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CIGARS AND CANCER - SOME IMPORTANT PAPERS 2002 Update

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IMPORTANT UPDATE: Read [Dr. Schneiderman's response](#) to the 1998 National Cancer Institute's monograph *Cigars: Health Effects and Trends...*

By the end of the 19th century, physicians began recording an increase in the incidence of bronchogenic (lung) cancer cases. By 1900 lung cancer became the most common organ cancer in men. A landmark paper by Adler in 1912 implicated tobacco use in these cancers, although researchers at various hospitals began suspecting tobacco as a carcinogen as early as 1900. Thousands of articles on the relationship of various tobacco products to heart disease, respiratory disease, and cancer have been published since Adler. Most of these articles have focused on the outcome of cigarette use and lung cancer. By comparison, cigar use and its relationship to disease has only been documented by little over a 100 comprehensive research studies. These various articles fail to differentiate between processed tobacco as opposed to fermented leaf, or machine made vs. hand made cigars. One can argue differences between the quantity of tar and nicotine present in an American El Producto vs. a Dominican Davidoff. Few papers differentiate between grams of cigar tobacco smoked vs. numbers of cigars smoked daily (a 2 corona per day user certainly uses less cigar tobacco than a 2 double corona per day user.) No perfect study has at yet been written.. Given the number of articles, however, and the general agreement in some of the findings, some conclusions can be drawn between the relationship of cigars and cancer.

Much of the literature regarding cigars and cancer began with lung cancer risk studies. In the 1980's researchers began to look at cigars and oral cancer risk. Today research has expanded into various forms of oral cancers, esophageal and other gastrointestinal cancers, bladder, prostate, and biliary system cancers. One researcher even studied melanoma of the eye and outcomes with tobacco use following radiation therapy. Perhaps it is easier to summarize the various forms of cigar-related cancers that have been studied by the graph which follows. Confusion, however, still abounds. Not all research techniques have been standardized. Some papers do not differentiate pipe smokers from cigar smokers, or even attempt to quantify cigar tobacco amounts.

Political agendas further complicating the cigar research field abounded in 1998. The World Health Organization studied second hand tobacco smoke (ETS or "environmental tobacco smoke") and found a small, and statistically insignificant protective effect from ETS with regards to heart disease. The WHO chose not to release the report as these results did not coincide with their mission. In 1998 U.S. District Court Judge William Osteen overturned the 1993 Environmental Protection Agency's report on secondhand tobacco smoke. He ruled that the authors approached the study with a predetermined mindset, manipulated the research and analyses to reach a conclusion they deemed favorable to their cause. Judge Osteen felt the report was internally flawed. Unfortunately that original EPA report had already resulted in considerable damage by fueling many an anti-cigar engine and created untold havoc and fear among the non-smoking public.

The National Institutes of Health, with the National Cancer Institute, published its long awaited Monograph number 9, Cigars, Health Effects and Trends in February, 1998. This publication is to date the most complete compilation of cigar research and health risks. NCI's conclusions regarding cigars and health are easily contested. But the papers they present should interest any student of the health risks of cigar smoking. This monograph is highly recommended.

The relative risk values are the relative risk of occurrence of a certain disease compared to the general non-smoking population (which is considered a standard of "1"). It should be emphasized that the National Cancer Institute states that a "relative risk of less than 2 are considered small and are usually difficult to interpret." The NCI report then is encouraging to the moderate cigar smoker. According to the NCI the relative risk ratios of death are all less than 2 for smokers limiting cigar consumption from 1 to 2 a day for: 1) all causes of death, 2) lung cancer, 3) pancreatic cancer, 4) emphysema, and 5) coronary artery disease. Cancers of the oral cavity and larynx have higher risk ratios but are intimately associated with heavy alcohol use.

Now apparently cigar smokers are starting younger and becoming more numerous. One study of high school students reported that 26.7% of U.S. students had smoked at least one cigar. Although any high school tobacco use is worrisome, there are no studies suggesting that these students continue to smoke cigars on a regular basis. And although nicotine is highly addictive, there are no studies suggesting cigars are addictive.

This 2001 update continues to confirm that cigars are associated with lung, gastrointestinal, pharyngeal and laryngeal cancers. Alcohol continues to remain as a cofactor in the genesis of oral and gastrointestinal cancers. Some new studies implicate cigars with the development of bladder, prostate, and colon cancer although the associations with these is still weak in my opinion. It should be noted that previous research has failed to significantly associate cigars with colon, bladder or prostate cancers. More research is certainly needed.

TYPE OF CANCER	CIGARS IMPLICATED?	PAPER/RELIABILITY
Lung Cancer	yes with >5 cigars/day/inhaled for longtime smokers yes yes/if inhaled >20g/day yes if inhaled yes if inhaled yes if inhaled not significant yes 5+/day + inhaled yes yes (esp. inhaled) yes (+ other factors) yes	Wynder, 1972/good Abel, 1967/poor (no inhalation practices studied) Gsell, 1972/good Wynder, 1977/good Joly, 1983/poor Lublin, 1984/good Chow, 1992/poor Higgins, 1988/good Wald and Watt, 1997/good; Boffetta, 1999 (good) Nakachi, 1999 (good) Iribarren, 1999 (good)
Oral Cancer:	yes (alcohol was not studied) yes + alcohol not significant but suggestive + alcohol yes + alcohol not significant yes	Gsell, 1972/good Wynder, 1977/good Franceschi, 1992/poor Sorrall, 1995/poor Chow, 1993/good Garrote, 2001/poor
Larynx Cancer:	suggestive + alcohol none not significant yes: 5+/day+inhaling	Wynder/good Franceschi, 1992/good Freudenheim, 1992/good Muscat, 1992/poor
Esophageal Cancer: suggestive + alcohol	yes + alcohol yes with dark tobacco (alcohol/inhalation not studied) (pure cigars not studied)	Wynder, 1961/good Wynder, 1977/good de Stefani, 1993/poor
Biliary and Extra biliary Cancers:	minimal (sample size)	Wong-Ho, 1993/poor

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About this capture

Pancreas:	possible/inhalation + ingestion. none none	Muscat, 1997/poor Farro, 1990/poor Bueon de Mesquita, 1991/poor
Colon	none	Slattery, 1997 (good)/ Nyren, 1996 (good)
Renal Cancer:	none	McLaughlin, 1995/good, Yuan, 1998
Bladder Cancer:	minimal if any none none none none none yes	Wynder, 1977/not strong for bladder Burch, 1989/good Kunze, 1992/good Najem, 1982/good Morrison, 1984/good Slattery, 1988/good Pitard, 2001/good
Pancreatic Cancer:	none	Farrow, 1990/good
Prostate Cancer:	none yes	Hedin, 1996/good Sharpe, 2001 (weak)
Eye/Melanoma spread after treatment:	none	Egan, 1992/good

Presented here are some of the finer points relating to cigars and cancer from articles which seem to demonstrate the least problematic methodology. In an attempt to decrease personal bias, most articles were directly quoted from rather than summarized. The reader's own interpretations hopefully will fill in here. Papers which were duplicative were not presented. For those who would like to study the literature more thoroughly, please refer to the references. Also, some papers presented did not focus primarily on cigars, but may have made important statements about cigars of interest to cigar smokers.

