Uptake and long-term psychosocial outcomes of the UK Lung Screening trial

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Lung cancer is an area of unmet need

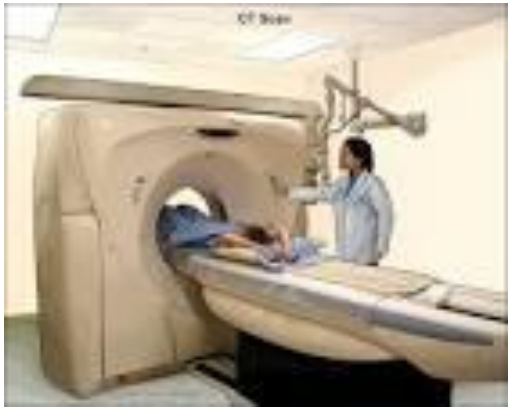
Lung cancer statistics

- Most common cause of cancer mortality in the UK
- Five year survival rate <10%

Lung cancer early detection strategies are essential

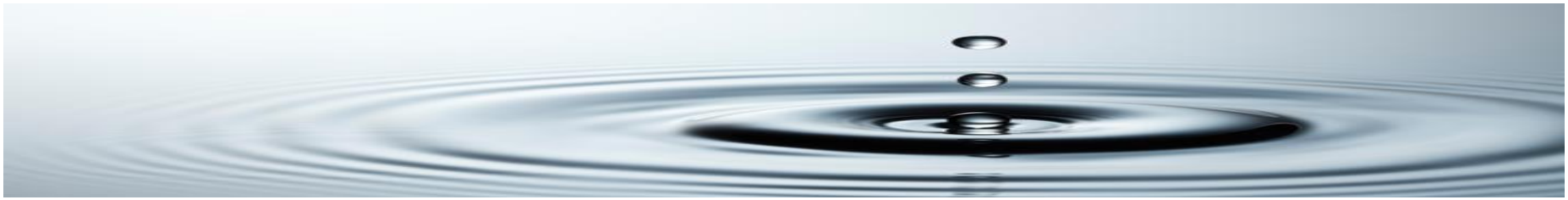
Low dose computed tomography (CT) screening

- 20% reduction in mortality in a high risk US trial (Aberle et al, 2011)
- High false positive rate



