

AN
ALTERNATIVE
APPROACH TO
ALLERGIES

*The New Field of Clinical Ecology
Unravels the Environmental Causes of Mental
and Physical Ills*

REVISED EDITION

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We are also especially indebted to the directors of and contributors to the Human Ecology Research Foundations.

Detoxification

Veterans of environmental illness—physicians and sufferers—are aware that there are many unresolved problems in the field of clinical ecology. Among the more puzzling of these problems is the persistence of symptoms in some patients despite painstaking, rigorous effort to control environmental factors and to minimize chemical exposures.

Why do some patients not respond well to standard treatment? Of those who do respond well, why are so many bothered periodically by reactions they find impossible to explain and, therefore, that are so frustrating?

Since the discovery of the chemical-susceptibility problem in clinical ecology, clinical ecologists have been concerned with patients' exposure to exogenous factors: chemicals, allergens, and other etiologic factors found outside the body.¹ It has become apparent, however, that there is an endogenous or *internal* pollution problem that cannot be ignored.

We are exposed to an overwhelming number of chemical contaminants every day in our air, water, food, and general environment. The body is fairly efficient at excreting those chemicals, which are water-soluble, but not as capable of breaking down or excreting some of the fat-soluble ones. Indeed, many industrial and agricultural compounds were specifically formulated to resist the decompositional effects of heat, abrasion, water, and chemical agents. Thus, many fat-soluble chemicals tend to accumulate in the body's fatty tissues, where they may persist indefinitely. This process is called "toxic bio-accumulation."

Over 300 foreign chemicals have been identified in human fat. They are found in most organs and systems of the body, including the brain and nervous system. Even the myelin sheathing that encases nerve fibers is

fatty material. Breast milk also has a high fat component. Thus, contaminants can be transferred to the newborn during one of the most sensitive stages of development. A national survey by the U.S. Environmental Protection Agency found that most Americans have dozens of identifiable contaminants in their fatty tissue.² This toxic load includes several carcinogens, such as benzene, which is known to be hazardous at low levels³ and which was found in 96 percent of the fat samples analyzed. Table 1 lists some of these compounds, their frequency of observation and range of detection. No one fully understands the health effects of this chemical "cocktail" in human beings, although, researchers are increasingly documenting the adverse effects of environmental contaminants at very low levels.^{4,5,6,7}

That certain chemicals tend not only to accumulate in the fat, but to persist there for long periods of time has been demonstrated in a number of studies.^{8,9,10} For example, the levels of fat in Michigan residents who were contaminated by the highly toxic fire retardant PBB did not decrease significantly over a six-year period.¹¹ Studies have further shown that many toxic materials impose increased burdens and the human body with age.¹² This fact is particularly noteworthy in light of the time-tested toxicological model of biological action, which states simply that the greater the chemical exposure, the greater the resultant effect.

Toxic Recirculation

If toxic substances remained "locked" in the fat, they might be of less concern to us. Fat, however, is very mobile within the body. Whenever the body is stressed, stored fat may be released back into the bloodstream and with it, its burden of toxic material.¹³ Since the body is ill equipped to metabolize and excrete these synthetic compounds, they tend to circulate throughout the body, moving from one fat depot to another. The resulting exposure can target various organs and body systems.¹⁴

Studies have found that fat can be mobilized by such common influences as exercise¹⁵, emotional stress¹⁶, and the overnight fast during sleep¹⁷. Mobilization during sleep may be a factor in the increased severity of symptoms that certain people experience in the morning.

The intermittent release of fat-stored toxic chemicals may also explain why a significant proportion of chemically susceptible patients do poorly even when they manage to control their environment and minimize their exposure to chemicals. These chemicals in the body seem to be causing acute reactions that are both confusing and frustrating.

