

Smoking cessation for specific population

[특수상황에서의 금연치료의 실제]



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Ewha Womans University, School of Medicine

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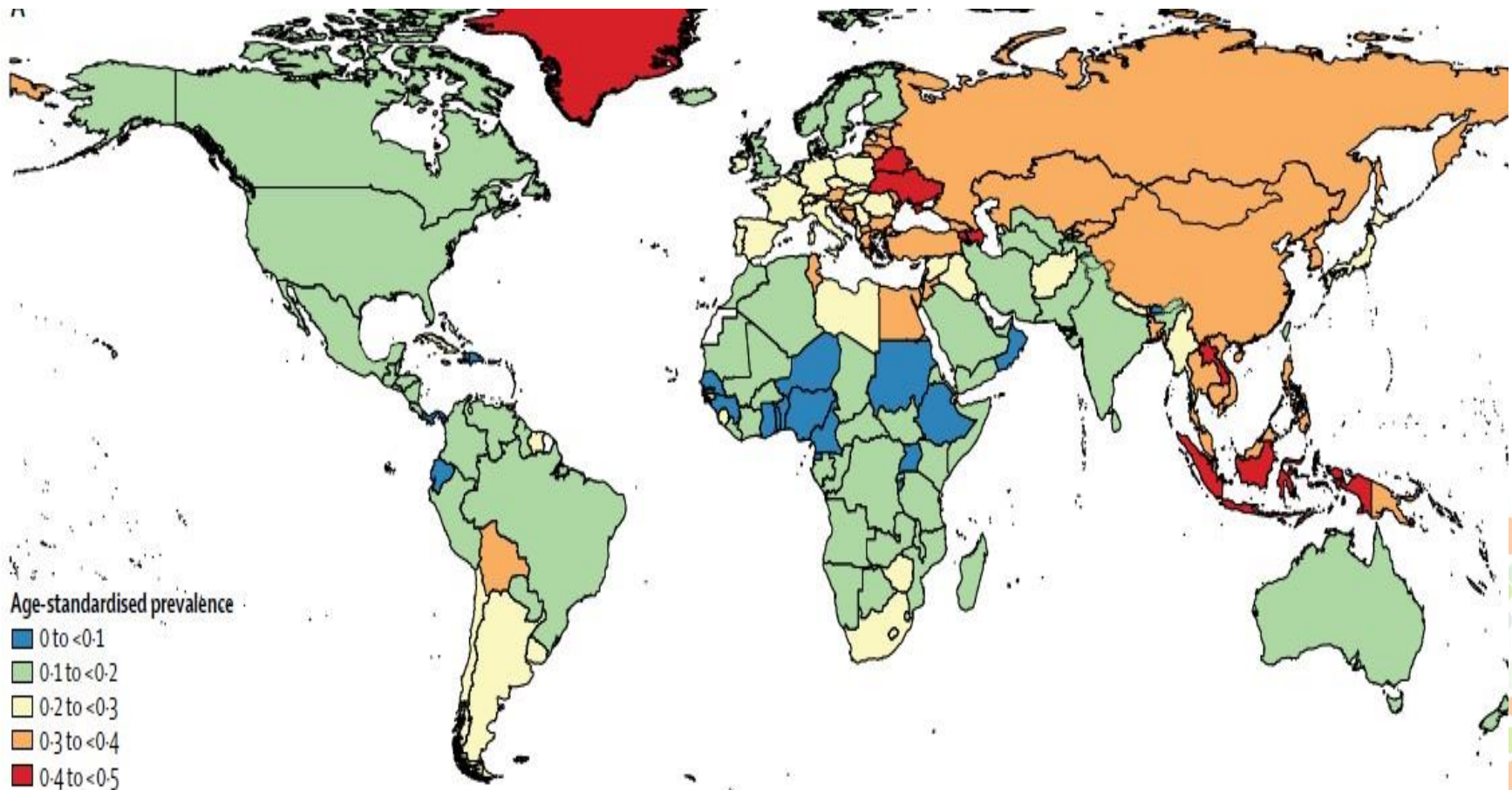


Smoking prevalence and attributable disease burden in 195 countries and territories, 1990–2015: a systematic analysis from the Global Burden of Disease Study 2015

- 933.1 million daily smokers in the world,
- 82.3% male smokers (768.1 million)
- 6.4 million deaths were attributable to smoking
- **Age- standardised prevalence of smoking**
25.0% for men, 5.4% (5.1–5.7) for women,
28.4% and 34.4% reductions, respectively, since 1990.
- China, India, Indonesia of male smokers, accounted for 51.4%.

GBD 2015 tobacco collaborators, Lancet 2017 April

Smoking prevalence and attributable disease burden in 195 countries and territories, 1990–2015:



