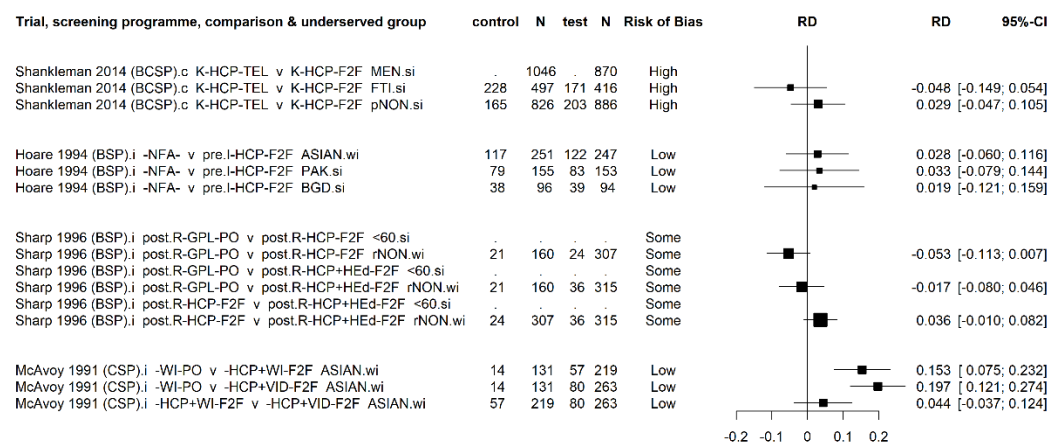
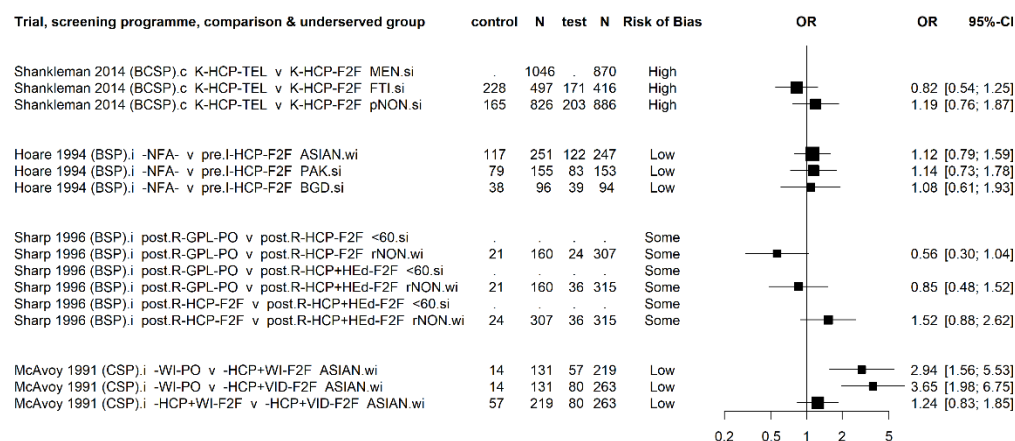


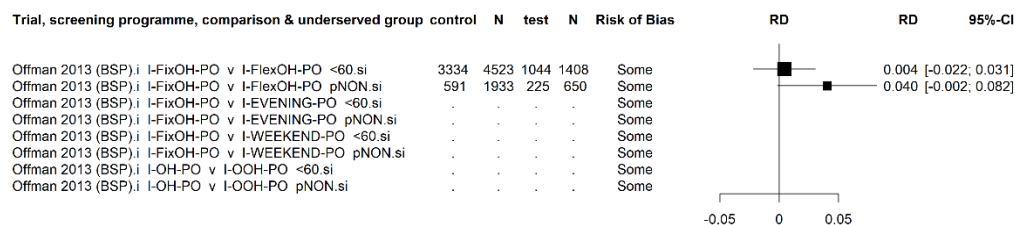
Figure 20 OR (link worker or nurse home visits)



