164. Smoking-related disorders and smoking prevention

P1548

Prevention of passive smoking exposure in children at risk for asthma: Results of a pilot study

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Background: 50% of children worldwide are exposed to second-hand smoking (SHS) or passive smoking, which is difficult to influence. We hypothesised that an effective intervention is possible by means of an individualized tailored program with repeated contacts, motivational interviewing, attention for barriers and needs of parents, and feedback on the children's urine cotinine levels and lung function.
Objectives: 1) to assess the prevalence of SHS in children; 2) to study the feasibility of the innovative intervention towards stopping of SHS in children.
Methods: 1) 10.000 families with children ≤13 years received a questionnaire about smoking and respiratory symptoms; 2) 11 families were recruited for the pilot study during two months which was given by two trained counsellors and evaluated with a questionnaire.
Results: Response rate for the initial questionnaire was 1075 (9.3%). Smoking by 1 or more parents was reported in 244 (22.7%) families, with 142 (58.2%) thereof smoking in the presence of their children at home. Among these exposed children, 56 (41.2%) are at risk for asthma. 11 parents participated in the pilot study. Before the intervention, 6 (54.5%) parents fully agreed that stopping SHS exposure to their children is of great importance, 2 (33.3%) reported that it would be easy to accomplish. Already after two counselling sessions, 10 (90.9%) parents were planning to stop SHS exposure to their children.
Conclusion: These results show that SHS exposure in children is still an important problem in our society. The pilot study demonstrates good feasibility of the new intervention program. The intervention will be further tested in a one year follow-up randomised control trial.

P1549

Exposure to environmental tobacco smoke in childhood is associated to lung function in smoking adults

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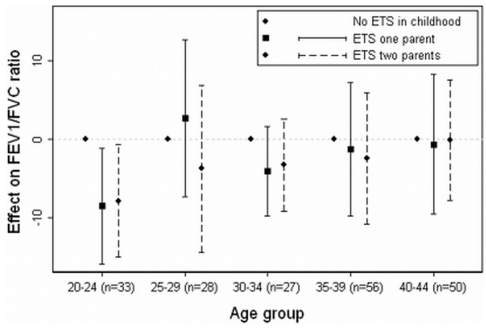
Objective: To analyse for associations between exposure to environmental tobacco smoke (ETS) in childhood and lung function in young adults.
Methods: In a Danish cross-sectional study of asthma in subjects aged 20-44 years (ERCHS protocol) 690 randomly selected subjects were eligible for analysis. Information of the participant exposure to ETS in childhood, cumulative smoking history and current exposure to ETS was based on questionnaire. FEV_1 and FVC were measured according to ERS and ATS recommendation.
Results: No ETS exposure in childhood was reported by 130 subjects, while 245 and 315 subjects reported one or two parents smoking at home, respectively. Mean FEV_1/FVC ratio (95% CI) was 80.2 (79.5-80.5). ETS in childhood had negative effect on the FEV_1/FVC ratio (p=0.025 and p=0.001 by one or two parents, respectively). Stratifying for smoking habits the results were only significant among the 194 current smokers. Figure 1 shows relative difference in FEV_1/FVC ratio in smoking adults by number of parents smoking at home in childhood stratified by age group, adjusted for gender, pack year, current exposure to ETS, study centre, and height[2].



Conclusion: Young adults have more obstructive pattern in lung function when exposed to ETS as a child, especially in young current smokers.

P1550

Environmental tobacco smoke (ETS) in allergic asthma: A parallel exposure study in human subjects and sensitized allergic Balb/c mice

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Introduction: The present study focused on the acute effects of short term (3 hours) exposure to ETS in allergic asthma, in a mouse model as well as in asthmatics.
Methods: Analogously 23 non-smoking asthmatics as well as 54 allergen challenged Balb/c mice were exposed to artificially produced ETS in increasing concentrations (I=250 $\mu g/m^3$, II= 450 $\mu g/m^3$, III=850 $\mu g/m^3$) or to ambient air (control group).
In human asthmatics, lung function, exhaled NO and exhaled CO was assessed. Serum samples were analyzed for cytokine profile and distribution of immune cells. Symptom severity was assessed via asthma control test (ACT) and visual analogue scale (VAS) questionnaires.
Whole body plethysmography was performed in mice before, after and one day after ETS treatment. The immunological status of mice was assessed by analysing serum cytokines and BALF cell composition.
Results: Human asthmatics exposed to ETS II and ETS III had significantly lower FeNO levels, a decrease in lung function of small airways (MEF25, MEF50) and an increase in VAS scores compared to controls. In sera ETS II led to a more anti-inflammatory cytokine profile (IL10) whereas ETS III showed a proinflammatory cytokine milieu (IL8, TNF-α) compared to controls.
Airway hyperreactivity in mice exposed to ETS II and ETS III was increased. Provocation with metacholine resulted in similar hyperreactivity in both groups. However, control mice displayed an improved recovery after provocation compared to ETS III exposed animals.
Conclusion: The data indicate a direct and dose dependent effect of ETS exposure on lung function as well as respiratory inflammation in human asthmatics and sensitized allergic mice.

