Non-neoplastic mortality of European workers who produce man made vitreous fibres

In a very well written and interesting study Sali et al found an increased mortality due to ischaemic heart disease (IHD) among European workers producing rock or slag wool and continuous filament after 30 years since first employment.1 These types of fibres belong to a group called man made vitreous fibres (MMVF). Other types in this group are ceramic fibres and glass fibres. These groups of European workers have been compared with the national death rates of the respective countries.1 This comparison is most often regarded as an underestimation of the true risk as the general population includes sick and disabled people unable to work. This underestimation is well known as the healthy worker effect.2

During the past decade fibrinogen has emerged as an important risk factor for IHD.3 Fibrinogen is a general indicator of inflammation and is related to atherogenesis.4 European workers from the United Kingdom, France, and Germany exposed to ceramic fibres were investigated for respiratory function.5 Workers who currently or formerly smoked had a significant decrease of forced expiratory volume in 1 second (FEV1) which was related to cumulative exposure. There was also a decrease of vital capacity (VC), which was not significant. A relation between decreased lung function (VC and FEV1) and increased concentrations of fibrinogen has been found in a study of 788 Swedish men.6 Several studies have found a relation between a decreased lung function expressed as VC or FEV1 and IHD.7

Among the European workers exposed to ceramic fibres there was a relation between increasing exposure to respirable fibres and two degrees of breathlessness from the Medical Research Council (MRC) respiratory questionnaire.8 Some studies have found significant associations between breathlessness and cardiovascular mortality.9,10 An increased prevalence of chronic bronchitis has been found among United States workers exposed to fibreglass after adjustment for exposure to asbestos and smoking (relative risk (RR) 2.3, 95% confidence interval (95% CI) 1.1 to 4.9).11 A Finnish study has shown that people with chronic bronchitis have an increased risk of coronary disease and coronary deaths.12 A general hypothesis about exposure to inhaled particles and the occurrence of IHD can be expressed in the following way. Long term inhalation of particles retained in the lungs will create a low grade inflammation associated with an increase in plasma fibrinogen. The high concentrations of fibrinogen will increase the risk for blood clotting and thereby the risk for myocardial infarction and IHD.13 Possible indicators of some inflammatory process in the lungs could be decreased lung function, breathlessness, and chronic bronchitis. This hypothesis will be supported if workers exposed to MMVF have a higher concentration of plasma fibrinogen than non-exposed workers with control for other possible confounders such as smoking habits.14 Sali et al suggested further investigations on the relation between an increased mortality from IHD and exposure to rock or slag wool and ceramic fibres and this is one way of performing such further studies.

The Work Accident Insurance Act of Japan has prescribed that insurance can not be provided in the case of suicide. Karo jisatsu has been recognised as a work related accident by the law only when the work is the cause of mental disorder and the worker loses the rational ability to evaluate suicide. However, there has been no standard for its recognition, and in some cases it has taken around 5 years from submission of an application about a work related accident for a claim to be processed. For this reason, the applications are assessed at an expert meeting of the Ministry of Labour on a one by one basis. Also, the difficulty of gaining recognition of karō jisatsu is indicated by the fact that only four cases out of the last 108 applications have been assessed as work related accidents. Recently, a special review meeting in the Ministry of Labour issued a report recommending easing the requirements which recognise mental disorder and karō jisatsu as work related accidents. Based on the international classification of diseases, the report extended the range of mental disorders that can be evaluated as work related accidents. Also, a list of 31 items including “error in work” and “non-achievement of the norm” was produced to evaluate stress at work. Recognition of karō jisatsu as a work related accident is, however, the final remedy. The first measure should be to improve the working environment that causes the mental disorder and eventual suicide of industrial workers. There is still room for improvement when the work environment in Japan is evaluated from this viewpoint. The system for counselling employees and referral to psychiatric specialists in Japan has lagged considerably behind other developed countries. Also, the social prejudice associated with having a psychiatric medical examination remains ingrained. Therefore, people are being driven to attempt suicide because of physical and mental failure even when they are aware that they could be counselled or referred to a psychiatrist. There were over 40 applications for recognition of karō jisatsu as a work related accident in 1997 and 1998. It is expected that these applications represent only “the tip of the iceberg”, and reports of mental disorders and karō jisatsu will continue to increase once the condition becomes socially accepted. The psychiatric and psychosomatic disorders should be eliminated from society, and overworked people should be able to consult psychiatric specialists more light-heartedly. Therefore, the basis for preventing karō jisatsu is to change the attitude of the workplace and society toward occupational mental illnesses.

