QUITTING SMOKING AFTER CANCER DIAGNOSIS

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DISCLOSURES

I have no relevant disclosures

BACKGROUND

- Smoking causes ~30% of all cancer deaths and ~90% of lung cancer deaths
- >60% of cancer patients are current, recent, or former smokers
- Smoking is most common among patients with lung and head & neck cancers
- ~70% of smokers want to quit; ~50% attempt quitting
- Most patients relapse without professional support

FACTORS THAT ENCOURAGE QUITTING AFTER CANCER DIAGNOSIS

- Smoking-related cancer (lung, head and neck, bladder)
- Favorable prognosis
- Upcoming treatment, eg., surgery or hospitalization requiring abstinence
- Older age

PATIENT AND PHYSICIAN ATTITUDES

- Patients with tobacco-related cancers often experience guilt and shame, leading to underreporting of continued smoking
- Many patients see little benefit in quitting after a cancer diagnosis
- Some healthcare professionals, concerned about adding guilt or stress, avoid discussing cessation
- Cessation support for identified smokers remains limited in oncology settings

BARRIERS TO SMOKING CESSATION SUPPORT IN ONCOLOGY SETTINGS

- Limited time during clinical visits
- Lack of training among oncology staff
- Unclear responsibility for smoking cessation
- Inadequate referral pathways
- Limited access to cessation programs or medications

CONSEQUENCES OF CONTINUED SMOKING IN LUNG CANCER PATIENTS

- Increased treatment toxicity
- Increased risk of second cancer
- Lower quality of life
- Decreased treatment outcomes

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FACTORS PREDICTING POSTOPERATIVE COMPLICATIONS AFTER SLEEVE RESECTION

(MULTIVARIATE ANALYSIS)

Factors	*p*-value
Age	NS
Gender	NS
Compromised patients	0.001
Smoking	0.01
Neoadjuvant treatment	NS
Mediastinoscopy	NS
Side of resection (right vs left)	0.003
Vascular sleeve resection	NS
Bilobectomy	0.03
Invaded bronchial stump	NS
Squamous cell ca	0.03
N positive disease	0.01

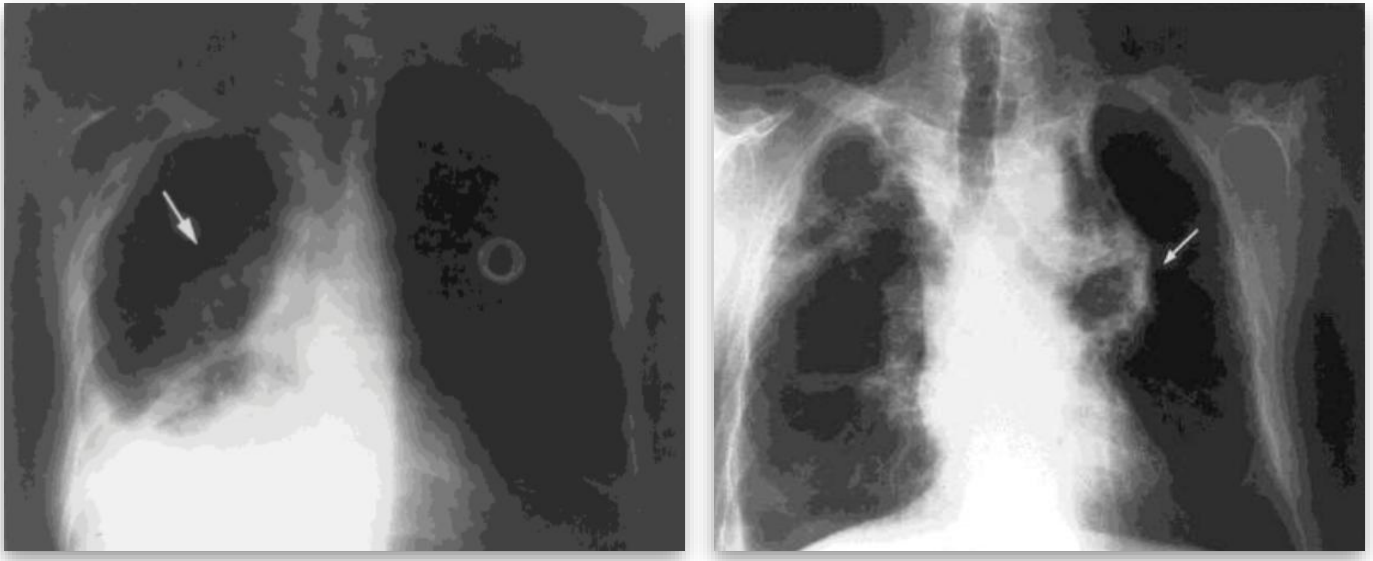
Yildizeli et al. Eur J Cardiothor Surg 2007; 31: 95

