BAREFOOT research

employment worries
headache
fatigue from overwork
stress from low pay
depression
loss of hearing
respiratory, coughing
pain
chest pain
silicosis
asbestosis
lump
heart disease
liver cancer
kidney disease
back pain
diabetes
carpal tunnel
arthritis
reproductive problems
leg (needles/pins)
varicose veins
foot pain

A Workers' Manual For Organising On Work Security

InFocus Programme on Socio-Economic Security

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Acknowledgements

This manual has been written collaboratively by four authors committed to improving workers' security. Their years of experience using worker-driven, empowerment-based tools have led them to produce this manual. Many people have contributed by passing on information, offering advice and reviewing drafts of the manual. *Thanks are due in particular to:*

Preface

Globalisation – however one defines it – and more informal and flexible labour markets are creating a greater sense of economic and social insecurity all over the world. The insecurity has been compounded by a bewildering array of technological changes, shifts in government policy and changes in systems of regulation. Workers everywhere are buffeted by uncertainty. And they, like everybody, want a sense of security in which to pursue their lives, bring up their families and develop their skills.

A just society should ensure that everybody in it has basic security, an environment in which they have enough to eat, enough opportunity to send their children to decent schools, and access to healthcare that they can afford. In this, they need good working conditions, protected by mechanisms that ensure that the risks are minimal and known in advance and by mechanisms to ensure compensation and recovery should things go wrong.

These circumstances never come easily. Workers throughout history have had to demand improvements and have had to put pressure on those around them to ensure they have what we call work security, safe and decent working conditions and occupational health and safety. The ILO believes good employers, governments and worker organisations want the same in this respect. It believes basic security is the essence of "decent work" and social justice.

Workers and unions cannot guarantee that these desirable circumstances will materialise. However, what they can do is participate in developing the environment in which they have a high probability of making improvements. Often, they need to pursue that objective through their own efforts, or by encouraging their friends and representatives to pursue it on their behalf. This manual is an attempt to show how workers and researchers working on their behalf with limited financial and technical resources can lobby and bargain to improve work security. The manual is a practical tool, designed to be of assistance to workers and union officials, showing how they can probe to discover whether they have work security, and if not how they can go about obtaining it. Information is rarely neutral, and it is rarely appropriate to rely on others to collect, analyse and disseminate information on which practices and policies should be based. If workers want basic security, they must be involved in collecting the information, analysing it and using it in ways they determine. This manual should be of really practical assistance.

Guy Standing,
Director, Socio-Economic Security Programme,
International Labour Office
January 2002

When I joined the ILO's research and action programme on Socio-Economic Security, the very first thing I did was to propose that we create this manual. The gap between scientific research and what happens to workers has bothered me for a long time. It was about time to provide workers with the tools needed to conduct their own workplace-based research, to take their own steps toward creating decent work. Reading my proposal for the manual, our Director, long experienced in conducting empirical research, asked if these "barefoot research" techniques really work? I explained that not only do they work, but the majority of known work-related diseases have been identified first by workers, often using any number of these "barefoot", or alternative research techniques. With that we launched directly into developing this manual. I was fortunate to be led to Margaret, James and Peter, all like-minded thinkers, who also recognised the need for a "how to" manual on alternative research techniques. We have worked as a team to bring these tools to workers and others. Lesson learned: when you believe in something that could help improve people's lives, keep searching for those who will support your ideas, who will encourage you to act on your beliefs and who will work with you. It may take a while, but the effort spent is worthwhile!

We hope that workers all over the world will find improved health and socio-economic security by using these techniques to catalyse positive change.

Ellen Rosskam,
Senior Work Security Specialist, Socio-Economic Security Programme,
International Labour Office
January 2002

1. Why Barefoot Research?

Aims of the manual

This manual has been developed to help workers to:

- identify work security problems
- ensure that problems are tackled from a worker centred perspective
- use Barefoot Research tools
- use the results of Barefoot Research to improve their work security
- organise for work security

This manual is aimed at empowering workers to increase their level of control over their own work situations, to protect their health and well being, and to improve their level of basic security.

Who is this manual for?

This is a practical guide for workers providing tools for:

- conducting their own research
- collecting important information and
- transforming that information into action to improve workers' lives

Many others will also find the manual useful, namely:

- representatives of workers, including trade union representatives, organisers and officials
- worker educators
- trade unions
- employers and their organisations
- academic institutions
- progressive researchers
- labour inspectors

The techniques described in this manual can be used in any country in the world. Because no tool can be everything for everyone, sometimes you may need to adapt the techniques to fit local conditions. Sometimes it may be appropriate for workers and trade unions to seek further help from outside collaborators and researchers. If you want to go further in your Barefoot Research, you will find further guidance in the section at the back of this manual "Taking Barefoot Research further".

Benefits of Barefoot Research: Everyone wins

When workers' well being is not protected in the workplace, everyone suffers, not just the individual worker. Barefoot Research can be carried out:

- by workers themselves who act as researchers, rather than using the standard scientific approach whereby an outside researcher investigates
- without the need for sophisticated equipment, trained experts, or expensive resources

Barefoot Research in work security is a tool that provides major benefits for workers, their families and their communities. Conducting Barefoot Research gives dignity and respect to life, by using simple methods to protect workers' lives, which in turn protects their families, neighbourhoods, villages, communities.

Organising around work security provides workers with greater strength for bargaining to make changes and increase their level of security. If workers have the tools to organise they can:
- improve their basic socio-economic security
- improve working conditions
- increase their voice representation
- gain power through organisation to also tackle income and employment issues

Through collective work on income or employment rights, workers can also build the power base needed to tackle issues of working conditions and basic worker protection.

Barefoot Research is not an academic exercise. It is a practical approach for improving workers' basic security with special emphasis on working conditions. The absence of basic security for workers can often mean that workers accept any working conditions for fear of not having a job or income. Barefoot Research can help to overcome this problem by:
- generating information that is difficult for employers, inspectors or enforcement representatives to ignore
- providing some protection against reprisal, since it is much more difficult to discredit or rebuke an entire workforce than it is a few isolated individuals
- empowering and building confidence in workers, since the participatory element of the research process validates workers' concerns and creates a sense of ownership of the process and outcomes
- building trade union strength for bargaining through collective action by workers
- publicising the results, as retaliatory action against workers who are promoting work security does not make for good public relations for an enterprise
- organising workers around their health, well being and basic security where a collective body, such as a trade union, does not exist. This is an excellent means of building workers' confidence to form a trade union which will speak on behalf of the workers

Barefoot Research tools for better working conditions

There is a variety of Barefoot or "Do-It-Yourself" (DIY) research techniques which all involve looking at the workplace, listening to workers, and placing value on workers' opinions. These techniques include:
- inspections by workers
- surveys of workers
- small group discussions with workers
- mapping techniques
- interviewing workers
- observation of work tasks

In some work situations you might only need to use one of these tools for Barefoot Research. In other situations you may want to use several of the techniques described.

Why work security?

Changes in the global economy have resulted in increased economic insecurity and inequality everywhere. These trends have been associated with a weakening in the voice representation of workers and working communities and a decline in working conditions in many parts of the world.

The ILO's strategy to improve social and economic security focuses on seven basic dimensions of security.

Seven Dimensions of Basic Security:

Labour market security – Adequate employment opportunities, through state- guaranteed full employment

Employment security – Protection against arbitrary dismissal, regulations on hiring and firing, placing burden of costs on employers

Job security – Protection of one's occupation, skill area or "career", protection against de-skilling, down-skilling, and restrictive work practices, protection of job qualifications, tolerance for craft unions

Skill reproduction security – Widespread opportunities to gain and retain skills, through apprenticeships, employment training

Work security – Protection against accidents and illness at work, through safety and health regulations, limits on working time, unsociable hours, night work for all workers

Representation security – Protection of a collective voice in the labour market, through independent trade unions and employer associations incorporated economically and politically into the state, with the right to strike

Income security – Protection of income through minimum wage, wage indexation, comprehensive social security, progressive taxation

What is work security?

Work Security is a fundamental right of all working people. It is an inseparable part of basic socio-economic security through the provision of:

- protection against accidents and illness at work through safety, health and environmental regulations
- protection from discrimination based on work-related or other disabilities, gender, race, religion or ethnicity
- protection from violence, harassment, stress, unsociable hours; limits on hours of work, night work; limits on working age
- rights to employment and income security, compensation benefits, pension security, maternity protection, absenteeism protection, long-term care, holidays, reasonable work scheduling and work organisation
- protection through legislation, enforcement, inspections
- right to association
- right to collective bargaining
- right to social supports such as access to health care, education, child care
- right to refuse unsafe work
- right to participate through mechanisms such as joint labour-management health and safety committees and other forms of voice representation
- right to know about work-related hazards
- right to protection for "whistle-blowers"

Work Security is the right to Decent Work that promotes individual and community health.

Every year:
- 1.2 million workers world wide die from work-related accidents and work-related diseases
- by conservative estimates, workers suffer 250 million work-related accidents and 160 million work-related diseases

Deaths and injuries take a particularly heavy toll in developing countries, where large numbers of workers are concentrated in hazardous industries such as agriculture, logging, fishing and mining.

The absence of any dimension of basic security can directly impact upon working conditions. The lack of basic security may mean that workers:

- accept any working conditions, no matter how bad, for fear of not having a job or income
- do not raise their concerns about working conditions because there may be substantial risks in doing so including employer reprisal, ridicule, job loss, plant closure and even retaliation from co-workers who are afraid that their own jobs will be placed in jeopardy by voicing concerns
- lack a collective voice to raise their concerns
- consider working conditions a last priority after jobs, wages and other life-sustaining concerns

Costs of work-related accidents or diseases

Work-related accidents or diseases are costly to everyone.

For workers some of the direct costs of an injury or illness are:

- the pain and suffering of the injury or illness
- the loss of income
- the possible loss of a job
- health-care costs

The indirect costs of an accident or illness can be far greater than the direct costs, often so great that it is difficult to measure them.

Work-related injuries and illnesses are costly for workers' families, and their local communities. Some of the costs include:

- seeing a loved and respected person suffering from an injury or disease
- worry and stress
- time and effort to care for the person
- financial losses and hardship
- loss of life

Accidents or illnesses are costly for employers. For a small business, the cost of even one accident can be a financial disaster. For employers, some of the direct costs are:

- payment for work not performed
- medical and compensation payments
- repair or replacement of damaged machinery and equipment
- reduction or a temporary halt in production
- increased training expenses and administration costs
- possible reduction in the quality of work
- negative effect on morale of other workers

Some of the indirect costs for employers are:

- the injured/ill worker has to be replaced
- a new worker has to be trained and given time to adjust
- it takes time before the new worker is producing at the rate of the original worker
- time must be devoted to obligatory investigations, to the writing of reports and filling out of forms
- accidents often arouse the concern of fellow workers and influence labour relations in a negative way
- poor public relations for the company

And work-related accidents and illnesses can cost the State three to four per cent of a country's gross national product. In reality, no one really knows the total costs. This is because there is a multitude of indirect costs which are difficult to measure, besides the more obvious direct costs.

Limitations of "scientific" study

Unfortunately, many employers assume little responsibility for the protection of workers' well being. In fact, some employers do not even know that they have the moral and often legal responsibility to protect workers. As a result of the lack of attention given to work security and resulting exposures, work-related accidents and diseases are common in all parts of the world.

Often workers and trade unions have led the struggle to protect workers' rights and health. But workers and trade union organisations can be faced with a real challenge when trying to prove that illnesses and even injuries are related to conditions in the workplace and to other factors related to a lack of basic security. Workers face even tougher problems in trying to influence change.

It can seem that employers, government institutions and the medical community demand an impossibly high standard of proof before they are prepared to take steps to protect workers' health. Study after study may be carried out, and while waiting for decisions workers continue to be exposed. Even after it has been established that a link exists between a particular exposure and a health problem, it may be many years before the exposures are substantially reduced, if in fact they are ever reduced at all.

Scientifically conducted studies, even those that clearly establish a link between work and disease, provide no guarantee of improvements in the workplace. The 1.2 million work-related deaths across the globe each year show how the current science-based approach to work security is inadequate.

It would take years for an army of scientists to evaluate every possible workplace health hazard. For example:

- there are over 50,000 chemicals in common industrial use and only a small percentage have been fully studied for their human health impact
- even when a particular substance is studied, standard research requirements and statistical testing can be so rigid that work-related associations cannot be scientifically "proven," leaving workers without protection

There is a dangerous assumption that no association exists between disease and a work-related exposure if a scientific study does not demonstrate the association. This assumption is wrong. For most occupational diseases, it is seldom possible to collect adequate data to achieve scientifically defensible results. For this reason, most scientific studies do not demonstrate a scientific association between work exposures and diseases. Many diseases are in fact due to work-related exposures or insecurities.

There are many examples where work-related diseases have been recognised by workers and trade unions for many years, with employers and the medical and political establishment lagging behind. Some well known occupational diseases include:

- asbestosis *(caused by asbestos, which is common in insulation products)*
- silicosis *(caused by silica, which is common in mining and sandblasting)*
- lead poisoning *(caused by lead, which is common in battery plants and paint factories)*
- noise-induced hearing loss *(caused by noise, which is common in many workplaces)*

There are also a number of major health problems that can be associated with poor work security, including:

- heart disease
- cancer
- musculoskeletal disorders such as permanent back injuries or muscle disorders
- allergies
- reproductive problems in men or women
- stress-related disorders
- psycho-social disorders

The cause of work-related diseases can be difficult to determine. Sadly, all too often by the time a work-related disease is finally identified, it may be so advanced that it cannot be treated or cured. Since many work-related diseases do not show up until 20-30 years after the worker was exposed, it can be difficult to identify what a worker was exposed to in the past that caused the disease in the present. Barefoot Research can help to identify past exposures which may be the cause of disease in the present.

More is understood today about some work-related hazards than in the past. However the organisation of work, the way jobs are designed, the speed of work, working time, working with insecure contracts, inadequate wages, lack of employment opportunities in the labour market, and lack of training and skills development all continue to have negative impacts on workers' well being.

These work security problems, some with unknown hazards, present great challenges to workers, trade unions, employers, educators, and governments. Employers who include workers in planning and analysis of working conditions have found that problems are solved faster and better, often improving working relationships and productivity.

Workers know best

Workers often know what it is that is hurting them or threatening their well being. They may not know the exact physiological or biological mechanisms causing a problem and they may not be familiar with being asked for their opinions, but their own experience is a powerful source of information and knowledge that must be taken into account. No one knows the work environment better than those who work in it.

One of the most effective means of improving work security is to ensure that workers are involved in:

- determining what problems exist
- setting their own priorities
- creating a collective consciousness and
- collectively pressuring for improvements

An active and worker-centred approach to participation in improving work security is crucial and is an effective means of increasing workers' voice representation.

An equal approach for women and men

In many cases, legislation, where it exists, is based on norms set by men for men (and is often applied to health and safety equipment as well as work methods, tools, work design and even work organisation). In addition, legislation often ignores both the concentration of women in certain supposedly "low risk" occupations, and the double jeopardy facing women whose waged work may expose them to similar risks as those they experience in their work at home.

For the most part, women have been left out of work-related health research studies mainly because women's work is generally viewed as "safe" work. Yet time and again we see that this is *not* the case. There are many risks to women's health that are present in many jobs performed by women. Research has focused on jobs where the hazards are more dramatic and where compensation is a financial concern, such as manufacturing and construction and where in most cases, men make up the majority of workers.

It is essential that:
- all workers are involved and effectively represented
- women's work security is not overlooked
- more research is undertaken on jobs where women are present and make up the majority of the workforce
- reproductive health hazards for *both* men and women are studied. Workplace exposures can affect the reproductive health of both men and women

Barefoot Research and objectivity

Some people will claim that Barefoot Research is not objective, saying its results are somehow less valid than those that might be arrived at by an outside researcher. But Barefoot Research is not meant to be for scientific use or for publishing in a scientific journal. The information collected through Barefoot Research is used to:
- identify problems
- develop a collective consciousness amongst workers
- provide solutions
- bargain with the employer to provide basic security at work

Some of the tools you need to conduct your own Barefoot Research are now described in the next section.

2. Tools for Barefoot Research

Define your goals

One of the most effective means of improving workers' security is to involve workers in determining what problems exist and then collectively pressuring for improvements. There may well be many workers with individual work security problems that no one else is aware of. It can be very difficult to get an accurate picture of working conditions when we hear about problems in isolation from each other, one or two at a time. Barefoot Research helps you bring together the experiences of workers and the work security problems that they face, in order to develop a collective response.

Using Barefoot techniques, you will probably want to find out something and then use that information to make changes. "Finding out" is the first stage; "Making change" is second. This is what separates Barefoot Research from traditional research and is what makes it so worthwhile.

Defining the goals is one of the first activities that workers need to tackle. For example, two union representatives or a worker health and safety committee may wish to conduct Barefoot Research. They want to find out the priority work security concerns of workers in a large retail outlet in order to:
- better respond to the workers' needs
- gain the trust of the workers
- develop a collective approach amongst the workers
- take effective action to improve unsatisfactory conditions - with the full support and involvement of the workers

After establishing the goals, it is important to clearly **define the question you want to investigate**. Using the above example, which describes the goals of Barefoot Research in a retail outlet, the question could be *"What are the workers' priority work security concerns and what are their recommendations for correcting the identified problems?"*

Barefoot Research can involve:
- an entire workforce or a small group of workers
- research about health problems
- the collection of information about potential hazards
- asking workers for their opinions on what issues affect their basic security including their work security
- union representatives working with their members

The fundamental purpose of Barefoot Research is to improve the lives of people by taking action to bring about practical change. It is available and accessible, even to the less powerful groups in society. It can raise awareness and produce valuable information. Because of its participatory nature, it places an element of control in the hands of the participants.

The information that is gathered from the research can be used to negotiate improvements.

There are a number of Barefoot Research tools available for gathering specific information relevant to the workplace. These tools can be used alone or in combination with each other. Each tool has strengths and weaknesses. Decide which to use based on:

- which will best help you to achieve your goals
- the time that you and other workers have available
- the nature of the intended research

But whichever tool you choose *don't "go it alone"*:

- workers are stronger when they act together and are more likely to be listened to by an employer. When you are on your own there are greater risks to you of retaliation, reprisal, and even violence. If your workplace is unionised, work with another union representative

- carefully prepare before you begin your research. If your workplace is unionised, you should talk first to your members and other union representatives to get their views. Success will only be achieved by workers combining in collective activity

- look at the workplace, listen to the workers, value workers' opinions, and develop collective organisation to tackle work security problems

OBSERVE YOUR
WORKPLACE

EXAMINE RECORDS

LISTEN TO
COMPLAINTS

INSPECT YOUR
WORKPLACE

ASK MEMBERS WHAT
THEY THINK

READ INFORMATION

Inspections by Workers

What is an inspection?

An inspection of the workplace helps workers and their representatives to identify work security problems by:

- systematically checking on a particular aspect of work security, or part of the workplace, or the way work is organised
- talking to workers, management, other workers' representatives, safety committee members

Communication with workers is the key to finding out the information we need and to negotiating improvements. Ensure that workers are involved at all stages of an inspection and gain their support by:

- finding out their problems and complaints before inspecting
- talking to them during an inspection
- reporting back to them after an inspection
- deciding with them what action to take as a result of the information that was found during the inspection

There are a number of different types of inspection which include:

- general inspections, where you routinely check numerous aspects of work security and compare them with the standards that you think should apply
- special inspections, where you concentrate in more detail on a particular aspect of work security. For example, whether work equipment is suitable for women workers to use, or whether workers required to work at night have the same protections as those working day shifts
- inspections after an accident or ill health
- inspections of documents

Inspection checklists

Some workers and their representatives find it helpful to use a checklist when carrying out an inspection. A checklist can give you more confidence and help you remember all the questions you want answered. Checklists can be particularly useful for special inspections on specific hazards (see the example shown on next page).

