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# The Handbook of Road Safety Measures

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# Handbook of Road Safety Measures

- Describes the effects of 124 road safety measures
- Based on a critical and systematic review of current knowledge
- Based on a Norwegian book published in 1997
- Parts of the book have been updated



# Main questions the book answers

- Which road safety measures exist and can be used?
- Which road safety problems do these safety measures help solve?
- What are the effects of road safety measures on accidents or injuries?
- What are the effects of road safety measures on mobility and the environment?
- What are the costs of road safety measures?
- Which road safety measures give the greatest benefits for a given cost?

# Four main parts of the book

1. Introduction
2. General-purpose policy instruments
3. Specific traffic safety measures
4. Vocabulary and index

# Standard layout for chapters describing road safety measures

- Problem and objective
- Description of the measure
- Effect on accidents
- Effect on mobility
- Effect on the environment
- Costs
- Cost-benefit analysis

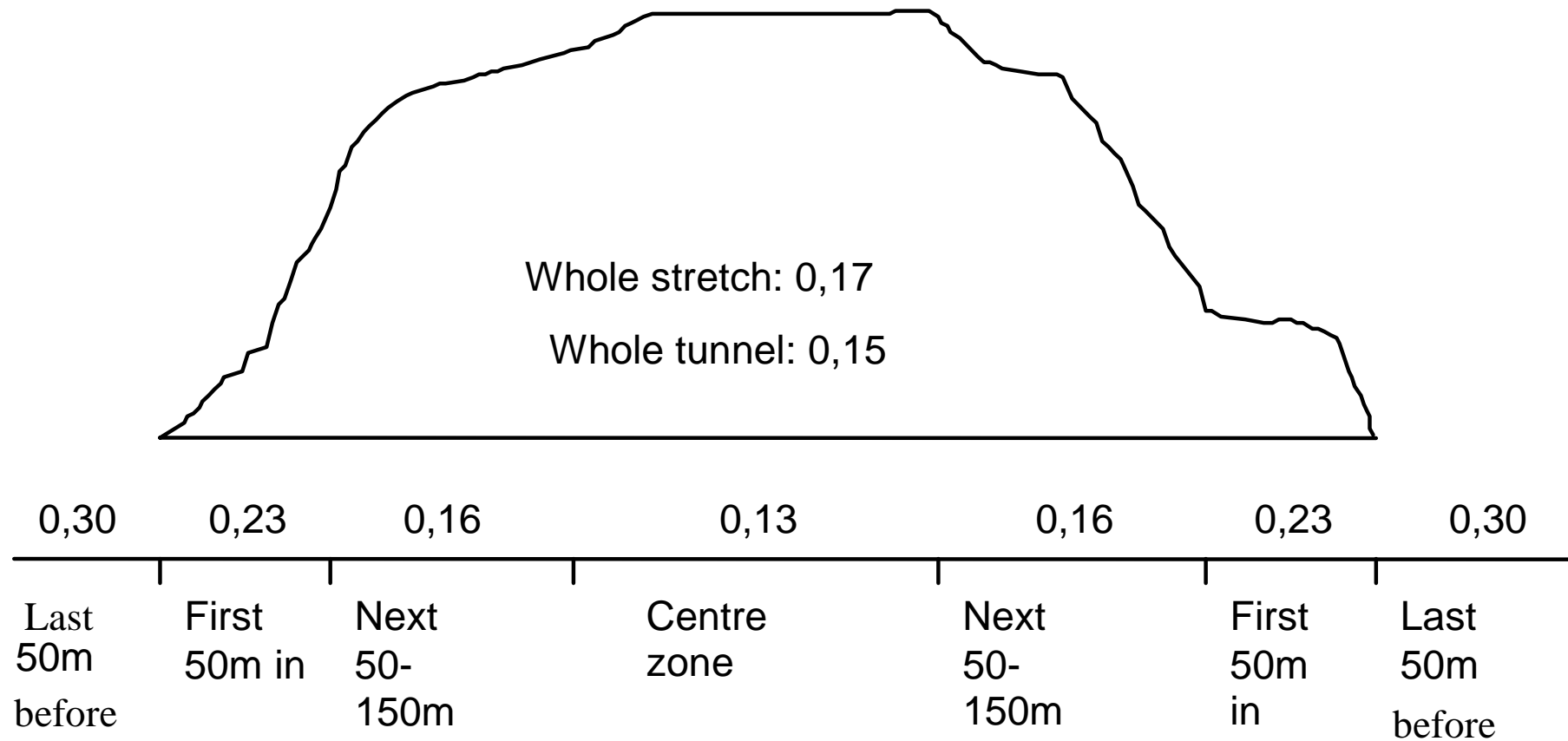
# Effect on accidents

- Stated as the percentage change in the number of accidents or injured road users
- Uncertainty is stated as a 95% confidence interval
- Most summary estimates of effect are based on meta-analysis (104 of 124 measures)
- Emphasis has been put on the methodologically best studies

# An example: improving tunnel safety

- Choice between building a road in a tunnel or above ground
- Choice of tunnel length
- Choice of tunnel width
- Choice of gradient in tunnel
- Provision of tunnel lighting

# Accident rates in tunnels



# Effects of safety measures

Accident severity	Types of accident affected	Percentage change in the number of accidents	
		Best estimate	95% confidence interval
<i>Road in tunnel vs. road above-ground</i>			
Injury accidents	All accidents: motorway A	-2	(-15; +12)
Injury accidents	All accidents: rural	-4	(-17; +11)
Injury accidents	All accidents: urban	-61	(-77; -35)
<i>Lighting in tunnels</i>			
Injury accidents	Accidents in tunnels	-35	(-51; -14)
<i>Increasing the width of the tunnel from less than 6m to more than 6m</i>			
Injury accidents	Accidents in tunnels	-40	(-49; -30)
<i>Reduction in gradient from more than 50 per thousand to flat road</i>			
Injury accidents	Accidents in tunnels	-71	(-84; -49)

# Costs and benefits of urban tunnel

- AADT = 30,000
- Accident rate = 0.50
- Traffic speed before = 35 kph
- Traffic speed after = 70 kph
- Accident reduction = 40%
- Savings in vehicle operating costs and environmental costs
- Accidents = 57.7 mill NOK
- Travel time = 109.4 mill NOK
- Vehicles = 7.7 mill NOK
- Environment = 38.3 mill NOK
- Total benefits = 213.1 mill NOK
- Costs = 201 mill NOK

# Comments are welcome

- If you spot any errors or have suggestions for improving the book, please contact:

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