Diagnosis and Management of Idiopathic Environmental Illness/Intolerance (IEI)
(ie, Multiple Chemical Sensitivities)
Corporate Medical Policy

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Description/Summary

Idiopathic environmental illness/intolerance (IEI) (also known as multiple chemical sensitivities or clinical ecology) is typically characterized by recurrent, nonspecific symptoms that the patient or clinician believes are provoked by low levels of exposure to chemical, biologic, or physical agents. Reported symptoms are wide-ranging, and there are not clearly established diagnostic criteria. Various tests (eg, nutritional assessment) and treatments (eg, immunoglobulin therapy [IVIg]) have been proposed.

There is a lack of clear diagnostic criteria for idiopathic environmental intolerance and a lack of evidence on the diagnostic accuracy of laboratory or other tests for this condition. Overall, studies using existing criteria have not found that subjects diagnosed with the condition can reliably distinguish between chemical exposure and placebo. Moreover, studies have not consistently found that low-level electromagnetic field exposure affects objective outcomes (eg, heart rate or cognitive function). In addition, there is a lack of controlled studies to evaluate treatments for idiopathic environmental intolerance. Thus, all tests and treatments for this condition are considered investigational.

Policy

Coding Information

There are no specific procedure codes for testing or treatment of idiopathic environmental illness (IEI). A wide variety of codes could be used.

All diagnoses for the diagnosis and management of idiopathic environmental intolerance IEI are considered investigational.

Laboratory tests designed to affirm the diagnosis of idiopathic environmental illness are considered investigational.
Treatment of idiopathic environmental illness/intolerance, including by not limited to intravenous immune globulin (IVIG), avoidance therapy, elimination diets, neutralizing therapy of chemical and food extracts, and oral nystatin (to treat “candidiasis hypersensitivity syndrome”) is considered

Policy Guidelines

Laboratory tests for the diagnosis of idiopathic environmental illness/intolerance may be broadly subdivided into those intended to rule out specific diseases with well-defined presentations and diagnostic criteria and those tests designed to affirm the diagnosis of idiopathic environmental illness/intolerance. For example, a basic diagnostic workup, including a standard panel of chemistry tests and blood workup, would be considered appropriate as an initial diagnostic step, even in patients with nonspecific symptoms, to rule out well defined illnesses. Additional tests may be considered medically necessary in patients with more specific symptoms, suggestive, for example, of an autoimmune connective tissue disease, or infectious mononucleosis. A variety of psychiatric or psychologic assessments may be performed to assess underlying conditions. However, at the present time, no specific tests can confirm the diagnosis of idiopathic environmental intolerance, and thus, a large battery of tests performed for a patient with nonspecific symptoms must be reviewed carefully for medically necessity. For example, the following should be reviewed closely, particularly when ordered simultaneously: laboratory tests of immune function (ie, lymphocyte transformation, deregulation of the 2,5A RNase L antiviral pathway), lymphocyte subsets (eg, natural killer cells, CD4, CD8), immunoglobulin levels (eg, IgG, IgE), levels of trace minerals in the serum or urine (eg, selenium, manganese, mercury), antibodies for a variety of infectious agents simultaneously, allergy services (including provocation testing), positron emission tomography scans, or neuropsychologic testing and elaborate nutritional assessment, including intracellular micronutrient assays.

In addition, such treatments as IVlg therapy, provocation therapy, or counseling regarding specific avoidance environments or elimination diets would be considered investigational in the absence of specific symptoms.

Rationale/Scientific Background

Idiopathic environmental intolerance has been labeled in a variety of ways over time. The original term, clinical ecology, was replaced by the term multiple chemical sensitivity (MCS). More recently, MCS has been replaced by idiopathic environmental intolerance, a term that reflects the uncertain nature of the condition and its relationship to chemical exposure. The central focus of the condition is patient reporting of recurrent, nonspecific symptoms referable to multiple organ systems that the patient believes are provoked by exposure to low levels of chemical, biologic, or physical agents. The most common environmental exposures include perfumes and scented products, pesticides, domestic and industrial solvents, new carpets, car exhaust, gasoline and diesel fumes, urban air pollution, cigarette smoke, plastics, and formaldehyde. Certain foods, food additives, drugs, electromagnetic fields, and mercury in dental fillings have also been reported as triggering events. However
symptoms do not bear any relationship to established toxic effects of the specific chemical and occur at concentrations far below those expected to elicit toxicity.

Reported symptoms are markedly variable but generally involve the central nervous system, respiratory and mucosal irritation, or gastrointestinal symptoms. Symptoms may include fatigue, difficulty concentrating, depressed mood, memory loss, weakness, dizziness, headaches, heat intolerance, and arthralgia. In contrast to the frequently debilitating symptomatology, no specific and consistent abnormalities are noted on laboratory or other diagnostic testing. Other primarily subjectively defined disorders have symptoms that overlap with idiopathic environmental intolerance, including chronic fatigue syndrome, sick building syndrome, fibromyalgia, irritable bowel syndrome, and Gulf War syndrome. A diagnosis of intestinal dysbiosis could be considered within the category of idiopathic environmental intolerance. (Intestinal dysbiosis is addressed separately)

The variable nature of the reported symptoms and the lack of recognized pathologic abnormalities make it extremely difficult to establish objective diagnostic criteria for the condition, which further hinders research into both the causes and appropriate treatment. Various causes for idiopathic environmental intolerances have been proposed; these have prompted different diagnostic and treatment approaches. Some believe that the condition is an unrecognized form of allergy or immunologic hypersensitivity. Advocates of this etiology may recommend a large series of immunologic tests, including a variety of provocation-neutralization tests and a panel of immunologic tests, including immune function tests (e.g., deregulation of the 2,5A RNase L antiviral pathway in peripheral mononuclear blood cells) and levels of lymphocyte subsets (i.e., natural killer cells, CD8 cells). Proposed therapies have included avoidance of environmental and/or dietary exposures. Immune globulin may be recommended for injection or sublingual drops of “neutralizing” chemical and food extracts. Others have proposed that exposure to toxic substances may have prompted the immunologic abnormality and, based on this theory, testing of levels of environmental chemicals in the blood, urine, or fat may be suggested. Detailed nutritional analyses have also been performed, including blood, urine, and intracellular levels of trace minerals. Such elaborate nutritional assessments may also be performed in asymptomatic subjects. For example, Functional Intracellular Analysis (FIA™) is a series of laboratory tests offered by SpectraCell Labs that measure the intracellular levels of micronutrients, such as vitamins, minerals, and antioxidants in lymphocytes.