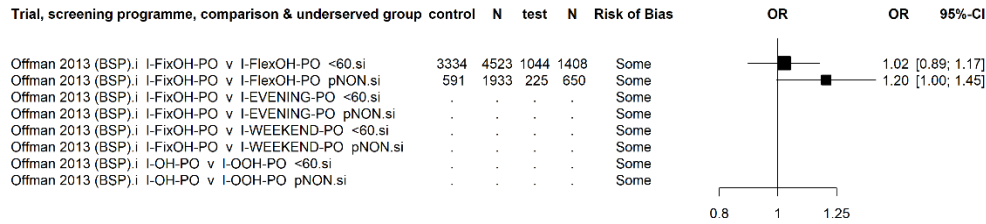
For Shankleman 2014, assumes ICC of 0.03 because ICC not reported (RD and OR plots).

## 11 Office hours vs out-of-hours appointments (BSP)

Figure 21 RD (office hours vs out-of-hours appointments)

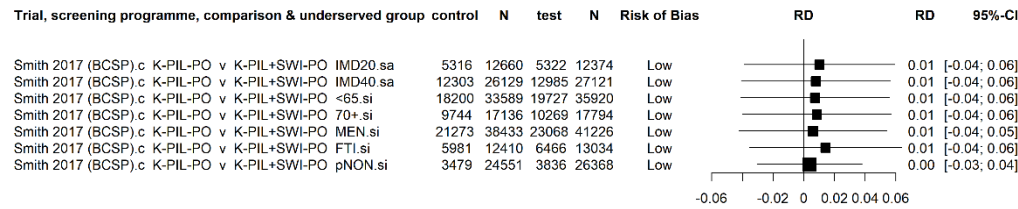


**Figure 22 OR (office hours vs out-of-hours appointments)**



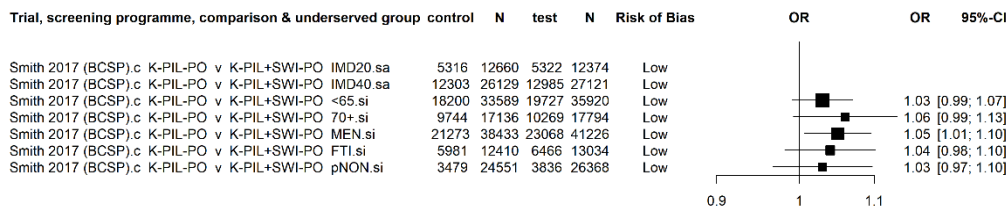
## 12 Simplified 'gist' patient information leaflet (BCSP)

**Figure 23 RD (simplified 'gist' patient information leaflet)**



Assumes ICC of 0.03 because ICC not reported.

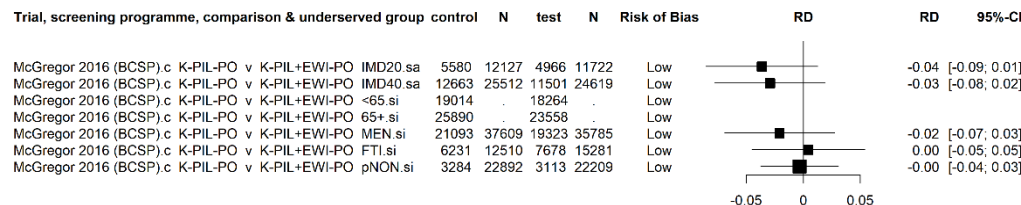
**Figure 24 Adjusted OR (simplified 'gist' patient information leaflet)**



Adjusted OR not reported for IMD.