However, not everything can be included in a checklist. The most important things in an inspection are to:

- talk to workers and find out their views
- observe what is really going on and how people are actually working
- make notes and drawings to help make a report
- use other methods for recording evidence, such as taking photographs, if you have access to such equipment
- take action as a result of what you have found out

Example of a Workers' Inspection Checklist for Job Design

Question	Yes	No	Action Required Yes / No
Difficult work positions			
1. Can the time spent in one position be reduced by: redesigning the job, providing rest breaks, rotating workers, or providing chairs or stools?			
2. Can the work height be adjusted?			
3. Can adjustable chairs be provided?			
4. Can machine controls or materials be placed so workers can reach them more easily?			
Mental stress			
5. Can workers who must maintain close concentration be given extra breaks?			
6. Can workers who work alone be rotated to other jobs for part of the shift to lessen feelings of isolation?			
7. Can workers who deal with the public spend part of their day doing other kinds of work?			
8. Can workers have more control over the pace of work?			
9. Can the quota of work for each person be adjusted to a more realistic level?			
Work environment stress			
10. Can sources of noise and vibration be removed or controlled?			
11. Can chemical hazards that cause headaches or minor irritations be controlled?			
12. Can lighting be improved?			
13. Can workers be given control over the temperature in their work environment?			
Tools and machine design			
14. Can tools be designed to eliminate twisting of the hand or wrist?			
15. Can trucks or other machinery be designed so the driver or operator has a clearer view?			
16. Can gauges be made easier to read?			
17. Can machinery be used to lift heavy loads instead of moving them by hand?			

Source: Adapted from United Auto Workers' Union, USA

Action after an inspection

Safety Representative

The result of an inspection will be a list of points where you believe your employer should act, or about which you need more information. Remember: inspections are only useful if action is taken about the work security problems that you and other workers have identified.

So be sure to:
- point out defects found during the inspection
- inform management in writing about the problems that you have found, using a report form, a letter, or a report that you construct yourself
- obtain a management response
- keep workers informed about what management is going to do *(see Section 3 of this manual for more details)*

Surveys

What are surveys and why do them?
Surveys are amongst the most commonly used Barefoot Research tools for gathering information. A carefully designed survey can be a powerful tool for finding out about workers' work security concerns or gathering information about ill health or hazards.

Workload Surveys

Surveys help inform the union of how our members are experiencing and coping with heavy workloads. A survey can provide input from a large number of union members, including voices we don't otherwise hear from. It can be an important way to reach out and get input from workers of colour, Aboriginal workers, workers with disabilities, gays and lesbians, women and youth.

The results can provide valuable information and help the union develop more effective strategies to tackle workload problems. A survey can gather ammunition for a campaign for more staff, demonstrating how public services decline even as union members work harder and longer trying to fill the gap.

Source: Canadian Union of Public Employees

A survey may:

- be as simple as posing a single question to a number of individuals, asking "yes" or "no"
- involve a show of hands from workers when they are taking a break from work
- comprise numerous questions which require detailed analysis

Generally, the simpler the survey the better, but your particular research needs will determine its scope and complexity. Surveys are quite adaptable and can be used to gather:

- quantitative, numerical data, such as the number of workers on the afternoon shift who are suffering from headaches or
- qualitative, descriptive data, such as ideas for reducing the risk of back and neck strain among bricklayers

Deciding on whether to use a survey

Before choosing whether or not a survey is the right tool for your particular research needs, there are a number of issues for you to consider, including:

- the size of the target group
- the amount of information to be gathered
- the number of workers or workers' representatives that are needed to carry out the survey

Once it has been decided that a survey is the right tool, there are a number of other decisions to make:

- should it be conducted verbally?
- should it be written?
- if a written questionnaire is chosen, should it be distributed and returned in person; at a meeting; by mail; over the internet; by other means that you might think of?

Preparing a Survey

When preparing a survey, it is important to be very clear about the objectives and emphasis. Ask yourself the following questions to help define the scope of the survey:

- What is the purpose of the survey?
- Who will be asked to respond to the survey?
- What information do you want to have when the survey is complete? Be very specific in answering this.
- How will you use the information you gather?
- What is your plan and timeframe for getting surveys completed and results analysed?
- What resources do you need to do this?

Source: Canadian Union of Public Employees

Putting together a survey

The more questions asked in a survey and the more individuals being asked the questions, the more data there is to analyse. You may simply want to know, for example, *whether men and women are experiencing symptoms in similar numbers*. In this case, it's just a matter of counting and comparing symptoms reported by men and symptoms reported by women. But you may want to know, for example, *whether men and/or women in a particular department are more likely to report symptoms than men and/or women in another department*. This requires more analysis and will involve more time.

What sort of questions should you ask?

You can gather descriptive data through "open-ended" questions, where workers write in answers in their own words. They do not tick a box, in the way that they would do for a "closed" question.

"Open-ended" questions can reveal rich information because answers are not limited. A question such as, *"What do you think can be done to prevent back injuries on the loading bay?"* may result in ideas that only someone who has experienced work in that area can provide. "Open-ended" questions are best used when:

- your questionnaire is short
- you have a small sample size
- you are doing face to face interviews
- you are having a "practice run", to find out the best way of getting responses to different questions

The main disadvantages of "open-ended" questions are:

- the time it takes for a worker to complete their answers
- the questions may be more difficult to respond to, especially if the researcher is not there to explain the question
- developing a system for analysing the data may be time consuming
- deciding what information to use from the responses can be difficult

"Open-ended" questions are not recommended:

- if your questionnaire is long
- if workers are filling in their responses alone

"Closed" questions are normally quicker and simpler to answer, but the responses are limited to those that are allowed for in the questionnaire. For "closed" questions, workers tick a box, choosing from one of several predetermined answer choices.

Your survey should produce the information you need to know, so be sure to design it so that it can answer your question or questions. For example, if you are using a health questionnaire to find out whether workers are experiencing symptoms of toluene exposure, you need to know what the possible symptoms are from exposure to this chemical. If a reliable fact sheet on toluene tells us that exposure can cause *headaches, dizziness, sore throat, numbness or tingling in the fingers, central nervous system damage, and cancer,* your survey should probably ask about these symptoms. A survey that is designed specifically for symptoms of particular exposure will provide more concise and meaningful information.

How you select and word questions can strongly influence the responses.

Here is some advice to guide you:
- give clear instructions about how to complete the survey
- avoid biased or emotionally-loaded questions
- avoid negative questions that can be confusing, such as, "Do you disagree that the ventilation system should be shut off after hours?"
- limit the number of possible multiple choice answers for any given question to four or five or, alternatively, consider making it an open-ended question
- borrow the wording and format from established surveys. You may even be able to use them as they are, or adapt them to your circumstances with just a few changes or substitutions
- after constructing the survey, be sure to test it with a few workers to make sure the instructions are clear and the questions are worded properly
- make any necessary changes before distributing it

Developing a Questionnaire

When putting together a questionnaire it is important to balance the goal of creating a clear, short, "to the point" questionnaire with the need to make sure the survey collects all the necessary information.

Consider the following:
- *"Is this an opportunity to obtain information from groups you don't often hear from, such as women workers, or those working at night?"* Does the issue you are investigating affect them in a different way, which might require different questions or solutions?
- Are there issues like language or literacy that need to be taken into account?
- Are the objectives of the survey clearly presented to the respondent? *(The more workers understand how the information will be used the more likely they are to respond.)*
- Do you need information about: Gender? Age? Job class? Employment status? Ethnicity? Why do you need this information?
- Will the responses to the questions provide background information to help interpret the results?
- Are the questions and the options for answers clear?
- Can the questionnaire be answered in 10-15 minutes?
- Will the results be easy to tabulate and provide the information you are looking for?

Source: Canadian Union of Public Employees

Keeping questions objective

It is important for Barefoot Researchers not to get put down or discouraged by critics when releasing the results of their survey. Therefore, it is important to avoid bias, and you should be careful to not make statements or use questions that could be perceived as being leading or influencing the respondents. For example:
- you might be accused of influencing the results, if you were to say, *"Following numerous reports of nose bleeds and shortness of breath, this survey is being done by the union to try to convince the employer that we are suffering from sick building syndrome and need better ventilation"*
- it would, however, be acceptable to say, *"This survey is being done by the union to gather data regarding the health of its members in this department"*

A brief statement of purpose should include assurances of confidentiality, plans for release of findings, and an explanation of the importance of everyone's co-operation. It should stress that this is worker-based research, in other words, it is the workers' own research, and is being done to reflect their reality.

Case Study:
An Equal Approach for Women and Men

A union health and safety representative constructed a questionnaire and distributed it to a cross section of women members. Many problems were identified in their replies including:

- ergonomic problems
- flour dust
- women feeling that they are discriminated against and ignored
- stress caused by low staffing levels, long hours, shift work and verbal abuse
- poor welfare facilities with a lack of seats and privacy in the changing rooms

As a result, the union representative:

- submitted a report to the general manager. A positive response was given, and a meeting arranged to address the issues
- identified a female member who was recommended by the other women, who is willing to stand for the position of union health and safety representative at the next union branch meeting
- feels that awareness of women's health, safety and welfare needs has been raised, and steps will now be taken to address the problems

Adapted from: The Impact of Trade Union Education and Training in Health and Safety on the Workplace Activity of Health and Safety Representatives, HSE UK 2001

Sample Survey about Workers' Health Complaints
WHOLE-BODY VIBRATION

Personal information (optional)

Name _____

Age _____ Male _____ Female _____

Job description

Present job title _____

When did you start on this job? _____

What vibrating equipment do you use? _____

For how long each day? _____

Other machines or tools used? _____

Past jobs where vibration was a factor _____

Length of time employed at this workplace _____

Health description

If you are exposed to mainly whole-body vibration (near machines, concrete vibrators, buses, trucks, tractors, etc.), please indicate if you are suffering , or if you have suffered in the past, from any of the problems listed below. For each item below that is, or has been a problem, please indicate:

> **"A"** *if you have/had the problem "All the time"*
> **"R"** *if you have/had the problem "Regularly"*
> **"O"** *if you have/had the problem "Occasionally"*

back pain		difficulty sleeping	
arthritis		irritability	
varicose veins		giddiness	
piles		blurred eyesight	
groin trouble		fatigue	
indigestion		impotence or loss of sexual interest	
high blood pressure		difficulty breathing	
heart trouble		aching muscles	

Did you suffer from any of these complaints before you started your present job? If yes, please give details: _____

Any other comments? _____

Source: Guidelines on hazards of vibration, Australian Council of Trade Unions

Conducting the survey and obtaining a good response

Not every worker feels comfortable participating in a survey. Some workers may:

- feel imposed upon when asked to participate
- be unfamiliar with being asked for their views
- fear reprisal
- be unsure about the purpose of the survey
- be concerned about how much time it will take

In order to re-assure workers, be responsive to their feelings. To get a good response:

- make an effort to accommodate schedules or particular needs
- try to get some input from workers regarding convenient times for them
- ensure anonymity and confidentiality
- arrange a meeting with workers or issue a letter to explain the goals and purpose of the survey and to offer assurances of protection for them
- confirm that completed surveys will be stored in a secure location
- confirm that you will report back to them and collectively decide on the next steps

A survey that is conducted face to face with workers will result in a better response rate because of the personal, interactive nature of the information collection. If literacy is likely to pose a problem, a verbal survey is better than a written questionnaire that workers have to fill out on their own. With a *verbal survey* the Barefoot Researcher asks the questions and writes down the responses. It may, however, not be an appropriate method for gathering confidential or sensitive information. For confidential or sensitive information it is best to use a written survey that workers fill out by themselves. Workers should not put their names on surveys asking confidential or sensitive information. In fact, workers should not be *required* to put their names on any survey they complete if they do not wish to be identified. If literacy is a problem for confidential or sensitive information gathering, you will probably still have to ask the questions verbally, one-to-one, ensuring complete confidentiality of all information.

The main *advantage* of a written questionnaire that workers complete themselves is that it requires fewer people to collect the data. It also gives workers more time to consider their responses. The main *disadvantage* is you may get a lower response rate than with a verbal survey. Written questionnaires require some time and effort from the worker. The response rate for written questionnaires can be higher if workers have some help with the questionnaire. The return will be much better if workers are asked to:

- complete the questionnaires on-site
- complete the questionnaires at a meeting, for example, and return the forms immediately

Once workers have taken the forms away with them, there is less likelihood they will return them unless they are very motivated.

Analysis and action

Unfortunately, the world is full of completed questionnaires that were never tallied, analysed, reported on, or acted upon. So it is essential that you now take action to complete the process. It is important not to jump to immediate conclusions. First, carefully analyse the information that you have gathered and then see if the results point to a problem.

The results of the survey should be reported back to the workers who have participated. Methods of reporting back include:

- a verbal report at a meeting or by going around the workplace
- a newsletter
- a written report

Once the report back has been given, discussions should take place to decide what action needs to be taken as a result of the survey *(see Section 3 of this manual for more details).*

Analysing the Results

The method of putting together the results depends on the type of questions asked, the number of responses and the purpose of the survey. For a small survey you can put together the results by hand, or with a simple data base program. For a large, more detailed survey with many respondents it is best to use a computer program designed for analysing survey results.

Source: Canadian Union of Public Employees

Case Study:
Textile Workers Conduct RSI Research

Repetitive strain injuries (RSI) are common in the clothing and textile industry. UNITE, the union representing 200 workers at a sequins manufacturing plant in New York City, USA, responded to workers' concerns about ergonomic problems by circulating a confidential survey asking workers about health complaints.

The survey showed an alarming number of injuries among workers rolling sequins onto a spool with a manual crank. A union health and safety specialist found that almost 75% of the workers were experiencing serious pain of one form or another.

The union took the results of the survey to management and began a joint investigation to evaluate the various workstations. With the workers' permission, the union video taped individual jobs to document any awkward postures and difficult motions. A number of workstations were then ergonomically re-designed, including the spooling machine which was fitted with a foot pedal. Padded, adjustable chairs were purchased. Jobs were rotated. The union ran an educational programme involving workers and managers to develop awareness about the prevention of RSI.

The year before the programme began there were 18 cases of carpal tunnel syndrome, a potentially disabling wrist disorder. In the following year, after implementing many of the recommendations from the research, there were only 5 compensation cases, none of which were for carpal tunnel syndrome. Plant management reported that, due to this joint undertaking, their compensation costs were cut in half. More importantly, workers' risk of injury was greatly reduced.

Adapted from: Video. 1998. Ergonomic Programs That Work. US Department of Labor/Occupational Safety and Health Administration. Photo source: Video capture from Ergonomic Programs That Work.

Case Study:
Brazilian Workers in Chocolate Industry Tackle RSI

Workers in Brazil's chocolate industry are doing their own research on repetitive strain injuries. Their goal is to use the results to develop a concrete action plan to support the cases of injured workers in the chocolate industry and to prevent further injuries. The union began their study by collecting data using questionnaires distributed at the plant gates. About 15% of the workers responded, returning the questionnaires via the union letterbox.

Workers were asked about:
- the kind of pain they are experiencing
- the problems they are confronted with at the workplace
- opinions about the union's activities related to these problems
- ideas for proposals to prevent the problems

The next phase of the research is being done together with a local university. The union intends to use the results to help them in planning action to reduce stress factors and injuries. Solutions will be based on developing demands for collective bargaining and gaining the right to intervene in the factory directly.

Information provided by: Mara Lira, union leader, Espirito Santo, Brazil and Research Student from Federal University of Espirito Santo. Adapted from: Translation by Heiner Koehnen

Case Study:
Barefoot Research with Women Workers in Italy

The Environment and Labour Association of Tuscany and the Italian General Workers' Confederation (CGIL) Women's Committee of Tuscany carried out an investigation about women workers' health through a set of guided questions. The questions focused on risks perceived by individual workers. Women workers in different industrial sectors *(shoe factories, food and catering, communication and telephone companies, banking, kindergarten, police and social research)* filled in 233 questionnaires.

Results showed:
- 90% of women reported suffering from stress-related health problems
- 80% of women reported heavy manual lifting
- 60% of women reported repetitive hand use
- 12% of women reported reproductive ill-health including irregular periods, temporary sterility, unexpected abortion and premature birth

Stress is believed to be responsible for a general loss of sexual interest and causes changes in female menstruation. Stress can also be the consequence of workload, providing evidence once again of the existing pressures on working women, particularly due to the double work duty of home and employment responsibilities compounded by the level of performance required of the workers.

From its women-specific surveys, the CGIL Women's Committee of Tuscany and the Environment and Labour Association of Tuscany gained tremendous insight from their Barefoot Research on women workers. The need to assess all risks to women workers emerged as a priority. The usual and "official" means of evaluating risks rarely take into consideration the presence of women at work and the differences between male and female workers. The process also revealed widespread resistance to understanding gender differences when providing information and training for both workers and their representatives.

Armed with the results of this Barefoot Research, the Union and the Association are working together to prevent these problems and to improve work security for women workers in Tuscany, Italy.

Adapted from: The Italian General Workers' Confederation (CGIL), Women's Committee of Tuscany and the Associazione Ambiente e Lavoro Toscana (Environment and Labour Association of Tuscany) Tuscany, Italy, (2000)

Small group discussions

Small group discussions with workers can be used as a Barefoot Research tool. Trained worker-researchers, worker educators or experienced worker representatives can facilitate the discussions. The worker-facilitator's role is to prompt workers in the small group with questions about a particular topic or topics. The discussions that follow become the source for the research data, or information. Workers' attitudes, beliefs, feelings, reactions, and experiences are drawn out in a way that would not be possible using other research methods. It is the small group interaction in a supportive environment that encourages this.

Small group discussion is a very good method to use for researching an issue such as work security, where there can be many concerns about:
- possible job losses
- income security
- poor representation
- personal injuries and ill health

In addition, workers will have plenty of ideas about solutions!

Why use small group discussions?

A small group discussion with workers can:
- allow information to be gathered quickly about a clearly defined topic
- encourage working collectively
- encourage workers to become involved in discussions
- provide an informal and effective way of structuring discussion
- allow workers to investigate, discuss and provide solutions to work security problems that they and their co-workers face
- develop worker organisation for work security

How can small group discussions work effectively?

For a small group discussion to work, certain elements should be present. The key elements include:
- ensuring that the workers invited to the small group discussion have experience of, or opinions about, the subject being researched, and that they are representative of the workforce as a whole. For example, a small group discussion which is organised to find out how women in a workplace feel about the issue of sexual harassment at work, should include women whose age groups, occupations, or other characteristics are roughly within the same ratio as exists in the workplace
- keeping the group size manageable, with a maximum of 6 –10 workers
- making the timing convenient for the workers involved
- agreeing with workers about where the meeting should take place. It can be at the workplace or outside. But wherever it is located, it is highly recommended that it is somewhere that workers can comfortably speak up about issues
- organising in advance by preparing questions or activities, so that the small group has the opportunity to share their subjective experiences
- allowing the small group of workers to interact. This ensures that workers can comfortably express their values and beliefs, ask questions of each other, and reflect upon their own understanding of their specific experiences

- understanding that small group discussion is a forum for change. Where trust is established and where workers work effectively with one another, the group approach to examining a problem may result in solutions. These solutions may not have been obvious to the individual
- having a good group facilitator who can draw out contributions from every person in the group
- ensuring that the discussions and conclusions are recorded. These notes will be useful to you in taking action
- setting realistic time limits for discussion. Between one and two hours will normally be sufficient
- at the end of the discussion, encouraging workers to reflect upon what has been said and what action is necessary
- agreeing the time and date of the next small group discussion and the agenda

The facilitator and the workers

The facilitator plays a very important role in making the small group discussion a success. She or he may be trained in the gathering of information, may be an experienced union official, or an experienced worker educator. The facilitator helps to guide the discussion, and helps workers to feel comfortable and respected. She or he has to believe in and value what the workers are saying. Active listening, showing empathy, consideration and affirmation will foster good communication and yield better results. If workers are to share their thoughts, they must feel that the facilitator is open and honest and that she or he will respect confidentiality. The workers should not feel that they are lacking control in any way.