Karo jisatsu (suicide from overwork) is a spreading occupational threat

It has often been said that Japanese people have an attitude to work that resembles a worker bee. This working style may, however, be a cause of mental and physical health problems, such as depression, burn out syndrome, and chronic fatigue. Among these, karoshi, which is sudden death from overwork, has been reported as the most serious consequence.15 Overwork can kill employees especially if combined with high demand, low control, and poor social support.16 At the present time, we should consider another serious consequence, which is “karō jisatsu (suicide from overwork)”. Currently in Japan, with structural changes causing a long recession and restructuring of work practices, the incidence of karō jisatsu is rapidly increasing.17 There is, therefore, an urgent need to develop countermeasures to cope with the situation.

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Karo jisatsu (suicide from overwork): a spreading occupational threat

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The industrial athlete?

Due to the tremendous addition of work-related injuries attributing to lost productivity and workdays, billions of dollars are being spent for treatment of these problems that result in less than optimal outcomes. Clinicians who care for injured workers continually search for enhanced approaches to treatment that will result in improved workdays, reduced time away from work, and improved patient satisfaction.

If an industrial athlete is injured, one goal of the medical team is to return the athlete as quickly as possible without risk of further injury. The contribution by a worker on the production line is not any less valuable than the athlete. Therefore, the employer deserves the same commitment and attention from the medical team as the athlete.

Some physicians assume that patients with work-related injuries have less motivation to return to their original job. However, with more practical experience, most have changed their perspective because persistent pain is a tremendous demotivator. Most workers will gladly perform their job (a) if they do not have pain and (b) if after working a full day they are able to pursue outside interests without disabling pain. Although there are exceptions to the rule, most of the cases support this perception. Most physicians of sports medicine rely on the same model or protocol that they use in their practice to treat patients for workers’ compensation. This model requires patients to be active participants in the process, which can be particularly useful when treating patients who seem to lack motivation, or have encountered chronic pain.

There are four key elements in the sports medicine model that contribute to the success of this approach:

1. Prevention: use of preventive and protective equipment while working or performing sports.
2. Conditioning: training that strengthens potential areas of weakness and enhances performance at work.
3. Early intervention or identification: diagnose the injury as quickly as possible and initiate measures to decrease the severity of disability.
4. Progressive treatment: rehabilitation that improves flexibility, muscular balance, and other factors that may have contributed to the injury and may prevent future injury.

Finally, it is important to treat industrial athletes as comprehensively and intensely as you would any competitive athlete, providing guidance in safety practices, appropriate prevention, and conditioning practices, as well as facilitating access to innovative approaches to treatment that carry the greatest opportunity to yield positive outcomes.

Bringing the sports medicine model to the industrial setting can reduce the medical and non-medical expenditures related to repetitive stress injuries. To have the greatest impact, the medical team needs to have the same level of understanding about the demands of a job as the athlete, just as a sports medicine team physician understands the demands of a specific sport or position. The goal of returning competitive athletes to their functional status before their injuries should be just as aggressively pursued for industrial athletes. In a competitive business environment, it is crucial to have a healthy, strong, highly motivated team to get the job done.

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Acute respiratory distress syndrome: a comprehensive clinical approach.

The editors of this book have assembled a distinguished group of (almost entirely North American) experts, to produce a well-organised and elegant account of acute respiratory distress syndrome (ARDS).

Their aim is to cover all aspects of this challenging critical care problem, for an audience including students, doctors in training, critical care specialists, physicians and surgeons. They have succeeded in this, so that there is something for everyone; and very few of their readers will come away without learning something new.

In the editors’ own introduction, the chapters are briefly and accurately summarised, without listing objectives or keywords and phrases which might be expected in a textbook.

It works better as an academic review than as a clinical handbook. It is certainly comprehensive, and in particular has chapters on specific matter in hand. For example, the discussions of artificial ventilation (and weaning therefrom) are apposite and clear. Where the attention changes to more general aspects of critical care, the context of the book does not allow the authors to be either as didactic or as discursive as in other works. For instance, the discussions on management of sepsis and general trauma, although appropriate to the authors’ aims, will add little to many readers’ own knowledge.

