Case Definition

In my view, a case definition is needed to determine who does and does not suffer from chemical sensitivity (CS) before any treatment claims can be assessed. A proposed diagnostic checklist, derived from the Chemical Injury Information Network (CIIN; http://ciin.org/index.html) Case Definition Conference (San Francisco, August 2006) is shown in Figure 1 (on the following page). While in a currently unpublished work in progress, initial estimates are that the instrument attains specificity and sensitivity of > 85% in the diagnosis of CS and can be administered easily in a clinical setting.

There is no single effective treatment for CS, as CS is not a single pathologic diagnosis but a syndromal diagnosis. Management depends on the clinical details and requires clinician support for patients with CS, as there is still enormous medical, community, and institutional resistance to this diagnosis. This resistance often translates to intolerance bordering on abuse, exacerbating the condition. The evidence is that psychiatric drug therapy worsens instead of reducing the condition, although stress management may be helpful.

Reduction of unnecessary exposure to exacerbating chemicals is a foundation of successful management. This requires care in documenting the chemicals that cause symptoms and expertise in identifying circumstances in which exposure may occur.

Charcoal masks can reduce exposure for sufferers. Empirically, a high-quality organic diet seems to reduce impairment. Normal-pressure oxygen through Tygon tubing and a ceramic mask at 28%–32% can reduce disability after exposure significantly. The use of alkali salts (“Bi-salts” or “Tri-salts”) can help in the same way. Magnesium, N-acetyl L-cysteine (NAC), sleep management, and probiotics/gut management are other approaches that often benefit sufferers.1

Reference


—Mark Donohoe, M.B., B.S., F.A.C.N.E.M., F.A.S.E.M.
P.O. Box 328
Mosman, New South Wales 2088
Australia
E-mail: drmark@bigpond.net.au

Traditional Environmental Medicine

The Academy of Environmental Medicine now uses the terms chemical sensitivity (CS) or environmental illness (EI) for what patients often call multiple chemical sensitivity (MCS). The members of this academy are trained to take environmental histories, which are of supreme importance in identifying causes of not only EI, including CFS, fibromyalgia, and Gulf War syndrome (GWS), but also other chronic medical problems in their patients—such as depression, diabetes, attention-deficit disorder (ADD), and autoimmune-related disorders.

I find that many doctors do not realize the importance of asking about mold in the home or workplace. Just having a musty basement is a huge clue to the potential etiology of a person’s ill health—including, often, a mood disorder. Pesticides, chemicals, and heavy metals have their roles, but most clinicians do not recognize that at least half of patients with EI will have mold and mycotoxin exposure as their chief problems.

Treatment of EI due to mold includes identification of the offending agents/toxins (clothing and dust vacuumed from...
### Multiple Chemical Sensitivity (MCS) Case Definition Checklist (version 0.2 revised draft)

<table>
<thead>
<tr>
<th>Patient Info (please do NOT identify the patient)</th>
<th>Practitioner/stamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age _____  Sex _____  Nationality __________________</td>
<td></td>
</tr>
<tr>
<td>Rec # __________________ ___________________________</td>
<td></td>
</tr>
</tbody>
</table>

### Basic Definition

Multiple Chemical Sensitivity is a medical condition characterised by recurrent symptomatic responses to chemical exposures at levels lower than previously or commonly tolerated.

### Diagnosis

To be diagnosed with Multiple Chemical Sensitivity, the individual must fulfil the primary diagnostic criterion AND at least 6 of the 9 secondary diagnostic criteria.

#### Primary diagnostic criterion

- The person suffers recurrent symptoms to chemical exposures at levels considerably less than those generally considered to cause adverse human effects.