Worker guidelines for small group discussions

To be sure the small group discussion is a positive and safe experience, workers should agree to:
- keep an open mind
- respect each other's opinions and comments. Everyone's questions or answers are important
- participate as fully as possible. Everyone's thoughts and opinions are equally important
- feel free to leave the group at any time. Participation is voluntary
- avoid monopolising conversation. Everyone should have an equal opportunity to speak
- express honest opinions. In order to carry out accurate, meaningful Barefoot Research, workers must provide honest, accurate information
- resist interrupting or carrying on side conversations while another person is speaking
- express disagreements without attacking others
- maintain a sense of humour
- maintain confidentiality

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Facilitator guidelines for small group discussions

Here are some suggested guidelines to help facilitate small group discussions:

- the facilitator's job is to foster broad active participation, to focus and guide the dialogue
- ground rules for the operation of the small group should be agreed, for example, all participants agree to respect confidentiality
- everybody should feel included. Some workers need an invitation to speak, but an invitation that leaves them feeling free and not threatened
- some workers talk too much and need to be gently but firmly reminded that others have not had the chance to speak much, or that someone was interrupted before they finished their contribution
- everyone's ideas should be respected. Although this does not mean that everyone has to agree. Exploring disagreements can be fruitful
- invite people to develop further what they said. Help workers to connect what one person says to what others have already said: "Didn't Maria say something like that?" Try to deepen the discussion by building on what has been said already
- every now and then, give a brief summary of the basic ideas touched on so far. Then offer a question that can give the discussion some focus and direction
- if it is time to move on, say so
- one person should speak at a time. If three people want to speak, order the responses: "Okay, how about Regina first, then Alberto then Selim?
- be interested in and positive towards the workers
- be a moderator, not a participant
- try not to intervene with your own opinions or biases
- be ready to hear unpleasant views
- accept that you may not be able to moderate all groups
- use your own unique talents
- thank the workers for their contribution to the research and action process

Adapted from: South Bronx People for Change. 1984
And: Morgan, DL and Krueger, RA. 1998. The Focus Group Kit

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Problem trees

A problem tree exercise is one example of how a small group discussion can be used to gather information regarding workers' concerns. It provides workers with an opportunity to collectively explore and analyse the fundamental causes and effects of identified problems.

Draw a simple outline of a tree on a flip chart or large sheet of paper and post it on the wall. The drawing should include roots, a trunk and branches.

Ask workers:

- **WHAT** hazards and ill health problems exist in their workplaces? Number the problems and write them beside the branches of the tree
- **WHAT** are the immediate causes of these problems? Give these answers the *same number* as the problems to which they refer and write these alongside the trunk of the tree
- **WHAT** are the root causes of the problems? Give the root causes the same number as the problems to which they refer. Write these next to the roots of the tree
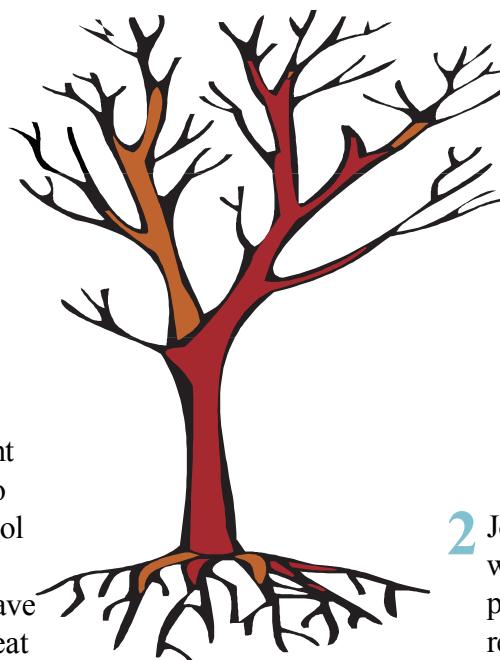
1 Workers and their children have rashes on their hands

1 Pesticide exposure; no protective equipment; no labels on pesticide containers

1 No minimum wage; payment based on crops sprayed; no child care provision or school on the plantation; basic pay rate so poor that children have to work to earn enough to eat

2 Aching backs

2 Lifting heavy loads, no lifting aids

2 Jobs assigned mainly to women workers on precarious contracts; pregnant workers fired; no regulations on lifting; no union

Adapted from: Ferreira, EC and Ferreira, JC. 1997. Making Sense of the Media;
A handbook of popular education techniques. (New York, USA: Monthly review Press)

This exercise is ideal for collecting information regarding the full range of workers' concerns. It has the added benefit of raising awareness about the fundamental causes of identified problems. Workers and their families may suffer from poor health caused by a combination of factors all related to a lack of basic security. Daily realities for many workers include:
- poor nutrition
- lack of access to clean water
- lack of medicines and medical services

Even where medicine and health services are available, an insufficient income often means that workers cannot buy medicine or get medical treatment when needed. A poor general state of health due to a lack of basic securities makes the health effects of exposure to work-related hazards much worse.

In conducting Barefoot Research, workers may speak about a variety of problems in their daily life outside work. At first, you may think these are not related to health complaints reported in the workplace. But by listening to and recording these problems, often you discover that problems outside work are directly linked to health problems related to exposures at work. For example, workers struggling to provide their children with enough food to eat each day may not give priority to the effects on their own health from working with chemicals, dangerous machines, or unsafe construction practices. The lack of basic security in a worker's life may explain why he or she does not take any action to improve their working conditions, even if they are suffering from hazardous exposures.

Barefoot Research allows you to investigate all of the causes that may contribute to workers' health problems. And Barefoot Research can help you decide collectively which area to take action on first. You may be surprised, for example, if workers choose to take collective action on their insecure employment status before wanting to take action on chemical exposures, even if they have no protection at all from the hazards. As Barefoot Researchers, it is important to respect the collective choices, even if you do not agree personally.

Analysis and action
Workers should agree that notes can be kept that record key points arising from the small group discussion. The notes will help to tackle the work security problems that have been identified by:
- collective discussion
- collective analysis and
- development of action plans (see Section 3 of this manual for more details)

Mapping
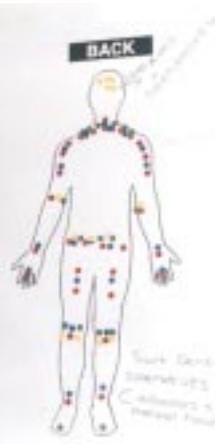
A picture is worth a thousand words! Remember this when you are deciding how to gather information on work-related health problems.

Mapping, in various forms, has been used for many years in developing countries, mainly as an educational and community-organising tool.

Photo: courtesy of the Union of Shop, Distributive and Allied Workers, UK.

What is mapping?

By drawing simple maps of their body or their workplace, workers can record, in a visual form, their health problems, work hazards and overall work environment. Mapping can also be used to produce maps of working conditions which existed years before, even when the workplaces no longer exist today. Workers share their knowledge of problems and solutions using mapping to help.

Why use mapping?

There are a number of reasons to use mapping in Barefoot Research about work security. Mapping:

- involves workers and shows them that they are not alone
- is participatory and develops a collective approach
- encourages discussion and analysis
- allows participants to see that their health problems, and issues related to basic security, workplaces and lives are connected
- is simple to use
- uses workers' subjective experience and knowledge to paint detailed pictures of their working conditions
- is more easily and widely understood than most other forms of information
- helps to overcome problems of literacy and language differences
- is fun!

Who can organise mapping?

A trained worker facilitator, or worker educator or trade union representative can carry out mapping using:

- small group discussions
- larger groups to record and display large amounts of information

The role of the worker facilitator

In each of the mapping activities that are explained in detail below, the worker facilitator leads the workers through the mapping exercise(s), keeping detailed notes of what is being recorded on the maps along with any verbal comments or descriptions that are made. It can help if a volunteer helps the facilitator to keep a record of comments.

It is possible to carry out mapping exercises without a facilitator or recorder present, such as in a trade union office over several shifts, but this is not recommended. If however you do mapping this way, it is essential that instructions are posted up and the place is secure.

Confidentiality and security

Mapping works best when workers feel safe and comfortable that the information they are about to reveal cannot be used against them in any way. Workers will be more open in discussing issues when they are in groups consisting only of other workers, with a facilitator that they can trust, such as a trade union representative.

Before conducting any mapping exercises, the facilitator should inform the workers that:
- participation is completely voluntary
- it is up to them how much they want to reveal to each other, since some of the information in the mapping exercises may be personal in nature
- the issue of confidentiality is a top priority when information is gathered through mapping
- no names or any other means of identification are to be used on the maps in order to protect workers' privacy
- everybody agrees that they will not reveal to anyone outside of the group any personal information

It is also important to agree to whom the maps will be shown. During mapping activities, workers can decide collectively who will see the maps. They may wish to show the maps to:
- the workers and the facilitator only
- other worker groups or a worker health and safety committee
- other trade union representatives

But they may be less willing to show the maps outside the group if individuals can be identified or if the maps might be shown to:
- the employer or a government inspector
- the media, or be published in any way

In these cases workers may feel safer if a summary from the maps is used instead of the actual maps.

Preparation

There are some basic materials that you will need to carry out mapping:
- large pieces of paper, such as craft, flip chart or butcher paper
- a roll of tape to stick the paper on the wall and
- marker pens (coloured if possible, but not essential)

Before the mapping activity, try to create the basic map forms, so that you avoid delays during the mapping process.

The types of maps to be created will depend on the type of information to be collected. Three types of mapping exercises are explained below.

Body Mapping
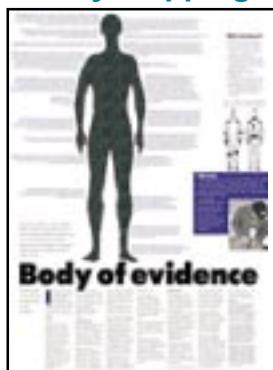
Hazard Mapping

"Your World" Mapping
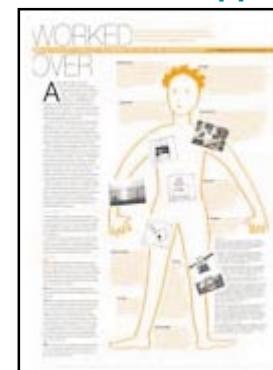
Images: courtesy of Hazards Publications, UK.

Body Mapping

You can use body mapping to collect information about workers' health, such as:

- diseases
- illnesses
- injuries
- aches and pains
- stress symptoms
- reproductive problems
- other related problems

Photo: courtesy of the Union of Shop, Distributive and Allied Workers, UK.

Body mapping:

- provides an easy and effective way to encourage workers to speak out and report symptoms of ill health that they suffer
- identifies common patterns of health problems amongst workers in a particular workplace or doing the same job. Keep in mind that identifying common health complaints does not mean with certainty that the causes are all work-related
- highlights areas for further investigation and action

How many participants should be in a body mapping group?

Body mapping can be done in small group discussions, or with large groups of workers. It is better if workers interact with each other, so groups of six to ten are best. It is also better to organise groups by department, by job, or by some other common characteristic.

Using body mapping you can collect information about:

- workers' current personal health problems or
- the health problems workers have experienced since they began working at their current workplace, or in their current job

Preparing for a body mapping session

- Draw two large outlines of the human body on flip chart or craft paper
- Label the separate images "Front" and "Back" and title the overall map, "BODY MAP"
- Use some tape to stick the images to the wall
- Provide marker pens (different colours if you can, but not essential), so participants can mark any symptoms they have on to the body map

Conducting a body mapping session

- Explain what you are proposing to do, and make it very clear to everyone that information from individuals is confidential
- Ask the workers to make a mark (**X**) on the body map to show any areas of the body which they believe are affected by their work. Different coloured marker pens will help to identify different symptoms, but this is not essential
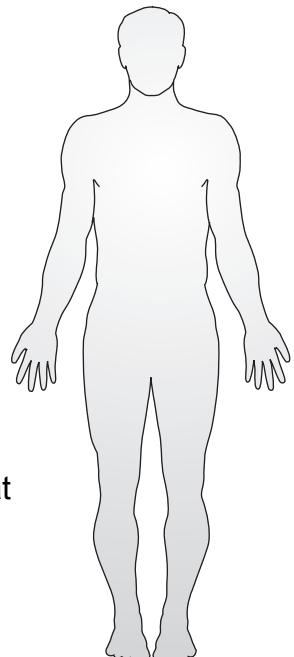
Examples of different symptoms

X—————————	Aches and pains
X—————————	Allergies
X—————————	Reproductive problems in men or women
X—————————	Stress-related disorders

- If there is enough space on the body images you have drawn, you can ask all the workers in the group to do the body mapping at the same time
- Let the workers know that they can stay after the session ends, to add any information they may not wish to share with the group
- After the workers have finished marking the front and back of the bodies, ask them to describe, one at a time, what health problems their marks represent
- You can make a note of the nature of the health problems, beside the relevant marks
- Ask the workers for any observations they have regarding common patterns of health problems and record these comments as well
- Encourage a discussion about these observations

Action

Collectively agree on some initial conclusions and action points from the Body Mapping activity. Be sure to make detailed notes of workers' comments and conclusions, and use these with the workers for action planning *(see Section 3 of this manual for more details).*
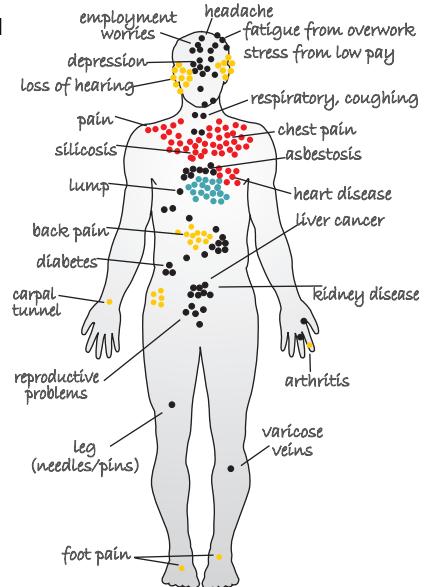
Case Study:
Body Mapping Changes Job Process

A union health and safety representative at a bakery introduced body mapping following a TUC course. The body mapping exercise revealed back injuries and strains. Previously, workers had not liked doing the job in question, but in the union representative's opinion, it was not until the workers body mapped together, that they realised that other workers were getting the same sort of aches and strains.

In the period after the course had finished, the union representative presented the findings to management. As a result, the way that the job is done has now been changed with the introduction of:
- new, smaller baskets that do not hold as much of the product and weigh less
- job rotation and task variety

The union representative says that the members are much happier now as a result of the changes.

Adapted from: Training Safety Reps in the Use of Body Mapping, TUC UK 2001

Case Study:
Behind the Glamour - Canada

The gaming industry (gambling) is one of the fastest growing new industries in Canada. But, almost no research has been done regarding gaming workers' health and safety problems. In response to numerous health and safety complaints from their members, and the frequency of reported injuries and health problems, the unions representing the gaming workers in Canada launched their own research study.

Working together with supportive professionals, a consultative process was carried out to identify the main concerns of gaming workers in the communities. Action research involving workers as researchers was used to drive the study. Small group sessions were held with trained worker-facilitators and five or six workers each. Body Mapping, Hazard Mapping, and "Your World" mapping exercises were used to collect information. A Priorities and Action Chart completed each session.

71 group participants from eighteen different gaming occupations took part. They reported a variety of health concerns including repetitive strain injuries, back injuries, respiratory problems, hearing loss, dermatitis and stress-related health problems. They identified a variety of causal factors as high priority concerns, including poor indoor air quality and second-hand smoke, poor ergonomic design, stressful and noisy conditions, and biological hazards. They revealed the impact of their work on their personal, social and family lives.

The research team concluded that a number of immediate steps should be taken to improve working conditions including further research in priority areas. The unions presented a full report of the findings to their joint-management health and safety committees and a six-page summary was distributed to every gaming worker in the communities. The study was published in a scientific journal. According to the gaming workers, the study achieved its goals - it identified problems and led to improvements.

Adapted from: The Joint Windsor-Winnipeg Gaming Workers' Health and Safety Project Priorities Report, February, 1998
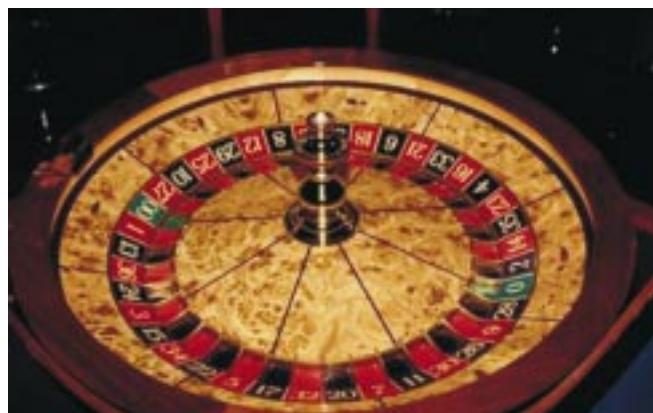
Hazard Mapping

You can use hazard mapping to collect information regarding work security problems. Workers can identify workplace hazards, such as:

- noise and vibration
- sexual harassment
- poor scaffolding
- chemicals
- needlesticks
- working alone
- unguarded machinery

Photo: courtesy of Hazards Publications, UK.

In addition, workers will have the chance to think about hazards which may be "hidden" and relate to their basic security. For example:

- the impact of precarious contracts on working conditions
- lack of income security and how this may impact upon working conditions
- the way work is organised and scheduled
- lack of voice representation

Like body mapping, hazard mapping gives a visual picture and may follow-on from a body mapping session. Through the use of drawings, hazard mapping helps workers and their representatives to visualise their workplace and the hazards that exist. It also provides information that they can present to:

- an employer
- a government inspector
- a joint labour-management health and safety committee
- a supervisor
- a workers' compensation representative

Hazard maps can even be drawn retrospectively, meaning a group of workers can draw from memory the workplace or a particular department as it existed years before. This can be particularly useful to establish the link between the workplace and health problems that have developed over a period of time, such as cancer.

How many participants should be in a hazard mapping group?

Hazard mapping can be done in small group discussions, or with large groups of workers. But it is better if:

- workers interact with each other, so groups of six to ten are best
- you organise groups by department, by job, or by some other common characteristic
- you create an overall workplace hazard map by joining together maps that are drawn by department or a particular section of a workplace

Case Study:
Mexican Steel Workers Research

The Mexican Mine and Metal Workers Union responded to a growing concern among rank and file workers over health problems in a steel plant. The union developed a working relationship with university researchers. The union and researchers agreed upon a three-step process. Sixteen workplaces were chosen. A general assembly of workers was organised to explain the goals and plan. Collective questionnaires were used. Small groups of workers discussed specific questions attempting to reach agreement in each group. Hazard maps were collectively produced. Over 300 workers and 2 researchers were involved. The union produced a booklet with the results of the study which was used to help formulate specific proposals to improve the work environment.

