



# Chemical, Food, and Drug Intolerances: Self-Assessment Tools

UT Health – Toxicant Induced Loss of Tolerance (TILT) Program

Over the last decade, peer-reviewed research has connected a wide variety of symptoms with exposures to chemicals, foods, and drugs. For physicians and patients, understanding the connection between symptoms and exposures is critical for diagnosis, prevention, and treatment.

**We have developed three tools to help your doctor understand your symptoms.** These tools are designed to be used together as a package. We encourage you to print and complete them in the order presented below, and then show them to your doctor.

- I) The **BREESI** (Brief Environmental Exposure and Sensitivity Inventory) includes three questions that screen for chemical, food, and drug intolerances.
  - If you answer “YES” to one or more BREESI questions, then proceed to the **QEESI** and the Symptom Star.
  
- II) The **QEESI** (Quick Environmental Exposure and Sensitivity Inventory) is a validated tool with 50 questions to identify specific chemical, food, and drug intolerances. The QEESI comes with a guide to help interpret it, and a Symptom Star.
  - The QEESI has five sections, each with 10 questions (*Chemical Exposures, Other Exposures, Symptoms, Masking Index, and Impact of Sensitivities*). For each section, answer the questions and add the scores.
  - We recommend that you complete the QEESI at least twice to document your symptoms: (1) *before* the exposure event; and (2) *at your worst after* the exposure event (which may be currently). At the top of the first page of each QEESI that you complete, please write the date (if known) or the month/year that your answers represent. Note that you can also count and plot your *Symptoms* scores (or you can score other sections) for additional time periods, such as after partial recovery, if desired.
  - Each time you complete the QEESI, plot your *Symptoms* scale scores on the QEESI Symptom Star on page 1 (instructions provided). You may find it easier to plot these scores on the single enlarged Symptom Star that is included in this packet. If you do this, we recommend that you use *different color inks* to provide a visual map of your symptoms and how they have changed over time. Please indicate the date or month/year that each star represents.
  
- III) The **Exposure History** questionnaire will help you to document specific exposures that may have contributed to your symptoms and/or intolerances. Doctors have limited time to spend with each patient, so it is helpful to keep your history short and to the point.

Our website <https://tiltresearch.org/> has more detailed information for doctors and for people with chemical, food, and drug intolerances.



**Part I:**  
**Brief Environmental Exposure and Sensitivity Inventory**  
**(BREESI)**  
**UT Health – Toxicant Induced Loss of Tolerance (TILT) Program**

*Instructions: Please answer these three questions by checking Yes or No*

1. Do you feel sick when you are exposed to tobacco smoke, certain fragrances, nail polish/remover, engine exhaust, gasoline, air fresheners, pesticides, paint/thinner, fresh tar/asphalt, cleaning supplies, new carpet, or furnishings? By sick, we mean headaches, difficulty thinking, difficulty breathing, weakness, dizziness, upset stomach, etc.  
  
 Yes  No
  
  2. Are you unable to tolerate or do you have adverse or allergic reactions to any drugs or medications (such as antibiotics, anesthetics, pain relievers, x-ray contrast dye, vaccines or birth control pills), or to an implant, prosthesis, contraceptive chemical or device, or other medical/surgical/dental material or procedure?  
  
 Yes  No
  
  3. Are you unable to tolerate or do you have adverse reactions to any foods such as dairy products, wheat, corn, eggs, caffeine, alcoholic beverages, or food additives (such as MSG, food dye)?  
  
 Yes  No
- 

If you answered “YES” to one or more BREESI questions, then proceed to the **QEESI**. Refer to the previous page for the specific instructions.

If you answered “NO” to the three questions, you do not need to continue with the **QEESI** because it is unlikely that you have significant intolerances.



Available online: [www.qeesi.org](http://www.qeesi.org)

This validated questionnaire, **The Quick Environmental Exposure and Sensitivity Inventory**, or **QEESI**®, helps researchers, doctors, and their patients identify individuals with multiple chemical intolerances. The **QEESI**® involves personal health information. Its use should be restricted to patients, their personal physicians, and researchers using the **QEESI**® as part of a protocol approved by an appropriate institutional review board (such as one registered with the U.S. Department of Health and Human Services Office for Human Research Protections).