Any incorrect interpretation of specific findings was not intentional. No authors presented infer that any tobacco use is safe. Personal conclusions based upon the available research that moderate/non inhaled cigar use poses no significant health threat, hopefully have not colored this presentation. These studies demonstrate that inhalation habits play an important role in the genesis of tobacco related disease. Some cancers also appear to be related to tobacco use and abusive alcohol consumption. Future studies must take this into account when authors interpret results. If the current wave of increased cigar usage continues we will undoubtedly see more health issues surface. Future studies should further clarify the relationship between cigar usage and cancer.

Wynder, E.L., 1950

The purpose of this study was to "attempt to determine, so far as possible by clinical investigation statistical methods and experimental studies, the importance of various exogenous factors that might play a role in the induction of bronchogenic carcinoma...In the present paper the chief emphasis will be placed on our findings in regard to smoking." The study found that out of 605 patients with lung cancer 2 percent were non smokers and 94% were cigarette smokers. Amount of cigarettes smoked per day directly correlated with development of lung cancer at an earlier age, as well as the incidence of lung cancer. Among the age-adjusted general hospital population 12.4% were pipe smokers and 7.8% were cigar smokers. Among lung cancer patients, 4% were pipe smokers and 3.5% were cigar smokers. The average age of pipe smokers with lung cancer was 60.5, with a range of 52 to 78, and the average age of cigar smokers with lung cancer was 63.1, the range being from 53-76. The average number of pipes smoked per day by the cancer patients was 15.6 and the average number of cigars 6.8 smoked per day (for the last 20 years of their smoking history.) It was commented that this amount of smoking was decidedly higher than that found among the general cigar and pipe smokers. Wynder's final conclusion was that "from the evidence presented, however, the temptation is strong to incriminate excessive smoking, and in particular cigarette (sic) smoking, over a long period as at least one important factor in the striking increase of bronchogenic carcinoma...Type of Tobacco: The majority of patients with cancer of the lungs are cigarette (sic) smokers rather than pipe or cigar smokers, the ratio being over and above that found in the general population. This fact may be due to one of the following reasons: 1. Cigarette (sic) smoke is more frequently inhaled than is that of either pipes or cigars...2. Because of the greater physical and economic convenience, more persons are heavy smokers of cigars (sic) than of either pipes or cigars...3. Certain irritative substances may be present in cigars (sic) in greater amounts than in pipes or cigars. The role of paper, the use of insecticides during the growth of the tobacco and other ingredients warrant further research in this regard."

Wynder, E.L. and Bross, 1961

Tobacco increases the risk of cancer of the esophagus far less than it does that of lung cancer. The present data, furthermore, indicate that in the absence of heavy alcohol consumption the risk among smokers of developing cancer of the esophagus is relatively small. As for cancer of the larynx and oral cavity, the risk for pipe and cigar smokers to develop cancer of the esophagus is somewhat greater than that for cigarette smokers. The risk for a smoker appears to be a result of the place at which the smoke concentrates. In the case of the esophagus, we may be dealing chiefly with a swallowing of the smoke condensate. In this sense it is not surprising that the practice of chewing tobacco is more common among patients with cancer of the esophagus than it is in the control group. In view of the fact that all of our tobacco chewers were, however, also tobacco smokers, it cannot be concluded from this study that tobacco chewing is carcinogenic per se. On the basis of other studies from areas in which tobacco chewing is more common, and considering experimental studies that show minimal carcinogenic activity for unburnt (sic) tobacco extract, it would appear that chewing tobacco in itself is weakly carcinogenic. With respect to alcohol consumption, we have made studies on its relationship to the incidence of cancer of the oral cavity and larynx; and we find that for cancer of the esophagus, the role of heavy alcohol consumption is ever greater.

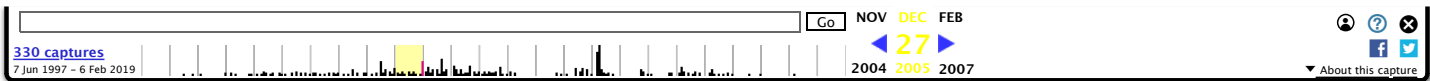
Summary: The epidemiological pattern of cancer of the esophagus is consistent with statistical studies that have shown that the use of tobacco in the form of cigars and pipes is at least as important, if not more important than cigarettes and that the heavy consumption of alcohol is a particularly important factor in the development of cancer of the esophagus. In general, the data prove that in the absence of tobacco and heavy alcohol consumption, cancer of the esophagus is a rare disease.

Wynder, E.L. and Mabuchi, K., 1972

The purpose of this study was to review the epidemiological literature linking cigar and pipe smoking to the development of lung cancer and to report on the association of smoking cigars and pipes to lung cancer based upon a 10 year retrospective study carried out in New York City. It was commented that the risk of lung cancer for cigar and pipe smokers is lower than that for cigarette smokers, although the risk is increased compared with nonsmokers. The mortality ratio from lung cancer as compared with nonsmokers was reported to range from 7 to 14 for cigarette smokers, and from 2 to 6 for cigar and pipe smokers. A study of British physicians (Doll and Hill, 1964) demonstrated a dose-response relationship to death rate from lung cancer as measured by daily consumption of cigars and pipes. Wynder and Mabuchi also commented that other retrospective studies found that the risk of lung cancer for cigar and pipe smokers in Switzerland and Germany is higher than that for such smokers in the United States. Abelin and Gsell (1967) suggested that the reason for this discrepancy might be due to either differences in the amount smoked or a greater carcinogenicity of Swiss and German types of cigars compared to that of American cigars. Wynder and Mabuchi comment that these findings may relate to more frequent inhalation associated with the greater use of smaller cigars in Switzerland as compared with other countries where large cigars are commonly used and rarely inhaled. In a survey conducted among 2142 male cigar smokers in Great Britain it was found that 36% of cigarillo smokers were inhalers but that only 10% of 20 smokers of large cigars inhaled (Todd, 1969.)

In this study it was found that the lung cancer group contained a significantly greater percentage of heavy cigar smokers than the control group, with the largest difference between the two groups being noted for those who had smoked "more than ten cigars per day." There was no statistical significance between the lung cancer patients and control patients who had smoked "in excess of 5 cigars per day." Of the 784 male lung cancer patients interviewed by this group from 1961-1970, 2% were non smokers, 4% were pure cigar and/or pipe smokers, and 94% had predominately smoked cigarettes. Comparing this group with a control group of 1408 patients during the same period, a relative risk of lung cancer of 2.2 for cigar and/or pipe smokers and 11.63 for pure cigarette smokers was determined.

