

The Clinical Case for Smoking Cessation for ONCOLOGY PATIENTS

What is this initiative aiming to achieve?

The aim of this initiative is to provide clinical support for temporary abstinence with a view to prompting a permanent quit supported by a referral to local NHS Stop Smoking Services. To gain maximum benefit, hospital associated abstinence needs to lead to permanent quitting. However, temporary abstinence during treatment may still have worthwhile benefits.

Why intervene in secondary care?

Hospitalisation offers an opportune time to encourage patients to stop smoking for four main reasons.

- Firstly, this time is often a “teachable moment” where patients are more receptive to intervention and are more motivated to quit.
- Secondly, the hospital's no smoking environment creates an external force to support abstinence.
- Thirdly, patients are ideally placed to be given information about treatment options, support through withdrawal and signposted to specialist services.
- Fourthly, abstaining from smoking at this time can lead to significant health benefits.

What is the relationship between smoking and cancer?

Cigarette smoking has been causally linked with the development of an ever-increasing list of cancers, including lung, oral cavity, pharynx, oesophagus, pancreas, bladder, renal pelvis, nasal cavities and nasal sinuses, stomach, liver, kidney, uterine cervix and myeloid leukemia.¹ Smoking is the single biggest preventable risk factor for cancer. The total proportion of cancer deaths attributable to cigarette smoking in developed countries currently stands at around 29%.² Of the 4000+ chemicals that are known to make up cigarette smoke, at least 40 are carcinogenic. However, there is also a growing body of evidence that not only does cigarette smoke initiate tumour development it may also promote tumour progression.^{3;4}

What are the health benefits of quitting for oncology patients?

Although some cancer patients present with advance stage disease, many patients are eligible for curative treatment and may benefit from smoking cessation. Smoking cessation has been associated with increased treatment response, a decreased risk in complications, increased quality of life and a reduction in risk of disease progression and death in a number of histological types of cancer (see next page). Additionally, smoking cessation will benefit a patient's long term health by reducing the risk of developing other disease.⁵ Some of these benefits may be derived from the elimination of the acute effects of smoking on the body (see next page).

Main acute effects of smoking on the body (estimated time of recovery after cessation, if known)

- Increase in sympathetic tone leading to increase in blood pressure, heart rate and peripheral vasoconstriction leading to an increased demand for oxygen and cardiac function. ⁶ (24-48 hrs)
- Formation of carboxyhaemoglobin leading to reduction in oxygen delivery to the tissues. ⁷ (8-24 hrs)
- Formation of carboxymyoglobin leading to reduction in oxygen storage in the muscles ⁸ (8-24hrs)
- Increase in red blood cell production which leads to increase in blood viscosity, a decrease in tissue perfusion, a decrease in oxygen delivery to the tissues and potentiation of thrombotic process. ^{9;10}
- Hypersecretion of mucus, narrowing of the small airways, decrease in ciliary function and change in mucus rheology leading to a decrease in mucociliary transport ^{9;10} (12-72 hours)
- Changes in functioning of a range of immune cells (pro- and anti-inflammatory cytokines, white blood cells, immunoglobulins) which lead to decreased immunity and are associated with atherosclerosis ^{9;10} (1 week-2 months)
- Induction of hepatic enzymes which increases drug metabolism through both pharmacokinetic and pharmacodynamic mechanisms ¹¹ (6-8 weeks)

Health benefits associated with smoking cessation in cancer populations

Lung cancer

- Smoking cessation within 1 month before lung cancer surgery has been associated with either no increase or a decreased risk in major pulmonary complications compared with continuing smokers ¹²⁻¹⁵ Aside from effects on pulmonary complications smoking cessation before surgery can improve other outcomes (see clinical case for quitting for surgical patients)
- Smoking cessation after diagnosis has been associated with increased overall survival and decrease rate of recurrence in non-small cell lung cancer (NSCLC) compared with continuing smokers. ¹⁶
- Smoking cessation after diagnosis has been associated with increase overall survival and a decreased rate of development of a second primary or recurrence in small cell lung cancer (SCLC) compared with continuing smokers. ¹⁶

Head & Neck cancers

- Smoking cessation before the initiation of radiation therapy is associated with an increased rate of complete response to treatment compared to those who continue to smoke through treatment. ¹⁷
- Smoking cessation after diagnosis has been associated with decreased risk of development of a second primary tumour. ¹⁸⁻²²
- Smoking cessation after diagnosis has been associated with an increased survival rate. ^{18;23}
- Smoking cessation after a diagnosis has been associated with increased quality of life scores on the EORTC C30, H&N35 and SF-36V questionnaires. ^{24;25}

Bladder cancer

- There is preliminary evidence that smoking cessation after the diagnosis of bladder cancer may reduce the risk of the development of a recurrence and of overall mortality. ²⁶⁻²⁹

The 3A's

How to approach smoking cessation with patients

Smoking cessation for patients with cancer presents added complications as patients are contending with a life-threatening illness, have a prolonged treatment period, have significantly elevated levels of psychological distress which has been associated with decrease quit success and there are medical contraindications to some smoking cessation medications.^{30;31} Smoking cessation interventions have been proven effective for hospitalised patients regardless of admitting diagnosis³² and specifically for oncology patients.^{33;34}

The DH guidance, "Stop Smoking Interventions in Secondary Care",³⁵ is designed to be practical for busy healthcare professionals and outlines a care pathway for supporting smoking cessation that can be adopted for oncology patients. In essence, the care pathway incorporates a very brief intervention using the 3A's:

ASK and record smoking status

ADVISE the patient of the personal health benefits of quitting

ACT on the patient response

- prescribe NRT for patients in withdrawal
- monitor withdrawal and adjust pharmacotherapy accordingly
- refer to local NHS Stop Smoking Service

How was this information sheet put together?

This information is a summary of the current scientific evidence on the association between cigarette smoking and cancer. Studies were found by searching MEDLINE and EMBASE using combined exploded subject headings of "neoplasms by histologic type", "neoplasms by site" and "tobacco use cessation" from 01/1990 – 10/2009 and by searching the Report of the US surgeon general on the health benefits of smoking cessation.¹ Evidence has been included in this summary from cohort studies, randomised controlled trials and reviews only.

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