Please do not re-post the **QEESI**® or its image on any websites without written permission.

### **Doctors**

This instrument is provided free of charge. Please do not charge patients for its use. Physicians are encouraged to use the **QEESI**®, as part of their clinical practice with patients when chemical intolerance or TILT (Toxicant Induced Loss of Tolerance) is suspected.

### **Patients**

Patients are welcome to download and complete the **QEESI**®, and are encouraged to take it and the interpretation sheet to their doctors.

### **Researchers**

Researchers must contact Dr. Claudia Miller for permission to use the **QEESI**® in their studies.

### **Contact**

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Additional information is available at [www.TILTresearch.org](http://www.TILTresearch.org).

Dr. Miller is not available to consult on individual cases or to serve as an expert witness.

Date: \_\_\_\_\_

ID: \_\_\_\_\_

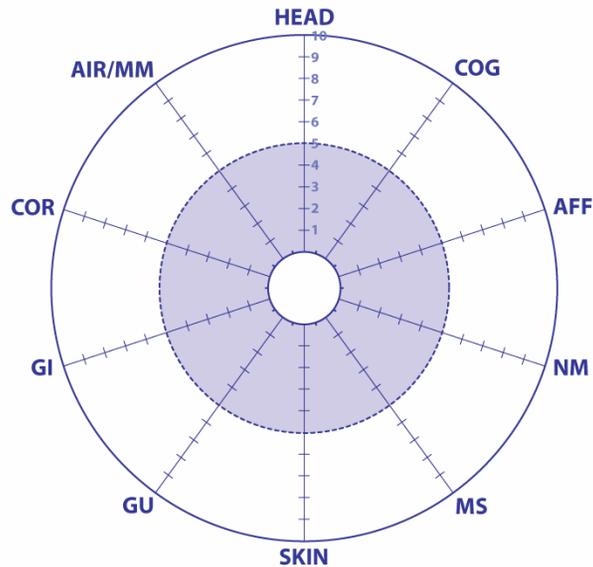
# QEESI<sup>®</sup>

## Quick Environmental Exposure and Sensitivity Inventory V-1

The purpose of this questionnaire is to help identify health problems you may be having and to understand your responses to various exposures. Complete pages 1-5, describing how you are now. Then fill in the "target" diagram below.

If your health problems began suddenly or became much worse after a particular exposure event, such as a pesticide exposure or moving to a new home or office building, then go back through pages 1-3 and indicate how you were before the exposure event. Use different colors or symbols (circles, squares) for "before" and "after."

### Symptom Star



Instructions: Place page 3 so that it lies next to this page. Place a dot on the corresponding spoke for each symptom item. Connect these points. Indicate "before" and "after" scores by using different colors or dotted versus solid lines.

### — Chemical Exposures —

The following items ask about your responses to various odors or chemical exposures. Please indicate whether or not these odors or exposures would make you feel sick, for example, you would get a headache, have difficulty thinking, feel weak, have trouble breathing, get an upset stomach, feel dizzy, or something like that. For any exposure that makes you feel sick, on a 0-10 scale rate the severity of your symptoms with that exposure. For exposures that do not bother you, answer "0." Do not leave any items blank.

For each item, circle one number only:  
[0 = not at all a problem] [5 = moderate symptoms]  
[10 = disabling symptoms]