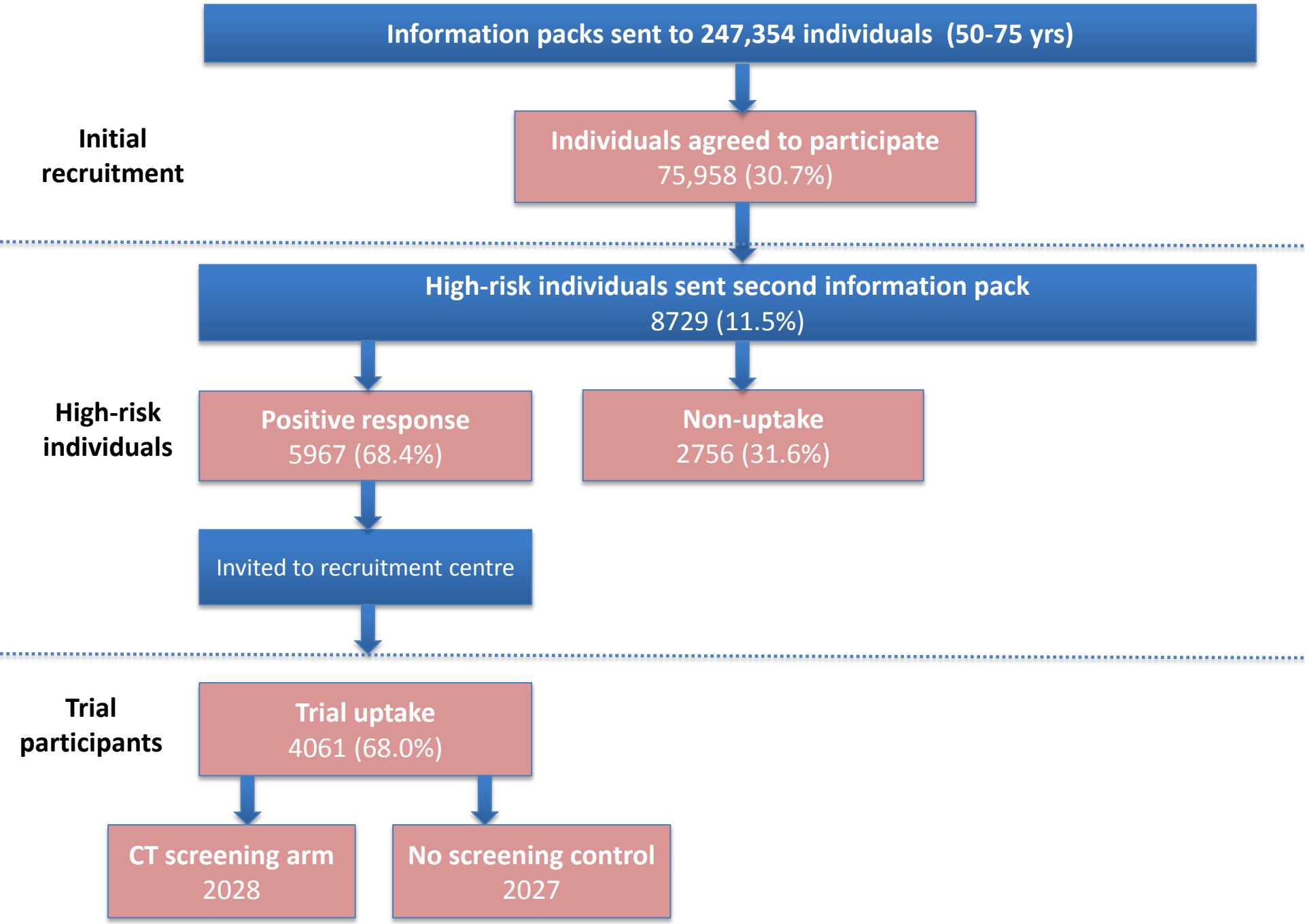
Psychosocial effects of lung screening

- Wilson & Jungner criteria: acceptability, benefit/harm ratio
- Barriers to lung screening uptake include smoking and fearful/fatalistic beliefs
- Minimal effect of trial allocation or CT screening result in Dutch-Belgian, Danish and US trials
- Effects in the UK context?



UKLS Methods

- Population-based pilot RCT in high risk individuals
- Random sample of N≈250,000 (50-75 yrs) approached from six PCTs in Liverpool and Cambridge
- Questionnaire to identify those at >5% risk over 5 years (Liverpool Lung Project risk criteria)