FACTORS PREDICTING POSTOPERATIVE COMPLICATIONS AFTER PNEUMONECTOMY
(MULTIVARIATE ANALYSIS)

Variable Examined	Odds Ratio	Confidence Interval	*p*
Timing of smoking cessation (< 1 month versus ≥ 1 month)	2.70	1.18–6.17	0.018
Age (> 60 versus ≤ 60 years)	1.14	0.50–2.60	0.760
Side of pneumonectomy (right versus left)	1.10	0.48–2.51	0.823
Preoperative therapy (therapy versus no therapy)	0.92	0.57–1.48	0.724

Varpocijan et al., Ann Thorac Surg 2002;73:420

CLINICAL RADIATION PNEUMONITIS



Clinical radiation pneumonitis in 17/83 patients (20%):
- 17/75 (23%) smokers
- 0/8 (0%) non-smokers ($p<0.01$)

Monson et al. Cancer 1998;82:842

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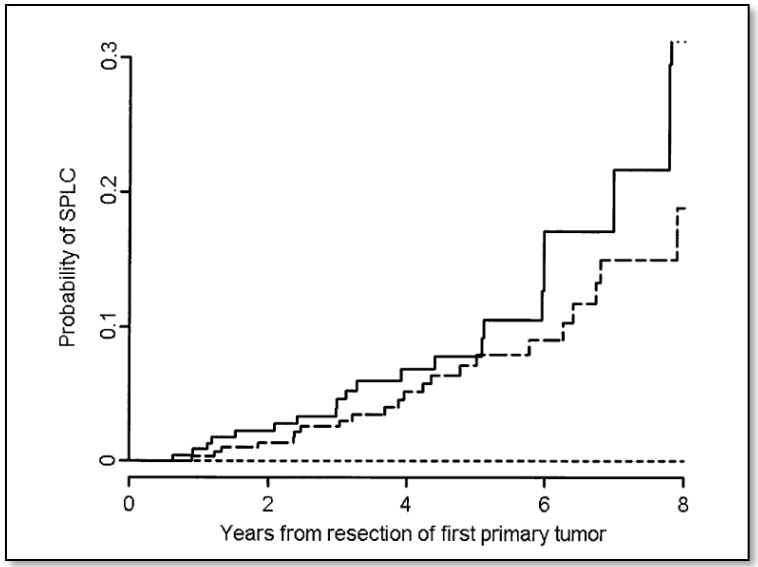
EFFECT OF SMOKING STATUS ON RISK OF SECOND PRIMARY LUNG CANCER IN STAGE I NSCLC



Current smokers (n=230)
Former smokers (n=295)
Never smokers (n=44)

Never vs. ever smokers: p = 0.046
Former vs. current smokers: p = 0.03

Rice et al., Ann Thorac Surg 2003;76:1001– 8

SECOND PRIMARY CANCER (SPC) INCIDENCE vs. SMOKING BEHAVIORS (N = 29,795)

Smoking behaviors	No (%)	All SPC	Tobacco-related SPCs
Current smoker	9833 (33.7)	1.00	1.00
Recent quit	2645 (9.1)	0.82 (0.69–0.96)	0.74 (0.61–0.90)
Former smoker	3661 (12.6)	0.73 (0.63–0.84)	0.64 (0.54–0.75)
Never smoker	13 007 (43.7)	0.57 (0.49–0.65)	0.42 (0.35–0.51)

Tabuchi et al. Ann Oncol 2013; 24: 2699

TOBACCO SMOKING vs. RISK OF SECOND PRIMARY CANCER IN PATIENTS ADMINISTERED RADIOTHERAPY

First author, year	Type	No pts	Outcome
Kawaguchi 2006	NSCLC	62	RR in continued smokers vs. general population 5.2 (1.6-11.7)
Tucker 1997	SCLC	611	RR 9.1 in ceased and 21 in continued smokers vs. general population
Kawahara 1998	SCLC	70	HR in current smokers vs. non-smokers 4.3 (p=0.03)

HR: hazard ratio; RR: relative risk;LRC: locoregional control; DC: distant control

Pedryan & Jassem. Current Oncol 2022; 29: 2284–2300

CONSEQUENCES OF CONTINUED SMOKING IN LUNG CANCER PATIENTS

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ADJUSTED MEAN LUNG CANCER SYMPTOM SCALE (LCSS) SCORES ACCORDING TO SMOKING STATUS

