



ONCOLOGY UNIT, 3<sup>rd</sup> DEPARTMENT OF MEDICINE, ATHENS MEDICAL SCHOOL, SOTIRIA GENERAL HOSPITAL

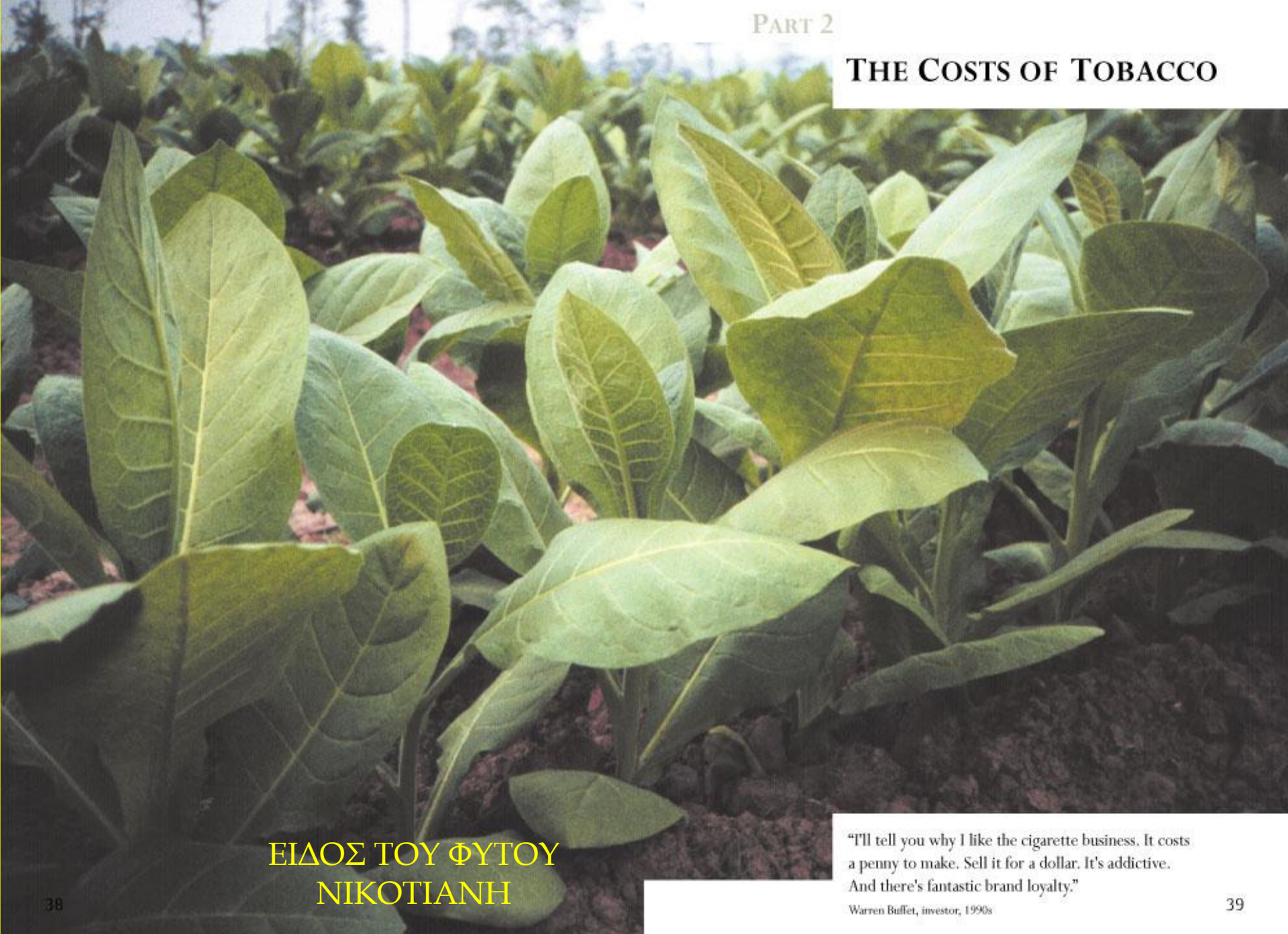
# ΚΑΤΗΝΙΣΜΑ & ΚΑΡΚΙΝΟΣ

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ΠΝΕΥΜΟΝΟΛΟΓΟΣ  
ΕΠΙΣΤΗΜΟΝΙΚΟΣ ΣΥΝΕΡΓΑΤΗΣ  
ΙΑΤΡΙΚΗΣ ΣΧΟΛΗΣ ΠΑΝ/ΜΙΟΥ ΑΘΗΝΩΝ

❑ **ΙΣΤΟΡΙΑ ΤΟΥ ΚΑΠΝΙΣΜΑΤΟΣ**

❑ **ΚΑΠΝΙΣΜΑ ΚΑΙ ΚΑΡΚΙΝΟΣ ΠΝΕΥΜΟΝΑ**

❑ **ΚΑΠΝΙΣΜΑ ΚΑΙ ΚΑΡΚΙΝΟΣ**



ΕΙΔΟΣ ΤΟΥ ΦΥΤΟΥ  
ΝΙΚΟΤΙΑΝΗ

"I'll tell you why I like the cigarette business. It costs a penny to make. Sell it for a dollar. It's addictive. And there's fantastic brand loyalty."

Warren Buffet, investor, 1990s



# ΙΣΤΟΡΙΑ ΤΟΥ ΚΑΠΝΟΥ

## ΑΠΟ ΤΗΝ ΑΡΧΑΙΟΤΗΤΑ ΕΩΣ ΤΟ 1492



- ▣ Οι αρχαίοι Έλληνες & οι Ρωμαίοι κάπνιζαν με πίπες

- ▣ Οι Μάγια και οι Ατζέκοι κάπνιζαν κατά τη διάρκεια θρησκευτικών τελετών



- ▣ Οι Ινδιάνοι της Αμερικής υπήρξαν οι πρώτοι «επίσημοι» καπνιστές παγκοσμίως  
(Y- shaped pipe called **tobaga** )

# ΙΣΤΟΡΙΑ ΤΟΥ ΚΑΠΝΟΥ

## ΑΠΟ ΤΗΝ ΑΡΧΑΙΟΤΗΤΑ ΕΩΣ ΤΟ 1492



- ▣ Το 1492 ο Χριστόφορος Κολόμβος είναι ο πρώτος άνθρωπος εκτός Αμερικής που είδε, μύρισε και άγγιξε φύλλα καπνού.
- ▣ Την ίδια χρονιά, ένας εξερευνητής, ο Rodrigo de Jeres ήταν ο πρώτος που κάπνισε φύλλα καπνού εκτός Αμερικής.

# ΙΣΤΟΡΙΑ ΤΟΥ ΚΑΠΝΟΥ ΑΠΟ ΤΟ 1493 ΕΩΣ ΤΟ 1600



- ▣ Ο Ramon Pane ήταν ο πρώτος που μετέφερε τον καπνό στην Ευρώπη.



- ▣ Το φυτό χρησιμοποιήθηκε αρχικά ως διακοσμητικό.
- ▣ Απέκτησε τη φήμη ως θεραπευτικό βότανο .