#### Secondary diagnostic criteria

*The individual being assessed exhibits the following (check all that apply)*

- 1. A chronic condition, persisting for at least three months
- 2. Symptoms that improve or resolve when exposure ceases
- 3. Reactivity that apparently spreads to include previously tolerated substances
- 4. Symptoms that occur with exposure to chemically diverse substances
- 5. Generally similar symptoms following similar types of exposure to similar agents
- 6. Symptoms that vary markedly in terms of time to onset, recovery time, severity, frequency and duration
- 7. Intolerance for previously tolerated alcohol and some pharmaceutical agents
- 8. Symptoms that are not limited to a single organ system
- 9. Difficulty with maintaining usual habits and activities of daily living, reduced quality of life, and reduced ability to access hospital and medical services

*Examples: ability to go to work or school; choice of personal care products, clothing, food and home location; ability to travel to other cities or drive a car; ability to be around others and enjoy social activities such as going to meetings, place of worship and restaurants; choice of hobbies or recreation; ability to perform home maintenance and chores;*

\[9\] = score of positive responses out of 9

### CLINICIAN FEEDBACK (circle all answers that apply):

This patient’s clinical diagnosis is  
MCS  CFS  OTHER _______________________

The Checklist  CORRECTLY / INCORRECTLY categorised this as a case / non-case of MCS

Comments

### NOTES:

The purpose of the case definition is to facilitate the appropriate and timely recognition of the chemically sensitive individual in clinical practice, allowing for immediate preventive action, especially avoidance or reduction of exposure for the individual. This is a draft checklist instrument which has been used and revised by the MCS Case Definition Working Group. It is not at this point a proven diagnostic tool, but initial data analysis suggests PPV and NPV at greater than 90% each. Completed (deidentified) checklists should either be retained, or forwarded to Dr Mark Donohoe for data extraction. Please do not include identifying information on this form. Return to PO Box 328, Mosman NSW 2088 Australia or by email to drmark@bigpond.net.au
carpets, cars, or clothes can be measured inexpensively, and toxins can now be measured in urine), and—for those contaminants that are highly toxic and cannot be removed—discarding clothing, cars, and all possessions that are contaminated, and leaving one’s domicile, usually permanently. Other options are intravenous (I.V.) vitamins; oxygen (if venous O₂ [without a tourniquet] is more than 20–25); avoidance of chemicals in air, food, and water; neutralization and provocation skin testing and treatment; immune boosters; hormone and neurotransmitter replacement; treatment of dysautonomia (using floxurin and midodrine, if necessary); chelation; dental assessment with a meter replacement; treatment of dysautonomia (using florinef); and entering the system.

Initially, I recommend Tri salts and buffered vitamin C for reactions; Epsom salt baths, charcoal room air filters, and charcoal masks or painting respirator for outdoors near traffic and airplanes; som salt baths, charcoal room air filters, and charcoal masks recommend Tri salts and buffered vitamin C for reactions; Epian oral potential meter; and CranioSacral therapy. Initially, I recommend evaluating brain function objectively with a QEEG, which is the least-invasive, most-practical, and least-expensive type of evaluation for brain function. When abnormal brain function exists, I have found frequently that EEG biofeedback (neurofeedback) is successful in improving cognitive function and in reducing chemical sensitivity.6,9

Neurofeedback

Patients with chemical sensitivities (CS) without a clear date of onset are more likely to have psychiatric diagnoses (62%) than patients with an identifiable onset (26%).1 Thus, I always screen thoroughly for mental-health problems.

However, abnormal brain function is also often involved. For example, Bell2 evaluated chemical intolerant (CI) women, compared with depressed women and normal controls. Although 71% of the CI women had been diagnosed previously with depression, they had a different quantitative EEG (QEEG) pattern than the other groups, as did workers exposed to styrene,3 miners and welders exposed to aluminum dust,4–6 and workers exposed to solvents.7

Thus, I believe in screening patients who have CS for psychologic conditions and exposure to toxic agents. I also recommend evaluating brain function objectively with a QEEG, which is the least-invasive, most-practical, and least-expensive type of evaluation for brain function. When abnormal brain function exists, I have found frequently that EEG biofeedback (neurofeedback) is successful in improving cognitive function and in reducing chemical sensitivity.6,9

References


Traditional Chinese Medicine

As with all complicated afflictions, chemical sensitivity (CS), in our opinion, should be treated simply. The ability of the gut and enteric nervous system to handle assimilation—not just with probiotics—to move any toxin in or out of the system without placing it into crisis is paramount. This fine balance is the difference between success and failure. Anything that the body cannot assimilate and use becomes a toxin. Excess food, stress, over-the-counter (OTC) medications, improper pH levels, and even too many supplements all cause imbalance in the system.