GBD 2015 tobacco collaborators, Lancet 2017 April

담배 유해성에 대한 정부 역할에 대한 기대



국내 흡연자(금연자) 금연 방법



암센터, 보건복지부, 2012



국내금연정책: 흡연 예방교육 및 홍보

흡연예방
교육

국가 금연 지원서비스

유아 흡연 예방 교육, 학생 및 교사, 학부모

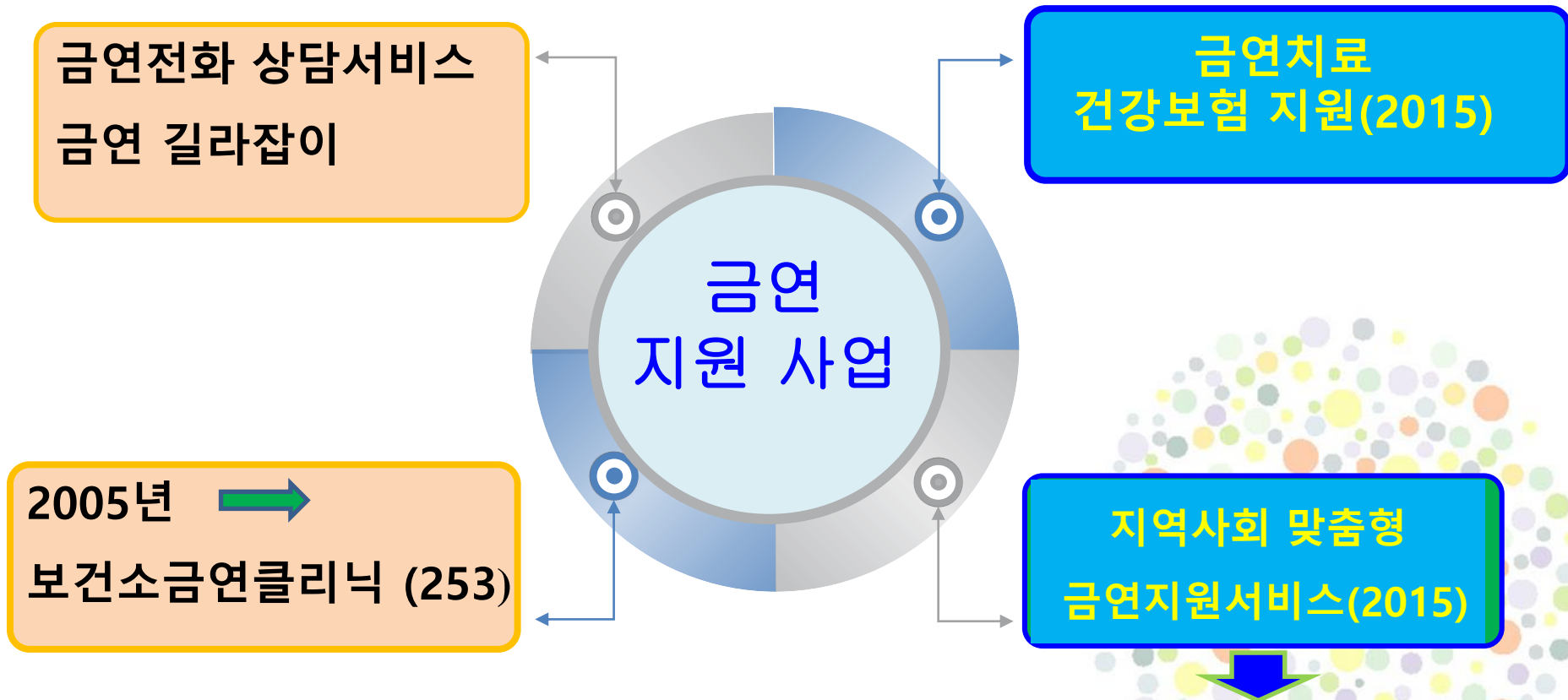
민간단체 연계교육

금연 지도자 교육, 교사, 군 간부, 군 의료인
특수계층 금연교육, 군인, 경찰, 대학생

금연 캠페인

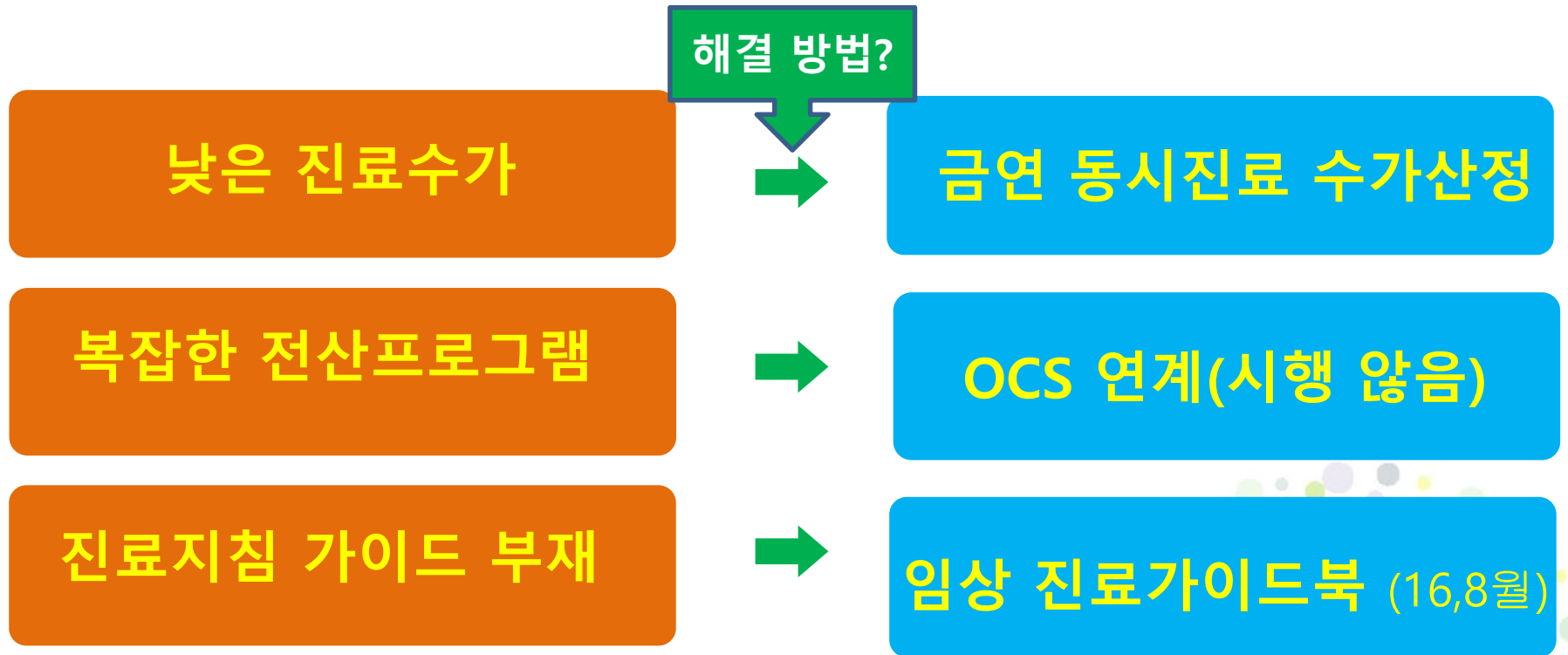


국내 금연치료 지원 사업 현황



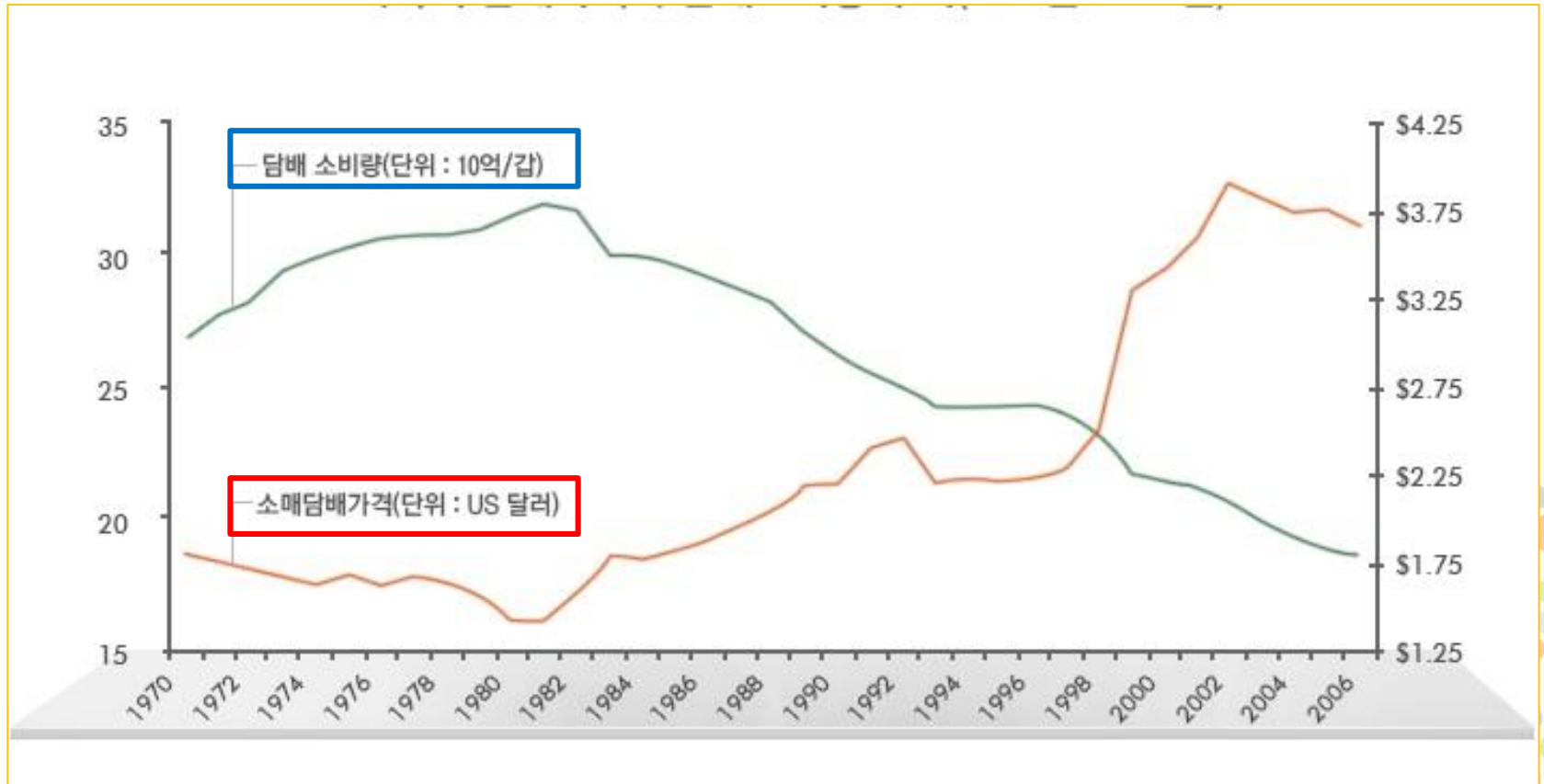
학교 밖 청소년, 여성을 방문고도흡연자 대상 **전문금연캠프**

건보공단 금연치료 프로그램



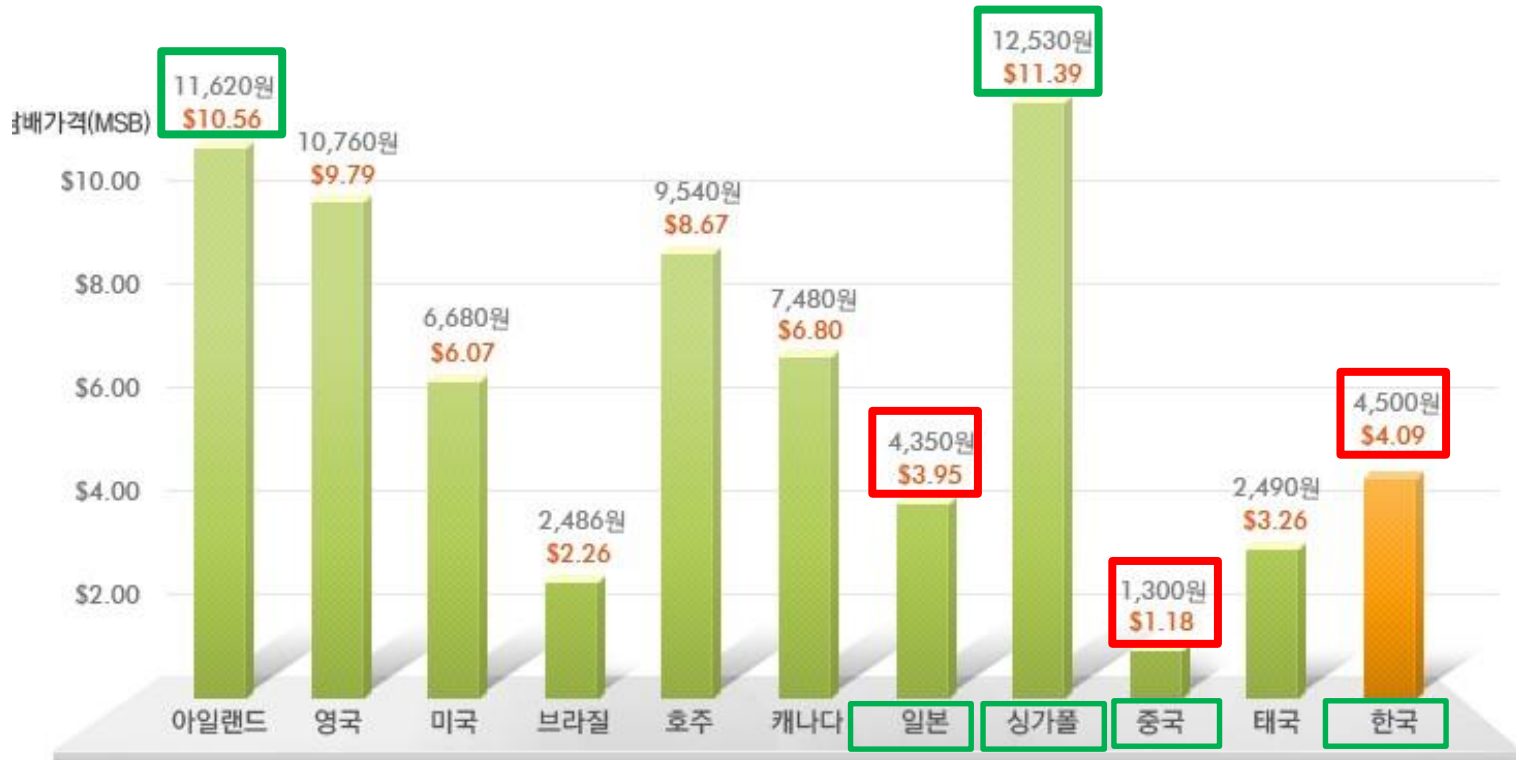
- ① 금연 전문상담 없이 치료 약만 처방
- ② 지급 받은 금연 치료제를 인터넷을 통해 판매

