Institute for Environmental Solutions

IES Virtual Lakewood Sustainable Neighborhoods - Eiber Reduce Your Chemical Footprint Workshop 2020 Report

Appendices

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Appendix A

Workshop Presentation Slides

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Reduce Your Chemical Footprint

IES Chemical Footprint Project

Workshop Agenda

- Chemical footprint presentation 20 min
- Hands-on activities 30 min
  - DIY product making
  - Smartphone app demonstration
  - Product label reading
- Discussion and wrap-up 20 min
  - Q&A
  - Make an action plan
  - Make a commitment

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About IES

IES delivers scientific solutions to improve our health and environment

What Is a Chemical Footprint?

Your total contribution to contaminant pollution in the environment

Everyday household and personal care products contain harmful chemicals

A smaller chemical footprint is better for your health and better for the environment
Contaminants of Emerging Concern (CECs)

- Harmful chemicals found in common household and personal care products
- Bad for you and bad for the environment
- Persistent in the water supply
- Not regulated by the government
- Not treated in wastewater and drinking water treatment plants

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Contaminants of Emerging Concern (CECs)

Can cause human health problems such as endocrine disruption, increased cancer risks, and negative developmental outcomes

Examples of common CECs:

- Synthetic fragrances
- DEET
- Neonicotinoids
- Oxybenzone

Synthetic Fragrances

Found in perfume, cosmetics, toiletries, air fresheners, scented candles, laundry products, skin lotions, and soaps

Harms include asthma, allergic reactions, and endocrine disruption
Diethyltoluamide (DEET)

Found in insect repellents

Harms include hives, itching, redness, swelling, and potential nervous system effects including seizures

Neonicotinoids (neonics)

Found in pesticides and flea and tick repellent for pets

Examples include acetamiprid, clothianidin, imidacloprid, nitenpyram, nithiazine, thiacloprid, and thiamethoxam

Harms include honeybee colony collapse disorder and damage to bird populations
Oxybenzone

Found in sunscreens, beauty creams, skin lotions, lipsticks, bubble baths, shampoos, hair dyes, hair sprays, pharmaceuticals, agricultural chemicals, insecticides, and adhesives

Harms include endocrine disruption and coral bleaching

Bisphenol A (BPA)

Found in aluminum cans, canned foods, plastic food containers, water bottles, plastic beverage containers, plastic food wraps, thermal wraps, dental fillings, and receipt paper

Harms include endocrine disruption in humans and wildlife
Questions

How to Limit Exposure

Engineering solutions

DIY products

Alternative ready-made products

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Synthetic Fragrances

Use less

Use natural scents

Buy scent-free products

DEET

Wear clothing that covers your skin

Avoid outdoor activities when bug activity is high

Minimize standing water around your home

Use DEET free insect repellents made with ingredients like oil of lemon eucalyptus

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Neonicotinoids

Use plant-based gardening sprays or other alternative pest-control strategies

Reduce and switch pet’s flea and tick repellent if appropriate

Buy organic produce

Oxybenzone

Wear clothing that provides adequate skin cover

Avoid extended outdoor activities between 10 am and 4 pm

Stay in the shade

Use oxybenzone-free sunscreen that contains zinc oxide or titanium dioxide

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BPA

Avoid plastic packaging

Choose BPA-free plastics. Avoid plastics with recycle codes 3, 6, or 7

Buy fresh food

Decline paper receipts

Questions

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Hands-on Activities

DIY Product Making

App Demonstrations

Product Label Reading

Thank You!

Please contact us at solutions@i4es.org

Visit our website at www.i4es.org for more information

Follow us on social media. Learn more about our work and share what you’re doing to reduce your chemical footprint!

