



# Occupational **cancer**

A WORKPLACE GUIDE





## What is cancer?

**Cancer is not a single disease with a single type of treatment. There are more than 200 different kinds of cancer affecting different parts of the body.**

Cancers occur when new cells start growing out of control and develop into a lump or tumour. These tumours can be either benign or malignant. If it is benign the cells do not spread to other parts of the body, but if it is malignant the tumour can spread beyond the original area. Cancer is the name given to a malignant tumour. If the tumour is left untreated, it may spread into the surrounding tissues. Sometimes cells break away from the original cancer and spread to other organs in the body through the bloodstream or lymphatic system. When the cancer cells reach a new area they go on dividing and form a new tumour.

Cancers can develop for a wide range of reasons. These include exposure to radiation – both from radioactive materials and the sun – infection by certain viruses, a genetic defect, a weakened immune system, age, bad diet, and exposure to chemical carcinogens. Carcinogens damage cells and make them more likely to turn cancerous. There are a wide range of known carcinogens, including tobacco smoke, asbestos fibres, diesel exhaust, radiation, and a wide range of chemicals found in the workplace.

Although some cancers seem to develop for no apparent reason, most are a result of exposure to a carcinogen, lifestyle issues, genetic defects, age or a combination of these.

This booklet primarily deals with cancers caused through exposures that are a result of work.

## Cancer numbers

**Roughly a quarter of a million people are diagnosed with cancer every year and it is estimated that this figure will rise to almost 300,000 by 2020. Estimates of how many are caused through work vary considerably. This is because, if a worker develops lung cancer, it is impossible to say whether they developed the cancer because they smoked, because they were exposed to a carcinogen at work such as asbestos, whether they were exposed to radon gas in their home, or whether there was some other cause.**

However, it is possible to estimate numbers based on the increased levels of certain cancers among people who work with certain chemicals or are exposed to other carcinogens.

We know that it is estimated that 23 per cent of workers in Europe are exposed to some kind of carcinogen. Work done 15 years ago estimated that, within the UK, the exposure rates of workers were as follows:

- Solar radiation – 1.3 million
- Radon – 600,000
- Wood dust – 430,000
- Ethylene dibromide – 280,000
- Chromium V1 – 130,000
- Crystalline silica – 600,000
- Diesel particles – 470,000
- Benzene – 300,000
- Lead compounds – 250,000

In the past the HSE has estimated that there are around 6,000 occupational cancer deaths each year. This includes around 4,000 caused by exposure to asbestos. These figures were strongly criticised and as a result the HSE has funded research into the number of cancers. More recent research has estimated that the six most common cancers alone were responsible for more than 13,000 occupational cancer diagnoses, with 7,300 deaths a year. If other cancers are added the figure is likely to be much higher. Estimates from the TUC have suggested that the number of cancer cases caused through work each year is almost certainly over 20,000 with the number of deaths between 15,000–18,000.

## Case study

Unite members who work for a salmon farming company insisted that the employer provide laundry facilities to eliminate the risk of workers' and families' exposure to substances such as mineral oil and anti-fungicidal agents. Prior to the provision of laundry facilities members had to take their contaminated personal protective equipment home for cleaning or not clean it at all.

However, this is only the number of deaths. There are a large number of people who develop cancers that are treatable but which can seriously affect quality of life. The survival rates from cancers vary considerably. Some, such as mesothelioma (a cancer of the lining of the lung caused by asbestos exposure), are always fatal, usually killing the person within 18 months to two years. Most, however, are treatable, and some of them usually successfully. For example, although there are 100,000 new cases of skin cancer every year, most of these are treatable and only around 2,000 people a year die from it. Most cancers fall somewhere between these two examples.

The reason for the lack of accurate figures on workplace cancers, as opposed to figures for the number of immediate fatalities, is that it is almost always impossible to state accurately that an individual cancer is caused by exposure to a specific chemical or virus or type of radiation. Even if the link can be shown, such as the link between skin cancer and excessive sun exposure, proving that the cause is occupational is again very difficult.