1.	Diesel or gas engine exhaust	0   1   2   3   4   5   6   7   8   9   10
2.	Tobacco smoke	0   1   2   3   4   5   6   7   8   9   10
3.	Insecticide	0   1   2   3   4   5   6   7   8   9   10
4.	Gasoline, for example at a service station while filling the gas tank	0   1   2   3   4   5   6   7   8   9   10
5.	Paint or paint thinner	0   1   2   3   4   5   6   7   8   9   10
6.	Cleaning products such as disinfectants, bleach, bathroom cleansers or floor cleaners	0   1   2   3   4   5   6   7   8   9   10
7.	Certain perfumes, air fresheners or other fragrances	0   1   2   3   4   5   6   7   8   9   10
8.	Fresh tar or asphalt	0   1   2   3   4   5   6   7   8   9   10
9.	Nailpolish, nailpolish remover, or hairspray	0   1   2   3   4   5   6   7   8   9   10
10.	New furnishings such as new carpeting, a new soft plastic shower curtain or the interior of a new car	0   1   2   3   4   5   6   7   8   9   10

Total Chemical Intolerance Score (0-100):

Name any additional chemical exposures that make you feel ill and score them from 0 to 10: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## — Other Exposures —

The following items ask about your responses to a variety of other exposures. As before, please indicate whether these exposures would make you feel sick. Rate the severity of your symptoms on a 0-10 scale. Do not leave any items blank.

**For each item, circle one number only:**  
**[0 = not at all a problem] [5 = moderate symptoms]**  
**[10 = disabling symptoms]**

1.	Chlorinated tap water	0   1 2 3 4 5 6 7 8 9 10
2.	Particular foods, such as candy, pizza, milk, fatty foods, meats, barbecue, onions, garlic, spicy foods, or food additives such as MSG	0   1 2 3 4 5 6 7 8 9 10
3.	Unusual cravings, or eating any foods as though you were addicted to them; or feeling ill if you miss a meal	0   1 2 3 4 5 6 7 8 9 10
4.	Feeling ill after meals	0   1 2 3 4 5 6 7 8 9 10
5.	Caffeine, such as coffee, tea, Snapple, cola drinks, Big Red, Dr. Pepper or Mountain Dew, or chocolate	0   1 2 3 4 5 6 7 8 9 10
6.	Feeling ill if you drink or eat less than your usual amount of coffee, tea, caffeinated soda or chocolate, or miss it altogether	0   1 2 3 4 5 6 7 8 9 10
7.	Alcoholic beverages in small amounts such as one beer or a glass of wine	0   1 2 3 4 5 6 7 8 9 10
8.	Fabrics, metal jewelry, creams, cosmetics, or other items that touch your skin	0   1 2 3 4 5 6 7 8 9 10
9.	Being unable to tolerate or having adverse or allergic reactions to any drugs or medications (such as antibiotics, anesthetics, pain relievers, x-ray contrast dye, vaccines or birth control pills), or to an implant, prosthesis, contraceptive chemical or device, or other medical, surgical or dental material or procedure	0   1 2 3 4 5 6 7 8 9 10
10.	Problems with any classical allergic reactions (asthma, nasal symptoms, hives, anaphylaxis or eczema) when exposed to allergens such as: tree, grass or weed pollen, dust, mold, animal dander, insect stings or particular foods	0   1 2 3 4 5 6 7 8 9 10

**Total Other Intolerance Score (0-100):**

## — Symptoms —

The following questions ask about symptoms you may have experienced commonly. Rate the severity of your symptoms on a 0-10 scale. Do not leave any items blank.

**For each item, circle one number only:**  
**[0 = not at all a problem] [5 = moderate symptoms]**  
**[10 = disabling symptoms]**