As in any book with multiple authors, there is inevitably some duplication and repetition—for instance on the subjects of artificial airways, gastric tonometry, and cytokines. However, although the emphasis may be different from the various authors, there is no contradiction or disagreement between them.

For examination purposes, the book would easily suit postgraduate study, although the student would be wise to select those aspects specific to their relevant curriculum. The book is well indexed, making this task straightforward. Also, each chapter has an extensive and fairly contemporary reference list.

In an age in which the former elegance of scientific writing has given way to ill formed prose, check lists, and dreary tomes, this book is a welcome change. It is well written and very well indexed, with a comprehensive index to guide one to the needed section in a hurry. These advantages will be appreciated by the target readership of junior hospital doctors and medical students; and also by hard pressed microbiologists, consultants in communicable disease control, and infection control nurses. It meets the demands of integrated training and clinical application, now an essential aspect in the field of infection. I suspect that more senior practitioners will also place this volume in a readily accessible part of their bookshelves. Weighing in at 1.3 kg, it is sadly too large to be carried around in the pocket, but it has wisely avoided the pitfalls of oversimplistic brevity. For those students daunted by the length, there is a guide to priority reading, picking out the essential sections that will help them through under-graduate and probably also postgraduate examinations.

The author has succeeded in producing a new edition—the last was in 1989—that reflects the many changes in emerging infection and research. Common and vexing topics are easily tracked down from index headings, but I was disappointed that the topic of water borne pathogens is covered only under “infections of the gastrointestinal tract”, although organisms associated with water, such as Legionella pneumophila and Mycobacterium marinum, are mentioned elsewhere. Public health and epidemiological aspects are reasonably well covered, but understandably take second place to microbiological investigation and treatment. For example, there is no attempt to resolve the current debate about the policy for prophylaxis and exclusion from food or nursery work in typhoid carriers and contacts. The introduction of routine vaccination against meningococcal infection in the United Kingdom is also too recent to have been included. The limited public health coverage is balanced by frequent references to the need for discussion between consultants in communicable disease control and microbiologists about best methods and control of epidemic infection, which lays the basis for the shared approach involved in contemporary management of infection. I also liked the way the book concentrates on United Kingdom practice and the infection problems that practitioners are likely to meet, including the wide range of tropical and imported infections in returning travellers. Although more illustrations might be expected from the substantial price, the book is still excellent value for money in comparison with other comprehensive microbiology texts. The summaries give a good grounding for further forays into history and research and will be a boon for lecture preparation. The need to cover both the advances and the clinical dilemmas in microbiology has meant the sacrifice of the anecdote and historical detail that made earlier applied microbiology writing so inspiring, as exemplified by Christie in his editions of Infectious diseases: epidemiology and clinical practice. Nevertheless, Christie and other fine authors are included in the list of further reading. Meanwhile, many will find that Shanson’s text amply satisfies most needs. A book which chooses as its only quotation the challenging lines from Swift—

“So, naturalists observe, a flea
Hath smaller fleas that on him prey;
And these have smaller fleas to bite ’em,
And so proceed ad infinitum.”

—neatly bridges the gap between scholarly detail and practical modernity: and yes, fleas are also in the index and succinctly covered in the text.

ROASILND STANWELL-SMITH

Air pollutants and the respiratory tract


This three part book was in the process of preparation when the untimely death of David Swift occurred. The first part is an overview of the subject with four general essays on the nature of air pollution, respiratory exposure to air pollutants, bioavailability of particle absorbed air pollutants, and the detection of respiratory responses to air pollutants. The second part deals with individual pollutants and specific responses, with five essays on irritant air pollutants, the effects of oxidants, lung cancer, fibre aerosols, and biological pollutants; and the third part is a long and detailed discussion of health risk assessments and regulatory considerations. There are 15 contributors in all, with six based at the Johns Hopkins Medical School.

Most of the essays include acceptable summaries of existing knowledge, and in some of them, interesting and important points are made. What is disappointing is that many of the current critical issues are not discussed in detail. Thus there is no critical description of time series analyses and the inherent limitations of attributing effects to highly correlated but very different pollutants, such as oxides of nitrogen and particles; nor is there an up to date discussion of the strengths and limitations of epidemiological data. The book fails to meet the demands of integrated training and clinical application. I find the ever popular lists of drugs and a few chemicals, much about HLA and MHC in human and animal models, and the common intention of the cellular genetically soon to have explained everything. They have yet to do so but one can learn from their travels.