P<0.001

Garces et al. Chest 2004; 126:1733

CONSEQUENCES OF CONTINUED SMOKING IN LUNG CANCER PATIENTS

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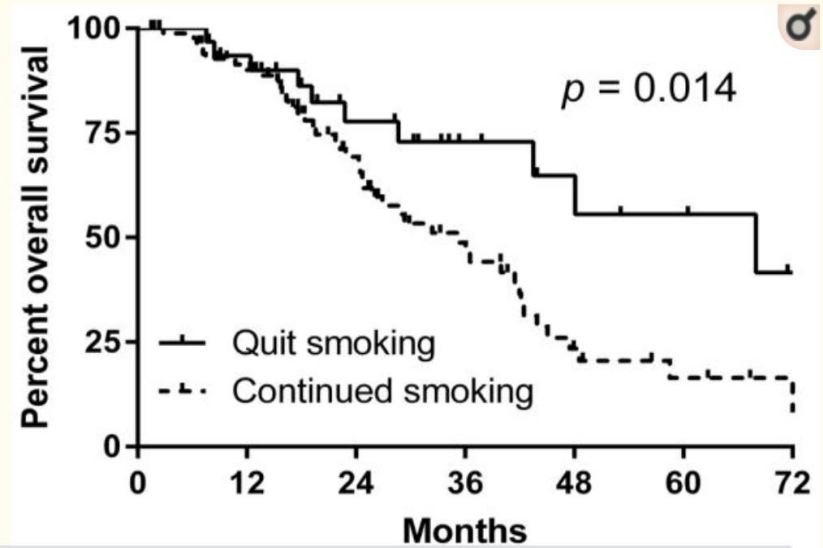
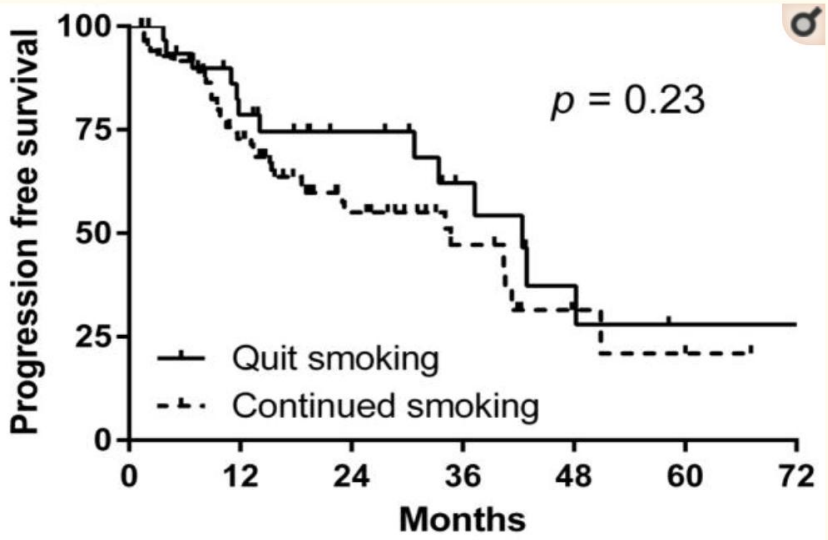
OUTCOMES OF STEREOTACTIC RADIOTHERAPY FOR LUNG CANCER IN SMOKERS AND QUITTERS





Roach et al. Pract Radiat Oncol. 2016 ; 6: 12–18

TOBACCO SMOKING vs. LOCOREGIONAL AND DISTANT CONTROL AFTER RADIOTHERAPY

First author, year	Type	No pts	Outcome
Nguyen, 2010	NSCLC	152	HR for LRC in smokers vs. non-smokers 3.6 (p=0.0006)
Miller, 2019	NSCLC	226	HR for DC in current vs. never-smokers 1.31 (0.24-2.36) and for former vs. never-smokers 1.14 (0.31-2.46)
Sheikh, 2021	NSCLC	517	HR for LRC in current vs. former-smokers 1.74 (p=0.029)
Rades, 2008	NSCLC	181	RR for LRC in smokers vs. non-smokers 1.74 (p=0.029)

Pedryan & Jassem. Current Oncol 2022; 29: 2284–2300

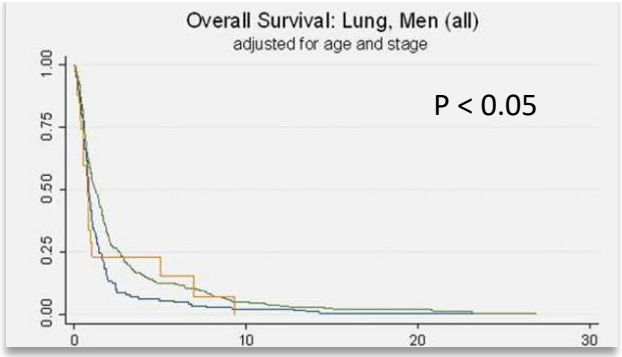
TOBACCO SMOKING vs. OVERALL SURVIVAL AFTER RADIOTHERAPY

