Microplastics in the Body

eslvideo.com Quiz by: YuliiaVOVK

1. How do microplastics generally enter our bodies?

○ a.) Through the air, skin, and food

○ b.) Through water and sunlight

○ c.) Through exercise and breathing

2. What type of food has the most plastic particles?

○ a.) Fresh fruits and vegetables

○ b.) Processed foods

○ c.) Organic foods

3. What can a single liter of bottled water contain?

○ a.) Over 100,000 plastic particles

○ b.) Over 200,000 plastic particles

○ c.) Over 300,000 plastic particles

4. How do plastic storage containers affect food?

○ a.) They keep food fresh

○ b.) They release millions of particles when microwaved

○ c.) They are safer than glass containers

5. What happens when nanoplastics enter the body?

○ a.) They are easily broken down

○ b.) They can pass through cell membranes

○ c.) They are expelled immediately

6. What do our bodies do in response to plastic particles?

○ a.) They ignore them

○ b.) They trigger inflammation

○ c.) They enhance metabolism

7. What are endocrine disrupting chemicals (EDCs) known to affect?

○ a.) Hormonal activity

○ b.) Digestive health

○ c.) Skin texture

8. What health issue is linked to high phthalate levels in women?

○ a.) Increased energy levels

○ b.) Pregnancy complications

○ c.) Improved skin health

9. What can individuals do to reduce plastic exposure?

○ a.) Buy more plastic products

○ b.) Choose natural fibers and fresh foods

○ c.) Avoid all types of food

10. What organization helps people learn about reducing microplastics exposure?

○ a.) The Oceanic Preservation Society

○ b.) The World Health Organization

○ c.) The Environmental Protection Agency

Gap-fill

Complete these sentences with the words in the box.

Wordbank

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1. 1. The amount of plastic you breathe depends on your environment; urban areas and indoor spaces contain more airborne particles than rural ones, but most people inhale tens of thousands of particles a day. Finally, beauty and personal care products let plastics and toxic chemicals seep into our skin.
2. 2. Our bodies recognize these invaders and trigger inflammation to remove the foreign particles, but since our natural defenses can't break down plastic, the inflammatory response can trigger repeatedly, causing long-term damage.
3. 3. There are over 16,000 chemicals involved in plastic production, and whenever plastic enters your body, some of these chemicals do too.
4. 4. After all, there are no medical interventions for getting this material out of our bodies, and data suggests these particles accumulate inside us faster than we excrete them through sweat, urine, and feces.

Transcript

Plastic is everywhere; it's in our clothes, our food, even the air we breathe, so it's no surprise that plastic is also in our bodies. But how exactly do these microscopic particles affect our health?

Micro and nanoplastics generally enter our bodies in one of three ways: through the air, through our skin, and most commonly through what we eat and drink. While processed foods have the most, plastic particles have infiltrated our farms and seas, making their way into most seafood, meat, and produce. Plastic packaging sheds particles into whatever it touches; a single liter of bottled water can contain over 200,000 of them, and even metal cans and paper wrappers often hide plastic linings. At home, particles enter our food from plastic cutting boards and Teflon cookware. Plastic storage containers are especially bad; microwaving food in these can release millions of particles into your leftovers. The amount of plastic you breathe depends on your environment; urban areas and indoor spaces contain more airborne particles than rural ones, but most people inhale tens of thousands of particles a day. Finally, beauty and personal care products let plastics and toxic chemicals seep into our skin.

Once inside, nanoplastics are small enough to pass through most cell membranes and settle deep in our tissues. Our bodies recognize these invaders and trigger inflammation to remove the foreign particles, but since our natural defenses can't break down plastic, the inflammatory response can trigger repeatedly, causing long-term damage. For example, particles circulating through the respiratory system can trigger widespread inflammation that impairs breathing and contributes to asthma and pneumonia. Worse still, inflammation brings an influx of blood to these tissues, which plastics use to hitch a ride throughout the body. Particles have been detected in our livers, spleens, muscles, bones, and even our brains.

It's hard to say exactly how much plastic is in any one person, but these particles are just the tip of the iceberg. There are over 16,000 chemicals involved in plastic production, and whenever plastic enters your body, some of these chemicals do too. The vast majority of these have health impacts we don't yet understand, making it tricky to link specific health issues with specific chemicals and plastics. However, researchers have identified a few particularly dangerous groups. Endocrine disrupting chemicals (EDCs) such as phthalates, PFAS, and BPA are known to alter hormonal activity,

wreaking havoc across the body by activating or inhibiting hormone receptors. EDCs can hijack our metabolisms, increasing the risk for obesity and type 2 diabetes. They can mimic testosterone and estrogen, confusing our body's hormonal balance. In women, high phthalate levels have been linked with pregnancy complications, and in men, high BPA exposure has been connected to lower sperm count. In fact, research suggests these chemicals have contributed to the global decline in sperm count over the past 50 years. Today, most people encounter these chemicals before they're even born. A study on over 300 pre-teens found that exposure to EDCs in utero may have impacted when they entered puberty over a decade later.

It's easy to feel overwhelmed by this plastic plague. After all, there are no medical interventions for getting this material out of our bodies, and data suggests these particles accumulate inside us faster than we excrete them through sweat, urine, and feces.

But small choices you make each day can reduce how much plastic enters your body. When buying clothes, look for pieces made from natural fibers without toxic chemicals. Swap your plastic cutting boards and storage containers for wood, stainless steel, and glass replacements. Eliminate single-use plastic and buy fresh, unpackaged foods whenever possible. The more people stop buying plastic, the less of it we'll see.

But fixing a problem this big requires big solutions. Just like gasoline, plastic is a petrochemical product made and sold at a massive scale, so it's going to take legislation on the local, state, and country level to make this material safer and regulate just how much of it we put into our world and our bodies.

Don't underestimate your impact; small changes can have large-scale impact when enough of us make them.

The Oceanic Preservation Society is helping people learn how to reduce their exposure to microplastics and harmful chemicals. Visit unplasticyourlife.com to learn more.