

Niamh at 9 months



Niamh at 3 years



Niamh at 5 years



# Maternal smoking during pregnancy and infant's respiratory health.

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# Overview of Presentation

- **Background**
- **Aim**
- **Findings**
- **Discussion**



# Introduction

- **Exposure to maternal smoking increases the risk of respiratory illnesses during early childhood**
- **Previous studies could not differentiate between the effects of smoking during pregnancy from postnatal exposure**
- **Aim: Examine the association between maternal smoking during pregnancy and respiratory health of infants**



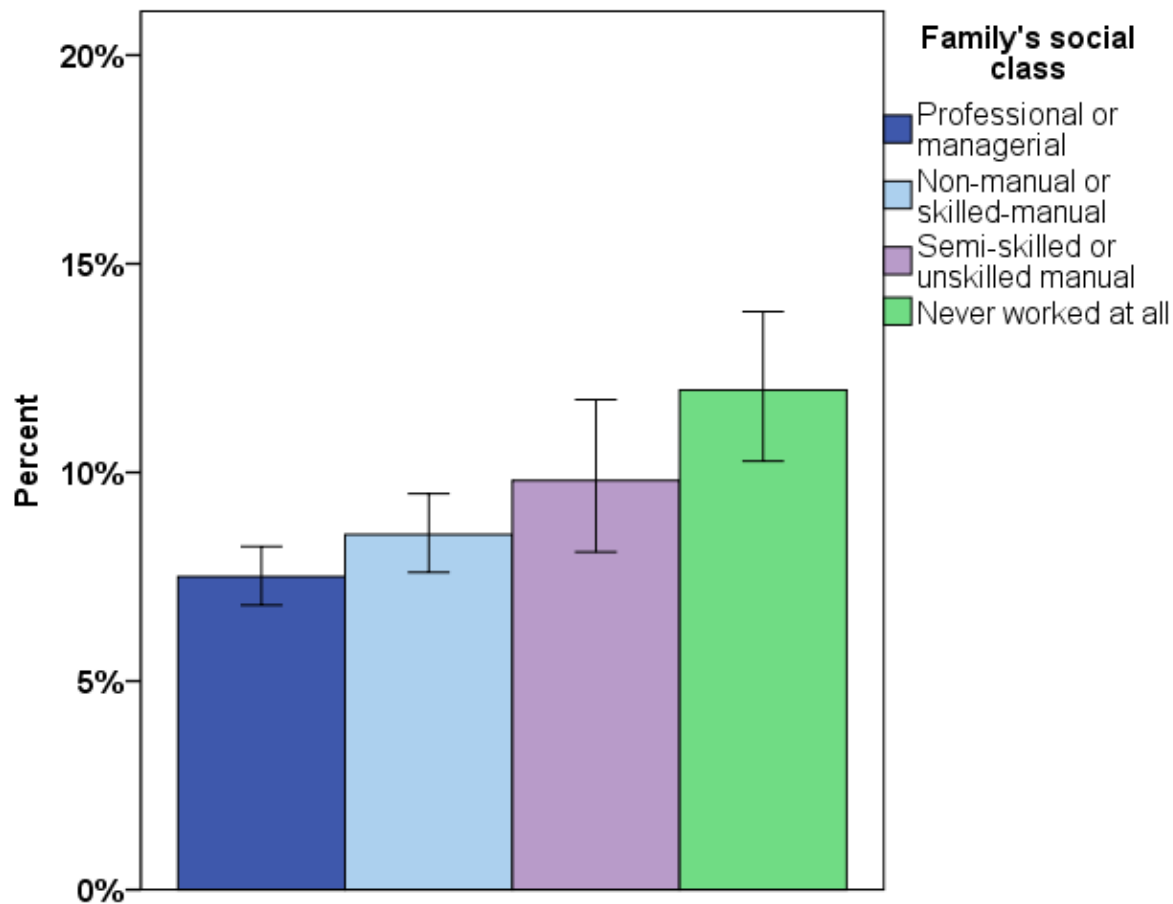
# Method

- **Infant cohort of GUI**
- **Sampled from the Child Benefit Register; Infants born in Ireland between December 2007 and May 2008**
- **11,134 nine-month-olds; 9793 re-interviewed at three years**
- **Data was reweighted to be statistically representative**