담배 가격과 담배 소비량 관계 (미국 1970-2006)



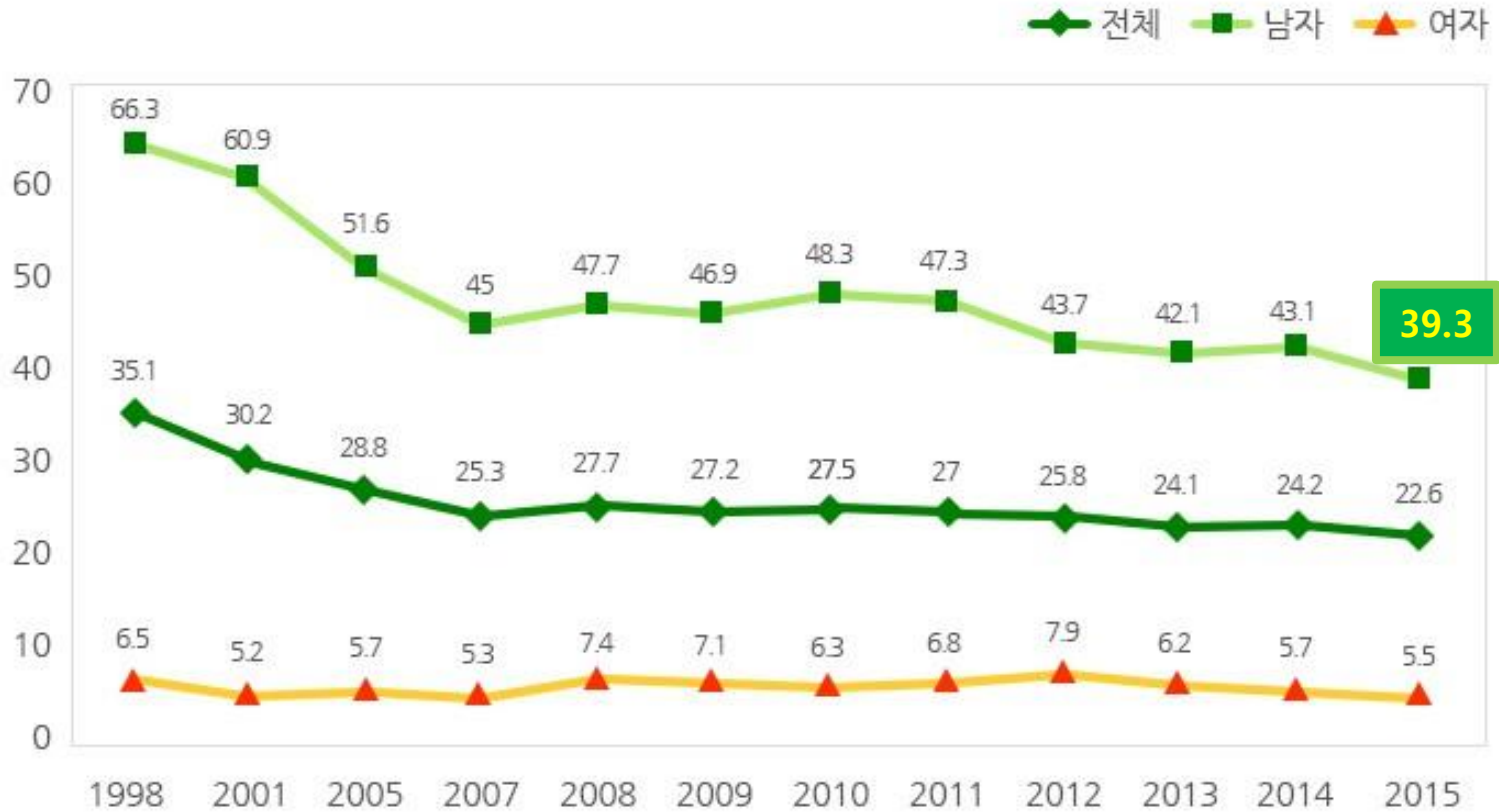
global.tobaccofreekids.org/en

국내. 외 담배 가격 비교



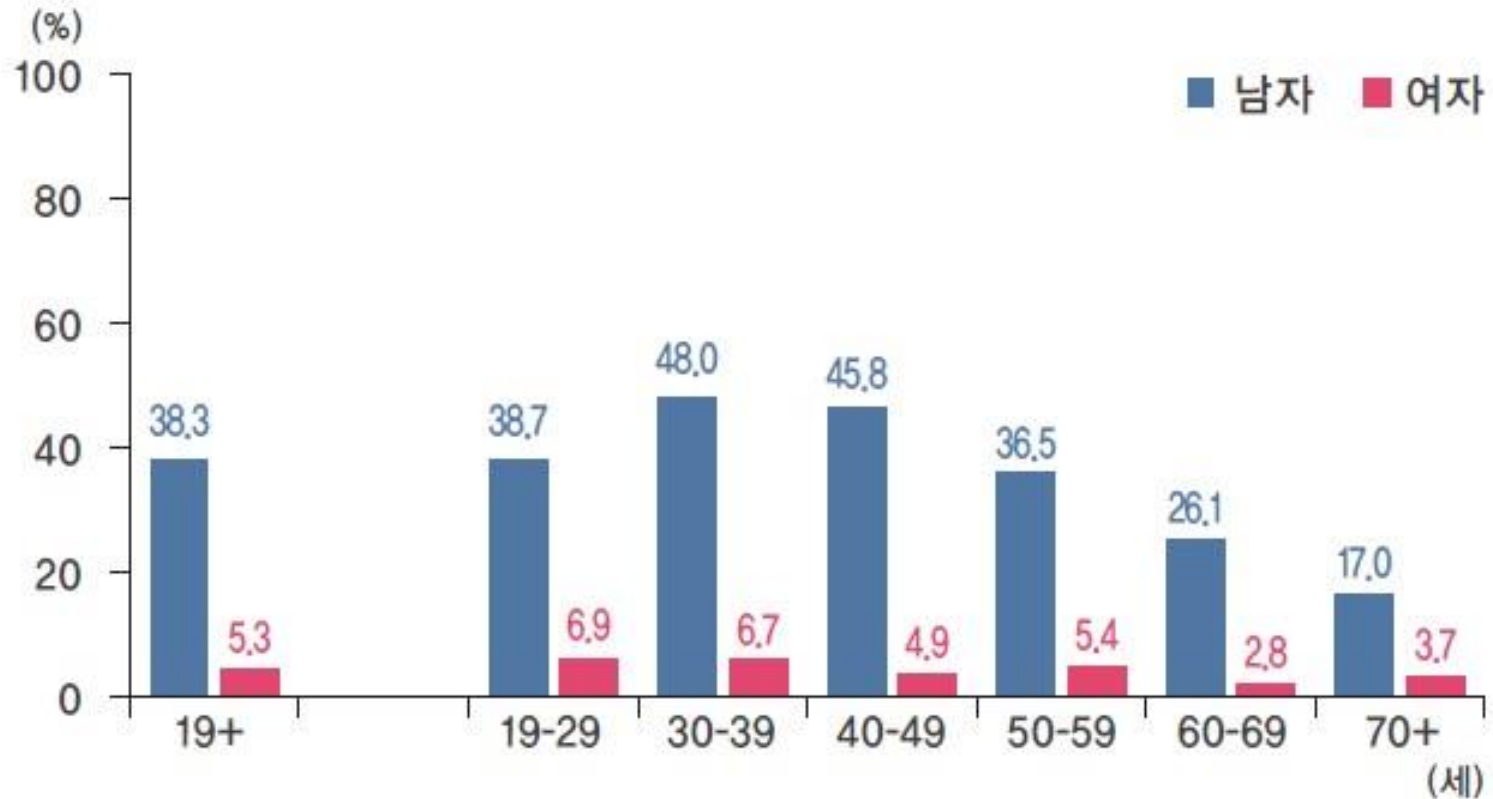
WHO report on the global tobacco epidemic.2013, Graph 9.2

