

ASSESSING EXPOSURE TO BIOTOXINS

Step One of the Shoemaker Protocol is to identify and remove the source of biotoxin exposure. If you know or suspect that you have CIRS, have you assessed your home lately to ensure that it is conducive to recovery?

80% of CIRS cases are induced by one or more of the toxins produced by mold and bacteria in buildings with current OR historical water damage, so this is what most people consider first (home, school, work). Lyme Disease, certain types of blue-green algae, and brown recluse spider bites can also produce biotoxins that lead to CIRS.

1) Has there been a known leak or water intrusion? Is the indoor humidity often above 50%? Is there a musty smell, a crawl space or damp basement, water staining on the ceiling, warped floors under sink cabinets, or peeling/ bubbling paint? Do you feel differently in this building compared to outdoors or other buildings? Have your symptoms worsened since you moved in, or remodeled this home? While these signs are not always present, they can certainly be cues.

2) If your environment has visible mold or known water damage, it is best to hire a professional mold inspector to perform a comprehensive assessment of your whole house and devise a customized remediation plan to remove damaged building materials and microbial growth.

3) If you don't have obvious issues, or you'd like more objective information before hiring a professional, consider using a do-it-yourself dust sampling method called ERMI or HERTSMI-2. These tests are used to identify the presence and amount of key mold species that are often correlated with water damage and human illness, using DNA-based PCR technology. Because even dead, settled fragments of mold can be toxic and inflammatory for CIRS patients, it is advised to sample household dust rather than just air or cultures. Dust sampling also captures some of the most toxic mold species that are typically too heavy to be airborne.

[Mycometrics](#), [Lis Biotech](#), and [Envirobiomics](#) (15% off) are three reputable labs that offer these DIY kits for online purchase. Your kit will come with sampling instructions. About a week after returning your dust sample to the lab for analysis, you will get a report outlining the specific mold species that were present, and in what abundance. This information can be used to compare your home to national norms, and to determine if your home reflects "normal fungal ecology" or not.

Dr. Ritchie Shoemaker has devised a free-scoring system called the [HERTSMI-2 scoring system](#) that calculates a health score for your home based on the raw data from either an ERMI or HERTSMI-2 test. According to Shoemaker's research, folks whose homes score higher than a 15 on this scale do not tend to heal well from CIRS unless they remediate or move. Scores between 11-15 are equivocal, indicating the need for further inspection or deep cleaning. If your home receives a score of 10 or less, it is statistically safe for CIRS recovery.

General Guidelines for Collecting Dust Samples in Your Home









**To be customized according to your circumstances*

- 3 reputable labs that offer kits: [Envirobiomics](#) (15% off), [Lis Biotech](#), & [Mycometrics](#)
- Most people choose the Swiffer style cloth kits rather than the vacuum test, so that they can test the settled dust on various elevated surfaces rather than the floor, which may represent contaminants tracked in from outside.
- Use the gloves and cloth that come with your kit to collect settled dust. In a pinch, you can make your own dust collection kit using brand new gloves, cloths and bags. In this case, you would download/print the required chain of custody paperwork from the lab's website.
- In general, aim to collect settled dust from elevated surfaces that are not touched or disturbed regularly (tops of ceiling fans, interior door frames, TV, pictures, mirrors, light fixtures, walls, bookshelves, dressers, etc).
- Avoid sampling off of HVAC systems/ductwork/registers/air purifiers/vacuum bags. Aggregated dust may have different concentrations than naturally-settled dust.
- Avoid sampling from window sills or external doors that are frequently opened.
- If you wish to compare your results/scores to standardized norms, do not directly swipe highly suspicious areas that could skew your results. This includes surfaces that could be wet, have visible microbial growth or water damage, or are used for produce storage, composting/trash, or food prep.
- Do not collect dust from surfaces that may have rust, kitty litter, makeup, significant plaster/clay/drywall dust, chemical storage or that have been recently cleaned with a chemical antimicrobial, as these areas may inhibit mold DNA analysis and lead to false negatives.