Adapted from: Loewenson, R, Laurell, C, Hogstedt, C. 1993. Participatory approaches in occupational health research. (Stockholm, Sweden: Arbets Milio)

Using hazard mapping you can collect information about:
- hazards in the workplace now
- hazards that were in the workplace years ago

Preparing for a hazard mapping session
- Write "HAZARD MAP" on large blank sheets of paper
- Have sticky tape and marker pens available (different colours if you can, but not essential)
- You may want to have a blank sheet of paper available for each different occupational group or for each department

Conducting a hazard mapping session
- Explain what you are proposing to do
- Ask the group of workers who have a common work area or similar work environment to sketch out their hazard map together
- Some workers do not have clearly defined work areas. For example, they may have delivery routes, or work at several work sites. Explain that they can draw whatever they feel will best communicate the hazards that exist within their work environment(s)

Encourage workers to be creative and not to worry about their drawing abilities. The drawings can be very rough, and should include:
- a sketch or outline of the physical layout of the work area(s) and any equipment, machinery or other characteristics, such as doors, loading bays, and windows
- figures representing workers (these can be simple stick figures)

Map Of Our Plant
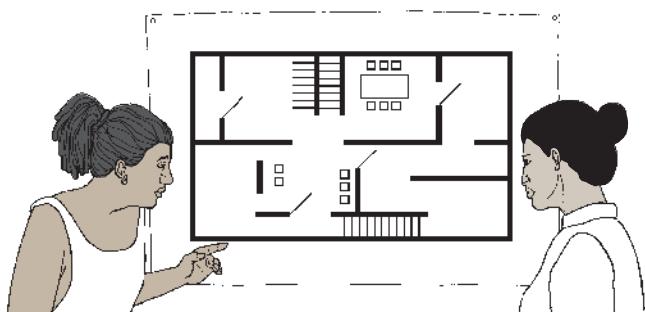
- any hazards which exist and labels or descriptions for each of the hazards, such as chemicals, dusts, extreme temperatures, unguarded machinery, repetitive work, violence from clients, and any other hazards
- a title for the map identifying the area(s) being represented, such as "Construction Site"

Examples of hazards

- Physical hazards – such as noise, radiation, vibration, temperature
- Chemical hazards - such as cleaning agents, solvents, diesel exhaust fumes
- Biological hazards - such as infectious diseases, bacteria, needlesticks, body fluids
- Work design hazards - such as ergonomic hazards, working alone, no procedures for dealing with potential violence
- Stress hazards - such as workload, harassment, discrimination, shiftwork, long working hours

Ask the workers to:
- describe their maps to the whole group
- add any further details to their maps that they think of as they are describing what they have drawn
- make observations about what they see in each of the maps
- make comments regarding patterns, or common hazards
- comment on the causes and effects of the hazards they described

Action
Collectively draw some initial conclusions and action points from the Hazard Mapping activity. Be sure to make detailed notes of workers' comments and conclusions, and to use these with the workers for action planning *(see Section 3 of this manual for more details).*

"Your World" Mapping
Often we fail to recognise the impact that work has on our families, our ability to participate in social activities, and on our relationships. Work is central to our lives because it takes up so much of our time, our thoughts and our energy. Injuries, illnesses and stresses caused by poor working conditions and the lack of basic security can have a profound effect on our quality of life. The "Your World" map is a collective visual representation of that impact.

How many participants should be in a "Your World" mapping group?
"Your World" mapping can be done in small group discussions, or with large groups of workers.

Using "Your World" mapping you can collect information about the effects of working conditions on workers:
- family lives
- social lives
- communities
- neighbourhoods, and
- mental and emotional health

Preparing for a "Your World" mapping session

- Draw a small figure of a worker *(a stick figure will do)* in the centre of a large sheet of paper and label it, "YOUR WORLD" MAP
- Have sticky tape and marker pens available (different colours if you can, but not essential)

Conducting a "Your World" mapping session

- Explain to the group of workers that this exercise is designed to gather information that is often overlooked in traditional research
- You can say something like *"Usually we do not leave our aches, pains and stress at the workplace when we go home after a shift. Our fatigue, injuries and health problems often stay with us and can have an impact on our personal lives. In this next exercise we are going to map that impact."*
- Encourage workers to be creative and not to worry about their drawing abilities
- Ask the group of workers to map the effects their work has on their personal lives, using drawings or words to represent the particular areas of their lives that are affected
- The drawings or words should be added to the area surrounding the central figure. For example, a participant might report child-care problems by drawing stick figures of children. Words can be added next to the drawing, such as *"Difficult to arrange child care because of shiftwork;"* or a worker might draw a bed to indicate that she/he never gets a good night's sleep because of worry about her/his job
- Ask the workers to explain to the other workers what they have drawn
- After everyone in the group has finished their mapping and reporting, you can ask the group for observations about any patterns which start to appear
- Ask the group to try to draw some initial conclusions about causes and effects from the "Your World" mapping activity

Action

Collectively draw some initial conclusions and action points from the "Your World" mapping activity. Be sure to make detailed notes of workers' comments and conclusions, and to use these with the workers for action planning *(see Section 3 of this manual for more details).*
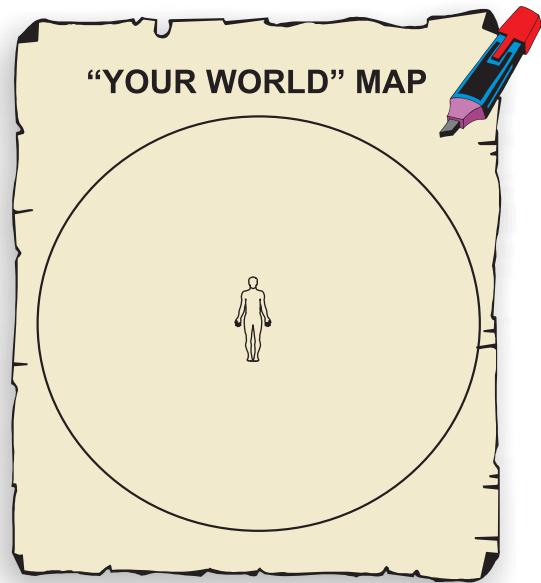
Case Study:
Putting Breast Cancer on the Map - United Kingdom

The Women's Environment Network (WEN) in the United Kingdom (UK) used Barefoot Research to launch an investigation into breast cancer in the UK. WEN's project began after it was discovered that the eastern part of England had some of the highest breast cancer death rates in the country, especially for women in younger age groups. There was very little official reaction to these findings.

WEN organised their own investigation, with women themselves beginning to examine possible causes. WEN held community meetings, used questionnaires and mapping techniques to facilitate discussions. They asked what role environmental factors might be playing in the disease and why so little information was available about environmental risks. The total number of respondents at the close of the project was over 1000, ranging in ages from early 20s to late 80s.

The findings were published in a booklet that contained copies of the maps and summarised the main issues identified. WEN's "Putting Breast Cancer on the Map" project succeeded in shedding light on the causes of breast cancer, gave voice to the women at risk and put pressure on the public health system to take the issue more seriously.

Adapted from: Watterson AE. 1995. Breast Cancer and the Links with Environmental and Occupational Carcinogens: Public health dilemmas and policies. Centre for Occupational and Environmental Health, De Montfort University, Leicester and: Women's Environmental Network .1999 Putting Breast Cancer on the Map. 87 Worship, St. London EC2A 2BE, UK **http://www.wen.org.uk**
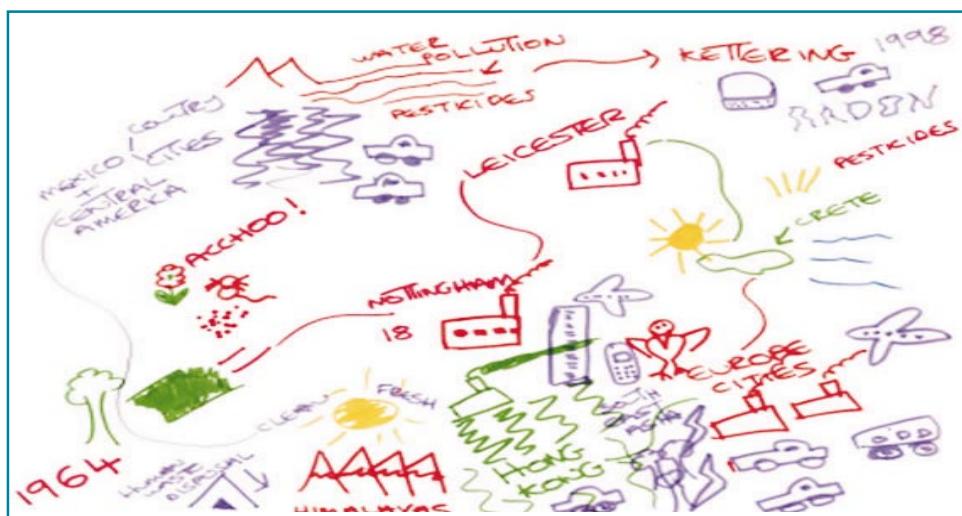
Case Study:
Cambodian Farmers Research Pesticides

Farmers in Cambodia are addressing a wide range of issues: work security associated with pesticide use, poverty, domestic violence, and diseases such as malaria and HIV/AIDS. They have established a pilot project called Farmer Life Schools (FLS) to assist them in taking charge of their futures. It involves groups of farmers investigating various aspects of their lives in order to develop strategies to improve their living and working conditions. Farmers use locally adapted mapping techniques to identify and prioritise basic security problems needing action.

Adapted from: Toxic Trail. (BBC World documentary, April, 2001. The programme tracked the flow of pesticides from Thailand to Cambodia). ***http://www.toxictrail.org/***
Photo source: Toxic Trail (BBC World Documentary, April, 2001)

Interviews

Barefoot Research uses various methods to gather information about workers' opinions, fears, ideas, and individual experiences. Interviews are a useful tool for collecting information that may be difficult to obtain by other means. Interviews can be used:

- as the sole method of information gathering or
- to supplement other Barefoot Research methods, such as questionnaires or mapping

As a worker-researcher you may have to interview workers:

- who are victims or witnesses of accidents or ill health
- who have complained about a work security problem
- as part of gathering information in a larger survey
- who need assistance filling in questionnaires

Interviews are a means for workers:

- to discuss their opinions
- to know that what they have to say is valued
- to have an opportunity to talk about their own concerns to someone whom they can trust and who will listen
- to contribute to action planning

As a worker-researcher you can interview workers in person on a "one-to-one" basis or in small group discussions. Interviews can take place by telephone if "face to face" is not possible.

To ensure objectivity, you can use prepared interview questions. The questions should be:

- agreed on with others involved in the Barefoot Research
- tested before starting the interviews of workers so you are sure the questions get the information you are seeking

Interview tips

Good interview skills are important and training can help. Here are a few tips:

- find a quiet and private place to meet
- greet workers warmly to make them feel comfortable
- use a friendly tone of voice
- explain what you are doing and reassure the worker that anything that they say will be treated confidentially
- explain how long you expect the interview to take
- ask the worker if she/he accepts that you take notes
- be respectful and sensitive
- listen actively – commit yourself to receiving accurately the worker's ideas, facts and opinions
- listen without interrupting or offering your own opinions – even if you disagree strongly with something that is said
- use positive body language
- do not allow disapproval or impatience to show
- if necessary, keep a very talkative worker on track by saying "thank you for the very complete answer" then move on to the next question
- if the worker strays from a question, try asking the question in another way
- ask the worker to clarify any points that are not clear to you to avoid any misunderstandings
- check the main points with the worker at the end of the interview
- explain what you are going to do with the information after the interview
- thank the worker warmly at the end of the interview

It is important to keep written notes of the key points from the interview for future action planning. Try to record the answers as accurately as possible. Tape recording the interviews can be helpful if you have the equipment.

You could use an interview to help workers fill in a lengthy questionnaire, like the sample below.

Survey about workers' health complaints

1. Name (optional) _____

2. Place of work/department _____

3. Job description _____

4. Years at this job _____

5. How is your health, in general? _____

6a. Do you have any problem with your skin (redness, infections, rashes, painful itching, other)?

_____

6b. Did you have these problems before you began the job?   Yes [   ]   No [   ]

6c. Do these problems disappear on weekends or during vacations?   Yes [   ]   No [   ]

7a. Do you have any problems with coughing, running nose, coughing up mucous or blood, dry or sore throat, frequent colds, chest pain?

_____

7b. Did you have these problems before you began the job?   Yes [   ]   No [   ]

7c. When do these complaints occur?

[   ] Morning   [   ] Afternoon   [   ] All day   [   ] Everyday

[   ] Only certain days of the week   [   ] Other   [   ] No noticeable pattern

7d. Do they disappear on weekends or during vacations?   Yes [   ]   No [   ]

8a. Do you have trouble with your eyes (itching, watering, swelling, pain, vision changes?

_____

8b. Did you have these problems before you began the job?   Yes [   ]   No [   ]

8c. When do these complaints occur?

[   ] Morning   [   ] Afternoon   [   ] All day   [   ] Everyday

[   ] Only certain days of the week   [   ] Other   [   ] No noticeable pattern

8d. Do the complaints disappear on weekends or during vacations?   Yes [   ]   No [   ]

9a. Do you have trouble with your hearing (ringing in the ears, ear infections, can't hear after leaving the workplace?

_____

9b. Did you have these problems before you began the job?   Yes [   ]   No [   ]

9c. When do these complaints occur?

[   ] Morning   [   ] Afternoon   [   ] All day   [   ] Everyday

[   ] Only certain days of the week   [   ] Other   [   ] No noticeable pattern

9d. Do they disappear on weekends or during vacations?   Yes ☐   No ☐

10a. Do you have allergies?   Yes ☐   No ☐

10b. Did you have them before you began the job?   Yes ☐   No ☐

11a. Do you often feel ill at work?   Yes ☐   No ☐

11b. Do you have headaches, dizziness, drowsiness, stomach aches, loss of appetite, nausea, vomiting, weakness, irritability, nervousness, rapid heartbeat, muscle cramps, back aches, pain or stiffness in in arms, legs, joints, swelling of arms, legs, joints, other? (Please explain)

_____

12. Describe any problem or complaints from other people in your work area that you may consider important.

_____

13a. Does your employer give any regular health tests or examinations to any special group of workers in your area?

Yes ☐   No ☐

13b. If yes, what tests?

_____

13c. Do you see the results?

_____

14a. Do you go for physical examinations regularly *(either to your own physician or the company's)*?

Yes ☐   No ☐

14b. If so, what tests are done?

_____

15. Do you have any children? _____

16. **Women**: Have you had trouble getting pregnant?   Yes ☐   No ☐

   Men: Has your wife had trouble getting pregnant?   Yes ☐   No ☐

17. **Women**: Have you had any miscarriages?   Yes ☐   No ☐

   Men: Has your wife had any miscarriages?   Yes ☐   No ☐

18. Do you know of any similar problems with any other workers in your area?

_____

19. Do you know of any medical problems that you now have? Have these been confirmed by a doctor?

_____

20. Have you ever been hospitalised? If yes, please record when and for what reason.

_____

21. Is there anything else you think is important to say about health on your job?

_____

Source: A Union Representatives Manual on Occupational Disease, AFL-CIO, Ohio, USA.

Case Study:
HIV/AIDS Investigation in Zimbabwe

In 1997, the Zimbabwe Congress of Trade Unions (ZCTU) launched a research project about workers' knowledge, attitudes and practices on HIV/AIDS as part of its Health, Safety and Environment Programme. The project involved four of the ZTUC's affiliates, representing workers in the railways, hotels and catering services, leather and chemical manufacturing. The project included management and workers in seven companies.

Step 1: Interviews: conducted with management and worker representatives regarding company activities on HIV/AIDS. Union health and safety officers carried out the interviews.

Step 2: Group discussions: facilitated by union health and safety representatives, held with workers to learn about their views and perceptions on HIV/AIDS and related issues. The group discussions also acted as an awareness-raising exercise aimed at encouraging future worker-based approaches in HIV/AIDS activities.

Step 3: Questionnaire: tested and revised before being distributed. Over 300 workers completed the questionnaire. Researchers from the University of Zimbabwe analysed the results of the survey.

Step 4: Action: after reviewing the findings, the union proposed that bipartite meetings be held with the companies to implement an HIV/AIDS awareness and prevention programme.

Adapted from: Zimbabwe Congress of Trade Unions (ZCTU). ***http://www.samara.co.zw/zctu***
Photo source: Website
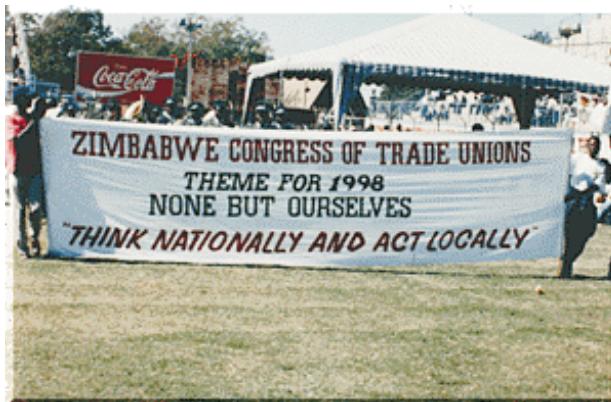
Observation

Why observation?

Observation can be used by worker-researchers to gather information about work processes and activities.

Barefoot Research recognises that workers are the most knowledgeable individuals regarding their working conditions and level of basic security. The information that workers provide will be the best reflection of their own experience. But, sometimes it is useful to have another "pair of eyes", a so-called observer, to find information that the worker may have overlooked or may have been unable to provide.

For example, it may be useful to have an observer watch the way a particular work task or process is done to evaluate possible sources of injury. An observer can do this:

- by studying the work and recording what she or he observes, or
- as a "participant observer" who actually participates in the work being studied in order to observe it first hand

> ### Example of the benefits of observation
>
> A group of workers in a hospital laundry is investigating the high rates of back injury. A laundry worker, in describing her work, estimates that she bends one hundred times in one shift to lift bags of soiled laundry onto a sorting table and stacks of folded linens onto a cart. An observer, whose only function is to observe the worker throughout her shift, may be able to provide a more detailed assessment. The observer can:
>
> - actually count how many times the worker bends and lifts
> - observe other elements as well, such as the angles and distances of the lifts and any awkward postures
> - look for any other movements or activities that might add to the worker's back strain, such as reaching up to retrieve bags of laundry coming into the area on an overhead pulley system, or pushing stacks of laundry across a sorting table

As with most methods of information collection, there is the potential for bias in observation and recording. To help ensure objectivity, agree on guidelines for observation with others involved in the Barefoot Research.

The observer and the "observed"

Workers who are being observed must feel fully involved in the research process and have a deep sense of trust that they will not be put at risk by the observer's reports. The very thought of having someone watching and recording your every move can seem intrusive and threatening. A worker-observer should ensure that:

- the workers are involved in setting up the observation
- the workers understand that the observation process is being done in the interests of their work security
- the workers have agreed that notes can be taken
- the information gathered is kept confidential unless agreed otherwise
- the workers agree on how the information is going to be used and who will have access to it

A time-limited and task-limited observation, such as watching how a worker performs a particular motion, is less threatening than being watched for an extended period of time. An element of interaction between the observer and the worker being observed will mean that the worker feels less like an object and more involved in the process.

For observation to be meaningful, you may need some additional information from those being observed. For example, imagine an observer who is gathering data for a Barefoot Research study of stress and workload. When recording how many times a worker is interrupted to answer a question or perform some other task, it is important to know the nature of the interruptions as well as the number. The type of demands on a worker can contribute directly to the workers' overall stress level. Who is interrupting? What is the tone of the interruptions? What is being requested? How demanding are the requests? Do workers have control over their workload and the speed of their work?

Analysis and action

Workers should agree that key points arising from the observations can be recorded in notes. These notes will help in tackling the problems that have been identified.

The results of the observations should be reported back to the workers who have participated. Methods of reporting back include:
- a verbal report at a meeting or by going around the workplace
- a newsletter
- a written report

Once the report back has been given, discussions should take place to decide what action needs to be taken as a result. Collectively draw some initial conclusions and action points from the observations and record these *(see Section 3 of this manual for more details).*

Case Study:
Bank Workers Study - Canada

The union representing bank tellers in Quebec, Canada carried out a study together with researchers from the University of Montreal, to identify priority work security problems. The union was directly involved in selecting a representative team of bank tellers who would work with the researchers as well as determine the research priorities. The union identified their most important concerns as prolonged standing, bank robberies and pressure to sell bank services.

Once the research plan was in place, the union negotiated with the employers to give the researchers access to the workplace for their observation and interviews. The researchers observed workers on the job and conducted interviews with workers and supervisors regarding their problems and opinions. This information provided the basis for a questionnaire for 305 bank tellers.

The researchers prepared a detailed report based on the data. The report was shortened for wider distribution and the research findings were reported to a general assembly of the bank tellers. The report's recommendations were incorporated into the union's negotiating strategy, which was successful in improving the bank tellers' working conditions.