There is more meat in the accounts of proved disorders and their associations, notably, the toxic oil, esophagitis myalgia and other fibrosing syndromes, followed by descriptions of drug induced systemic lupus erematosus and pulmonart rheumatic diseases. The silicone catastrophes, smoking, and a duet of the peculiar chronic fatigue and multiple chemical sensitivity syndromes. Where there are physical disorders to consider, there are good accounts of what is known and a valid attempt to note general environmental factors (diet, work, etc) possibly associated with the disorder. The uncertain conditions, such as the silicone, chronic fatigue, and multiple chemical sensitivity claims, are described but not critically assessed. They lack firm deci
The editors have drawn together a series of contributions that deal with all aspects of indoor air including assessment, key pollutants, syndromes (sick building syndrome and multiple chemical sensitivity), control measures, the litigative framework (United States), clinical assessment of patients and methods of building construction that avoid problems. The book thus offers an unusually wide range of information.

Seltzer has provided a long (50 pages) chapter on sources, concentrations, and assessment of indoor air pollution. This is an excellent and detailed review. There is little to argue with although the United States obsession with words gives rise to some confusion in the equations that explain conversion of ppm to mg/m³. The equation should read:

\[ \text{ppm} = \text{mg/m}^3 \times 22.45/\text{MW} \]

The detailed blank forms provided for assessing indoor air quality are a most useful contribution. Environmental tobacco smoke and pollutants generated by combustion are well dealt with by Rands et al and Lambert, respectively. In both chapters, the information is up to date and is reviewed in an even handed way. Indoor air pollution with pesticides is an area that has been largely ignored in the United Kingdom. Wagner's chapter provides a good non-reviewed review and deals briefly with assertions that exposure to even very low concentrations of organophosphorus compounds can give rise to disease. Useful guidance on how to investigate cases of alleged poisoning is provided. The chapter on multiple chemical sensitivity by Terr struck me as particularly good. Physicians practising conventional medicine seldom know much about the non-traditional approaches: useful information is provided. Care is taken in dealing with these methods: where no objective evidence of efficacy has been obtained this is pointed out. Practical matters including the use of provocation challenge (Tsien and Spector) and the assessment of patients (Bardana) are well presented.

If indoor air pollutants are bad for people, the litigation that they produce is good for lawyers. The legal aspects are tackled in two chapters: a formal presentation of the United States legal position by Hirsh and a more provocative essay by Selner entitled "The future". This chapter is a gem. The author issues a call to all scientists to stand up against "junk science" and to require the rigorous application of rules of scientific logic to assertions of harm. Whether this call will be heeded remains moot.

In their preface the editors say "we know of no other text that has addressed the issue of the indoor environment from so broad a platform". I agree: this is an unusual and important book; although at £129.00, too few will buy it.

R. L. MAYNARD


This small book is the latest in the series on chemical incident management published by the Stationery Office. The authors, all experienced workers in the chemical incident field, have set out to define a series of guidelines that are intended to help the public health physician deal with a chemical incident. As such it is a handbook of "how to do it". The authors point out that although incidents involving the accidental exposure of people to chemicals are common, the involvement of public health physicians is rare. Despite this, public health physicians have responsibilities for managing aspects of chemical incidents. The book is divided into four sections: prevention, preparedness, response, recovery. Each section is subdivided into sections that deal with specific aspects of each main area. Emphasis is rightly placed on planning and surveillance and the importance of establishing good links with other organisations that have a part to play is stressed. Communications inside the team dealing with the incident and between the team and, for example, the media, are discussed in detail: excellent advice is provided; "Never agree to interviews with solicitors who represent local residents or industry!" Advice is provided on such difficult problems as evacuation versus sheltering. EVacuation is often demanded by the public although the better advice may be to provide advice that will allow people to seal their homes and stay where they are.

Major chemical incidents are often followed by complaints of delayed or lasting effects. Counselling of those affected and epidemiological investigation of such possibilities is needed. Methods are explained briefly.

An unusual and particularly useful feature of this book is the wealth of information provided in the appendices. Addresses and telephone numbers of all those who can help in dealing with a chemical incident are provided. Also, examples of questionnaires that can be used to record essential information are provided.

