



**WHO Collaborating Centre**  
for Evidence-Based Health Promotion in Hosp & HS  
**Bispebjerg University Hospital**



# Gold standard program for heavy smokers in a real life setting

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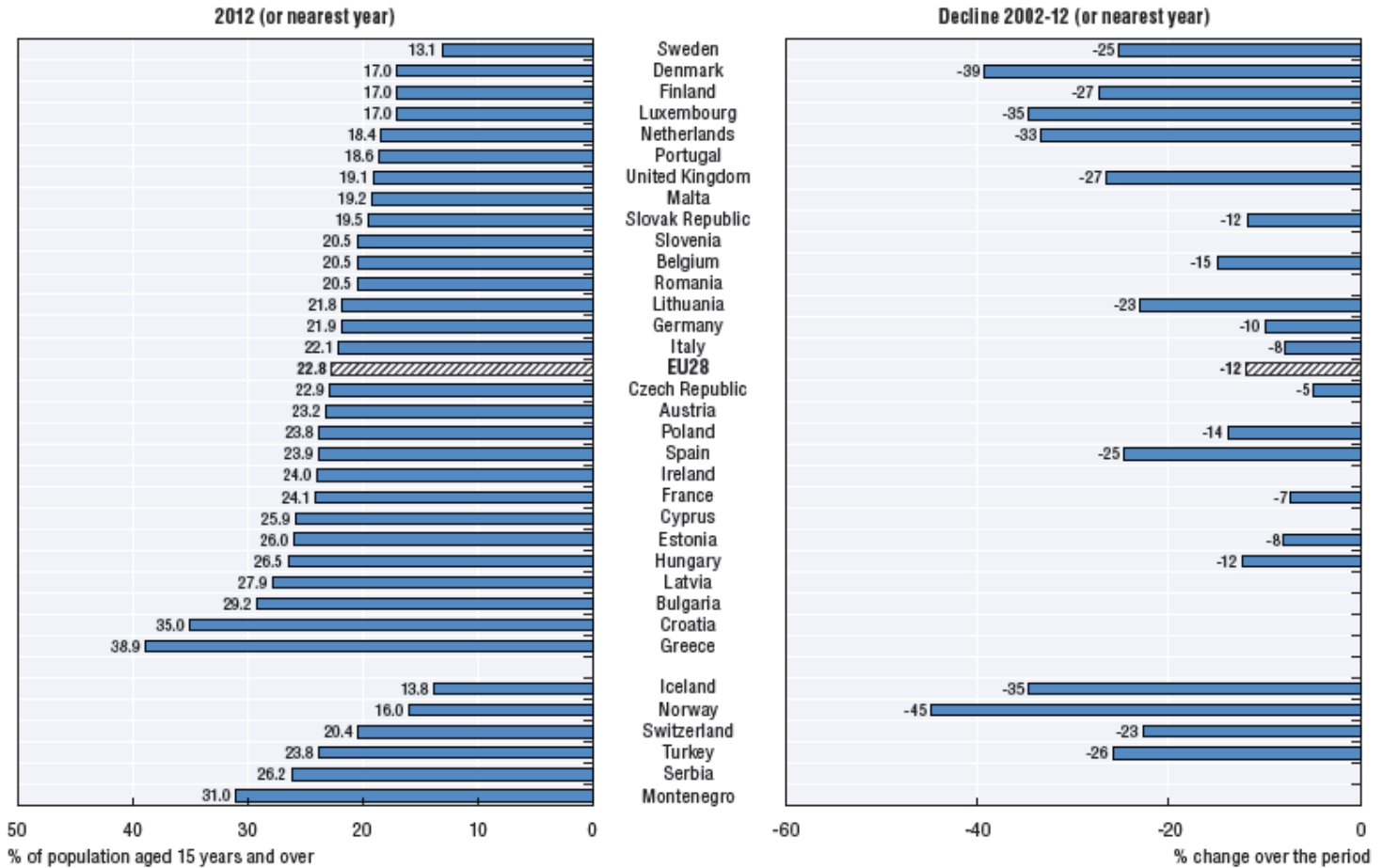
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# Daily smoking rates among adults, 2012 and change 2002-12 (or nearest years)

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# Background

**Higher quit-rates are generally achieved in high than low intensity smoking cessation programs; however, also lower quit-rates have been reported particularly among heavy smokers.**

**Kjaer 2007**

**Olsen 2006**

**Pisinger 2005**

**Baker 2007**

**Koslowski 1994**

**Ferguson 2005**

**Kotz & West 2009**

**WHO 2009**



The screenshot shows the homepage of the Smoking Cessation Database (SCDB). At the top, there is a navigation menu with links for HOME, ABOUT, QUALITY, and LIBRARY. A search bar is located in the top right corner. The main heading is "Smoking Cessation Database" with a Danish flag icon. Below the heading, there is a "Details" section stating it was created on 24 May 2011 and last updated on 07 January 2013, written by Mette Rasmussen, with 21841 hits. The text describes the database's purpose: to gather information on smoking cessation interventions and offer external documentation to cessation units. A map of Europe highlights Denmark. Contact information is provided, including a phone number (+45 3531 6037) and an email address (info@scdb.dk). A section titled "Who can join?" is partially visible at the bottom.

