

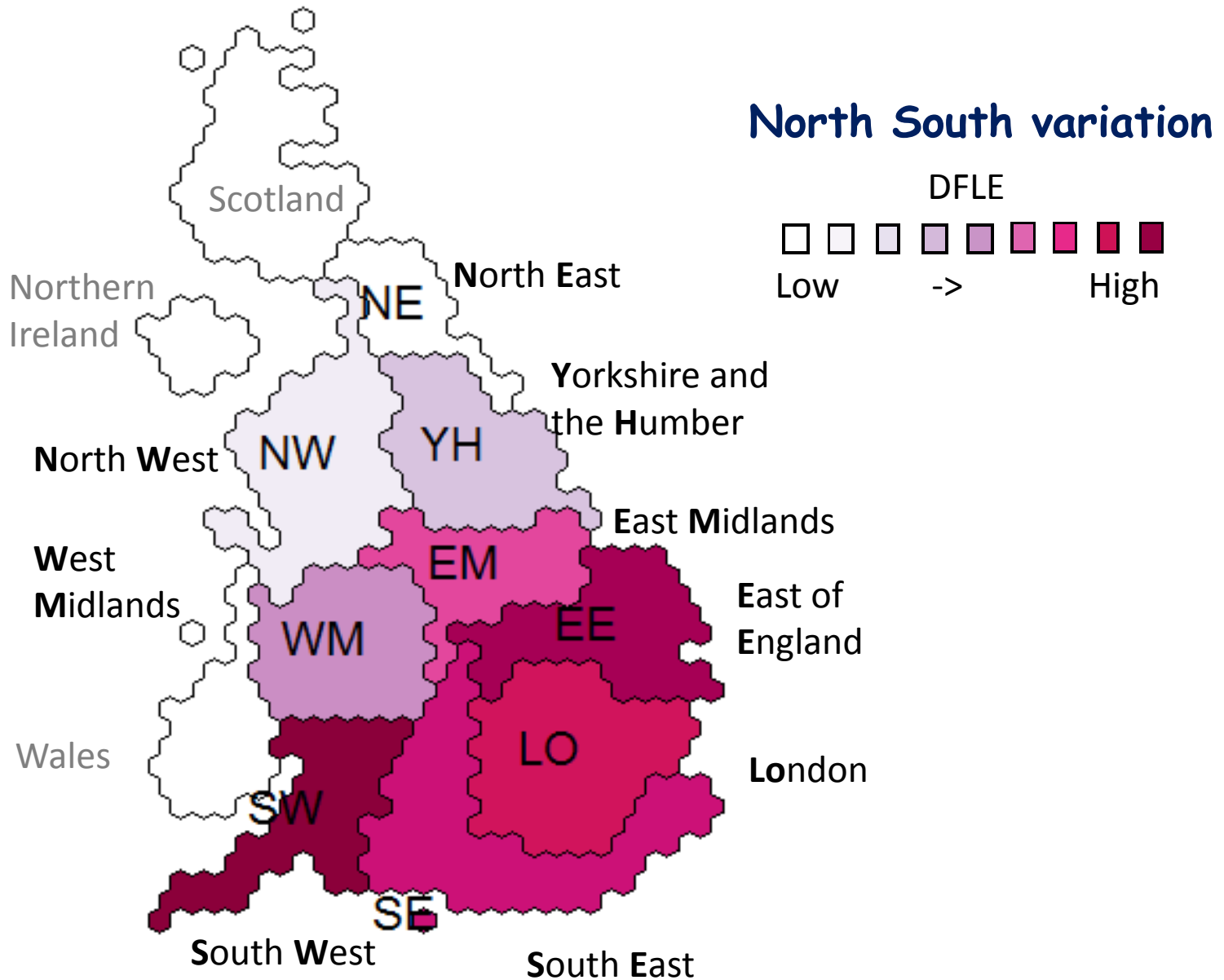
# Explaining regional health expectancy variations: the relative contribution of socio-demographic, socio-economic and health behavioural factors

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For the InHALE team Carol Jagger, Clare Gillies, Seraphim Alvanides  
Fiona Matthews and Vikki O'Neill,

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# DFLE at birth- 9 English regions -NUTS 1 regions



# LE and DFLE variation across English regions

- Larger variation in DFLE compared to LE (both genders)
- Larger variation in men compared to women
- No overlap in LE but overlap in DFLE between genders

