Lung Cancer Risk From Exposure to Radon in the Home - Are Policies in the U.K. Appropriate to the Risk?

Andrew T. Arthur MPH MCIEH FRSH

Public Health Policies

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- Unnecessary expenditure, opportunity costs if risk wrongly attributed or applied


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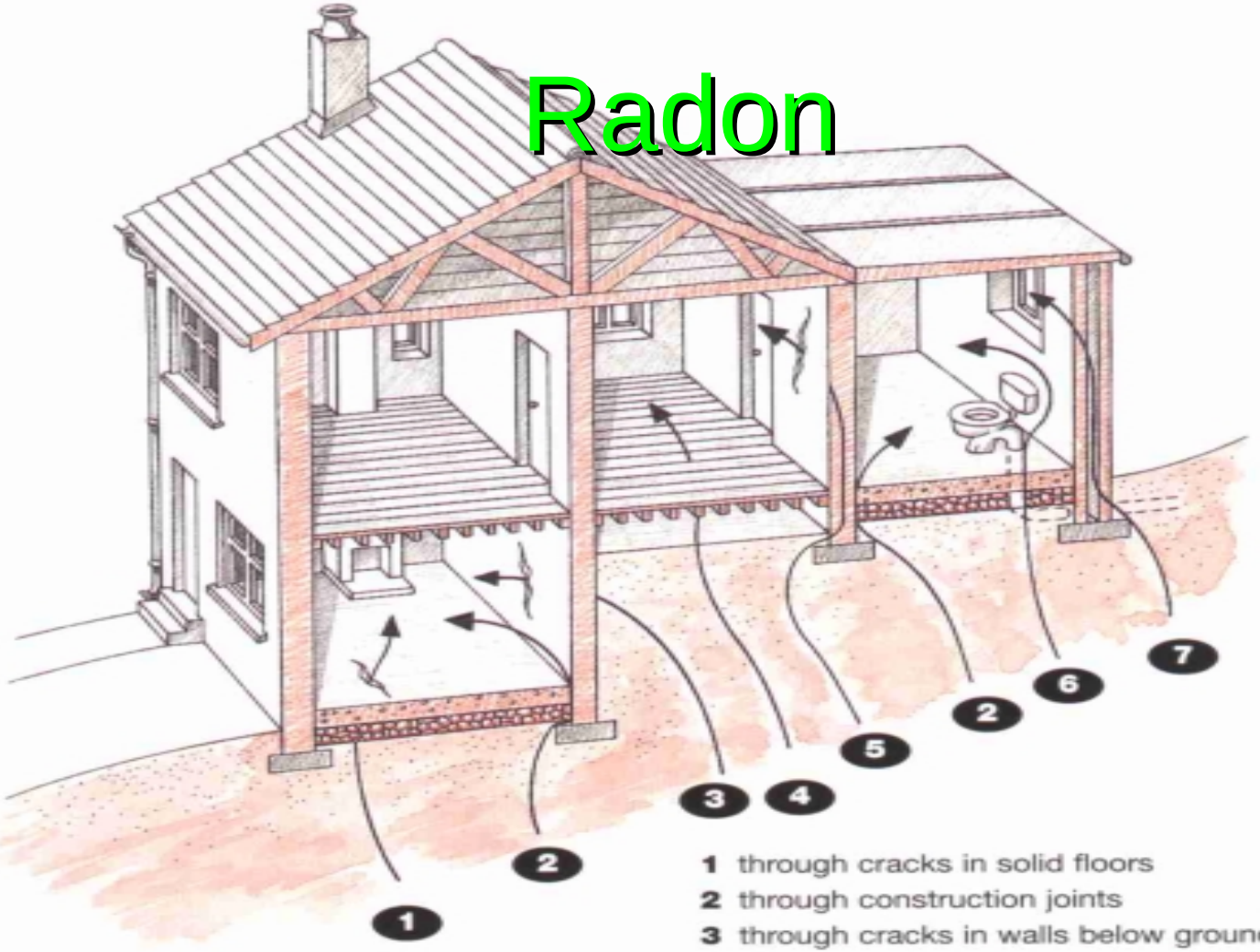
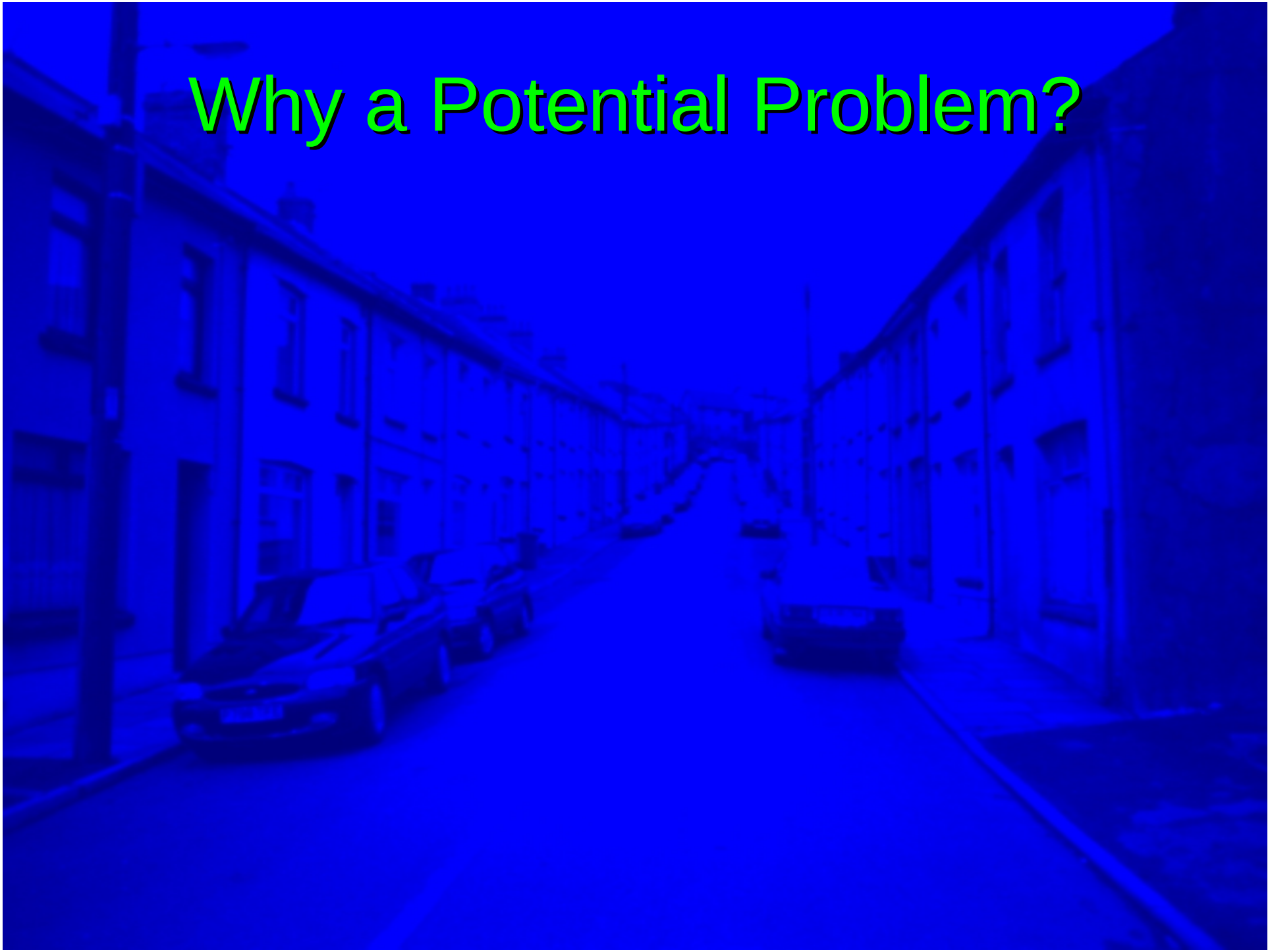
- Seeps through soil and can enter buildings