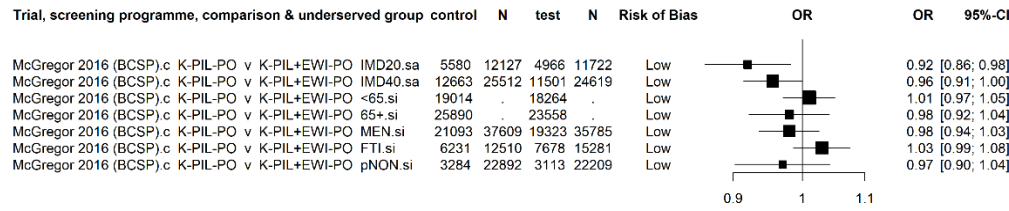
## 13 Narrative patient information leaflet (BCSP)

**Figure 25 RD (narrative patient information leaflet)**



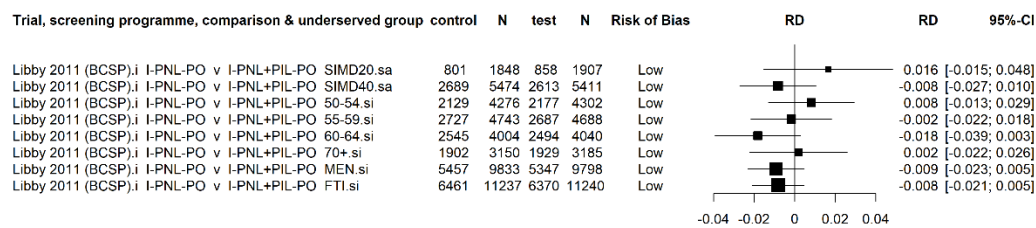
Assumes ICC of 0.03 because ICC not reported.

**Figure 26 Adjusted OR (narrative patient information leaflet)**

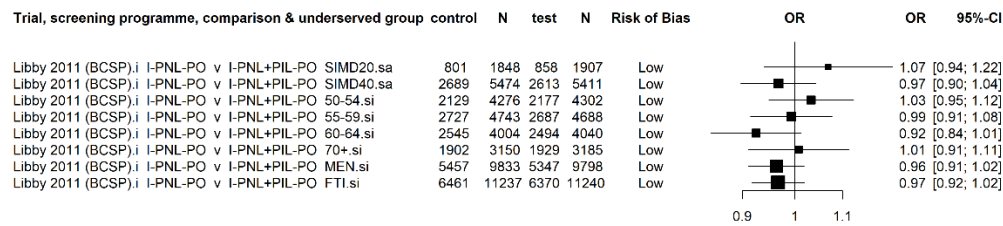


## 14 Information sent with pre-notification letter or home test kit (BCSP)

**Figure 27 RD (information sent with pre-notification letter or home test kit)**

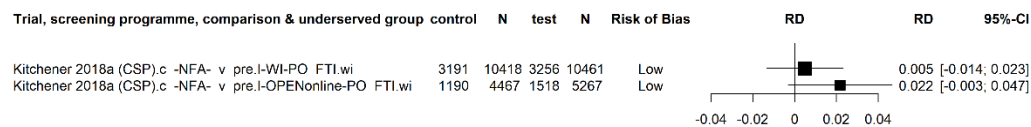


**Figure 28 OR (information sent with pre-notification letter or home test kit)**

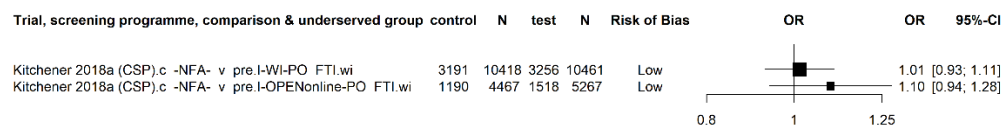


## 15 Pre-notification letters (CSP)

**Figure 29 RD (pre-notification letters)**



**Figure 30 OR (pre-notification letters)**



## 16 Tailored invitations (BSP)

Figure 31 RD (tailored invitations)

