As the impact of climate change worsens—longer warm and wet seasons—we must prepare to deal with an increase in mosquitoes and mosquito-borne diseases that affect people, wildlife and our waterways. Peer-reviewed studies show that pesticide spray programs are largely ineffective in targeting adult mosquito populations and they pose health and environmental risks—especially to children, pets, pollinators, wildlife—even when they are used as directed.

- Exposure to mosquito control pesticides containing synthetic pyrethroids, used in ground applications, can cause and worsen respiratory symptoms, especially for those at-risk including people with ragweed allergies and asthma. [https://bit.ly/2XMwqUo](https://bit.ly/2XMwqUo)

- Organophosphates, often used in aerial applications, are linked to Parkinson’s disease and other neurodegenerative diseases.

  Both chemicals have endocrine disrupting effects, with links to breast cancer and infertility.

- These pesticides are toxic to bees, pollinators, beneficial insects, birds, fish, amphibians and kill off the natural predators of mosquitoes, creating a dependence on spraying. Example: Over a period of eleven years, Cicero Swamp in central New York was sprayed fifteen times with the insecticide Dibrom/Naled (organophosphate). The mosquito population grew fifteen-fold during this period.

### Has your community contracted for Md. State routine mosquito control?
Are you concerned about such applications in your community?

The Good News: There are effective ways to minimize mosquito bites while also eliminating exposure to toxic pesticides. Think of it as a four-part plan:

1. Around your home: prevent mosquito breeding sites by eliminating standing water.
2. In your yard: discourage mosquitoes by planting fragrant beautiful plants that repel them.
3. On your body: use organic and non-toxic repellants and increase your intake of vitamin B1.
4. Away from home: consider what you wear, where you go, and time of day you’re out.

### Step #1: Protect decks, backyards and outdoor areas around your home

✓ "Standing water left alone keeps mosquitoes close to home." Eliminate pooled water from leaky faucets, containers,
gutters, drains, flowerpots and saucers, trash cans, puddles, and any places that collect water—even a bottle cap can become a breeding site. Get poster: https://bit.ly/2Vk59ab

✔ Use window screens, fans and screens over outdoor areas. An electric fan outside near you is effective and adds to your comfort. Place nets over strollers and baby carriers.

✔ Mosquito traps give off carbon dioxide, which mimic a breathing person or animal and attract and trap mosquitoes.

✔ In larger moist areas, eliminate breeding sites using natural Mosquito Dunks granules or disks (at hardware/garden stores) or make your own dry granulated garlic or garlic-pepper tea in problem areas such as garbage cans, tall grass and turf, or purchase the garlic-based Mosquito Barrier www.mosquitobarrier.com

Step #2: Plant a wide range of plants that are natural mosquito repellents
Combinations of these plants in and around your home are beautiful and fragrant, many are culinary herbs and/or are perennial plants that come back and increase each spring.

✔ Basil ✔ Eucalyptus ✔ Lavender ✔ Rosemary
✔ Catnip ✔ Horse mint ✔ Lemongrass ✔ Thyme
✔ Cedar ✔ Scented ✔ Marigolds ✔ Witch
✔ Cinnamon geranium ✔ Pennyroyal ✔ Clove

Step #3: Use non-toxic and organic mosquito repellents
The CDC reports that the essential oil Lemon Eucalyptus is as effective as DEET. Google retail and online stores, DIY recipes. Products may have varying durations of effect, so experiment.

✔ Oil of Lemon Eucalyptus (OLE)
✔ PMD (p-menthane-3,8-diol), which is the extract from OLE that shows superior repellent activity. Here is a detailed fact sheet on OLE and PMD: http://bit.ly/2pjFEpy
✔ Badger Anti-Bug Balm ✔ Zoe Organic Insect Repellent
✔ Bubble & Bee Organic Insect Repellent ✔ Sofia BugSafe
✔ Britannie’s Thyme Organic Bug Spray ✔ Burt’s Bees Herbal Insect Repellent

✔ Homemade natural roll-ons and sprays using essential oils of citronella, lemon, basic, thyme, lemongrass, geranium, peppermint, lemon balm, Neem, bergamot, clove. Studies on effectiveness here: www.medicalnewstoday.com/articles/325337
✔ Vitamin B1 at 50-100mg emits an odor only mosquitoes detect and avoid, not humans
✔ Burn citronella candles around outdoor activity and seating areas.

Step #4: Other ways to protect against mosquitoes
✔ Be aware of peak exposure times and places, especially dawn and dusk.
✔ Wear appropriate clothing to minimize exposed skin such as long-sleeved shirts, long pants, boots and hats. Tuck in shirts. Choose light colored clothing. Wear closed shoes instead of sandals.

Learn more at Maryland Pesticide Education Network: www.mdpestnet.org
✔ What You Need to Know About Pesticides & Mosquitoes: tinyurl.com/jt9wy2f