Customization Considerations for Dust Sampling

- While some people like to do one “composite” sample for their home to get a general idea of potential issues, doing multiple samples can provide more information about hot spots. Sampling each floor or zone of your home separately (roughly 700 sq ft per sample) can help narrow in on problematic areas and prevent dilution of an issue.
- Depending on your unique circumstances, it may be appropriate to preclean your space prior to testing, in order to remove very old dust or unwanted influences. This is typically done using HEPA vacuuming of accessible surfaces, followed by wet-wiping (soap and water with microfiber cloth), and then dry wiping (dry Swiffer-type cloth). Precleaning helps to answer the question “Is there an ongoing issue with my home rather than a historic one.”
- Doing a [HERTSMI-2](#) dust sample is the most cost-effective way to get some helpful information regarding likely health consequences, though it can miss a lot. If you have a lot riding on the sample, it is worth considering a full [ERMI](#) panel to assess for the presence and amount of more mold species. Please note that a HERTSMI-2 test can be upgraded to a ERMI once you get the results, if you decide more information would be valuable. Similarly, a HERTSMI-2 score can be calculated from an ERMI report, so there is no need to do both of these tests. A nice “in-between” option is the [Mold Ten](#) by Envirobiomics or the [Fungi Ten](#) by Lis Biotech.
- If you have had water events related to floods or sewage losses, if you live near farms, if you have indoor pets, if anyone in the home has toileting accidents, if your notice sour/rotten egg/sewer smells in your home, or if your doctor has determined that you are reacting to bacteria, it would be of value to test for [endotoxins](#) and/or [actinomycetes](#) as well as mold. A [combo kit](#) is also available on Envirobiomics.
- Because sometimes the source of mold and bacteria is actually outside of our home, taking an outdoor control sample to compare with your interior sample(s) is a good consideration. Dust would be collected from outdoor fencing, light fixtures, patio furniture, etc.
- Using **discount code SWD** at checkout with Envirobiomics will grant you 15% off any of their kits mentioned above.

Making Your Own Dust Sample Kit for Envirobiomics

-  Purchase a brand new box of sandwich bags, quart-sized Ziploc bags, dry (unscented) Swiffer cloths, and latex or nitrile gloves.
-  Open up all boxes
-  Put on a pair of gloves
-  Place one Swiffer cloth inside of a sandwich bag and seal it shut. Place that sandwich bag inside of a larger quart-size bag, along with a fresh pair of gloves. Seal the quart-sized bag. Repeat with as many kits as you would like to prepare
-  Print a chain of custody form to include with each kit that you send in. [HERE](#) is the chain of custody form for Envirobiomics.
-  When you are ready to take a sample, open your kit and don your gloves. Open the smaller sandwich bag and remove the Swiffer cloth to collect your dust as instructed for your unique purposes. Place “dirty” cloth back inside the sandwich bag, and place that sandwich bag back inside the quart-sized bag. Complete the chain of custody form and place your completed form inside of the quart size bag. Write your name on the outside of the quart bag. This is your completed kit.
-  Envirobiomics has recently changed some policies regarding payment, so it may be necessary to call ahead and prepay over the phone with a credit card before mailing them your completed kit. Please contact them directly for their current payment policy: (210) 570-2095; www.Envirobiomics.com; support@envirobiomics.com
-  Place completed kit (and form of payment requested by Envirobiomics, if applicable) inside of a Priority Mail envelope and send to Envirobiomics at 11550 IH-10 West, Suite 105, San Antonio, Texas 78230. You will receive an email shortly thereafter, letting you know that your kit has been received. Your results will come by email as well, according to the time frame you chose (1 day TAT, 3 day TAT, 7 day TAT).

**This handout was created by Jenny Johnson at [Simplified Wellness Designs](#) as part of a series of continuously updated instructional guides for her personal clients, [CIRS Healing Collective](#) members, and [Equipped to Overcome CIRS](#) online course participants.*