Adapted from: Messing, K. 1998. One-Eyed Science: Occupational Health and Women Workers. (Philadelphia: Temple University Press)

Using and Interpreting Information

Workers' own experience is the best guide to determining whether or not work-related health problems exist. But helpful information may also be available from other sources both inside and outside the workplace. Here are some ideas of where to find useful information:

- Information you can get from employers including:
    - → information about hazards and methods of prevention and protection can be found in handbooks, on labels, or data sheets
    - → risk assessments
    - → management safety policy, rules, working procedures and training materials
    - → information about management's future plans and proposed changes, and the likely impact upon work security
    - → injury reports
    - → injury statistics
    - → sickness statistics
    - → near-miss and incident reports
    - → consultants' reports and survey and test results
    - → labour inspectors' letters and reports
    - → copies of official health and safety guidance and advisory literature
    - → guidance from trade associations, and employers' associations
    - → reference books, journals and other health and safety publications
    - → financial information such as health and safety budgets

- Trade Union information such as:
    - → union publications
    - → information about health and safety problems and related to basic security
    - → other trade union representatives in the same industry
    - → union web sites

- Manufacturers and suppliers safety data sheets for materials, chemical products and machinery
- Engineering texts and technical specifications. These can show where work processes may fail and put workers at risk. They can also explain how to make processes and equipment safer
- Labour inspectors, consultants and occupational health specialists
- Legal standards and Government publications. In case you cannot get access to a government office or the text of a law in your country, first ask your employer for copies of relevant laws, and contact either your local union or the confederation your union is affiliated to, if you have a union. If you do not have a union, then start by visiting a local university library to search the laws of your country, and at the same time see if there is an ILO CIS national centre in your country. They can provide a great deal of specific information off existing databases. Contact ILO CIS by phone, mail, fax or email. Details on how to contact them are provided in the Resources section at the back of this manual.

- National or industry statistics. These may include lists of work-related injuries and diseases
- Labour and trade union occupational health projects which have been established in some countries to provide advice to workers on health problems that could be related to their work activity
- Libraries where staff may be willing to help you to conduct searches of the literature and may order articles for you
- Internet sites with information that can be useful in your understanding of health and other problems associated with workplace exposures. Most of this information can be downloaded off the web sites or ordered *(See the section on Resources at the back of this manual)*. There are also internet sites, such as the Hazards website in the United Kingdom (www.hazards.org), the ILO's Programme on Socio-Economic Security (www.ilo.org/ses) and the ILO's SafeWork Programme (www.ilo.org/safework) that provide support and contacts throughout the world
- Health and safety journals such as Workers' Health International Newsletter covering health and safety news and research from across the world. e-mail:sub@hazards.org
- Other publications ranging from leaflets and magazines to books and encyclopaedias
- Scientific and medical literature, which contains health studies about known or suspected causes of work-related ill health and death

See the section on Resources at the back of this manual for further guidance on who to contact for information.

Right to Know

- Has your employer ever brought in outside consultants to do sampling of workplace exposures?
- Are there inspection reports filed?
- Have government inspectors ever written reports or orders?

In some countries, there is legislation that gives workers access to employer and government reports. These reports, even though they have certain limitations, may provide evidence of exposures or poor levels of work security.

Health studies

Scientists may have already studied the health of workers who were exposed to the substances that you work with. There may be health studies about occupations and industries similar to yours. Even if individual workers have not been directly involved in a health study, they can use existing research to help evaluate their own risks. For example, if a group of workers had been exposed to silica for twenty years and a number of them developed lung cancer or silicosis, it is probably not necessary for them to participate in a study about themselves, since there are hundreds of studies already done on silica-exposed workers.

You do **not** have to accept the findings of health studies at face value without looking critically at the study design and conclusions. The results of scientific health studies should be viewed as just another piece of evidence which contributes to an overall understanding of health problems in the workplace.

All health studies have their strengths and weaknesses. Here are some of the weaknesses that workers should know about:

- if a scientific study does not demonstrate the association between disease and work-related exposure, it is often assumed that no association exists. *This assumption is wrong.* The disease and the exposure may well be associated, even if it does not appear so from a scientific study
- many occupations have never been studied
- researchers can make critical mistakes in interpreting their study results if they are unfamiliar with the work environment
- women workers are often absent from scientific investigations
- race and ethnicity can be sources of bias. In one study of foundry workers, for example, the authors concluded that elevated heart disease amongst Black workers was caused by genetic factors. However, it is likely the real cause of heart disease among those foundry workers was not genetic, but caused by the high levels of exposure to dusts and carbon monoxide
- workers often are not involved, or consulted about what needs to be examined. Workers' knowledge of the workplace is generally ignored in scientific health studies

Information about chemicals - *It is your right to know!*
One of the biggest problems for workers and trade union representatives is getting adequate information about chemicals used at work. Here are some sources of information that may help:

- your employer
- the chemical manufacturer or supplier
- hazard data sheets
- labels on containers
- training programmes
- your union
- the local factory or labour inspectorate
- local colleges or universities
- the local fire department
- your local library
- the Ministry of Labour or the Ministry of Health
- International Trade Secretariats (ITSs)
- the International Labour Organisation (ILO)

Often a single source will not tell you everything you need to know, therefore it is best to try to get information from as many of these sources as you can. Health and safety information on chemical substances is public, so you have the right to ask for the facts! Let us look at some of these sources of information in more detail.

Management
Many countries now have some kind of hazard information or *right-to-know* legislation. These laws make it the employer's legal responsibility to provide workers with as much information and training as possible on all chemical substances used. Some unions have negotiated agreements which require that the union be given full information on all chemicals used in the workplace. Unfortunately, many employers do not have this information and may not know where to get it. If this describes your situation, you should insist that the employer obtains information from the chemical manufacturer or the supplier and makes it available to the workers.

Manufacturer/supplier

If your employer cannot obtain the necessary information for you, then you may want to write directly to the chemical manufacturer and request the information yourself. You can modify the sample letter below for your own situation to request information directly from the chemical manufacturer or supplier.

Sample letter requesting hazard data sheet and other technical information from chemical manufacturer

---

Date
The Technical Directors
Name and address of chemical manufacturer

Dear Sir or Madam:

I am writing to request information about the possible health hazards associated with one of your products:
Trade name: _____
Chemical name: (if known) _____

I use this substance during the routine course of my work at (name and address of the company you work for). Could you please supply me with the following information:

1. What are the ingredients of (name of the chemical), the chemical formula of each ingredient, and the rough proportion in which they are mixed? Are there any known hazardous contaminants or by-products?

2. What harmful effects is (name of chemical) known to cause or suspected to cause in humans? Please include any reports on the effects of short-term and long-term exposure.

3. What was the level of concentration and length of exposure where any negative health effects were observed?

4. What precautions are recommended when working with or near (name of chemical)?

5. What precautions are recommended for storage, handling and transport?

6. What first-aid measures are recommended for any workers exposed to (name of chemical)?
    Thank you in advance for your assistance and co-operation in this matter and I look forward to receiving this information from you in the near future.

Yours sincerely,
Your name
Title (if any)
Your address

Many manufacturers are willing to co-operate, but if you do not get a response from them after a reasonable period of time and have sent reminders, then it may be necessary to recommend that your employer stops using the chemical. This should be made clear in one of the reminders to the manufacturer. At that point, it may be necessary to look for a safe alternative to the original chemical.

Hazard data sheets

Hazard data sheets (HDS) (sometimes called material safety data sheets (MSDS) or chemical safety data sheets (CSDS)) are detailed information sheets on chemicals. You can request a copy of the HDS for any chemical you are exposed to on your job. You can request HDSs from:

- your employer
- chemical manufacturers
- programmes such as the International Programme on Chemical Safety (IPCS, which is a joint programme of the World Health Organisation (WHO), the International Labour Organisation (ILO), and the United Nations Environment Programme (UNEP)). You can write to the IPCs for hazard data sheets on specific chemicals (and in various languages) at: International Programme on Chemical Safety, CH-1211, Geneva 27, Switzerland

HDSs are important sources of information on chemicals which you can get hold of easily, but their quality can vary. If you use or plan to use HDSs, be aware of their limitations. For example:

- they are often difficult to read and understand
- they often do not contain enough information about the hazards and the necessary precautions you need to take when working with certain chemicals

To overcome these limitations, whenever possible use other sources of information together with HDSs. It is a good idea to keep a hazard data sheet on each chemical used in the workplace.

The categories of information in the following box below must appear on all hazard data sheets. However, the order of the information may vary among hazard data sheets.

Section I: Identification of product and manufacturer

The name of the product is listed here by chemical name or by trade name. The name listed should be the same as the name that appears on the label. Hazard data sheets must also list synonyms for the product or substance. Synonyms are other names by which the substance is known. For example, methyl alcohol is also known as methanol or wood alcohol.

Manufacturer identification: Includes manufacturer's (or supplier's) name, address, telephone number, the date the HDS was prepared and an emergency telephone number to call after business hours. It is a good idea to call the manufacturer for information before an emergency occurs.

Section II: Hazardous ingredients

For products which are mixtures, only those ingredients that appear on specified lists of hazardous chemicals and which make up one per cent (1%) or more of the product need to be listed. Cancer causing substances are an exception and must be listed if they make up one-tenth of one per cent (0.1%) of the mixture. The hazardous ingredients must be listed by their chemical names.

For each listed ingredient, the concentration limit to which you may be exposed must be indicated. Both the enforceable permissible exposure limit (PEL) and the recommended threshold limit value (TLV) must be listed on the HDS.

- The PEL is the maximum amount of a substance allowed in workplace air. The PEL is legally enforceable.
- The TLV is a recommended limit and is not legally enforceable. TLVs are supposed to represent the concentration of a substance to which most workers can be exposed on a daily basis without harmful health effects.

Section III: Physical data

This section lists boiling point, vapour pressure, vapour density, melting point, appearance, odour, etc. The information in Section III helps you to understand how a chemical behaves and the kind of hazard it presents.

Section IV: Fire and explosion data

Section IV lists the flashpoint and flammable or explosive limits, and tells you how to extinguish a fire. The information in this section is needed to prevent, plan for and respond to chemical fires and explosions.

Section V: Reactivity data

Section V tells you whether or not the substance is stable and, if it is not, what hazards the instability presents. Section V lists incompatibles (substances which must not be placed or used together). This information is important for proper storage and handling of the product.

Section VI: Health hazard data

Routes of entry (inhalation, skin absorption or ingestion), acute and chronic health effects, signs and symptoms of exposure, whether the product causes cancer, medical problems made worse by exposure, and recommended first-aid/emergency procedures are all supposed to be listed under Section VI. *In reality, Section VI is often incomplete and inadequate.*

Section VII: Precautions for handling

Information needed to devise emergency response plans, clean-up procedures, safe disposal methods and necessary storage and handling precautions must be detailed in Section VII. Frequently, however, manufacturers sum up this information with simple (and inadequate) statement such as "Avoid breathing vapour" or "Avoid skin contact".

Section VIII: Control measures

Recommended methods of hazard control including ventilation, work practices and personal protective equipment (PPE) are detailed in Section VIII. The type of respirator and the most resistant protective clothing and glove material for the product should be named. However, this information is often incomplete. Rather than recommend the most resistant protective material, the HDS may simply state that "impermeable" gloves and clothing should be used. Section VIII tends to stress personal protective equipment rather than engineering controls.

Labels

Labels on chemical containers or drums are another important source of information. Labels should always be *attached* to the container, and the chemical listed on the label should be what is found in the container.

All chemical containers should have adequate labels on them.

Like hazard data sheets, labels have limitations. For example, the label may:
- not give the actual ingredients of the substance
- not give the possible health effects from exposure
- not tell you how to use the chemical safely
- not give the telephone number of the manufacturer
- be written in a language you may not know, depending on the country where the chemical is produced

A label in German would not be suitable for English-speaking workers and vice versa.

To overcome these limitations, it is best to use labels together with other sources of information.

It is important to know that most industrial chemicals have two names:
- a trade name by which the chemical is commonly known, for example "Wonderglu" or "Supabat", which does not tell you anything about the chemical — it is simply the brand name used to advertise the chemical
- the chemical name which tells you the exact ingredients *(the ingredients are often in small writing on the label)*

The chemical name does not change unless the ingredients are changed, but the trade name can change anytime. For example, if an advertising campaign for a new chemical pesticide is not going well, or if reports from another country suggest that the chemical causes harmful health effects in workers, then the manufacturer can change the trade name, but not the chemical name. Try to get both names, but the chemical name is more important.

In many workplaces, the chemicals used are often mixtures of different chemicals, or they may be contaminated with small traces of chemicals that may be toxic. Both cases make it more difficult to obtain precise information, since HDSs only give information for pure chemicals, not mixtures, and contaminants are rarely indicated on a label. Chemical mixtures can be particularly dangerous if the substances react together or if they produce synergistic effects. *("Synergistic" means the combined effect of two or more substances whose total effect may be greater than the sum of the two together and different from the individual effects of either substance alone).*

Where to get information on chemicals at work	
Employer	Chemical Manufacturer or Supplier
International Labour Organisation	Hazards Data Sheets
International Trade Secretariats	Labels
Ministry of Labour	Training Programmes
Local Library	Union
Local Fire Department	Local Factory/ Labour Inspectorate
Local Colleges/ Universities	Reference Books

These are all good reasons to do Barefoot Research so you can find out if workers are experiencing ill health caused by chemicals used at work. As you can see, "official" sources of information are often not enough to protect us. You have to collect your own information as well and put together the pieces of the puzzle until you can see the whole picture.

Using information - analysis and action

Once you identify the hazards in your workplace, the next step is to reduce or eliminate them altogether. There are a number of ways to work towards this goal using the information you collect:

- discuss the information with your co-workers or the health and safety committee. Do you see any patterns? Are there any gaps in your information? Can you think of ways to fill those gaps?
- use the information to educate your co-workers about the hazards
- draw some initial conclusions and points for action with your co-workers, based upon the information you have found *(see Section 3 of this manual for more details)*
- use the information as the basis for collective bargaining demands

3. Taking Action

The purpose of Barefoot Research is to bring about change. By the time your research is completed, the process of turning the research into action will already be taking place! Because Barefoot Research is participatory in nature the workers who were involved will have demonstrated some commitment to the research along the way. This will provide you with a ready group to organise action based on the Barefoot Research results. Gaining group support for workplace change can be a difficult task, so pat yourself on the back and consider you have won half the battle by this point!

If workers are informed, interested and involved, a trade union or an organised group can be an effective means of protecting and improving workers' security. Some of the key elements of organising include:

- building on the interest of workers where it exists
- awakening interest where it does not exist
- involving workers from the beginning in identifying work security problems and possible solutions
- prioritising problems, on the basis that not all problems can be tackled at once
- choosing first those issues where workers' support can be won and there is a good chance of success and
- building the confidence of workers to tackle the more difficult problems later

Good communication is essential in organising for change. The Barefoot Research process will have raised interest and hopes in the workers involved. Producing research results and reporting back to the workers that participated is an important part of the communication.

Using and sharing the results of Barefoot Research

It is essential that you present the research findings to the workers as soon as possible. You will need to do the following:

- sort, compile and analyse the information that you have gathered. Do this collectively if you can. You may want to include some initial conclusions and recommendations at this point
- communicate the results in full or summary form, either verbally, by pictures, in writing, or by a combination of all these methods
- remember, in presenting the findings the issue of confidentiality is of utmost importance to protect the security of workers. Information that might identify an individual should not be used without the express prior consent of that individual

Photo: courtesy of Occupational Health Clinics for Ontario Workers, Sarnia, Canada.

Verbal report

A verbal report may be adequate to present the results of a quick poll.

For example, a group of public service workers might be asked, through a simple ballot form, if a client has ever physically or verbally threatened or attacked them and if so, on how many occasions. The report may be as simple as stating how many of the workers experienced such a threat or attack once, on two occasions, or more than twice. Such simple findings could be presented at a workers' meeting. You could then collectively discuss strategies for change.

Later you might produce a written report to present to the employer or government authorities.

Report with maps or pictures

When preparing the report, it is important to consider the literacy level of workers you are presenting the report to. You could give a report based on mapping, using the actual maps that were created, with permission from the workers who created the maps. Be careful not to reveal the workers' identities. Reports based on mapping are a useful way to present results to workers who may not easily read a written report.

You can create:
- combined body maps using the maps from separate groups
- an overall map of the workplace using hazard maps of different departments in the workplace

You can add a written summary or analysis of the information gathered from the maps.

Results of Survey Health About Symptoms
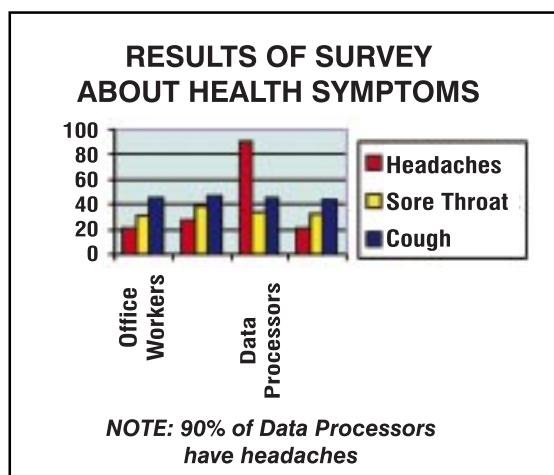
Numerical findings can be presented visually using diagrams such as pie charts, bar charts or pictograms. These can be hand-drawn or computer-generated.

Written report

A written report may be:
- a one page flyer with a summary of the research findings
- a larger document with a full description of the Barefoot Research process, goals, information collection methods, the information gathered, analysis, recommendations and conclusions

You may want to include:
- quotes, drawings, maps and other descriptive information
- any tables and calculations, if you have created them

Agreeing on action with workers

You should organise an action planning meeting with the workers where you:
- present the results of the research and
- collectively decide on what action should be taken next

The action planning meeting should aim to develop:
- a discussion about the findings of the research
- concrete plans for action
- counter arguments to an employer's likely response
- timeframes and deadlines
- the commitment of workers to implement agreed activities and action including who will do what

It may be helpful to note down these action plans in a visual way using a Priorities and Action Planning chart. Record on the chart the issues that workers are most concerned about and write down their ideas for making changes.

PRIORITIES AND ACTION

Problem	Solution	Barriers	Short-Term Action	Long-Term Action	Priority Vote
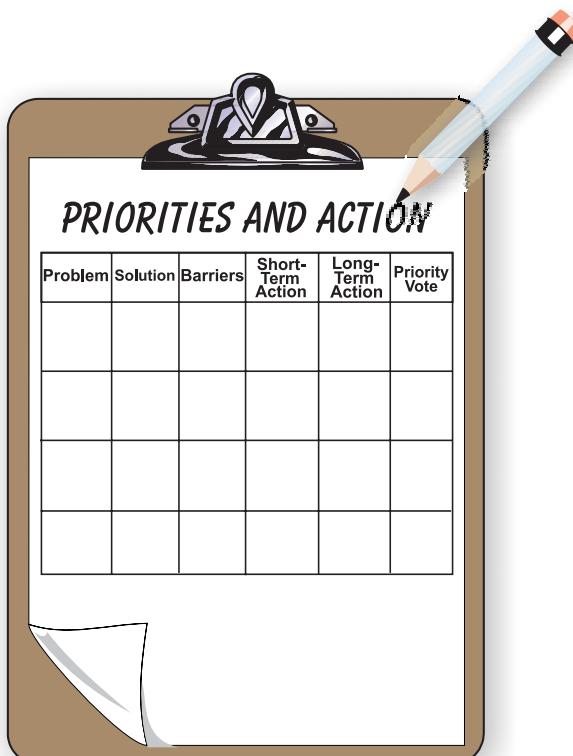
In preparation, create a blank chart on a large sheet of paper. Label the overall chart "PRIORITIES AND ACTION PLAN."

Create six columns and label them:
- *Problem*
- *Solution*
- *Barriers*
- *Short-Term Action*
- *Long-Term Action*
- *Priority Votes*

Then the workers can decide upon the priorities for action in two linked stages.