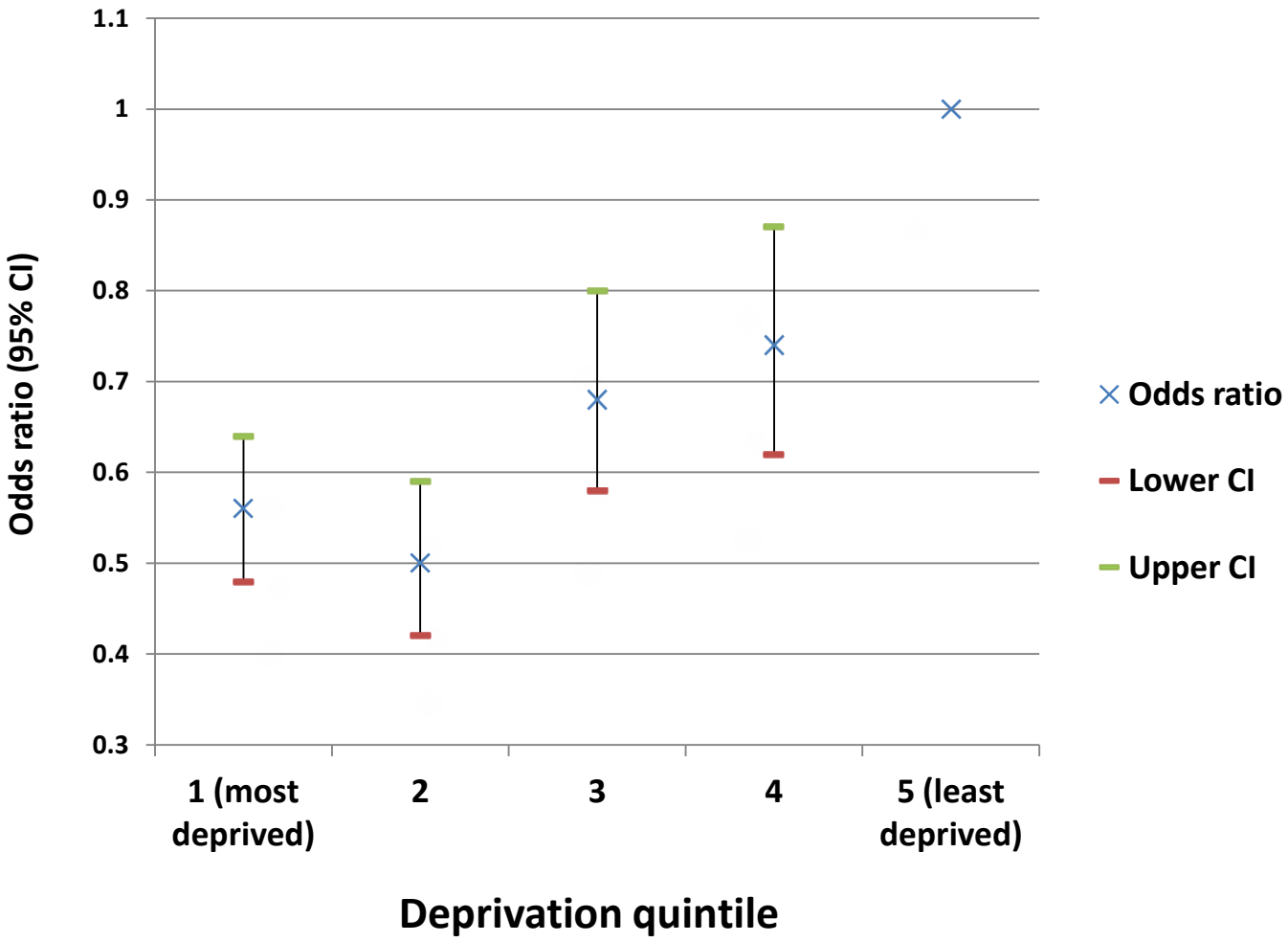

Information packs sent to 247,354 individuals (50-75 yrs)
Initial recruitment
Individuals agreed to participate
75,958 (30.7%)
High-risk individuals sent second information pack
8729 (11.5%)
High-risk individuals
Positive response
5967 (68.4%)
Non-uptake
2756 (31.6%)
Invited to recruitment centre
Trial participants
Trial uptake
4061 (68.0%)
CT screening arm
2028
No screening control
2027

Barriers to UKLS uptake in high risk individuals

	Non uptake N=2756	Uptake N=4061	multivariable OR (95% CI)	p value
Female	986 (36%)	1020 (25%)	0.64 (0.58-0.71)	<0.001
Older age (>71 yrs)	831 (30%)	1070 (26%)	0.73 (0.64-0.80)	<0.001
Current smokers	1334 (48%)	1568 (39%)	0.70 (0.63-0.78)	<0.001
Lowest IMD quintile	924 (34%)	1090 (27%)	0.56 (0.49-0.65)	<0.001
Higher affective risk	329 (44%)	1478 (36%)	0.52 (0.42-0.65)	<0.001

Ali N, Lifford K, Carter B, McRonald F, Yadegarfar G, Baldwin DR, Weller D, Hansell DM, Duffy SW, Field JK, Brain K. Barriers to uptake among high-risk individuals declining participation in lung cancer screening: A mixed-methods analysis of the United Kingdom Lung Cancer Screening (UKLS) trial. Submitted.

