

# Environmental Toxins Basic Recommendations - Part One

Hey, everybody. In this presentation, we're going to discuss basic recommendations for reducing exposure to environmental toxins. Now that you have an idea of the havoc that toxins can wreak on the body, we're going to talk more about how to avoid them in your everyday life. In this section, we'll talk about the common places we're exposed to many toxins, which include food, home cleaning products, the bedroom, personal care products, indoor air, and water, and at the end, we'll cover ways to improve detoxification of these harmful chemicals.

Let's start with food. Since you'll already be talking to your patients about the food they eat, food chemicals are a good place to start with most patients. Eating organic is a great way to avoid food chemicals, and also shopping at farmers markets. Oftentimes at farmers markets, even if foods aren't labeled as organic, they may be grown without pesticides, so speak to the farmers market staff and the farmers themselves. Getting organic certification can be really expensive, and often local farmers who sell at farmers markets are what we might call beyond organic. They follow even better practices than large organic farms, but they may not be certified as organic.

The screenshot shows the EWG website's 'Dirty Dozen' page. The navigation bar includes 'HOME', 'READ THE REPORT', 'DIRTY DOZEN', 'CLEAN FIFTEEN', 'FAQ', 'ABOUT', 'PRESS', and 'GET THE BAG TAG'. The main content area is divided into two columns. The left column features promotional banners for 'More from EWG', 'NEW FOCUS ON STRAWBERRIES', 'TAKE ACTION: GROW ORGANICS!', 'FOOD SCORES', and 'GET THE GUIDE'. The right column is titled 'DIRTY DOZEN' and lists 'EWG's 2016 Shopper's Guide to Pesticides in Produce™'. The list includes: 1. Strawberries, 2. Apples, and 3. Nectarines. A 'DONATE NOW' button is located at the bottom right of the page. A social media sidebar on the right shows a Facebook icon with 54.7K followers and a Twitter icon.

For patients who have budgetary concerns about buying organic all the time, you can refer them to the **Environmental Working Group's Clean Fifteen and Dirty Dozen** lists. These lists are published each year, and they represent the cleanest and dirtiest in terms of pesticide residue produce in the United States.

# Dirty 12

Strawberries

Apples

Nectarines

Peaches

Celery

Grapes

Cherries

Spinach

Tomatoes

Bell Peppers

Cherry Tomatoes

Cucumbers

Let's start with the Dirty Dozen. These are fruits and vegetables with the highest amounts of pesticide residue, and they're the ones you should advise your patients to buy organic even if budget is a consideration. These are strawberries, apples, nectarines, peaches, celery, grapes, cherries, spinach, tomatoes, bell peppers, cherry tomatoes, and cucumbers. In general, as you can see, they tend to be fruits and vegetables, fruits with more thin skin, though not always. They are fairly commonly consumed fruits and vegetables, so it's important to make your patients aware of these.

Here are a few key findings from this year's report based on the time of the recording. More than 98 percent of strawberry samples, peaches, nectarines, and apples tested positive for at least one pesticide residue. These are conventional varieties, of course. Interestingly, the average potato had more pesticides by weight than any other produce. They didn't make the list because the list isn't by weight, but because of this, I'd also recommend that patients buy organic potatoes if they eat potatoes. A single grape and a sweet bell pepper sample contained 15 pesticides. Single samples of strawberries showed 17 different pesticides.

The Environmental Working Group decided on the Dirty Dozen Plus this year, which includes all of the above plus kale and hot peppers, as those two items are often contaminated with toxic insecticides.



The Clean Fifteen, on the other hand, are the fruits and vegetables that don't tend to be as contaminated by pesticides, and if your patient is on a limited budget, and they can't buy everything organic, these are the ones that they should worry the least about. They include avocados, corn, pineapples, cabbage, sweet peas, onions, asparagus, mangoes, papayas, kiwi, eggplant, honeydew, grapefruit, cantaloupe, and cauliflower.

