



WARNING: SMOKING CAUSES MALE SEXUAL IMPOTENCE

Smoking and Male Sexual Problems

CONTENTS:

[Summary](#)
[Mechanisms of Erectile Dysfunction](#)
[Evidence](#)
[Views of Specialists](#)
[What Should Be Done](#)
[Appendix 1](#)
[Appendix 2](#)
[View the press release](#)
[Send a virtual Postcard](#)

Summary:

Smoking and Erectile Dysfunction in Men

Terms

Impotence, or penile erectile dysfunction, is the repeated inability to have or maintain an erection. The condition affects roughly 1 in 10 men between the ages of 21 and 75 - that's about two million men in the UK alone. In up to 75% of cases, the cause is physical.

**50%
Increased
Risk in
Smokers**

Smoking increases the risk of erectile dysfunction by around 50% for men in their 30s and 40s. Diabetes, high cholesterol levels and drugs used to treat high blood pressure are also important risk factors.

**120,000 UK
Men in their
30s and 40s
impotent due
to smoking**

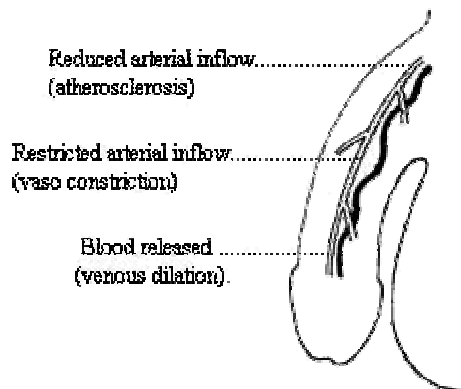
On the basis of these risks and the prevalence of smoking in the UK, Action on Smoking and Health (ASH) and the British Medical Association (BMA) estimate that up to 120,000 UK men in their 30s and 40s are impotent as a direct consequence of smoking. This figure is likely to be an underestimate, because it does not include impotence due to previous smoking in men who no longer smoke.

Mechanisms

During an erection, large quantities of blood flow, under pressure, into the penile arteries. This causes the veins which drain the penis to become compressed, so preventing the immediate outflow of blood. This process is significantly impaired by smoking.

1. Less blood flows into the penis if the inflow route is blocked by long term build-up of fatty deposits in the arteries (atherosclerosis) caused, in part, by smoking.
2. Rapid contractions in penile tissue, a direct an immediate result of nicotine stimulation in the brain, restrict arterial blood flow into the penis. This is known as acute vasospasm.
3. The valve mechanism that traps blood in the penis is impaired as a result of nicotine in the blood stream. This is known as venous dilation.

**Mechanisms
of Penile
Erectile
Dysfunction**



Other impacts

The damage caused by smoking to male sexual health also includes:

- Reduced volume of ejaculate
- Lowered sperm count

- Abnormal sperm shape
- Impaired sperm motility

Prospects for recovery

Smoking is a major and avoidable hazard for sexual health. Given that two of the three main side effects of smoking on erectile function are acute responses to nicotine, then immediate improvements on stopping smoking are possible.

88% Smokers Unaware of Risks

Polling undertaken by MORI for ASH in March 1999 reveals that only 12% of smokers (13% men, 11% women) name smoking as a cause of male impotence.

What should be done?

Labels on cigarette packs and other tobacco products should contain warnings about the threat to men's sexual health. A new European Union Directive will soon replace the existing Directive (89/622/EEC) which specifies the current warnings. Cigarettes sold in Thailand now carry impotence warnings, and the idea is also under consideration in Hong Kong.

New warnings on packs

The following warnings should be added to approved list of warnings that can be specified in the new Directive:

WARNING: SMOKING CAUSES MALE SEXUAL IMPOTENCE

WARNING: SMOKING DAMAGES SPERM

WARNING: SMOKING MAY DAMAGE YOUR SEX-LIFE

Part 1. Evidence

Impotence defined

Impotence, or penile erectile dysfunction, is the consistent or recurrent inability to attain and maintain an erection. Studies suggest that around 74% of all cases are attributable to physical causes.¹

Who suffers?