What is important is not whether the number of deaths are 8,000 or 18,000. What is important is that all occupational cancers are avoidable.

## Why is cancer different?

**The prevention of workplace cancer has a much lower profile in the workplace than preventing injuries from risks such as falls from height or electrocution. This is despite the fact that only 220 to 250 workers die each year as a result of an immediate injury as opposed to the 15,000 to 18,000 that die from cancer.**

Cancer deaths are treated differently because of a number of factors. The first is that it is almost always impossible to link a specific instance of cancer with a specific exposure to a cancer-causing substance. Secondly, when there is a fatality in the workplace it is very visible. Most people who are killed by cancer will die either at home or hospital. Thirdly, many cancers develop decades after the initial exposure. Often the person has retired from work before they develop any signs of cancer. Finally, cancer is becoming much more prevalent in society and as a result when someone develops cancer the cause is rarely identified as being work.



Because identifying which cancers are caused by which substances and processes is done by looking at large numbers of cases and then working out the increased incidence it means the link between the individual with cancer and the cause is often broken. There are exceptions, such as the development of mesothelioma as a result of asbestos exposure, but for most cancers, such as lung cancer, stomach cancer, nasal cancer, breast cancer, bladder cancer, and prostate cancer, it is often impossible to say that that particular cancer was caused by a particular exposure. In addition, some carcinogens affect men and women differently so a chemical that is more likely to cause cancer in women may not be identified in a workplace that is predominantly male and vice versa.

The time delay and lack of individual certainty breaks the link between the cancer and the workplace. This is why raising awareness of cancer in the workplace, both among workers and employers, can be much more difficult than dealing with other diseases or injuries which occur immediately.

It also means that enforcement action aimed at removing the risks of cancers is rare. When a worker dies as a result of an injury at work there is almost always an investigation by the Health and Safety Executive or local authority. There is no investigation when a worker dies of a work-related cancer, and as exposure often happened many years previously, it is almost impossible to prosecute by that stage.

## The law

**The Health and Safety at Work Act makes it clear there is a legal responsibility on every employer to ensure, as far as is reasonably practicable, the health of their employees. It also states that employers must provide information, instruction, training and supervision to ensure their safety. This requirement covers not just an employee's safety from immediate injury but also any danger to their long-term health. The Management of Health and Safety at Work Regulations also require the employer to conduct a suitable risk assessment of risks to the health of the workforce. That includes any risk from any hazard that may cause cancer.**

The regulations also state that the employer must identify and then introduce preventative and protective measures needed to improve workplace health and safety. The regulations are clear: that the first aim should always be to remove the hazard. Unfortunately employers often forget this and see their role as controlling hazards. The Management Regulations and COSHH (Control of Substances Hazardous to Health) lay down clear principles for prevention that must be followed when deciding what to do about a potential hazard. This means the first step must always be, where possible, to remove the hazard altogether – removing any cancer-causing hazards from the workplace.

It is only once management has tried to do this that they should look at whether they have to control the hazard. And even then they must follow a certain order. First, the employer should try to reduce the risk through using a less hazardous chemical or process. This means substituting the chemical for one that is less dangerous, or changing working practices so that the worker is not exposed to the hazard. Many employers do not consider substitution if there is any additional cost involved in substituting a less harmful chemical, but the law is quite clear – if substitution is “reasonably practicable”, even if it is more expensive, then it must be used.

If it is not possible to substitute for a less hazardous substance or process then the employer should try to ensure that there is no access to the hazard through use of partitioning, or exhaust ventilation. If that is not possible they should try to organise work to remove or reduce exposure to the hazard.

Finally, if no other control measures work, and as a last resort, they should issue personal protective equipment (PPE). PPE is often unreliable, only partially effective, or not used properly. Unfortunately many employers go straight to this option rather than removing or reducing exposure to a carcinogen by other means.