1.	Problems with your muscles or joints, such as pain, aching, cramping, stiffness or weakness?	MS 0   1 2 3 4 5 6 7 8 9 10
2.	Problems with burning or irritation of your eyes, or problems with your airway or breathing, such as feeling short of breath, coughing, or having a lot of mucus, post-nasal drainage, or respiratory infections?	AIR/MM 0   1 2 3 4 5 6 7 8 9 10
3.	Problems with your heart or chest, such as a fast or irregular heart rate, skipped beats, your heart pounding, or chest discomfort?	COR 0   1 2 3 4 5 6 7 8 9 10
4.	Problems with your stomach or digestive tract, such as abdominal pain or cramping, abdominal swelling or bloating, nausea, diarrhea, or constipation?	GI 0   1 2 3 4 5 6 7 8 9 10
5.	Problems with your ability to think, such as difficulty concentrating or remembering things, feeling spacey, or having trouble making decisions?	COG 0   1 2 3 4 5 6 7 8 9 10
6.	Problems with your mood, such as feeling tense or nervous, irritable, depressed, having spells of crying or rage, or loss of motivation to do things that used to interest you?	AFF 0   1 2 3 4 5 6 7 8 9 10
7.	Problems with balance or coordination, with numbness or tingling in your extremities, or with focusing your eyes?	NM 0   1 2 3 4 5 6 7 8 9 10
8.	Problems with your head, such as headaches or a feeling of pressure or fullness in your face or head?	HEAD 0   1 2 3 4 5 6 7 8 9 10
9.	Problems with your skin, such as a rash, hives or dry skin?	SKIN 0   1 2 3 4 5 6 7 8 9 10
10.	Problems with your urinary tract or genitals, such as pelvic pain or frequent or urgent urination? (For women: or discomfort or other problems with your menstrual period?)	GU 0   1 2 3 4 5 6 7 8 9 10

**Total Symptom Score (0-100):**

## — Masking Index —

The following items refer to *ongoing* exposures you may be having. Circle “0” if the answer is “NO,” or if you don’t know whether you have the exposure. Circle “1” if the answer is “YES,” you do have the exposure. Do not leave any items blank.

**Circle “0” or “1” only:**

1.	Do you smoke or dip tobacco once a week or more often?	NO=0	YES=1
2.	Do you drink any alcoholic beverages, beer, or wine once a week or more often?	NO=0	YES=1
3.	Do you consume any caffeinated beverages once a week or more often?	NO=0	YES=1
4.	Do you routinely (once a week or more) use perfume, hairspray, or other scented personal care products?	NO=0	YES=1
5.	Has either your home or your workplace been sprayed for insects or fumigated in the past year?	NO=0	YES=1
6.	In your current job or hobby, are you routinely (once a week or more) exposed to any chemicals, smoke or fumes?	NO=0	YES=1
7.	Other than yourself, does anyone routinely smoke inside your home?	NO=0	YES=1
8.	Is either a gas or propane stove used for cooking in your home?	NO=0	YES=1
9.	Is a scented fabric softener (liquid or dryer sheet) routinely used in laundering your clothes or bedding?	NO=0	YES=1
10.	Do you routinely (once a week or more) take any of the following: steroid pills, such as prednisone; pain medications requiring a prescription; medications for depression, anxiety, or mood disorders; medications for sleep; or recreational or street drugs?	NO=0	YES=1

**Masking Index (0-10):**  
(Total number of YES answers)

## — Impact of Sensitivities —

If you are sensitive to certain chemicals or foods, on a scale of 0-10 rate the degree to which your sensitivities have affected various aspects of your life. If you are not sensitive or if your sensitivities do not affect these aspects of your life, answer “0.” Do not leave any items blank.

**How much have your sensitivities affected:**  
[0 = not at all] [5 = moderately] [10 = severely]

1.	Your diet?	0   1   2   3   4   5   6   7   8   9   10
2.	Your ability to work or go to school?	0   1   2   3   4   5   6   7   8   9   10
3.	How you furnish your home?	0   1   2   3   4   5   6   7   8   9   10
4.	Your choice of clothing?	0   1   2   3   4   5   6   7   8   9   10
5.	Your ability to travel to other cities or drive a car?	0   1   2   3   4   5   6   7   8   9   10
6.	Your choice of personal care products, such as deodorants or makeup?	0   1   2   3   4   5   6   7   8   9   10
7.	Your ability to be around others and enjoy social activities, for example, going to meetings, church, restaurants, etc.?	0   1   2   3   4   5   6   7   8   9   10
8.	Your choice of hobbies or recreation?	0   1   2   3   4   5   6   7   8   9   10
9.	Your relationship with your spouse or family?	0   1   2   3   4   5   6   7   8   9   10
10.	Your ability to clean your home, iron, mow the lawn, or perform other routine chores?	0   1   2   3   4   5   6   7   8   9   10

**Total Life Impact Score (0-100):**

For copies of the QEESI, call 210-562-6550 or email [millercs@uthscsa.edu](mailto:millercs@uthscsa.edu).