# ΙΣΤΟΡΙΑ ΤΟΥ ΚΑΠΝΟΥ

## ΑΠΟ ΤΟ 1801 ΕΩΣ 1900

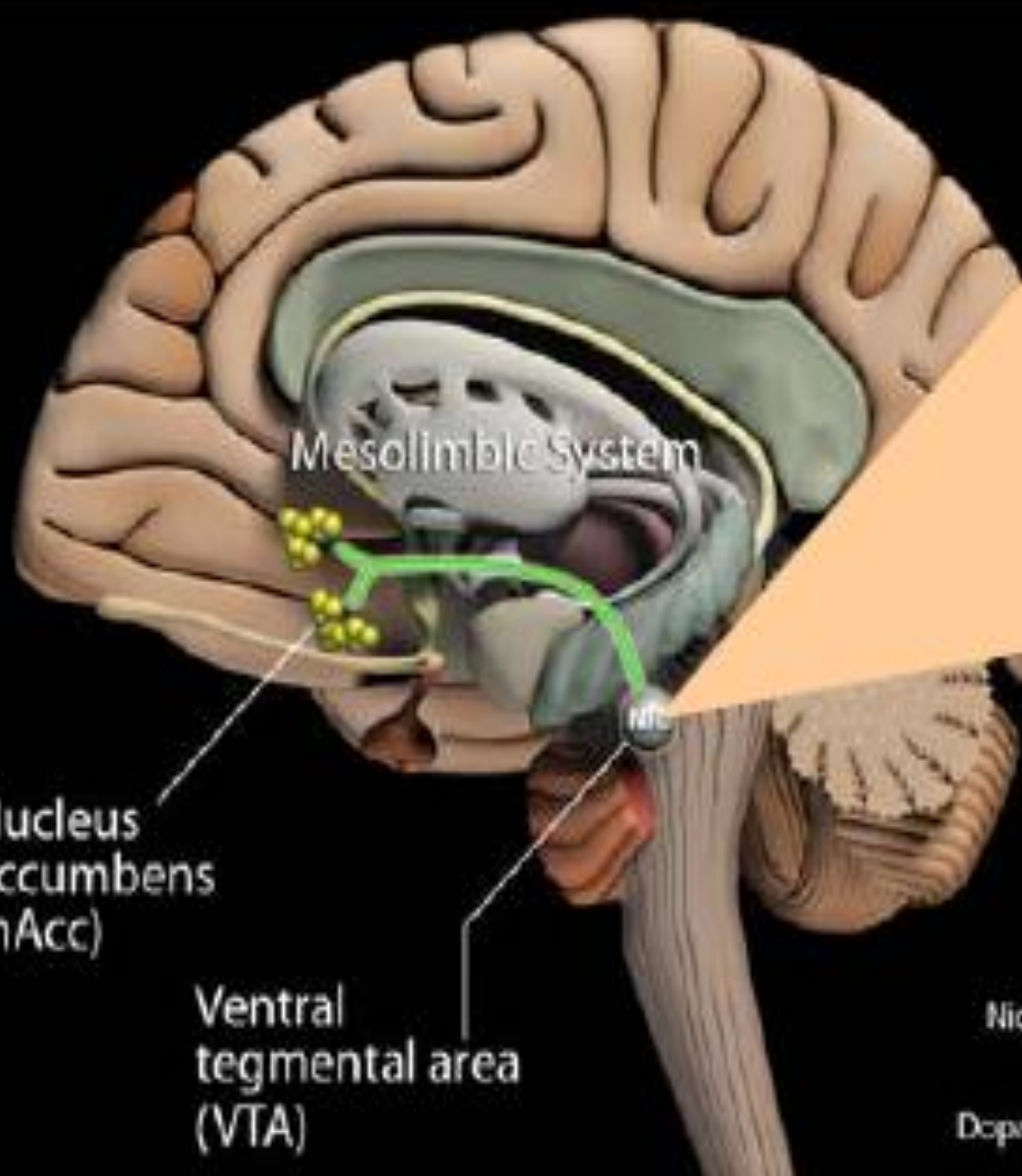


- Τα πρώτα στριφτά τσιγάρα έγιναν από τους Αιγύπτιους στρατιώτες στον πόλεμο με τη Τουρκία του 1832.



- Τα στριφτά τσιγάρα κυκλοφόρησαν ευρέως στην Ευρώπη μετά τον πόλεμο της Κριμαίας (1856) από την Τουρκία.

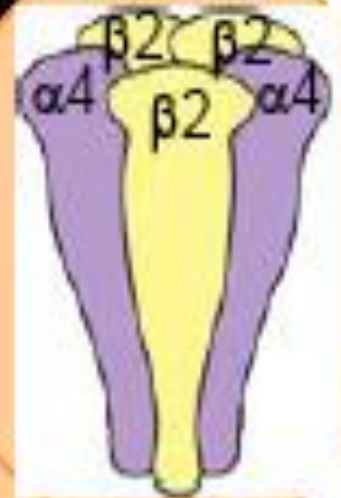




Mesolimbic System

Nucleus  
accumbens  
(nAcc)

Ventral  
tegmental area  
(VTA)



$\alpha 4 \beta 2$   
Nicotinic  
Receptor

Nicotine - ntc

Dopamine -



# ΙΣΤΟΡΙΑ ΤΟΥ ΚΑΠΝΟΥ ΑΠΟ ΤΟ 1900 ΕΩΣ ΣΗΜΕΡΑ



- ▣ Οι γυναίκες διεκδικούν το δικαίωμα στο κάπνισμα.



- ▣ Ο R J Reynolds εισάγει το 1913, το Camel - το πρώτο «μοντέρνο» τσιγάρο.

# Το 1950, η εταιρεία Kent εισάγει το 'Micronite' φίλτρο και υποστηρίζει ότι «προσφέρει την μεγαλύτερη προστασία υγείας στην ιστορία του τσιγάρου»

To 1 out of every 3 cigarette smokers:

## Kent—the one cigarette that can show you proof of greater health protection

Every week, millions see convincing evidence that KENT's "Micronite" Filter is the cigarette filter that really works—giving true smoking pleasure, yet removing up to 7 times more nicotine and tar than other filter cigarettes.

It's that 1 out of every 3 smokers—you've switched to the new and exciting Micronite, you know more than just a promise that a cigarette cigarette will give you the health protection you need.

Just KENT is the one cigarette that gives you more than a promise. KENT's Micronite Filter is made of Micronite—the ultra-fine particles of KENT's Micronite Filter is tested before your very eyes... you'll know the difference.

The cigarette shown here are shown clear of one of three tests—be performed by Jonathan Blake, your host on the exciting TV show, The Week.

1. Everything equal. The cigarette shown here is tested through which means can be shown on a single test of plain water. Jonathan Blake explains that the glass will be used to test the smoke of the Kent Micronite Filter cigarette and the results of the test.

2. Millions watch him. What does water from the Kent Micronite Filter cigarette do to the water in the glass? Jonathan Blake explains that the glass will be used to test the smoke of the Kent Micronite Filter cigarette and the results of the test.

3. Time is checked. What does a few minutes for the smoke of the Kent Micronite Filter cigarette do to the water in the glass? Jonathan Blake explains that the glass will be used to test the smoke of the Kent Micronite Filter cigarette and the results of the test.

4. And here's your answer. When the glasses are filled, you can see a dark stain from nicotine in the water of Brand X, showing a stain from the smoke of the Kent Micronite Filter cigarette. The difference in the two stains represents the difference in the health protection you get from a KENT cigarette.

5. Against all comers, there are the results of the same test performed in a laboratory, showing how KENT's Micronite Filter cigarette compares with the other filter cigarettes. The results show that KENT's Micronite Filter cigarette is the only one that gives you the health protection you need.

# Kent

with exclusive  
MICRONITE Filter

Full smoking pleasure...  
plus proof of the  
greatest health protection ever

# ΚΑΠΝΙΣΜΑ



ΕΥΧΑΡΙΣΤΗΣΗ;



ΠΡΟΒΛΗΜΑ;;



# Τι κρύβεται σε ένα τσιγάρο



- ▣ 4.000 χημικές ουσίες
- ▣ Πίσσα
- ▣ Μονοξείδιο του άνθρακα
- ▣ Νικοτίνη
- ▣ Καρκινογόνες ουσίες  
(Πολυκυκλικοί Αρωματικοί  
Υδρογονάνθρακες,  
Νιτροζαμίνες,  
Χημικές ουσίες)

# Τι Υπάρχει μέσα σε ένα Τσιγάρο;

- ▣ Καπνός τσιγάρου:  $\geq 4.000$  χημικές ουσίες,  $\geq 250$  ουσίες τοξικές ή καρκινογόνες<sup>1</sup>

Χημική Ουσία στον Καπνό του Τσιγάρου <sup>2</sup>	Βρίσκεται επίσης σε...
Ακετόνη	Αποχρωστικά υλικά
Βουτάνιο	Υγρό αναπτήρων
Αρσενικό	Εντομοκτόνα
Κάδμιο	Μπαταρίες αυτοκινήτων
Μονοξείδιο του άνθρακα	Καυσαέρια αυτοκινήτων
Τολουένιο	Βιομηχανικά διαλυτικά μέσα

1. National Toxicology Program. 11th Report on Carcinogens; 2005. Διατίθεται στην ηλεκτρονική διεύθυνση: <http://ntp-server.niehs.nih.gov>. 2. Mackay J, Eriksen M. *The Tobacco Atlas*. World Health Organization; 2006. 3. *Harvard Health Letter*. May 2005. 4. Surgeon General's Report. *The Health Consequences of Smoking*; 2004.



**Table 3.2.** Known concentrations of carcinogens. *ND* Not detected

Group/Carcinogen	Amount in (mainstream) tobacco smoke ng/cigarette	Sidestream/mainstream ratio
<b>Group 1: carcinogenic to humans</b>		
4-Aminobiphenyl [18]	0.2–4.6 (unfiltered) 0.2–23 (filtered)	30.4 (unfiltered) 6.1 (filtered) <sup>a</sup>
Benzene [19]	5,900–75,000	8.7 <sup>b</sup>
Cadmium [20]	1,700	7.2 [21]
Chromium [22]	0.2–500	
Formaldehyde [23]	3,400–283,000	
2-Naphthylamine [24]	1.5–14.1 and 35	1.9–4.8 <sup>c</sup>
Nickel [22]	0–510	13–30
Vinyl Chloride [22]	1.3–15.8	
<b>Group 2A: probably carcinogenic to humans</b>		
Benzo[a]anthracene [23]	Trace–80	
Benzo[a]pyrene [23]	4–108	2.5–3.5 [21]
1,3-Butadiene [25]	400,000	~ 1 <sup>d</sup>
Dibenz[a,h]anthracene [23]	4–76	
N-Nitrosodiethylamine [26]	< 8.3	0.96–8.8 <sup>e</sup>
N-Nitrosodimethylamine [23,27]	13–65 (unfiltered) 5.7–43 (filtered) ND–1,620	~ 12 unfiltered ~ 41 filtered <sup>f</sup>
<b>Group 2B: possibly carcinogenic to humans</b>		
Benzo[b]fluoranthene [7]	4–22	
Benzo[j]fluoranthene [7]	6–21	
Benzo[k]fluoranthene [7]	6–12	
Dibenz[a,h]acridine* [28]	0.1	
Dibenz[a,j]acridine* [28]	2.7	
7H-Dibenzo[c,g]carbazole [28]	0.7 (in tar)	
Dibenzo[a,i]pyrene [7]	1.7–3.2	
Hydrazine* [29]	32,000	
Indeno[1,2,3-cd]pyrene [7]	4–20	
5-Methylchrysene [7]	0.6	
NNK [30]	20–4,200	3.7 <sup>g</sup>
Ethyl carbamate [7]	20–38	

\* Exact source of extraction not specified, values may be higher than expected.

