

Online supplement

Mould and dampness in the dwelling and onset of asthma: the population-based cohort ECRHS

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When stratifying for gender, the risk estimates for new onset asthma in relation to being ever exposed to dampness and moulds were similar in males and females, with no significant sex-interaction except for moulds in the living room ($p=0.03$ for interaction). The RR for new onset asthma in relation to self-reported moulds in the living room was 0.89 (95% CI 0.51-1.52) for males and 2.02 (95% CI 1.40-2.92) for females. (Table E1). In addition we stratified the material with respect to sensitization at baseline, using a hierarchic classification of sensitization. Among subject with no sensitisation (N=3329) there were associations between new onset asthma and self-reported water damage last 12 months and self-reported mould last 12 months. Among subject with sensitisation to cat and timothy grass, but not to house dust mites or mould (N=1303) there were associations between new onset asthma and self-reported mould in the living room last 12 months. Among subject with sensitization to house dust mites but not to mould (N=1064) there were associations between new onset asthma and self-reported mould in the bedroom last 12 months. Among subject sensitized to mould at baseline (*Cladosporium herbarium* or *Alternaria alternate*) (N=339) there were associations between new onset asthma and self-reported water damage last 12 months and self-reported mould in the living room (Table E2). When testing heterogeneity between centres, meta-analysis of new onset asthma in relation to water damage last 12 months or damp spots did not reveal any heterogeneity between centres ($p=0.75$ and 0.81 , respectively), but some heterogeneity was found for indoor moulds last 12 months ($p=0.09$) (Figure E1-E3). Finally we compared RR for new onset asthma in relation to self-reported dampness and moulds (ever vs. never exposed) in those moving and not moving to another home during the follow up. RR for new onset asthma was similar in movers and non-movers for all types of exposure with overlapping confidence intervals. Among those living in the same home, there was an association between new onset asthma and self-reported mould in the bedroom and self-reported damp spots the last 12 months. Among those moving to another home, there was an association between new onset asthma and self-reported water damage. When analysing associations for new onset asthma combined with BHR, those staying in the same home had always higher RR as compared to those moving. There were significant associations for self-reported mould in the bedroom and self-reported mould in the living room while movers had no significant associations for any type of exposure (Table E3).

Table E1 New onset asthma in relation to self-reported dampness and moulds, stratified by gender (N=5171)

Stratified by gender	New onset asthma						New onset asthma & BHR					
	Males (N=3,364)			Females (N=3,478)			Males (N=2,093)			Females (N=1,895)		
	Exposed (%)	Adjusted RR [†]	95% CI	Exposed (%)	Adjusted RR [†]	95% CI	Exposed (%)	Adjusted RR [†]	95% CI	Exposed (%)	Adjusted RR [†]	95% CI
Ever exposed (ECRHS I and/or ECRHS II vs. never exposed)												
Water damage in last 12 months	18.2%	1.12	(0.74-1.70)	20.0%	1.40	(1.01-1.94)	18.6%	0.80	(0.23-2.81)	19.1%	1.71	(0.76-3.81)
Mould in the last 12 months	27.6%	1.45	(1.03-2.05)	30.2%	1.27	(0.94-1.72)	27.3%	0.85	(0.30-2.35)	29.1%	1.45	(0.72-2.92)
Mould in the bedroom	16.4%	1.53	(1.06-2.23)	20.2%	1.32	(0.95-1.85)	15.6%	0.65	(0.15-2.93)	20.2%	1.31	(0.60-2.88)
Mould in the living room	10.0%	0.89	(0.52-1.53)	9.9%	2.02	(1.40-2.92)	9.5%	1.53	(0.46-5.15)	9.7%	2.63	(1.19-5.82)
Damp spots last 12 months ^a	18.5%	1.49	(1.03-2.16)	20.8%	1.10	(0.78-1.55)	19.0%	0.41	(0.09-1.83)	20.5%	1.32	(0.61-2.87)

[†] Adjusted for age, sex, smoking status and centre.