Stage 1: Drawing up a shortlist of priorities

In the action planning meeting, present the results of the research, and then ask the workers to:
- think about the various problems identified by the research and
- individually choose a single issue or problem that she or he considers to be the most important or the most urgent

Fill in the first five columns of the chart by asking the workers one at a time, to:
- name their highest priority work security issue from the research findings
- give their suggestions for possible solutions to that problem
- state the potential barriers they think would be faced in tackling this priority issue
- give their ideas for short-term and long-term action

You should then ask the other workers to offer additional suggestions for the solutions and actions. If more than one person names the same problem, it need only be written down once, but additional solutions, barriers, or action plan ideas should be recorded.

Stage 2: Deciding upon a priority problem

Ask each worker to indicate on the chart the one issue she or he thinks should be given highest priority. Using markers, each worker should put an **X** in the priority votes column next to the one issue they consider to be of highest priority. After the voting, count the **X**s and you will all have a clear picture of what are the highest priorities for the workers and where to focus initial action.

There are other ways of deciding on priorities too. After you have given your report on the research findings, you can start a discussion with the workers using questions to stimulate the discussion. For each issue identified in the research findings, ask workers to consider:
- is this a serious concern for me personally?
- is this a serious concern for my co-workers?
- has this problem resulted in serious health problems?
- could this problem result in serious health problems?
- are many people affected by, or at risk of being affected by this problem?
- could this problem be corrected quickly and easily?
- is this an issue likely to win widespread support for the collective body?

Once you have decided collectively on the priority concern and your action plan, you will need to think about the way that you can get things done.

Getting things done

Improvements to work security are made in the same ways as all worker gains — through education, solidarity, organisation and action. If there is a union in your workplace, union representatives and sometimes a local union committee are important parts of the mechanism for resolving work security concerns. It is the job of the union representative and a local union committee to represent rank and file workers on work security issues. If you do not have a trade union in your workplace, the Barefoot Research process may have given encouragement and confidence to workers to form a union that will speak on behalf of workers. But whatever your situation is, **"Don't go it alone!"**

Without the support of workers, workers' representatives, union representatives or health and safety committee members can become isolated. This makes it difficult or even impossible to get things done. Employers are more likely to act if they know that workers are well informed, active and organised.

Here are some techniques that can help you get your employer to remedy the problems that have been uncovered by Barefoot Research:

Get organised
- prepare your work carefully
- put things in writing
- make reports
- use procedures
- negotiate with management
- use joint health and safety committees
- make health and safety agreements with your employer
- build wider alliances with worker friendly networks
- use the media where appropriate

Use the law
- check if there are any laws in your country that help
- be clear about employer's duties and your legal rights
- check if ILO Conventions can help
- use Government inspectors if there are any

(See also the section on Resources at the back of this manual).
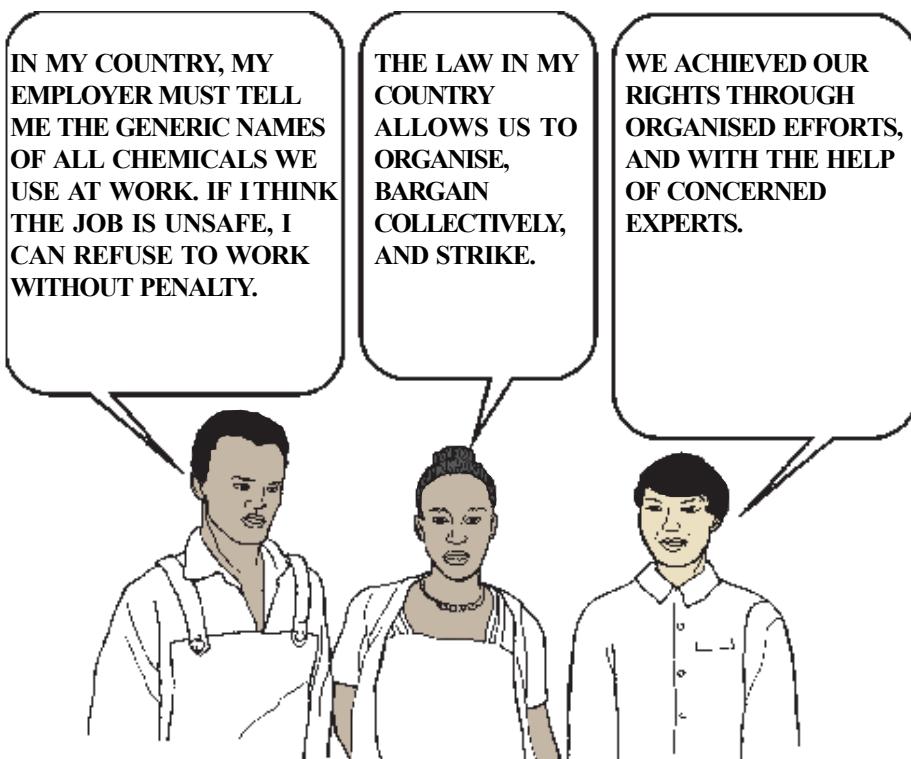
Use the collective strength of workers

- ensure good communication with them
- plan action and report back
- ensure that the employer knows how strongly workers feel about the issue

Monitor, follow-up and don't give up!

- making changes can be hard and can take time, but don't give up until you have achieved your goals
- build on your achievements, by using or adapting Barefoot Research tools to deal with new situations and new problems

Careful preparation

We have studied the situation and now present you with our demands and suggestions for improvements. We expect your reply in one week, otherwise we will be forced to take more drastic action.

The need for careful preparation is critical and cannot be stressed strongly enough. You must be clear about:

- what you want to achieve as a result of your Barefoot Research findings
- how you will pursue the issue with management – in writing, in a meeting, in the joint labour-management health and safety committee?
- how you will keep workers involved throughout the process
- the strength of support that you have from workers

You will need to:

- decide on your minimum as well as maximum demands in advance. These should have been agreed with the workers during the priority and action planning meeting, when you reported back on the results of the Barefoot Research
- make sure you have the support of the workers who are involved
- talk to a more experienced representative to get advice, if you feel this will help
- ensure that you have all the information and facts you need from the Barefoot Research and from your action plan. Write things down so that you do not forget important points
- list the arguments you will use with the management, identifying which are your strong points and which are the weak ones
- think carefully about the different ways management may respond to your arguments and pre-pare some counter arguments. For example, your Barefoot Research uncovers headaches and a loss of appetite when workers are using Chemical "X". Management may produce a data sheet that does not mention these symptoms and a scientific research paper saying that Chemi-cal "X" is safe to use when following the manufacturer's instructions. Furthermore they may say that your Barefoot Research is not scientific and is biased towards the workers. You can use ideas from this manual to help you to develop your counter arguments

Negotiation with management

Negotiation is not a discussion — it is a collective bargaining session between workers and management. It is through the collective bargaining process that many changes in the workplace can be made. In many situations, management may try to "bury" workers with technical data and technical terminology. Workers and their union representatives must be prepared to deal competently and confidently with such strategies. After the Barefoot Research, workers and their representatives will find themselves much better informed about particular issues than management. There are large numbers of employers who know little, if anything, about the growing number of work-related health hazards. Some employers will be interested to learn from what you have discovered through Barefoot Research.

Here are some basic principles to follow when negotiating with management following your Barefoot Research:

- try to avoid meeting alone with the management unless it is on a one-to-one basis
- if other representatives are involved in the meeting/negotiation, prepare a united case
- stay calm, do not lose your temper – you may forget your argument and aims
- try to steer the discussion to your strong points and away from the weaker ones
- look for management offers of a compromise but do not go below the minimum goals that you have agreed collectively with the workers. Remember that if both sides feel they have gained something from a negotiation often it will be easier to reach a settlement
- if you can reach a settlement that you are happy with, make sure that everyone is clear on the precise nature of the agreement reached
- keep a written record which both sides agree on
- always inform workers about the outcome of negotiations and decide on your next steps collectively

Joint labour-management health and safety committee

In many workplaces, collective agreements have already established joint labour-management health and safety committees. In some countries, the law provides for the establishment of these joint committees.

The joint labour-management health and safety committee has great potential to improve working conditions following Barefoot Research. The committee involves both management and workers in the process of identifying, eliminating, and controlling hazards. This is important because ultimately, it is management who must implement the necessary changes in the workplace - with the agreement of the workers.

The effectiveness of a joint committee is primarily determined by the support that workers, the trade union members and the local union committee (if there is a trade union) give to the worker members who are on the committee. Without strong support, worker representatives will be in a position of isolation — and therefore weakness — no matter how strong, determined, or well-prepared they are individually. Management will know whether the issue is of concern to one or two people or a lot of workers, and their reaction is likely to vary accordingly.

When you have conducted Barefoot Research, management will know that workers themselves have generated the information and demands, and it will be difficult for them to ignore this. Management will also know that workers might refuse to do any job that would endanger their health or safety. (In some countries there is a legal right to refuse to do dangerous work).

In some cases, workers have timed their research findings to be released at the same time contract negotiations begin, with the joint health and safety committee playing an important role.

Barefoot Research Success

The research conducted by the casino gaming workers in Windsor, Ontario, Canada, was directly acknowledged in their collective agreement and it was agreed that the findings and recommendations would be addressed, item by item, by the joint union management health and safety committee.

[Keith M, et al, 2001]

Collective agreements

Workers' rights, basic security and health and safety should not be negotiable. But where there is no adequate legislation and enforcement these rights often have to be won through the collective bargaining process. The results of a Barefoot Research project, along with the support generated among the workers through the participatory process, can provide leverage for negotiating improvements.

The end result of the bargaining process should be a Collective Agreement. For example, Barefoot Research may have revealed that workers are suffering from headaches as a result of exposure to a toxic chemical. To prevent these health effects in the future, the joint labour-management health and safety committee might agree that:

- the toxic chemical will be removed from use and a safer substitute will be found
- processes that create dusts, vapours or mists will be isolated and enclosed
- no new chemical substances will be introduced without the consent of the worker members of the committee
- a joint sub committee will be elected to develop a chemicals policy, plan and co-ordinate activities on chemical safety
- hazard data sheets will be compiled on all chemicals used in the workplace
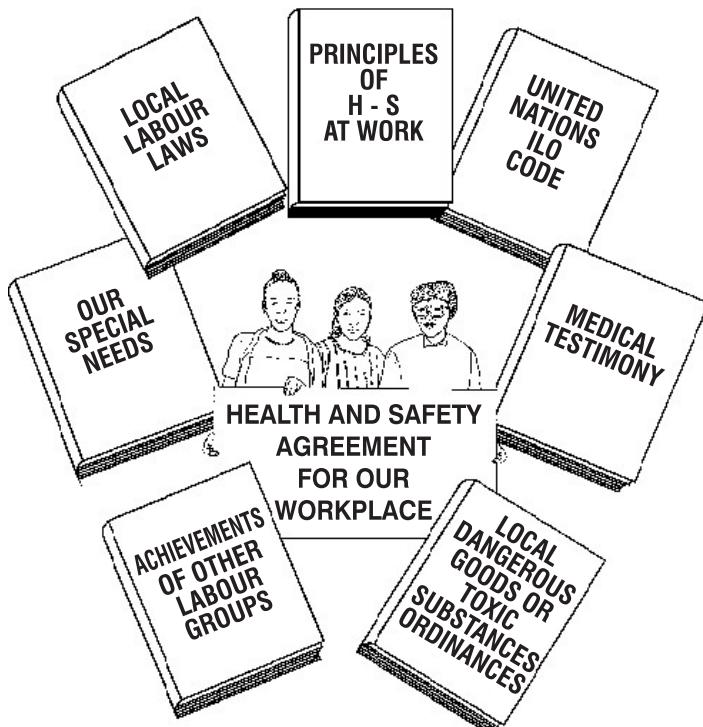
Grievance and disputes procedures

In some workplaces, unions and management have agreed a special procedure for dealing with grievances and disputes. These include problems that are not resolved regarding health and safety, basic security as well as other issues.

The procedure will normally identify the steps that the union must take to raise the problem formally through the levels of the management structure. Grievance or disputes procedures normally have stages and time limits. If a question is not settled (this is sometimes called a failure to agree), or a time limit is exhausted, the problem is considered at the next stage of the procedure.

Example of a disputes procedure

Stage 1: member raises problem with supervisor

-if no agreement within 24 hours
Stage 2: union representative discusses problems with supervisor

-if no agreement within two working days
Stage 3: union representative meets departmental manager

-if no agreement within four working days
Stage 4: union representative and convenor meet senior managers

*-if no agreement, procedure deemed to be exhausted and **action** may follow*

If management will not agree to proposals from the Barefoot Research, unions and workers should insist on the right to use the normal grievance or disputes procedure.

Building support outside the workplace
It is best to use internal procedures to try to make the changes that are needed following Barefoot Research. Sometimes though, the employer will be reluctant to make the changes that are being demanded by workers. In these circumstances it can help if the research has been made public and allies created in the local community. This will place additional pressure on the employer to respond to the workers' demands.

Government inspectors
Government inspectors may be able to place pressure on an employer to tackle problems identified through Barefoot Research. Government inspectors are needed to inspect, monitor and enforce the law in workplaces. These inspectors are known as health and safety inspectors or factory inspectors and are under the authority of the Ministry of Labour or the equivalent.

Inspectors should make sure that employers comply with the minimum legal standards governing the workplace. Common problems with the enforcement of legislation protecting workers' rights, including health and safety, in many countries include:
- not enough inspectors
- many inspectors have only limited training
- many inspectors have to do their job with virtually no equipment or sources of information
- inspectors can enforce only existing legislation, but the legislation itself may not be strong or protective, giving inspectors little authority, and resulting in little or no action to improve working conditions

Because of the serious problems in enforcing health and safety laws, it is better to use your negotiations as the first line of attack against poor working conditions. But if you think your Barefoot Research clearly shows that the law is being broken, then an inspector may help. Sometimes, just the threat of bringing in an outside body may ensure that your employer takes your Barefoot Research findings more seriously.

The media

If you are considering using the media, ***make sure that you discuss it thoroughly with your co-workers and other union representatives, if you have a union***. You should agree on a strategy that protects individuals who may be victimised for "going public".

You could consider holding a press conference to release the results of your Barefoot Research. News of research findings will be seen as an event and will be more likely to receive coverage. Media coverage of your research will give it more importance. Public attention and sympathy might have some influence on employers or policy-makers. It may also add to the solidarity and confidence of the workers whose problems are being publicly acknowledged for the first time.

Here are some tips for working with the media:
- issue a press release to the media several days before the event. It should announce the date, time and place of the press conference, include a brief description of the Barefoot Research, and provide the name and telephone number of someone who can be contacted for more information. There should be something in the press release that will attract the media's interest, such as a surprising finding or a unique aspect of the research
- make sure that you protect individuals and respect the confidential details of your research findings
- prepare a small panel to speak at the press conference. It can include worker-facilitators, workers who participated in the research, and union representatives, with perhaps an ally or two from the community. If possible, you should display visual items such as maps or charts showing results
- prepare a press statement highlighting the points you want to make publicly
- have copies of the press statement and the research findings available for the media to take away with them

Case Study:
Brazilian Asbestos Workers Networking World-wide

Brazil is one of the five largest producers of asbestos in the world. It also uses asbestos in thousands of products. It was not until 1991 that the Brazilian government introduced a law for medical surveillance for workers exposed to asbestos. Like Canada, the world's second largest asbestos producer, Brazil has not maintained a registry to document the extent of cancer and respiratory disease found among asbestos-exposed workers.

A group of ill workers from a large multinational corporation, formed an organisation in 1995 called the Brazilian Association of the Asbestos Exposed (ABREA). These workers established clear goals. They wanted to:
- publicise the dangers of asbestos
- document the medical condition of exposed workers
- promote safe substitutes
- have the use of asbestos banned

ABREA members began to record cases of workers with asbestos disease. They teamed up with a government health and safety inspector and a medical expert. Out of 960 former employees, they documented:
- 20 cases of cancer
- more than 100 cases of asbestosis
- nearly 200 cases of lung scarring and
- another 220 cases of impaired respiratory function

In a very short period of time ABREA has grown into an organisation of over 1000 members. It has created strong voice representation for workers who had been marginalised because of work-related illness and disability. It has been instrumental in achieving the agreement by four Brazilian states to ban the use of asbestos by 2005. These four states represent 70% of the asbestos use in Brazil.

The Brazilians are also very active in building an international network, called the Ban Asbestos Network. Through the use of the internet, videoconferences, discussion lists, homepages, newsletters and emails an international movement emerged. This grassroots movement has been a significant force in having the use and importation of asbestos stopped throughout the European Union, Australia, and Chile.

Adapted from: Scanove, L, Giannasi, F, Thebaud-Mony, A. 2001. Asbestos Disease in Brazil and the Building of Counter-Powers: A Study in Health, Work and Gender. (This article is one of the results of the research project "Asbestos and Its Social and Familial Consequences: A Comparative Franco-Brazilian Study.")
And: Giannasi, F. 2001. The movement for a ban on asbestos in Brazil: Globalization from below. Paper at Asbestos and Public Health - The International Dimension Activities towards a global ban and the role of the World Trade Organisation.

Worker friendly networks

You should use your Barefoot Research findings to make connections with and gain support from:

- worker-friendly individuals in the medical, legal, social science, and scientific communities
- natural allies such as environmental groups, women's organisations, anti-poverty groups, human rights or injured workers' organisations
- sympathetic policy-makers
- international allies, perhaps linking with a workers' group in another country
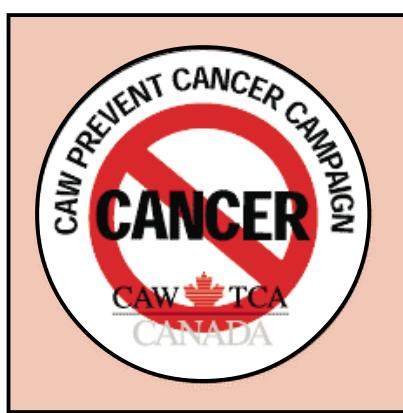
Poster Images: courtesy of Hazards Publications, UK.

Share your results with other groups of workers and employers in similar workplaces or industries. They will benefit from your research and may be inspired to conduct their own. This may in turn strengthen your findings and add more credibility to your arguments for change, perhaps even on an industry-wide basis.

You can join into existing worker and trade union based networks, which are building around the world. Some of these networks have achieved great successes in protecting workers' security. Look at the Hazards Campaigns web page **http://www.hazards.org/campaigns/index.htm** to see examples of successful trade union health and safety campaigns around the world. You could contact some of these groups to share ideas about building a campaign around your own research findings.

Gaining a Voice

Workers know their own workplaces best. By relying on their own experience and the collective knowledge of their colleagues, workers often have gathered the necessary information to change the work environment. It is workers who first identified such diseases as miners' pneumoconiosis and chronic bronchitis; asbestos-related diseases; industrial deafness; vibration white finger; occupational asthma, repetitive strain injuries; and workplace stress.

From: O'Neill, R. 2000. "Surveying the Damage". Hazards, July-September 16-17, 2000

Worker participation in decision-making and economic democracy are essential to all forms of basic security including work security. Without a voice in how work is organised and all the factors that contribute to working conditions, workers will continue to face work environments that threaten their health, safety, security, dignity and livelihood.

Workers need a voice in the workplace, through union representation, participation on workplace committees, or any other effective group mechanism that can be formed where there is no union. They need a voice in the decisions made in communities where they live and work. Workers need a voice in legislative, regulatory and policy decisions.

Barefoot Research is one way that workers can use their voice to communicate:
- their experience of work
- the limitations of protective measures
- the impact those limitations have upon workers' lives and
- the changes that are necessary to protect their health and well-being

Organising around work security provides workers with greater strength for bargaining to make changes and increase their level of basic security. If workers have the tools to organise they can:
- improve their basic socio-economic security
- gain power through organisation to tackle income and employment issues
- improve working conditions
- increase their voice representation

As workers around the world have repeatedly shown, Barefoot Research is a powerful mechanism for learning, understanding, organising and change.

Taking Barefoot Research Further

For more ambitious Barefoot Researchers, this Section helps you to go further with the Barefoot Research techniques described in the main part of this manual. Terms used for the first time in this Section are defined in the Glossary at the back of the manual.

Collaborative research

Larger more ambitious research projects may require a core group of individuals who will take primary responsibility for the co-ordination of the research and another general group of individuals who can provide assistance.