국내 흡연율 변화



국민건강 영양조사, 보건복지부

국내 연령별, 성별 흡연율

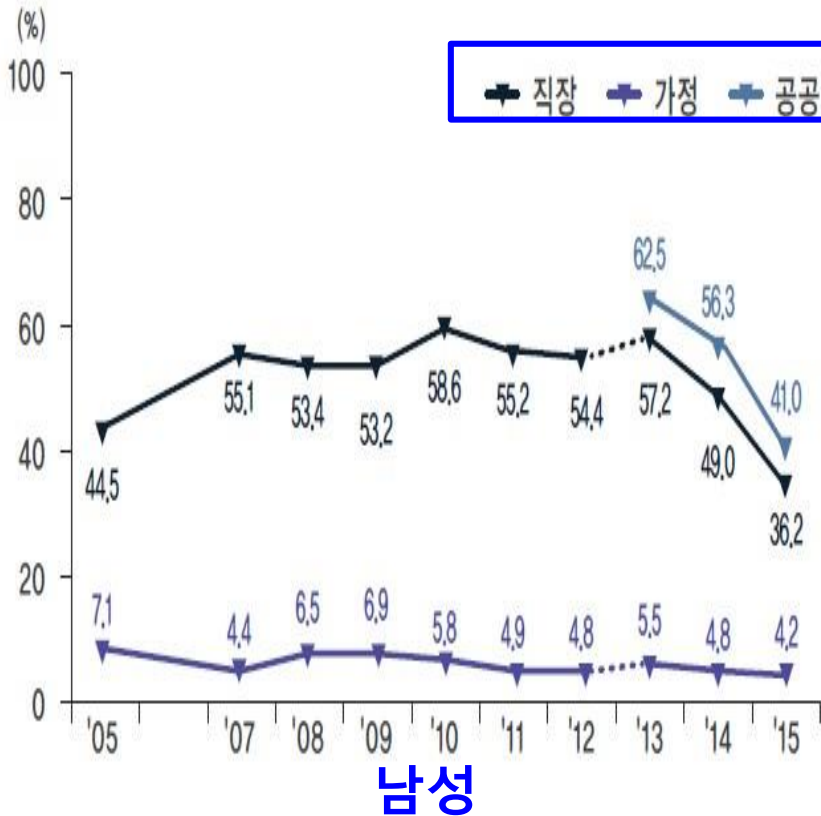


국민건강 영양조사, 보건복지부



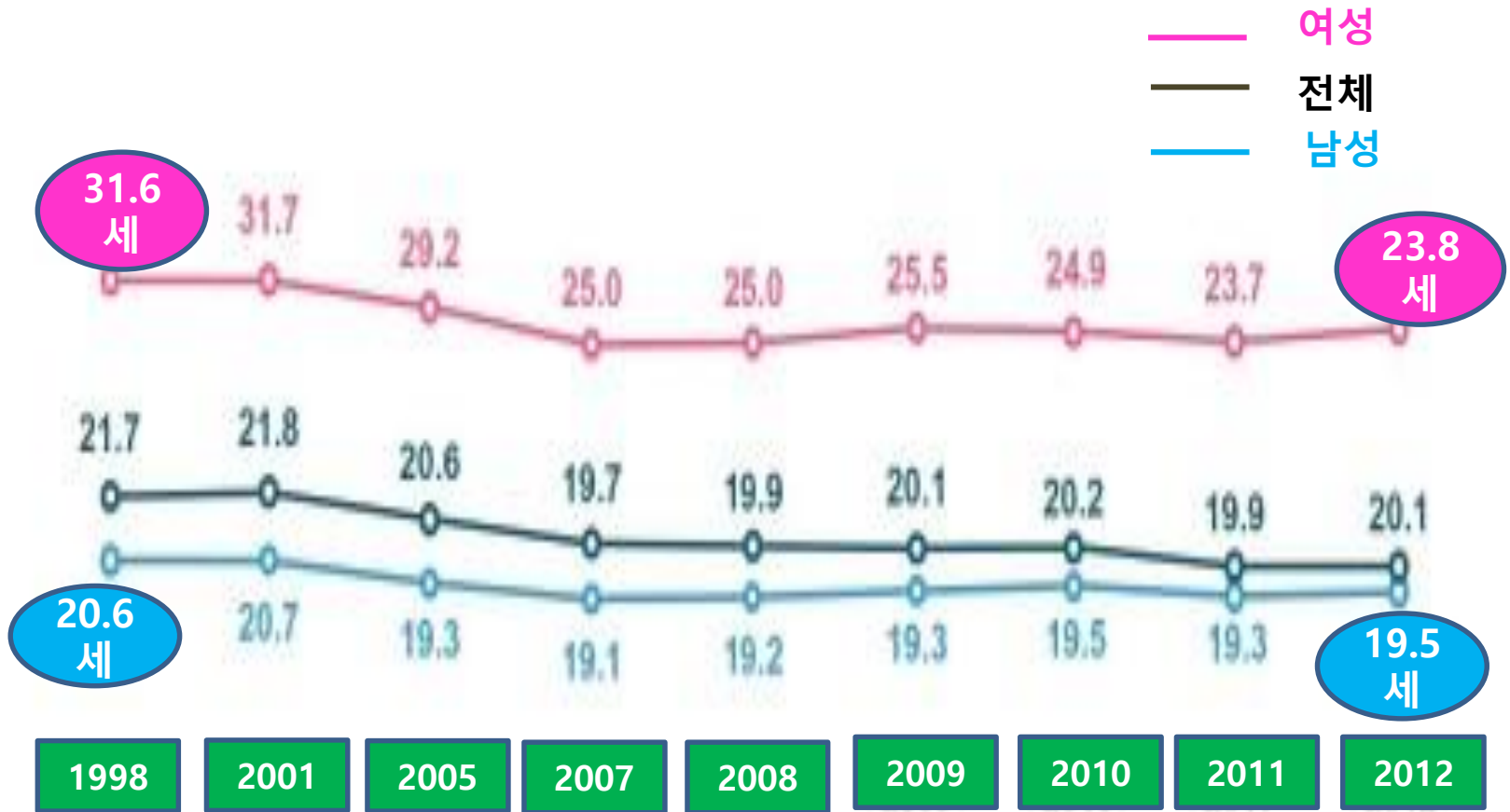
이화여자대학교
EWHHA WOMANS UNIVERSITY

비흡연자의 간접 흡연 노출




국민건강 영양조사, 보건복지부

국내 흡연 시작 연령 변화



국민건강 영양조사, 보건복지부



Smoking cessation in specific populations



Smoking cessation for Adolescent

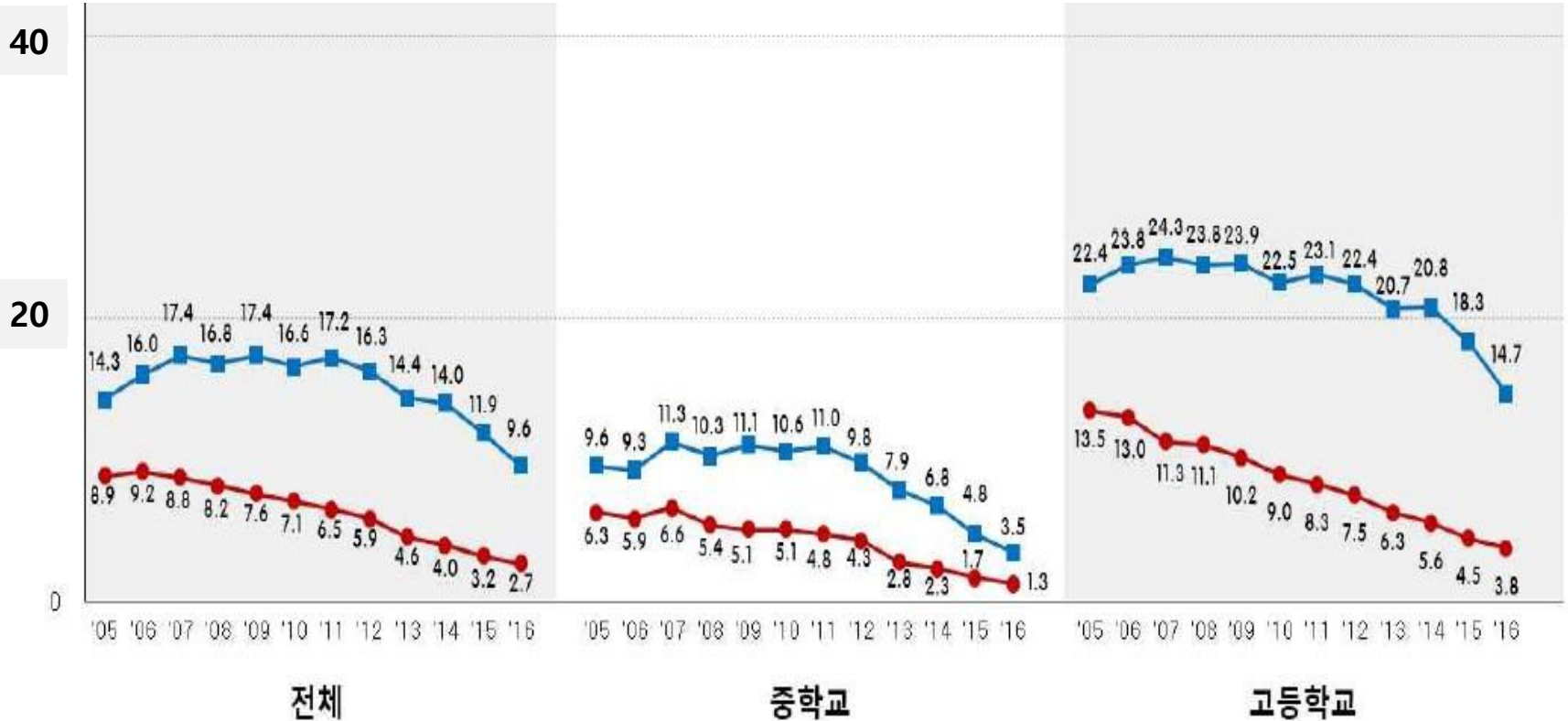
National Youth Tobacco Survey(N=18,385, 6-12 grades)