A relative shortcoming of this study was the small sample size. "Since cigar and/or pipe smokers, particularly heavy smokers of these tobacco products, represent a small proportion of smokers in American males, it can be easily understood that only three or four cigar and/or pipe smokers have been found in every 100 lung cancer patients. It took us about 10 years to obtain 30 cigar/or pipe



to relate to differences in inhalation practices and to the age at which smoking began. (3) The lower risk of lung cancer for Jewish males does not apply for cigar and pipe smoking, indicated the lower overall risk of lung cancer for Jewish males to relate to the lesser usage of cigarettes rather than to constitutional factors. (4) The age of male lung cancer patients who have smoked only cigars and pipes is older than for cigarette smokers, possibly reflecting an older age at the start of smoking and a longer life expectancy of cigar and pipe smokers as compared with cigarette smokers, or a lesser deposition of tobacco smoke in the respiratory tract of cigar and pipe smokers due to the fact that they are predominantly noninhalers. It is also possible that this reflects the secular changes in smoking habits that has taken place in the general population. (5) While light cigars (one to two a day) or pipe smoking (one to four a day) does not appear to be associated with an increased risk of lung cancer, heavier cigar and pipe smokers need to realize that their risk for lung cancer as well as for other types of cancer and diseases is quite appreciable."

Abelin, T. and Gsell, O., 1967

This study was undertaken to determine if there were carcinogenic properties from the use of pipes and cigars as suggested by studies in the United States, Great Britain, and Canada. In an attempt to quantify the amount of cigar tobacco smoked to lung cancer generation, this study separated types of cigars and quantified amount smoked by weight of the cigar tobacco. Results of this study demonstrated that the relative risk of developing lung cancer for cigarettes was 8.5 times the non-smoker population. For the combined group of Stumpen, Toscani, Brissago and cigars smokers (and excluding pipe smokers), the relative risk of developing lung cancer was 4.5 times that for nonsmokers. For "light smokers" the risk of pulmonary cancer appears to have been similar to that of nonsmokers while for heavy smokers of cigars and pipes it was 14.7 times higher than for nonsmokers. (Heavy smokers in this case were men who smoked at least eight pipesful of tobacco per day or five Stumpen per day or four cigars, Brissago, or Toscani per day or corresponding combinations of these during some prolonged period of their lifetime.) Inhalation habits in this study were not analyzed. "The question of whether cancer of the lung occurs only, or more frequently, among the few inhalers cannot be examined with the available data. If this is the case, then the risk of pulmonary cancer must be extremely high in this small group."

The final conclusion of this study: "Whatever the explanation may be, the outcome of this study suggests that heavy cigar and pipe smoking may be more hazardous to health than previously thought and should not be considered a safe alternative to cigarette smoking." In a 9-year follow up study of Swiss physicians, Strobel and Gsell found mortality ratios from all causes of combined illnesses was 1.0 for nonsmokers, 1.24 for smokers of both cigarettes and other products, 1.35 for cigar and pipe smokers and 1.58 for cigarette smokers. Over-all death rates and mortality from cardiac infarction were as high for heavy cigar and pipe smokers as for heavy cigarette smokers while moderate smokers of cigars and pipes were at a lower risk than moderate cigarette smokers. The numbers in the study were too small for a similar analysis of deaths from cancer of the lung. It is remarkable, however, that a clearly increased risk of illness among heavy cigar and pipe smokers is common to both the physicians' study and this report.

Gsell O, and Abelin T., 1972

The purpose of this article was to try to explain the inconsistency of the conclusions of American articles which fail to identify as strong an association of lung cancer in cigar and pipe smokers compared with European findings. With regards to coronary artery disease, it was pointed out that "clearly coronary infarction and myocardial insufficiency due to coronary sclerosis were associated not only with cigarette smoking but also with cigar and pipe smoking. However, while moderate smoking of cigarettes was already clearly associated with overall mortality and coronary disease, moderate smoking of cigars and/or pipe was not. On the other hand, the type of tobacco product was rather irrelevant when only heavy smoking was considered....The pattern is reminiscent of a result of our case-control study of lung cancer...In that study, the lung cancer risk for cigar and/or pipe smokers smoking <20g/day was not significantly different from that of nonsmokers. But it significantly exceeded that of average cigarette smokers for cigar and/or pipe smokers smoking >20g/day."

Their final conclusion based on the available case studies and review of the literature was:

"The practical recommendation which follows from this review then is that cigar and pipe smoking cannot be considered harmless. The available evidence suggests that an occasional cigar or pipe would hardly increase the risk of disease and death. But heavy exposure, and exposure involving inhalation, cannot be recommended. Special caution is required when a heavy cigarette smoker who is used to deep inhalation switches to cigars or pipe. If he continues to inhale and to smoke heavily pipes or cigars, his risk of lung cancer and other severe diseases might not be reduced as intended."

Turner, J.A., et al., 1977

This research was crucial in demonstrating that cigar smokers who never smoked cigarettes, and who didn't inhale, did not absorb nicotine or carbonmonoxide. The paper also demonstrated that ex cigarette smokers tend to inhale cigars even though they reported that they didn't. "The primary pipe and cigar smokers had low carboxyhemoglobin levels throughout the study, confirming that they did not inhale. The reduced mortality in primary pipe and cigar smokers probably relates to this fact. Not only did the primary pipe and cigar smokers not inhale, they also absorbed very little nicotine. The small rise in plasma nicotine in this group was similar to that found in passive smoking and would be expected in the environment of this study. The failure of the primary pipe and cigar smokers to absorb nicotine from the large cigar suggests that extrapulmonary routes of absorption of nicotine from smoke are unimportant. We conclude that cigarette smokers who change to cigar smoking do not lose their habit of inhaling even after many years. The health benefit of such a change must be uncertain. The absence of inhalation by primary pipe and cigar smokers probably accounts for their smaller risk of heart and lung disease, but the accompanying absence of nicotine absorption makes their motive for smoking an enigma."

Wynder, E.L. and Stellman, S.D., 1977

This paper presents the comparative epidemiology for a number of tobacco-related cancer sites, with reference to the influences of age, sex, socioeconomic status, tobacco usage and other epidemiological variables.

The following data was presented:

Lung cancer:	726 patients:	6% were pipes/cigars,	4% were non smokers.
Oral cancer:	578 patients:	13% were pipes/cigars,	4% were non smokers.
Larynx cancer:	378 patients:	4% were pipes/cigars,	3% were non smokers.
Esophagus cancer:	175 patients:	9% were pipes/cigars,	9% were non smokers.
Bladder cancer:	582 patients:	7% were pipes/cigars,	12% were non smokers.