Radon



1 through cracks in solid floors
2 through construction joints
3 through cracks in walls below ground level
4 through gaps in suspended floors
5 through cracks in walls
6 through gaps around service pipes
7 through cavities in walls

Why a Potential Problem?



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- Evidence linking it to lung cancer


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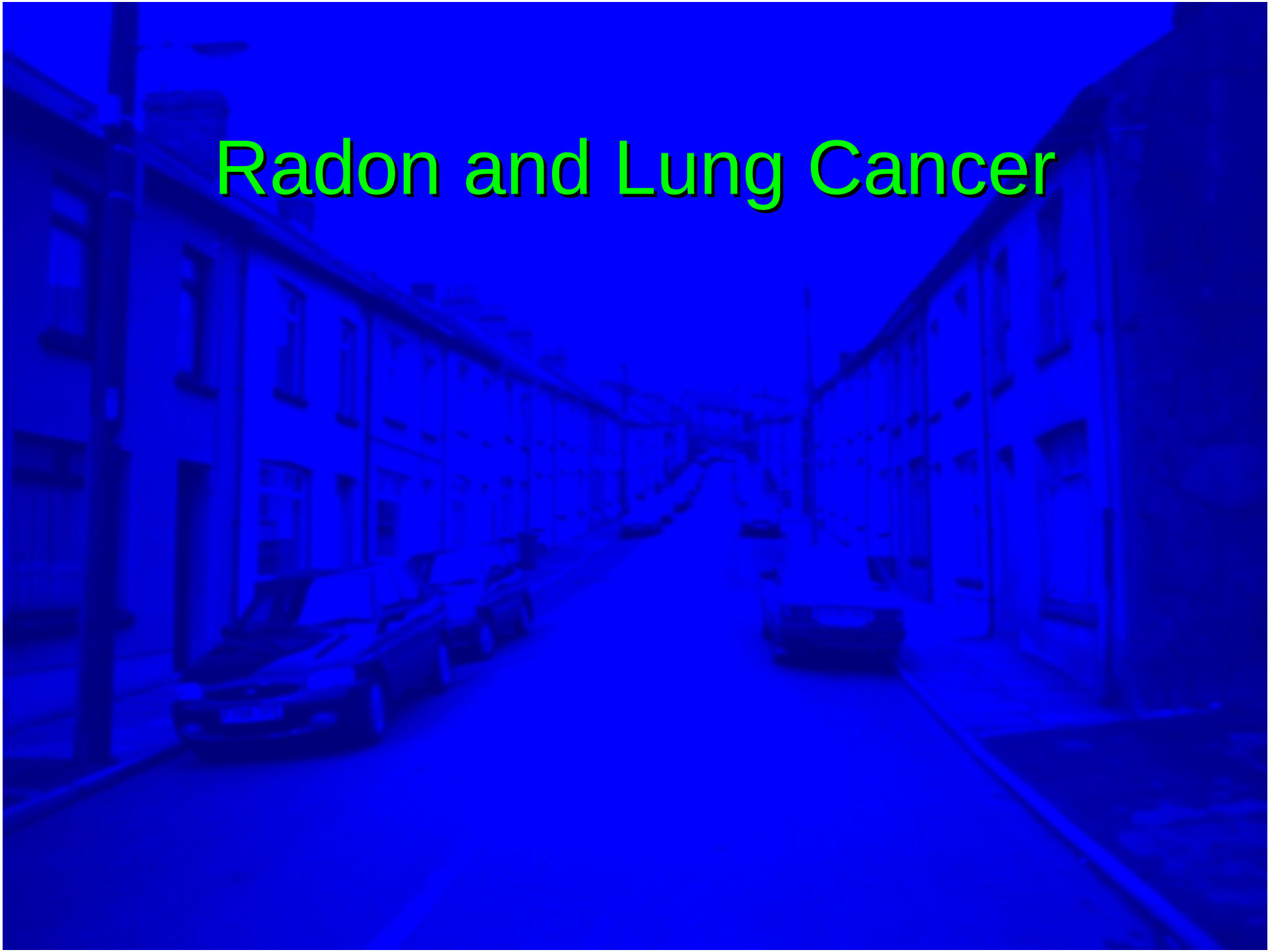
- Most common form of cancer death in U.K.
- Tobacco implicated in vast majority of cases (approx. 90%)

Radon and Lung Cancer



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- Since 1980’s exposures in certain homes considered potential cause of lung cancer