- The overall prevalence of current tobacco use : 16.6%
- Prevalence of being asked by health care provider: **32.2%**
- Prevalence of being advised to quit tobacco : **31.4%**

Schauer GL. Et al. Pediatrics 2014;134

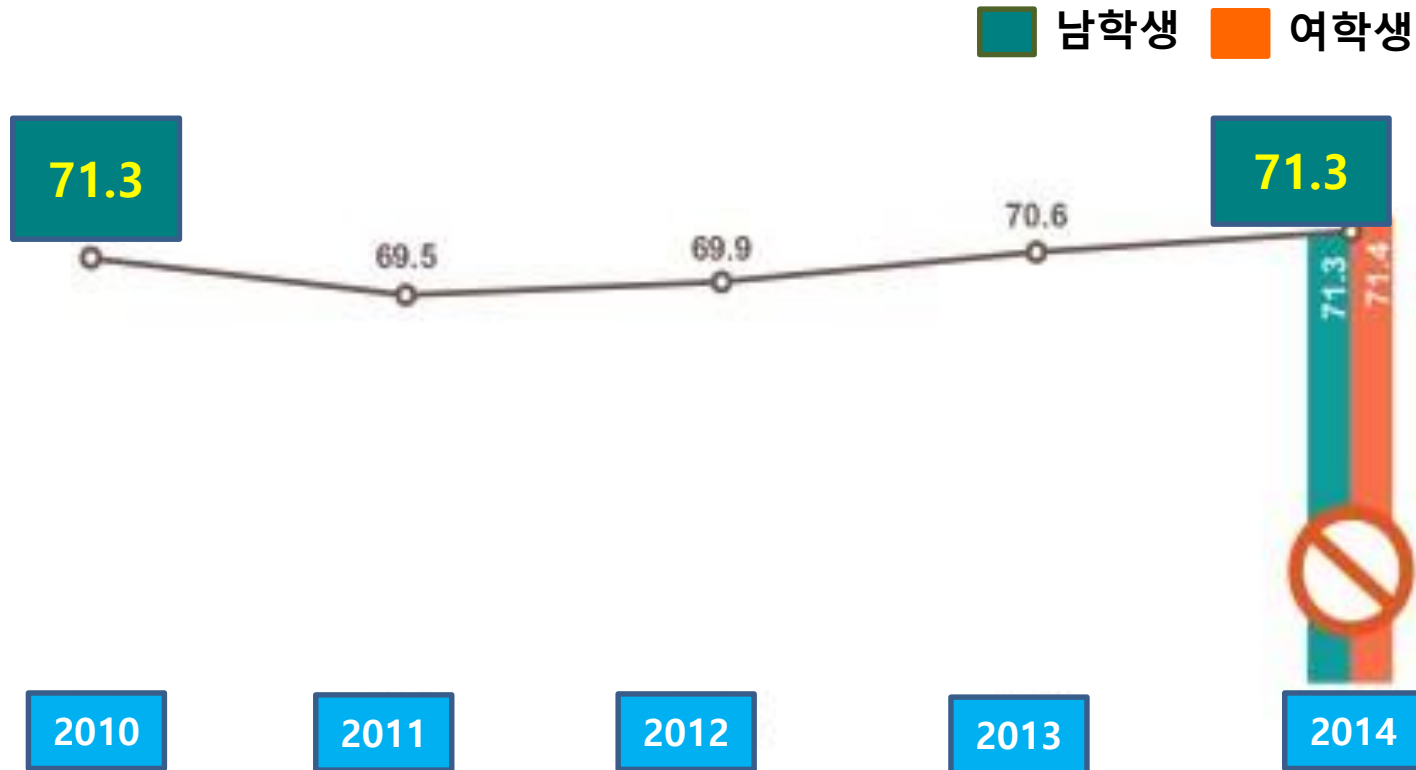
국내 청소년 흡연율 변화

■ 남학생
● 여학생



청소년건강상태온라인조사

청소년 흡연자의 금연 시도율



청소년건강형태온라인조사

Smoking cessation Strategies for Adolescent

- 80 % become **addicted** to nicotine as teenagers
- Initiated and transition to **dependence**
- **Preventing** from starting rather than quitting
- **Counselling** is considered to be vital in this age
- NRT is recommended with precautions
- Bupropion and varenicline are not approved

RAGCP



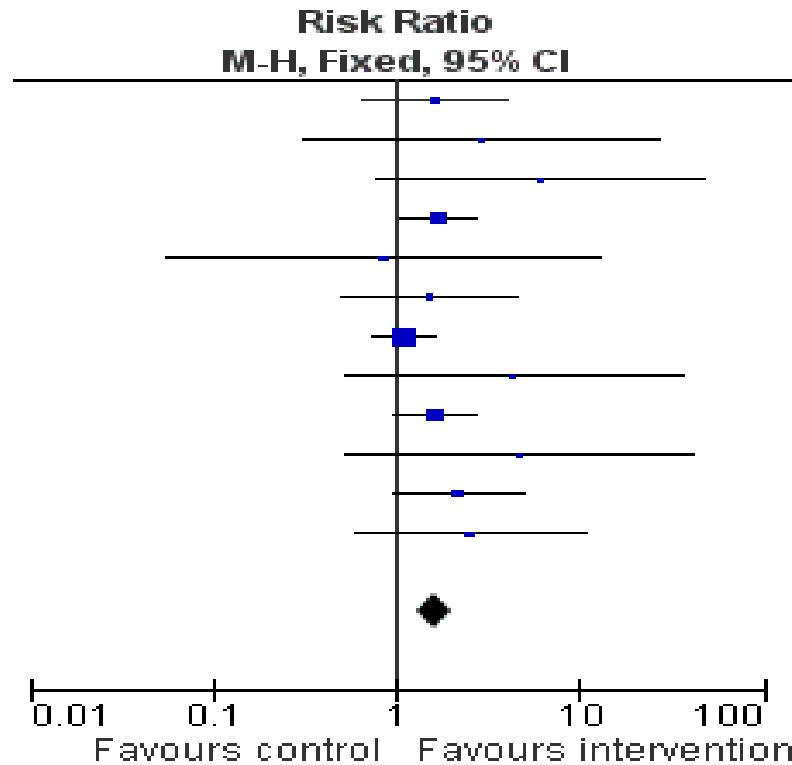
Abstinence rate for children and Adolescents: Usual care vs Counselling

Estimated abstinence rates for counselling interventions with adolescent smokers (2008)

Adolescent smokers	Number of arms	Estimated odds ratio (95%C.I.)	Estimated abstinence rate (95%C.I.)
Usual care	7	1.0	6.7
Counselling	7	1.8 (1.1-3.0)	11.6(7.5-17.5)

[www. Surgeongeneral.gov/tobacco/](http://www.Surgeongeneral.gov/tobacco/)

Motivational enhancement vs brief interventions for adolescent smokers



Study or Subgroup	Intervention		Control		Weight	Risk Ratio M-H, Fixed, 95% CI
	Events	Total	Events	Total		
Total (95% CI)		1477		1190	100.0%	1.60 [1.28, 2.01]

Tobacco cessation interventions for young people.

Cochrane Database of Systematic Reviews 2013

Smoking hazards in Pregnant women

- Women are more susceptible to smoking than men
- Oral contraceptives increases incidence of cardiovascular disorders in smoking women 12-fold than in non-smoker

Stampfer MJ et al. Am J Obstet Gynecol 1990





Smoking cessation intervention for pregnant smokers

Recommended smoking cessation treatments

- Intense support and proactive telephone counselling
- Lack of evidence on the safety of pharmacotherapy in pregnancy, intermittent NRT preferred.



RAGCP, CDC

Smoking cessation in pregnant smokers

Recommendations

- Pregnant smokers should be offered psychosocial interventions that exceed minimal advice to quit (A).

