

SKIN CANCER – AN OCCUPATIONAL HEALTH RISK

Sharon Buckley

Joint Coal Board and Safety Trust

SUMMARY

The responsibility of the Joint Coal Board Health and Safety Trust to fund good quality research projects does not stop with ensuring the project is completed. The Trust must also ensure that it enables industry to take up the benefits of the research it funds. Too often good projects end up being nothing more than volumes on a shelf, and the benefits do not accrue to the people in the industry.

A lingering concern in the industry about a possible link between coal mining and cancer was investigated by the Trust in the Cancer Surveillance Project, Part 1, which reported its findings in 1994. That report showed that coal miners had no greater chance of contracting cancer than the normal population. There appeared to be, however, an elevated risk, although not statistically significant, of contracting melanoma, or skin cancer.

The Trust determined that the most appropriate response to this finding was to educate coal miners in the risks associated with sun exposure, and what prevention and detection strategies were available to them to minimise their risk.

The result is the skin cancer training kit, called

Skin Cancer Gets Miners Too

INTRODUCTION

Joint Coal Board Health and Safety Trust

In 1991 the Joint Coal Board established the Joint Coal Board Health and Safety Trust for the purpose of finding, nurturing and applying research projects that would have a direct benefit in relation to coal miners' health. The Trust currently has around \$20m available for research funding. The average grant size awarded is \$80,000, and average duration of a project is 12 months. However, it often takes another twelve months to implement the findings!

In terms of **funding** research projects, the Trust has identified 4 major priority areas. These are

- noise and NIHL;

- occupational disease;
- sprain and strain injury; and
- ergonomics.

Projects in these categories are assessed according to how attractive they are (that is, do they propose to solve an actual health or safety problem currently being experienced) and how feasible they are (that is, could the potential proposed solution be implemented)

When it comes to **transferring** the results, it is a little more problematic. It is a challenge for the Trust to encourage the uptake of new technologies. This has become the focus of the activities of the Trust over the past twelve months. Seminars, videos and manuals are some of the tools the Trust uses to get information into the industry.

There have been a number of recent projects that have produced results that can easily be adopted, and some that are more difficult. The Trust now makes it a requirement that all project grants provide details of the method to be used to transfer results to industry.

CANCER AND COAL

I would like to talk briefly about two projects that are somewhat interwoven. In 1994, the Cancer Surveillance Project reported that coal miners were at no greater risk of contracting cancer than the general population, with the exception of melanoma, where the rate was elevated, but not statistically significant. A summary of some of the findings follows:

Cancer Type	Observed	Expected	SIR	95% Confidence Interval
All	302	366.35	0.82	0.73 - 0.92
Lip	10	9.85	1.02	0.49 - 1.87
Colon	27	27.04	1.00	0.66 - 1.45
Lung	29	39.16	0.74	0.50 - 1.06
Melanoma	85	75.52	1.13	0.90 - 1.39
Testis	21	22.18	0.95	0.59 - 1.45
Lymphoma etc	18	29.01	0.62	0.37 - 0.98

As can be seen, melanomas were the most common cancer observed, and were also observed more often than expected. As an aside,

the next stage of the Cancer Surveillance Project will report in early 2000.

Based on the above results, the Trust commissioned the NSW Cancer Council to produce a training program about skin cancer targeted specifically at coal miners.

THE PROGRAM

Firstly, let me say that the Trust appreciates the help provided to it by West Cliff and Warkworth mines in NSW in developing the training program.

The skin cancer training program, called "Skin cancer gets miners too" has two main objectives:

- first, to educate coal miners about the dangers of exposure to the sun; and
- second, to provide them with information to help minimise the risks, including prevention and early detection strategies.

The training program is designed to provide information on a number of levels, and to give strategies to deal with the information. This means that it will educate participants in key areas, but will also alleviate any anxiety or fear that is caused by the information. Skin cancer is one type of cancer that has a high cure rate when detected early, and the fear that is generated by the information is hopefully counterbalanced by the strategies that are given.

INFORMATION

The program begins by providing some statistics.

For example, how many Australians do you think get skin cancer?

- 1 in 10? 1 in 5 perhaps?

In fact, **2 out of 3** people who live all their lives in Australia will get skin cancer. The cost to the community annually is \$300m. Other statistics reveal that

- there are 160,000 new cases of skin cancer in Australia each year,
- around 1,200 people die each year from skin cancer. In fact it is the most common cause of cancer deaths in the 25 to 40 year age bracket.

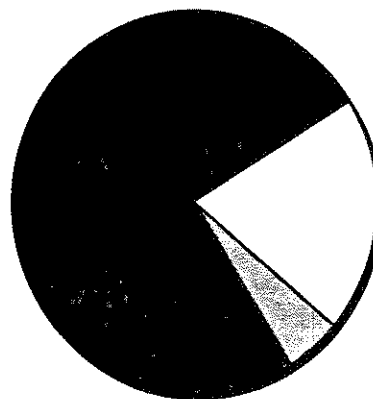
This is all a little bit frightening.