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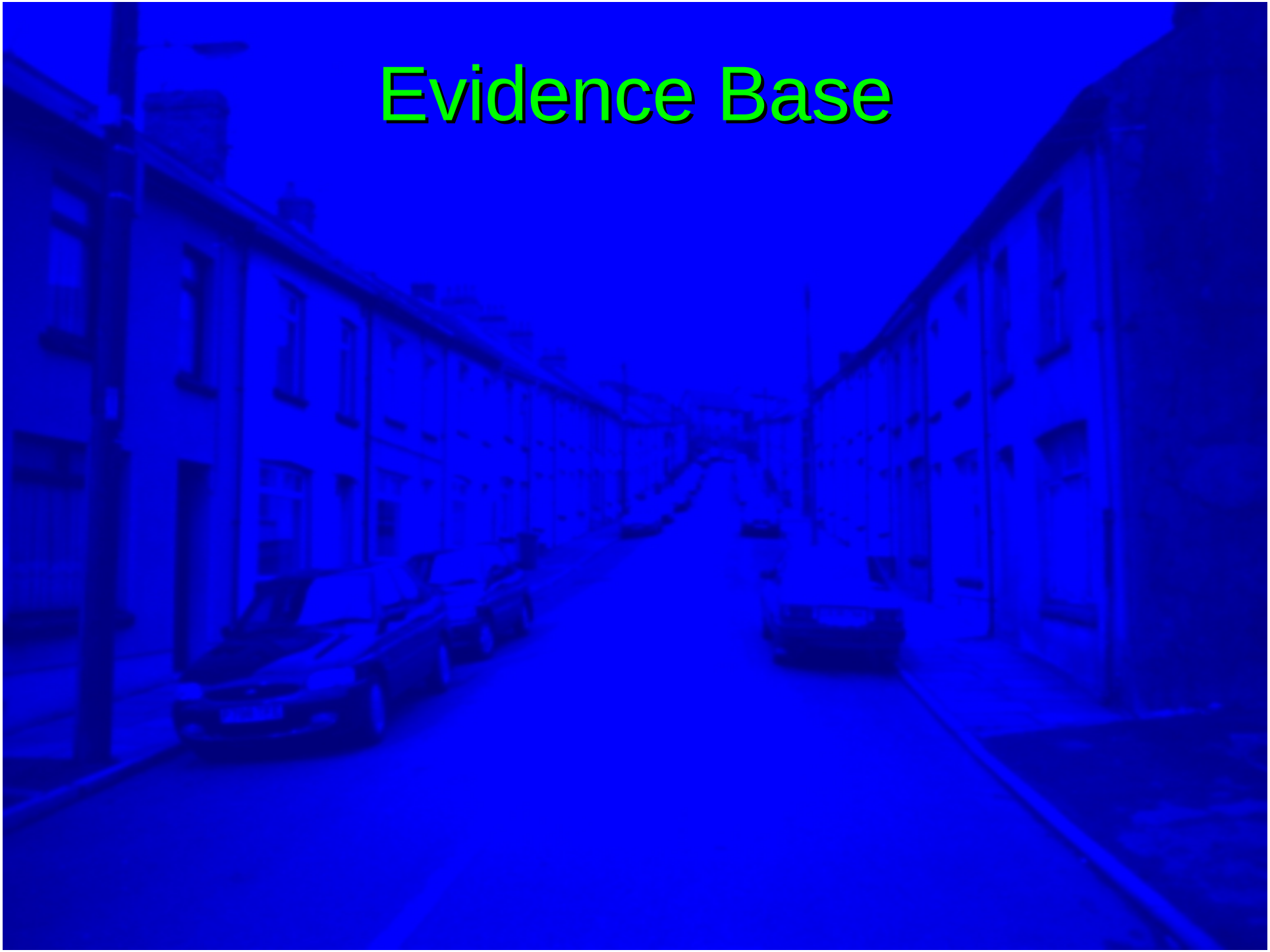
- Introduction of changes to building regulations to require protection in new homes