^aAvailable only at ECRHS II

BHR=bronchial hyperresponsiveness

Table E2 New onset asthma in relation to self-reported dampness and moulds, stratified by sensitization at baseline (N=5171)

	No sensitisation (N=3329)		Only grass or cat sensitisation (N=1303)		Mite sensitisation but no mould sensitisation (N=1064)		Mould sensitisation (N=339)	
	Adj usted RR [†]	95% CI	Adj usted RR [†]	95% CI	Adj usted RR [†]	95% CI	Adj usted RR [†]	95% CI
Ever exposed (ECRHS I and/or ECRHS II) vs. never exposed								
Water damage in last 12 months	1.60	(1.07-2.39)	1.32	(0.77-2.24)	1.50	(0.89-2.54)	4.57	(2.10-9.94)
Damp spots in last 12 months ^a	1.38	(0.92-2.05)	1.63	(0.99-2.70)	1.58	(0.95-2.65)	1.09	(0.42-2.84)
Mould in last 12 months	1.57	(1.09-2.27)	1.29	(0.81-2.03)	1.43	(0.86-2.37)	2.08	(0.98-4.44)
Mould in bedroom (ever)	1.32	(0.88-1.98)	1.58	(0.94-2.65)	1.87	(1.12-3.10)	0.95	(0.34-2.68)
Mould in living room (ever)	1.19	(0.68-2.06)	2.05	(1.17-3.61)	1.70	(0.96-3.02)	4.38	(1.80-10.62)

[†] Adjusted for age, sex, smoking status and centre.

A hierachic classification based on data from ECRHS I: mould sensitisation (irrespectively of other sensitisation) >mite sensitization but no mould sensitisation (irrespectively of grass or cat sensitisation) >only grass or cat sensitisation> no atopy

^aAvailable only at ECRHS II

BHR=bronchial hyperresponsiveness

Table E3 New onset asthma in relation to self-reported dampness and moulds, stratified by moving house (N=5171)

Stratified by move home	New onset asthma						New onset asthma & BHR					
	Move home			Same home			Move home			Same home		
	Exposed (%)	RR [†]	95% CI	Exposed (%)	RR [†]	95% CI	Exposed (%)	RR [†]	95% CI	Exposed (%)	RR [†]	95% CI
Ever exposed (ECRHS I and/or ECRHS II) vs. never exposed												
Water damage in last 12 months	20.4%	1.48	(1.05-2.09)	16.8%	0.98	(0.64-1.50)	19.7%	0.94	(0.35-2.53)	16.5%	1.43	(0.55-3.70)
Mould in last 12 months	27.7%	1.21	(0.87-1.69)	26.9%	1.35	(0.96-1.89)	26.1%	0.59	(0.24-1.48)	26.7%	2.12	(0.94-4.78)
Mould in bedroom (ever)	16.8%	1.12	(0.76-1.65)	17.9%	1.61	(1.13-2.30)	16.0%	0.17	(0.02-1.28)	17.2%	2.64	(1.10-6.33)
Mould in living room (ever)	9.8%	1.39	(0.89-2.17)	9.8%	1.43	(0.91-2.25)	9.4%	0.66	(0.15-2.81)	9.4%	3.79	(1.64-8.73)
Damp spots in the last 12 months ^b	18.4%	1.12	(0.77-1.63)	21.1%	1.49	(1.06-2.09)	18.6%	0.28	(0.07-1.21)	20.8%	2.01	(0.87-4.65)

[†] Adjusted for age, sex, smoking status and centre.

^b Available only at ECRHS II

BHR=bronchial hyperresponsiveness

Figure E1 Meta analysis of new onset asthma in relation to self-reported water damage last 12 months comparing ever exposed (ECRHS I and/or ECRHS II) vs. never exposed