**REFERENCES:**

**Background information:**

Chemical Exposures: Low Levels and High Stakes (2nd Ed.) by Nicholas A. Ashford and Claudia S. Miller, John Wiley & Sons, Inc., New York, 1998.

**Sensitivity, specificity, reliability and validity of the QEESI:**

Miller CS, Prihoda TJ: The Environmental Exposure and Sensitivity Inventory (EESI): a standardized approach for measuring chemical intolerances for research and clinical applications. *Toxicology and Industrial Health* 15:370-385, 1999.

Miller CS, Prihoda TJ: A controlled comparison of symptoms and chemical intolerances reported by Gulf War veterans, implant recipients and persons with multiple chemical sensitivity. *Toxicology and Industrial Health* 15:386-397, 1999.

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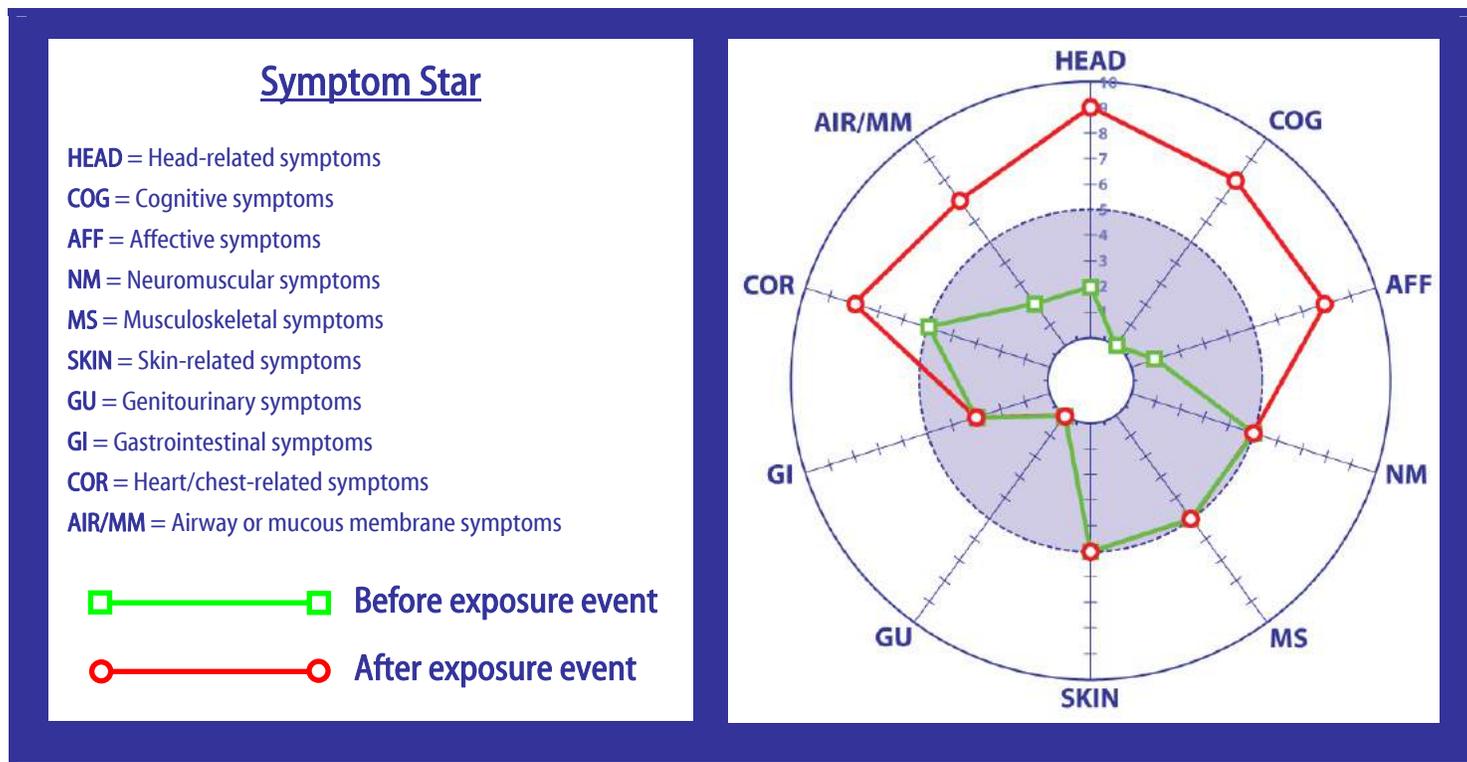
# QEESI<sup>®</sup>