We have come to believe that the overstressing of the body transitions the system into such a state that only more-powerful herbs, drugs, and therapies seem to make a difference.

We cannot eliminate stress; however, we can enhance recovery. The cornerstone of stress recovery is reduced down to three very important factors: (1) breathing; (2) mind; and (3) nutrition. These comprise the foundation of postnatal qi in Traditional Chinese Medicine (TCM).

Addressing breathing would include improving air quality; reducing fumes, offgassing, and odors; and full, deep breathing in what we call 6-direction breath practice.

From the point of view of TCM, nutrition consists of balancing all supplements, foods, liquids, topical or transdermal applications, or anything ingested into the system.
We originally taught this approach to manage asthma, panic attacks, and pain but have expanded the technique to include all patients in need of rebalancing their hypothalamic–hyper–physical–adrenal axis. This method, although it is a process rather than a single treatment, is the most successful approach we have found.

Executive Director of Inner Strength, Inc.
825 Lovers Leap Road
Leechburg, PA 15656
E-mail: ted@inner-strength.com

Traditional Chinese Medicine and Western Medicine

Chemical sensitivity (CS) is a syndrome in which multiple symptoms reportedly occur with low-level chemical exposure. Because the symptoms associated with CS are caused by physical or psychologic factors, we approach management in several ways.

First, we recommend avoiding the chemicals or foods that seem to trigger reactions. Second, we use antiallergic drugs, including antihistamines, to reduce allergic symptoms. Third, we believe that psychotherapy is necessary.

Within the doctor–patient relationship, we focus on reassuring and supporting the patient, and preventing unnecessary tests and treatments. Drugs are necessary to treat some of the symptoms, such as headaches or pain. Alleviating symptoms is helpful in the psychotherapy process. We also encourage each patient to work and to socialize despite having the symptoms. Each patient should be encouraged to increase activity gradually, while keeping anxiety or other symptoms at tolerable levels. Relaxation or breath-control exercises are very helpful.

Prevention of CS is also very important. In China, according to the different seasons and patients’ constitutions, we use acupuncture and moxibustion, Chinese massage (also known as t’ai na), and Chinese herbal medicine to modulate the immune system or to improve emotions. All of these management approaches should be applied under the direction of Traditional Chinese Medicine (TCM).

In summary, in China, we treat CS with a combination of Western medicine and TCM. The result is significant.

—Peng Zhang, Ph.D.
Postdoctorate
Orthopaedic Department
Second Hospital of Zhejiang University College of Medicine
88 JieFeng Road
Hang Zhou
Zhejiang Province, 310009
Mainland China
E-mail: superzhangpeng@zju.edu.cn

Ayurveda

Ayurveda deals with the issue of chemical sensitivity in a holistic fashion. It is well known that the same substance in a similar quantity may not cause sensitivity in one person, whereas, at the same time, can lead to extensive hazards in others. This issue of individual variability in drug and substance responses is beautifully dealt with in Ayurveda by the identification of the individual body constitution.1 It is presumed in Ayurveda that the human population is composed of few basic physiological traits, or Doshas, which Ayurveda names Vata, Pitta, and Kapha.1–3 There can be individual prevalence of these major traits, or there can also be a differential combination of these traits in which one trait may predominate over the others. Ayurvedic conceptualization of body constitution based upon Tridosha has received the attention of molecular biologists recently and, as a result, a genomic, an allelic correlation to the Ayurvedic grouping of the population on the basis of Dosha is substantiated.4,5 In routine clinical practice, Ayurveda identifies the body constitution in patients and determines accordingly which substances, can be beneficial or hazardous for them. A substance that opposes the basic Dosha characteristic of an individual has a greater possibility to cause individual sensitivities. The compounds causing these sensitivities are to be analyzed as per their properties and their possible effect on individual body type.

Ayurveda also recommends using some preparations that can be used in specific sensitivity cases. Preparations of coriander, curcuma, and coral are commonly used in these cases.

A general detoxification therapy (Pancha Karma) is also employed in specific cases to reduce the toxins from the body, which may give rise to individual sensitivity.