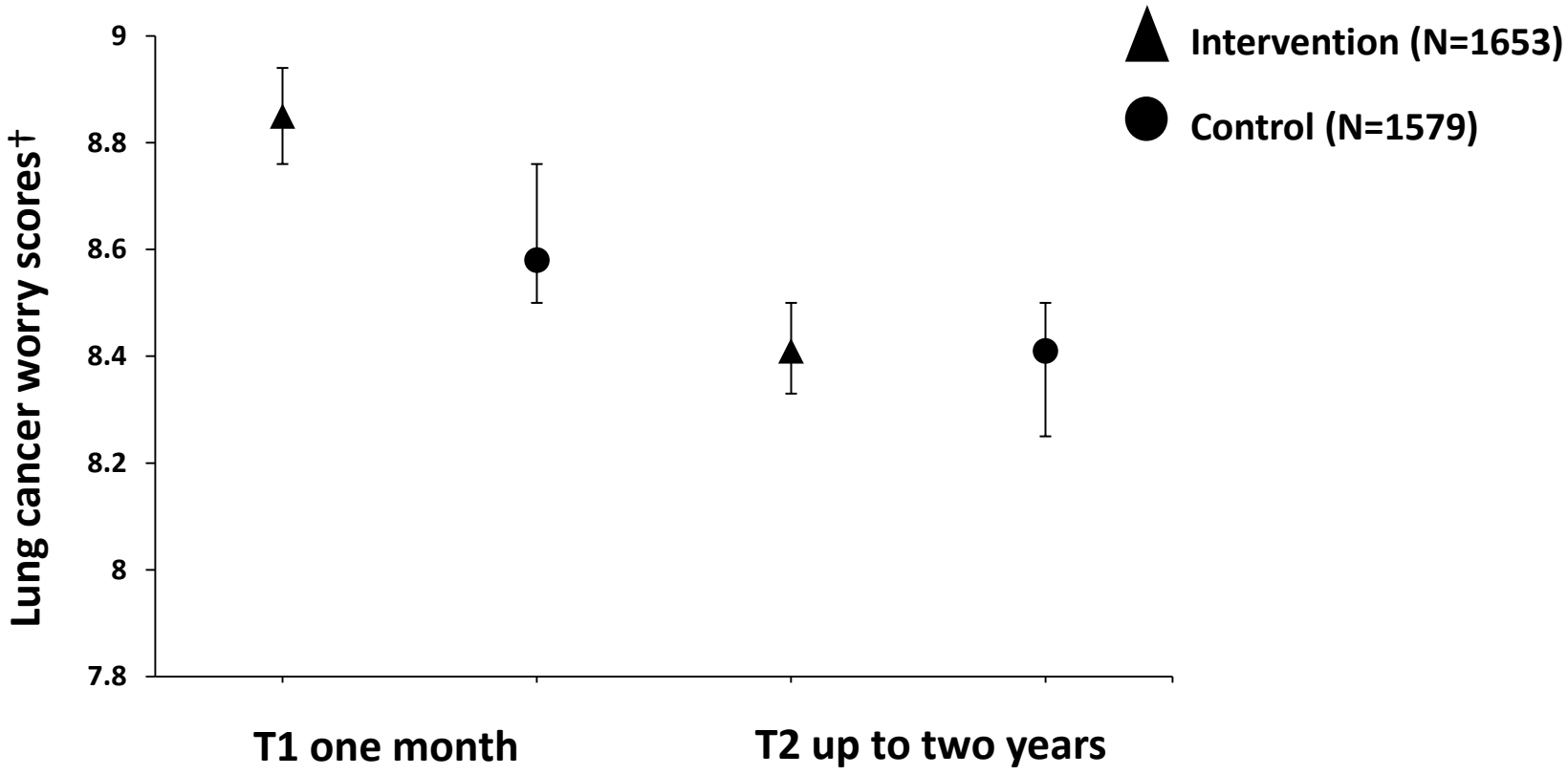
Effect of socioeconomic group on UKLS uptake



Qualitative analysis of barriers to uptake

Main themes	Subcategory	n
Practical Barriers n=350	Travel	138
	Comorbidities	120
	Carer responsibilities	43
	Already receiving scans	41
	Work and other commitments	23
	Not in area	20
	Taking part in other research	8
	Language or literacy problems	6
	Cannot be scanned	4
	Prior exposure to radiation	3
	Effort required	5
Emotional Barriers n=138	Avoidance of LC information	17
	Fear	15
	Anxiety from taking part or results	6
	Mistrust of medical system	2
	Recent bereavement	2
	Anxiety of family member	1