The **Quick Environmental Exposure and Sensitivity Inventory (QEESI<sup>®</sup>)** was developed as a screening questionnaire for multiple chemical intolerances (MCI). The instrument has four scales: Symptom Severity, Chemical Intolerances, Other Intolerances, and Life Impact. Each scale contains 10 items, scored from 0 = “not a problem” to 10 = “severe or disabling problem.” A 10-item Masking Index gauges ongoing exposures that may affect individuals’ awareness of their intolerances as well as the intensity of their responses to environmental exposures. Potential uses for the QEESI<sup>®</sup> include:

1. Research—to characterize and compare study populations, and to select subjects and controls.
2. Clinical evaluations—to obtain a profile of patients’ self-reported symptoms and intolerances. The QEESI<sup>®</sup> can be administered at intervals to follow symptoms over time or to document responses to treatment or exposure avoidance.
3. Workplace or community investigations—to identify and assist those who may be more chemically susceptible or who report new intolerances. Affected individuals should have the option of discussing results with investigators or their personal physicians.

Individuals whose symptoms began or intensified following a particular exposure event can fill out the QEESI<sup>®</sup> using two different ink colors, one showing how they were before the event, and the second how they have been since the event. On the cover of the QEESI<sup>®</sup> is a “Symptom Star” (Figure 1) which provides a graphical representation of patients’ responses on the Symptom Severity Scale.

**Figure 1. QEESI Symptom Star illustrating symptom severity in an individual before and after an exposure event (e.g., pesticide application, indoor air contaminants, chemical spill)**



For additional copies of the QEESI<sup>®</sup>, contact Claudia S. Miller, M.D., M.S., University of Texas Health Science Center at San Antonio, Department of Family and Community Medicine, 7703 Floyd Curl Drive (222 MCS), San Antonio, Texas 78229-3900. Phone: (210) 562-6550; fax: (210) 562-6552; email: millercs@uthscsa.edu. For further information see Chemical Exposures: Low Levels and High Stakes by Nicholas A. Ashford and Claudia S. Miller, John Wiley & Sons, 1998 (1-800-225-5945) <http://www.wiley.com>.

## — Interpreting the QEESI<sup>®</sup> —

In a study of 421 individuals, including four exposure groups and a control group, the QEESI<sup>®</sup> provided sensitivity of 92% and specificity of 95% in differentiating between persons with multiple chemical intolerances (MCI) and the general population (Miller and Prihoda 1999a,b).

Cronbach's alpha reliability coefficients for the QEESI<sup>®</sup>'s four scales—Symptom Severity, Chemical Intolerances, Other Intolerances and Life Impact—were high (0.76-0.97) for each of the groups, as well as over all subjects, indicating that the questions on the QEESI<sup>®</sup> form scales showing good internal consistency. Pearson correlations for each of the four scales with validity items of interest, i.e., life quality, health status, energy level, body pain, ability to work and employment status, were all significant and in the expected direction, thus supporting good construct validity.