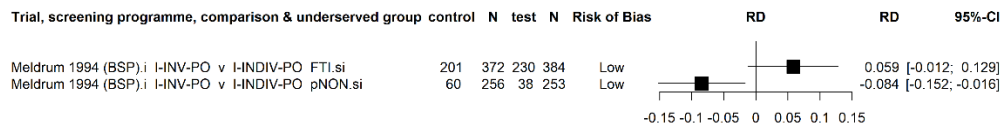
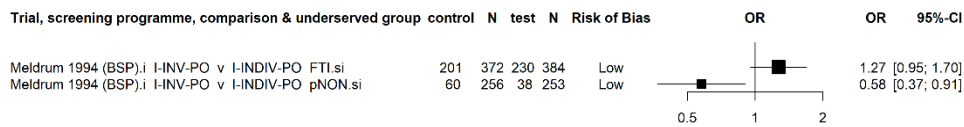


Figure 32 OR (tailored invitations)



## 17 Financial incentives (DES)

Figure 33 RD (financial incentives)

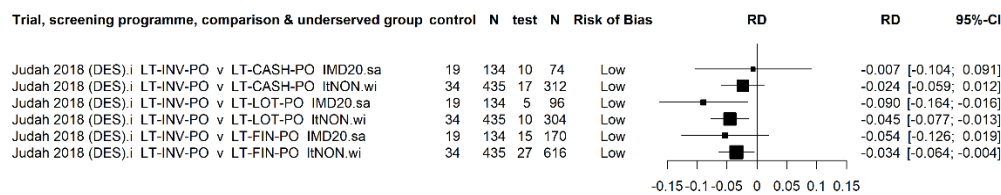
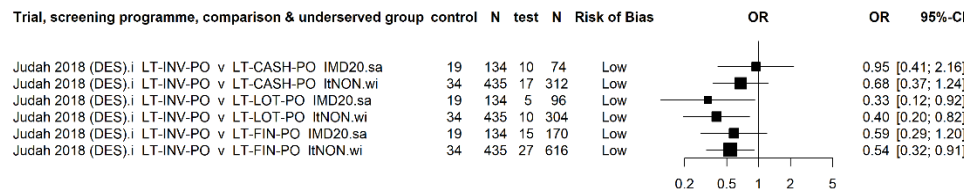
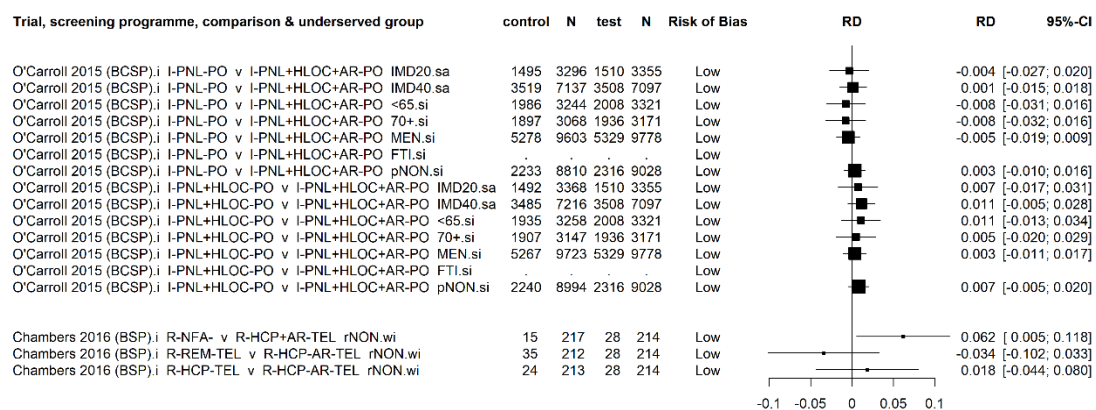


Figure 34 OR (financial incentives)