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Appendix B

Do-it-Yourself Product Recipe Handout

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**Hand Sanitizer**

Ingredients and Supplies:
- 2 parts rubbing alcohol or ethanol
- 1 part aloe vera gel
- Few drops essential oil (optional)

Directions:
- Combine all ingredients in a bowl and mix with a whisk
- Pour into a BPA-free bottle
- Use a few drops to clean hands

**Wood Cleaner**

Ingredients and Supplies:
- ¼ cup white vinegar
- ¼ cup water
- ½ teaspoon liquid soap
- Few drops of olive oil
- Measuring spoon (½ teaspoon)
- Liquid measuring cup (½ cup)
- Spray bottle or jar

Directions:
- Combine all ingredients into spray bottle
- Shake vigorously
- Spray onto soft cloth and polish
- Shake regularly during use

**Glass Cleaner**

Ingredients and Supplies:
- 1 spray bottle
- Liquid measuring cup
- 1/8 cup white vinegar
- 1 cup of water

Directions:
- Fill spray bottle with 1/8 cup of white vinegar
- Add 1 cup of water

**Toilet Bowl Cleaner**

Ingredients and Supplies:
- Toilet brush
- Measuring cups
- 1 cup baking soda
- ½ cup salt
- Eucalyptus or citrus oil (5-10 drops)
- 1 ½ cup white vinegar

Directions:
- Pour baking soda, salt and essential oil into the water of the toilet bowl
- Stir with toilet brush
- Very slowly pour the vinegar into the toilet bowl. If it foams up too much, stop pouring briefly until it subsides
- Let sit for 10-20 minutes
- Scrub the whole toilet bowl with a brush, then flush
- Note: for mineral build up, use a pumice stone to remove ring

**All-Purpose Cleaner**

Ingredients and Supplies:
- 12 oz spray bottle
- 6 oz white vinegar
- 6 oz warm water
- Lemon or orange essential oil (optional)

Directions:
- Fill spray bottle with water and vinegar
- Add 10 drops of essential oil for fragrance (optional)
- Shake bottle gently

**Bug Repellent**

Ingredients and Supplies:
- 4 oz spray bottle
- ¼ cup witch hazel
- ¼ cup distilled water
- 10 drops oil of lemon eucalyptus
- 5 drops peppermint oil

Directions:
- Mix witch hazel and distilled water in large bowl
- Add essential oils and stir
- Pour into spray bottle

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FACE WASH
Ingredients and Supplies:
- 8 oz pump bottle
- 6 oz castile soap
- 2 oz water
- Essential oil (30-40 drops)
*If using peppermint oil, use maximum of 25 drops
Directions:
- Pour all ingredients into pump bottle and shake gently

OATMEAL SCRUB WITH ALMOND AND CHAMOMILE
Ingredients and Supplies:
- Sealed container
- 2 tbsp almond flour
- 4 tbsp oatmeal
- 1 tsp cornstarch
- 1 tbsp chamomile flowers (contents of a chamomile tea bag)
- 2 tsp sweet almond oil
Directions:
- Add all ingredients to a food processor; blend until mixture is a soft granular consistency.
- To use, put ½ tsp of mixture on hand, add a few drops of water and rub onto face
- Store in a sealed container

APPLE CIDER VINEGAR HAIR CONDITIONER
Ingredients and Supplies:
- 1 pump bottle
- Apple cider vinegar
- Warm water
- Essential oil (optional, for scent)
Directions:
- Combine equal parts of vinegar and water
- Add a couple drops of essential oil, if desired
- Use on hair after regular shampooing and rinse with water

SUGAR BODY SCRUB
Ingredients and Supplies:
- Small air tight jar (can use mason jelly jars)
- Measuring cups
- 1/3 cup extra virgin olive oil
- 1/2 cup granulated sugar (white or brown)
- Essential oils (optional)
Directions:
- Mix all ingredients into container
- Mix with finger prior to use
- Use on your face, lips, body, feet, and hands to exfoliate and moisturize your skin

DEODORANT
Ingredients and Supplies:
- Sealed container
- 1/4 cup coconut oil
- 1/4 cup baking soda
- 1/4 cup cornstarch
- 40-60 drops essential oil (e.g., lemon, sage, or other flavored smell)
Directions:
- Add all ingredients to a bowl and mix
- Apply 1/2 tsp to each underarm, allow to dry for a few minutes
- Store in a sealed container

EYE MAKEUP REMOVER
Ingredients and supplies:
- Small jar
- Carrier oil or coconut oil
- Water
- Essential oil
Directions:
- Combine equal parts of oil and water into small jar
- Shake before every use
- Put an appropriate amount on a cotton ball and use to remove eye make up
- Rinse with water

NON-TOXIC CLEANING TIPS

- Baking Soda: Baking soda can be used as a mild abrasive cleaner. It is great for cleaning, scouring, deodorizing, and softening water. It is a good alternative to chlorine or silica-based scouring products.