Information on the development of this instrument, its interpretation, and results for several populations have been published (Miller and Prihoda 1999a,b). Proposed ranges for the QEESI<sup>®</sup>'s scales and guidelines for their interpretation appear in Tables 1 and 2 below:

**Table 1. Criteria for low, medium, and high scale scores**

Scale/Index	Score		
	Low	Medium	High
Symptom Severity	0-19	20-39	40-100
Chemical Intolerance	0-19	20-39	40-100
Other Intolerance	0-11	12-24	25-100
Life Impact	0-11	12-23	24-100
Masking Index	0-3	4-5	6-10

**Table 2. Distribution of subjects by group using “high” cutoff points for symptom severity (≥ 40) and chemical intolerances (≥ 40), with masking low or not low (< 4 or ≥ 4)**

Degree to Which MCI is Suggested <sup>2</sup>	Risk Criteria <sup>1</sup>			Percentage of Each Group Meeting Risk Criteria				
	Symptom Severity Score	Chemical Intolerance Score	Masking Score	Controls n=76	MCS – No Event n=90	MCS – Event n=96	Implant n=87	Gulf War Veterans n=72
Very suggestive	≥ 40	≥ 40	≥ 4	7	16	23	39	45
Very suggestive	≥ 40	≥ 40	< 4	0	65	66	36	4
Somewhat suggestive	≥ 40	< 40	≥ 4	3	1	2	16	26
Not suggestive	≥ 40	< 40	< 4	0	0	2	3	6
Problematic	< 40	≥ 40	≥ 4	7	3	1	1	0
Problematic	< 40	≥ 40	< 4	3	13	4	2	0
Not suggestive	< 40	< 40	≥ 4	68	1	0	2	18
Not Suggestive	< 40	< 40	< 4	12	1	2	1	1
				100	100	100	100	100

<sup>1</sup> Subjects must meet all three criteria, i.e., Symptom Severity, Chemical Intolerance, and Masking scores, as indicated in each row of this table.

<sup>2</sup> “Very suggestive” = high symptom and chemical intolerance scores.

“Somewhat suggestive” = high symptom score but possibly masked chemical intolerance.

“Not suggestive” = either (1) high symptom score but low chemical intolerance score with low masking, or (2) low symptom and chemical intolerance scores.

“Problematic” = low symptom score but high chemical intolerance score. Persons in this category with low masking (<4) may be sensitive individuals who have been avoiding chemical exposures for an extended period (months or years).

### References:

- Miller CS, Prihoda TJ: The Environmental Exposure and Sensitivity Inventory (EESI): a standardized approach for measuring chemical intolerances for research and clinical applications. *Toxicology and Industrial Health* 15:370-385, 1999a.
- Miller CS, Prihoda TJ: A controlled comparison of symptoms and chemical intolerances reported by Gulf War veterans, implant recipients and persons with multiple chemical sensitivity. *Toxicology and Industrial Health* 15:386-397, 1999b.