Pregnant smokers	Number of arms	Estimated odds ratio (95%C.I.)	Estimated abstinence rate(95%C.I.)
Usual care	8	1.0	7.6
Psychosocial intervention (abstinence)	9	1.8 (1.4-2.3)	13.3(9.0-19.4)

Pharmacological interventions for smoking cessation during pregnancy

Comparison between NRT vs Control

Outcome or subgroup	No of studies	No of participants	Statistical methods	Effect size
Validated cessation in later pregnancy	8	2199	Risk Ratio (95% CI)	1.41 [1.03, 1.93]
Placebo controlled trials	5	1926	Risk Ratio (95% CI)	1.28 [0.99, 1.66]
Non placebo controlled trials	3	273	Risk Ratio (95% CI)	8.51 [2.05, 35.2]

Pharmacotherapy for smoking cessation in pregnant smokers

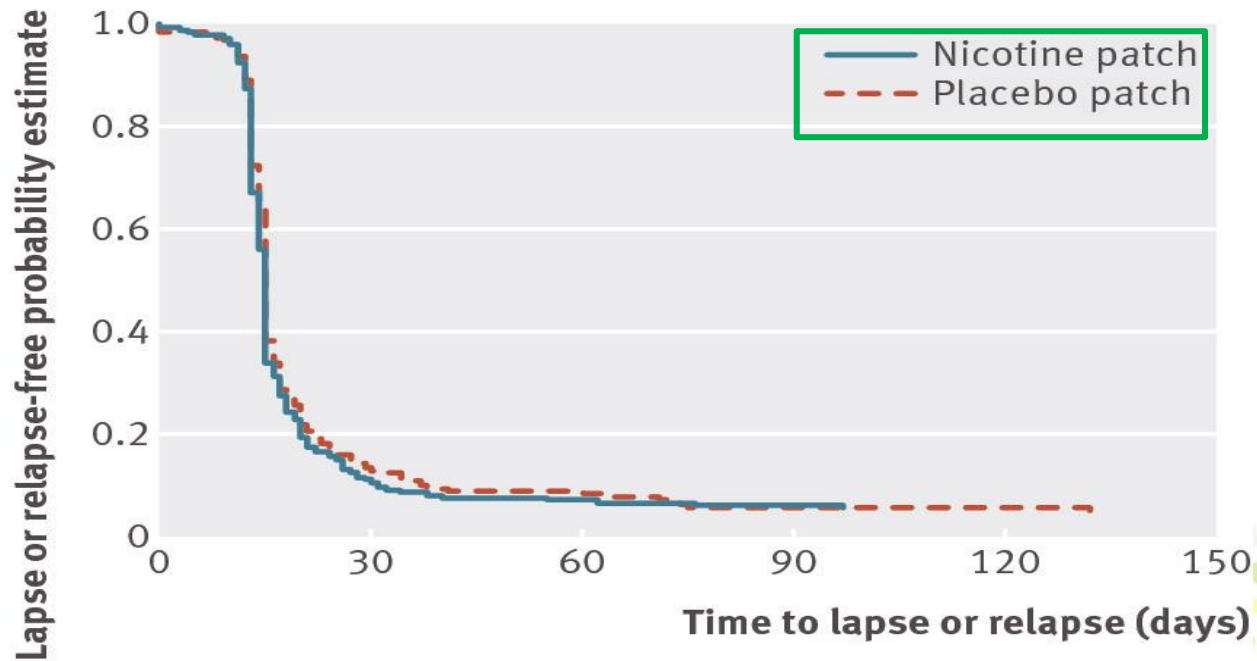
- ✓ **Eight** studies investigated of NRT(N=2199)
- ✓ **One** study investigated bupropion (n=11)
- ✓ **No** trials investigated varenicline or (ENDS).

NRT used with behavioural support increase smoking abstinence in late pregnancy by 40% (?)

Borderline significant findings of placebo-RCTs

Coleman T et al 2015 Cochrane database

Efficacy of nicotine patches in pregnant smokers



Counselling & support :main strategy in pregnant

Consider the damage between NRT & smoking

Smoking cessation in psychiatric smokers:

Demographic characteristics

- ① More common among smokers, almost half of all
- ② Lower rates of cessation success
- ③ On average die 25 years younger

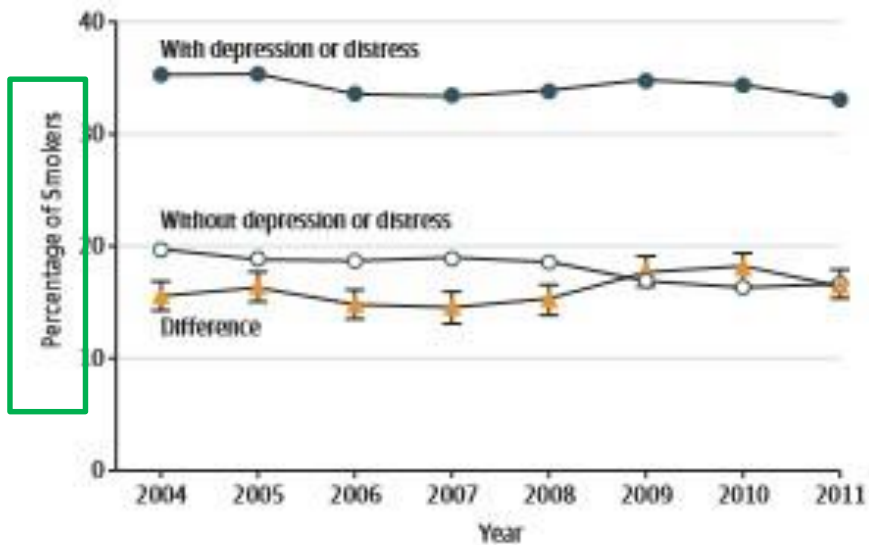
Tobacco control policies and cessation intervention

The general population have not worked as effectively for those with mental illness

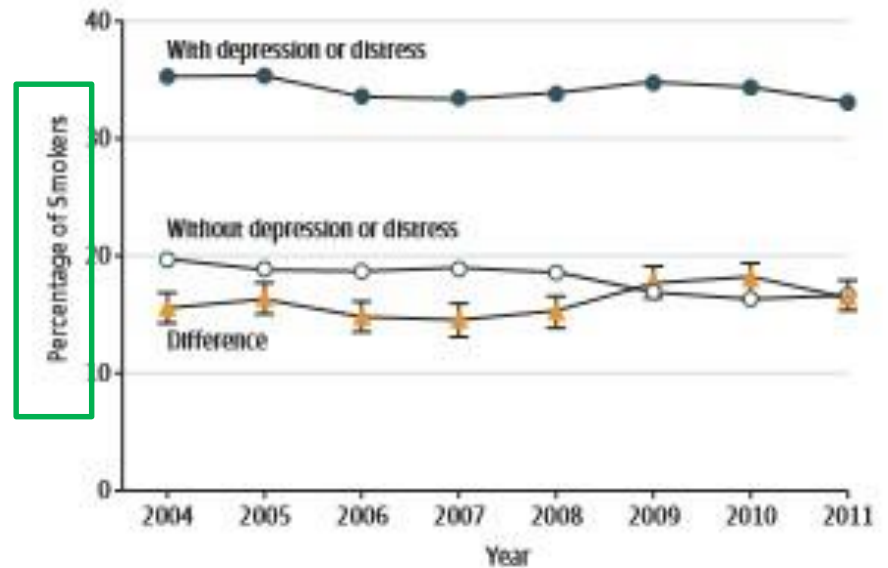
Cook et al. JAMA 2014:311

Trends in smoking rates in individuals with and without mental illness

Probable mental illness



Probable depression or psychiatric distress illness



Cook et al. JAMA 2014:311

Estimated trends in smoking among individuals with and without probable mental illness

	Mental illness		No mental illness	
	No. (%) [95% CI]	P Value	No. (%) [95% CI]	P Value
Treatment linked to a mental health diagnosis, PHQ-2 Score > 2, or K-6 Score > 12^a				
2004-2005	8404 (25.3) [24.2 to 26.3]		33 238 (19.2) [18.7 to 19.7]	
2010-2011	8206 (24.9) [23.8 to 26.0]		35 111 (16.5) [16.0 to 17.0]	
Difference over time, % (95% CI) ^b	-0.4 (-1.8 to 1.1)	.50	-2.7 (-3.4 to -2.0)	<.001
Difference in difference, % (95% CI) ^c			2.3 (0.7 to 3.9)	.005
Treatment for mental health diagnosis				
2004-2005	5114 (24.4) [23.0 to 25.7]		36 528 (19.7) [19.3 to 20.2]	
2010-2011	5239 (23.9) [22.5 to 25.3]		38 078 (17.1) [16.6 to 17.6]	
Difference over time, % (95% CI)	-0.5 (-2.4 to 1.4)	.71	-2.6 (-3.3 to -1.9)	<.001
Difference in difference, % (95% CI)			2.1 (0 to 4.2)	.048

Cook et al. JAMA 2014:311

Smoking cessation in psychiatric smokers: psychiatric adverse events used by pharmacotherapy

- Bupropion may not be suitable for smokers with a history of seizures, anorexia or bulimia and using other antidepressants

Suicidal ideation and suicidality

- No increased risk of suicidality with bupropion(HR:0.83) or varenicline (HR0.88) compared to NRT

Thomas KH et al. BMJ,. 2013

Smoking cessation in psychiatric smokers

[Evaluating Adverse Events in a Global Smoking Cessation Study]

- ✚ **Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EGALES)**

a double-blind, randomised, placebo-controlled clinical trial

16 countries between Nov 30, 2011, and Jan 13, 2015

- No significant difference in neuropsychiatric adverse events between 4 groups (1.3% vs 2.2% vs 2.5% vs 2.4%)

