



Feature Story

Reducing Toxic Body Burdens Advancing in Innovative Technique

It is increasingly clear that there is a need for a safe method of reducing human body burdens

A Rand Corporation study in 1984 estimated that by the year 2020, 75,000 American workers will have died as a result of asbestos related diseases. By the end of the century, claims by victims of asbestos contamination may cost the world insurance industry as much as \$30 billion, according to Lloyd's of London experts.

By watching this scenario, many high risk industries using toxic substances hope that they have no similar toxic time bombs ticking away beneath their own corporate cornerstones.

PROTECTING WORKERS. The problem faced today by risk managers and company officials with regard to chemically-related illnesses is not easily resolved. Legally, it is not entirely clear how many civil suits against employers by workers suffering from occupational diseases the courts will allow. The California Supreme Court's ruling in the Manville asbestos case has weakened the principle of "exclusivity" which states that workers' compensation systems are designed to be the exclusive health benefits and wage replacement remedy for injured workers, thereby indemnifying employers against civil suits. The court in the Manville ruling said that employers will remain invulnerable to civil suits as long as they do not intentionally conceal essential health information from workers.

Scientifically reliable health information regarding toxic chemicals is often difficult, if not impossible, to obtain. According to the National Research Council, no toxicity data is available for about 80 percent of the 49,000 chemicals currently in commercial use. Of those substances for which toxicity data do exist, the data may be too imprecise for use in establishing reliable exposure regulations. Even when such regulations do exist, research discoveries rapidly may render them invalid. For example, while the toxicity of lead has been known for centuries, only in recent months did an Environmental Protection Agency expert review committee recommend that the "acceptable" level of lead in the blood should be no more than 'three micrograms per decaliter, a level which is one-twelfth the level the EPA had previously considered acceptable.

**Symptom Prevalence of Chemically Exposed and Unexposed Reference Populations
and a Chemically Exposed Treatment Group**

Symptom	Anderson Study		HealthMed Study		
	Chemically' Exposed Population	Healthy' Population	Treatment Group (pre- treatment)	Treatment Group (post- treatment)	
Rash	17%	9%	18%	4%	**
Acne	12	5	16	4	*
Skin Thickening	9	3	9	4	
Paresthesias (dermal sensations)	19	5	14	2	**
Weakness	13	3	16	4	*
Uncoordination	21	5	7	0	*
Dizziness	20	3	18	2	**
Fatigue	52	15	79	5	**
Nervousness	22	2	14	4	*
Disorientation	6	0	11	0	**
Headaches	41	14	40	9	**
Joint Pain	43	23	5	0	*
Muscle Pain	23	8	42	5	**
Abdominal pain	13	7	33	11	**
Constipation	6	2	26	2	**

Footnotes:

1. These reference populations are discussed in Anderson, et al, "Symptoms and Clinical Abnormalities Following Ingestion of Polybrominated Biphenyl-Contaminated Food Products," *Ann. NY Acad. of Sci.*, Vol. 320:684-702,1979. The Chemically Exposed Population above is Group 3 in Anderson's report. The healthy population is Group 4.

2. The difference in symptom prevalence after treatment is significant at the following levels: * = **p<0.05**; ** **p<0.01**.

Assessing chemical toxicity poses problems because most of the past health-effect literature is correlated to blood levels of a given substance and not to the levels in the fat, which may be as much as 500 times higher. Blood levels may have little or no relation to symptoms which are either chronic or not outwardly apparent. Because occupational diseases can take as many as 10 to 20 years to develop, accurately evaluating chemical toxicity becomes more difficult.

NEED ANSWERS. All of these factors, legal and scientific, have led a number of corporations and medical advisers to conclude that it is neither economically nor socially sound to adopt a waiting game regarding Chemically exposed workers. Some already have developed company policies emphasizing early detection and preventive measures.

"This sort of thinking makes sense," said Ann Smith, benefit analyst with Grand Met USA in Montvale, N.J. "If you can detect a minor illness you can certainly lessen the odds of a major one. Maybe because it is so simple we have overlooked it all these years' "

Chemically-related health problems have traditionally been among the most difficult to diagnose and treat. Occupational diseases, particularly in their developmental stages, often are observed as a set of minor symptoms such as headaches, fatigue, mental cloudiness and minor aches and pains. Because these symptoms are common health problems, their etiology is not obvious, and often is missed. Individuals presenting such symptoms are often misdiagnosed.