The training program shows how many people are affected by skin cancer, and what it costs, but at this point participants don't actually know what skin cancer is.

WHAT IS SKIN CANCER?

During the program, some time is spent talking about what skin cancer is, in terms that non-technical and non medical people can understand. The three types of skin cancer are mentioned, and later on we will see what they actually look like, and we will be given an explanation of the way that a skin cancer develops.

Types of Skin Cancer



□ Melanoma ■ BCC ▒ SCC

- Basal Cell Carcinoma accounts for between 70 and 80% of all skin cancers
- Squamous Cell Carcinoma accounts for between 15 and 20% of all skin cancers
- Melanoma accounts for less than 5% of all skin cancers

By now, the miners have been given an idea of some statistics, types of cancer, and some of the biology involved. But they still need more information. What actually causes the skin cancer to develop? At this point, we spend some time talking about Ultraviolet Radiation (UVR)

For example, did you know that UVR cannot be felt on your skin? Did you know it is present even on cloudy days, and it is at its highest levels at the middle of the day. It can also penetrate glass. These things most of us have heard before, but perhaps we have not realised the health implications of these facts.

UVR comes directly from the sun, and causes

cumulative damage to skin. It is also reflected by certain surfaces. For example, concrete reflects up to 12%, sand up to 18% and new snow up to 88%! It is important that miners be aware that in some jobs around a mine, they are more likely to be exposed to UVR. As well, holidays at the beach or the snow can dramatically increase exposure to UVR.

The program provides pictures to give the participants an idea of what sun damaged skin looks like. This is a picture of sun damaged skin on the neck and shoulder area of an outdoor worker. The first sign that skin has been damaged by UVR is that you get sunburn! Sunburn is strongly related to an increased risk of melanoma.

EXPLODING THE MYTHS

Since underground coal miners mostly do not consider themselves to be candidates for skin cancer, the program spends some time dispelling this myth, and talking about leisure activities and sun protection during holidays. Not only is it the amount of exposure, but also the pattern of that exposure that can cause skin cancer. People who spend a lot of time underground or under cover but who receive bursts of exposure to strong sun are a greater risk of developing melanoma. At this point in the program, we would ask participants how their work and leisure exposure to the sun differs, and whether they are exposed to the sun in bursts. Discussion about the individual practices brings the risks into sharp focus for the participants.

A self audit of behaviour and family history is usually conducted. This helps reveal whether individuals are at risk. The questions usually include the following:-

- did you spend your childhood in Australia?
- have you spent a lot of the time in the sun without covering up?
- do you have fair skin or a lot of moles?
- do you have a family history of melanoma?
- do you work undercover or underground and have strong bursts of sun during your leisure time?

I suspect that many of us would answer "yes" to most of those questions!

At this stage, there is usually a little apprehension in the group about skin cancer. The program emphasises at this point that nearly ALL skin cancer is preventable, and can be cured if

detected at an early stage. The program then leads into giving miners some strategies for protection.

PROTECTION STRATEGIES

Several hints about the type of clothing which provides the most protection are given; for example a close weave fabric provides good protection and a collar always helps! No sun screen protects 100%, so other types of protection are also suggested. These hints are very practical, if even self evident, and can be adopted by anyone.

What can you do?

- wear comfortable protective clothing
- wear a broad rimmed hat
- wear sunglasses
- stay in the shade
- avoid the sun in peak times whenever possible
- use sunscreen with very high SPF15 or 30+

We emphasise that parents are the best role models for their children, and that the natural instincts of the participants to protect their children from harm by making them SLIP SLOP SLAP and so on, need to be reinforced by their own behaviours. It's not enough to insist that your children cover up; you must also!

WHAT TO LOOK FOR (OR EARLY DETECTION)

It is very important to educate miners about how to detect skin cancers. We show several different forms of sun blemishes. We show several pictures of basal cell carcinomas, squamous cell carcinomas and melanomas. (These will be shown during the presentation)

As well as demonstrating what the different types of skin cancers look like, we provide strategies for skin monitoring. Regular checks of any new freckles or moles, and changes to existing spots, or any spots that look like they just don't belong, should be investigated.

The self-monitoring message that is delivered is if you see something different, do something about it!

PROGRAM EFFECTIVENESS

Overall the program uses many different learning methods to help participants in the program

understand what skin cancer is, what it looks like, and what can be done to protect against it. The learning methods include

- pictures and graphic or visual information
- facts and figures
- talking or lecturing, and
- group discussion

A combination of these methods of learning usually means that each participant in the program is presented with information in a way which suits his or her preferred way of learning.

As well, at the completion of the program, participants receive a sticker (or perhaps two) from the series commissioned by the Trust for this program.

Since skin cancer affects families of mine workers, the program can be run to include workers and families. In NSW, some mines have run the program in the evenings or on weekends so that coal miners families can attend. A general raising of the awareness of skin cancer and its causes occurs, and as well, occasionally coal miners' children go on to become miners themselves. Targeting them early lessens the risk if an when they join the industry.