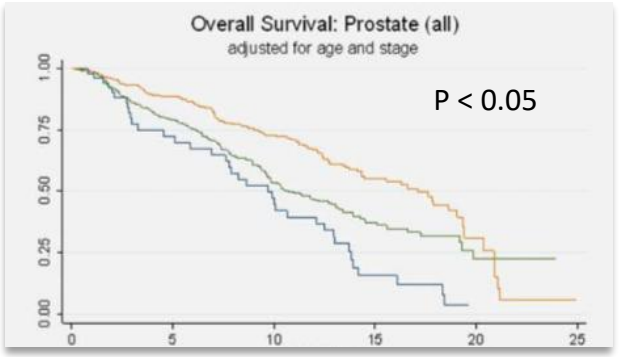
First author, year	Type	No pts	Outcome
Tsao et al.	NSCLC	497	1-y OS 67% in current/former vs. 69% in never smokers (NS)
Nguyen, 2010	NSCLC	152	5-y OS 20% in smokers and 34% in non-smokers (NS)
Fisher-Valuck, 2013	NSCLC	62	HR for death in smokers vs. never-smokers 1.31 (p=0.341)
Roach, 2015	NSCLC	119	2-y OS 69% in continued smokers vs. 78% in quitters (p=0.014)
Fox, 2003	NSCLC	237	2-y OS 41% in smokers vs. 56% in non-smokers (p=0.01)
Sheikh, 2021	NSCLC	517	5-y OS 61% in quitters and 49% in smokers and (p=0.001)
Rades, 2008	NSCLC	181	2-y OS 25% in smokers vs. 39% in non-smokers (NS)
Johnston, 1980	SCLC	112	Median OS 12 months in quitters at diagnosis, 16 in quitters before diagnosis and 11 in continued smokers (p<0.04)
Videtic, 2003	SCLC	215	Median OS 18 months in quitters vs. 13.6 months in continued smokers (p=0.002)

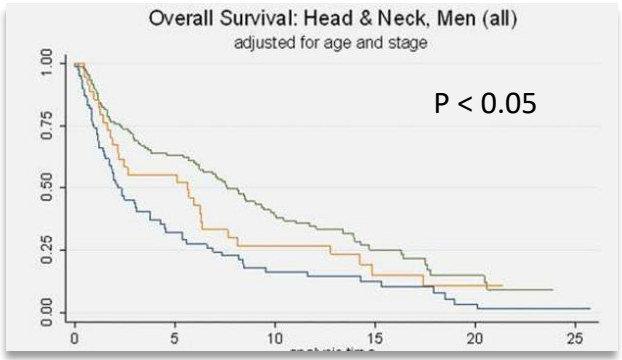
Pedryan & Jassem Current Oncol 2022, 29: 2284-2300