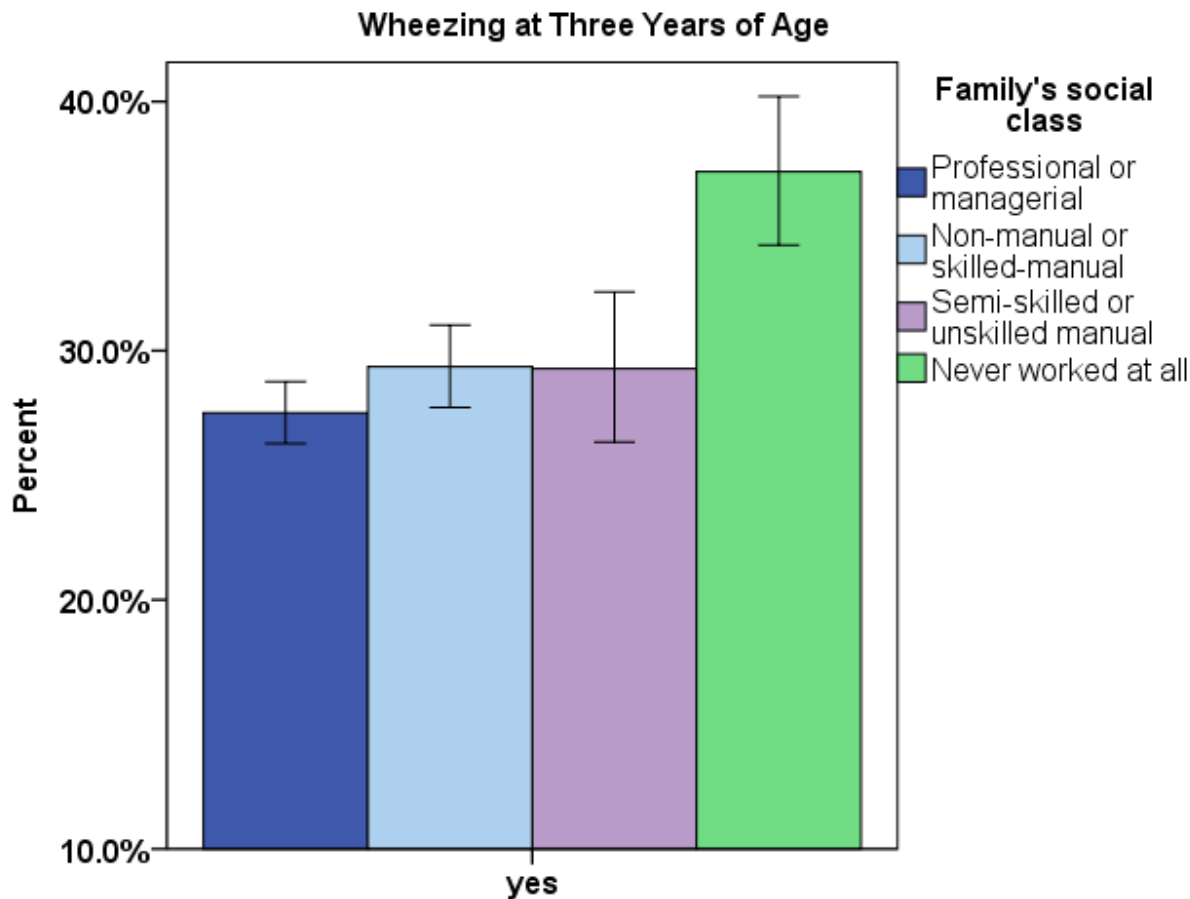
# Prevalence of respiratory problems

Wheezing at Nine Months of Age





# Prevalence of respiratory problems





# Smoking Behaviour During Pregnancy

Prevalence of Maternal Smoking		
	%	n
Smoke during pregnancy	15	1520
Smoke at 9 months	23	2314
Smoke at 3 years	26	2555