P1551

Smoking rates in pregnant women one year before and after the Irish workplace smoke-free policy: A widening gap?

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Objectives: To examine smoking rates during pregnancy among Irish mothers across selected socio-economic and demographic maternal characteristics one year before and after the Irish workplace smoke-free policy introduced in March 2004.
Methods: Individual-level data on mothers' with singleton live-births were analyzed for the years 2003 [n=7,593] and 2005 [n=7,648] in a Dublin university teaching hospital. Smokers were classified as current smokers and are self-reported. Age-standardized smoking rates for the two main sub-groups of employment status (working vs. not working) were estimated across maternal age, ethnicity and marital status based on the 2002 Census, as the standard. Relative Index of Inequality (RII), with 95% CI, in age-standardized smoking rates was computed (comparing not working with working mothers) for each calendar year.
Results: Overall, there was a 12% significant decline in crude smoking rates from 23.4% [in 2003] to 20.6% [in 2005]. RII in age-standardized smoking rates for 2003 was 0.65 (0.50-0.81) and increased to 0.79 (0.62-0.96) in 2005 (widened relatively by 22%) when comparing pregnant mothers not working with those working separately for each of the two calendar years.
Conclusions: Smoking rates in unemployed pregnant mothers remain high in Ireland, despite a significant decline one year after the comprehensive smoke-free policy. The disparity in smoking rates observed between employed and unemployed women has widened by 22%. Tobacco control and smoking cessation approaches must develop successful approaches to targeting unemployed women in pregnancy if social inequalities in birth outcomes and women's health are to be tackled.

P1552

Confusing communication by health organizations in the public debate on legal smoking ban in Switzerland

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Background: Signature of the FCTC and the parliamentary initiative of MP Gutzwiller MD in 2004 started the process to a smoking ban, but resulted 10/08 in the federal Alibi Law, meeting neither international nor WHO standards. Thus, the Swiss Lung League (SLL; federation of cantonal lung leagues) launched an initiative with the collection of 130 000 signatures by 05/10. Media reporting is poor: only 10% of articles in the period 11/09- 02/10 were positive on smoking bans; so pressure on MP's is insufficient to improve legislation.
Aim: To detect communication flaws contributing to poor media reporting.
Method: Analysis of official positions by health organizations on passive smoking.
Results: A. The FMH (Federation of Swiss physicians) declined (letter 03/09), but finally backed 01/10 the SLL-initiative. B. The president of the the Society of Internists (SSI), declined positioning on passive smoking at its assembly 2008, arguing the congress was'nt nonsmoking and sponsors should be consulted (letter 04/08). The SSI has not positioned itself yet (submission) on its support of the SLL initiative. C. By its launchig the SLL urged cantonal lung leagues to collect signatures. Some cantonal leagues did not (e.g.Zurich, Vaud). Despite initial desaprobation by the lung league Vaud (letter 12/08), the annual report 2009 of this league declared official support of the SLL initiative.
Conclusion: Reports on smoking bans are likely to improve, if health organizations communicate in a coordinated way. This can be achieved by all health organizations, since toxicity of passive smoke and public health benefits of smoking ban in public places are based on sound scientific evidence.

P1553

Comparison of tobacco control policies in the eastern Mediterranean countries based on tobacco control scale scores

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Introduction: According to the World Health Organization Framework Convention on Tobacco Control (FCTC) each country is held responsible for adapting and implementing effective tobacco control programs. Comparing the situation in different countries could not only shed light on their conditions compared to each other, but also motivate and stimulate them to implement and improve their tobacco control programs and strategies.
Materials and methods: A cross-sectional observational study using questionnaire based on WHO MPOWER guidelines was developed. A scoring system based on the Tobacco control scale methodology was used with total score of 100 in 6 major policies. Information about countries was also collected from the WHO report and the Tobacco Atlas 2009 and the World Bank report of 2008.
Results: Among 21 Eastern Mediterranean countries, only 3 countries (14.2%) mainly Iran (61%), Jordan (55%) and Egypt (51%), scored higher than 50. Mean score for countries were 29.7±3.6 points. More than 50% of the countries scored less than 26. Highest scores were achieved by Afghanistan in cigarette pricing, Oman in smoking ban in public places, Iran in budgeting, prohibition of advertisement and health warnings against smoking and Yemen in tobacco cessations programs.
Conclusion: Countries in the EMRO region lack the ideal conditions for tobacco control and the related authorities are required to make changes and amendments in their policies for achieving desirable results.