Impact of trial allocation (primary outcome)



† T0 baseline score included as covariate in ANCOVAs, using log transformations

Cancer Worry Scale score >12.5 corresponds to a clinically significant threshold score on GHQ-28 (Brain et al. Psycho-Oncology, 2011)

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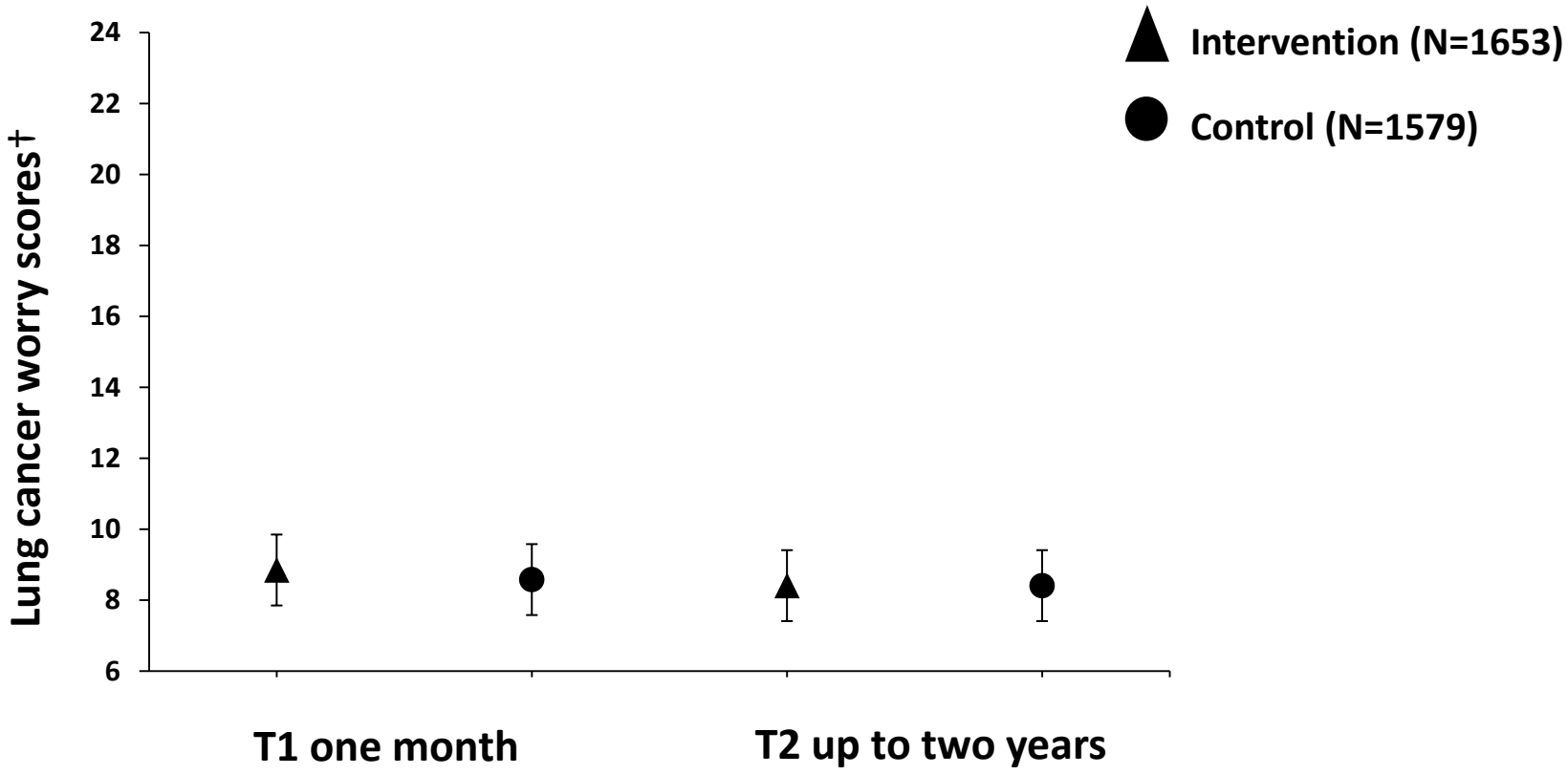