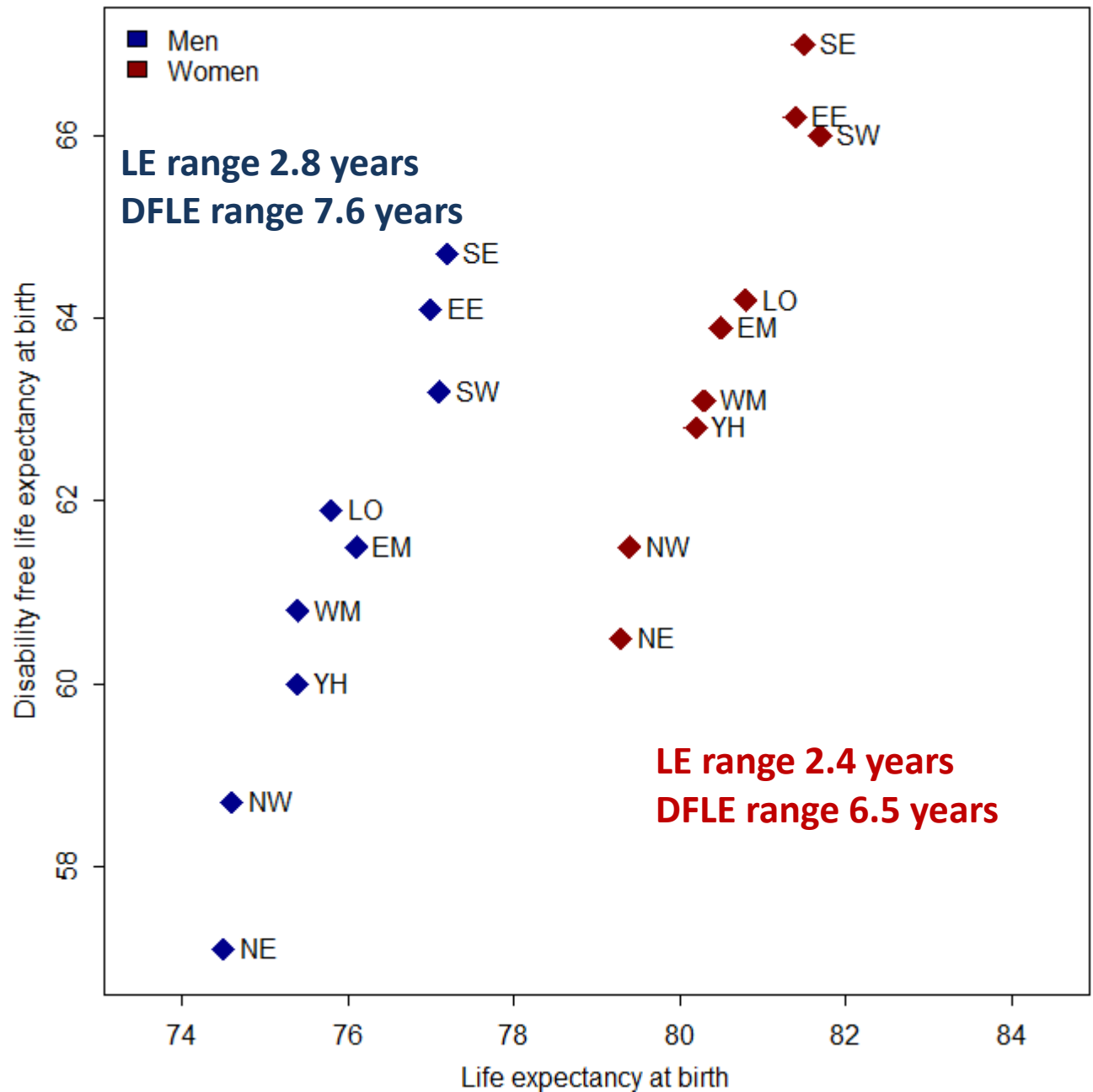
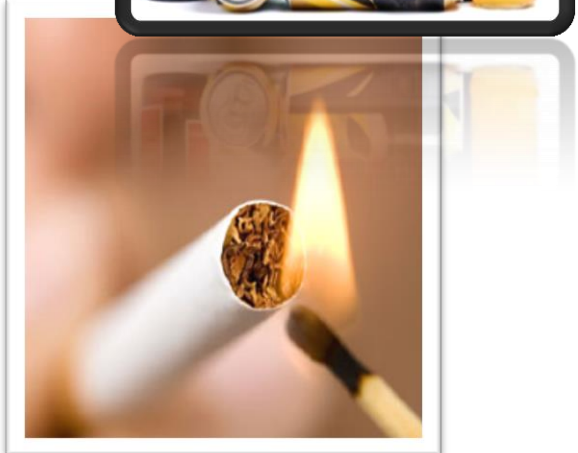
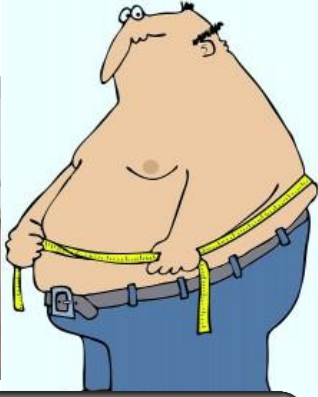