A major study in the US found that one in every 13 US men between 20 and 39 is impotent. This number increases with age to roughly 1 in 10 men across the whole adult population.² - that's the equivalent of two million men in the UK alone.³

Causes of impotence

Impotence is associated with a range of conditions including high cholesterol levels, drugs used to treat high blood pressure and diabetes, however there is strong evidence to demonstrate that the effects of all physical factors are made worse by smoking.⁴

Blood flow is the main

Circulatory or vascular problems are the most common physical cause of impotence. These affect the normal flow of blood into and out of the penis, resulting in lowered blood

problem...

pressure in the penile arteries. Smoking inhibits sexual function in three ways:

...inadequate blood in-flow

1. Over 20% of impotent smokers have evidence of abnormally low penile blood pressure (PBI)⁵: This decreases inflow of blood to the penis. Low BPI is often caused by atherosclerosis (build up of fatty deposits) in the pudendal and common penile arteries, thought to be the result of arterial lesions caused in part by smoking.⁶ A study of a group of smokers with an average age of 35 years showed that cigarette smoking was closely associated with atherosclerosis in the internal and main arteries supplying the penis.⁷ For every 'pack year'⁸ a smoker increases the risk of atherosclerosis of these arteries by 2-3%.⁹
2. Further reductions in blood flow can result from acute vasoconstriction or vasospasm within the penile arteries as a direct result of nicotine intake.¹⁰

...excessive blood out-flow

- Excessive venous outflow from the penis can reduce the time an erection is maintained. One study showed that nicotine in the blood stream encourages the venous chamber to dilate. This impairs the valve or veno-occlusive mechanism by which blood is trapped in the penis. Excessive blood outflow from the penis can also be related to other factors including insufficient relaxation of the penile muscular tissue, which can be caused by anxiety.

Smoking and general vascular disease

Cigarette smoke contains some 4,000 chemicals. Several of these are implicated in damage to the vascular (circulatory) system, including carbon monoxide, nicotine¹¹ and 1,3-butadiene¹². The ultimate consequence of this is a toll of 40,300 premature deaths every year in the UK due to heart and circulation diseases.¹³ Damage to the arteries and veins supplying the penis, is simply a manifestation of systemic arterial damage.

Smoking amplifies other impotence risks

Evidence suggests that cigarette smoking significantly increases other risk factors for impotence. A study of 1,290 men who had received treatment for impotence in Massachusetts, USA¹⁴, showed that smokers were over twice as likely to become impotent as non-smokers - 56% compared with 21%. Cigarette smoking was also associated with a significantly greater likelihood of complete impotence in men with high blood pressure (hypertension), heart disease and arthritis. Smoking does not therefore, merely add to other risk factors, but compounds them.¹⁵

***Impotence as
an early
warning***

There is compelling evidence to suggest impotence indicates more serious underlying vascular problems. Damage to the small blood vessels of the penis manifested as erectile dysfunction may offer an early warning signal that a smoker is risking serious damage to the main arteries in the heart. In this way the penis is acting as a 'canary', signaling a more serious threat to the heart and general circulatory system.

***Smoking
increases
impotence
risk by 50%***

There are various estimates of the relative risk of impotence among smokers and non-smokers. A study of 4,462 Vietnam War veterans between the ages of 31 and 49 showed an 80% increase in the risk of impotence among smokers compared with men who had never smoked.¹⁶ Even when adjusted for several other confounding factors,¹⁷ the findings showed a 50% increased risk.

***More
smokers at
impotence
clinics***

Among 178 patients attending an impotence clinic in the USA, the number of current smokers and ex-smokers (82%) was significantly higher than would be expected among men in the general population (58%).¹⁸ In each group, and at all levels of tobacco use, impotent patients smoked more than would have been expected from population estimates. Only 19% of these patients had never smoked compared with 42% in the general population.

The same study showed that the average PBI was lower among patients who had smoked than among those who had not. A significantly higher proportion (20.9%) of impotent patients with a history of smoking had abnormally low BPI compared with patients who had never smoked. The findings also suggested an association between length of smoking habit and abnormally low BPI.