The following conclusion was made between the relationship of cigar and pipe usage to oral cancer: "A significant dose-response relation between both cigar and pipe usage and oral cavity cancer is observed...The adjusted relative risk for oral cavity cancer relative to a nonsmoker is considerable (between 4 and 6), even for relatively small usage (1-5 cigars or pipe bowls/day)."

Alcohol was included in this study as an additional risk factor. It was found that "the risk for each type of cancer increases with the quantity of liquor consumed, and larger proportions of heavy drinkers (and lower proportions of nondrinkers) occur for cancers of the mouth, larynx, and esophagus than do for lung or bladder cancer...Cancer of the larynx and upper alimentary tract is affected by heavy alcohol intake, as was clearly shown once more by the present study. Alcohol, whose effects interact with cigarette smoke, may be regarded as a promoter of tobacco carcinogenesis."

Finally, "Cigar and pipe smokers have a risk similar to cigarette smokers for cancer of the oral cavity. They carry a lower risk for lung and larynx cancer, attributable probably to lower levels of inhalation of cigar and pipe smoke...Among smokers, heavy alcohol consumption specifically enhances the risk of cancers of the mouth, larynx, and esophagus. Reduction of excessive alcohol consumption will have an important impact on reducing these types of cancers."

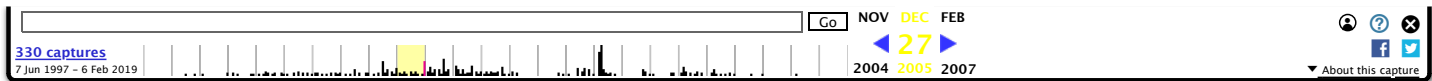
Lee, P.N. and L. Garfinkel, 1981

The purpose of this paper was to review the data pertaining to the level of tar in tobacco and its relation to mortality.

The major conclusion of this study was to show that "Any study comparing risks in smokers of differing cigarettes types is open to the problems of interpretation mentioned earlier. Marked differences between the studies considered, in type of study carried out, in sample size, in the statistical analysis, in reference period of time of the study, in the population, and in the type of comparisons, make it remarkable that any picture should appear at all. However, our impression is that a reasonably clear picture has emerged. This is that smokers of filter (or low T/N) cigarettes have a lower mortality than smokers of plain (or high T/N) cigarettes for those diseases most strongly associated with smoking and a slightly reduced mortality for those diseases less associated with smoking."

Joly, Olga G., et al., 1983.

Reports from the 1970's revealed that Cuba had the highest lung cancer mortality rates for women in the American region. The purpose of this study was to report an evaluation of the role smoking habits have in the causation of lung cancer among Cuban women and men.



Jay H. Lublin, et al., 1984

The purpose of this study was to analyze in detail the risks of lung cancer associated with cigar and pipe use. Because previous studies failed to have large case numbers, it was felt that this study would present more accurate information due to the large numbers of patients surveyed.

Out of 6,919 cases of lung cancer studied, 190 (2.7%) never smoked, 6,044 (87.3%) smoked cigarettes, 37 (0.5%) smoked cigars only, 29 (0.4%) smoked pipes only, 23 (0.3%) smoked cigars and pipes, 308 (4.5%) smoked cigarettes and pipes, 180 (2.6%) smoked cigarettes and cigars, and 98 (1.4%) smoked all three. Among cigar only smokers, the risk of lung cancer increased with years of use and usual number of cigars smoked per day.

Conclusions from this study were that although the tobacco smoke of cigars and pipes has carcinogenic activity resembling that of cigarettes, it is generally believed that cigar and pipe users inhale less because of the irritable properties of alkaline smoke. The risk of lung cancer among pure cigar and/or pipe smokers rose "convincingly" and proportionately with years of use and number smoked per day. Relative risks for the development of lung cancer compared with the non-smoking population were:

Never smoked:	1
Cigarettes only:	9.03
Cigars only:	2.9
Pipes only:	2.54
Cigarettes + cigars:	6.87
Cigarettes + pipes:	8.05
All three:	7.47

It was found that the relative risk of developing cancer in the cigar categories increased if the patient inhaled deeply and frequently, and/or smoked for a greater numbers of years.

In addition, it was also found that, "lung cancer patients who were exclusively cigar or pipe smokers were more likely to have squamous cell carcinoma than adenocarcinoma. Indeed, the histologic distribution of lung cancer among cigar-only and/or pipe-only smokers closely resembled that among cigarette-only smokers, further supporting a causal relationship between cigar and/or pipe use and lung cancer."

Benhamou, S, et al., 1986

This study was performed to evaluate the role of different types of tobacco on lung cancer. The results showed that out of 1529 cases of lung cancer, 36 (2.3%) were non smokers, 1298 (85%) were cigarette smokers, 9 (0.6%) were cigar only smokers, and 5 (0.3%) were pipe only smokers. Relative risks for the development of lung cancer were 13.3 for cigarette smokers, 5.6 for cigar only smokers, (3.9 if the cigar smoke was not inhaled,) and 1.6 for pipe only smokers. The relative risk was higher for cigar only smokers that inhaled.

The conclusion of the study was that the above results were consistent with those reported in the literature: "in relation to rates for non-smokers, lung cancer risks for lifetime cigar and lifetime pipe smokers were increased, but to levels below those seen for lifetime cigarette smokers."

Damber, L.A. and L.G. Larsson, 1986

This paper reports results from a case-control study performed on male lung cancer patients in northern Sweden. The "main purpose of this study was to evaluate the role of occupational exposures and interaction between such exposures and smoking in the causation of lung cancer." An important characteristic of this study population was that the incidence of pipe smokers was unusually high. Previously studied populations of lung cancers in pipe and cigar smokers usually have low numbers of patients because of the low incidence of cigar and pipe smokers in European and American study groups.

A total of 579 cases of lung cancer were studied. 42 (7.3%) were non smokers, 198 (34.2%) were cigarette only smokers, 198 (32.4%) were pipe only smokers, and 7 (1.2%) were cigar only smokers. The relative risks for the development of lung cancer was found to be 7 for pure cigarette smokers, 6.9 for pipe smokers. The relative risks increased with smoking time. In this study group pipe smokers had higher risks of developing lung cancer than previously reported. It was presumed that the larger numbers of pipe smokers in this group reflected a more accurate relative risk presentation.

Carstensen, John et al., 1987

This study focused on pipe smokers in Swedish men. As most studies have small amounts of pipe smokers, this study group was interesting because of the large numbers of pipe only smokers. In an attempt to quantify the incidence of different types of cancer and ischemic heart disease in tobacco users other than those who smoke cigarettes, this study was performed. 25,000 Swedish men were studied. No information about numbers of cigars smoked per day or inhalation practices were reported. Furthermore it was not clear from this paper if these groups were "pure" cigar or pipe smokers, or were made up of patients who had used one type of tobacco before a certain time and then subsequently switched.