Anthenelli RM et al Lancet 2016 387



Smoking cessation in psychiatric smokers

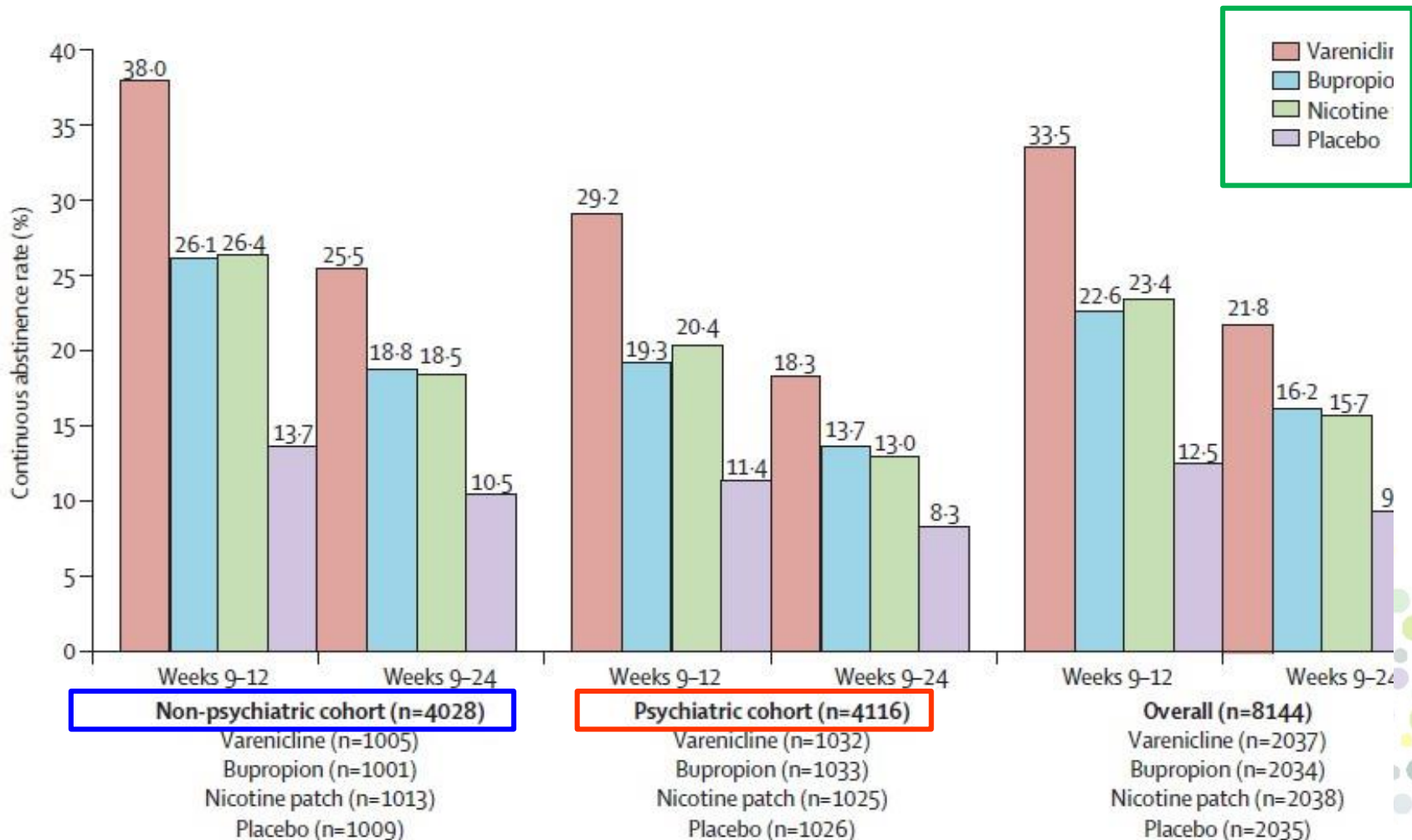
Common side effects of pharmacotherapy

- ① Nausea (varenicline, 25% [511 of 2016]),
- ② Insomnia (bupropion, 12% [245 of 2006]),
- ③ Abnormal dreams (nicotine patch, 12% [251 of 2022]),
- ④ Headache (placebo, 10% [199 of 2014])

Anthenelli RM et al. Lancet 2016; 387

EAGLES ;

Continuous abstinence rates for weeks



EAGLES:

Colombia-Suicide Severity Rating Scale(C-SSRS)

	Non-psychiatric cohort* (n=3984)				Psychiatric cohort* (n=4074)			
	Varenicline (n=990)	Bupropion (n=989)	Nicotine patch (n=1006)	Placebo (n=999)	Varenicline (n=1026)	Bupropion (n=1017)	Nicotine patch (n=1016)	Placebo (n=1015)
During treatment and ≤30 days after last dose								
Assessed	988	983	996	995	1017	1012	1006	1006
Suicidal behaviour and/or ideation	7 (1%)	4 (<1%)	3 (<1%)	7 (1%)	27 (3%)	15 (1%)	20 (2%)	25 (2%)
Suicidal behaviour†‡	0	0	1 (<1%)	1 (<1%)§	0	1 (<1%)	0	2 (<1%)
Suicidal ideation	7 (1%)	4 (<1%)	3 (<1%)	6 (1%)	27 (3%)	15 (1%)	20 (2%)	25 (2%)
During follow-up (>30 days after last treatment dose and through end of study)								
Assessed	807	816	800	805	833	836	824	791
Suicidal behaviour and/or ideation	3 (<1%)	2 (<1%)	3 (<1%)	4 (<1%)	14 (2%)	4 (<1%)	9 (1%)	11 (1%)
Suicidal behaviour†¶	0	1 (<1%)	0	0	1 (<1%)	0	1 (<1%)	1 (<1%)
Suicidal ideation	3 (<1%)	2 (<1%)	3 (<1%)	4 (<1%)	14 (2%)	4 (<1%)	9 (1%)	11 (1%)

EAGLES

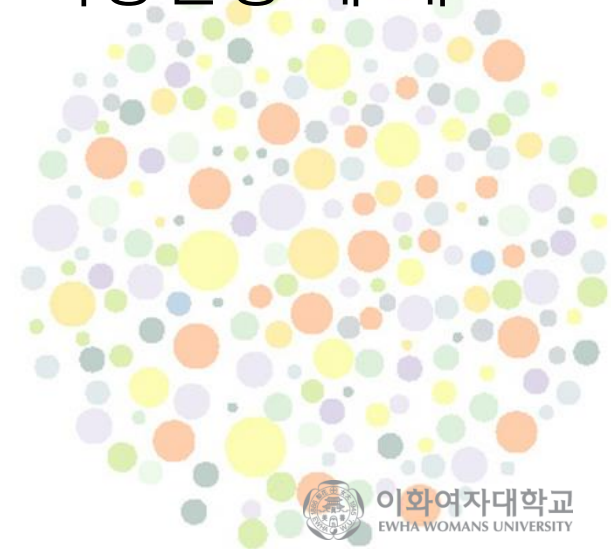
Neuropsychiatric composite safety endpoint

	Non-psychiatric cohort* (n=3984)				Psychiatric cohort* (n=4074)			
	Varenicline (n=990)	Bupropion (n=989)	Nicotine patch (n=1006)	Placebo (n=999)	Varenicline (n=1026)	Bupropion (n=1017)	Nicotine patch (n=1016)	Placebo (n=1015)
Primary composite neuropsychiatric endpoint	13 (1.3%)	22 (2.2%)	25 (2.5%)	24 (2.4%)	67 (6.5%)	68 (6.7%)	53 (5.2%)†	50 (4.9%)
Estimated primary composite neuropsychiatric adverse events (% [95% CI])	1.25% (0.60 to 1.90)	2.44% (1.52 to 3.36)	2.31% (1.37 to 3.25)	2.52% (1.58 to 3.46)	6.42% (4.91 to 7.93)	6.62% (5.09 to 8.15)	5.20% (3.84 to 6.56)	4.83% (3.51 to 6.16)
Difference in risk of composite primary endpoint (RD% [95% CI])								
Versus placebo	-1.28 (-2.40 to -0.15)	-0.08 (-1.37 to 1.21)	-0.21 (-1.54 to 1.12)	..	1.59 (-0.42 to 3.59)	1.78 (-0.24 to 3.81)	0.37 (-1.53 to 2.26)	..
Versus nicotine patch	-1.07 (-2.21 to 0.08)	0.13 (-1.19 to 1.45)	..	..	1.22 (-0.81 to 3.25)	1.42 (-0.63 to 3.46)	..	..
Versus bupropion	-1.19 (-2.30 to -0.09)	..	..	..	-0.20 (-2.34 to 1.95)	..	..	..

美 FDA 챔픽스 블랙박스 경고문 제거 (2016.12.16)

EAGLES((Evaluating Adverse Events in a Global Smoking Cessation Study)

미국 식품의약국(FDA)은 챔픽스 (바레니클린)의 제품 설명서에서 '심각한 신경정신학적 이상반응'에 대한 블랙박스 경고문을 삭제 승인.