Evidence Base



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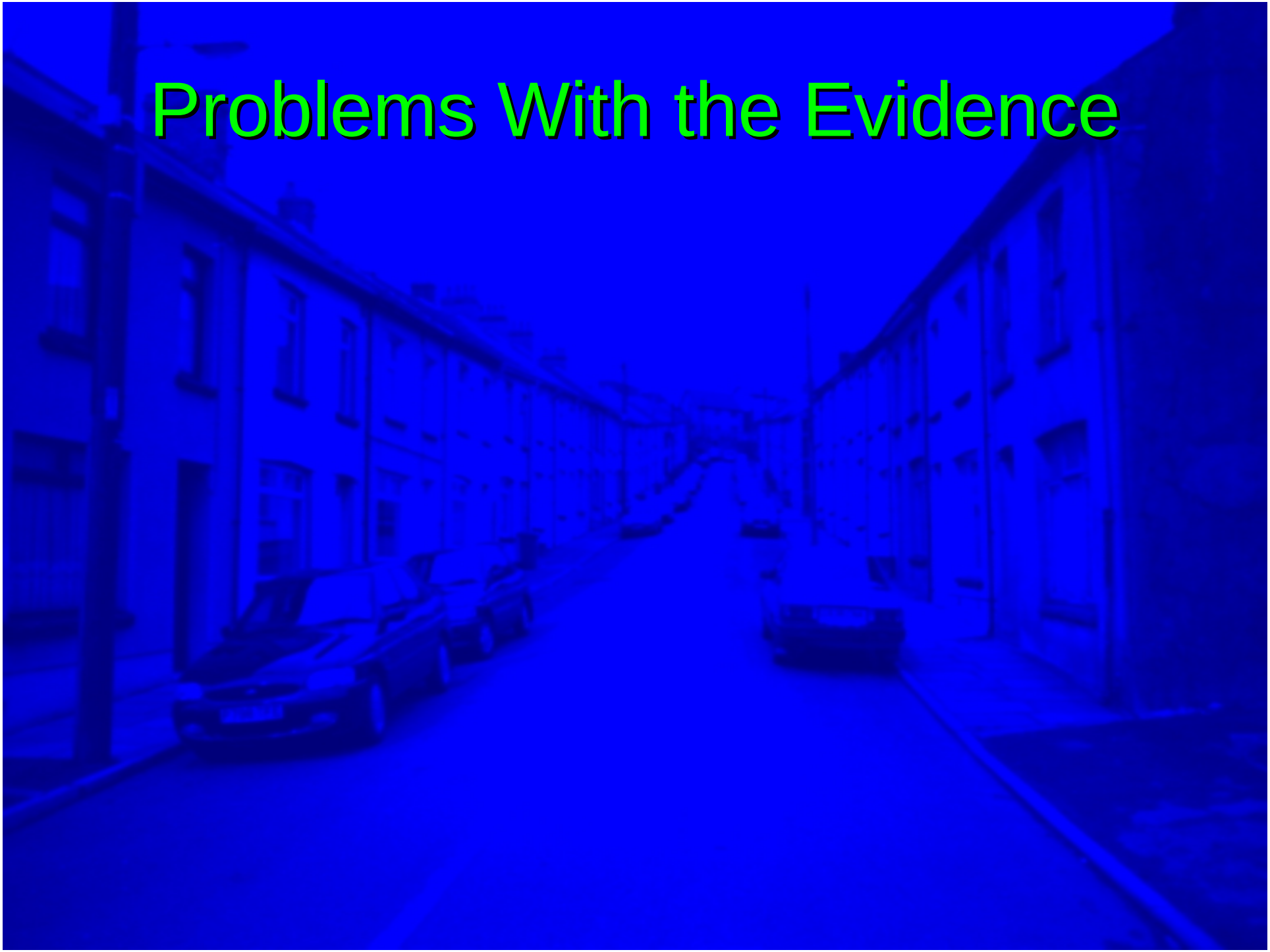
Population level:

- Direct - from ecologic studies of cancer mortality and average radon levels

Problems With the Evidence



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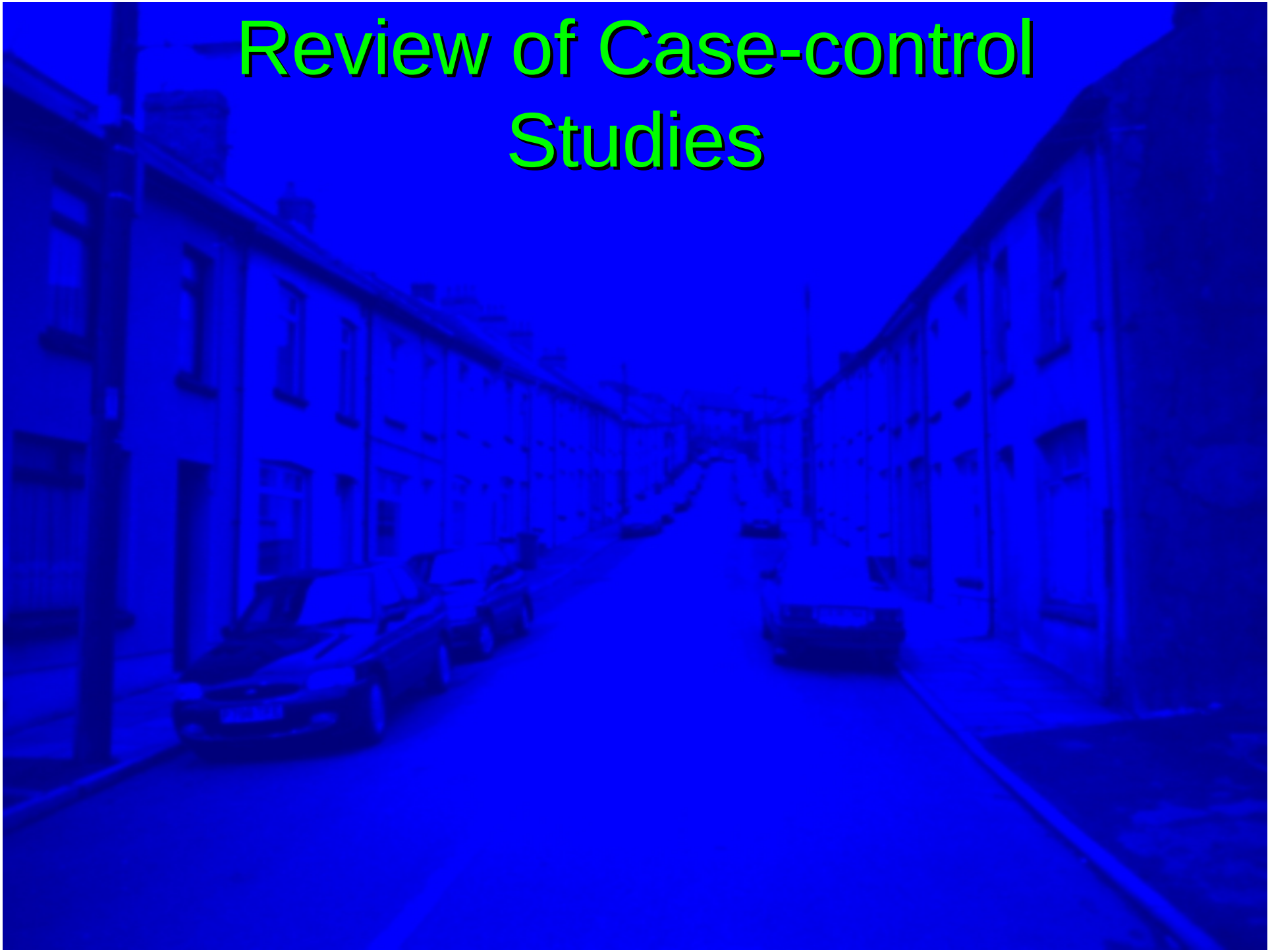
- Limits to ecologic method