Figure Life expectancy and disability free life expectancy across English regions, men and women

# Where you live or how you live?



# Possibly drivers of inequality of DFLE across English regions

## Socio-economic area variables

- Person data
- Census 2001

Unemployed (%)

Low social class (%)

Non White (%)

Population density

Retirement potential

Education/Qualification

First generation

migrants

Explain  
variation  
on local area  
level in 1991  
and 2001

"Better"  
data for  
2001

## Life style variables

- By gender
- General Household Survey 2001

Binge drinking\* (%)

Drinking\*\* > recommended (%)

Smoking (%)

Obesity (%)

\*Adults1 who drank more than 8 units (men) and 6 units (women) on at least one day in the week prior to interview

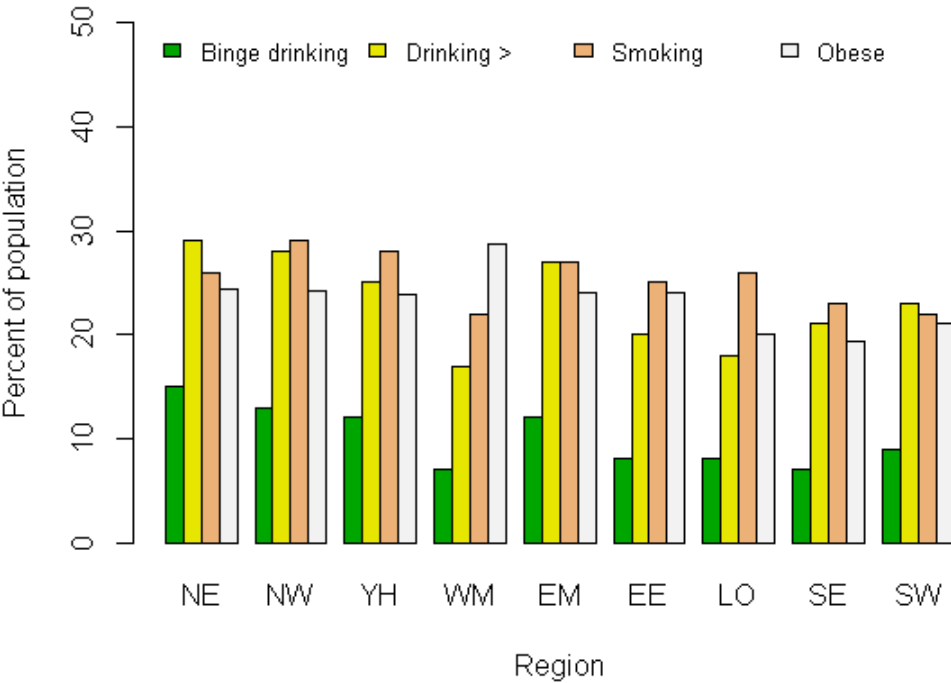
\*\*Adults1 who drank more than 4 units (men) and 3 units (women) on at least one day in the week prior to interview