# Smoking Behaviour Post Pregnancy

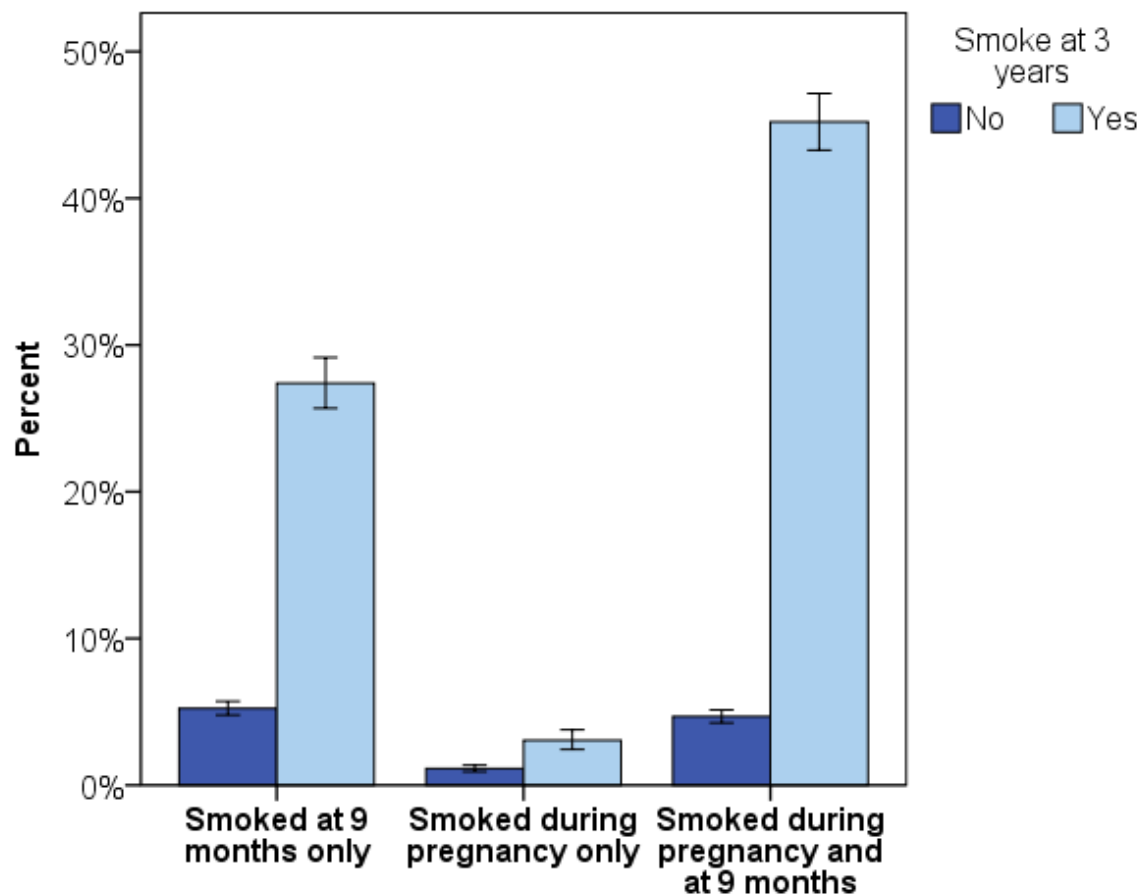
Change in Maternal Smoking		
	9 months	3 years
	% (n)	% (n)
Never smoked	72 (7926)	68 (6697)
Smoked pre and post pregnancy	14 (1600)	12 (1177)
Smoked post pregnancy only	9 (1001)	13 (1278)
Smoked during pregnancy only	2 (231)	1 (82)