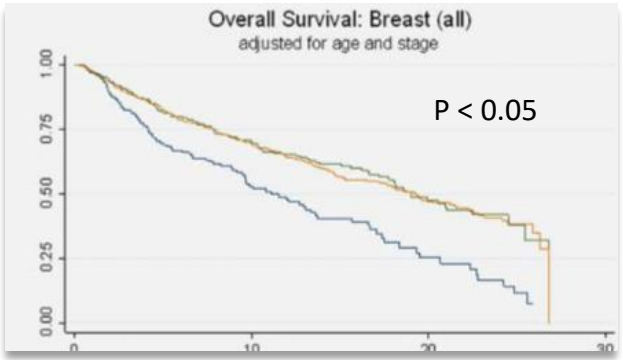
OVERALL SURVIVAL VS. SMOKING STATUS IN MAJOR MALIGNANCIES

never smokers
former smokers
current smokers





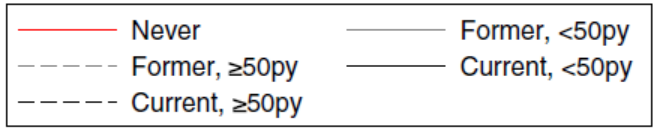


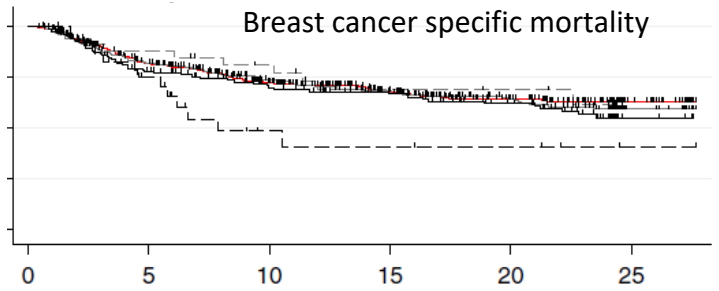


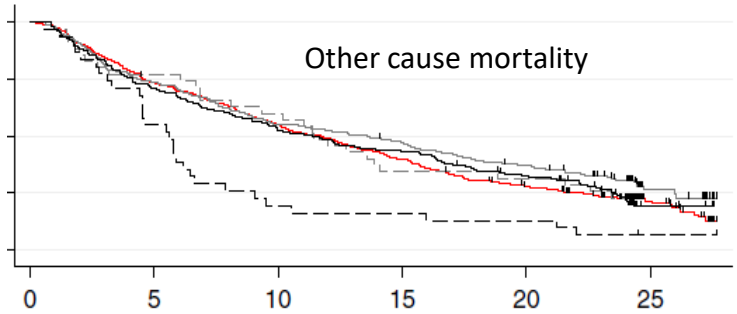
Warren GW, et al. Int J Cancer 2013; 132; 401

Smoking and mortality after breast cancer diagnosis: the health and functioning in women study

- 975 women aged 40–84 years; median follow up 11 years
- Current, and not former smoking was associated with increased risk of breast-cancer specific mortality (HR = 2.36, 95% CI: 1.26–4.44) and other-cause mortality (HR = 2.45, 95% CI: 1.81–3.32)

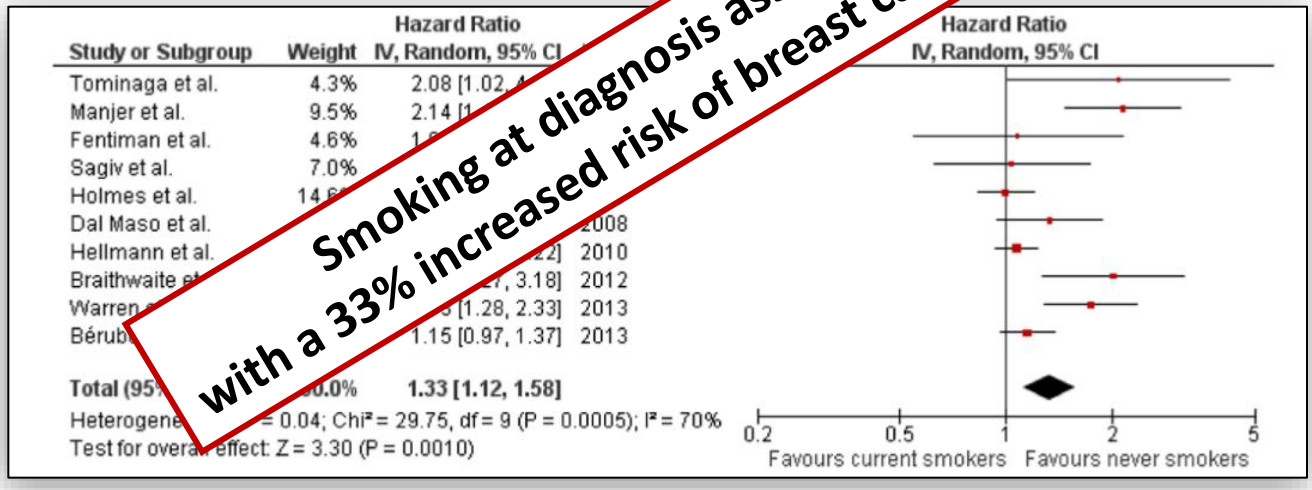






Izamo et al. Cancer Medicine 2015, 4: 315–324

Smoking at time of diagnosis and breast cancer-specific survival: new findi[illegible] and systematic review with meta-a[illegible]