<sup>a</sup> Data estimated by the concentration of sidestream smoke at 140 ng/cigarette.<sup>b</sup> Data estimated at 75,000 ng in mainstream smoke to 653,000 ng in sidestream smoke.<sup>c</sup> Based on 14.1 and 35 ng per cigarette and sidestream smoke of 67 ng/cigarette.<sup>d</sup> Based on sidestream smoke of 400,000 ng/cigarette.<sup>e</sup> Based on sidestream smoke of 8–73 ng/cigarette.<sup>f</sup> Based on upper level detection of sidestream smoke (823 ng unfiltered, 1,770 ng filtered).<sup>g</sup> Based on sidestream smoke of 15,700 ng/cigarette.



# ΕΠΙΔΗΜΙΟΛΟΓΙΑ ΚΑΡΚΙΝΟΥ ΠΝΕΥΜΟΝΑ

- ▣ Στις αρχές του 20ου αιώνα ο καρκίνος του πνεύμονα ήταν μια σπάνια κακοήθεια.
- ▣ Σήμερα το 28% των θανάτων από καρκίνο οφείλεται στο Ca του πνεύμονα.
- ▣ Παγκοσμίως αποτελεί την πρώτη αιτία θανάτου από κακοήθεια και για τα δυο φύλα.

# Εξαρτησιογόνα Φάρμακα και Ενίσχυση

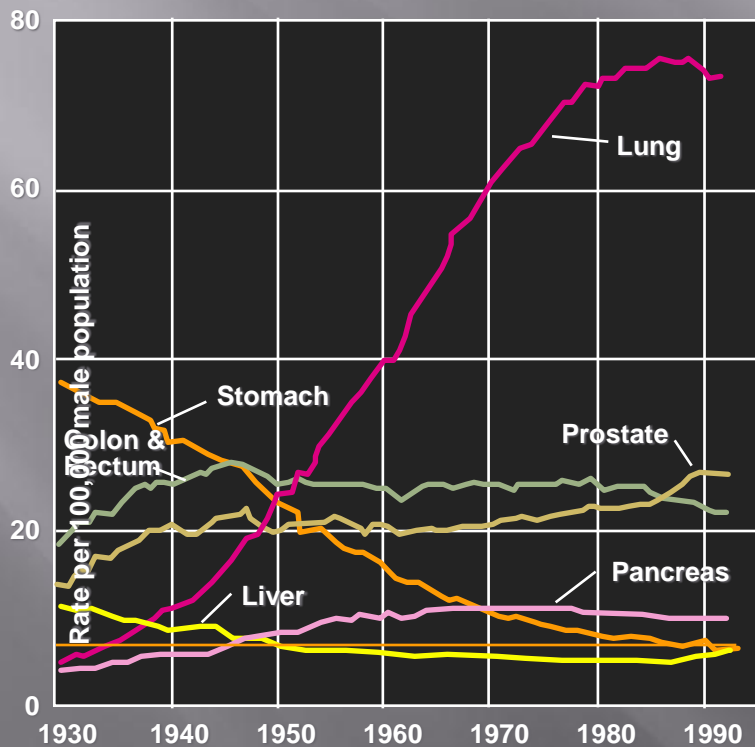


*Επιστήμονες Υγείας που ασχολούνται με την ουσιοεξάρτηση ρωτήθηκαν να βαθμολογήσουν τις ενισχυτικές ιδιότητες των εξαρτησιογόνων ουσιών σύμφωνα με μία ειδική κλίμακα .*

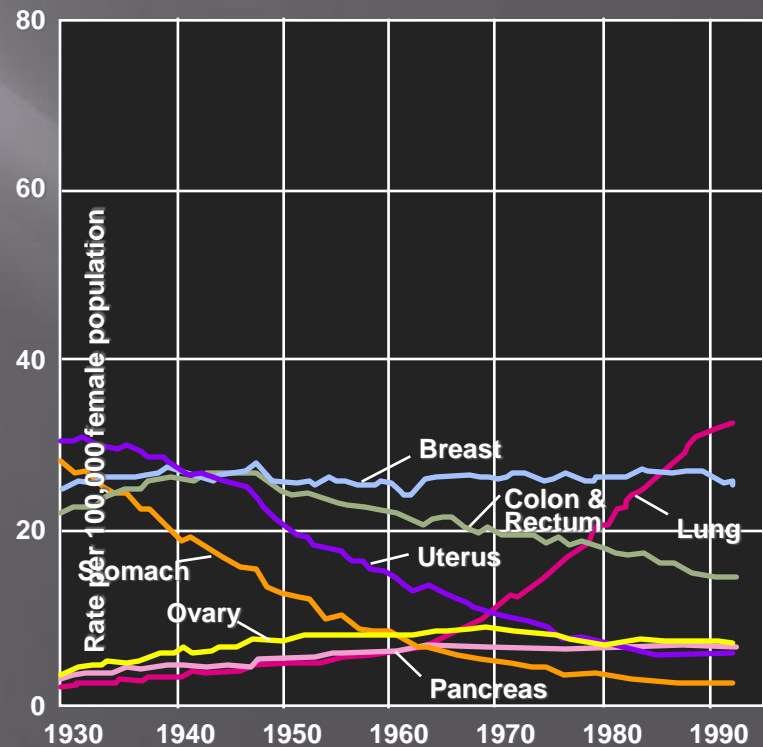
Source: D. Franklin, Health, 1990, 4, 38.

# ΘΑΝΑΤΟΙ ΑΠΟ ΚΑΡΚΙΝΟ ΠΝΕΥΜΟΝΑ ΣΤΙΣ ΗΠΑ

## ΑΝΔΡΕΣ



## ΓΥΝΑΙΚΕΣ





# Επιδημιολογικά Δεδομένα

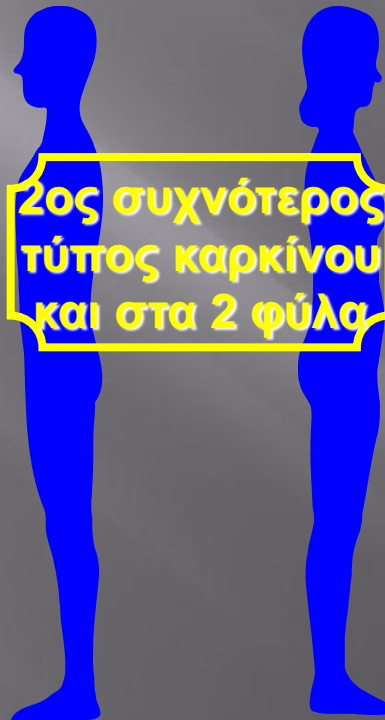
## ΑΝΔΡΕΣ

675,300

▪ Prostate 33%

Lung & bronchus 14%

- Colon & rectum 11%
- Urinary bladder 6%
- Melanoma of skin 4%
- Non-Hodgkin lymphoma 4%
- Kidney 3%
- Oral Cavity 3%
- Leukemia 3%
- Pancreas 2%
- All Other Sites 17%



2ος συχνότερος  
τύπος καρκίνου  
και στα 2 φύλα

## ΓΥΝΑΙΚΕΣ

658,800

▪ 32% Breast

12% Lung & bronchus

- 6% Uterine corpus
- 4% Ovary
- 4% Non-Hodgkin lymphoma
- 3% Melanoma of skin
- 3% Thyroid
- 2% Pancreas
- 2% Urinary bladder
- 20% All Other Sites

\*Excludes basal and squamous cell skin cancers and in situ carcinomas except urinary bladder.