P1554

The role of the smoke-free legislation on emergency department admissions due to tobacco-related diseases in Kocaeli

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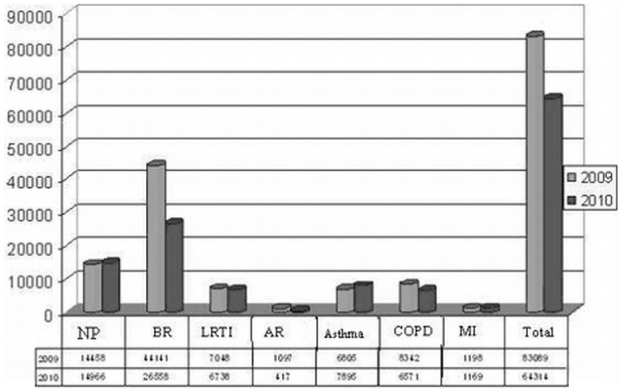
Aim: The aim of the study was to evaluate the admissions to emergency department due to tobacco-related diseases before and after smoke-free legislation.
Method: The number of admissions to emergency departments of 15 hospitals in Kocaeli was evaluated retrospectively before and after the implementation of smoke-free legislation published in 19 July 2009. ICD codes of smoking-related disease which were determined as bronchitis (BR), chronic obstructive pulmonary disease (COPD), asthma, nasopharingitis (NP), lower respiratory tract infections (LRTI), allergic rhinitis (AR) and myocardial infarction (MI) were recorded The data on January to June 2009 and 2010 were compared for the prevention of seasonal changes.

Results: There was a 22.5% decline in all emergency admissions due to smoking-related diseases.



	NP	BR	LRTI	AR	Asthma	COPD	MI	Total
2009	14458	44141	7048	1097	6805	8342	1198	83089
2010	14966	26558	6738	417	7895	6571	1169	64314

Total number of admissions due to above mentioned diseases was 83 089 in the first 6 months of 2009 while it was decreased to 64 314 in the first 6 months of 2010. There was a 39.8% reduction in the diagnosis of bronchitis, 4.3% of reduction in the lower respiratory tract infections, 61.9% reduction for allergic rhinitis and 21.2% reduction in the COPD exacerbations.
Conclusion: The number of admissions to emergency department due to tobacco-related disease decreased after the implementation of smoke-free legislation. This finding might be interpreted as an achievement of smoke-free environment.

P1555
Tobacco smoking and cardiovascular parameters
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The aim: To study the influence of tobacco smoking on cardiovascular parameters.
Materials and methods: 100 smokers were examined (index of smoking≥5 packs/years). The mean age was 42,7±7,57years. The acute tests were carried out: the 1st one was smoking 1 cigarette, then after 24 hours the 2nd test was smoking 2 cigarettes. The parameters were studied before and after smoking 1 and 2 cigarettes: diameter of a humeral artery, pulsioxymetry, Holter monitoring ECG.
Results: Diameter of a humeral artery in ten minutes after smoking 1 and 2 cigarettes decreased by 5,48% (2,4-8,9) and 6,89% (2,96-10,23), accordingly, p>0,05. Diameter of a humeral artery in fifteen minutes after smoking 1 and 2 cigarettes decreased by 6,25% (3,7-9,9) and 8,29% (3,42-12,58), accordingly, p>0,05. Diameter of a humeral artery in twenty minutes after smoking 1 and 2 cigarettes decreased by 6,71% (3,79-10,9) and 8,6% (5,11-12,78), accordingly, p<0,003. The oxygen saturation of blood before smoking cigarettes was 98% (96-98) of predicted; 10 minutes after smoking 1 cigarette it was 96% (95-98) (p<0,0001), after 15 minutes–96% (94-98) (p<0,0001); 10 minutes after smoking 2 cigarettes was 96% (94-98) (p<0,0001), after 15 minutes–96% (94-98) (p<0,0001), after 20 minutes–96% (94,5-98) (p<0,001). Heart rates (HR) before smoking cigarettes were 78,8±13,0; one minute after smoking 1 cigarette it was 94,5±13,9 (p<0,0001), after two minutes–88,0±12,2 (p<0,0001); one minute after smoking 2 cigarettes it was 98,1±14,5 (p<0,0001), after two minutes–89,8±15,2 (p<0,0001), after three minutes–83,1±12,9 (p<0,03).
Conclusion: Tobacco smoking can cause significant changes of cardiovascular parameters.The smoking of 2 cigarettes gives more distinctive changes in cardiovascular parameters.