Additionally, chemically caused ills, even where the symptoms appear severe, may not be discovered by conventional diagnostic tests, thus giving rise to the misconception (exasperating for physician and patient alike) that the concerned individual is either feigning illness for personal benefit or is a hypochondriac.

UNDERSTANDING DISEASE. The understanding of occupational diseases has, however, increased significantly in recent years. It is known, for example, that while the majority of workers may suffer from occasional headaches, fatigue and minor pains, individuals who have been exposed to significant levels of toxic chemicals generally manifest clusters of persistent symptoms. Symptoms commonly associated with low-level chemical contamination include headaches, fatigue, impaired memory and mental acuity, emotional instability, blurred vision, poor coordination and skin abnormalities.

Low level chemical contamination also may cause physiological changes in the body which signal the presence of disease or predisposition to it. Such physiological phenomena have been termed the sentinels of disease and among the most sensitive indicators is immune system response. It has long been known that chemical contaminants will cause a suppression of the immune system. Current research suggests that the impairment of the immune system may play a significant role in predisposing the body to occupational diseases, although such diseases may not be completely developed for a decade or more.

Monitoring these physiological sentinels may prove to be essential to the prevention of occupational diseases. As disease syndromes progress very slowly, it may take years of exposure before other signs are present. Unfortunately, by this time many of the changes (carcinogenesis, peripheral nerve damage, central nervous system damage, etc.) may be irreversible.

In short, subtle physiological and behavioral changes may well serve as the earliest indicator that some hidden, toxic action is occurring in the body, hopefully at a time when the process can still be reversed. But how is it reversed?

IDENTIFYING EXPOSURE. Anyone examining the problems in the chemical environment can notice the tremendous effort being made to identify the health effects of toxic chemicals. While this work is vital, the proliferation of chemical agents over the past few decades, as well as the nature of chemical toxicity itself, has made it imperative to develop effective means of addressing chemical contamination in humans, regardless of what is not known about the toxicity of those chemicals. Consider the following facts:

- To conduct a single long-term animal study of one chemical agent may take approximately two to three years and may cost roughly \$1.5 million.

- Due to the extent and diversity of environmental and human contamination, it would be virtually impossible to study, in humans, the toxicity of a single chemical agent in isolation from other substances. Most people carry with them a body burden of numerous (dozens, most likely) substances, the synergistic effect of which is simply not well understood.

- It is generally not possible to do tissue analysis for most toxic chemicals at low levels. Few laboratories have tissue analysis capability at the parts-per-billion and lower level. Thus, even if one desired to study the "chemical cocktail" in humans, defining the mix is unlikely.

- As noted earlier, chemical toxicity may prove to be a highly insidious malefactor, calling attention to itself, if at all, only years after irreversible damage is done.

It is increasingly clear that there is need for a safe and effective means of reducing human body burdens of foreign chemicals. Scientists and associates with the Foundation for Advancements in Science and Education (FASE) now are discussing a new method of human detoxification.

EFFECTIVE TECHNIQUE. According to FASE researchers, a technique developed in the late 1970s by the late author and researcher L. Ron Hubbard has been shown to be effective in reducing body stores of some highly bioaccumulative substances, including organohalides such as polychlorinated biphenyls. The regimen consists essentially of five parts:

- Aerobic exercises, to increase circulation and enhance the mobilization of toxic substances from tissues
- Polyunsaturated oil supplement, which assists the body in the exchange of toxic for clean fat
- Sauna at 140 F to 180 F to increase mobilization and induce sweating
- Nutritional supplements (vitamins and minerals) centered around gradually increasing doses of niacin, which promotes the release of toxic substances from tissues
- Water and salts taken as needed to avert dehydration or salt depletion due to concentrated sweating

The program is precisely monitored and, although its length may vary according to the participant, the average is three weeks on a schedule of two and one-half to five hours daily.

FASE tested the technique in 1983 on seven Michigan farmers who had been exposed to the fire retardant chemical polybrominated biphenyl. PBB made its way into the Michigan food chain, contaminating virtually the entire state population in 1973 following an accident in which a fire retardant containing the substance was accidentally substituted for a food supplement for farm animals.