# Socio-economic area variables

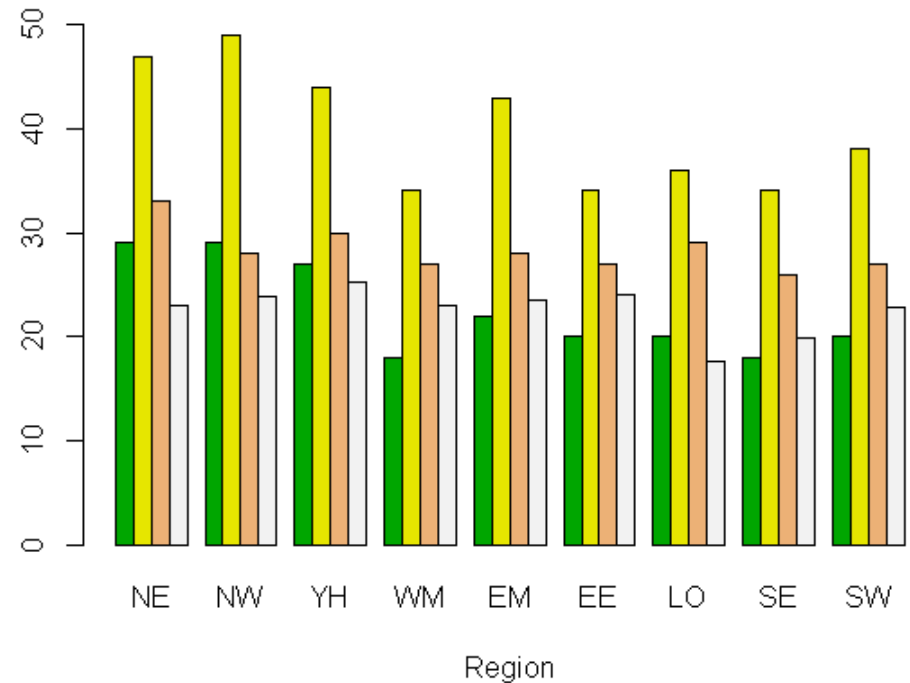


# Life style variables

Women 2001



Men 2001



# Meta regression

❖ Linear regression + accounts for uncertainty of measurement (DFLE).

+

- We use permutation tests to adjust p-values

- ✓ heterogeneity,

- ✓ few data points

- ✓ many covariates



# Results

Univariate meta-regressions

Possibly drivers of inequality of DFLE at birth across English regions

Area characteristics Socio-economic Life style choices

Variables	Women					Men				
	Coeff	SE	p*	Adjusted p**		Coeff	SE	p*	Adjusted p**	
%Unemployed	-1.45	0.43	0.012	0.077	0.085	-1.67	0.49	0.011	0.062	0.058
%Low social class	-0.89	0.15	0.001	0.004	0.004	-1.00	0.18	0.001	0.003	0.003
% No qualification	-0.41	0.11	0.009	0.057	0.062	-0.45	0.14	0.013	0.057	0.055
%Binge drinking	-0.59	0.17	0.012	0.068		-0.47	0.11	0.004	0.022	
%Heavy drinking	-0.28	0.15	0.107		0.380	-0.34	0.09	0.007	0.027	
%Smoking	-0.50	0.26	0.100	0.267	0.289	-0.96	0.26	0.008	0.052	0.051

\* Standard meta regression

\*\* Adjusted using permutation tests

# Findings and conclusion

Variation in  $DFLE_0 >$  in  $LE_0$

Causes for  $DFLE_0$  variation:  
socio-economic factors & health  
behaviours

Where we live and how we live

Socio-economic impact  $>$  health behaviour  
impact

# Findings and conclusion

For Socio-economic area variation



**Social Class composition**

# Findings and conclusion

For health behaviours:

- Obesity not significant negative relationship
- -> highest obesity WM women
- Drinking significantly negative for men
- Less women binge drink but impacts DFLE more strongly

## Outlook

- Are similar relationships found on an individual level?



THANK  
YOU

**Table 2**
**Disability-free life expectancy at birth: ranges for local authorities within Government Office Regions and Wales, 2001**

England, Wales and England and Wales

Government Office Region	Males					Females				
	Lowest DFLE		Highest DFLE		Range (years)	Lowest DFLE		Highest DFLE		Range (years)
	Local authority	DFLE (years)	Local authority	DFLE (years)		Local authority	DFLE (years)	Local authority	DFLE (years)	
North East	Easington	50.5	Tynedale	62.9	12.4	Easington	54.7	Alnwick	66.3	11.6
North West	Liverpool	53.6	Macclesfield	65.0	11.4	Knowsley	56.7	Macclesfield	67.0	10.2
Yorkshire and The Humber	Barnsley	54.9	Hambleton	65.4	10.5	Barnsley	58.7	Ryedale	68.3	9.6
East Midlands	Bolsover	55.4	Rutland	67.2	11.8	Bolsover	58.9	Rutland	68.4	9.5
West Midlands	Stoke-on-Trent	55.8	Stratford-on-Avon	65.6	9.8	Stoke-on-Trent	58.4	Stratford-on-Avon	68.2	9.8
East of England	Great Yarmouth	59.9	Uttlesford	67.7	7.7	Great Yarmouth	62.8	South Cambridgeshire	68.8	6.0
London	Tower Hamlets	55.7	Richmond upon Thames	66.6	10.9	Hackney	58.4	Richmond upon Thames	68.9	10.5
South East	Hastings	58.3	Hart	68.8	10.6	Hastings	62.2	Elmbridge	70.5	8.4
South West	Plymouth	59.2	Cotswold	67.1	7.9	Plymouth	62.2	Cotswold	69.1	6.9
Wales	Merthyr Tydfil	51.2	Monmouthshire	62.2	11.1	Merthyr Tydfil	54.1	Monmouthshire	65.2	11.1
England and Wales	Easington	50.5	Hart	68.8	18.3	Merthyr Tydfil	54.1	Elmbridge	70.5	16.4

Source: Office for National Statistics