Results of this study showed "similar relative risks of death from ischaemic heart disease in cigarette and pipe smokers. On the other hand, cigar smokers did not seem to experience a similar dose-related increase in the risk of ischaemic heart disease. The results of other authors are not fully consistent with regard to the risks of coronary heart disease in cigarette, pipe and cigar smokers. A difference in the distribution of other risk factors for ischaemic heart disease between the studies and smoking groups probably contributes to the diverging results."

The final conclusion of this study was that "...most of our results are consistent with those of previous studies on mortality in smokers. Unlike many other authors however, we find that men smoking pipe or cigars experience a risk of death similar to that of cigarette smokers for most smoking related causes. This can probably be explained to some extent by differences in smoking habits between Swedish pipe or cigar smokers and such smokers in other countries."

Higgins, et al., 1988

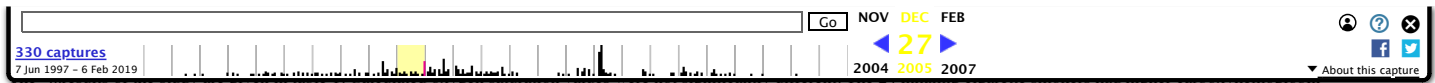
The effect of pipe and cigar smoking on lung cancer risk is reviewed using data from an ongoing hospital-based, case-control study of smoking-related cancers. Data from 2085 patients with histologically defined lung cancer and 3948 matched controls interviewed between 1977 and 1984 were analyzed. Risk, expressed as the odds ration in current smokers of cigarettes only, was 16 times that of never smokers, 3.1 times that of cigars only and 2.5 times that of cigars and pipes. Among pipe and/or cigar smokers only, patients with lung cancer were more likely than controls to have been long-time smokers of 5 or more cigars or 5 or more pipefuls per day and to have inhaled. The odds ratio for those smoking 5-9 cigars or pipes per day was 3.2 and for those smoking 10 or more units 6/7. The odds ratio of those cigar or pipe smokers who inhaled was 12.3.

The relatively low lung cancer risks usually reported for cigar and pipe smokers no doubt reflect the small amount of tobacco smoked and the tendency of such smokers not to inhale. Heavy smoking, particularly if combined with inhaling, can result in risks as significant as those usually reported for cigarette smokers. That contact with smoke from cigars and pipes increases the risk of cancer is clear from both retrospective and prospective studies of cancer of the mouth, pharynx, esophagus, and larynx. Furthermore, experimental work has shown that cigar smoke and pipe smoke are as carcinogenic as cigarette smoke. Variation in the estimates of lung cancer risk reported in the literature is presumably due mainly to variation in the amount of tobacco smoked and to the amount and degree of inhalation. Therefore, the importance of differentiating between those who have smoked cigars and/or pipes exclusively and those who have smoked cigarettes and cigars and/or pipes should be stressed. Moreover, when cigarette smokers switch to cigars or pipes, they usually have been found to continue to inhale in the way they were accustomed to when they smoked cigarettes. For this reason, no health benefit should be anticipated from switching.

Burch, J.D. et al., 1989

"The association between tobacco use and risk of bladder cancer was investigated in a population-based case-control study conducted in Alberta and south-central Ontario, Canada, between 1979 and 1982...Compared to those who had never smoked cigarettes, males and females who had ever smoked cigarettes had a statistically highly significant 2-fold increase in risk of bladder cancer for ex-smokers, the risk was intermediate between that for current smokers and never-smokers...Overall, risks of bladder cancer associated with lifetime consumptions of plain and filter cigarettes were similar, and there was little evidence to suggest that switching from plain to filter cigarettes was beneficial. Neither passive smoking nor other forms of tobacco consumption (pipes, cigars, chewing tobacco, or snuff) were associated with altered risk of bladder cancer. The population attributable risk for cigarette smoking was about 47% in males and about 33% in females."

Goldman, 1989



concentrations than the 16 nonsmokers. The 10 inhaling cigar smokers had higher carboxyhemoglobin concentrations than the 24 inhaling cigarette smokers."

The present study demonstrated that cigar smokers who inhale have significantly higher carboxyhemoglobin concentrations and lower oxygen saturation values than inhaling cigarette smokers. It was also pointed out that "Patients with carboxyhemoglobin concentrations of 5% and greater have been found to be more likely to have atherosclerotic disease than those with carboxyhemoglobin concentrations less than 3 per cent whether they smoked cigarettes or cigars. It is possible that intentional cigar inhalers are at even greater risk because of the higher carboxyhemoglobin concentrations.

Herling, S. and Lynn Kozlowski, 1988

The purpose of this study was to assess "the relative contributions of different characteristics of smoking behavior (e.g., cigarette smoking history, self-reported inhalation, amount smoked per day) in predicting exposure to tobacco smoke, as measure by expired-air carbon monoxide (CO) levels." It was pointed out that previous studies (Pechacek, et al., 1985) found that the number of pipes or cigars smoked per day was more important as a determinant of exposure to tobacco smoke than previous cigarette smoking status (similarly reported by Wald, et al., 1982.)

Results in this paper demonstrated that "whether smokers were classified on the basis of cigarette smoking history...or on the basis of self-reported inhalation...CO levels increased as a function of the numbers of pipe/cigars smoked per day...when pipe/cigar smokers were divided by self-reported inhalation, the CO values for inhalers were significantly higher than those for noninhalers, both overall and when 5 or more pipes and/or cigars were smoked per day."

If tobacco cannot be given up completely, it was concluded, pipe or cigar smoking may be a reasonable alternative to cigarettes if not inhaled and kept under 5 a day.

Kozlowski, 1989

"For those smokers who will not stop using tobacco, methods are discussed for reducing the risks to health of continued tobacco use. Overall, tobacco users are encouraged to reduce their exposure to tobacco toxins as much as they can tolerate. The boundary model of nicotine regulation implies that it is practical to prevent so-called 'needless' excesses of nicotine intake. For continuing smokers of cigarettes, fewer cigarettes per day and very-low-tar cigarettes are encouraged, provided filter-vents are not blocked by the smoker. Better yet would be switch to smoking one or two non-inhaled pipes or cigars each day. Even better would be a switch to use of the minimum acceptable amount of smokeless tobacco or nicotine-containing gum. Of course, the best course would be abstinence from any form of tobacco or nicotine use."