The response to chemicals stored in the body varies from person to

Table 1. Foreign Chemicals Found in Human Fat

Compound	Possible Common Sources	Frequency of Observation (%)	Range of Detection
Styrene	styrene based disposable cups	100%	6-350ng/g*
1,4-Dichlorobenzene	mothballs, house deodorizers	100	12-500 ng/g*
Xylene	gasoline, paints, lacquers	100	18-1,400 ng/g*
Ethylbenzene	drinking water	100	4-400 ng/g*
OCDD	wood treatment, herbicides, incinerators, auto exhausts	100	18-3,700 pg/g
1,2,3,4,6,7,8-HpCDD	wood treatment, herbicides, incinerators, auto exhausts	96	ND (28)-1,300 pg/g
HxCDD	wood treatment, herbicides, incinerators, auto exhausts	96	ND (13)-620 pg/g
Benzene	gasoline	96	ND (4)-97 ng/g*
Chlorobenzene	drinking water	96	ND (1)-9 ng/g*
Ethylbenzene	gasoline	96	ND (2)-280 ng/g*
p,p'-DDE	produce	93	ND (9)-8,800 ng/g†
1,2,3,4,6,7,8-HpCDF	wood treatment, herbicides, incinerators, auto exhausts	93	ND (3.5)-79 pg/g
Toluene	gasoline	91	ND (1)-250 ng/g*
1,2,3,7,8-PeCDD	wood treatment, herbicides, incinerators, auto exhausts	91	ND (1.3)-6,000 pg/g
2,3,4,7,8-PeCDF	wood treatment, herbicides, incinerators, auto exhausts	89	ND (1.3)-90 pg/g
B-BHC	drinking water, gas from road surfacing	87	ND (1.9)-670 ng/g†
Total PCBs	air, water, food pollution	83	ND (1.5)-1,700 ng/g†
Hexachlorobiphenyl		73	ND (2.1)-270 ng/g†
Hexachlorobiphenyl		73	ND (1.9)-450 ng/g†

Table 1. (Continued)

Compound	Possible Common Sources	Frequency of Observation (%)	Range of Detection
Hexachlorobenzene	Fungicides, wood preservative, rubber manufacturing	76	ND (12)—1,300 ng/gf
Chloroform	drinking water	76	ND (2)—660 ng/g*
2,3,7,8-TCDD	wood treatment, herbicides, transformers, auto exhausts	76	ND (1.3)—14 pg/g
HxCDF	wood treatment, herbicides, transformers, auto exhausts	72	ND (3.0)—80 pg/g
Butylenyl phthalate	plastics	68	ND (8)—1,700 ng/gf
Heptachlor epoxide	termitic insecticide, imported produce	67	ND (19)—910 ng/gf
1,2-Dichlorobenzene	drinking water, paint stripper	63	ND (1.1)—2 ng/g*
Tetrachloroethene	dry cleaning fluid	61	ND (3)—84 ng/g*
p,p'-DDE	food—both animal and vegetable products, air pollution	56	ND (8)—640 ng/gf
trans-Nonachlor	termitic insecticide	53	ND (18)—820 ng/gf

*Wet tissue concentration.
 †Range of observed lipid concentration.
 ND = not detected (quantities were below individual limits of detection). Values in parentheses are estimated levels of detection and body burdens below the level may exist.
 Source: Compiled by the Foundation for Advancements in Science and Education, Los Angeles, from U.S. EPA data in reference # 2, May, 1987. Reprinted with permission.

person and is influenced by several factors, including the severity of the bioaccumulation and the individual's sensitivities, a genetic predisposition, present diet and environment, and age.¹⁸ Some individuals are strongly affected by these residues, while others experience only minor effects. Both severe and mild symptoms, however, may constitute sentinels of more serious diseases that may manifest themselves years later.¹⁹

Diagnosis

Careful clinical investigation is required to establish how important these internal toxins may be in an individual case. A number of tests are available to assess organ and system functions. In arriving at a diagnosis, a physician would select those tests that are most appropriate, on the basis of his or her observations and the data on hand, including the known or suspected chemical agent or agents to which an individual had been exposed. Although the literature on this matter is voluminous, a good summary has been compiled by a scientific panel organized by the Board of Directors of Universities Associated for Research in Education and Pathology.²⁰

It is not uncommon for an individuals to regard certain incidents of exposure as insignificant, if, indeed, they remember these incidents at all. A thorough history of exposure, however, will help them identify those occurrences that resulted in the presence of chemical residues that now must be addressed.

The clinical ecologist is usually concerned with symptoms stemming from the subtle effects that chemicals may have on a variety of body systems before permanent damage has taken place. Such symptoms will be familiar to many chemically susceptible people. They include such conditions as headaches, tiredness, mental confusion and the lack of acuity, irritability, memory loss, cold or flulike symptoms, irritation of the eyes and mucous membranes, skin disorders, and musculoskeletal pains.

Because these and other symptoms in chemically susceptible people can be caused in by either external (exogenous) or internal (endogenous) exposures or a combination of both, one task of the physician is to establish which type of exposure is affecting a particular patient most and should, therefore, be treated first.