- **combines comprehensive information about**
  - **The smoker**
  - **The interventions**
  - **The outcome (FU up 6 months)**



# Gold Standard Programme (Manual Based and Performed by Certified Staff)

- **Introduction: motivational conversation.**
- **Five meetings over 6 weeks, groups or individuals**
  - **Clearly structured patient education programme (for**
  - **Reflections on benefits & costs of continuous smoking *versus* cessation**
  - **Date of cessation**
  - **Teaching and training about risk situations and relapse prevention,**
  - **Withdrawal symptoms and medical support**
  - **Planning for the future**
- **Nicotine replacement therapy and administration according to the FTND score, the number of cigarettes, and patient preferences.**
- **Hotline available during daytime hours on working days**
- **Follow-up for compliance (*i.e.*, attending meetings), for smoking at the end of the programme (6 weeks), and for patient satisfaction.**
- **Follow-up for smoking after 6 months and/or 1 year**



# SCDB

## Smoking Cessation Data Base

- High-quality clinical database
- Since 2001 \_\_ \_\_, \_\_ \_\_ \_\_ individual smokers included
- combines comprehensive information about
  - The smoker
  - The interventions
  - The outcome (FU up 6 months) after the intervention.

**The SCDB-DK reflects a diversity of smoking cessation intervention units in terms of settings, programmes and organisations.**



# AIM

...to evaluate the quit-rates among heavy smokers undergoing a standardized intensive 6 week smoking cessation program that integrated pharmacotherapy,

and to identify modifiable factors associated with improved quit-rates.

A secondary aim was to examine if quit-rate was associated with smoking severity.



# Methods

## Design:

- Clinical nationwide study
- 36,550 interventions, smokers undergoing an intensive cessation program in Denmark in 2001-2010
- prospectively collected data.

## Definitions of heavy smoking:

- $\geq 7$  points in the Fagerström Nicotine Dependency Test
- Smoking  $\geq 20$  cigarettes/day
- $\geq 20$  pack-years

## The primary outcome:

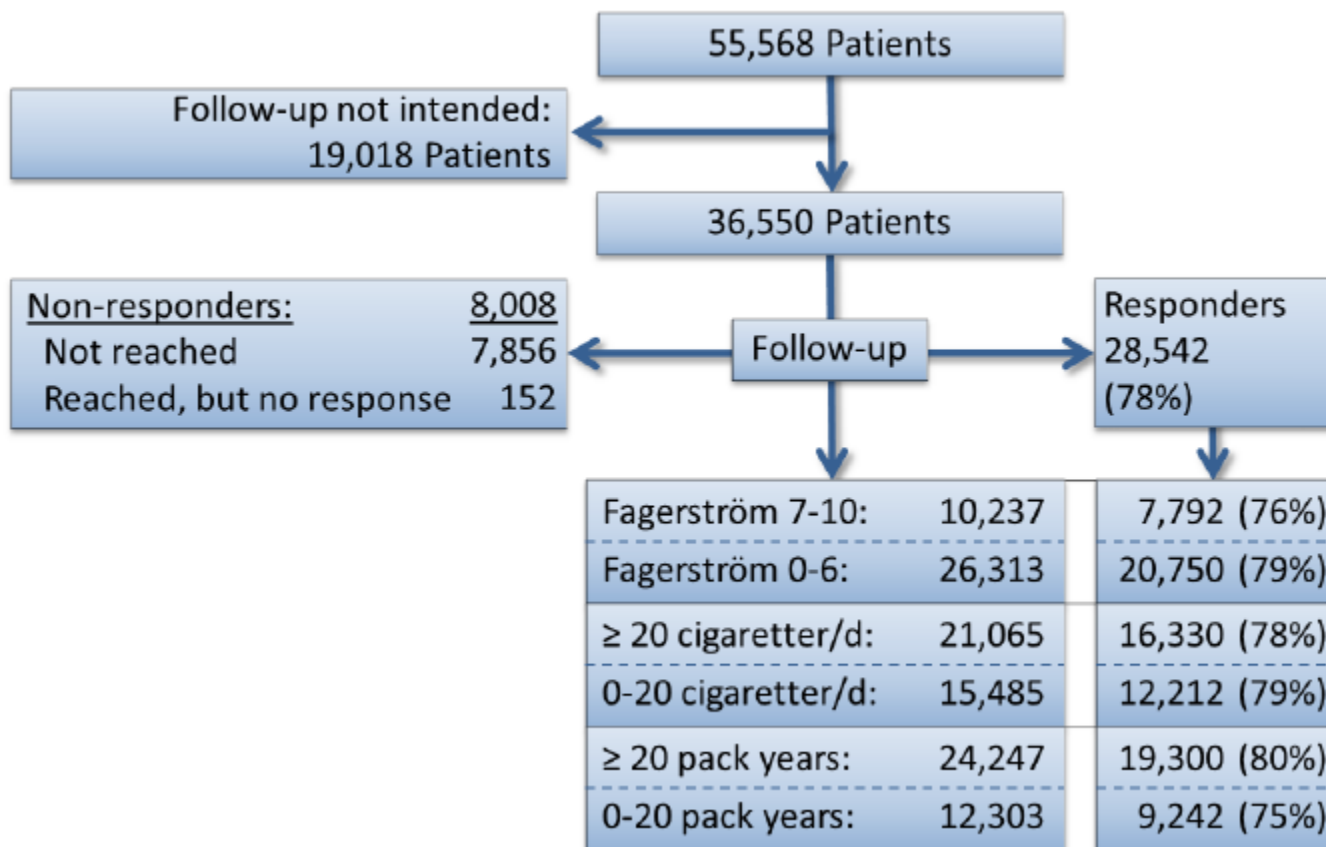
- 6 months (+/- 1 m) continuous quit rate.