***120,000 UK
men in their
30s and 40s
impotent due
to smoking***

On the basis of the increased risk faced by smokers, the known rates of smoking among men, and reported levels of impotence in the UK, ASH and the BMA estimate that around 120,000 UK men in their 30s and 40s are needlessly impotent as a result of smoking. Although both smokers and non-smokers can become impotent, these represent additional cases directly attributable to smoking and no other cause. The calculation is outlined in *Appendix 1: Calculation of smoking attributable impotence*.

***Low level of
awareness
among
smokers***

A poll commissioned by ASH and undertaken by MORI in March 1999 shows a low level of awareness of the risk of impotence arising from smoking.¹⁹ The survey shows that a substantial 88% majority of smokers (87% of men and 89% of women) do not name smoking as a cause of impotence. Even when prompted with a list of possible factors including smoking, over two-thirds (67%) do not identify

smoking as a risk (65% of men and 70% of women).

ASH and the BMA believe that the low level of awareness among smokers makes a compelling case for new warnings on packets of cigarettes and other tobacco products.

***Smoking also
affects other
areas of
men's sexual
health***

Medical research links smoking with other areas of male sexual health, including reduced volume of ejaculate, lowered sperm count, abnormal sperm shape and impaired sperm motility^{20,21,22}. Smoking is also linked to pyospermia, a condition manifested in swollen testes with excess white blood cells (pus) present in ejaculate.²³

Part 2: Views of specialists

Not only does smoking reduce life expectancy, but also the quality of life. Smokers with impotence usually suffer in silence with the knowledge that the condition was totally preventable.

**David. J. Ralph BSc Ms FRCS (Urol)
Institute of Urology
University College, London**

It is now clear that smokers are more likely to develop impotence in just the same way that they develop heart disease - if they can stop smoking, there is every chance that they will prolong normal sexual function.

**Ian Eardley
Consultant Urologist
St. James Hospital, Leeds.**

It seems to me that we have a serious case of "smokers droop" on our hands.

**Dr. Ian banks
Chair UK Men's Health Forum
Medical Editor: Men's Health magazine**

There is clear evidence to suggest that those individuals who smoke heavily are at increased risk of erectile dysfunction. This is probably the result of smoking on small blood vessels, but there could also be a direct action on the smooth muscle within the penis.

**Roger Kirby
Consultant Urologist**

St. George's Hospital, London.

Men's erection problems are not only a problem for them, they are very real problem for women too. Women often reach their sexual peak at a later age than men do, by which time the cumulative effects of smoking can have started to affect their men's ability to get an erection. This can cause deep distress, and is sometimes enough of a problem to cause women to look elsewhere. If men realised how smoking affects their performance, I'm sure many more would find the determination to give up.

Deidre Saunders
Sun Newspaper Problem Page

Tobacco consumption produces immediate and long-term effects on erections that are sometimes dramatic. Giving up smoking often leads to improvement. It is surprising that impotence is not cited more often as a persuasive reason for giving up smoking".

Alain Gregoire: *ABC Of Sexual Health*
British Medical Journal²⁴

Just as cigarettes damage your heart, every cigarette you smoke reduces the volume of blood flow to the penis. In many cases this damage cannot be reversed and the result is impotence. Young men think they are invincible, but as long as they carry on smoking, the damage is getting worse.

Professor Alan Riley
Former-Chairman Impotence Association of Great Britain

There are three main risk factors for impotence. They are smoking, high blood pressure and diabetes.

Mr. John Pryor
Male Infertility and Erectile Dysfunction Unit,
University College Hospital, London.
President Elect, European Society for Impotence Research

What you have to understand is that the penile arteries are tiny arteries -- about a third that of a coronary artery -- so it's not unusual for people to have erection problems preceding any other vascular problem, whether it be heart attacks or strokes.

Dr. John Mulhall, Director, Center for Sexual Health,
Loyola University Medical Center, United States

We are finding that erectile dysfunction or impotence may be a precursor or an indicator of oncoming cardiovascular disease, so

rather than dismissing it as just simply normal aging and nothing to get alarmed about, we're beginning to take this very, very seriously.

Dr. John McKinlay,
New England Research Institute, United States²⁵

Part 3: What should be done?