Source: American Cancer Society, 2015

# Επιδημιολογικά Δεδομένα

## ΑΝΔΡΕΣ

675,300

### Lung & bronchus 31%

▪ Prostate	10%
▪ Colon & rectum	10%
▪ Pancreas	5%
▪ Non-Hodgkin lymphoma	4%
▪ Leukemia	4%
▪ Esophagus	4%
▪ Liver/intrahepatic bile duct	3%
▪ Urinary bladder	3%
▪ Kidney	3%
▪ All other sites	22%



1η αιτία θανάτου  
από καρκίνο  
και στα 2 φύλλα

## ΓΥΝΑΙΚΕΣ

658,800

### 25% Lung & bronchus

▣ 15%	Breast
▣ 11%	Colon & rectum
▣ 6%	Pancreas
▣ 5%	Ovary
▣ 4%	Non-Hodgkin lymphoma
▣ 4%	Leukemia
▣ 3%	Uterine corpus
▣ 2%	Brain/ONS
▣ 2%	Multiple myeloma
▣ 23%	All other sites

# ΑΙΤΙΟΛΟΓΙΑ



# ΑΙΤΙΑ ΚΑΡΚΙΝΟΥ ΠΝΕΥΜΟΝΑ

- ▣ Κάπνισμα
- ▣ Κάπνισμα
- ▣ Κάπνισμα
- ▣ Κάπνισμα
- ▣ Κάπνισμα
- ▣ Κάπνισμα
- ▣ Άλλα αίτια



# Κάπνισμα και αναπνευστικό

## Κίνδυνος ανάπτυξης καρκίνου

Αριθμός/ ημέρα

Την ηλικία έναρξης

Per Day	HR
10	X5
20	X10
40	X15
>40	X20

Την συνολική διάρκεια καπνιστικής συμπεριφοράς

# ΑΙΤΙΑ ΚΑΡΚΙΝΟΥ ΠΝΕΥΜΟΝΑ

- ▣ Κάπνισμα
- ▣ Παθητικό κάπνισμα
- ▣ Επαγγελματική έκθεση
- ▣ Ατμοσφαιρική ρύπανση
- ▣ Διατροφή
- ▣ Πνευμονοπάθειες
- ▣ Κληρονομικότητα

# American Study & E. Wynder (1950)



## The Journal of the American Medical Association

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MAY 27, 1950

### TOBACCO SMOKING AS A POSSIBLE ETIOLOGIC FACTOR IN BRONCHIOGENIC CARCINOMA

A Study of Six Hundred and Eighty-Four Proved Cases

ERNEST L. WYNDER

and

EVARTS A. GRAHAM, M.D.  
St. Louis

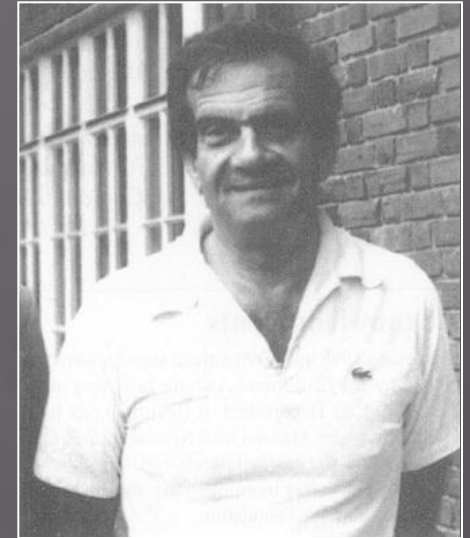
a few of the workers who thought that there was some evidence that tobacco was an important factor in the increase of cancer of the lungs. Müller<sup>11</sup> in 1939, from a careful but limited clinical statistical study, offered good evidence that heavy smoking is an important etiologic factor. In 1941 Ochsner and DeBakey<sup>12</sup> called attention to the similarity of the curve of increased sales of cigarets in this country to the greater prevalence of primary cancer of the lung. They emphasized the

**General Increase.**—There is rather general agreement that the incidence of bronchiogenic carcinoma has greatly increased in the last half-century. Statistical studies at the Charity Hospital of New Orleans (Ochsner and DeBakey),<sup>1</sup> the St. Louis City Hospital (Wheeler)<sup>2</sup> and the Veterans Administration Hospital of Hines, Ill. (Avery)<sup>3</sup> have revealed that at these hospitals cancer of the lung is now the most frequent visceral cancer in men.

**Purpose of Study.**—The purpose of the present study was to attempt to determine, so far as possible by clinical investigations, statistical methods and experimental studies, the importance of various exogenous factors that might play a role in the induction of bronchiogenic carcinoma. In this regard we intended to learn the relative importance of previous diseases of the lungs, rural and urban distribution of patients, various occupations and hereditary background as well as smoking habits. By obtaining all this information, we hoped to determine whether any of these factors, either singly or in combination, have had an effect in increasing the incidence of bronchiogenic carcinoma.

#### METHOD OF STUDY

The results of this study are based on 684 cases of proved bronchiogenic carcinoma. It should be emphasized that the results in this report have not been obtained from hospital records since we learned at the outset of our study that the routine records did not supply satisfactory answers to our questions. It was therefore decided to seek the desired information by special interviews. Six hundred and thirty-four patients reported on in this paper have been personally interviewed, and in 33 cases we obtained the information by mailing a questionnaire.<sup>16</sup> In the remaining 17 cases information for the questionnaire was obtained from a person who had been intimately acquainted with the patient throughout his adult life.



Smoking & Lung Cancer



## Tobacco smoking as a possible etiologic factor in Bronchiogenic Carcinoma



Their conclusion is as follows: "On the basis of the statistical data for both the control study I and the combined results, when the nonsmokers and the total of the high smoking classes of patients with lung cancer are compared with patients who have other diseases, we can reject the null hypothesis that smoking has no effect on the induction of cancer of the lungs. If smoking does not have anything to do with the induction of cancer of the lungs, then the observed deviation could occur only with the probability (p) as shown above."

### CONCLUSION AND SUMMARY

1. Excessive and prolonged use of tobacco, especially cigarettes, seems to be an important factor in the induction of bronchiogenic carcinoma.

2. Among 605 men with bronchiogenic carcinoma, other than adenocarcinoma, 96.5 per cent were moderately heavy to chain smokers for many years, compared with 73.7 per cent among the general male hospital population without cancer. Among the cancer group 51.2 per cent were excessive or chain smokers compared to 19.1 per cent in the general hospital group without cancer.

3. The occurrence of carcinoma of the lung in a male nonsmoker or minimal smoker is a rare phenomenon (2.0 per cent).

4. Tobacco seems at this time to play a similar but somewhat less evident role in the induction of epidermoid and undifferentiated carcinoma in women. Among this group a greater percentage of nonsmokers will be found than among the men, with 10 of 25 being nonsmokers.

5. Ninety-six and one-tenth per cent of patients with cancer of the lungs who had a history of smoking had smoked for over twenty years. Few women have smoked for such a length of time, and this is believed to be one of the reasons for the greater incidence of the disease among men today.

6. There may be a lag period of ten years or more between the cessation of smoking tobacco and the occurrence of clinical symptoms of cancer.

7. Ninety-four and one-tenth per cent of male patients with cancer of the lungs were found to be cigaret smokers, 4.0 per cent pipe smokers and 3.5 per cent cigar smokers. This prevalence of cigaret smoking is greater than among the general hospital population of the same age group. The greater practice of inhalation among cigaret smokers is believed to be a factor in the increased incidence of the disease.

8. The influence of tobacco on the development of adenocarcinoma seems much less than on the other types of bronchiogenic carcinoma.

9. Three independent studies have resulted in data so uniform that one may deduce the same conclusions from each of them.

# British Study & R. Doll (1950)

## BRITISH MEDICAL JOURNAL

LONDON. SATURDAY SEPTEMBER 30 1950

### SMOKING AND CARCINOMA OF THE LUNG PRELIMINARY REPORT

BY

**RICHARD DOLL, M.D., M.R.C.P.**

*Member of the Statistical Research Unit of the Medical Research Council*

AND

**A. BRADFORD HILL, Ph.D., D.Sc.**

*Professor of Medical Statistics, London School of Hygiene and Tropical Medicine; Honorary Director of the Statistical Research Unit of the Medical Research Council*



In England and Wales the phenomenal increase in the number of deaths attributed to cancer of the lung provides one of the most striking changes in the pattern of mortality recorded by the Registrar-General. For example, in the quarter of a century between 1922 and 1947 the annual number of deaths recorded increased from 612 to 9,287, or roughly fifteenfold. This remarkable increase is, of course, out of all proportion to the increase of population—both in total and, particularly, in its older age groups. Stocks (1947), using standardized death rates to allow for these population changes, shows the following trend: rate per 100,000 in 1901–20, males 1.1, females 0.7; rate per 100,000 in 1936–9, males 10.6, females 2.5.

#### Possible Causes of the Increase

Two main causes have from time to time been put forward: (1) a general atmospheric pollution from the exhaust fumes of cars, from the surface dust of tarred roads, and from gas-works, industrial plants, and coal fires; and (2) the smoking of tobacco.

The method of the investigation was as follows: Twenty London hospitals were asked to co-operate by notifying all patients admitted to them with carcinoma of the lung, stomach, colon, or rectum.

Between April, 1948, and October, 1949, the notification of cancer cases numbered 2,370. It was not, however, possible to interview all these patients.