Some key findings from this year's report include that avocados were the cleanest. Only 1 percent of avocado samples showed any detectable pesticides. About 89 percent of pineapples, 81 percent of papayas, 78 percent of mangoes, 73 percent of kiwi, and 62 percent of cantaloupe had no residue. No single fruit sample from the Clean Fifteen tested positive for more than four types of pesticides, and multiple pesticide residues are extremely rare on Clean Fifteen vegetables. Only 5.5 percent of samples had two or more pesticides.

<b>Full list of fruits and vegetables with pesticide residue data</b>		
Strawberries	Kale/collard greens	Mushrooms
Apples	Blueberries (imported)	Cauliflower
Nectarines	Green beans	Cantaloupe
Peaches	Plums	Grapefruit
Celery	Pears	Honeydew melon
Grapes	Raspberries	Eggplant
Cherries	Carrots	Kiwi
Spinach	Winter squash	Papayas
Tomatoes	Tangerines	Mangoes
Sweet bell peppers	Summer squash	Asparagus
Cherry tomatoes	Snap peas (domestic)	Onions
Cucumbers	Green onions	Sweet peas (frozen)
Snap peas (imported)	Bananas	Cabbage
Blueberries (domestic)	Oranges	Pineapples
Potatoes	Watermelon	Sweet corn
Hot peppers	Broccoli	Avocados
Lettuce	Sweet potatoes	

Environmental Working Group also releases a full list of produce tested each year, so if you or your patient is interested in swapping organic items over the 15 that are definitely recommended, they can use the full list to see the next foods on the hierarchy, and we'll provide a link to that list in the resources section.

Meat and dairy products, of course, can also be a source of toxins. While the degree to which meat and dairy can accumulate hormones has been overblown in the media, the hormones given to animals may affect other things that in turn have a negative impact on our health. For example,

rBGH given to cows, which then produce dairy products that we consume or may consume, doesn't show up in the milk. However, it may increase the production of insulin-like growth factor 1 and increase IGF-1. It may be associated with higher rates of colon and breast cancer.

Pesticides and antibiotic residue can also end up on our meat. As we've discussed, antibiotics can have a devastating effect on the gut biome even at low doses, and it's not something that we want to expose ourselves to on an ongoing basis through food. Antibiotics in food production have also led to antibiotic resistance and superbugs, and I do think that antibiotic residue is perhaps the single most important reason to eat organic and pasture-raised animal products. Pesticide residues can also be found in meat due to the animals being fed pesticide-laced feeds in the confinement feeding operations, and this is particularly problematic in fatty meats where the pesticides tend to concentrate in the adipose tissue.

Recommend that patients choose organic and grass-fed or pasture-raised meat and dairy products as often as possible. For those on a budget, recommend that they choose organic and grass-fed or pastured products for the fattier cuts of meat and dairy products because, as I mentioned, the toxins are stored in the fat tissue, so these fattier cuts and the full-fat dairy products will probably have a higher level of toxin exposure than lean cuts.

Another area worth thinking about when it comes to food is food storage. You and your patients will likely have heard a lot about BPA and its negative health impacts. BPA, or bisphenol A, is found in plastics as well as aluminum cans used for canned foods, and it's a potent endocrine disruptor. As the negative impact of BPA came to light, manufacturers began making BPA-free plastics, but unfortunately, many of the chemicals used instead of BPA, such as BPS, actually have even greater estrogenic activity than BPA itself. So, in other words, they're worse than BPA. Unfortunately, very few people are aware of this, and for whatever reason, it didn't get reported on in the media as much as the BPA issue did.