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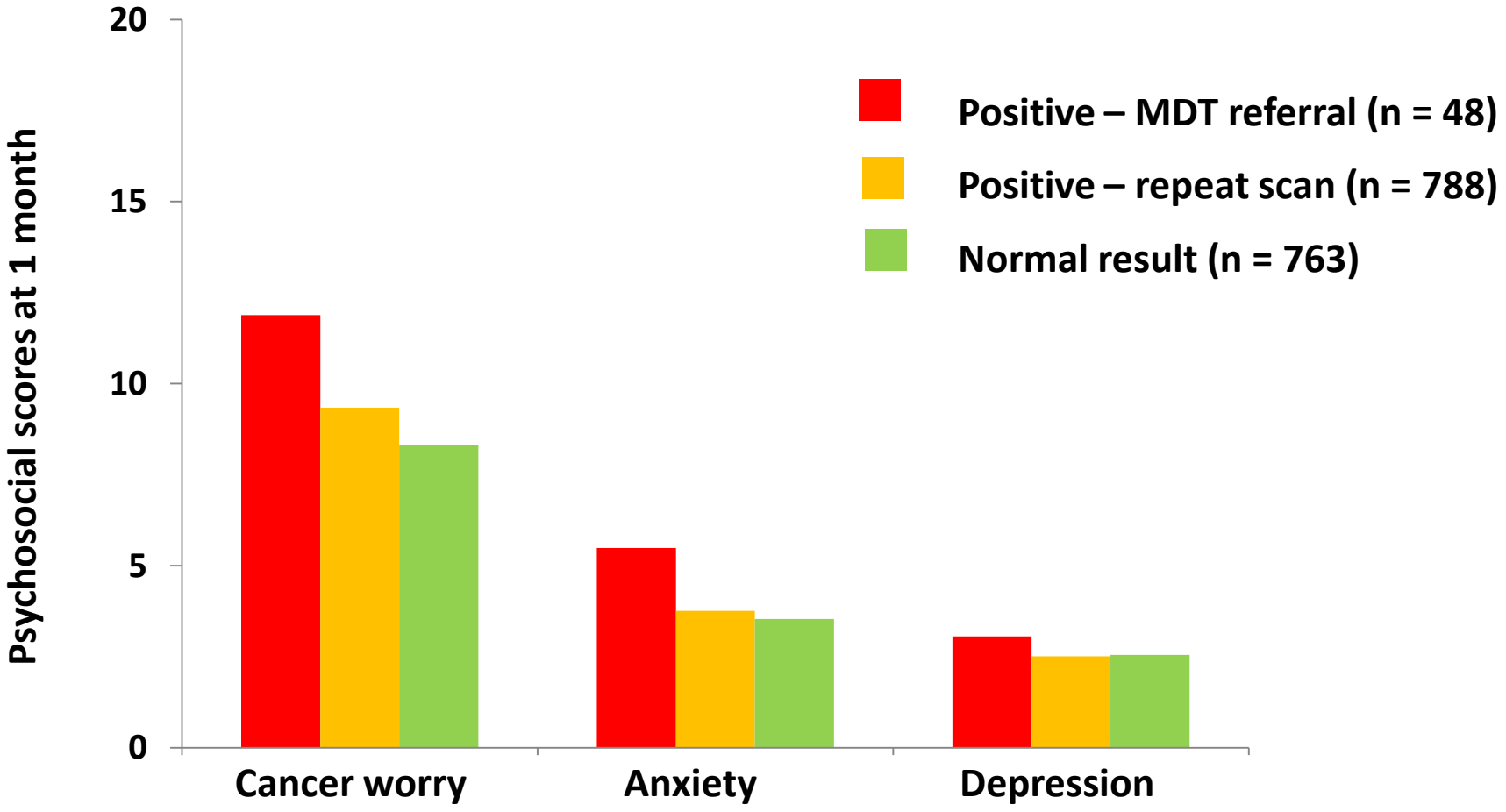
Short-term impact of CT screening result