There are also legally enforceable limits to the levels of exposure to many substances, including most known carcinogens. These exposure limits, called Workplace Exposure Limits, are the absolute maximum levels to which workers can be exposed. However it should be remembered that even with these maximums there is still a legal responsibility on employers to reduce levels “as far as is reasonably practicable”.

Sadly, many employers see Workplace Exposure Limits as being the levels up to which it is safe to expose people. This is not the case, as there is no safe exposure limit for any carcinogen and even levels well below the Workplace Exposure Limits can lead to some workers developing cancer. This is because cancers can be caused by very low exposures to carcinogens. Although it is likely that the higher the exposure the more likely it is a person will develop cancer, this does not mean that work below these limits is safe. It may be slightly safer – but there is still a risk of developing cancer.

Just because a substance has a Workplace Exposure Limit does not mean that it is deemed to be safe to work with it at either that, or any level. This is why trade unions believe the aim should be to remove all exposure to any known or suspected carcinogen in the workplace. We should not accept levels that continue to lead workers to develop avoidable cancers just because either the European Commission or HSE has decided that an exposure level is “acceptable”. Trade unions have therefore decided, after many years campaigning for a reduction in the use of carcinogens, that their aim should be to stop the use of carcinogens in the workplace through changing processes, substituting for other substances or, where that is not possible, ensuring that levels be reduced as low as possible and workers fully protected from any contact with a cancer-causing agent.

While we recognise there are some difficulties, and that some cancer-causing substances, such as silica and solar radiation, cannot be removed from the workplace, exposure to them can be easily controlled. In addition, most of the chemicals known or suspected to cause cancer can be substituted for other less harmful substances.

## Case study

In one workplace a possible carcinogen, hydrazine, was poured from a container into a satellite tank and then decanted as required into the dilute tank, causing high vapour levels. Safety representatives from the union Prospect raised their concerns over this and management agreed to contact the supplier that worked with them to develop a system with a stainless steel locking device attached to the storage drum which clamped on to the ejector suction pipe, reducing the exposure to vapour considerably. Monitoring of hydrazine in air concentrations confirmed the improvements gained by modifications to the procedures.



## Trade union strategy for removing the burden of occupational cancer

Trade unions have been at the forefront of the campaign against the use of carcinogens in the workplace. Many substances that employers once claimed were safe have only been recognised as dangerous because unions highlighted the fact that workers were dying as a result of exposure, or because unions have campaigned for their ban or control. One example is asbestos, which kills 4,000 workers a year but which employers claimed was safe right up until the 1980s (some still claim it is safe to this day).

The aim of trade unions is that there should be no workplace exposure to anything that causes cancer. Where possible this will mean removing carcinogens from the workplace completely. In some cases that is not practical, but in these cases the worker should be fully protected from exposure. Examples of where a cancer-causing agent cannot be removed, but where worker-exposure to a given risk can be removed include radiographers with radiation, quarry workers with silica and bus mechanics with diesel exhaust.

## Finding out where carcinogens are

**The first step should be to find out what carcinogens workers are exposed to.**

The main list of cancer-causing substances is produced by The International Agency for Research on Cancer (IARC).

This list contains all hazards evaluated to date, according to the type of hazard posed and to the type of exposure. There are several groupings. The TUC believes that all substances in Group 1 and 2A should be removed from the workplace or, if that is not possible, exposure should be fully controlled. Caution should also be used to prevent exposure to substances in Group 2B.

- Group 1:** The agent is carcinogenic to humans.
- Group 2A:** The agent is probably carcinogenic to humans.
- Group 2B:** The agent is possibly carcinogenic to humans.
- Group 3:** The agent is not classifiable as to its carcinogenicity to humans.
- Group 4:** The agent is probably not carcinogenic to humans.

The list can be found at: <http://monographs.iarc.fr/ENG/Classification/index.php>

Safety representatives should be encouraged to ask their employer for a list of all known class 1, 2A and 2B carcinogens that workers are likely to be exposed to as part of their work. According to HSE research the largest contributors to cancer deaths in the UK were asbestos, followed by mineral oils, solar radiation, silica and diesel engine exhausts. Large numbers of workers are potentially exposed to more than one carcinogenic agent, in particular in the construction industry, but also in manufacturing, transport, painting, welding and textiles.