Effective Detoxification

The optimum treatment for people who are found to be reacting to endogenous chemical exposures is detoxification, a therapy that has a long

fatty material. Breast milk also has a high fat component. Thus, contaminants can be transferred to the newborn during one of the most sensitive stages of development. A national survey by the U.S. Environmental Protection Agency found that most Americans have dozens of identifiable contaminants in their fatty tissue.⁷ This toxic load includes several carcinogens, such as benzene, which is known to be hazardous at low levels⁸ and which was found in 96 percent of the fat samples analyzed. Table 1 lists some of these compounds, their frequency of observation and range of detection. No one fully understands the health effects of this chemical "cocktail" in human beings, although, researchers are increasingly documenting the adverse effects of environmental contaminants at very low levels.^{9,5,6,7}

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Effective Detoxification

The optimum treatment for people who are found to be reacting to endogenous chemical exposures is detoxification, a therapy that has a long

history in medicine. As early as 1713, Ramazzini noted, in his landmark work, *Diseases of Workers*, writers of works on poisons at that time advised, "in general, remedies that have the power of setting the spirits and blood mass in motion and of provoking sweat"²¹—a recommendation that seems at once simplistic and yet profound in light of what is now known, over 275 years later, about the kinetics and metabolism of foreign compounds.

As I have noted, however, today's fat-persistent synthetic compounds pose a special problem. To reduce the burdens of these substances on the body, one must achieve three biological goals:

1. Enhanced *mobilization* of stored chemicals from fat depots within the body.
2. Adequate *distribution* of mobilized chemicals to the channels of excretion.
3. Enhanced *excretion* through any or several of the body's natural routes—the lungs, gastrointestinal tract, kidneys (urinary tract), skin via excretion of sweat or sebum (skin oil).

Until recently, we lacked a safe and effective treatment for accomplishing such detoxification. Within the last decade, however, a technique has been developed, tested in independent scientific trials, and shown by clinical use to be both safe and effective. This technique is known as the *Hubbard method*.

→ This method of detoxification, by L. Ron Hubbard, was originally conceived as a technique for ridding the body of drug residues. Aside from being the author of a great many nonmedical books, Hubbard was well known for his work and theories in the field of drug rehabilitation. In the mid 1970s, he concluded that accumulations of drugs and foreign chemicals in fatty tissues were causing learning and perceptual problems long after the ingestion of the drugs or exposure to the chemicals. He began to investigate which methods might be used to lower the endogenous levels of drugs and other toxins and developed a precise technique for their reduction.

Since the Hubbard method appeared to do successfully what no other form of therapy was attempting to do, it became the focus of scientific scrutiny by several physicians and scientists who were looking for a safe, effective means of reducing burdens on the body. The Foundation for Advancements in Science and Education, a nonprofit research group based in Los Angeles, sponsored several studies to test the technique. The findings of the researchers who participated in these studies have been

published by the Royal Swedish Academy of Science, the World Health Organization's International Agency for Research on Cancer, and in many scientific journals.^{22, 23, 24, 25}

Dr. Megan Shields later introduced the technique into her clinical practice in California. Dr. Shields was a co-investigator in several studies of the program and was the physician in charge of treatment protocol and supervision. Her large practice specializes in chemical detoxification therapy and is administered by HealthMed, which is owned by a nonprofit organization.

MICHIGAN DISASTER PROVIDES A TESTING GROUND

A 1982 study of the technique chose as its test population some unfortunate victims of a chemical disaster in Michigan. In the early 1970s, the toxic fire retardant PBB was accidentally substituted for a nutritional supplement for farm animals. The resulting contamination of meat, milk, and a number of other foods ended with the ingestion of the chemical by virtually the entire population of Michigan, my home state.

Victims of this disaster had been the subjects of intensive study by a team from the Mt. Sinai School of Medicine in New York City. The team found that 97 percent of the individuals in the state who were tested had detectable levels of PBB in their fatty tissues by 1978 and that there was clear evidence of widespread effects on health. They also found that there had been no significant reduction of PBB levels in the six years following the contamination. Their conclusion was that the PBB was there to stay.²⁶

IMPRESSIVE RESULTS

During the Michigan trial, subjects from the earlier Mt. Sinai study were put through a precisely controlled Hubbard regimen. The results were promising. Before-and-after biopsies of the participants' tissues indicated reductions averaging 21.3 percent for all sixteen chemicals studied, including the PBBs and PCBs.²⁷

The findings from a four-month follow-up examination may be even more significant. They showed that the toxicant levels of the subjects continued to go down even after treatment. After four months, the average reduction for all sixteen chemicals studied was 42.4 percent. Some physicians have suggested that this continued drop may indicate a rehabilitative effect on the body's natural process of eliminating toxic substances.