FASE Director of Research Dr. David W. Schnare said that follow-up tests of the program participants (by analysis of fat tissue, using solvent extraction and gas chromatography/mass spectrometry) revealed an average reduction of 21 percent for all chemicals studied which included PCBs and three pesticides, in addition to the PBB metabolites. Four-month post-treatment examinations showed that a further reduction (to 42 percent) had taken place, a fact which has led some physicians to speculate that the program may rehabilitate or enhance natural body mechanisms for throwing off toxic elements.

This conclusion is documented by the work of Florida researcher Dr. Dan Roehm. As reported in *Clinical Research* (Vol. 31, No. 2, 1983), Roehm conducted follow-up studies for DDE (metabolized variant of the pesticide DDT) on one patient approximately eight months after completion of the FASE method of detoxification. At the end of this period, the patient's DDE level (determined by fat tissue analysis using mass spectrometry) had been reduced by 97 percent.

CASE HISTORIES. In addition to scientific studies, a great deal of new information has come from physicians who have monitored individuals undergoing this method of detoxification. Dr. David B. Katzin is a Los Angeles medical doctor (with a Ph.D. in physiology and a degree in chemistry) specializing in chemically related illnesses. For two years Katzin served as medical director of the HealthMed @c, a Los Angeles facility where nearly 1,000 people have been treated for chemical exposure problems.

Katzin presented a paper at the annual conference of the American Industrial Hygiene Association recently in which he detailed several case histories of chemically exposed workers. Among them were the following:

- A female patient, 24, was employed for eight months in a maintenance capacity, hosing down filter pads through which exhaust from a diesel generator passed before being vented into the air. Her symptoms included: severe acne, extreme fatigue, pain in her lungs, sinuses and gums, continual headaches, poor concentration, irritability and impaired vision. After five days of treatment, a black oily sludge began coming out of her pores.

The discharge, which continued for several days, was especially strong upon increase of niacin dosage. The patient also threw up water which she said tasted like "rusty tin."

Upon completion of the FASE detoxification program, her acne cleared up, and her liver function improved. The patient stated that her exhaustion was gone, headaches were now rare, concentration improved, vision improved, and the pain in the lungs, sinuses and gums was gone.

- A 44-year-old man who was a chemical industry worker for 20 years had been exposed to a variety of substances including PCBs, PBBs, pesticides and solvent organic chemicals including toluene, ethylbenzene, trimethylbenzene, dichlorobenzene, xylene, styrene, and bromoform. Symptoms included hair loss, loss of fingernails and toenails, severe skin disorders, tumors, easy bleeding and bruising, unpaired vision and hearing, numbness in extremities, fatigue, headaches and poor mental acuity. In previous months, the patient had been examined and unsuccessfully treated by more than 20 physicians at an estimated cost of nearly \$100,000. Upon completion of the program, the patient's health and appearance dramatically improved. His hair, toenails and fingernails were growing back, his tumors were either gone or greatly reduced in size, and other symptoms were either gone or considerably unproved.

IMPORTANT TOOL. Katzin has treated approximately 200 individuals using the technique. Katzin believes it to be an important tool in combating occupational , and cites data compiled at HealthMed comparing the symptomatology of patients following detoxification with that of chemically exposed and healthy reference populations. (See table.)

These reference populations were taken from a study by Anderson (see footnote 1 in the table) in which he compared persons who had been exposed to PBB in Michigan (column 1) with unexposed persons in rural Wisconsin (column 2). Using the same 15 symptoms reported by Anderson, HealthMed staff compiled data on patients who had exposed to a variety of substances. Striking similarity was found between the prevalence of symptoms reported by Anderson's exposed and unexposed populations and the HealthMed patients before and after treatment (columns 3 and 4), respectively.

"Controversy remains over the advisability of mobilizing highly toxic fat stored chemicals back into the blood stream for purposes of elimination," Katzin said. "However, the fact is that these substances do not remain isolated in the fat anyway. During times of stress or illness, they move back into the blood and can often be found there in low levels. This can bring about chronic low-level exposure to many body organs and systems, which, over time, can have tragic consequences."

The potential benefits of effective human detoxification are summarized by Dr. Max Ben, a Florida scientist and

former director of corporate research for Miles Laboratories. Writing in the National Safety Council's monthly publication, *National Safety News*, Ben noted that for the 20 million American workers who are exposed to chemicals which have become economically and technologically vital to their industries, detoxification is a significant step in the right direction.

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