## Case study

At Airbus unions have appointed a full-time safety representative to look at monitoring of dust (concerning fettling, machining and general workplace operations). As a result all the processes are being reviewed to see if dust created can be removed or reduced. This has led to a large number of changes including: banning of 'blowing down' across site; vacuuming where possible; all COSHH data sheets and safe systems of work being reviewed; continued air monitoring taking place; reviewing Local Exhaust Ventilation (LEV); and paint surfaces being removed by suppliers prior to delivery so fettling is not required on site. The process has also led to the removal of a number of carcinogens and the safety committee reviewing a site standard video for working with carcinogens.

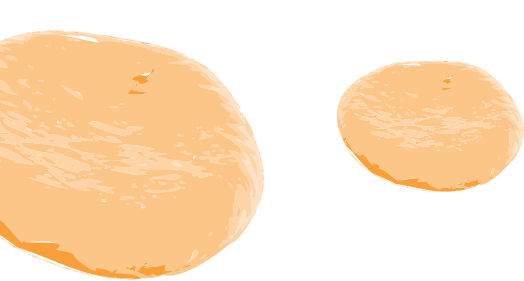
However, if your employer does give you a list then please treat it with suspicion and check if it includes everything. For instance if you are a safety representative in a hospital does it include possible risk from viral hepatitis? Does your employer actually know whether there is any asbestos in the building? Have they included the risk of working in the sun for outdoor employees? Also some chemicals may be known only by their brand name rather than by the name they are given in the IARC classification, or may be mixed with other agents. Safety representatives should therefore ask for copies of safety datasheets for all chemicals and chemical mixtures used to ensure that all possible cancer-causing agents are included. They are entitled to this information by law.

Safety representatives should also seek an assurance that no new carcinogens will be introduced into the workplace without full consultation and agreement with the unions, which should only agree where there are no alternatives and workers are totally protected from any contact with the substance.

## Why are carcinogens used?

There is a legal requirement on employers to only use a carcinogen if there is no reasonable alternative. In practice this often means that they will continue to use a cancer-causing agent if the alternative is more expensive. They will also often not consider alternatives if the exposure levels are below their legal maximum. In fact, regardless of whether there is a cheaper substitute or they are still within the legal maximum, there is still a legal requirement on the employer to remove or reduce exposure "as far as is reasonably practical". Following pressure from unions, a large number of employers have managed to substitute cancer-causing chemicals with safer ones. Examples include trichloroethylene as a cleaner for metal, cancer-causing inks in printing, and formaldehyde and insulating foams in furniture.

Initially, employers have always complained that the substitute is more expensive, however a slightly increased cost is no legal or moral argument for putting human lives at risk.



## Case study

The union Nautilus worked with the Maritime and Coastguard Agency to produce a leaflet explaining the dangers of skin cancer due to exposure from the sun aboard ships. They then issued the leaflet to merchant seafarers on 20,000 ships.

## Control measures such as enclosure, extraction and PPE

If a carcinogen is kept totally separate from the workforce through preventative measures such as a closed system then this can seem, on the face of things, to be safe. However, the reality is that leakages happen, as do fires and explosions. Also, what happens when the closed system has to be cleaned and what controls are there on the disposal of waste?

In addition, measures such as local exhaust ventilation and, in the case of dusts, dampening, are usually only going to be partially effective. The same applies to personal protective equipment (PPE), which should only be used when all other control measures have been attempted and there is still residual risk. PPE often fails, either because it is unsuitable, because it can be damaged, or simply because workers do not wear it at all times as it is uncomfortable, restrictive or doesn't fit properly.

It is up to safety representatives to challenge the decisions their employers make to ensure that, whatever safeguards are in place, there is no exposure to cancer-causing substances in the workplace. Reps must feel certain that the employer has attempted to remove the substance rather than first control the risk, and they must also be confident that any control measures put in place are going to work.