- White Vinegar: Vinegar can be used as a multi-purpose cleaner, and it is good on hard surfaces and glass. It cuts grease, removes mildew, odors, some stains and wax build-up. It is a great alternative to corrosive products such as ammonia-based cleaners. Vinegar is also an excellent disinfectant.

- Lemon Juice: Due to their acidic nature, lemons provide antibacterial, antiseptic, and bleaching properties for cleaning. These properties are enhanced when you add lemon juice to vinegar, which also helps neutralize the vinegar smell. Lemon juice can damage flat surfaces if left for too long.

- Soap: Use unscented soap in liquid form, flakes, powders, or bars that are biodegradable. Unscented soaps clean everything just as well as the scented ones. Avoid soap with fragrance.

- Hydrogen Peroxide: Hydrogen peroxide can be used as a general purpose cleaner.

- Store your products in safe containers that are made of glass, ceramic, BPA-free plastic or stainless steel. These containers can be easily found at The Container Store or on Amazon.

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Appendix C

Pre-Workshop Survey Questions
Sustainable Eiber Virtual Workshop: Pre-Workshop Survey Questions on Google Forms

1. How confident are you that the personal care, beauty, household, and cleaning products you buy are safe for you and the environment?
   - Not at all Confident
   - Only Slightly Confident
   - Somewhat Confident
   - Moderately Confident
   - Very Confident

2. Are you familiar with any harmful chemicals that may exist in your personal care, beauty, household, and cleaning products? If so, please list them.
   Long answer text

3. Have you used any personal care, beauty, household, or cleaning products that could be considered eco-friendly or contaminant-free? If so, what are they? If not, write 'none'.
   Long answer text
What, if anything, prevents you from purchasing household cleaning and personal care products that could be considered eco-friendly or contaminant-free? (Choose all that apply)

- I don't know which products are free from harmful chemicals.
- No product is free from harmful chemicals.
- I don't have enough time to read product labels.
- Alternative products free from harmful chemicals are too expensive.
- Alternative products free from harmful chemicals do not work well.
- I don't think it makes any difference whether products are considered eco-friendly or contaminant-free.
- Other...

Have you made any personal care, beauty, household, and cleaning products at home? If so, please describe.

Long answer text

How confident are you in your ability to make your own household and personal care products at home that are free of harmful chemicals?

- Not at all Confident
- Only Slightly Confident
- Somewhat Confident
- Moderately Confident
- Very Confident

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How often do you check a product’s list of ingredients before purchasing? *

- Never
- Rarely
- Sometimes
- Often
- Always

How confident do you feel in your ability to read and understand product labels to avoid harmful ingredients?

- Not at all Confident
- Only Slightly Confident
- Somewhat Confident
- Moderately Confident
- Very Confident
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Workshop 2020 Report

<table>
<thead>
<tr>
<th>How confident are you in your ability to reduce pollution in your community’s water supply? *</th>
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<tr>
<td>O Not at all Confident</td>
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<th>List any actions you can take to reduce your chemical footprint. *</th>
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<td>Long answer text</td>
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Appendix D

Post-Workshop Survey Questions
Sustainable Eiber Virtual Workshop: Post-Workshop Survey Questions on Google Forms

Do you understand the concept of chemical footprints? *

- Yes
- No
- Somewhat

Please name at least one thing you learned during this workshop. *

Long answer text

Please list any actions you can take to reduce your chemical footprint. *

Long answer text

How confident are you that the personal care, beauty, household, and cleaning products you buy are safe for you and the environment? *

- Not at all Confident
- Only Slightly Confident
- Somewhat Confident
- Moderately Confident
- Very Confident

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What, if anything, prevents you from purchasing household cleaning and personal care products that could be considered eco-friendly or contaminant-free? (Choose all that apply)

- [ ] I don’t know which products are free from harmful chemicals.
- [ ] No product is free from harmful chemicals.
- [ ] I don’t have enough time to read product labels.
- [ ] Alternative products free from harmful chemicals are too expensive.
- [ ] Alternative products free from harmful chemicals do not work well.
- [ ] I don’t think it makes any difference whether products are considered eco-friendly or contaminant-free.
- [ ] Other...