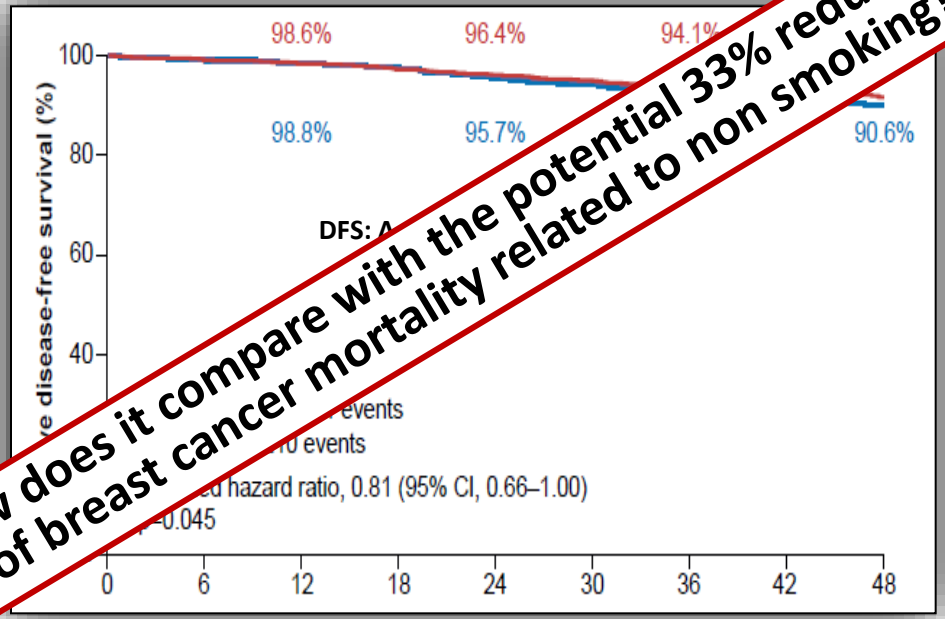
Smoking at diagnosis associated with a 33% increased risk of breast cancer death

Breast cancer specific-mortality

76% of patients received postoperative radiotherapy

Brube et al. Breast Cancer Res 2014, 16:R42

APHINITY: SINGLE VS. DUAL HER2 BLOCKADE IN EARLY BREAST CANCER



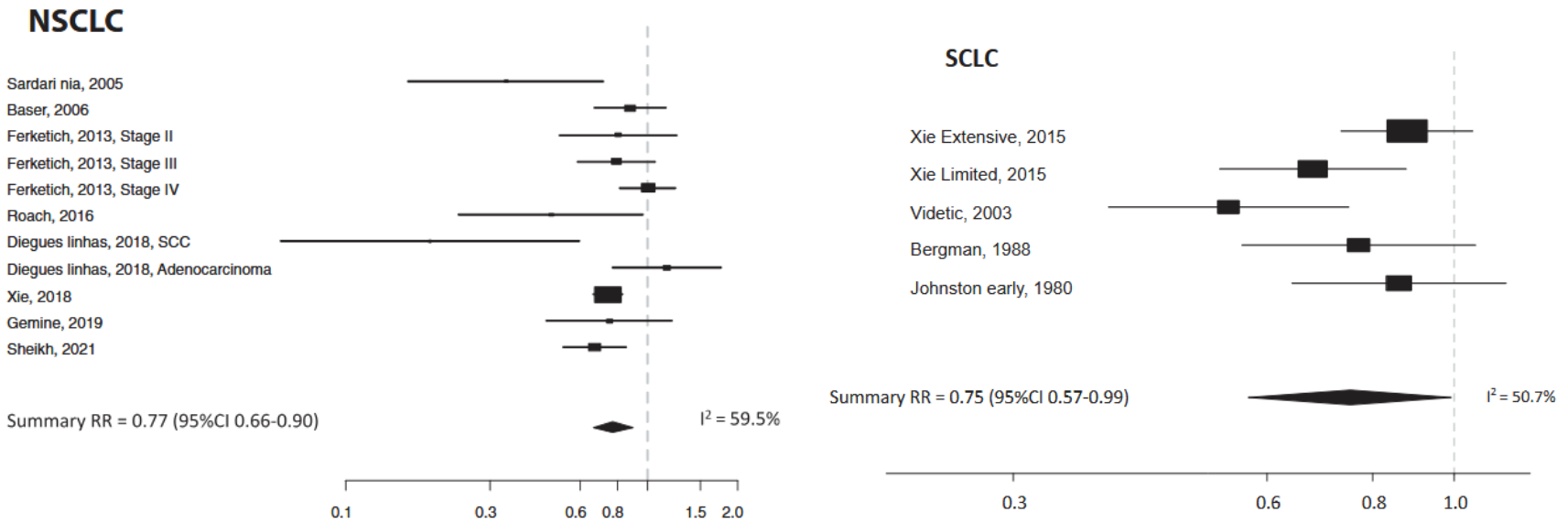
How does it compare with the potential 33% reduction of breast cancer mortality related to non smoking?

Von Minckwitz et al. N Engl J Med 2017

WHY DOES CONTINUED SMOKING REDUCE TREATMENT EFFICACY?