Review of Case-control Studies



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- Inadequacies of sample size and power to resolve risk with precision


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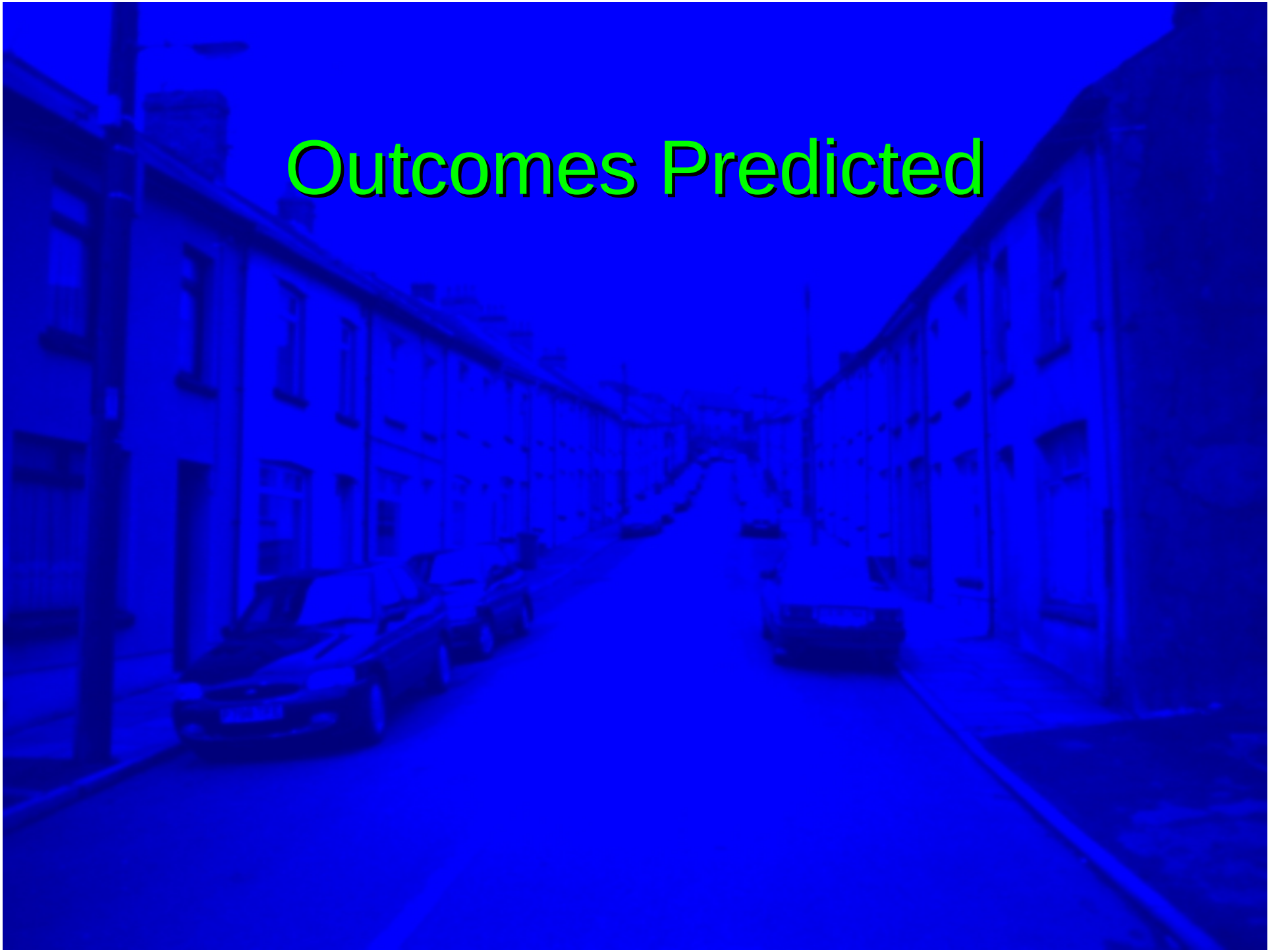
BEIR VI model which assumes LNT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- Between 500 and 1300 of these are in non smokers