The finding of postprogram improvement was also made by a Florida

cardiologist, who conducted a series of post-Hubbard regimen tests on an individual exposed to Agent Orange (dioxin).²⁸ This doctor found that the level of DE (the metabolized variant of the pesticide DDT) in his patient's tissues had been reduced by 29 percent immediately after treatment. At the end of 250 days, the level had decreased by 97 percent. He further reported that, after treatment, his patient was free of the symptoms of dioxin poisoning.

→ *The Hubbard Regimen*

The Hubbard regimen is individually tailored to mobilize fats, enhance excretion, and maintain proper biochemical and nutritional status.

ACHIEVEMENTS

Mobilization of fats. The mobilization of fats is accomplished through therapeutic cardiovascular exercise and precisely controlled dosages of nicotinic acid (vitamin B₃) and polyunsaturated oils. A physician adjusts all these elements to a patient's level of tolerance. Cold-pressed polyunsaturated oils, adjusted to the individual patient's tolerance, can enhance the mobilization of fats and bring about significant changes in the composition of fats in the body. Polyunsaturated oils have been found to replace existing adipose tissue stores, thereby enhancing the mobilization of fats.²⁹

Many studies have demonstrated that exercise can increase the mobilization of fats.³⁰⁻³² Nicotinic acid has been shown to block the mobilization of free fatty acids for approximately 30-90 minutes, depending on the dose. This blockage, however, is followed by a pronounced rebound in mobilization and a release of free fatty acids into the blood.^{33,34} Over a course of treatment, vitamin B₃ is gradually increased according to a precise protocol.

The detoxification protocol calls for increases in the dosage of nicotinic acid only after a careful analysis of the patient's response to previous dosages to ensure that the patient is achieving the optimal result each day. The clinician's failure to moderate the dosage correctly because he or she does not understand the process or does not monitor the patient's response may result in discomfort or possibly more serious complications for the patient. The exact adjustment of increments of niacin, which is so critical to the proper mobilization and excretion of toxins, is one of the hallmarks of a properly managed Hubbard regimen.

Exercise and nicotinic acid also increase blood circulation, assisting the "pickup" of freed toxins and enhancing their distribution to the channels of elimination.

Some researchers have expressed concern that the level of toxic substances in the blood may become too elevated during such a regimen. A study published by the International Agency for Research on Cancer, however, suggests that enhanced excretion keeps pace with mobilization. In the study, blood-serum levels in a treatment group did not increase during the treatment period.³⁵

Enhanced excretion is accomplished via the skin, through treatment with moderate heat in a well-ventilated sauna. The sauna is operated at an average temperature of 160°F, in contrast to the usual 200°F-210°F of a nontherapeutic sauna. Several studies have documented the excretion of foreign substances in human sweat and sebum.^{36,37,38,39}

The use of cold pressed polyunsaturated oils aids in retarding the assimilation of fat-soluble toxic chemicals which can occur in the intestines, and assists their excretion through the colon.⁴⁰

Maintenance of biochemical and nutritional status. In the Hubbard program, water, potassium, and other salts are administered, as needed, to replace those lost through concentrated sweating. Other nutrients and minerals are supplied in strict proportion to the gradually increasing doses of niacin. The balancing of vitamins and minerals in forms that are most assimilable is required to prevent the development of symptoms of deficiencies. The skill in biochemistry required to balance these supplements further distinguishes a clinician who is experienced in the administration of the precise Hubbard treatment. The physician adjusts the therapy to allow for individual intolerances to nutrients and other factors.

It is necessary that patients follow a regular daily schedule (they should never miss a day while undergoing treatment) and get adequate sleep. Generally, patients follow the same diet to which they are accustomed but place greater emphasis on leafy green vegetables. No other medications are required.

The length of treatment varies with each patient; twenty-five days is about the average.