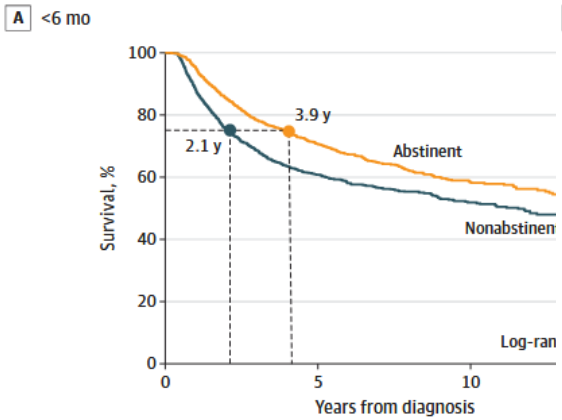
- Increased risk of cardiovascular and respiratory complications, and second primary cancer?
- Reduced treatment compliance due to greater toxicity and poorer tolerance?
- Nicotine-induced neoangiogenesis promotes tumor growth and treatment resistance?
- Life-table modeling: treatment failure is mainly driven by tumor progression caused by tobacco-related carcinogens

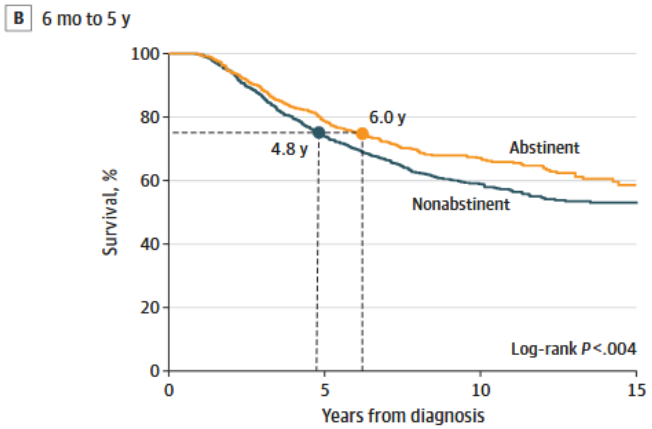
QUITTING SMOKING AT LUNG CANCER DIAGNOSIS IMPROVES OVERALL SURVIVAL: META-ANALYSIS OF >10,000 PATIENTS

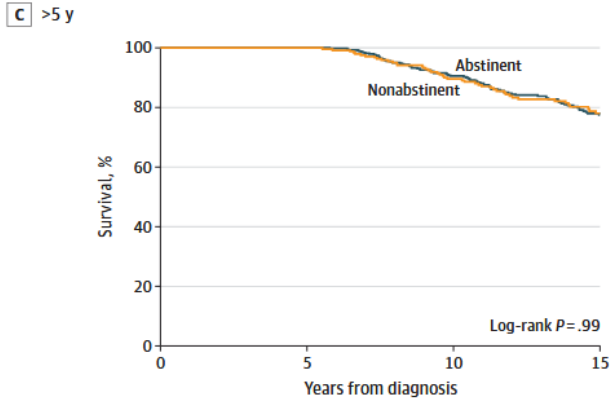


Caini et al. J Thor Oncol 2021;17: 623–63

QUIT TIME MATTERS!







Cinciripini ET AL. Jama Oncol 2024; 10:1689-1696

CANCER DIAGNOSIS: A „TEACHABLE MOMENT”

- A cancer diagnosis represents a powerful teachable moment — the best opportunity for healthcare professionals to discuss nicotine addiction and engage in shared decision-making
- Enhanced focus on smoking cessation at diagnosis, combined with active intervention, can significantly increase patients’ motivation and success in quitting

Declaration from IASLC: Tobacco Cessation After Cancer Diagnosis

Wednesday, September 04, 2019

IASLC INTERNATIONAL ASSOCIATION FOR THE STUDY OF LUNG CANCER
Conquering Thoracic Cancers Worldwide

Tobacco use is a well-established cause of cancer, contributing to about 1 in 3 cancer deaths annually. Whereas detrimental effects of smoking are well recognized, the harms of continued smoking after the diagnosis of cancer are underappreciated. Smoking continuation by cancer patients and survivors causes adverse treatment outcomes, including increased overall mortality, cancer related mortality and risk for second primary cancer, and considerably increases cancer treatment toxicity. The clinical effects of smoking after the diagnosis of cancer also has a substantial effect on increased cancer treatment costs. Smoking cessation after the diagnosis of cancer can improve treatment outcomes, but most cancer patients who smoke at the time of diagnosis persist in their smoking habit during treatment. Unfortunately, healthcare providers often do not proactively cooperate with their patients to help them to quit by providing tobacco cessation assistance for their tobacco using patients. Surveys among IASLC members demonstrate that although most healthcare professionals recognize that smoking causes adverse outcomes, approximately 90% ask about tobacco use and 80% advise patients to quit, only few offer direct assistance with quitting. There is a clear and unmet need to address tobacco use in cancer patients. The diagnosis of cancer is "the teachable moment", allowing health care professionals the best opportunity to discuss with patients their nicotine addiction and shared decision-making. An enhanced focus on smoking cessation at the time of a cancer diagnosis and active intervention may increase patients' action to quit.