P1556
Does smoking impair the quality of life of 34 year olds with alpha-1 antitrypsin deficiency?
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Background: Alpha 1-antitrypsin (AAT) protects lung tissue against degradation. Hereditary AAT deficiency increases the risk of pulmonary emphysema. During 1972-74 all newborns in Sweden where screened regarding AAT. Out of 200 000 newborns, 129 with severe (PiZZ) and 55 with moderate (PiSZ) deficiency were identified. We have examined whether smoking affects the quality of life in the cohort of individuals with AAT deficiency at the age of 34.
Method: The study included 129 PiZZ and 55 PiSZ individuals, and 300 age matched PiMM controls with normal AAT level. The questionnaires on smoking habits and the St. George's Respiratory Questionnaire (SGQR) where answered by the participants. Low scores indicate better quality of life in a 0-100 scale in the SGQR questionnaire.
Results: 104 PiZZ, 41 PiSZ individuals and 134 PiMM answered the SGRQ questionnaire. The mean total score in SGQR was 6.8 (SD 8.9) for PiZZ, 6.0 (SD 6.9) for PiSZ and 5.6 (SD 6.1) for PiMM (ns). The mean total score for all the 80 study participants who had ever smoked was 7.4 (SD 8.0) and 5.6 (SD 7.1) for all 199 non-smokers (p<0.01). The mean total score for 24 PiZZ smokers was 7.9 (SD 9.3) and 6.5 (SD 8.9) for 80 non-smokers (ns). Mean total scores for 9 PiSZ smokers was 7.1 (SD 5.0) and 5.7 (SD 7.4) for 32 non-smokers (ns). Mean total score for 47 PiMM smokers was 7.3 (SD 8.0) and 4.6 (SD 4.6) for 87 non-smokers (p<0.001).
Conclusion: Smoking impairs the quality of life already at the age of 34 in the Swedish population. In smokers with alpha-1 antitrypsin deficiency the quality of life was also worse than in non-smokers, but the difference was not significant.

P1557
Stress influence on smoking behavior of teenagers
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Rationale: Previous studies suggested that stress levels might influence smoking behavior.
Objectives: To investigate the stress levels among teenagers according to their smoking history. To correlate stress levels with scores of the University of São Paulo Reasons for Smoking Scale (USP-RSS) in the current smoking group.
Methods: Two thousand and fourteen high school students answered a standard questionnaire including the Perceived Stress Scale (PSS) and the USP-RSS. Comparisons among scores were performed by ANOVA on ranks and Dunn's post test when indicated. Associations between USP-RSS domains scores and PSS scores were performed by Spearman's correlation coefficient.
Results: The students were classified in 3 groups: G1, never smokers (n= 1283; men= 595; age= 16.1±1.1 years); G2, subjects who have experimented smoking at least once in their lives (n=487; men= 224; age= 16.3±1.1years), and G3, current smokers (n=244; men= 128; age= 16.4±1.0 years). The mean PSS for G1 (16.5±6.4) was significantly lower than those of G2 (18.0±6.8) and G3 (19.2±7.2) (p<0.001). There was not a significant difference between G2 and G3 regarding PSS (p>0.05). There were significant correlations between PSS and the following USP-RSS domains: *addiction* (p=0.015; r=0.161), *tension reduction* (p=0.0002; r=0.243), *stimulation* (p=0.013; r=0.164), *automatism* (p=0.020; r=0.154). *Weight control* showed only a marginally significant correlation (p= 0.052; r=0.130).
Conclusion: Stress levels in teenagers appear to contribute to the smoking experimentation, but not to the addiction establishment. Stress levels show small, but significant, correlations with important factors that contribute to smoking maintenance. Supported by: FAPESP 09/50562-0