Farrow, D.C. and S. Davis, 1990

"A population-based case-control study was conducted to examine the relationship between certain medical conditions, the use of tobacco, alcohol and coffee, and the incidence of pancreatic cancer...The risk of pancreatic cancer was increased individuals with a history of diabetes or pancreatitis, and decreased in those with a history of tonsillectomy. Individuals who had ever smoked cigarettes were at elevated risk of disease. This excess risk was confined to current smokers...the risk among former smokers resembled that in those who had never smoked. There was no excess risk of pancreatic cancer among those who had ever used other forms of tobacco, including pipe tobacco, cigars and chewing tobacco. After adjustment for demographic and dietary characteristics, there was no association between pancreatic cancer risk and the intake of coffee, beer, red wine, hard liquor or all alcohol combined a slight reduction in risk was seen among those consuming white wine daily."

Capewell, S. et al., 1991

This paper attempts to reveal some information regarding lung cancer in non smokers. Results showed that adenocarcinoma was far more common in the nonsmokers/lung cancer patient than in the smoker/lung cancer group. The non-smokers had corresponding less squamous carcinoma. In 3000 patients with lung cancer, 2% were nonsmokers. It was further pointed out that their nonsmoking patients with lung cancer had worse performance scores (lower surgical resection rates and a lower five year survival) than smokers with lung cancer.

Chow, W., et al., 1992

This study evaluated the role of tobacco use, occupation and diet in lung cancer mortality in 17,818 men followed for 20 years. This study also tried to evaluate other variables such as job, diet, alcohol, and casual smoking habits in the development of lung cancer.

The relative risk for the development of lung cancer mortality in smokers of pipe/cigars was 4.3 and for cigarettes, 6.3. Consumption of 3 to 4 cups of coffee per day increased the lung cancer risk twofold in cigarette smokers. Doubling the coffee intake to 7 or more cups per day had little additional effect. Individual "food items that were linked to a lower risk of lung cancer death included oranges, apples, grapes, canned fruits, fruit juices, carrots, rutabaga, cauliflower, corn and eggs...Consumption of more than 14 servings of oranges per month was associated with a 30 percent reduction in lung cancer risk...Dietary intake of vitamin A and its components generally was associated with lowered risk of lung cancer, with persons in the highest intake-level of vitamin A, beta-carotene, or total carotenoids having a 20% reduction in risk. Intake of vitamin C also was associated with a reduced risk of lung cancer death. However, the trends for reduced risk with these associations were not consistent and did not reach statistical significance...intake of total fat, saturated fat, or cholesterol--after adjustment for age, industry/occupation, and smoking status was not related to lung cancer risk."

Their findings suggest that cigarettes (and the amount smoked) are directly causal in lung cancer. There was an increased risk with pipe and cigar users, however numbers were small. An increased risk in laborers or craftsmen was noted. A protective effect in the development of lung cancer may be afforded by increased consumption of fruits and higher dietary intakes of vitamins A and C. A significant association of lung cancer development in coffee drinkers who smoke cigarettes was noted.

A final note on cigar/pipe smoking was added:

"The excess of lung cancer associated with cigar/pipe smoking adds to the evidence of carcinogenic risk, independent of the effects of cigarette smoking. The increased risk associated with cigar/pipe smoking was limited to nonsmokers and past/occasional smokers of cigarettes. The failure to detect an effect of cigar/pipe smoking among current cigarette smokers may be related to a dominating influence of cigarette smoking and/or to the observation that mixed smokers tend to inhale cigarette smoke less frequently and less deeply than cigarette-only smokers. While earlier studies have reported an elevated risk of lung cancer among former exclusive cigar/pipe smokers, the present study failed to detect such an effect, although the power to assess moderate increases in risk was low. Detailed information on age started and stopped smoking and amount smoked was not ascertained for pipe and cigar use, so more detailed evaluation of risk among current and past users of these tobacco products could not be made."

Egan, K.M., et al., 1992

"Smoking is suspected of altering host immunity and may therefore hasten the development of metastases among cancer patients. The authors followed 946 patients with melanomas of the choroid and/or ciliary body [eye] who had been treated with proton beam irradiation and who had provided a smoking history during their evaluation before treatment. After a mean follow-up of 33 months, 98 patients were diagnosed with metastatic disease...Estimates for smoking effects were unchanged after adjusting for established prognostic factors for metastases. Results suggest that smoking does not alter the risk of metastases during the first few years after irradiation of choroidal melanomas." Both cigarettes and pipes/cigars were used in this study.

Franceschi, et al., 1992

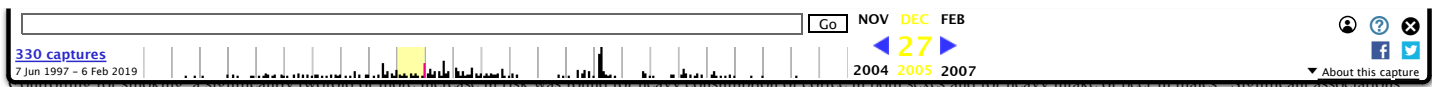
This study enlisted a cohort group of cigar only smokers of only 12. Although an association could be made between cigars and oral cancer, that association based upon these numbers is not a strong one. The concurrent use of alcohol in these cancers continues to be a significant risk factor.

"Similarly strong associations were observed with cigarette smoking for current smokers versus never smokers in cancer of the tongue and mouth and alcohol. The risk conferred by pipe or cigars smoking, although based on only 12 smokers who did not smoke cigarettes, seemed however, to be lower for cancer of the tongue than cancer of the mouth."

Freudenheim, J.L., et al., 1992.

"A case-control study among white men in eastern New York was conducted from 1975 through 1985 to examine diet and other risk factors for laryngeal cancer...Cigarettes were strongly associated with risk pipes and cigars were not. Beer and hard liquor but not wine were associated with increased risk...This study again demonstrates the strong association between tobacco and alcohol and laryngeal cancer and also suggests that diets low in carotenoids and high in fat may increase risk."

Kunze, E., et al., 1992



controlling for smoking, a significant increase in risk was found for heavy consumption of coffee in both sexes and for heavy intake of beer in males. Significant associations were found for chronic infection of the lower urinary tract, familial history of bladder cancer, and frequent consumption of high fat meals among men and for frequent consumption of canned food in both sexes...

Lange, et al., 1993

This study investigated the risk of tobacco use and mortality from lung cancer and emphysema. "The study sample comprised 2986 plain cigarette smokers, 3222 filter cigarette smokers, 1578 smokers of cheroots/cigars, 433 male pipe smokers, and 773 smokers smoking more than one type of tobacco. >From 1976 to the end of 1989 we observed 268 deaths from lung cancer and 195 deaths, where COPD was considered as either the main or the contributory cause of death.