Multivariate and sensitivity analyses were performed.





# Trial profile





# Results

Proportions of heavy smokers  
28% (Fagerström score  $\geq 7$  points),  
58% (cigarettes/day  $\geq 20$  ) and  
68% (pack-years  $\geq 20$  ), respectively.

Six months response rate was 78%.

Proportion of patients attending the intervention more  
than once: estimated: 4%



# Heavy smoking

Overall continuous abstinence was 33%,  
worst 26%, best case 48%.

1-6% lower in heavy smokers:

Fagerström score $\geq 7$ points	27% (21-45%)
Cigarettes/day $\geq 20$	30% (23-46%)
Pack-years $\geq 20$	32% (25-46%)

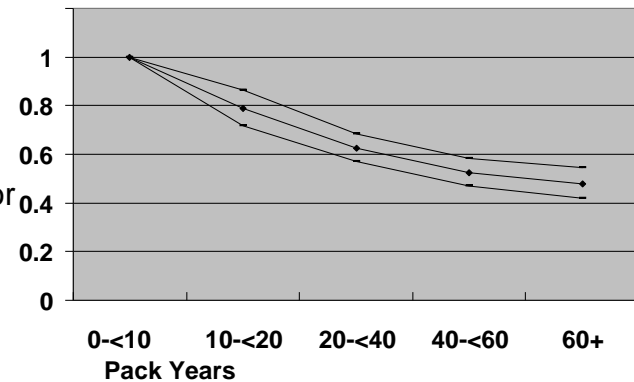
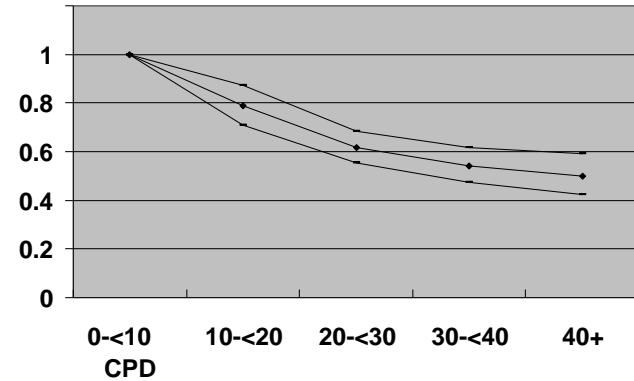
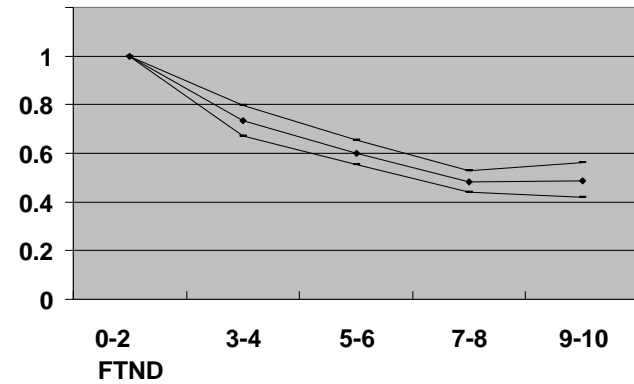
# Continuous abstinence -adjusted Odds ratios



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Odds ratio (◆) , 95% CI (—) adjusted (final model) for setting, region, format, payment , age, gender, employment, attempts to quit, living with a smoker, compliance, period (2010-2006 vs. 2001-2005).