However, even with the most vigorous control measures, if cancer-causing substances are being used in the workplace then it can only be because there is no alternative and that all practical precautions are in place to ensure there is no exposure.

More importantly they have to ensure that the control measures that are in place are regularly monitored to ensure that they are effective.

## New substances

Often a substance is only found to cause cancer many years after it is introduced. By then many thousands of workers could have been exposed to it. Trade unions support the "precautionary principle", which says that if there is a reasonable possibility that a substance may cause harm then there should be a presumption that it will and therefore should be controlled.

## Workplace monitoring

Employers are required by law to carry out appropriate health surveillance if employees are exposed to certain substances. Most of these are listed in COSHH (Control of Substances Hazardous to Health) Regulations but in actual fact any worker exposed to any possible carcinogen should be regularly monitored to ensure there are no adverse health effects arising from the exposure.

Unfortunately with many workplace cancers the illness takes many decades to develop and often the worker is no longer employed in the same industry. They may even be retired. This means short-term monitoring is of little use in detecting the effects of exposure to cancer-causing substances.

In some other countries, workers are regularly monitored throughout their working life, regardless of whether they change employer. This means that much of the information that we have gained on workplace cancers has come from abroad. Trade unions would like to see a national register of exposure developed in the UK.

Employers should still keep records of any worker that develops any form of cancer, including the kind of cancer and the work the person did. Union safety representatives can also assist in building up a picture of any possible cancer links by checking sickness absence records and also talking to other workers who have a long-term illness. Just because a number of people within one workplace develop a similar kind of cancer, it does not necessarily mean it is linked to their work. What it certainly does mean is that there should be a full investigation as to whether the cancer is work-related.

The TUC has also called for much more information on both work and workplaces to be held by GPs so that information on whether specific cancers may be work-related can be obtained more quickly.

## **Enforcement activity**

**The level of enforcement of the regulations aimed at controlling exposure to carcinogens is minimal, and that which does take place is usually aimed at chemicals used in manufacturing rather than the more common ones such as silica, wood dust or radon. Trade unions want to see an enforcement-led campaign by the HSE and local authorities aimed at ensuring that employers which continue to expose workers to carcinogens are prosecuted. In addition the HSE should not see exposure up to a Workplace Exposure Limit as being acceptable when removal or substitution are options.**

Where unions have raised any issue of exposure to a carcinogen with their employer and the employer fails to either remove exposure or, if that is not possible, reduce levels of exposure as far as is reasonably practical, the union should consider raising the issue with the enforcing authority.

## **Case study**

An RMT safety representative, Greg Hewitt, campaigned vigorously for the removal of Asbestos-containing material from Signalling and Telecoms boxes on the Southern Region railway. Eventually Network Rail allocated £16m for this important work.

## Supporting workers

While trade unions see preventing injury and illness as being their top priority, they also have an important role in supporting those workers who do become ill as a result of employer negligence. People with cancer often experience considerable prejudice from both managers and colleagues and may hide their illness from employers. Unions have experience in ensuring that anyone who develops cancer, regardless of the cause, will be given advice on their rights to both sickness absence and also to reasonable adjustments under the Disability Discrimination Act.

However, if a union member suspects that their cancer may have been caused by work then their union may be able to provide legal support to ensure that they can seek compensation either from their employer and/or under the Government's Industrial Injuries Benefit Scheme.

## Resources and further information

The TUC health and safety pages can be found at [www.tuc.org.uk/healthandsafety](http://www.tuc.org.uk/healthandsafety)

The research papers of the International Agency for Research on Cancer are at <http://monographs.iarc.fr/ENG/Classification/index.php>

The *Hazards* magazine website has a number of pages on occupational cancer, including links to a guide to developing strategies against workplace cancers at [www.hazards.org/cancer](http://www.hazards.org/cancer)

There are a number of charities that give advice and information on cancers. These include Cancerbackup at [www.cancerbackup.org.uk](http://www.cancerbackup.org.uk)





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