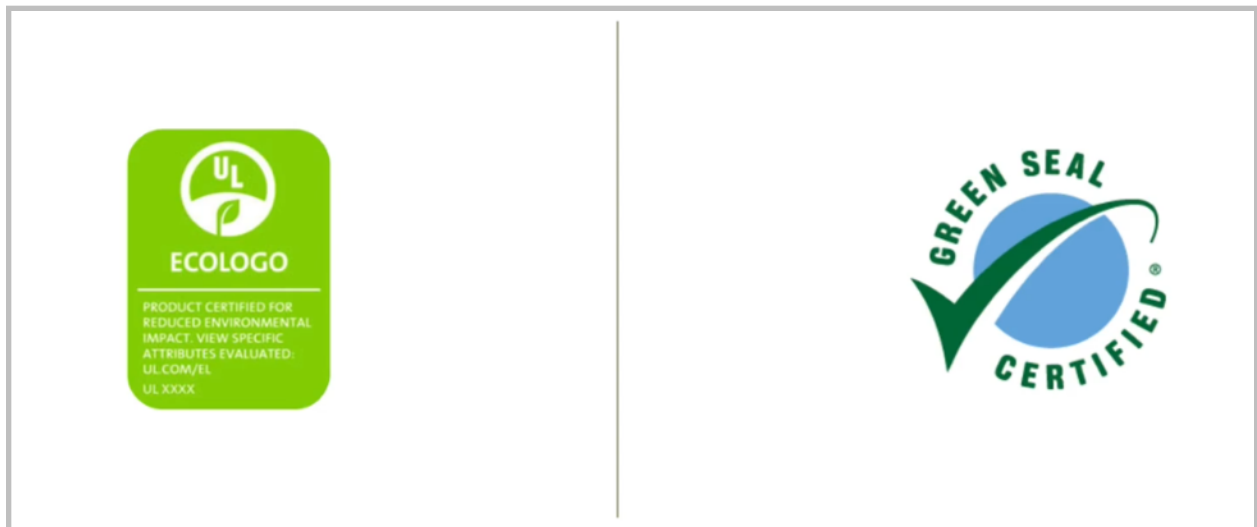
To avoid BPA and its estrogenic counterparts or alternatives, here are a few of the suggestions you can give to your patients. First, they can use glass containers such as canning jars or stainless steel containers for food storage. Instead of a traditional plastic water bottle, use a stainless steel or a glass one instead. Don't drink bottled water from plastic bottles, especially if it has been exposed to sunlight or heat. Recommend that parents especially use glass baby bottles rather than plastic baby bottles. There are many choices for all of these kinds of products available now, so it's much easier to do this with a little bit of attention.

Next, let's talk about home cleaning products. The products we use to clean our homes can contain hundreds of chemicals, and as we've previously discussed, most of these are innocent until proven guilty, meaning they've never been tested for safety. It's best to avoid as many of these chemicals as possible and recommend the most natural or harmless products that our patients can use.

# Nontoxic... **does it really mean anything?**

Don't be fooled by the nontoxic label on cleaners and other household items. This is an unregulated term and does not provide any evidence of lack of harm. How do you find the less-toxic household items?

Again, we can rely on the **Environmental Working Group**, which is a wonderful resource when it comes to healthier cleaning products. They have a database of over 2,500 products that are on the marketplace and provide ratings on their toxicity. Patients can also use the EWG's Healthy Living app for on-the-go use. It's a great mobile app. You can download for iOS and Android. Then, the EWG also has a guide on safer cleaning supplies that can be really useful to your patients, so we'll provide links for the app and the guide in the resources section.



Some natural products are wonderful household cleaners, and these include things such as baking soda, white vinegar, and also lemon juice. If patients aren't ready to use natural products such as baking soda and vinegar or aren't too keen on scanning items to find healthy choices in the supermarket, you can encourage them to look for either the Green Seal or EcoLogo markings on cleaning products. The EWG recommends looking for these certifications because their standards are the best out there today. This is unlike the Design for the Environment label, which still allows

many toxic chemicals, so don't pay any attention to that logo. It doesn't mean that it's a safe product, the Design for the Environment label.

The EWG also has a handout with tips for safer cleaning protocols. These include things such as diluting cleaning supplies, opening windows when using cleaners, using gloves, keeping children out of the area, avoiding antibacterial products, and skipping the biggest hazards such as oven and drain cleaners for natural alternatives such as baking soda and a mechanical drain snake. We'll provide a link to this handout as well.