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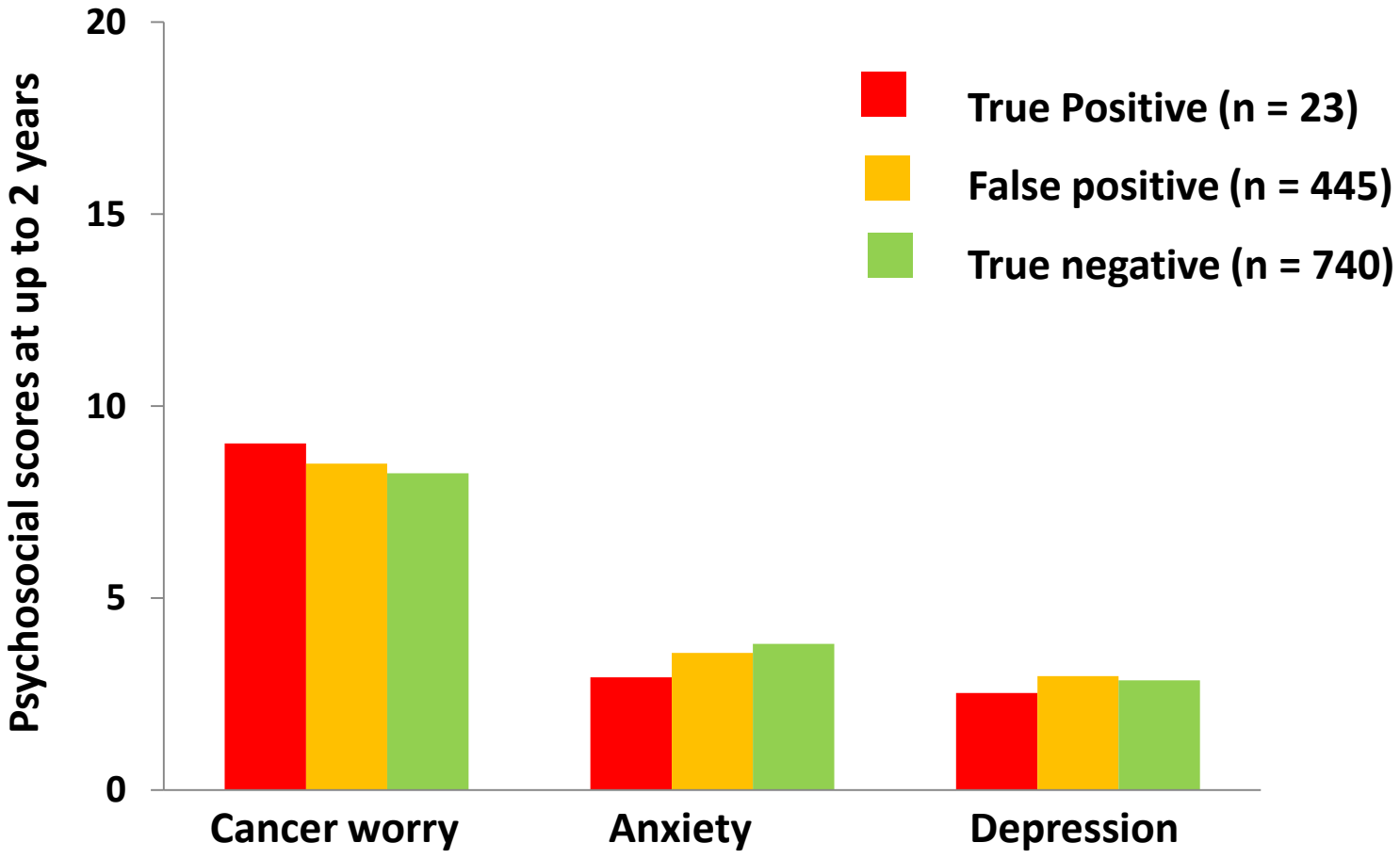
HADS Anxiety and Depression score range 0-21 (0-7 'normal', 8-10 'mild', ≥11 'moderate to severe')

Long-term impact of CT screening result



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Conclusions

- Minimal psychosocial impact of CT lung screening – in those who take part
- Under-representation of women, older people, smokers and low socioeconomic groups
- Strategies for engaging high risk, harder to reach groups
- Targeted interventions could ‘prepare the ground’ for routine lung screening

UKLS

NHS
National Institute for Health Research

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