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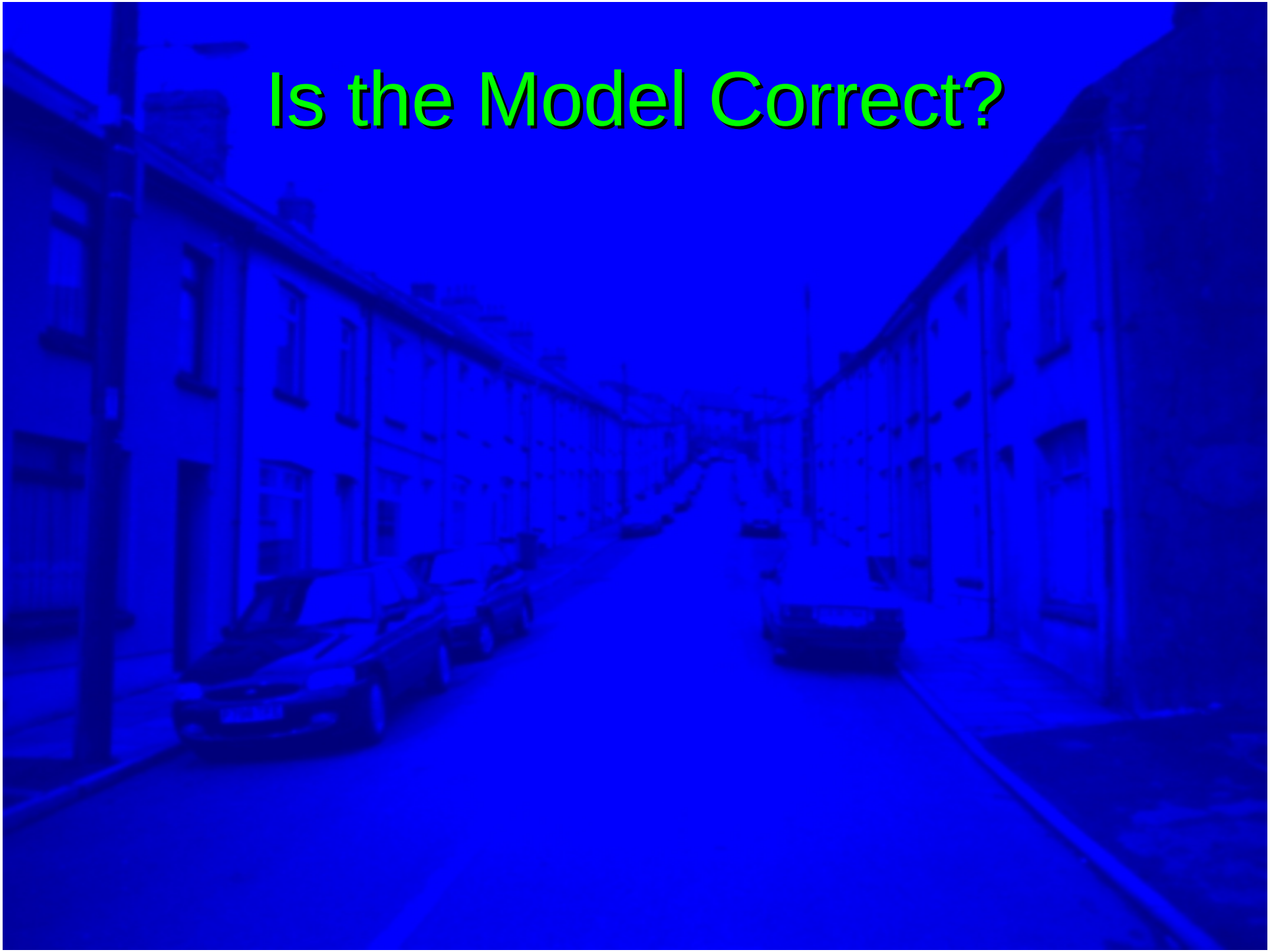