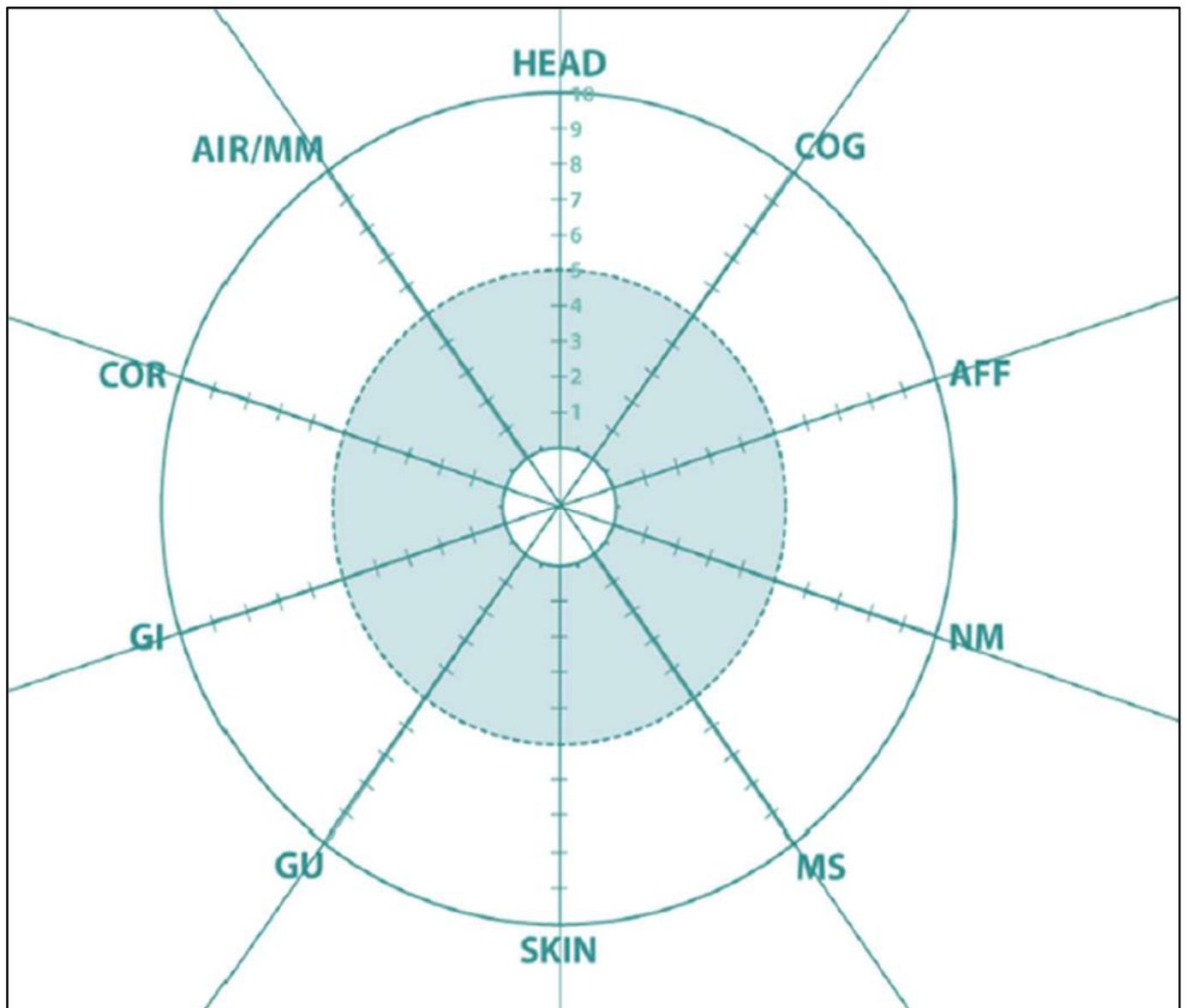


## Part II – continued QEESI Symptom Star

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- You may find it easier to plot both sets of your *Symptom* scores on this enlarged grid (follow instructions on page 1 of QEESI). If you choose this option, use *different color inks* for each set of scores to represent how your symptoms have changed over time. Please indicate the approximate date that each star represents.

AFF = affective symptoms; AIR/MM = airway or mucous membrane symptoms; COG = cognitive symptoms; COR = heart/chest-related symptoms; GI = gastrointestinal symptoms; GU = genitourinary symptoms; HEAD = head-related symptoms; MS = musculoskeletal symptoms; NM = neuromuscular symptoms; and SKIN = skin-related symptoms.





**Part III.**  
**Exposure History**  
**UT Health – Toxicant Induced Loss of Tolerance (TILT) Program**

*If you developed symptoms after a specific exposure event, complete the following questions:*

1. Did you become ill after a particular exposure event?

Yes  No (If you answered “No”, the next questions will not be relevant.)

2. If yes, what was the exposure(s)?

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3. When did the exposure occur?

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4. What symptoms did you experience at that time?

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5. Were any other people or animals exposed?

i. If so, who?

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ii. What symptoms, if any, did they experience?

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6. Describe how your symptoms have changed since the exposure (if at all).

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7. Are there other details you think are important? (Complete on additional page, if necessary.)

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This concludes the self-assessment for chemical intolerances.