TABLE I.—Number of Patients Interviewed in Each Disease Group Subdivided According to Certainty of Diagnosis

Disease Group	No. of Cases		
	Group A. Diagnosis Confirmed at Necropsy, etc.	Group B. Other Criteria of Diagnosis	Total
Carcinoma of lung .. ..	489	220	709
" " stomach .. ..	178	28	206
" " colon and rectum ..	412	19	431
Other malignant diseases	—	—	81
Diseases other than cancer (controls)	—	—	709
Other cases .. ..	—	—	353
Excluded .. ..	—	—	4
All cases .. ..	—	—	2,475

The 709 control patients with diseases other than cancer form a group which was, as previously stated, deliberately selected to be closely comparable in age and sex with the carcinoma of the lung patients.

Smoking & Lung Cancer

# Smoking and Carcinoma of the Lung



## Summary

The great increase in the number of deaths attributed to cancer of the lung in the last 25 years justifies the search for a cause in the environment. An investigation was therefore carried out into the possible association of carcinoma of the lung with smoking, exposure to car and fuel fumes, occupation, etc. The preliminary findings with regard to smoking are reported.

Altogether 649 men and 60 women with carcinoma of the lung were interviewed. Of the men 0.3% and of the women 31.7% were non-smokers (as defined in the text). The corresponding figures for the non-cancer control groups were: men 4.2%, women 53.3%.

Among the smokers a relatively high proportion of the patients with carcinoma of the lung fell in the heavier smoking categories. For example, 26.0% of the male and 14.6% of the female lung-carcinoma patients who smoked gave as their most recent smoking habits prior to their illness the equivalent of 25 or more cigarettes a day, while only 13.5% of the male and none of the female non-cancer control patients smoked as much. Similar differences were found when comparisons were made between the maximum amounts ever smoked and the estimated total amounts ever smoked.

Consideration has been given to the possibility that the results could have been produced by the selection of an unsuitable group of control patients, by patients with respiratory disease exaggerating their smoking habits, or by bias on the part of the interviewers. Reasons are given for excluding all these possibilities, and it is concluded that smoking is an important factor in the cause of carcinoma of the lung.



# Another British Study & R. Doll (1954)



## BRITISH MEDICAL JOURNAL

LONDON SATURDAY JUNE 26 1954

### THE MORTALITY OF DOCTORS IN RELATION TO THEIR SMOKING HABITS

A PRELIMINARY REPORT

BY

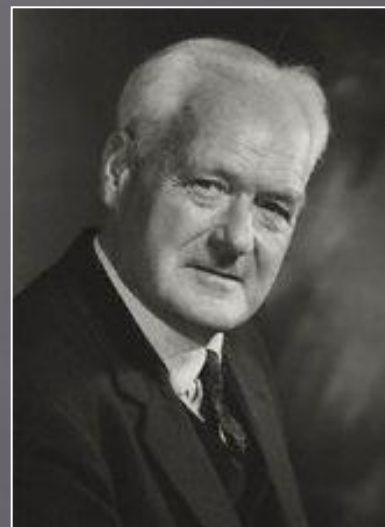
RICHARD DOLL, M.D., M.R.C.P.

*Member of the Statistical Research Unit of the Medical Research Council*

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#### Method of Investigation

To derive such groups of persons with different smoking habits we wrote in October, 1951, to the members of the medical profession in the United Kingdom and asked them to fill in a simple questionnaire. In addition to giving their name, address, and age, the doctors were asked to classify themselves into one of three groups—namely, (a) whether they were, at that time, smoking; (b) whether they had smoked but had given up; or (c) whether they had never smoked regularly (that is, had never smoked as much as one cigarette a day, or its equivalent in pipe tobacco, for as long as one year). All present smokers and ex-smokers were asked additional questions. The former were asked the ages at which they had started smoking and the amount of tobacco that they were smoking, and the method by which it was consumed, at the time of replying to the questionnaire. The ex-smokers were asked similar questions but relating to the time at which they had last given up smoking.

At the end of 1951 some 40,000 men and women on the British Medical Register replied to a simple questionnaire relating to their smoking habits. On that basis they were divided into non-smokers and three groups of smokers (including ex-smokers) according to the amount they smoked at that time (or when they gave up).

The certified causes of death of those men and women who have since died have been supplied by the Registrars-General of the U.K. over the ensuing 29 months. This preliminary report is confined to the deaths among the 24,389 men over the age of 35.

Though the numbers of deaths at present available are small the resulting rates reveal a significant and steadily rising mortality from deaths due to cancer of the lung as the amount of tobacco smoked increases. There is also a rise in the mortality from deaths attributed to coronary thrombosis as the amount smoked increases, but the gradient is much less steep than that revealed by cancer of the lung. The other groups of deaths so far analysed reveal no gradient (other forms of cancer, other forms of cardiovascular disease, respiratory diseases, all other causes).

Smoking & Lung Cancer



# The Same Study Over the years...



## Discussion

About half of all persistent cigarette smokers are killed by their habit—a quarter while still in middle age (35-69 years)

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After a large increase in cigarette smoking by young people, the full effects on national mortality rates can take more than 50 years to mature

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British men born in the first few decades of the 20th century could be the first population in the world in which the full long term hazards of cigarette smoking, and the corresponding benefits of stopping, can be assessed directly

Among the particular generation of men born around 1920, cigarette smoking tripled the age specific mortality rates

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Among British men born 1900-1909, cigarette smoking approximately doubled the age specific mortality rates in both middle and old age

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Longevity has been improving rapidly for non-smokers, but not for men who continued smoking cigarettes

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Cessation at age 50 halved the hazard; cessation at 30 avoided almost all of it

---

On average, cigarette smokers die about 10 years younger than non-smokers

---

Stopping at age 60, 50, 40, or 30 gains, respectively, about 3, 6, 9, or 10 years of life expectancy

Το 1964 ανακοινώνεται για πρώτη φορά στην Αμερική η σχέση καπνίσματος και καρκίνου του πνεύμονα



U.S. Surgeon General,  
Luther Terry, M.D.

# Surgeon General's Report on Smoking and Health (1964)



## THE EFFECTS OF SMOKING: PRINCIPAL FINDINGS

Cigarette smoking is associated with a 70 percent increase in the age-specific death rates of males, and to a lesser extent with increased death rates of females. The total number of excess deaths causally related to cigarette smoking in the U.S. population cannot be accurately estimated. In view of the continuing and mounting evidence from many sources, it is the judgment of the Committee that cigarette smoking contributes substantially to mortality from certain specific diseases and to the overall death rate.

### Lung Cancer

Cigarette smoking is causally related to lung cancer in men; the magnitude of the effect of cigarette smoking far outweighs all other factors. The data for women, though less extensive, point in the same direction.

The risk of developing lung cancer increases with duration of smoking and the number of cigarettes smoked per day, and is diminished by discontinuing smoking. In comparison with non-smokers, average male smokers of cigarettes have approximately a 9- to 10-fold risk of developing lung cancer and heavy smokers at least a 20-fold risk.

The risk of developing cancer of the lung for the combined group of pipe smokers, cigar smokers, and pipe and cigar smokers is greater than for non-smokers, but much less than for cigarette smokers.

Cigarette smoking is much more important than occupational exposures in the causation of lung cancer in the general population.

TABLE 2.<sup>1</sup>—Expected and observed deaths for smokers of cigarettes only and mortality ratios in seven prospective studies

Underlying cause of death	Expected deaths	Observed deaths	Mortality ratio
Cancer of lung (162-3) <sup>2</sup>	170.3	1,833	10.8
Bronchitis and emphysema (502, 521.1)	89.5	546	6.1
Cancer of larynx (161)	14.0	75	5.4
Oral cancer (140-8)	37.0	152	4.1
Cancer of esophagus (150)	33.7	113	3.4
Stomach and duodenal ulcers (540, 541)	105.1	294	2.8
Other circulatory diseases (451-68)	254.0	649	2.6
Cirrhosis of liver (581)	169.2	379	2.2
Cancer of bladder (181)	111.6	216	1.9
Coronary artery disease (420)	6,430.7	11,177	1.7
Other heart diseases (421-2, 430-4)	526.0	868	1.7
Hypertensive heart (440-3)	409.2	631	1.5
General arteriosclerosis (450)	210.7	310	1.5
Cancer of kidney (190)	79.0	120	1.5
All causes <sup>2</sup>	15,653.9	23,223	1.68

## SMOKING and HEALTH

### REPORT OF THE ADVISORY COMMITTEE TO THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE

#### Oral Cancer

The causal relationship of the smoking of pipes to the development of cancer of the lip appears to be established.

Although there are suggestions of relationships between cancer of other specific sites of the oral cavity and the several forms of tobacco use, their causal implications cannot at present be stated (Chapter 9, pp. 204-205).

#### Cancer of the Larynx

Evaluation of the evidence leads to the judgment that cigarette smoking is a significant factor in the causation of laryngeal cancer in the male (Chapter 9, p. 212).

#### Cancer of the Esophagus

The evidence on the tobacco-esophageal cancer relationship supports the belief that an association exists. However, the data are not adequate to decide whether the relationship is causal (Chapter 9, p. 218).