How confident are you in your ability to make your own household and personal care products at home that are free of harmful chemicals?

- [ ] Not at all Confident
- [ ] Only Slightly Confident
- [ ] Somewhat Confident
- [ ] Moderately Confident
- [ ] Very Confident

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How confident do you feel in your ability to read and understand product labels to avoid harmful ingredients?

- Not at all Confident
- Only Slightly Confident
- Somewhat Confident
- Moderately Confident
- Very Confident

In the future, how likely are you to check product labels for ingredients of harmful chemicals?

- Very Unlikely
- Somewhat Unlikely
- Neutral
- Somewhat Likely
- Very Likely

How confident are you in your ability to reduce your chemical footprint?

- Not at all Confident
- Only Slightly Confident
- Somewhat Confident
- Moderately Confident
- Very Confident

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Workshop 2020 Report

Based on what you learned, how likely are you to change your purchasing decisions to avoid harmful chemicals in certain products?

- Very Unlikely
- Somewhat Unlikely
- Neutral
- Somewhat Likely
- Very Likely

Based on what you learned, how likely are you to make your own alternatives to products at home?

- Very Unlikely
- Somewhat Unlikely
- Neutral
- Somewhat Likely
- Very Likely

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How likely are you to pass on the information you have learned to your friends, family, or community?

- Very Unlikely
- Somewhat Unlikely
- Neutral
- Somewhat Likely
- Very Likely

Using what you’ve learned, please write a brief Action Plan for how you’d like to reduce your chemical footprint. Identify what tasks/steps are needed, what milestones you want to reach, and how you plan to measure them.

Long answer text
We would like to follow-up with you to see what you have done to reduce your chemical footprint. If you are interested in receiving additional information from IES, please provide your email address.

Short answer text

How satisfied were you with this workshop? *

1  2  3  4  5

Not Satisfied At All  ○  ○  ○  ○  ○  Very Satisfied

What parts of the information presented in the workshop, if any, were confusing? *

Long answer text

How could we improve this workshop? *

Long answer text

Would you recommend this workshop to friends, family or coworkers? *

○ Yes

○ No

○ Maybe

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Pre- and Post-Workshop Survey Results
Sustainable Eiber Virtual Workshop: Survey Results

Pre-Workshop Survey Responses

A. Participants were asked to rate their confidence in their personal care, beauty, household, and cleaning products they buy being safe for themselves and the environment.

1. The percentage of respondents that felt not at all confident in the safety of their products: 1 out of 6
2. The percentage of respondents that felt only slightly confident in the safety of their products: 1 out of 6
3. The percentage of respondents that felt somewhat confident in the safety of their products: 1 out of 6

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4. The percentage of respondents that felt moderately confident in the safety of their products: **1 out of 6**

5. The percentage of respondents that felt very confident in the safety of their products: **1 out of 6**

B. When asked what prevents participants from purchasing household cleaning and personal care products that could be considered eco-friendly or contaminant-free, the responses varied.

1. The percentage of respondents that don’t know which products are free from harmful chemicals: **3 out of 6**

2. The percentage of respondents that stated no product is free from harmful chemicals: **1 out of 6**

3. The percentage of respondents that stated alternative products free from harmful chemicals are too expensive: **1 out of 6**

4. The percentage of respondents that consider alternative products free from harmful chemicals do not work well: **1 out of 6**

C. Participants were asked to select how confident they felt in their ability to make their own household and personal care products at home that are free of harmful chemicals.