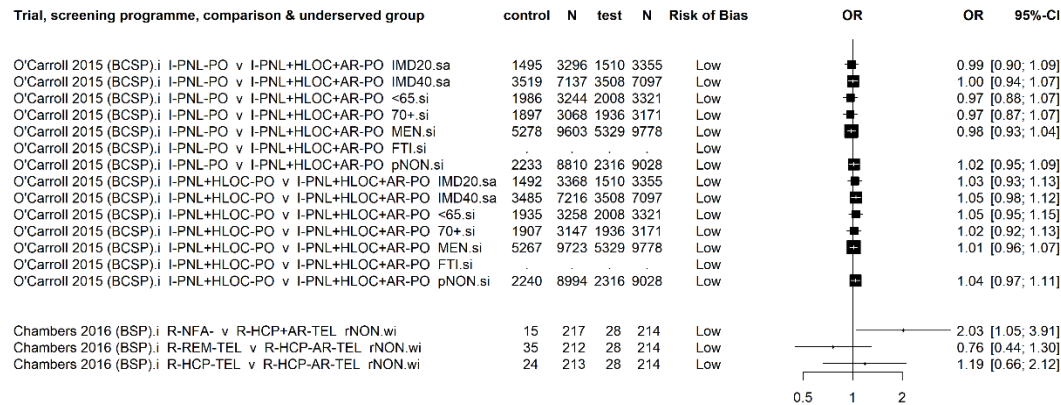
## 18 Anticipated regret (BCSP, BSP)

Figure 35 RD (anticipated regret)



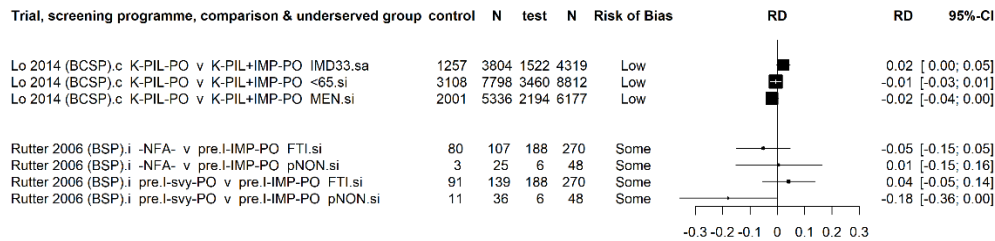


**Figure 36 OR (anticipated regret)**

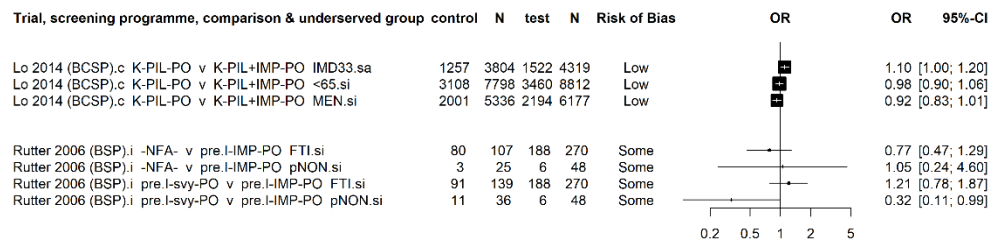


## 19 Implementation Intentions, planning (BCSP, BSP)

**Figure 37 RD (implementation intentions, planning)**



**Figure 38 OR (implementation intentions, planning)**

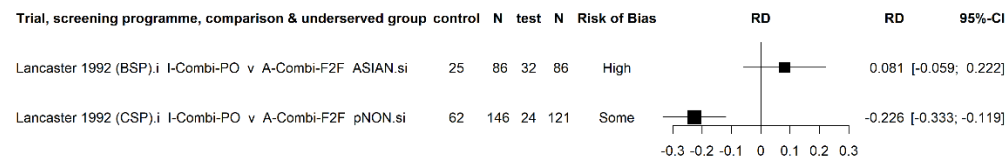


## 20 Psychoeducational booklet (BSS)

No eligible numerical results were reported for this trial; reported results are detailed in Appendix 1 (Trial Summaries and Risk of Bias).

## 21 Combined invitations for BSP and CSP

**Figure 39 RD (combined invitations for BSP and CSP)**



**Figure 40 OR (combined invitations for BSP and CSP)**