CASE STUDIES

Many environmentally ill patients have shown significant improvement through the Hubbard technique. Although this technique is not a cure for environmental illness or any disease, results of studies and clinical practice clearly show that reducing the burdens of toxic chemicals on the body by the Hubbard regimen generally brings about improvement in the symptomatology and overall health of patients. Table 2 presents the results obtained in four actual case studies.⁴¹

PATIENT # 801 (Chief complaints: chemical reactivity, pesticide exposure)

Chemical	Pre-treatment	Post-treatment	% Reduction
Heptachlor epoxide	33.2	1.2	96.4%
Dieldrin	1.2	.87	94.1%
DDE	38.1	3.5	90.8%
PCB	20.0	2.0	90.0%
DDT	4.8	.8	87.5%

After 25 days of treatment, patient's hearing impairment in right ear was gone, fatigue and headaches were greatly diminished, allergies, neck pain and numbness in extremities also diminished.

PATIENT # 808 (Chief complaint: pesticide exposure)

Chemical	Pre-treatment	Post-treatment	% Reduction
DDE	6.42	.28	95.6%
HCB	.09	.01	88.8%
PCB	1.24	.35	71.8%

After 23 days of treatment, patient's pain in ankles was gone; pain in joints, chronic stiffness in neck, dryness of skin, post nasal drip, sore throat, lethargy, depression and sleeplessness reduced.

PATIENT # 806 (Chief complaint: multiple chemical exposures)

Chemical	Pre-treatment	Post-treatment	% Reduction
Delta BHC	.33	.01	96.9%
DDE	6.0	1.8	68.3%
Heptachlor epoxide	.12	.04	66.6%
Dieldrin	.06	.03	40.0%

After 17 days of treatment, patient's sleeplessness resolved, constipation was gone, acne and skin dryness, muscular pain, weakness, headaches, fatigue, mental dullness, confusion and disorientation diminished.

PATIENT # 2187 (Chief complaint: multiple chemical susceptibilities, PBB and pesticide exposure)

Chemical	Pre-treatment	Post-treatment	% Reduction
PBB	16.4	6.9	57.9%
Beta-BHC	.037	.023	37.8%
DDT	.029	.020	31.0%

After 32 days of treatment, patient's blurred vision was gone, irregular heartbeat gone, skin dryness gone, muscle weakness gone, diarrhea gone, depression and irritability gone, fatigue greatly diminished, allergies, sensitivities, and headaches reduced.

Note: All pre-treatment and post-treatment measurements are given in parts per million.
Source: Provided by G. Megan Shields, M.D., courtesy of HealthMed.

Table 3. Prevalence of Symptoms in Chemically Exposed and Unexposed Reference Populations and a Chemically Exposed Treatment Group (percentage)

Symptom	Chemically Exposed Population	Healthy Population	Treatment Group	
			Before Treatment	After Treatment
Rash	17%	0%	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†
Incoordination	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	28	2†

* = p < 0.5.
† = p < 0.01.

The data in Table 3 were taken from a study in which a population of patients was compared with chemically exposed and "unexposed" reference populations.⁴² The chemically exposed population was composed of individuals exposed to PBB in Michigan, while the "unexposed" population was taken from residents of rural Wisconsin.⁴³

As is apparent from the table, there is a striking similarity between the chemically exposed and unexposed reference populations and the corresponding pretreatment and posttreatment groups of patients. An analysis of the chemically exposed reference population and the treatment population before treatment indicated that there was no statistically significant difference in the prevalence of symptoms. A comparison of the healthy reference population and the treatment population posttreatment also found no statistically significant difference in the prevalence of symptoms. The table shows that the symptoms of the treated group improved dramatically after treatment, returning to normal levels.

A PRECISE TREATMENT REGIMEN

Because it includes some elements that are familiar to many health-conscious people, the Hubbard method may sound deceptively simple. It must be stressed that it is the *synergy* of these factors, each precisely controlled and monitored daily by trained personnel, that leads to consistent results with little risk to patients. The inexact application by untrained personnel could have some pitfalls. The following are some examples of the precision of this method:

- Patients often come to treatment with various complex sensitivities to heat, salts, oil, vitamins, exercise, and so forth. The physician always tailors the therapy to the individual's tolerances, biochemistry, and state of health while maintaining each essential element of the therapeutic technique.
- In one day of heat treatment, as much as four to twelve pounds of fluid may be displaced from the body. The patient must be closely monitored for early signs of dehydration, as well as for the loss of salts, minerals, and other nutrients, from excretion. Blood-chemistry analyses, as needed, and daily medical monitoring allow for the precise replacement of fluids to avert dehydration or depletion.
- Treatment with heat must occur in a well-ventilated chamber whose temperature is no lower than 140°F and no higher than 180°F. Saunas at health clubs are inadequately ventilated with fresh oxygen and are usually far too hot for this therapy. Random and unsupervised use of a sauna for periods longer than thirty minutes may put a person

at the risk of heat exhaustion, heat stroke, or other serious medical problems. *Nothing in this book should be construed to mean that one should try procedures such as these on one's own.*

- Cardiovascular exercise must be geared to an individual's physical abilities and tolerance. When properly programmed and supervised, a tolerable regime that is adequate to produce increased circulation is always possible without undue stress or risk.

The necessity for the exact application of this method must be emphasized. An environmentally ill person is already in tenuous health. If undertaken, the treatment should be administered by practitioners and staff who are expertly trained and who did their internships in the Hubbard method. Although some casual versions of the treatment have been attempted, the best results have been obtained using the original method researched and developed by Hubbard.

Indications of the Need for Treatment

It is unlikely that internal pollution alone would be the cause of all an environmentally ill person's symptoms. Thus, for certain patients, the reduction of toxic residues may not be the first priority. Patients should carefully review all the data at hand and evaluate their need for detoxification with their personal physicians.

Physicians may find detoxification therapy indicated for the following categories of chemically susceptible patients:

1. Patients who, though diagnosed and treated with standard clinical ecology techniques, continue to present unexplained acute or chronic symptoms that are apparently unrelated to external exposure to environmental chemicals or excitants.
2. Patients with known histories of higher-than-average exposure to toxic chemicals at work or otherwise.
3. Patients with a positive toxicity screen (the data having been confirmed by patients' existing symptoms and history of exposure).

Although a number of patients who have responded well to detoxification treatment have been in these categories, the indicators are not definitive of the need for detoxification treatment. In categories 1 and 2, the conservative use of a toxicity screen, such as the analysis of toxic chemicals in blood serum, adipose tissue, and sweat, could provide further insight.

In seeking to determine levels of a fat-soluble chemicals, physicians

generally obtain or perform a biopsy—the removal and examination of tissue, in this case, fat, from the body. Studies have shown that levels of contaminants are consistent in various fat depots throughout the body.⁴⁴ Samples of fat can be obtained easily by needle aspiration.⁴⁵ Analyses can be performed using high-resolution laboratory techniques that can detect foreign chemicals at the parts-per-billion level.

The quality of such chemical analyses may vary considerably from one laboratory to the next. Moreover, tests for some chemicals can be difficult to perform with a high degree of accuracy, particularly if the tissue levels of a substance are very low. Nevertheless, the analysis of fat tissue can be a valuable complementary tool for a physician who wants to gauge the impact of a stored residue on a patient's health. However, blood tests, although useful for some purposes, cannot be considered to be reliable for the accurate measurement of the total burdens of chemicals on the body.

Avoidance: Still the Best Public Health Policy

The individual who has developed an environmental illness over several years should realize that he or she has what is best viewed as a chronic condition. Thus, even after the person has successfully completed detoxification treatment, he or she should exercise caution in determining whether or what degree of reexposure is permissible.

The following rules should be applied in this regard:

1. Heavy frequent exposure in the workplace must be scrupulously avoided. Find other gainful employment.
2. Mild intermittent exposures to known toxics, whether on the job or at home, should be avoided as much as is practical.
3. No matter how good the individual feels, he or she should not be exposed indiscriminately to former excitants that seem to have little or no effect after treatment. A wiser approach is to follow a systematic policy of allowing only gradual reexposure. Care should be taken to ensure, as much as possible, that only one suspect chemical is allowed into the environment at a time. Thus, if there is a relapse, one is able to spot the exact excitant that is responsible, and a new policy of avoidance, once instituted, should restore the person to a better state of health.

The Future of Detoxification

Until relatively recently, internally stored chemicals in the body's fat have been a "hidden variable" in clinical ecology. Knowledge of their

presence and their effects can only bring more certainty to diagnosis and treatment.

The task of defining the relationship between external (exogenous) and internal (endogenous) chemicals in particular patients remains. At this time, we can say that the reduction of endogenous accumulations of toxic chemicals seems vitally important to the effective treatment of some environmentally ill patients, and the development of a safe and effective method for reducing these burdens gives us a welcome new tool for treatment.