"Currently smokers of all types of tobacco had a significantly higher risk of mortality from the investigated diseases than never-smokers. In both sexes the risks of death from both lung cancer and COPD were lower in cheroot/cigar smokers and in pipe smokers than in cigarette smokers, but these differences were markedly diminished after an adjustment for the inhalation habit. The present study substantiates that tobacco smoking increases pulmonary mortality. The small differences between the various types of tobacco are probably caused by different inhalation patterns."

de Stefani, E., 1993

"Relative risks of oesophageal cancer for smoking were higher in communities smoking mainly black tobacco, when compared with results from populations comprising mainly users of blond tobacco. Also, hand-rolled cigarette smoking, which could be considered as a proxy indicator of black tobacco smoking, was also associated with higher risk of oesophageal cancer, in comparison with the use of commercial (manufactured) cigarettes. Finally, the use of pipes and cigars showed odds ratios of higher magnitude than those associated with cigarettes. This indirect evidence of a higher risk of oesophageal cancer due to the use of black products was confirmed in three recent hospital-based case control studies. These investigations were able to compare the effect of both types of tobacco relative risks for black tobacco were two to three times higher than risks associated with blond tobacco smoking, after controlling for major potential confounders. Laboratory evidence suggests that swallowing tobacco condensates could be a major risk factor for oesophageal cancer. Also, the higher content of tobacco-specific N-nitroso compounds in black tobacco, including organospecific substances, could explain its higher carcinogenic effect."

Wong-Ho, et al., 1993

This study reported the risk factors associated with extrahepatic bile duct cancers in Los Angeles County, California. These cancers are considered rare and risks poorly understood. "Tobacco use and a history of gallbladder diseases increased the risk of both cancers in men and women, while excess body mass index was associated positively on with cancer of the extrahepatic bile ducts. No consistent patterns of risk in relation to alcohol and beverage consumption, diet, or reproductive factors were observed for either site." The relative risks for various tobacco products are as follows: never any tobacco 1.0 cigar/pipe only 1.6 cigarettes only 1.7 over 50 pack years: 2.2.

As these cancers are rare, more cases will be needed to accurately qualify the risk from tobacco use. However, it would appear that all tobacco products increase the relative risk of developing these types of cancers. The greatest risk lies with heavy cigarette users of greater than 50 pack years of cigarette use.

Chow et al., 1994

This paper tries to delineate extrahepatic bile duct cancers. However, smoking inhalation patterns were not discussed and the cohort was small. As these cancers are rare, it may be impossible to truly draw any conclusions based upon this study.

"Extrahepatic bile duct (EBD) cancers are rare and their risk factors are poorly understood. Except for a history of gallbladder diseases, evidence for other potential risk factors, such as excess body weight and use of tobacco and alcohol is scant. A case-control study was conducted to examine risk factors for EBD cancers, including ampulla of Vater tumors, among Los Angeles County (California, USA) residents...Cases and controls were interviewed about their demographic background and potential risk factors, including tobacco, reproductive factors among women. For deceased cases, their next-of-kin were interviewed. Risk of cancers of both subsites of extrahepatic duct and ampulla of Vater increased with smoking of cigars/pipes or cigarettes. For both men and women, risks increased twofold or more among those who smoked cigarettes for 50 or more pack-years. While a history of gallbladder diseases substantially increased the risk of cancers of both subsites, excess body mass index was associated only with cancer of extrahepatic duct subsite. Alcohol drinkers had lower risks compared with nondrinkers, but no consistent trend was observed with amount consumed."

Bundgaard, T., et al., 1995

"The aim of the study was to assess the potential prognostic value of tobacco and alcohol consumption. 161 consecutive patients with intra-oral squamous cell carcinoma were included in a prospective follow-up study and valid data on tobacco and alcohol consumption were obtained. Univariate analysis showed that alcohol consumption had a significant influence and tobacco consumption had a borderline significant influence on the prognosis. Tobacco and alcohol consumption were strongly correlated and each of these correlated to sex...A multivariate analysis showed that clinical stage, tumor size and tobacco consumption, but not alcohol consumption had a significant influence on the prognosis. Thus tobacco smoking is an important clinical parameter both from a prophylactic and therapeutic point of view."

Unfortunately specifics regarding cigars and cigarettes were not adequately delineated.

McLaughlin et al., 1995

This study was investigating the relationship between tobacco use and renal cell carcinoma. Previous studies note a relationship between cigarette smoking and renal cell cancer. Results demonstrated a positive relationship between cigarette smoking and the development of kidney cancer. In addition, the users of smokeless tobacco demonstrated an increased risk of renal cell cancer. Exclusive use of cigars and pipes entailed no increase risk.

The authors speculated that the substance in cigarette smoke responsible for the renal cell cancer development is N-nitrosodimethylamine, which causes kidney tumors in a number of animal species. It would be interesting to compare the amount of N-nitrosodimethylamine in premium cigars and cigarettes.

Worrall, S.F. and M. Corrigan, 1995

"The results of an audit of a single surgeon's experience of oral squamous cell carcinoma over a 5-year period is reported and the benefits of adopting a prospective computerized malignancy database outlined. Oral cancer occurred mainly in the 7th decade of life, women were on average 5 years younger than men at presentation. Men were affected 1.7 times as often as women and presented with more advanced disease than women...The majority of patients consumed alcohol and smoked tobacco, but a significant minority were lifelong nondrinkers and non-smokers."

Hedin, C.A. and T. Axell, 1996

"Prostate cancer is the most common cancer among men and accounts for most cancer related deaths in Sweden today. To find or confirm exogenous risk factors for prostate cancer a population based case-control study was performed....All specific food items studied, as well as tobacco and alcohol consumption, were unrelated to prostate cancer risk. Conclusions: This study suggests that high BMI and total food consumption are independent risk factors for prostate cancer and that dietary habits are important in the development of this tumor. It is also unlikely that neither tobacco nor alcohol use substantially changes the risk of prostate cancer."

Nyren, et al., 1996

Purpose of this study was to shed further light on the alleged relationship between long-term smoking and colorectal cancer risk. A retrospective cohort study among Swedish construction workers, with many long-term smokers, complete long-term follow-up, and a large number of observed cases. Results: a total of 713 incident colon cancers and 505 rectal cancers were observed. There was no statistically significant association between current smoking status, number of cigarettes smoked, or number of years smoking, and risk of colorectal cancer. Heavy smokers of cigars and pipes had a statistically non significant tendency toward excess risk for colon cancer, but there was no clear dose-risk trend. Conclusions: Our large cohort study did not indicate any excess risk of colon cancer in males who were long-term heavy smokers and provided only weak support for an association with rectal cancer.

Wald, N.J. and H.C. Watt, 1997

The objective of this study was to evaluate whether cigarette smokers who switched to pipes and cigars achieved a lower risk of dying from three smoking related diseases: lung cancer, ischemic



never smokers, a 57% higher risk than former smokers who stopped smoking over 20 years ago, and a 30% lower risk than continuing cigarette smokers. CIGAR GROUP: Cigarette smokers who have difficulty in giving up smoking altogether are better off changing to cigars or pipes than continuing to smoke cigarettes. Much of the effect is due to the reduction in the quantity of tobacco smoked, and some is due to inhaling less. Men who switch do not, however, achieve the lower risk of pipe and cigar smokers who never smoked cigarettes. All pipe and cigar smokers have a greater risk of lung cancer than lifelong non-smokers or former smokers.