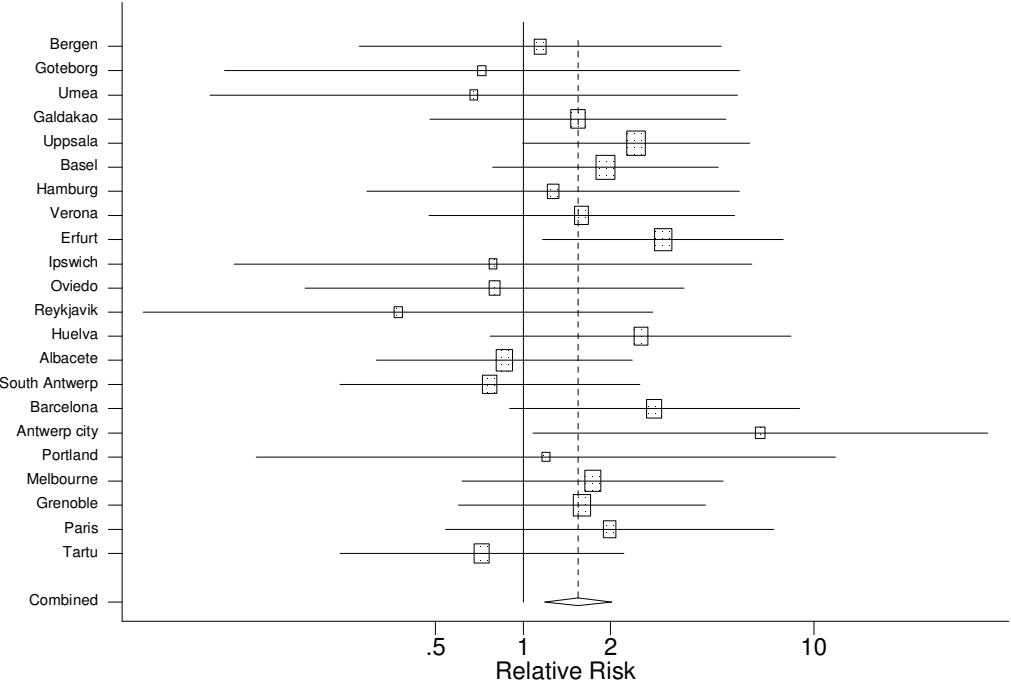


Figure E2 Meta-analysis of new onset asthma in relation to self-reported damp spots last 12 months in ECRHS II

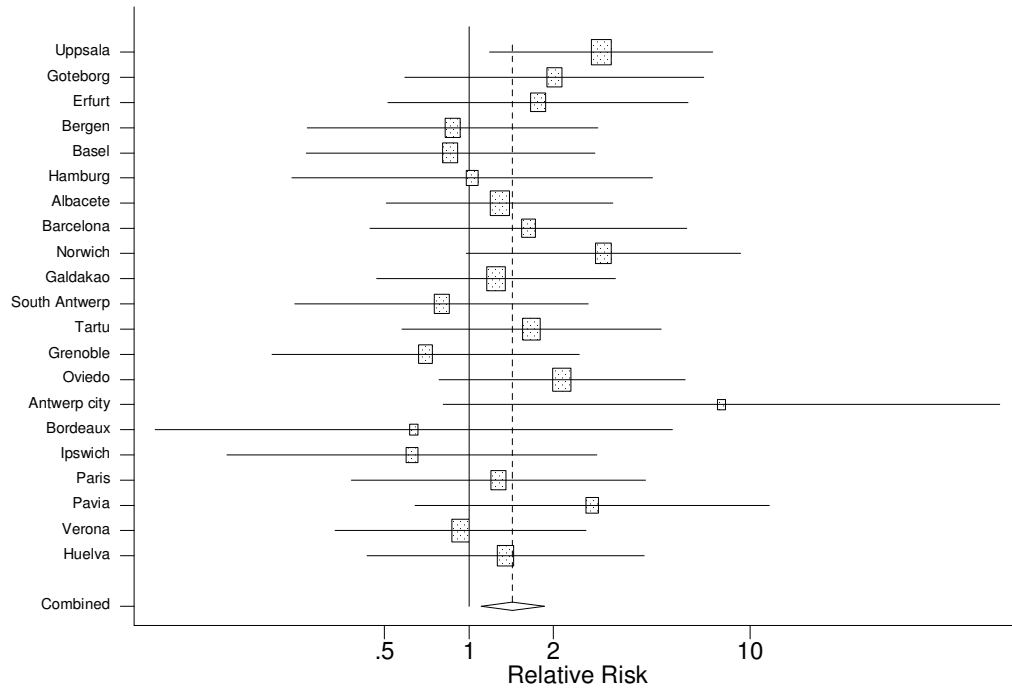


Figure E3 Meta analysis of new onset asthma in relation to self-reported mould last 12 months comparing ever exposed (ECRHS I and/or ECRHS II) vs. never exposed