Smoking cessation in Hospitalized Smokers

- Particularly motivated to make a quit attempt
- Hospitalized smoker is housed in a smoke-free.
- Smoking cessation program for admitted smokers

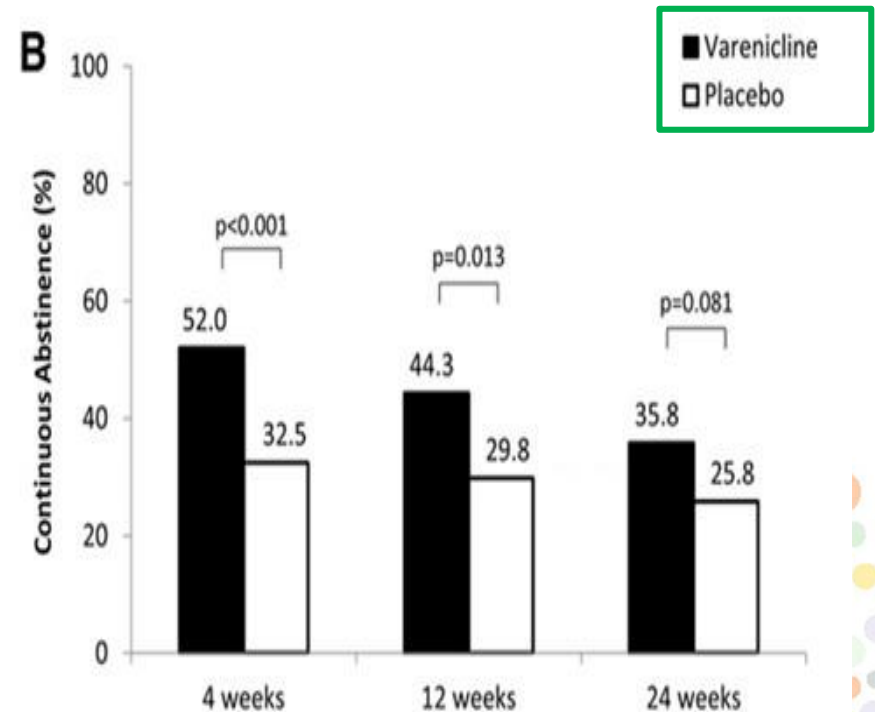
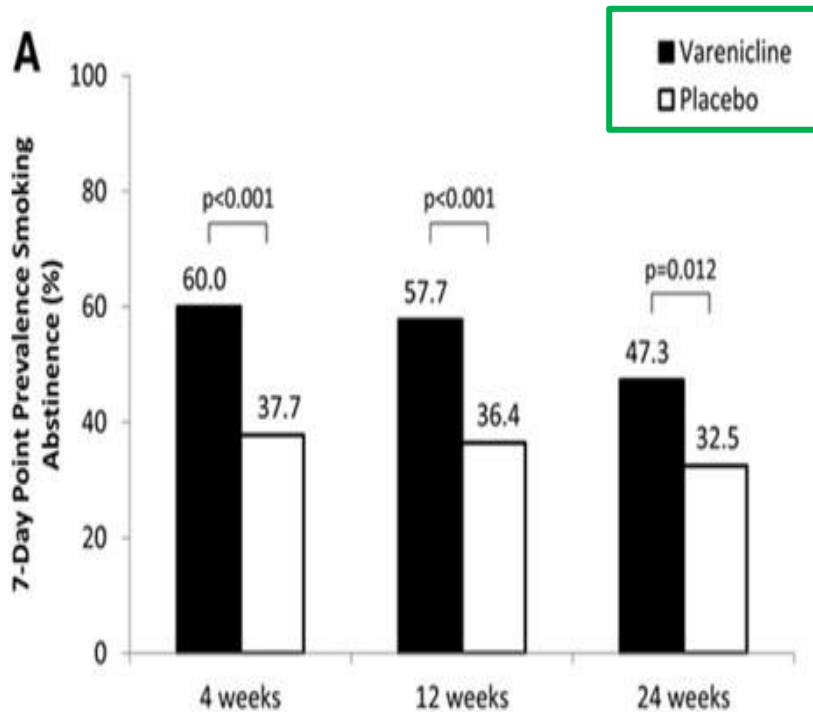
; effective more than OPD clinic

eg. [admission camp for severe addicted smokers]

Eisenberg MJ et al 2016 circulation

Smoking cessation in hospitalized smokers

Varenicline for Smoking Cessation in Hospitalized Patients With Acute Coronary syndrome



Eisenberg MJ et al 2016 circulation

Smoking cessation in Hospitalized Smokers

Varenicline for Smoking Cessation in Hospitalized Patients With Acute Coronary Syndrome

Adverse events by treatment groups

	Varenicline (n = 151)	Placebo (n = 151)	P Value
Serious adverse events within 30 days of treatment discontinuation, n (%)			
Patients with any SAE	18 (11.9)‡	17 (11.3)§	>0.99
Composite MACE	6 (4.0)	7 (4.6)	>0.99
Death†	2 (1.3)	0	0.50
MI	3 (2.0)	3 (2.0)	1.00
Unstable angina	1 (0.7)	5 (3.3)	0.21
Other cardiovascular events¶	3 (2.0)	2 (1.3)	>0.99

Eisenberg MJ et al 2016 circulation

Concerning in CV adverse events

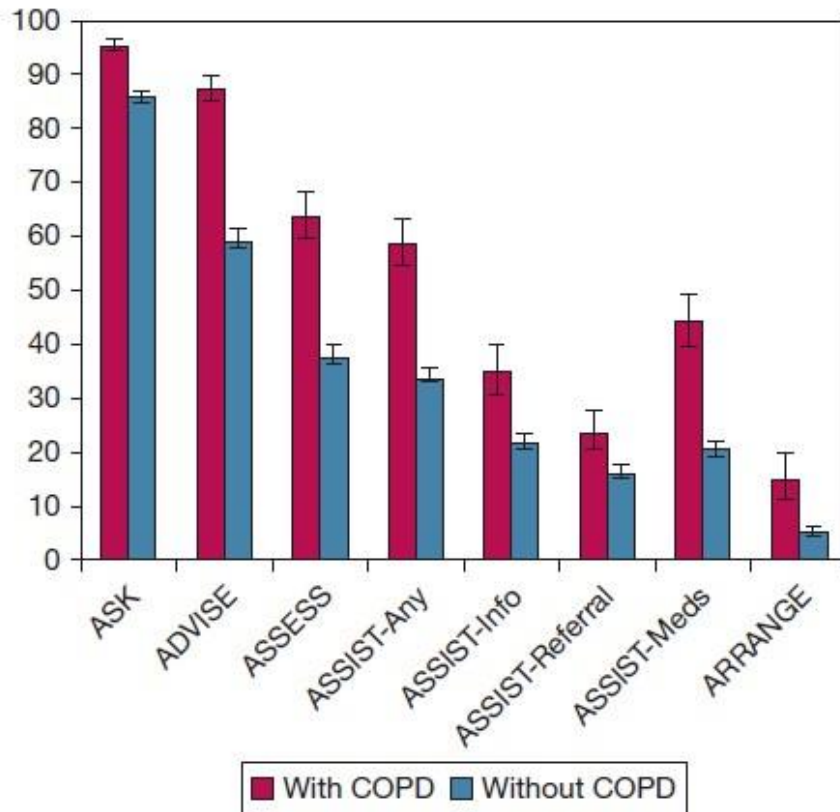
CV adverse events of pharmacotherapy

Meta analysis of RCTs: (30,500 patients) CV events with use of varenicline, bupropion SR, NRT

- **Neither** varenicline (RR;1.3 CI:0.79-2.23),or bupropion (RR;0.98 CI;0.54-1.73) showed increased all CV events risk.
- **No** clear evidence of major CV events with NRT compared to placebo (RR;1.95 CI;0.26-4.30)

Mills EJ et al. Circulation 2014

Past-Year Cigarette Smokers with vs without COPD having received each of 5A cessation strategies, National Adult Tobacco Survey, 2009-2010(n=16,335)



Unadjusted (n = 16,335)

Prevalence ratio COPD vs no COPD	95% (C.I.)	P value
1.11	(1.09, 1.13)	< .0001
1.47	(1.42, 1.53)	< .0001
1.68	(1.56, 1.82)	< .0001
1.72	(1.58, 1.88)	< .0001
1.62	(1.40, 1.88)	< .0001
1.44	(1.21, 1.71)	< .0001
2.16	(1.90, 2.46)	< .0001
2.89	(2.09, 4.00)	< .0001

Schauer GL et al. Chest 2016;149:617

Cessation Behaviors of Smokers With and Without COPD

National Adult Tobacco Survey, 2009-2010

Characteristic	Wt % (95% CI)		P Value
	Past smokers with COPD (N=2,339)	Past smokers without COPD (N=17,682)	
Used cessation treatment			
Any	59.2 (52.5, 65.6)	37.2 (35.2, 39.3)	< .0001
Quitline, class or program	10.0 (7.9, 12.6)	4.4 (3.9, 5.0)	< .0001
One-on-one health professional counseling	10.7 (7.9, 14.5)	5.7 (5.0, 6.6)	< .01
Medication	56.0 (49.5, 62.4)	34.1 (32.2, 36.1)	< .0001

Schauer GL et al. Chest 2016;149:617

Success rate of Smoking cessation for COPD

- ✓ **Nicotine & varenicline increased quit rate over placebo**
[RR **2.60** (95% CI 1.29 to 5.24)] and [RR **3.34** (95% CI 1.88 to 5.92)]
- ✓ **Positive effect of bupropion vs placebo**
[RR **2.03** (95% CI 1.26 to 3.28)]
- ✓ **Pharmacotherapy + high-intensity behavioural vs placebo + high-intensity behavioural treatment**
[RR **2.53** (95% CI 1.83 to 3.50)]
- ✓ **High-intensity behavioural treatment vs usual care**
[RR **25.38** (95% CI 8.03 to 80.22)]

Cochrane database review 2016





경청해 주셔서 감사합니다