Muscat, J.E., et al., 1997.

A hospital-based study of 484 male and female patients with pancreatic cancer and 954 control subjects was conducted based on direct interview of incident cases. Compared to never smokers, the odds ratio for current cigarette smokers was 1.6 for men and 2.3 for women. In women, but not in men, there was a trend in the odds ratios with years of daily cigarette consumption. Among men, the odds ratio was 2.1 for pipe/cigar smokers and 3.6 for tobacco chewers. Tobacco smoke causes pancreatic cancer when inhaled into the lungs. Tobacco juice may also cause pancreatic cancer when ingested or absorbed through the oral cavity. These data suggest that smoking is a cause of pancreatic cancer in women and that the risks for female smokers are comparable to male smokers. Nevertheless, the causes of most pancreatic cancers are unknown.

Slattery, 1997

A population based case-control study of colon cancer was conducted in 3 areas in the United States: northern California, Utah and Minnesota. We observed approximately a 50% increase in colon cancer risk from smoking over a pack of cigarettes per day among both men and women. Those who stopped smoking remained at increased risk, even if they stopped over 10 years ago. Our data suggest that the amount smoked may be a more important factor than the total number of years smoked. Smother neither cigars nor pipes was associated with an increased risk of colon cancer.

Boffetta, et al., 1999

Because of the limited information available on the quantitative association between consumption of tobacco products other than cigarettes and lung cancer risk these researchers attempted to clarify this relationship. They investigated lung cancer risk among smokers of cigars and /or cigarillos only and of pipes only and compared these risks with the risk of smokers of cigarettes only. The odds ratio for cigars and cigarillos was 9.0 (43 lung cancers out of 5621 lung cancer cases) compared to 7.9 for pipe (61 case patients out of 5621 lung cancer cases). The odds ratio for cigarettes was 14.9 (4204 lung cancer cases out of 5621 total cases). The conclusion of the researchers was that smoking of European cigars, cigarillos, and pipe tobacco might exert a carcinogenic effect on the lung comparable to that of cigarettes.

Iribarren, et al., 1999

This study was meant to help clarify the relationship between cigar smoking and cardiovascular disease as well as certain cancers. This was a cohort study among 17,774 men, aged 30 to 85 years old enrolled in a health plan (Kaiser Permanente). A self reported questionnaire performed in 1964 was compared to causes of death as reported on death certificates in 1973. An attempt to correlate the self reported surveys to cause of death later on. Results demonstrated relative risks (RR)s for cigars and following diseases:

1)	coronary artery disease:	1.27
2)	COPD:	1.45
3)	upper GI cancer:	2.02
4)	lung cancer:	2.14

There seemed to be a synergistic relation between cigar smoking and alcohol consumption with respect to the risk of oropharyngeal cancers and cancers of the upper aerodigestive tract.

Nakachi et al., 1999

Lung cancer incidence among Northern Thai women is one of the highest in Asia. This study compared the highest and lowest incidence areas for cultural differences that could account for the difference in lung cancer incidence. Their results suggested that tobacco smoking alone may not be able to explain the very high incidence of female lung cancer in Northern Thailand, and that chronic benign respiratory disease, possibly caused by the infection of fungi such as *M. canis*, is likely to be involved in the etiology of female lung cancer in Northern Thailand.

Schlecht, et al., 1999

This study analyzed the effect of different tobacco types and the benefit of smoking cessation on aero-digestive tract cancers. Controlling for total tobacco and alcohol characteristics, and diet, risk for ex-smokers compared with current smokers decreased substantially with time since cessation of the habit. Compared with never smokers, ex-smokes of >20 years had a relative risk (RR) of 1.98 for all upper aerodigestive tract cancers. RRs for long term >20 years ex smokers tended to be lower for mouth (RR 1.61) and pharynx (RR 1.52) than for larynx (RR 3.63) cancers. The benefit of quitting was strongest for commercial cigarettes (RR 1.45) for smokers of >10 years, as compared with smoking of black tobacco (RR 2.57), cigars (RR 2.59) and pipe tobacco (RR 3.4).

Garrote et al., 2001

These researchers studied 200 Cuban cases of cancer of the oral cavity and pharynx. Tobacco use was assessed in the etiologies of these cancers. Odds ratios (OR): Smoking > or +30 cigarettes/day demonstrated an OR of 20.8, similar to smoking > or = 4 cigars daily (OR 20.5), or drinking > or = 70 alcoholic drinks per week (OR 5.7). 82% of the oral cancer cases in Cuba were attributable to tobacco smoking. 19% to smoking cigars or pipe only. The fraction attributable to alcohol drinking (7%) and "low fruit intake" (11%) were more modest.

Pitard, et al, 2001

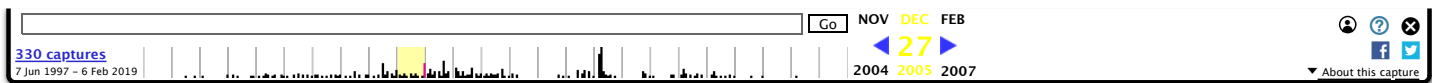
Objective of this research was to estimate the risk of bladder cancer from cigars and pipe smoking. They undertook a pooled analysis of the data on men from six published case control studies from Denmark, France, Germany, and Spain to assess the association between pipe and cigar smoking and bladder cancer. Results: The pooled data set comprised 2270 cases and 5268 controls, of whom 88 cases and 253 controls smoked only cigars or pipe. The OR for pure cigarette smoking was 3.5, pure pipe smoking was 1.9, and pure cigars smoking was 2.3. "The increase in the OR of bladder cancer that was observed with the duration of smoking was non-significantly lower for cigars than for cigarettes." Conclusion: their results suggest that smoking of cigars and pipe is carcinogenic to the urinary bladder, although the potency might be lower than for cigarettes.

Sharpe and Siemiatycki, 2001

These researchers analyzed the effects of smoking cigarettes only and of smoking cigars, or pipes, or both, with or without cigarettes, on the risk of prostate cancer. And compared these to body mass index to see if a relationship with body mass index and prostate cancer existed. Overall, the associations between smoking cigarettes and prostate cancer were weak and compatible with no effect; the associations with cigar and pipe smoking were stronger. Among men with high body mass index, however, they found appreciable associations between cigarette smoking and prostate cancer. A history of ever smoking daily was associated an odds ratio of 2.31. Risk increased with amount smoked per day and with duration of smoking. Taken together the findings of increased risk associated with cigar and pipe smoking and the findings of increased risk associated with cigarette smoking among obese men suggest that tobacco smoking may be a risk factor for prostate cancer.

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