Core Research Team

A core research team should be established to define, design and oversee the research. The core team can be as small as one person (not recommended) or as large as is practical. What is important is that the basic philosophy and goals of the team members should be fully compatible. Additions can always be made to the team if needed, as the project begins to take shape. Keep in mind that it is much easier to add to the team than to subtract.

A worker-based project can also include outside collaborators or consultants. The decision regarding whether or not to involve outside researchers should be based on a number of factors: the degree of complexity of the research, the existing skills of the worker-researchers, the need for some degree of neutrality or objectivity, and access to funds and other resources.

Co-operative research relationships

The following are essential conditions for a co-operative research relationship with outside research collaborators:

1) The research aims should be of genuine interest to both the workers and researcher. The success of participatory research is due partly to developing mutually dependent and cooperative relationships;

2) The outcomes of the study should be relevant to the needs of all those involved in the research.

From: Reinharz S. 1983. "Experiential analysis: a contribution to feminist research"

Rather than treating people as the subjects of study by a detached and neutral researcher, collaborators, in keeping with the principles of participatory action research, join the so-called "subjects" in a partnership.

It is important to distinguish between collaborators, who by definition will be part of the research team, and consultants who will be retained in some manner to provide assistance and advice. Caution must be taken to ensure that those in either category are not able take control or dilute the goals of the workers by imposing their own needs or philosophies.

Barriers to the involvement of outside researchers

You should be aware that there may be some resistance from outside researchers to participate in a study that they do not fully control. Barefoot Research is, after all, about identifying and recognising the power structures that exist within institutions and economic systems. It is about understanding, analysing, involving, empowering, and taking action in ways that may challenge those very structures. It is often

about taking sides and of challenging dominant ideologies. The action component can be troubling and even threatening for potential allies in academia and in professions which are financially dependent on the good will of the very institutions and existing economic structures being challenged though the research.

Barefoot Research is often qualitative, which is not the standard approach for conducting health studies. The more common biomedical model of health research is based on laboratory experiments, and clinic-based scientific studies. It can be a stretch for some academics and health professionals to understand the value of Barefoot Research. The fact that the health data collected using Barefoot Research is often self-reported may offend those who are accustomed to the usually stringent protocols for collecting clinically diagnosed and confirmed health data. The Barefoot approach to identifying hazards may be objectionable to occupational hygiene professionals, toxicologists, and industrial environmental consultants who are used to relying on sampling and measuring and published scientific literature to establish causal connections.

Nevertheless, there are individuals, often connected to liberal institutions, who recognise the value of Barefoot Research and who are eager to lend support and guidance, without taking over the leadership role of the worker-researchers.

General Research Team

After the core research team has been established, a larger, general research team can be organised to support the core research team. It can include workers who are acting as research assistants or data gathers. It can also include outside consultants. Once again, however, if outside consultants or research assistants are used to gather data or help with analysis, their role should be clearly defined as providing support to the core research team and they should not have undue control or influence.

Additional methods of mapping

Body Mapping

When body mapping is used as a research tool, data collection can be enhanced through the use of colour-coding. There are many ways to organise and categorise data. Here are two options:

1. Participants can categorise their health problems using coloured stickers or markers rather than marking an X on the body map indicating they have a health complaint. The following legend is a suggestion which you can adapt to fit your research needs (and whatever stickers or coloured markers you have available). Categorising by colours helps you to group similar types of health complaints.

COLOR	HEALTH PROBLEM
Red	Musculoskeletal / Strain
Orange	Respiratory
Blue	Neurological / Hearing
Purple	Traumatic Injury
Yellow	Cardiovascular / Heart
Black	Skin
Green	Digestive
Brown	Cancer
White	Stress Symptoms

2.   Another option is to colour-code by some meaningful participant characteristic. For example, it may be useful to have participants use a colour which represents their occupation, department, age, gender, seniority or some other demographic category. If, for example, the group includes workers from a variety of occupations, it might be useful to colour-code the participants according to their occupations. Kitchen workers may be asked to use green stickers, for instance, to distinguish their health problems from those of the cleaners who are asked to use blue, or the office workers, who are asked to use yellow.

Hazard Mapping

When hazard mapping is used as a research tool, data collection can be enhanced also through the use of colour-coding. Here are some options:

1.   Hazards can be grouped into categories and colour-coded accordingly. You may want to consider using the following legend:

COLOR	HAZARD CATEGORY
Blue	BIOLOGICAL *(germs, moulds, bacteria, etc.)*
Green	CHEMICAL and MINERAL *(second-hand smoke, solvents, asbestos, etc.)*
Red	PHYSICAL *(noise, radiation, heat, cold, etc.)*
Black	PSYCHOSOCIAL *(stress, shiftwork, job insecurity, harassment, etc.)*
Brown	WORK DESIGN *(poor ergonomics, overcrowding, etc.)*

2.   Another option is to colour-code by some meaningful participant characteristic. For example, women might use green stickers or markers, and men might use red.

"Your World" Mapping

When "Your World" mapping is used as a research tool, data collection can be enhanced as well through the use of colour-coding. There are many ways to organise and categorise data.

One option is to colour-code by some meaningful participant characteristic, such as occupation, seniority, or gender. If the participants used colour-coding according to a participant characteristic during body mapping or hazard mapping exercises prior to doing the "Your World" mapping, the same colour-coding scheme should be used throughout. The participants can place their colour-coded stickers beside the data (words or pictures) they have added to the "Your World" map or add their data using a colour-coded marker.

Obtaining occupational histories

Work-related diseases and injuries do not always have a clear cause and effect. When workers seek medical attention for a health problem, it is good practice that they are asked about their working conditions. Some workers' clinics will take a full occupational history of their patients. Unfortunately, most medical clinics and physicians do not.

Ideally, work histories will be gathered and recorded using an interview format. A health care provider, compensation representative or researcher can lead the worker through a standard set of questions to avoid missing important details.

An occupational history should include:
- the various jobs held by a worker throughout his or her working life
- the dates and duration of the jobs
- any known or suspected hazards, descriptions of their intensity and duration of exposures
- any abnormal exposures, for example, a maintenance worker exposed to a "one-off" event when the controls fail and a contaminant is emitted in larger than normal quantities
- work-induced stress and psycho-social disorders caused or made worse by work-related factors including insecurity such as involuntary job loss, income insecurity, lack of training for jobs performed and so on
- descriptions of work processes
- types of raw materials used and products produced
- periods of ill health and whether there was access to medical care
- whether co-workers complained of similar health problems

Any available material safety data sheets or industrial hygiene reports can supplement this information.

Standard work history questions

"A standardised set of questions asked of every patient is the single most important method of recognising a link between illness and occupation."
Screening questions include:
1. What type of work do you do?
2. Do you think your health problems may be related to your work?
3. Are your symptoms different at work and at home?
4. Are you currently exposed to chemicals, dusts, metals, radiation, noise or repetitive work?
5. Have you been exposed to chemicals, dusts, metals, radiation, noise or repetitive work in the past?
6. Are any of your co-workers experiencing similar symptoms?

From: Lax MB, Grant WD, Manetti FA, Klein R. 1998. "Recognizing Occupational Disease—Taking an Effective Occupational History," in American Family Physician.

It may be difficult for workers to convince medical practitioners to consider their work histories. To save time and make the task easier for the health care provider, workers can prepare their own histories in advance and present them to their physicians to consider. The history should be kept on file. The following self-administered occupational history form can be used.

Date	Employer name: product or service provided	Job title and specific duties	Major exposures (such as dusts, chemicals, noise, repetitive motion, stress)	Protective equipment (such as respirator, ear plugs, gloves)

(Lax MB et al, 1998)

Occupational cancer registries

Occupational cancer registries have been established in a number of countries. Some gather full work and exposure histories; others simply list cancer patients' occupations. Although such registries are not generally considered to be within the realm of Barefoot Research, they do provide important information regarding the association between workplace exposures and disease. Workers can promote the establishment of such registries and request access to findings, which can then be used to support their own research and action plans.

Sampling and testing

The traditional tools for assessing health and safety problems in the workplace include such procedures as air sampling and testing, collection of dust or biological samples, measuring noise levels, radiation monitoring, personal sampling and visual inspections. Although such methods can add to our understanding of how particular hazards might impact on the health and well being of workers, they do have their limitations. One particular problem is that hygiene investigations often occur without the workers' direct participation and may not reflect conditions as they normally exist. Air sampling, for instance, may take place after some of the machines have been shut off, or a bay door has been left open increasing air-flow and reducing normal exposure levels. Without worker input, a hygienist would probably not know that these are unusual working conditions and exposure levels.

> ### *Threshold limits unproven*
>
> "The very concept of "safe" exposures to any chemical is inherently unscientific. Indeed, the term "threshold limit" embodies this unproven and probably unprovable concept that there is some known level of exposure which does not adversely affect the organism. Discarding the term "threshold limit" is a necessary first step in correcting this false ideology of the past."
>
> *From: Castleman B. and Ziem G. 1988. "Corporate Influence on Threshold Limit Values". In American Journal of Industrial Medicine (13): 556.*

Air testing alone can seldom provide the full picture. Air testing is often done for only a few substances rather than the full range of possible exposures. It may miss the risks faced by workers who are exposed to substances in other ways. For example, many workers have direct contact with toxic substances that may be absorbed through the skin. They may ingest hazardous dust when they swallow. These other routes of entry are generally not well documented in hygiene reports. As a result, the overall toxic burden on workers is not reflected in the traditional tests.

Furthermore, hygiene tests are usually done to establish whether or not exposures fall within the legally allowable limits. Unfortunately, the allowed "threshold limits" are often too high to protect workers' health. What is legal or even "acceptable" is not necessarily safe.

Industrial hygiene associations often provide exposure limits for toxic substances, which are then adapted by governmental bodies. Corporations have had tremendous influence in determining at what levels the threshold limits are set. [Castleman and Ziem, 1988]. In fact, researchers have found that chemical producers often have a major role in setting the legal limits for toxic substances their own companies produce. They argue for levels that are readily achievable rather than those that protect the health of workers. [Roach S and Rappaport S, 1990] In some cases, the recommended limits are worse than those used by a company in its in-house production of the substance.

Despite the questionable accuracy of industrial hygiene and its reliance on threshold limits, it is still one of the most common approaches for evaluating workplace hazards. But it has understandably mixed reviews when it comes to helping workers prevent injuries and disease. When done well, it can help point to the potential for problems and the processes or tasks which put workers at risk. It can also help indicate where controls may be most effective. For monitoring to be done well, it must include careful observation and talking with workers to identify when problems occur and to get ideas for solutions. A good industrial hygienist can help workers realise that their observations have great value.

Industrial hygienists not always right

Industrial hygienists can be extremely helpful to workers by identifying, evaluating and recommending controls for health hazards on the job.

Experience has shown, however, that the personal exposure monitoring and exposure limits of industrial hygiene have been used to 'scientifically prove' that working conditions are 'safe' when they were not, even when workers were getting sick.

From: Senn E. 1991. "Playing Industrial Hygiene to Win," in New Solutions, Spring, 1991, pg. 72-80.

Sampling Report

A hygiene sampling report should include the following information:

√ Who performed sampling
√ Date
√ Time
√ Operation
√ Location
√ Worker's name
√ Job title
√ Personal Protective equipment worn
√ Ventilation in use
√ Sampling method
√ Analytical method
√ Instruments
√ Contaminants
√ Number of samples
√ Results for each sample
  - Sample I.D. number
  - Time: to/from
  - Raw Results
√ Overall results
√ Calculated time weighted average
√ Ceiling limit
√ Short-term excursion limit

From: UAW Health & Safety Fact Sheet: Questions for Industrial Hygiene Surveys. 1984.

Barefoot hygiene approach

As described in this manual, workers need to talk to one another; they need to use their senses to see, hear, and smell the hazards; they need to use their instincts and "gut" feelings to help direct them in their efforts to determine the causes of work-related ill-health. They also need to consider alternatives to traditional hygiene, such as conducting their own Barefoot Research using surveys, mapping, group discussions, and interviews rather than relying on testing or sampling. In fact, the results of a workers' survey, mapping exercise or literature search may provide important counter arguments when hygiene testing is inconclusive or concludes there is no problem.

How to read and interpret health studies

In many countries, studies are regularly reported in the news showing how a particular population is found to have some degree of risk for contracting a disease from some causative factor. A study may show, for example, that rubber workers have a 40% greater chance of developing bladder cancer because of their exposure to chemicals related to the production process. Such scientific studies can provide important information about the risks faced by particular groups of workers.

Some terms used in scientific or "epidemiological" studies

Learning a few scientific concepts can help workers to interpret and evaluate health studies and help determine whether the results might be applicable to their own situation.

A *cohort* is a group of people with similar exposures who are studied over a period of time. Researchers need to know the age, sex, work history, lifestyle, and exposures of members of the cohort so that they can compare them with people in the general population who have similar characteristics. Comparing an exposed group to an unexposed group can help identify health problems caused by exposures at work.

A *confounder* is a variable (such as age or smoking, which varies from individual to individual) that has the potential to make the results of an epidemiological, or "epi" study, incorrect or unclear. Since a number of different variables can potentially contribute to a person's risk of developing diseases, such as cancer or heart disease, health studies must consider, or control for, these other factors to get a more accurate picture of what is causing the disease in the study population. If researchers set out to determine whether a group of foundry workers had more lung cancer and heart disease than the general population, they would want to know the workers' smoking histories, because smoking alone can cause these diseases. To control for this kind of possible confounder, researchers will attempt to obtain the smoking histories of people in both the study group and a comparison group.

How do we know it is not just by chance that a group of workers is developing a particular health problem? A calculation determining **statistical significance** allows researchers to decide whether a finding was likely to have occurred by chance. Epidemiologists like to use a 95 per cent standard of certainty, which is called a **confidence interval.** This means that if the study population had the same risk as the comparison population, finding a difference in rates of death or disease would have occurred by chance only 5 per cent of the time. It is worth emphasising that the confidence interval standard of 95 per cent is completely arbitrary. While a 95 per cent limit guards against a chance finding, an 80 or 90 per cent certainty might be sufficient to demonstrate a probable connection. By maintaining such a "high" standard of probability (the 95% confidence interval), many "real" findings may never be recognised or acknowledged and a truly preventive approach to protecting workers' health is not applied. One direct result is that around the world, workers' health remains at risk from many work processes and substances.

HOW TO INTERPRET AN "EPI" TABLE

This column records the **Cause of Death**, which in this case are the types of cancer suffered by the "cases" or subjects. *In another study it might show types of diseases or injuries*

This column gives the actual **Number of Deaths** for each specific type of cancer. *(This particular table is based on a large study; there were 797 deaths within the cohort.)* Another study might show the number of diseases or injuries.

Cause of Death	Number of Deaths	Standard Mortality Ratio (SMR)	95% Confidence Interval (CI)
All Cancers	797	1.02	0.96-1.04
Oesophagus	22	1.18	0.74-1.79
Stomach	37	1.47	1.04-2.03
Larynx	23	1.98	1.26-2.98
Lung	251	1.72	1.02-2.15
Leukaemia	38	1.25	0.88-1.71

This column shows the **Standard Mortality Ratio (SMR)** which is the ratio of the **observed** number of deaths divided by the **expected** number of deaths. An SMR of one means the number of observed cases equals the number of expected cases. Any number greater than one indicates a higher number of deaths than expected. In this table, each of the cancers is elevated. For example, the figure of 1.72 for lung cancer means that there is a 72% greater number of observed cases than expected. In a study examining incidence of disease or injury rather than death, this column might show a **Standard Incidence Ratio (SIR).** The table might also show the risk of exposure by comparing the rates of disease or death among the exposed to the non-exposed. **Relative Risk (RR)** may be calculated in comparison to a control group or the general population. The difference between the exposed and non-exposed can also be shown as an **Odds Ratio (OR).**

This column contains the **Confidence Intervals (CI).** If the first number in the range, called the lower confidence interval, is one or greater, the findings are considered to be *statistically significant.* With a 95% CI, that means that there is only a 5% chance the findings occurred by chance alone. In this table, the SMRs for cancers of the stomach, larynx and lung were considered to be statistically significant. *(Therefore, there is a strong probability they were related to the exposures suspected.)*

People who are working are healthier than the non-working population. Workers, especially those in unions, generally have a higher standard of living, with better diets and access to medical care than the non-working population, which includes those who are differently abled, the elderly, and people too unhealthy to work. Many epidemiologists believe that when workers are compared to the non-working population certain diseases, like heart disease and cancer, are underestimated because of this so-called *healthy worker effect.*

Evaluation of research

The process of evaluating your research can be illuminating and can lead to ideas for improvement of the process and a better understanding of how the next critical steps should be carried out. Evaluation can take place at several levels. Participants can be asked to give their feedback, either verbally or in writing, after an interview, during a small or large group discussion or mapping session, for instance. A participant evaluation can be as simple as asking three questions:

What did you like?

What did you not like?

How would you change it?

After the Barefoot Research data gathering and report stages have been completed, the core research team should review its original goals to see how well they have been met. The research process can be evaluated by asking and discussing a series of questions:

What worked and why?

What did not work and why did it not work?

What could be done to improve the process and add to its effectiveness?

What still needs to be done?

Evaluation of the effectiveness in achieving the ultimate goal of change may have to wait until some intended action has taken place and its impact can be measured.

Case Study:
Health Survey of Former Vinatex Workers - United Kingdom

The hazards of workplace exposure to vinyl chloride (VCM), first used in 1927, have been known for decades. Reports of occupationally related disease in those exposed to VCM include:

- *1949 - damage to workers' livers;*
- *1965 - acro-osteolysis, a degenerative bone disease;*
- *1969 - neurological effects;*
- *1974 - the first liver cancer cases in VCM workers.*

A wide range of other diseases linked to VCM exposure has since been reported.

In 2000, a survey was developed through a partnership between a support group of former Vinatex workers in Britain and university researchers. 229 former Vinatex workers were identified and contact was made with as many as possible. 162 workers ultimately participated in the research. A questionnaire, which was sent out by mail, explored the employees' work history. Once the questionnaires had been returned, an interview was arranged to document the health status of the participants.

The research produced interesting findings:

- *levels of breathlessness in the former Vinatex workers was found to be much higher than those reported in the general Health Survey for England*
- *the former Vinatex workers also revealed greater problems than expected with concentration, state of mind, irritability and various cognitive processes.*

When the researchers examined the existing literature, they discovered that respiratory and cognitive impairment are, in fact, consistent with studies involving workers exposed to VCM.

The workers' support group is now demanding:

- *that the British government play an active role in formally documenting the health problems of the former Vinatex workers through a registry; and*
- *that the workers have a direct role in this process.*

Adapted from: Watterson, A. Pickvance, S. Cairns, M. Wingfield, M. 2000. Report on a Health Survey of Ex-Vinatex Workers. (Centre for Occupational and Environmental Health, De Montfort University, Leicester, England)

Glossary

The following are a few terms that you might come across when reading scientific literature, epidemiological or research findings or policy documents on health and safety or other work security issues:

Analysis: Study of the elements of a whole and their relationships.

Anecdotal Evidence: Evidence from descriptions or personal testimonies rather than from systematic data collection.

Association: A demonstrated relationship between two or more variables.

Bias: Inaccuracies or irregularities in the collection, analysis, or interpretation of data which may cause distortion of the research results; can be caused by intended or unintended subjective choices or perceptions. For example, you might be accused of influencing the results, if you were to say, "Following numerous reports of nose bleeds and shortness of breath, this survey is being done by the union to try to convince the employer that we are suffering from sick building syndrome and need better ventilation."

Body Map: A tool for collectively gathering and displaying data whereby health problems are indicated visually (with, stickers, symbols, and/or words) on an outline of the human body.

Case-Control Study: A study of the effects of a variable *(such as a particular exposure),* which is done by comparing cases *(such as people with a disease)* with a comparison or control group *(such as people without the disease).*

Causality: The determination of cause of ill health or death or some other effect. There are standard criteria or requirements for deciding whether there is a scientific basis for claiming something may be a cause of a particular effect or effects.