1. The respondents that felt not at all confident in their ability to make their own contaminant-free household and personal care products at home: **1 out of 6**

2. The respondents that felt only slightly confident in their ability to make their own contaminant-free household and personal care products at home: **1 out of 6**

3. The respondents that felt somewhat confident in their ability to make their own contaminant-free household and personal care products at home: **2 out of 6**

4. The respondents that felt moderately confident in their ability to make their own contaminant-free household and personal care products at home: **1 out of 6**

5. The respondents that felt very confident in their ability to make their own contaminant-free household and personal care products at home: **1 out of 6**

D. When asked how often participants check a product’s list of ingredients before purchasing.

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1. The percentage of respondents that said they sometimes check the list of ingredients: **2 out of 6**
2. The percentage of respondents that said they often check the list of ingredients: **3 out of 6**
3. The percentage of respondents that said they always check the list of ingredients: **1 out of 6**

E. Participants were asked to rate how confident they felt in their ability to read and understand product labels to avoid harmful ingredients.
   1. The percentage of respondents that reported feeling only slightly confident in their ability to read and understand product labels: **2 out of 6**
   2. The percentage of respondents that reported feeling somewhat confident in their ability to read and understand product labels: **2 out of 6**
   3. The percentage of respondents that reported feeling moderately confident in their ability to read and understand product labels: **1 out of 6**
   4. The percentage of respondents that reported feeling very confident in their ability to read and understand product labels: **1 out of 6**

F. When asked how confident are participants in their ability to reduce pollution in their community’s water supply.
   1. The percentage of respondents that reported feeling only slightly confident in their ability to reduce their pollution: **2 out of 6**
   2. The percentage of respondents that reported feeling somewhat confident in their ability to reduce their pollution: **2 out of 6**
   3. The percentage of respondents that reported feeling moderately confident in their ability to reduce their pollution: **1 out of 6**
   4. The percentage of respondents that reported feeling very confident in their ability to reduce their pollution: **1 out of 6**

Post-Workshop Survey Responses

A. The percentage of respondents that understand what a chemical footprint is: **3 out of 3**

B. When asked whether household, beauty, cleaning and personal care products that participants purchase are safe for humans and the environment:
   1. The respondents that felt somewhat confident in their product purchases health impact: **1 out of 3**
2. The respondents that felt moderately confident in their product purchases health impact: 1 out of 3
3. The respondents that felt very confident in their product purchases health impact: 1 out of 3

C. When asked what, if anything, prevents participants from purchasing household cleaning and personal care products that could be considered eco-friendly or contaminant-free.
   1. The percentage of participants that chose not knowing which products are free from contaminants: 1 out of 3
   2. The percentage of respondents that chose no product is free from harmful contaminants: 1 out of 3
   3. The percentage of participants that chose they make own products or purchase eco-friendly products: 1 out of 3

D. Participants were asked how confident they felt in their ability to make their own household and personal care products at home that are free of harmful chemicals.
   1. The percentage of respondents that felt moderately confident in their ability to make these products: 2 out of 3
   2. The percentage of respondents that felt very confident in their ability to make these products: 1 out of 3

E. Participants were asked how confident they felt in their ability to read and understand product labels to avoid harmful ingredients.
   1. The percentage of participants that felt moderately confident in their ability to read and understand product labels: 2 out of 3
   2. The percentage of participants that felt very confident in their ability to read and understand product labels: 1 out of 3

F. When asked in the future, how likely are participants likely to check product labels for ingredients of harmful chemicals.
   1. Respondents that felt very likely to check product labels: 3 out of 3

G. The percentage of respondents that very feel confident in their ability to reduce their chemical footprint: 3 out of 3

H. When asked based on what participants learned, how likely are they to change their purchasing decisions to avoid harmful chemicals in certain products.

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1. Respondents that said they were very likely to change their purchasing decisions: **3 out of 3**

I. When asked based on what participants learned, how likely are they to make their own alternatives to products at home.
   1. The percentage of participants that said they were very likely to make their own alternatives to products at home: **3 out of 3**

J. Participants were asked how likely they are to pass on the information they learned to their friends, family, or community.
   1. The respondents that reported to be somewhat likely to pass on information learned in the workshop to friends and family: **1 out of 3**
   2. The respondents that reported to be very likely to pass on information learned in the workshop to friends and family: **2 out of 3**