Recognizing the critical importance of smoking cessation after cancer diagnosis, the IASLC recommends implementation of the following:

- All cancer patients should be screened for tobacco use and advised on the benefits of tobacco cessation.
- In patients who continue smoking after diagnosis of cancer, evidence-based tobacco cessation assistance should be routinely and integrally incorporated into multidisciplinary cancer care for the patients and their family members.
- Educational programs regarding cancer management should include tobacco cessation training, empathetic communication around history of tobacco use and cessation and utilization of existing evidence- based tobacco cessation resources.
- Smoking cessation counseling and treatment should be a reimbursable service.
- Smoking status, both initially and during the study, should be a required data element for all prospective clinical studies.
- Clinical trials of patients with cancer should consider designs that could also determine the most effective tobacco cessation interventions.

About the Author

Professor Jacek Jassem, MD, PhD, is the Head of the Department of Oncology and Radiotherapy at the Medical University of Gdansk, Poland. Prof. Jassem has been involved with nationwide public health initiatives, such as authoring the Polish anti-tobacco legislation to limit smoking in public places and the coordination of Cancer Control Strategy for Poland 2015–2024.

Jacek Jassem, Head of the Department of Oncology and Radiotherapy at the Medical University of Gdansk, Poland

IASLC DECLARATION (BARCELONA; 2019)

- All cancer patients should be screened for tobacco use and advised on the benefits of tobacco cessation
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- Educational programs regarding cancer management should include tobacco cessation training, empathetic communication around history of tobacco use and cessation and utilization of existing evidence- based tobacco cessation resources

IASLC DECLARATION (CONT.)

- Smoking cessation counseling and treatment should be a reimbursable service
- Smoking status, both initially and during the study, should be a required data element for all prospective clinical studies
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National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2025
Smoking Cessation

NCCN Guidelines Index
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Discussion

EVALUATION AND ASSESSMENT OF PATIENT SMOKING[c,d]

INITIAL EVALUATION[b,e]

Assess current cigarette smoking status of all patients with cancer:[e,f,g]
- Have you ever smoked cigarettes?
- Do you currently smoke cigarettes or have you smoked in the last 30 days?
- Have you ever or do you currently use other tobacco products (eg, pipes, cigars, hookah, cigarillos, e-cigarettes/vaping, smokeless tobacco, nicotine pouches)?[c,h]

STATUS

- Individuals who currently smoke and/or those who have smoked within the last 30 days → Assessment of individuals who currently smoke (SC-2)
- Individuals who formerly smoked
  - >30 days–1 year since last smoked → Assessment of individuals who formerly smoked (SC-4)
  - >1 year since last smoked → Encourage patient to remain abstinent from smoking and not to use any combustible products[c]
- Individuals who never smoked → Encourage patient to remain abstinent from smoking and not to use any combustible products[c]

INDIVIDUALS WHO CURRENTLY SMOKE (WITHIN LAST 30 DAYS)

STATUS	MANAGEMENT	
Quit within prior 30 days	• Discuss risk of relapse[p] • Encourage continued abstinence from smoking[q]	Evaluation of relapse risk (SC-4)
Ready to set a quit date	• Establish or reinforce personalized quit plan based on: ▸ Evaluation[o] ▸ Smoking treatment options (SC-5) • Discuss risk of relapse[p] • Encourage abstinence from smoking as soon as possible if cancer surgery is planned[q] • Discuss the impact of continued smoking on cancer treatment outcomes and complications from chemotherapy, radiation, and surgery	Begin treatment for smoking (SC-5)
Not ready to quit[m]	• Assess and address barriers and concerns of patient • Provide pharmacotherapy with a goal of smoking reduction and set a quit date in the near future[n,r] • Discuss the impact of continued smoking on cancer treatment outcomes and complications from chemotherapy, radiation, and surgery	Reassess readiness to quit at each visit

TAKE HOME MESSAGES

- Smoking cessation is a vital component of cancer care: improves survival, treatment outcomes, and quality of life
- Every encounter counts: even brief advice from oncologists can trigger quit attempts
- Cessation support should be integrated into routine oncology practice
- Pharmacotherapy and counseling combined offer the best results


QUIT