# Smoking Behaviour Post Pregnancy

Change in smoking behaviour over time



# Smoking & Wheeze

Odds of experiencing wheeze at 9 months				
	Crude OR	95% CI	Adj OR	95% CI
Never smoked	-	-	-	-
Smoked pre and post pregnancy	1.7	1.5-2.1	1.5	1.2-1.9
Smoked post pregnancy only	0.9	0.7-1.1	0.9	0.6-1.2
Smoked during pregnancy only	1.2	0.7-1.9	1.1	0.6-1.8



# Other significant factors

Other significant factors	9 months		3 years	
	OR	95% CI	OR	95% CI
Maternal asthma	4.5	3.2-6.2	2.5	1.9-3.3
Being Male	1.7	1.5-2.0	1.2	1.1-1.4
Spent time in ICU during infancy	1.6	1.3-1.9	1.5	1.3-1.7
Spending time in crèche	1.45	1.3-1.7	1.4	1.2-1.5
Not being Breastfed	1.4	1.1-1.6	1.2	1.1-1.4
Number of siblings	1.3	1.2-1.4	0.9	0.9-1.0
Maternal education	0.9	0.7-1.0	1.0	0.8-1.0

# Smoking & Wheeze

Odds of experiencing wheeze at 3 years				
	Crude OR	95% CI	Adj OR	95% CI
Never smoked	-		-	
Smoked pre and post pregnancy	1.5	1.4-1.7	1.4	1.2-1.6
Smoked post pregnancy only	1.1	1.0-1.2	1.0	0.9-1.2
Smoked during pregnancy only	1.3	0.8-2.0	1.2	0.8-1.9



# Dose Relationship

## Odds of experiencing wheezing

Number of cigarettes smoked	9 months	3 years
0	-	-
0-9	1.3	1.2
$\geq 10$	1.4	1.4

OR adjusted for gender, maternal health, infant health, attending crèche, breastfed, household type and maternal education



# Discussion

- **Self reported smoking behaviour : disclosure of socially undesirable habit**
- **Recall bias in wheezing symptoms reported**
- **Relationship between maternal smoking and other outcomes e.g. behavioural, cognitive**

Gaysina D, Fergusson DM, Leve LD, et al, 2013. Maternal smoking during pregnancy and offspring conduct problems: Evidence from 3 independent genetically sensitive research designs. *JAMA Psychiatry* 70, 956–963.



# Summary

- **Smoking rates during pregnancy among mothers remain persistently high ~ 15%**
- **By three years of age 27% of mothers smoked: more people restarting rather than stopping**
- **Women more likely than men to fear negative consequences of quitting smoking, such as gaining weight**

Brugha, R., Tully, N., Dicker, P., Shelley, E., Ward, M. and McGee, H. (2009) SLÁN 2007: Survey of Lifestyle, Attitudes and Nutrition in Ireland. Smoking Patterns in Ireland: Implications for policy and services, Department of Health and Children. Dublin: The Stationery Office.



# Summary

- **Strong association maternal smoking pre and post pregnancy and wheezing in infant [OR: 1.2-1.6]**
- **By three years of age, no increased risk of respiratory illness among children when mother smoked only during pregnancy**
- **Reversibility of effect?**

- Cook, D.G. & Strachan, D.P., 1999. Summary of effects of parental smoking on the respiratory health of children and implications for research. *Thorax*, 54(4), pp.357–366.
- Neuman, Å. et al., 2012. Maternal smoking in pregnancy and asthma in preschool children: a pooled analysis of eight birth cohorts. *American journal of respiratory and critical care medicine*, 186(10), pp.1037–1043.





# Thank you

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**Department of Public Health & Primary Care**



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