In some instances, symptoms may appear to coincide after exposure to a viral illness (particularly common in the related condition of chronic fatigue syndrome); supporters of this theory may recommend a wide variety of tests to detect antibodies or antigens of various viruses. Some have also suggested that hypersensitivity to Candida may present with a similar array of subjective complaints and thus recommend testing for Candida in the stool or urine. Finally, it has also been proposed that idiopathic environmental intolerance is a manifestation of a psychiatric disease or personality disorder based in part on results of psychologic/psychiatric interviews.

It should be noted that some environmentally caused illnesses can be well-characterized by their clinical presentation and laboratory tests. For example, in certain instances, “sick building” syndrome can be traced back to exposure of
microorganisms related to air-handling systems. However, in contrast to idiopathic environmental intolerances, these patients experience a limited range of symptoms, and those symptoms only occur in the affected building.

The clinical entity of idiopathic environmental intolerance has been controversial for decades, in part due to the lack of a set of reproducible diagnostic criteria. Absent a clear definition of the disorder, basic science research into the etiology of the disorder, appropriate laboratory tests, and identifications of effective treatment are obviously problematic. Published reviews and opinion pieces suggest controversy regarding the etiology of the condition, appropriate diagnostic criteria, and treatment strategies.¹

**Diagnosis and Treatment**

No well-designed studies were identified in the literature searches that evaluated the ability of laboratory tests, nutritional assessments, or other diagnostic tests to accurately diagnose idiopathic environmental intolerance (or multiple chemical sensitivity [MCS]).

There is a lack of clear diagnostic criteria for idiopathic environmental intolerance and a lack of evidence on the diagnostic accuracy of laboratory or other tests for this condition. Overall, studies using existing criteria have not found that subjects diagnosed with the condition can reliably distinguish between chemical exposure and placebo. Moreover, studies have not consistently found that low-level electromagnetic field exposure affects objective outcomes (eg, heart rate or cognitive function). In addition, there is a lack of controlled studies to evaluate treatments for idiopathic environmental intolerance. Thus, all tests and treatments for this condition are considered investigational.

**Regulatory status**

No specific U.S. Food and Drug Administration approval or clearance of a test for idiopathic environmental intolerance was found.

**Related Policies**

- Nutrient/Nutritional Panel Testing & Intracellular Micronutrient Analysis
- Selected Blood, Serum and Cellular Allergy and Toxicity Tests

**Reference Resources**

- Blue Cross and Blue Shield Association Medical Policy Reference Manual; 2.01.01 Diagnosis and Management of Idiopathic Environmental Intolerance

**Peer Reviewed Publications:**


**Government Agency, Medical Society, and Other Authoritative Publications:**


**Websites for Additional Information**


**Document Precedence**

Blue Cross and Blue Shield of Vermont (BCBSVT) Medical Policies are developed to provide clinical guidance and are based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. The applicable group/individual contract and member certificate language, or employer’s benefit plan if an ASO group, determines benefits that are in effect at the time of service. Since medical practices and knowledge are constantly evolving, BCBSVT reserves the right to review and revise its medical policies periodically. To the extent that there may be any conflict between medical policy and contract/employer benefit plan language, the member’s contract/employer benefit plan language takes precedence.
Audit Information

BCBSVT reserves the right to conduct audits on any provider and/or facility to ensure compliance with the guidelines stated in the medical policy. If an audit identifies instances of non-compliance with this medical policy, BCBSVT reserves the right to recoup all non-compliant payments.

Administrative and Contractual Guidance

Benefit Determination Guidance

An approved referral authorization for members of the New England Health Plan (NEHP) is required. A prior approval for Access Blue New England (ABNE) members is required. NEHP/ABNE members may have different benefits for services listed in this policy. To confirm benefits, please contact the customer service department at the member’s health plan.

Federal Employee Program (FEP) members may have different benefits that apply. For further information please contact FEP customer service or refer to the FEP Service Benefit Plan Brochure.

Coverage varies according to the member’s group or individual contract. Not all groups are required to follow the Vermont legislative mandates. Member Contract language takes precedence over medical policy when there is a conflict.

If the member receives benefits through an Administrative Services (ASO) only group, benefits may vary or not apply. To verify benefit information, please refer to the member’s employer benefit plan documents or contact the customer service department. Language in the employer benefit plan documents takes precedence over medical policy when there is a conflict.

Policy Implementation/Update information

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Health Care Procedure Coding System (HCPCS) codes related to chemotherapy drugs, drugs administered other than oral method, and enteral/parenteral formulas may be subject to National Drug Code (NDC) processing and pricing. The use of NDC on medical claims helps facilitate more accurate payment and better management of drug costs based on what was dispensed and may be required for payment. For more information on BCBSVT requirements for billing of NDC please refer to the provider portal [http://www.bcbsvt.com/provider-home](http://www.bcbsvt.com/provider-home) latest news and communications.

Eligible providers

Qualified healthcare professionals practicing within the scope of their license(s).