



Video Discussion Guide

Oxidative Stress and the Environment

The Community Outreach and Education Core (COEC) increases awareness and understanding of environmental health research.

Stakeholder Advisory Board members include:

- Community Health and Social Services Center, Inc.
- Detroit Department of Health and Wellness Promotion
- Detroit Hispanic Development Corporation
- Detroiters Working for Environmental Justice
- Eastside Community Network
- Institute for Population Health
- Green Door Initiative
- Henry Ford Health System
- Michigan Department of Community Health
- University of Michigan School of Public Health

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Note to facilitator: The purpose of this guide is to help facilitate discussion about environmental exposures, oxidative stress and health. A video, "Oxidative Stress and the Environment," is located online [here](#). Please view the video before beginning the discussion. The questions are intended to help people think about the ways in which local environments affect the health of communities and their residents, and to encourage discussion of individual and collective actions to improve environmental health through policy and advocacy.

Facts About Oxidative Stress

(Note to facilitator: Please read aloud.)

- When we breathe in oxygen, it goes through a process called oxidation to give us energy. Oxidation creates free radicals in the body. Having some free radicals in our body is normal. Too many can harm our health.
- Some things that we eat, breathe and come into contact with can increase the number of free radicals in our body. Too many free radicals lead to oxidative stress.
- Health problems that can result from oxidative stress include asthma, cancer and chronic fatigue.
- We can help protect ourselves from oxidative stress by eating foods rich in antioxidants, including fruits, vegetables and whole grains. They help to balance the number of free radicals in our bodies.

Discussion Questions:

Note to facilitator: Not all questions may be appropriate for your audience. Please review in advance and select those that are relevant.

1) What are some of the sources of oxidative stress that were mentioned in the video? *Note to facilitator: The video mentioned air pollution, smoking and fried foods.*

2) Have you noticed any of these in your community? If so, which ones?

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- 3) According to the video, what are some things that might reduce the negative effects of exposures that can lead to oxidative stress? *Note to facilitator: The video mentions eating healthy foods that are rich in antioxidants, such as fruits, vegetables and whole grains. It also suggests that communities can work together to reduce air pollution (which includes secondhand tobacco smoke).*
- 4) Some communities – especially those with lower incomes and often those with large numbers of African American and Hispanic residents – are more likely to be exposed to toxins in their environment. In your experience, do you see certain neighborhoods that are exposed to more toxins than others? Why do you think this is the case? *Note to facilitator: Poor and minority communities are more likely than wealthy and nonminority communities to be exposed to contaminated industrial sites and to higher levels of air pollution (e.g., from greater proximity to heavily trafficked roadways, industrial emissions or bus depots). These communities may not have sufficient political or economic power to keep toxins out of their neighborhood.*
- 5) Some communities with high levels of exposure to environmental toxins also have poor access to healthy foods. Why might this be the case? *Note to facilitator: Poor and minority communities are less likely to have major chain supermarkets (with affordable healthy food choices, such as fruits and vegetables) and are more likely to have fast food places and liquor stores, as compared to wealthier and nonminority communities. Additionally, smaller, local grocery stores (which are more often found in low-income areas have challenges in obtaining fruits and vegetables that can be sold at reasonable prices. Some solutions to these problems include increasing partnerships with farmers markets (e.g. Eastern Market) and urban gardens to sell produce around the city.*
- 6) What actions could you and other members of your community take to reduce exposures to toxins that cause oxidative stress? How about to reduce the negative effects of toxic exposures, such as by increasing opportunities to access healthy foods? *Note to facilitator: Actions might include working with community leaders to reduce emissions of air pollutants, starting a community garden or promoting farmer's markets.*
- 7) A policy gets at the root cause of a problem by changing current standards. Here are some examples of policies that other communities have proposed that can reduce oxidative stress:
 - Reducing air pollution by changing zoning regulations to reduce truck and car traffic near schools, parks, and day care centers
 - Increasing access to healthy foods by providing tax incentives to grocery store owners located in areas with inadequate access to healthy foods

Note to facilitator: The following exercise could be done in small groups or groups of two, with each group assigned to a topic (i.e., air pollution, including secondhand tobacco smoke; accessing healthy foods).

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Are there any other policies that you can think of that would improve air quality in your community? That might promote access to healthy foods? Discuss these and other policies that might help to reduce exposure to environmental toxins in your neighborhood or reduce the negative effects of toxic exposures. How might your community work together to implement or encourage such policies?

Note to facilitator: Other policies might include:

- *Reducing air pollution from motor vehicles by:*
 - *Increasing opportunities to walk through improved parks and sidewalks*
 - *Promoting cycling by putting in bike lanes that protect cyclists from cars*
 - *Promoting public transit*
 - *Creating incentives to carpool*
 - *Creating stricter regulations that prevent companies from polluting through industrial processes*
 - *Reducing secondhand tobacco smoke by prohibiting smoking near public entrances*
- 8) We learn that people can play an important role in policy change. What strengths or resources does your community have that could help to create the policy changes discussed in the previous question? If you were to create a coalition of people to advocate around this issue, who would you want to include in your coalition and why?
- 9) Which policy or decision makers in your community would have the ability to influence decisions around environmental health and oxidative stress? If you were to talk to them, what would you say to them? What actions could community members ask their policymakers to take to help reduce oxidative stress? *Note to facilitator: Please ask respondents to elaborate on reasons for their choices and proposed courses of action.*

Note to facilitator: If you are interested in providing participants with more information on oxidative stress, please hand out the fact sheet, “The Environment And Our Health: What is Oxidative Stress?,” located [here](#). You and others can also learn more about other important environmental health issues, visit ehscc.umich.edu and www.niehs.nih.gov.