Cohort: A group of people with one or more features in common, such as type of exposure or common employment, studied over a period of time.

Collaborator: A partner in a project, usually with some complementary skill(s) or interest(s) that may add value to a team or relationship.

Confidence Intervals: *(In an epidemiological study)* The degree to which an association between variables may be considered to have occurred by chance.

Confounding: A situation whereby a variable, such as age or smoking, for example, can influence and thus distort the measure of an association between variables.

Consensus: Agreement by all.

Consultant: A person who is contracted (with or without pay) to provide advice, knowledge or assistance.

Data: Items of information or facts collected.

Database: An organised collection of information or facts (data); usually stored on a computer.

Demographic: Characteristics of a population or group of people (such as age, gender, length of employment, occupation, etc).

Empirical: Based on experiment or research rather than through reasoning or supposition.

Epidemiology: The study of how often diseases occur in different populations and why they occur.

Ergonomics: The science of fitting the job to the person rather than making the person fit the job; designing of jobs to eliminate or minimise strain and other injury.

Exposure Profile: A record of the substances and circumstances to which a worker has been exposed during the course of employment.

Facilitator: An individual who leads a discussion or other activity and helps people communicate; usually does not participate but simply coordinates and organises the flow of discussion or activity.

Focus Groups: Group interviews, usually guided by a facilitator.

Healthy worker effect: People who are working are healthier than the non-working population. Workers, especially those in unions, generally have a higher standard of living, with better diets and access to medical care than the non-working population, which includes those who are differently abled, the elderly, and people too unhealthy to work. Many epidemiologists believe that when workers are compared to the non-working population certain diseases, like heart disease and cancer, are underestimated because of this so-called healthy worker effect.

Homogeneous: Having similar or like characteristics; belonging in some way to the same essential group; uniform.

Industrial Hygiene: The science of recognising, evaluating and controlling factors which may cause disease or injury in the workplace.

Informants: Research participants who provide information, facts, data.

MEL (Maximum Exposure Limit): is the maximum permitted concentration of a chemical to which a worker may be exposed over an extended period of time. Typically, MELs are quoted in ppm for an 8-hour reference period, though shorter periods may be quoted for some materials. MELs are, in many countries, enforceable by law.

Methods, Methodology: The framework which directs the research process; research design.

Monitoring: Studying over a period of time to observe any changes; taking measurements or samples over a period of time, either continuously or intermittently, to record concentrations or exposures and evaluate risks.

Morbidity Study: Examines the type(s) of illness suffered by a particular group of people over a period of time.

Mortality Study: Examines the number and causes of death for a particular group over a period of time.

Occupational Exposure Limit (OEL): a (generally legally-enforceable) limit on the amount or concentration of a chemical to which workers may be exposed.

Objective: Existing independent of the beliefs and desires of the researchers or subjects.

Odds Ratio (OR): The probability of an event occurring relative to the probability of it not occurring.

Permissible exposure limit (PEL): an eight-hour time-weighted average (TWA) concentration of a contaminant that must not be exceeded; PELs are established so that "nearly all" workers are safe if the exposure is not greater than the PEL. This means that some workers might suffer health damage; many PELs are designed to prevent acute health effects but do not adequately take into account chronic effects.

Protocol: An agreed upon set of terms or conditions which determine an action or set of actions.

Psychosocial: Psychological, organisational and personal factors that may cause ill-health, such as stress-induced problems.

Qualitative Research: Research that collects and analyses non-numerical information (qualitative data); often used to gather opinions, personal experiences and other subjective data.

Quantitative Research: Research that collects information in numerical quantities; used when statistical results are desired.

Random Sample: Selecting a group of subjects for study from a larger group by choosing each subject entirely by chance.

Relative Risk (RR): The ratio of the risk of disease or death among exposed people as compared to the risk among unexposed people.

Reliability: A measure of the consistency of a measure to achieve the same results with each test or use; stability of a research tool or method.

Risk Map, also known as Hazard Map: A tool for collectively gathering and displaying data whereby hazards are indicated visually (with stickers, symbols, and/or words) on a drawing of a workplace, community or another area of interest.

Sample: A group of subjects selected for a study from a larger group for the purpose of revealing something about the larger group.

Sampling: The measuring, evaluation and testing of a substance through the collection of a "sample" or small quantity of the substance, such as air or dust sampling; *often used interchangeably with "testing."*

Statistical Significance: A statistical method that allows researchers to decide whether a finding was likely to have occurred by chance.

Survey: An investigation in which information is systematically collected; usually through posing a question or series of questions.

Subjective: Dependent on a person's own perception and self-reporting.

Synergistic Effect: The combined effect of two or more agents whose total effect may be greater than the sum of the two and different from the effects of either.

Standard Incidence Ratio (SIR): The ratio of the number of cases *observed* (such as diseases or injuries) in a studied group compared to the number of cases *expected* in the general population.

Standard Mortality Ratio (SMR): The ratio of the number of deaths *observed* in a studied group compared to the number of deaths *expected* in the general population.

Testing: Evaluating or measuring through the use of medical, industrial hygiene or laboratory instruments; may measure a substance collected from a workplace or from such biomedical samples as blood or urine; *often used interchangeably with "sampling."*

Threshold Limit Value: Concentrations of chemicals at levels for which it is believed or claimed nearly all workers may be exposed without adverse effect, even with day-to-day use; often measured in parts per million (ppm) or milligrams per cubic metre (mg/m^3). *(Threshold Limit Values are not necessarily fully protective.)*

Validity: The extent to which a research tool measures what it is intended to measure.

Variable: Any quantity, attribute, characteristic or situation that varies, or can have different values *(such as types of chemicals used or amount of income for example).*

Adapted from:

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Resources

Contacting any number of organisations, government agencies and various groups can be a challenging task. Patience and dedication to getting the information you need will pay off in the end. Here is a suggested order of how to proceed to get additional information:

- your union (if you have one)
- your employer
- the trade union confederation that your union is affiliated to
- the product manufacturer
- Ministry of Labour or Health
- local library
- local university
- International Trade Secretariat (see below for contact details)
- ILO CIS (see below for contact details)

The following organisations provide information, support and opportunities for networking:

The Administrative Committee on Coordination (ACC) Network on Rural Development and Food Security
Via delle Terme di Caracalla
00100 Rome, Italy
E-mail: **rdfs-net@fao.org**
Internet: **www.accnetwork.net**

The African Newsletter on Occupational Health and Safety
www.occuphealth.fi/e/info/anl/index.htm
Guest Editor in Chief: S. Lehtinen
E-mail: **Suvi.Lehtinen@occuphealth.fi**
Guest Editor: Marianne Joronen
E-mail: **Marianne.Joronen@occuphealth.fi**

The Asian-Pacific Regional Network on Occupational Safety and Health (ASIA-OSH)
ILO Regional Office for Asia and the Pacific
United Nations Building, 11th Floor
Rajdamnern Nok Avenue, P.O. Box 2-349
Bangkok 10200, Thailand
Tel: + 1 66 2 288 2485
Fax: + 1 66 2 288 3064
E-mail: **asiaosh@ilo.org**
Internet : **http://mirror/public/english/region/asro/bangkok/asiaosh**

The Baltic Sea Network on Occupational Health and Safety
Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FIN-00250 Helsinki, Finland
Tel: + 1 358 (0) 9 47 471
Fax: + 1 358 (0) 9 4747
Internet: **www.occuphealth.fi/e/project/baltic**

Canadian Centre for Occupational Health and Safety (CCOHS)
250 Main Street East
Hamilton, Ontario L8N 1H6, Canada
Tel: + 1 800 668 4284 (inside Canada) or + 1 905 570 8094 (outside Canada)
Fax: + 1 905 572 2206
E-mail: **custserv@ccohs.ca**
Internet: **http://www.ccohs.ca**

Canadian Union of Public Employees
21 Florence Street
Ottawa, K2P 0W6, Canada
Tel: + 1 613 237 1590
Fax: + 1 613 237 5508
Email: **fox@cupe.ca**
Internet: **http//www.cupe.ca**

The Center to Protect Workers' Rights
8484 Georgia Avenue, Suite 1000
Silver Spring, Maryland 20910, USA
Tel: + 1 301 578 8500
Fax: + 1 301 578 8572
E-mail: **cpwr@cpwr.com**
Internet: **www.cpwr.com**

Centers for Disease Control and Prevention (CDC)
1600 Clifton Road,
Atlanta, GA. 30333, USA
Tel: + 1 404 639 3311
Internet: **http://www.cdc.gov/epiinfo/**
(Epi Info and Epi Map software can be downloaded free from the CDC website)

Duke University
Occupational and Environmental Medicine
Durham, North Carolina 27708, USA
Tel: + 1 919 684 8111
Internet: **http://dmi-www.mc.duke.edu/oem/**

Environmental Health and Safety Division of the Organization for Economic Co-Operation and Development, OECD
2 Rue André-Pascal
75 775 Paris, France
Tel: + 1 33 1 45 24 93 15
Fax: + 1 33 1 45 24 16 75
Mr. Rob Visser, Head
E-mail: **rob.visser@oecd.org**
Internet : **www.oecd.org/ehs**

European Agency for Safety and Health at Work
Gran Via 33
E-48009 Bilbao, Spain
Tel: + 34 94 479 43 60
Fax: + 34 94 479 43 83
E-mail: **information@osha.eu.int**
Internet: **http://agency.osha.eu.int**

European Foundation for the Improvement of Living and Working Conditions
Wyattville Road
Co. Dublin, Ireland
Tel: + 1 353 1 2043100
Fax: + 1 353 1 2826456, + 353 1 2824209
E-mail: **postmaster@eurofound.ie**
Internet: **www.eurofound.ie**

European Trade Union Technical Bureau for Health and Safety
ITUH Building
Bd du Roi Albert II, 5 bte 5
B - 1210 Brussels, Belgium
Tel: + 1 32 2 224 0560
Fax: + 1 32 2 224 05 61
E-mail: **tutb@etuc.org**
Internet: **www.etuc.org/tutb/index_en.html**

Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FIN-00250 Helsinki, Finland
Tel: + 1 358 (0) 9 47 471
Fax: + 1 358 (0) 9 47 47
Internet: **www.occuphealth.fi**

Food and Agriculture Organization (FAO)
Via delle Terme di Caracalla
00100 Rome, Italy
Tel: + 1 39 06 57 051
Fax: + 1 39 0657 053 152
Internet: **www.fao.org**

Hazards and Workers Health International Newsletter (WHIN)
PO Box 199, Sheffield, S1 4YL, United Kingdom
Tel: + 1 44 114 267 8936
E-mail: **editor@hazards.org**
Internet: **http://www.hazards.org**
Workers "Do it Yourself" web page **http://www.hazards.org/diyresearch/index.htm**

International Agency for Research on Cancer
150 cours Albert Thomas
F-69372 Lyon cedex 08, France
Tel: + 1 33 (0) 4 72 73 84 85
Fax: + 1 33 (0) 4 72 73 85 75
Internet: **http://www.iarc.fr/**

International Association of Industrial Accident Boards and Commissions (IAIABC)
1201 Wakarusa Drive C-3 Lawrence
Kansas 66049, USA
Tel: + 1 785 840 9103
Fax: + 1 785 840 9107
E-mail: **fhowe@iaiabc.org**
Internet: **http://www.iaiabc.org**

International Labour Office
4, route des Morillons
CH-1211 Geneva 22, Switzerland
Tel: + 1 41 22 799 6111
Fax: + 1 41 22 798 8685
E-mail: **ilo@ilo.org**
Internet: **www.ilo.org**

Listed below are relevant departments at the above Geneva, Switzerland address:

ILO InFocus Programme on Socio-Economic Security (IFP/SES)
Tel: + 1 41 22 799 8893
Fax: + 1 41 22 799 7123
E-mail: **ses@ilo.org**
Internet: **www.ilo.org/ses**

ILO International Occupational Safety and Health Information Centre (CIS)
Tel: + 1 41 22 799 6740
Fax: + 1 41 22 799 8516
E-mail: **cis@ilo.org**
Internet: **www.ilo.org/public/english/protection/safework/cis/about/contact.htm**

ILO InFocus Programme on Safework
Tel: + 1 41 22 799 6715
Fax: + 1 41 22 799 6878
E-mail: **safework@ilo.org**
Internet: **www.ilo.org/public/english/protection/safework/health/index.htm**

ILO Bureau for Workers' Activities
Tel: + 1 41 22 799 7021
Fax: + 1 41 22 799 6570
E-mail: **actrav@ilo.org**
Internet: **www.ilo.org/public/english/dialogue/actrav**

Inter-Organisation Programme for the Sound Management of Chemicals (IOMC)
Internet: **www.who.int/pcs/iomc.html**

International Confederation of Free Trade Unions (ICFTU)
5 Boulevard du Roi Albert II, Bte 1
1210 Brussels, Belgium
Tel: + 1 32 02 224 0211
Fax: + 1 32 02 201 5815
E-mail: **internetpo@icftu.org**
Internet: **www.icftu.org**

International Trade Secretariats affiliated to ICFTU

Education International
Boulevard du Roi Albert II, 5
B - 1210 Brussels, Belgium
Tel: + 1 32 2 224 0611
Fax: + 1 32 2 224 0606
E-mail: **headoffice@ei-ie.org**
Internet: **www.ei-ie.org**

International Federation of Building and Woodworkers
P.O. Box 1412
CH - 1227 Carouge GE
Switzerland
Tel: + 1 41 22 827 3777
Fax: + 1 41 22 827 3770
E-mail: **info@ifbww.org**
Internet: **www.ifbww.org**

International Federation of Chemical, Energy, Mine & General Workers' Unions
Avenue Emile de Beco 109
B - 1050 Brussels
Belgium
Tel: + 1 32 2 648 2020
Fax: + 1 32 2 626 4316
E-mail: **info@icem.org**
Internet: **www.icem.org**

International Federation of Journalists
International Press Centre, Rés. Palace
Rue de la Loi 155
B - 1040 Brussels
Belgium
Tel: + 1 32 2 235 2200
Fax: + 1 32 2 235 2219
E-mail: **ifj@ifj.org**
Internet: **www.ifj.org**

International Metalworkers' Federation
Route des Acacias 54 bis
Case Postale 1516
CH - 1227 Geneva
Switzerland
Tel: + 1 41 22 308 5050
Fax: + 1 41 22 308 5055
E-mail: **info@imfmetal.org**
Internet: **www.imfmetal.org**

International Textile, Garment & Leather Workers' Federation
Address Rue Joseph Stevens 8 Bte 4
B - 1000 Brussels
Belgium
Tel: + 1 32 2 512 2606
Fax: + 1 32 2 511 0904
E-mail: **office@itglwf.org**
Internet: **www.itglwf.org**

International Transport Workers' Federation
Address 49 - 60 Borough Road
GB - London SE1 1DS
United Kingdom
Tel: + 1 44 20 7403 2733
Fax: + 1 44 20 7357 7871
E-mail: **mail@itf.org.uk**
Internet: **www.itf.org.uk**

International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco &
Allied Workers' Association
Address Rampe du Pont-Rouge 8
CH - 1201 Petit-Lancy, Geneva
Switzerland
Tel: + 1 41 22 793 2233
Fax: + 1 41 22 793 2238
E-mail: **iuf@iuf.org**
Internet: **www.iuf.org**

Public Service International
Centre d'Aumard, BP 9
45 Avenue Voltaire
F - 01211 Ferney-Voltaire Cedex
France
Tel: + 1 33 450 406 464
Fax: + 1 33 450 407 320
E-mail: **psi@world-psi.org**
Internet: **www.world-psi.org**

Union Network International
Avenue Reverdil 8-10
Case postale
CH - 1260 Nyon 2
Switzerland
Tel: + 1 41 22 365 2100
Fax: + 1 41 22 365 2121
E-mail: **contact@union-network.org**
Internet: **www.union-network.org**

International Programme for Chemical Safety
World Health Organisation
CH-1211, Geneva 27, Switzerland
Tel: + 1 41 22 791 3588
Fax: + 1 41 22 791 4848
E-mail: **ipcsmail@who.ch**
Internet: **http://www.who.int/pcs/index.htm**

National Institute for Occupational Safety and Health (NIOSH)
Training and Educational Systems
4676 Colombia Parkway
MS-C10 Cincinnati
OHIO 45226, USA
Tel: + 1 800 365 4674 (inside USA) or + 1 513 533 8328 (outside USA)
Fax: + 1 513 533 8573
E-mail: **pubstaft@cdc.gov**
Internet: **http://www.cdc.gov/niosh/homepage.html**

New Jersey Department of Health
Hazardous Substance Fact Sheets
Internet: **http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm**

Occupational Health Clinics for Ontario Workers (OHCOW)
15 Gervais Drive
Suite 603
Don Mills, Ontario, M3C 1Y8, Canada
Tel: + 1 416 443 7669
Fax: + 1 416 443 6323
E-mail: **mcook@ohcow.on.ca.ca**
Internet: **http://www.ohcow.on.ca**

PARnet (Participatory Action Research)
Cornell University, Ithaca, New York, USA
Internet: **http://www.parnet.org**

PubMed/MEDLINE
Internet: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi**

TOXNet
Internet: **http://toxnet.nlm.nih.gov/**

Trade Union Congress (TUC)
Congress House
Great Russell St.
London, United Kingdom
WC1B 3LS
Tel: + 1 44 20 7636 4030
Fax: + 1 44 20 7636 0632
E-mail: **info@tuc.org.uk**
Internet: **http://www.tuc.org.uk/**

World Health Organization (WHO)
Avenue Appia 20
1211 Geneva 27, Switzerland
Tel: + 1 41 22 791 2111
Fax: + 1 41 22 791 3111
Telex: 415 416
Telegraph: UNISANTE GENEVA
Internet: **http://www.who.int/home-page/**

Further Reading

There are a number of useful resources of information listed in the REFERENCES and RESOURCES sections. The following is a list of additional reading materials:

Barnsley, J and Ellis, D. 1992. Research for Change: *Participatory Action Research for Community Groups.* (Vancouver, Canada: Women's Research Centre)

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Freire, P. 1998. *Teachers as Cultural Workers: Letters to Those Who Dare to Teach.* (Boulder, CO, USA and Oxford, UK: Westview Press)

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Greenwood, DJ and Levin, M. 1998. *Introduction to Action Research.* (Thousand Oaks, London, New Delhi: Sage Publications)

Hazards at Work. TUC Guide to Health and Safety. Details from TUC, Congress House, Great Russell Street, London WC1B 3LS. **http://www.tuc.org.uk**

Nadeau, D. 1996. *Counting Our Victories: Popular Education and Organizing.* (New Westminster, BC, Canada: Repeal the Deal Publications)

O'Neill, R. 1999. *Europe under strain: A report on trade union initiatives to combat workplace musculoskeletal disorders.* TUTB. ISBN 2-930003-29-4. **http://www.etuc.org/tutb/**

Participatory ergonomic interventions in meatpacking plants. 1994. NIOSH Publication No.94-124, 1994. USA

Pretty, JN, Guijt, I. Thompson, J. Scoones, I. 1995. *A Trainer's Guide for Participatory Learning and Action.* (London: International Institute for Environment and Development)

Putting breast cancer on the map. 1999. Women's Environmental Network. London, UK **http://www.wen.org.uk**

Shields, K. 1994. *In the Tiger's Mouth: An Empowerment Guide for Social Action.* (Philadelphia, PA, USA and Gabriola Island, BC, Canada: New Society Publishers)

Wallerstein, N and Rubenstein, HL. 1993. *Teaching Job Hazards: a Guide for Workers and Their Health Providers.* (Washington, DC, USA: American Public Health Association)

"When it comes to their health, workers always know best," in Workers' Health International Newsletter, no.42, Winter 1994/95

Wegman, D. 1994. *"Investigations into the use of symptom reports for studying toxic epidemics," in new epidemics in occupational health (Proceedings of the International Symposium on New Epidemics in Occupational Health), People and Work Research Reports no.1,* Finnish Institute of Occupational Health, Helsinki

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