#### Cancer of the Urinary Bladder

Available data suggest an association between cigarette smoking and urinary bladder cancer in the male but are not sufficient to support a judgment on the causal significance of this association (Chapter 9, p. 225).

#### Stomach Cancer

No relationship has been established between tobacco use and stomach cancer (Chapter 9, p. 229).

Smoking & Lung Cancer



**ΕΝΑ ΟΠΛΟ ΠΟΥ ΣΚΟΤΩΝΕΙ ΚΑΙ  
ΑΠΟ ΤΑ ΔΥΟ ΑΚΡΑ**

**SECONDHAND SMOKE KILLS.**

CALIFORNIA DEPARTMENT OF HEALTH SERVICES

PAID FOR BY THE TOBACCO TAX INITIATIVE



**Το παθητικό κάπνισμα αυξάνει κατά 25-30% τον κίνδυνο ανάπτυξης καρκίνου πνεύμονα έναντι αυτού των μη καπνιστών**



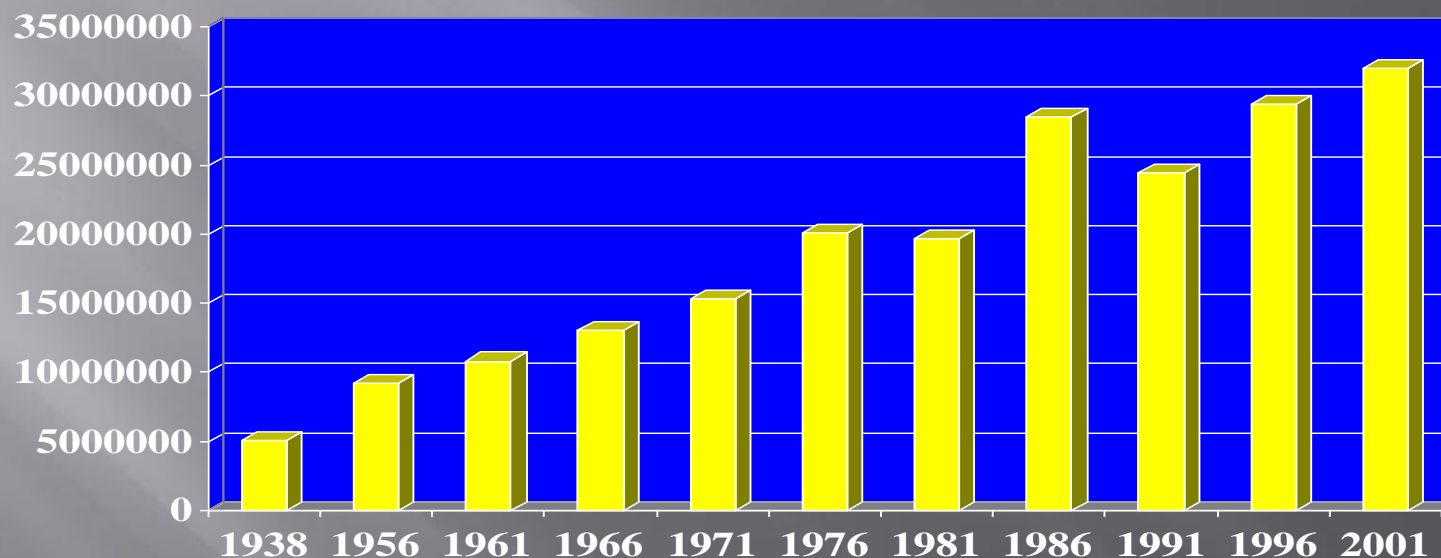
# 1<sup>η</sup> Θέση στην Ευρώπη στους ενήλικες στη κατανάλωση καπνού