Dealing with a major chemical incident is rather like fighting a battle, in Clausewitz's words "Everything in war is very simple, but the simplest thing is very difficult". Clausewitz explained this in terms of friction or the fog of war. This book dissipates the fog likely to accumulate about a chemical incident: read it now—before you need to.

R. L. MAYNARD

NOTICES

What authors want: the ALPSP research study on the motivations and concerns of contributors to learned journals

Alma Swan and Sheridan Brown, Key Perspectives (Pp 78; published June 1999; price: ALPSP members £50.00/$US100, non-members first copy £100.00 / US$200, discounts for more than 1 copy). Order forms and further information from: http://www.alp.org.uk or John Morris, South House, Clapham, Worthing, West Sussex BN13 3UJ, UK.

Each section of Learned and Professional Society Publishers has recently carried out a large scale survey of contributors to learned journals. The aim was to discover what motivated researchers to publish in journals, and how they decided where to publish, as well as their concerns about the
current system, and what changes they wanted or expected to see in the future.

With the help of many publishers, questionnaires were sent to about 10 500 contributors to learned journals published in the United Kingdom, the United States, and elsewhere. The titles were selected to give a comprehensive spread of subjects, and the recipients were chosen to give a representative worldwide geographical coverage.

With a response rate of >30%, the results provide a substantial body of evidence of what the authors of research articles really think and want.

Authors are continuing to publish in learned journals primarily to communicate their findings and advance their careers. Direct financial reward is not an important issue. Their main aim is to reach the widest possible audience, with the quality of peer review and the impact factor of the journal the main factors of importance in achieving their overall publishing objectives. In deciding where to submit their work, the perceived reputation of the journal, its impact factor, subject area, international reach, and coverage by abstracting and indexing services are extremely important.

OV prints continue to be the main way in which authors disseminate their findings after publication, although 84% also claim to announce their results at conferences before publication.

Copyright does not seem to be an area of major concern at the moment, although a considerable number of authors think that copyright should be retained by the author rather than being relinquished to the publisher. Around 30% of authors express dissatisfaction with the peer review system, primarily because of the delays incurred in the process. Publication delays in general are a source of concern, especially because of the anxiety that someone else will publish the work first.

More than half of authors agree that the purpose of scholarly publishing is changing and increased electronic publishing activities are looked forward to in the future by many authors.

**Industrial Audiometry Courses.**

**Industrial Audiometry Courses.**

**12-14 April and 1-3 November 2000. Manchester.**

These 3 day courses in industrial audiometry will be held at the Wendover Hotel, Monton Road, Monton, Eccles, Manchester.

The courses comply with the syllabus recommended by the British Society of Audiology and have been approved by the Society as such.

Each course offers basic training in audiometry for industrial medical staff, safety officers, and others concerned with hearing in industry. It concentrates attention on the problems of practical screening audiometry in industry for the assessment of hearing of both new entrants to noisy employment and existing workers.

The course will include lectures on the theory of audiometry, audiometric methods, accuracy of results, interpretation of data, detection of malingering, and available techniques for the prevention of hearing loss.

Assessment of handicap, detection of non-organic hearing loss, legal liability, and current noise legislation will also be covered. Practical work will include the use of manual and self recording audiometers, care and calibration of audiometers, and practice sessions on audiometry.

A range of modern audiometric equipment will be available for use by participants.

Because of the intensive nature of the course and the emphasis placed upon practical work, the number of participants will be limited to not more than 20 per course. Early registration is therefore advisable. There will be an optional examination and successful candidates will be awarded a certificate of competence.

Details from Dr W Tempest, Kismet, Croyde Rd, St Annes, Lancs, FY8 1EX. Tel 0044 1253 712550.

**Occupational and New Professional Level Training by NRPB in the Year 2000**

Around 40 training courses specialising in various aspects of radiological protection are scheduled to be held in the year 2000 by the National Radiological Protection Board. Past experience indicates that well over 100 private tailor made courses are also likely to be provided.

Further information on arranging private courses can be obtained by contacting the appropriate NRPB Centre. The telephone numbers are as follows: NRPB Scotland, Glasgow (0141-440-2201); NRPB Northern Centre, Leeds (0113-267-9041); NRPB Southern Centre, Chilton (01235-831600).

Information on the new courses is available from the NRPB website (www.nrpb.org.uk). Copies of the new brochure can be obtained free of charge by contacting one of the Centres or through the NRPB Information Office (telephone 01235-822742, fax 01235-822746, email information@nrpb.org.uk).