P1558
Predictive role of smoking in the development of mucociliary insufficiency in patients with chronic non-obstructive bronchitis
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Background: Smoking in patients with chronic bronchitis can lead to decrease of effectiveness of mucociliary clearance (MCC) and to development of mucociliary insufficiency at the early stages of a disease formation.
Aim: To study the peculiarities of mucociliary system functioning in patients with chronic non-obstructive bronchitis (CNOB) depending on smoking factor.
Methods: Spirography, the study of MCC by scintigraphy with ^{99m}Tc, the measurement of frequency of bronchial epithelium cilia beating in bronchial biopsy material in vitro were carried out in 79 patients with CNOB. There were 45 smokers (1st group) and 34 non-smokers (2nd group) at the age from 25 till 30 years old, the duration of the disease was no more than 5 years.
Results: There was no statistically significant difference between the groups of smokers and non-smokers in FEV_1 (92,4±3,5 and 96,8±2,6%, respectively). The integral index of MCC in the 1st group were lower than in the 2nd group (36,2±2,9 and 40,5±3,3% an hour, respectively, p<0,05). The occurrence of mucociliary insufficiency (MCC<37% an hour) in the 1st group was higher, than in the 2nd group: 84 and 53% of patients, respectively (χ^2=9,31; p<0,01). The mean frequency of bronchial epithelium cilia beating was higher in the 2nd group (9,01±0,14 Hz) and it was much lower in the 1st group (6,21±0,51 Hz, p<0,01). Besides, smokers had a progressive drop in the frequency of cilia beating depending on the duration of smoking.
Conclusion: The decrease of MCC is typical for smokers with CNOB with latent lung function disturbance. It is suggested the early correction of MCC failure is essential for optimization of CNOB clinical course.

P1559
Surfactant protein D as a potential serum marker of pulmonary emphysema
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Background: COPD is diagnosed from the presence of airflow obstruction in a

respiratory function test. Patients presenting normal respiratory function and with CT-detected pulmonary emphysema (PE) are not diagnosed as having COPD. As surfactant protein D (SP-D), human β-defensin 2 (HBD2), and interleukin-8 (IL-8) have been reported as serum markers of COPD, they may be useful for the diagnosis of CT-detected PE.
Aim: The aim of this study was to investigate the usefulness of serum markers (SP-D, HBD2, and IL-8) for patients with COPD and CT-detected PE.
Method: A total of 326 subjects were screened. Of these, 55 were excluded because they failed to meet the criteria for this study, leaving 271 subjects for analysis. They underwent the respiratory function test and chest CT. According to the results, the subjects were classified into four groups: control group (n=40), non-COPD group (n=169), CT-detected PE group (n=42), and COPD group (n=20). Serum marker (HBD2, SP-D, and IL-8) levels were measured by ELISA and evaluated.
Result: Serum SP-D levels in the CT-detected PE group (66.3±51.6 ng/ml) were significantly higher than those in the control group (43.0±27.7 ng/ml); and in, in comparison with the non-COPD group (49.3±32.9 ng/ml) they showed a significantly different elevation (p=0.028). However, there were no significant differences serum IL-8 and HBD2 levels among the four groups.
Conclusion: This study suggests that serum SP-D level might be a useful marker for detecting CT-detected PE.

P1560
Widening inequalities in smoking rates in the Republic of Ireland?
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Objectives: To assess patterns in adult smoking rates in Ireland across two main socio-economic indicators: level of education and social class (SC), using national cross-sectional survey data from 1998 and 2007.
Methods: Complete smoking-related information on adults (≥18 years) for 1998 [n=6,293] and 2007 [n=10,251] were analysed. Age-standardized smoking rates for each of the two main indicators were computed overall and by sex using 2002 Census as the standard population. Relative index of inequality (RII) in age-standardized smoking rates was computed (comparing the lowest with the highest socio-economic groups) for each calendar year based on relative ranking (0=highest; 1=lowest) and then regressing the cumulative percentile distribution of the sub-classes within each year. 95% confidence intervals (CI) for RII were generated.
Results: Overall, sample-weighted smoking rates declined from 33% (in 1998) to 29% (in 2007). However, the lowest SC groups recorded 51% higher smoking rates compared to the highest SC smoking rates in 1998 and this widened relatively by 37% to 70% in 2007. Smoking rates among those with lowest education widened relatively by 40% (from 35% to 49%) between the two time-periods compared to the highest groups. Female smoking rates have increased more relative to their male counterparts in lower SC groups.
Conclusions: Overall, smoking rates have declined in Ireland over a 10-year period but using "a" relative index of inequality measure, social inequalities in smoking rates have significantly widened in lower socio-economic groups, worsening further among disadvantaged females.Tobacco control policies combined with socio-economic interventions are imperative to address these inequalities.