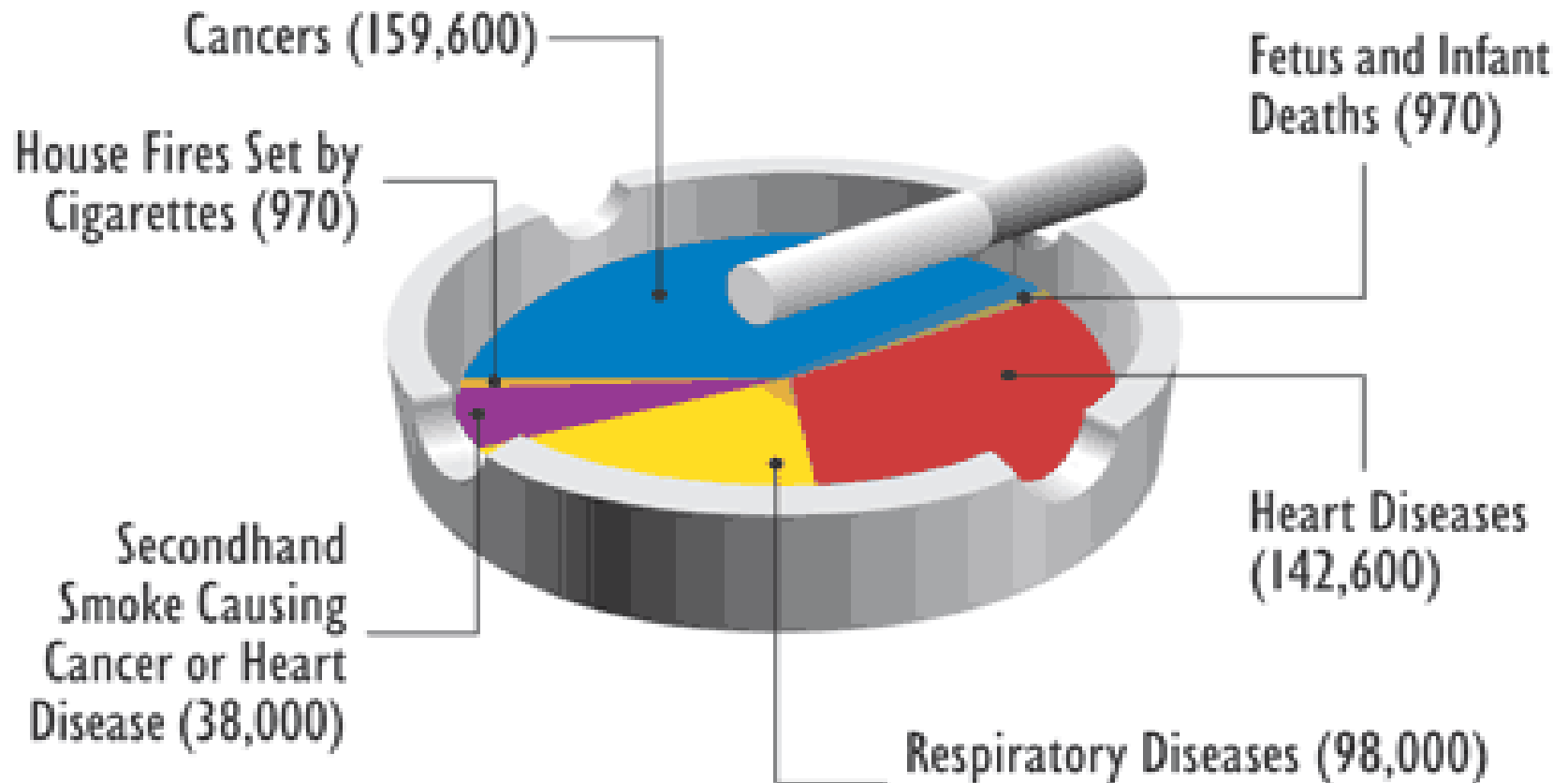
## 3<sup>η</sup> Θέση Παγκοσμίως



# ΚΑΤΑΝΑΛΩΣΗ ΤΣΙΓΑΡΩΝ ΑΝΑ ΕΤΟΣ ΣΤΗΝ ΕΛΛΑΔΑ



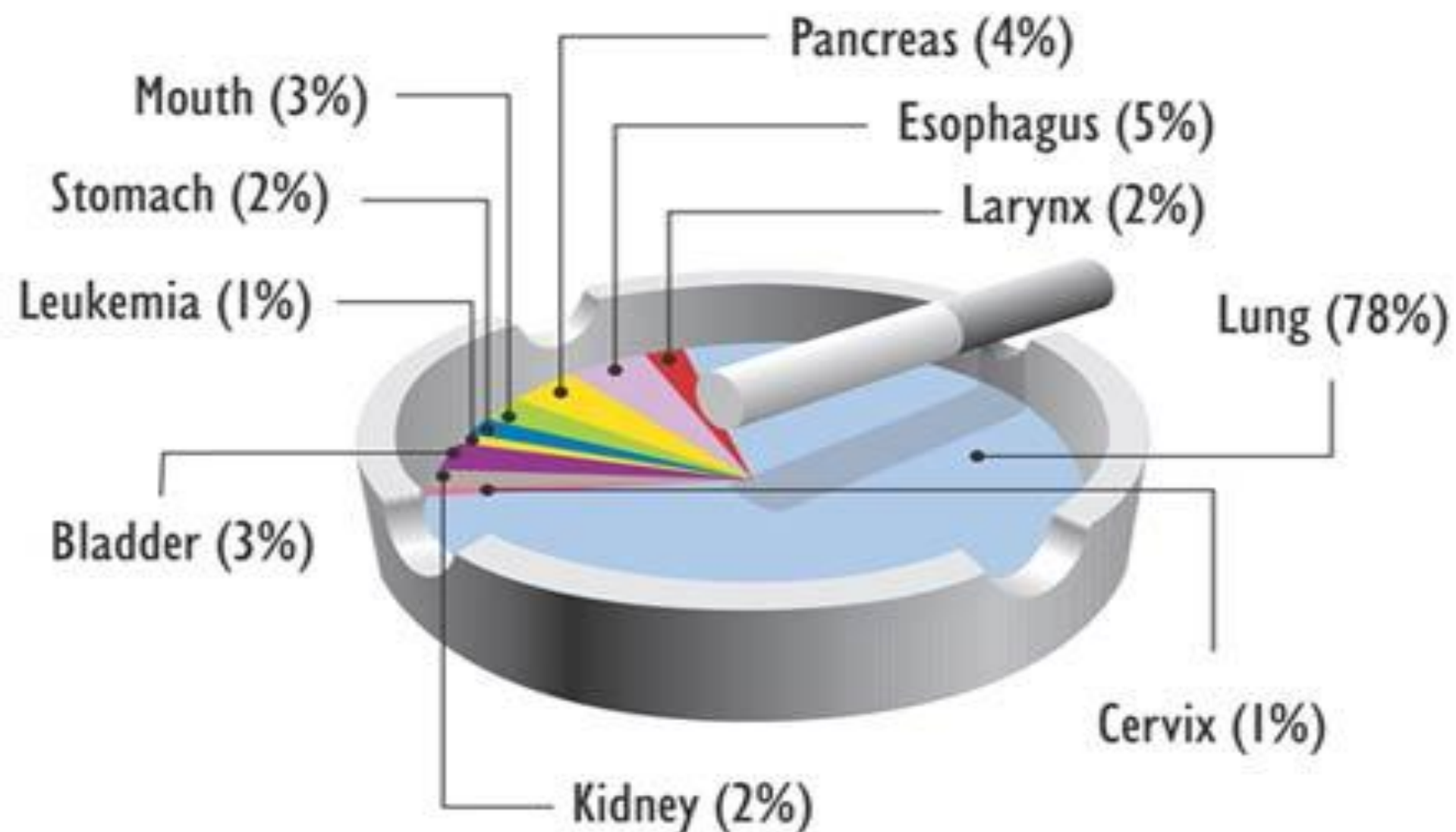
## 440,000 Deaths Each Year Caused by Smoking



All numbers are rounded.



# Cancers You Get From Smoking



Percentage of total 159,600 individual cases  
All numbers are rounded.

# ΠΝΕΥΜΟΝΑΣ ΠΡΙΝ ΚΑΙ ΜΕΤΑ !!!!



# Το κάπνισμα σκοτώνει ετησίως περισσότερα άτομα από:

- Αλκοόλ
- Κοκαΐνη
- Crack
- Ηρωίνη
- Δολοφονίες
- Αυτοκτονίες
- Αυτοκινητιστικά  
δυστυχήματα
- Πυρκαγιές
- AIDS