# Smoking treatment service in primary care (Nottingham, North Cumbria): 52-week CO-validated cessation rates

<i>Characteristic</i>	<i>Valid values</i>		<i>52-week cessation rate (%), with sig. test<sup>1</sup></i>
	<i>n</i>	<i>% of valid values</i>	
<b>Time after waking that first smokes</b>			
Under 5 minutes	710	34.6	11.7**
At least 5 and under 15 minutes	650	31.7	14.6 NS
At least 15 and under 30 minutes	333	16.2	16.8 NS
30 min and over	359	17.5	18.1*
Total	2052	100.0	14.6

# Heavy smoking

Factors associated with continuous abstinence (aOR's):

## 'Individual format' vs. group/other:

Fagerström score $\geq$ 7 points	1.44 (1.23-1.68)
Cigarettes/day $\geq$ 20	1.30 (1.16-1.45)
Pack-years $\geq$ 20	1.23 (1.11-1.36)

## Hospital vs. Pharmacy:

Fagerström score $\geq$ 7 points	1.18 (1.01-1.36)
Cigarettes/day $\geq$ 20	1.23 (1.11-1.36)
Pack-years $\geq$ 20	1.23 (1.07-1.28)

## Municipality, other vs. Pharmacy

Cigarettes/day $\geq$ 20	1.10 (1.01-1.20)
Pack-years $\geq$ 20	1.09 (1.01-1.18)

## Hospital vs. Municipality, other :

Cigarettes/day $\geq$ 20	1.11 (1.01-1.23)
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OR's:

**Compliance**, attending the planned meetings: 4.36-4.89

**Employed** vs. unemployed: 1.22-1.28

**Men** vs. women 1.25-1.32

**Age** a 10y: 1.05-1.10

**period** 2001-2005 vs. 2006-2010: 0.85-0.89

Neumann et al. 2013 IJEPH





# Format: Individual vs. Group

	All			Fagerström score $\geq 7$			Cigarettes/day $\geq 20$			Pack years $\geq 20$		
	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)
Individual format	4,526	37%	(27%–53%)	1,439	34%	(24%–53%)	2,612	34%	(25%–52%)	2,931	35%	(27%–51%)
Group format	31,918	33%	(26%–47%)	8,773	26%	(20%–43%)	18,401	30%	(23%–45%)	21,260	32%	(25%–45%)



# Region

	All			Fagerström score $\geq 7$			Cigarettes/day $\geq 20$			Pack years $\geq 20$		
	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)
Capital Region	12,100	32%	(25%–48%)	3,504	26%	(20%–45%)	7,293	30%	(23%–46%)	8,010	31%	(24%–46%)
Central Denmark	8,216	33%	(25%–48%)	2,183	27%	(20%–45%)	4,419	29%	(22%–45%)	5,200	32%	(25%–46%)
North Denmark	1,477	36%	(29%–50%)	368	30%	(24%–46%)	780	33%	(26%–48%)	982	36%	(29%–48%)
Region Zealand	5,144	34%	(28%–47%)	1,512	29%	(23%–43%)	3,149	32%	(26%–44%)	3,687	33%	(28%–44%)
South Denmark	9,613	34%	(27%–48%)	2,670	27%	(21%–45%)	5,424	31%	(24%–47%)	6,368	32%	(26%–46%)
Unknown	0											





# Gender

	All			Fagerström score $\geq 7$			Cigarettes/day $\geq 20$			Pack years $\geq 20$		
	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)
Women	22,538	32%	(25%–46%)	5,620	25%	(19%–42%)	11,423	27%	(21%–43%)	13,851	29%	(24%–43%)
Men	14,012	36%	(28%–50%)	4,617	30%	(23%–48%)	9,642	34%	(26%–49%)	10,396	36%	(28%–49%)



# Compliance

	All			Fagerström score $\geq 7$			Cigarettes/day $\geq 20$			Pack years $\geq 20$		
	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)	<i>n</i>	base	(worst-best)
<b>Compliant</b>	23,400	42%	(34%–52%)	6,144	37%	(30%–49%)	12,990	40%	(32%–51%)	15,919	40%	(34%–50%)
<b>Not compliant</b>	12,677	15%	(11%–40%)	3,968	10%	(7%–39%)	7,805	12%	(9%–38%)	8,032	13%	(9%–37%)



# Interpretation

Quit-rates after the intensive program were 1-6% lower in heavy smokers compared to the overall 33% rate.

Small improvements seem possible due to potentially modifiable factors.

Quit-rates were consistently decreased in a dose-dependent manner with increasing smoking severity irrespectively of the definition.



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# Mange tak!

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