Impotence warnings on cigarette packs

ASH and the BMA call for the British Government and the European Union to add the following warnings to labels on cigarettes and tobacco products sold in the UK and EU:

WARNING: SMOKING CAUSES MALE SEXUAL IMPOTENCE
WARNING: SMOKING DAMAGES SPERM
WARNING: SMOKING MAY DAMAGE YOUR SEX-LIFE

Legislative approach to new warnings

The warnings that can be used on packs throughout the EU are specified in EU Directive [89/622/EEC](#) (as amended by [92/41/EEC](#)). Following a Council of Ministers declaration on 4th December 1997, indicating a desire among Member States to see a strengthening of policy in this area, the European Commission is currently preparing proposals for a new Directive. The proposal is expected within the next few months. The existing Directive (92/41/EEC Annex 1) contains a list²⁶ of health warnings which either have to be included (Annex 1A), or may be included (Annex 1B) in the lists of warnings required by Member States (see *Appendix 2: Existing warnings on cigarette packs in the EU.*) In order for the warnings above to be included on cigarettes sold in the UK, they would need to be added to the Annex -- assuming the new Directive retains a structure similar to the existing Directive.

In the UK, the EU Directive is implemented through the Tobacco Products Labeling (Safety) Regulations 1991.²⁷ These would be amended following the introduction of the new Directive.

Appendix 1: Calculation of smoking attributable impotence

The variables and formula below are used to make the estimate

	20-39	40-49
Number of men	8,930,000	3,980,000
Share with Impotence	7.4%	11%
Number with Impotence	669,750	437,800

A calculation and interpolation of the figures above suggest that 838,500 30 to 49 year-old UK men suffer from impotence.

The variable and formula below can be used to make an estimate

Pc(30-49)	34% <i>Proportion of male smokers 30-49</i>
Rc	1.5 <i>Relative impotence risk for smokers</i>
Pf	32% <i>Proportion of male ex-smokers</i>
Rf	1.0 <i>Relative impotence risk for ex-smokers</i>
a	14.5% <i>Attributable fraction $a=[Pc(Rc-1)+Pf(Rf-1)]/[1+Pc(Rc-1)+Pf(Rf-1)]$</i>
Ni	838,500 <i>Men with impotence 30-49</i>
Ns	121,833 <i>Impotence cases attributable to smoking: $Ns = aNi$</i>

The methodology used is identical to that applied by Callum to estimate the death toll from smoking related diseases in the UK.²⁸ The calculation is based on the following premises:

- * The age distribution of impotence sufferers is 7.4% for 20-39 year olds and 11% for 40-49 year olds²⁹
- * The relative risk of impotence for smokers is 1.5
- * The proportion of smokers in the male population is 29%³⁰
- * No excess risk has been attributed to ex-smokers on account of their smoking behaviour. Though full or partial recovery is possible, this assumption must be regarded as optimistic, and therefore the total burden of smoking related impotence is likely to be greater than the figure suggested above.
- * No estimate has been made of smoking attributable impotence in under 30s or over 50s.
- * Population data from the Office of National Statistics.³¹

Appendix 2: Existing warnings on cigarette packs in the EU

The following list is from Annex 1 of EU Directive 92/41/EEC. Those displayed in bold are in current 1999 use in the UK.³²

- A. Warnings which must be included on the national lists
 - 1. Smoking causes cancer.**
 - 2. Smoking causes heart disease.**
- B. Warnings from amongst which Member States may choose
 - 1. Smoking causes fatal diseases.**
 - 2. Smoking kills.**
 3. Smoking can kill.
 - 4. Smoking when pregnant harms your baby.**
 - 5. Protect children: don't make them breathe your smoke.**
 6. Smoking damages the health of those around you.
 7. Stopping smoking reduces the risk of serious disease.
 8. Smoking causes cancer, chronic bronchitis and other chest diseases.
 9. More than (. . .) people die each year in . . . (name of country) of lung cancer.
 10. Every year, . . . people are killed in road accidents in . . . (name of country) - .

- . . . times more die from their addiction to smoking.
11. Every year, addiction to smoking claims more victims than road accidents.
 12. Smokers die younger.
 13. Don't smoke if you want to stay healthy.
 14. Save money: stop smoking.
 15. Smoking causes addiction.

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