



SIERRA CLUB

Howard County Group

**Embody the changes
we want to see.**

**If we don't buy it,
they won't make it.**

Small steps to start with...

- Do not heat plastic -- not in the microwave, not in the dishwasher
- Do not pour anything hot into plastic storage containers
- Reuse glass jars and containers rather than plastic
- Replace black plastic utensils in the kitchen with stainless steel or wood
- As nonstick pans need to be replaced, buy cast iron or stainless steel
- Replace your plastic cutting board with either wood or stainless steel
- Brew loose tea without the bag (some tea bags are plastic, or have plastic in them)
- Always use reusable grocery bags and produce bags (Keep them in your car!)
- Buy natural fiber clothing when possible (e.g. cotton, wool, linen)
- Wash clothing with synthetic fibers in cold water and hang to dry (heat degrades synthetic fibers and increases shedding)
- Try shampoo bars, go back to using soap bars
- For holiday gifting, use cloth bags or material to wrap; reuse gift bags and wrapping paper

So many lists of possibilities on the internet! Slowly do what you can. (Holiday season is coming up!)

Buy with intention- recycling won't solve the problem

Reduce single use plastic	refillable water bottles, cans/glass bottles of soda, reusable cutlery/cups, beeswax wrap
Reduce unnecessary plastic	loose produce, natural (not synthetic) fibers, shampoo and soap bars, food storage containers
Reuse	glass containers for storage, fabric gift wrap, gift bags, wrapping paper, packaging, thrifting
Refill	BYO take-home container to restaurants, household cleaners, shampoo, conditioner, hand soap, body wash, bulk pantry items
Repair	CEI Repair Café, CEI Sustainable Skills Workshops, HCC classes
Share	HoCo Library DIY and Educational Toy Collections, Howard County Loan Closet, your friend's tent!, clothing swap
Refuse	Will you use that give-away if you pick it up at the fair?
Reconsider	Do you really need that?
Learn more	Book and movie list on HoCo Sierra Club webpage; have a film screening!

Articles on the health impacts of plastic

Chemical components of plastics as endocrine disruptors: Overview and commentary

<https://onlinelibrary.wiley.com/doi/full/10.1002/bdr2.1778>

Abstract: Bisphenol A and phthalate esters are used as additives in the manufacture of plastic materials, but their ability to leach out with age and heat has resulted in their becoming ubiquitous contaminants of the ecosystem including within human body tissues. Over recent years, these compounds have been shown to possess endocrine disrupting properties with an ability to interfere in the actions of many hormones and to contribute to human health problems. Much of the reported disruptive activity has been in relation to the action of estrogens, androgens, and thyroid hormones, and concerns have been raised for adverse consequences on female and male reproductive health, thyroid function, metabolic alterations, brain development/function, immune responses, and development of cancers in hormone-sensitive tissues. A recurring theme throughout seems to be that there are windows of susceptibility to exposure in utero and in early postnatal life, which may then result in disease in later life without any need for further exposure. This commentary highlights key issues in a historical context and raises questions regarding the many data gaps.

Plasticenta: First evidence of microplastics in human placenta

<https://www.sciencedirect.com/science/article/pii/S0160412020322297#s0040>

Abstract: Microplastics are particles smaller than five millimeters deriving from the degradation of plastic objects present in the environment. Microplastics can move from the environment to living organisms, including mammals. In this study, six human placentas, collected from consenting women with physiological pregnancies, were analyzed by Raman Microspectroscopy to evaluate the presence of microplastics. In total, 12 microplastic fragments (ranging from 5 to 10 μm in size), with spheric or irregular shape were found in 4 placentas (5 in the fetal side, 4 in the maternal side and 3 in the chorioamniotic membranes); all microplastics particles were characterized in terms of morphology and chemical composition. All of them were pigmented; three were identified as stained polypropylene a thermoplastic polymer, while for the other nine it was possible to identify only the pigments, which were all used for man-made coatings, paints, adhesives, plasters, finger paints, polymers and cosmetics and personal care products.

Human Health and Ocean Pollution:

<https://annalsofglobalhealth.org/articles/10.5334/aogh.2831>

Excerpts from abstract:

- Plastic is a rapidly increasing and highly visible component of ocean pollution, and an estimated 10 million metric tons of plastic waste enter the seas each year.
- Plastic pollution threatens marine mammals, fish, and seabirds and accumulates in large mid-ocean gyres. It breaks down into microplastic and nanoplastic particles containing multiple manufactured chemicals that can enter the tissues of marine organisms, including species consumed by humans.
- Manufactured chemicals – phthalates, bisphenol A, flame retardants, and perfluorinated chemicals, many of them released into the seas from plastic waste – can disrupt endocrine signaling, reduce male fertility, damage the nervous system, and increase risk of cancer.
- Bans on single-use plastic and better management of plastic waste reduce plastic pollution.