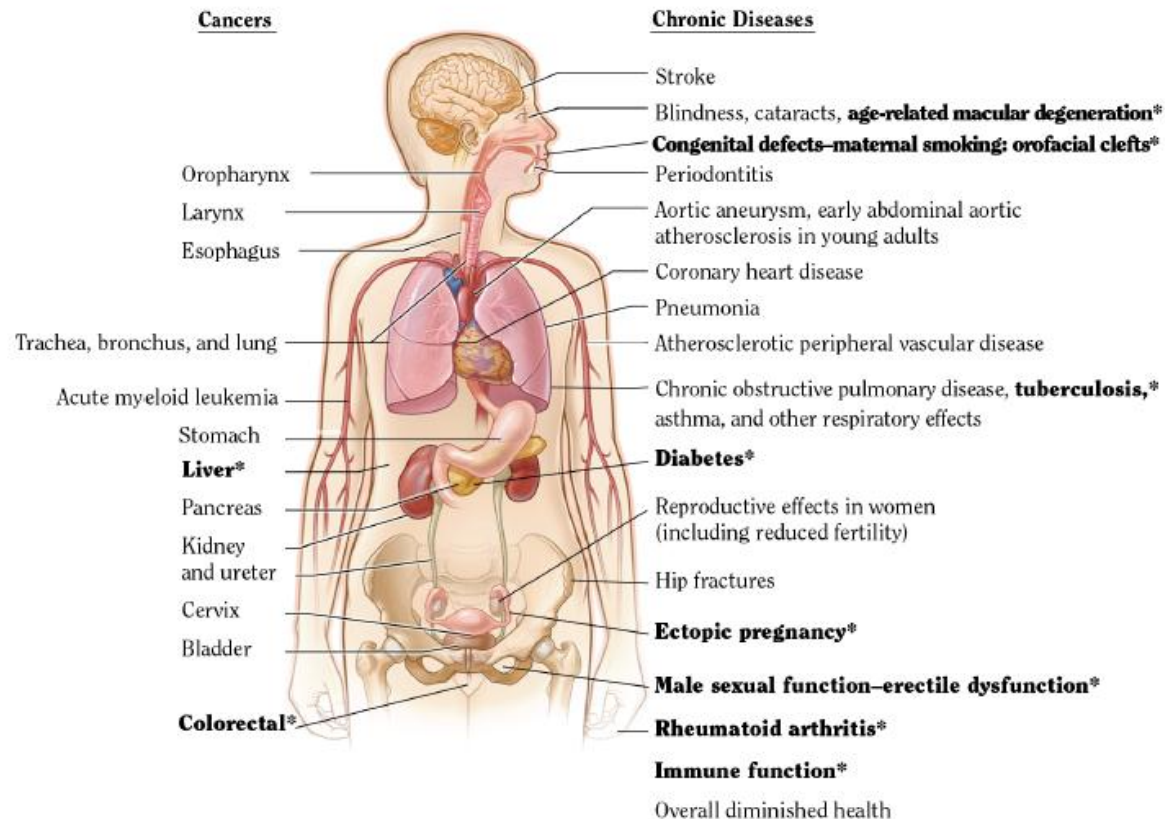
**ΑΘΡΟΙΣΤΙΚΑ!!!!**

# The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

*Surgeon General's Report*

**Figure 1.1A** The health consequences causally linked to smoking

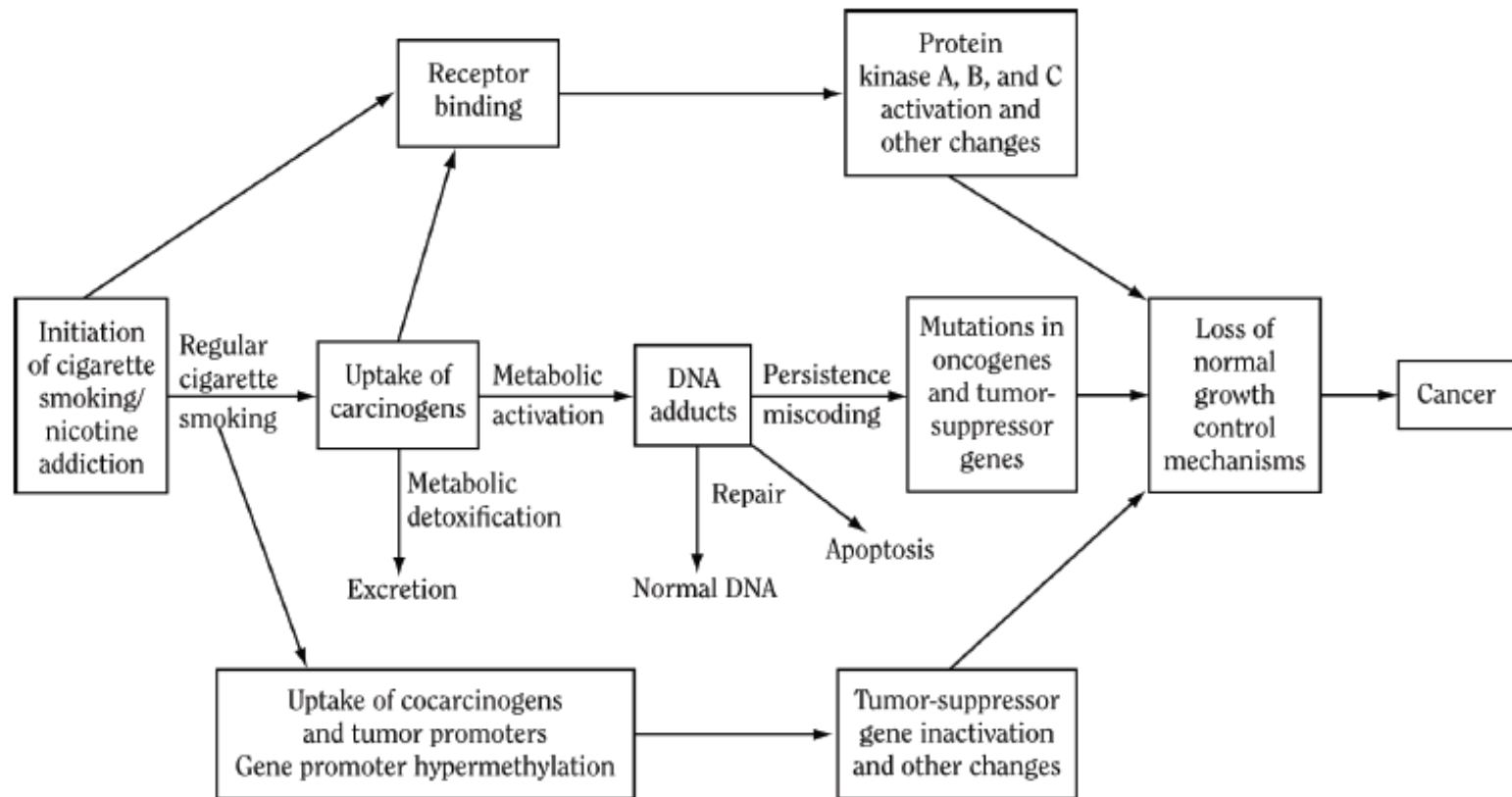




# The Health Consequences of Smoking—50 Years of Progress

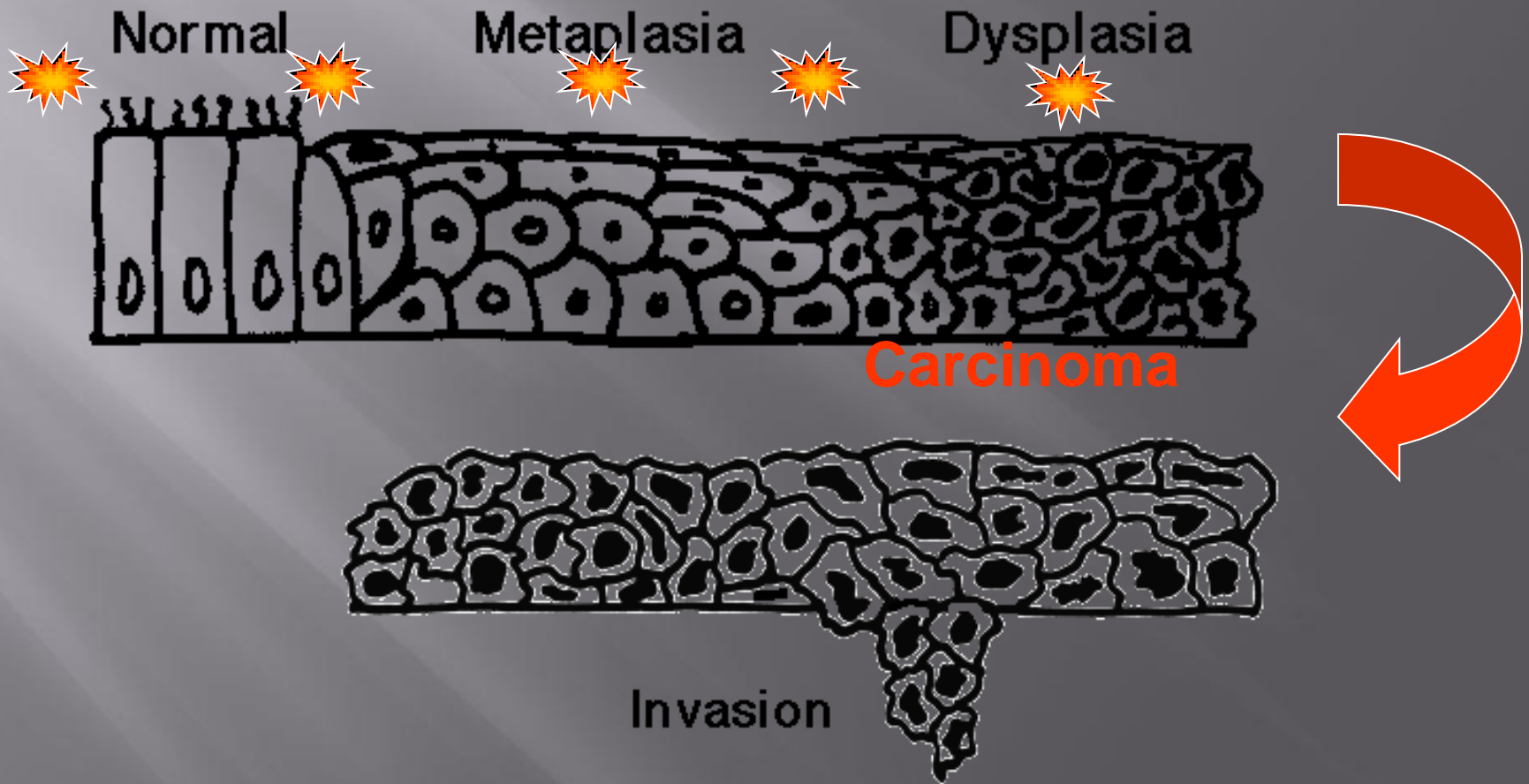
A Report of the Surgeon General

**Figure 6.4** Pathway for causation of cancer by carcinogens in tobacco smoke



Source: Modified from U.S. Department of Health and Human Services 2010.

# Παθογενετικός μηχανισμός



# The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

## Conclusions

1. The evidence is sufficient to conclude that the risk of developing adenocarcinoma of the lung from cigarette smoking has increased since the 1960s.
2. The evidence is sufficient to conclude that the increased risk of adenocarcinoma of the lung in smokers results from changes in the design and composition of cigarettes since the 1950s.
3. The evidence is not sufficient to specify which design changes are responsible for the increased risk of adenocarcinoma, but there is suggestive evidence that ventilated filters and increased levels of tobacco-specific nitrosamines have played a role.
4. The evidence shows that the decline of squamous cell carcinoma follows the trend of declining smoking prevalence.

# The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

## Conclusion

1. The evidence is sufficient to infer a causal relationship between smoking and hepatocellular carcinoma.



# The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

## Conclusion

1. The evidence is sufficient to infer a causal relationship between smoking and colorectal adenomatous polyps and colorectal cancer.

# The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

## Conclusions

1. The evidence is suggestive of no causal relationship between smoking and the risk of incident prostate cancer.
2. The evidence is suggestive of a higher risk of death from prostate cancer in smokers than in nonsmokers.
3. In men who have prostate cancer, the evidence is suggestive of a higher risk of advanced-stage disease and less-well-differentiated cancer in smokers than in nonsmokers, and—independent of stage and histologic grade—a higher risk of disease progression.

# The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

## Major Summary Points for Active Smoking

1. Based on 22 cohort reports published prior to 2012 and 27 case-control reports published from 2000–2011, evidence suggests that a history of ever smoking is associated with an increase in the RR for breast cancer by an average of 10%; long duration of smoking (20 or more years), greater number of cigarettes smoked per day (20 or more), and more pack-years of smoking (20 or more) significantly increase risk for breast cancer by 13–16%, depending on study design and the exclusion of studies with design or analysis issues.
2. Studies have not clearly determined whether either early age at smoking initiation or smoking before first pregnancy is associated with increased risk for breast cancer over and above the risk due to ever smoking.
3. Studies have not clearly determined whether the use of a restricted no active/no passive exposure reference group or adjustment for exposure to passive smoking meaningfully alters or clarifies the association between smoking and risk for breast cancer.
4. The extent to which the use of alcohol confounds the association between smoking and risk for breast cancer remains uncertain and should be considered in relation to the duration, dose, and timing of smoking.
5. There is emerging evidence to suggest that the risk of breast cancer from smoking may be greater in premenopausal than postmenopausal women, 17% versus 7%, or a relative difference of 9%.
6. There is insufficient evidence to conclude that the risk of breast cancer from smoking differs between women diagnosed with ER+ tumors and those diagnosed with ER– tumors.

# The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

## Conclusions

1. In cancer patients and survivors, the evidence is sufficient to infer a causal relationship between cigarette smoking and adverse health outcomes. Quitting smoking improves the prognosis of cancer patients.
2. In cancer patients and survivors, the evidence is sufficient to infer a causal relationship between cigarette smoking and increased all-cause mortality and cancer-specific mortality.
3. In cancer patients and survivors, the evidence is sufficient to infer a causal relationship between cigarette smoking and increased risk for second primary cancers known to be caused by cigarette smoking, such as lung cancer.
4. In cancer patients and survivors, the evidence is suggestive but not sufficient to infer a causal relationship between cigarette smoking and (1) the risk of recurrence, (2) poorer response to treatment, and (3) increased treatment-related toxicity.



**Είσαι έτοιμος να κόψεις το κάπνισμα;**