References


—Sanjeev Rastogi, M.D.
Lecturer
Department of Kayta Chikitsa,
State Ayurvedic College & Hospital
Lucknow-4 India
E-mail: rastogisanjeeev@rediffmail.com

Multifaceted Integrative Medicine

Chemical sensitivities (CS) reflect how physiologic systems are not adapting to environmental changes. Sensitivities (to electromagnetic fields [EMFs], foods, organic smells, etc.)
span everyday life. Patients need guidance. Lives are unraveling because people cannot keep living their role descriptions. Such people need to identify what is disabling them and find alternatives for how to live their lives differently. Both conventional and alternative medicines are useful.

Physiology becomes dysfunctional. Conventional medicine measures an organ’s function by the substance it produces. Work-ups include thyroid as well as sexual and metabolic hormones. “Tweaking” less-than-optimal reported “normals” can be helpful. Fatigued, brain-fogged, weight-gaining patients may benefit from a thyroid supplement. Low-normal or borderline thyroid-stimulating hormone (TSH) levels may not reflect what is actually happening in the body’s tissues. Patients who are already taking T4 should have a trial of a supplement containing T3 (T3 or armor thyroid.)

Patients with CS may have metabolic symptoms. Normal FBS, 2-hour postprandial, and Hb A1c tests do not rule out abrupt and dysfunctional swings in blood glucose. A dietary history of a post-cereal nap, and other symptoms might suggest CS or food allergies. Bioidentical estrogen and testosterone replacement for patients who are past age 40 may improve serotonin access, energy, and mood. These substances are the material result of the autonomic nervous system’s energetic balance or Traditional Chinese Medicine’s (TCM’s) yin/yang.

Alternative medical systems, such as TCM, identify energetic issues, including how organs and meridians work together and whether they are balanced. These diagnoses lead to energetic, as opposed to material, treatments. Better balance leads to improved organ function. While energy blockages do not cause CS, eliminating them with acupuncture and herbs helps heal and relieve symptoms. Pain, Blood Stasis (such as varicosities), swellings, and tender surgical scars suggest blockages. Patients can use home treatments to sustain improvements that are initiated by practitioners.

Other alternatives include valid supplements, such as vitamin D3. Essential oils may help rectify defects in the energy envelope (TCM’s Wei qi) which, some researchers speculate, is the basis of these sensitivities.

Patients need to reinvent their lifestyles. This usually includes returning to more biology-based living, such as establishing a sleep cycle congruent with the circadian rhythm. Understandably, patients become concerned-to-obsessed with avoiding “environmental triggers.” Practitioners can help such patients attain a balanced avoidance that does not socially isolate them.

—Peggy Finston M.D.
Private Practice
101 East Gurley
Prescott, Arizona, 86301
E-mail: pfin99@yahoo.com

Addressing Electromagnetic Hypersensitivity

Electromagnetic hypersensitivity1,2 is found in patients who already have ongoing chemical sensitivity (CS). This hypersensitivity occurs if an environmental frequency or pattern of frequencies matches the frequency pattern produced by chemicals in the body H-bonded to water. The electrically and chemically triggered symptoms are identical. Once some patient-specific electromagnetic field or intensity threshold has been exceeded, frequency becomes the relevant parameter.

About 10% of all patients with chemical, nutritional, or particulate sensitivities acquire electromagnetic sensitivities. These can be elicited under environmentally controlled double-blind conditions with 100% reactions to an active frequency and 0% reactions to the placebos.3 The electrical symptoms can be alleviated by measuring the stress frequencies in the body field and then either stimulating those frequencies that encourage the body to ignore the electrical environment or by canceling those environmental frequencies (e.g., 50 Hz) to which a patient has developed an addiction. However, the electrical symptoms will recur until the CS’ have been removed.

References


—Cyril W. Smith, Ph.D.
Retired Senior Lecturer
Manchester
United Kingdom
E-mail: cyril.smith@which.net

To order reprints of this article, e-mail Karen Ballen at: Kballen@liebertpub.com or call (914) 740-2100.

Read free sample issues of The Journal of Alternative and Complementary Medicine and Medical Acupuncture at:
www.liebertpub.com/acm
and
www.liebertpub.com/acu