P1561
Smokeless tobacco use among young male adults in northern Finland
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Background: Smokeless tobacco (ST) sales have been banned in Finland since joining the European union in 1995 while its' import for own personal use is allowed. Despite the sales ban, adolescents and young adults use ST. According to a national survey in 2009, 41% of 18-year-olds had experimented smokeless tobacco and 2.1% used it daily, and the trend seems to be increasing [1].
Aims: To study Swedish moist snuff use among young adult males in Northern Finland with fairly close access to Sweden, where ST products are allowed.
Methods: Data was collected during 2008-2009. The study population consists of 1151 male military recruits from the two most northern regions of Finland (mean age 19.4, 94.2% 18-20 years). All draftees were applied to answer a specific questionnaire. Response rate was high, 80%.
Results: Most young males (70.4%) had experimented ST at least once. Current daily ST use was reported by 14.3%, and 28% reported occasional use. Among daily users, mean duration of ST use was 3.0 years.
Conclusions: Despite the sales ban in Finland, ST use is common among young adult males. Compared to national prevalence, daily ST use was high in Northern Finland where also smoking is relatively common [2]. This might relate to cultural differences inside the country, but also to easy snus availability in the northern parts of the country.
References:
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P1562
Phenotypic features in COPD smokers attending a smoking cessation unit
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COPD smokers have specific features of their smoking habit.
We reviewed medical histories of all COPD patients who were treated in our Unit between January 2004 and January 2010.Medical and smoking histories were obtained during the baseline visit, as well as different test results such as FTND-questionnaire, Reward Test and Test to measure psychological, social and gestual dependence.
These test results obtained were compared whit those of a historical group of non-COPD patients treated in our Unit (Control Group).
472 COPD smokers showed the following data for gender (65% were male), average age 58,3 (9,8), number of cigarettes per day 29,7 (13,4), number of years smoking 40,5 (9,9) and number of pack-years 59,1 (30,2). For the control group, which consisted of 1850 patients, these data were 50% male, 47,8 (11), 28,3 (10,4), 32,3 (11,5) and 45,8 (25,7), respectively.
The average score on FTND-questionnaire was 7,4 (2,1) for COPD patients, against 6,5 (2,4), $p<0.001$ in the control group. 79% of COPD smokers were a negative reward smokers, against a 56% of the control group, $p<0.01$.
COPD patients had a low rate on gestual and social dependence, as well as on automatism. On the contrary, they had a high rate on psychic dependence and sedation.
COPD smokers who attend a smoking cessation unit are generally male over 55 years old, have higher figures of years smoking and higher pack-year figures than the control group. Their physical nicotine dependence is higher than for those in the control group. They are negative reward smokers more often and more significantly than those in the control group.
COPD smokers have a low grade of gestual and social dependence and a high grade of psychic dependence.

P1563
Prevalence and predictors of smoking cessation rates in Ireland: A follow-up cross-sectional study
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Background: We reported that intensive smoking cessation (SC) services are available in Ireland but lack uniformity or consistency countrywide [1]. Here we estimated successful quit rates at 4-weeks and again at 3-months follow-up relative to baseline after setting up a quit date, and identified significant predictors of quitting at 4-weeks follow-up relative to baseline smoking status.
Methods: A convenience sample of 1,490 patients was recruited while attending SC service throughout Ireland. An electronic database was created. Intention-to-treat analyses were performed employing stepwise multivariable logistic regression modelling to identify significant predictors from several covariates for which complete data were available. Smoking status was self-reported. Carbon monoxide (CO) monitoring was done but was patchy.
Results: 37% had quit smoking at 4-weeks after setting up a quit date ($p<0.001$) and a lower proportion (22.4%) quit smoking at 3-months follow-up ($p<0.001$). Only occupation [professionals had 58% increased success rates relative to semi/unskilled] and client sources [outpatients were least likely to succeed] were significant predictors ($p<0.05$) of SC rates at 4-weeks follow-up.
Conclusions: This pilot study demonstrated that SC services if availed of could result in quitting when followed-up both at 4-weeks and at 3-months, despite attrition. A cost-effective comprehensive tobacco dependence treatment program can accelerate further declines in smoking rates.
Reference:
[1] Currie *et al.* An evaluation of the range and availability of intensive smoking cessation services in Ireland. *Irish J Med Sci* 2010;179:77-83.