



So aunty, so what? June H.L. Wong
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Plastic – from wastelands to waistlines

Here I go again, with good reason, on the horrors the imperishable pollutant unleashes on Earth.

THE news on plastic just gets worse and worse. The latest: the chemicals it gives off can make you fat!

But before I get into that, the other bad news reported last month is how plastic pollution of the seas has created yet another huge garbage vortex, this time in the ocean between Chile and Easter Island, and it's the size of Mexico.

This is the South Pacific Garbage Patch made up of plastic that doesn't degrade but breaks up into microscopic fragments. There are now five of these patches swirling in the North Pacific, Atlantic and Indian Oceans.

It's all thanks to our addiction to plastic. *National Geographic* reported a new study showing that by 2015, humans had produced 6.3 billion metric tons of plastic waste. Of that only 9% was recycled, 12% incinerated and 79% disposed into landfills and the natural environment. At the rate we are going, there will be an estimated 12 billion metric tons of plastic waste by 2050.

Over the last several decades, tons of it end up in the oceans, together with dangerous toxins like lead, cadmium and mercury contained in some types of plastic that take thousands of years to decay.

Not surprisingly, these and other

toxins have entered our seafood chain as fish and other sea creatures consume the plastic debris, thinking it is plankton.

As I pointed out in my Jan 11, 2017 column, we have no one to blame but ourselves if we are eating plastic instead of fish.

Coming back to the jaw-dropping news about how plastic chemicals can trigger fat cells in our bodies, which was widely reported in western media but not locally, this was the discovery made by researchers at Duke University in North Carolina, United States.

Through their experiments, they found that house dust, laced with endocrine-disrupting chemicals (EDCs), can cause cells to accumulate more fat.

Among the most common EDCs are bisphenol A and phthalates, synthetic compounds used in making many plastics.

Other EDCs are from pesticides, flame retardants, cosmetics, food packaging and household cleaning products.

The Duke findings, published in the journal, *Environmental Science & Technology*, showed that exposure to such EDCs can raise the risk of cancer, infertility and childhood developmental disorders.

The scientists collected indoor dust from 11 homes. They then applied the dust to mouse cells. Seven of the 11 samples triggered the cells to mature and accumulate triglycerides, the fat that is associated with obesity. Nine of those fat cells also divided, growing into even larger clusters.

The study focused on how household contaminants can affect human metabolism, particularly in children.

We can ingest, inhale and absorb house dust through our skin. American children "consume" an estimated 50mg of house dust a day, according to the US Environmental Protection Agency.

But Duke University's ground-breaking research showed that just three micrograms had a noticeable effect and EDCs which can cause weight gain later in life after early childhood exposure are now nicknamed "obesogens".

"We were most surprised by how low the concentrations were that we saw as having an effect," Dr Christopher Kassotis, who led the study, was quoted as saying in several news reports.

Bisphenol A and phthalates are chemicals that act as binding agents, either to make clear, hard plastic

like baby feeding bottles or soft, flexible plastic like baby pacifiers.

It is a weak mimicker of the female sex hormone oestrogen that has been linked to male infertility.

As *The Telegraph* reported, in June the European Chemicals Agency voted unanimously to recognise bisphenol A, one of the world's best-selling chemicals, as a threat to human health. This could lead to it being banned or restricted in the EU soon.

The scientific evidence is growing that EDCs are dangerous to humans, but we are surrounded by them.

And now we know even tiny amounts found in dust can be harmful. So not only are we eating plastic toxins in our seafood, we are breathing in, absorbing them in our house dust.

What can we do to reduce the risks? Yes, you should clean your house diligently using wet methods, but clearly what humankind must do is to wean ourselves of plastic, especially bottles and even plastic drinking straws that are usually used for mere minutes before being discarded.

I was deeply struck by what Selina Denman wrote in an article for *thenational.ae* about Robert Bezeau, a Canadian living in

Panama who has made it his mission to reuse plastic bottles to build houses:

"Plastic bottles piled high on otherwise pristine beaches; birds entombed in plastic bags; turtles and seals with stomachs full of plastic detritus.

"The damage caused by plastic waste is so well documented, and the images of destruction so common, that we have become almost immune to them.

"The numbers, too, barely elicit a reaction, even though an astounding one million plastic bottles are bought every minute around the world, with the figure set to jump to half a trillion by 2021."

And if we don't stop our plastic addiction, Bezeau gives this dire warning on his website www.plasticbottlevillage.com:

"Stone Age, Ice Age, Plastic Age – Dinosaurs were extinguished by a meteor, humanity will be extinguished by plastic. If we kill the fish, we kill ourselves too. Change the world without changing the Earth."

Here's one government ban Aunty will wholeheartedly support: serving water in plastic bottles in restaurants, meetings and conferences. Feedback welcome to aunty@thestar.com.my