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	Radon, pCi/l				
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Source: Warner et al (1995)

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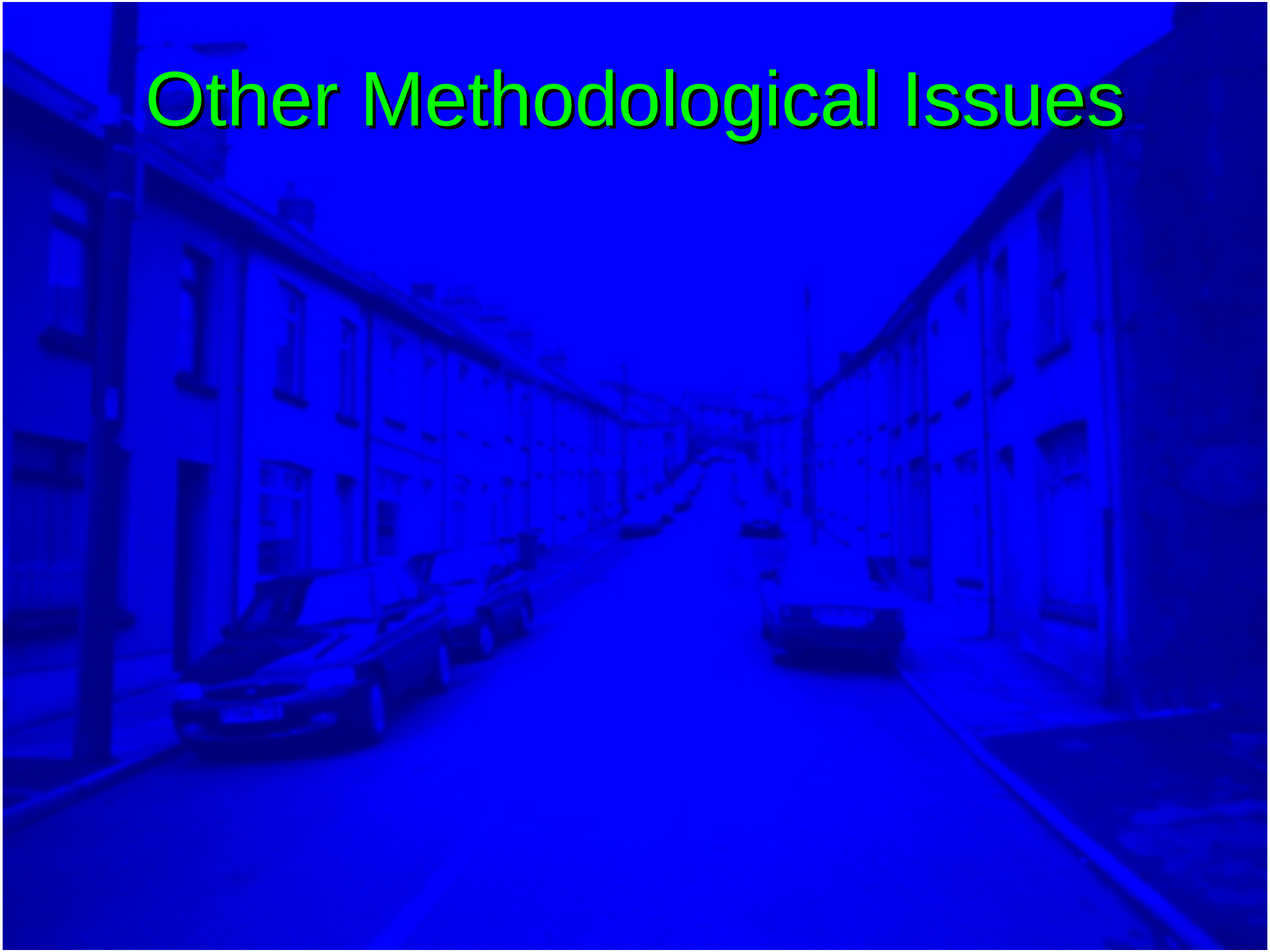
Mobility model	***158 (34.9%)***	***264 (58.3%)***	31 (6.8%)	2 (0.4%)	453 (100%)

Source: Warner et al (1995)

Other Methodological Issues



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- Ceasing smoking of considerably more benefit

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- Have not compared radon programme costs with other interventions

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- Re-evaluate numbers and locations of homes with high radon levels
- Evaluate costs of radon remediation against smoking cessation

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