LEAD in LIPSTICK

Is Your Lipstick Toxic?

By Asst Prof Dr Eugenie Tan
PhD (Environmental Quality & Conservation)

Lipstick is a common daily cosmetic product which is applied to the lips to achieve a more beautiful and attractive impression. Lipstick consumers are exposed to small amount of lead; however, over a prolonged period. As such, it may develop chronic health risk.

What is Lead?
Lead is a naturally occurring element found in earth’s crust. It is used to manufacture a variety of products such as paint, ceramics, pipes, plumbing materials, solders, batteries, ammunition, toys, and cosmetics.

Lead can also be released into the air from industrial and vehicles. It had been quantified in seafood such as fishes and clams due to their ability to bio-accumulate. In 2015, Hossen, Hamdan and Rahman had quantified lead in Malaysian clams at levels above safety limits. In cosmetics, lead is found in lip products, whitening toothpaste, eyeliners, nail colour, foundations, sunscreen, eye shadows, blush, and concealer. It is also often used as colour additives and may present as contaminants.

What are the possible health implications?
Chronic exposure to lead could cause neurological, endocrine disruption, teratogenic and blood systemic effects. The lead had also been characterised as “reasonably anticipated to be human carcinogens” by the Carcinogen Review Committee, National Toxicology Program’s Report.

What are the concentrations of lead in cosmetics?
In 2007, the Campaign for Safe Cosmetics reported that 61% of lipsticks contains lead with a maximum concentration of 0.65ppm. In 2009 and 2012, the US FDA reported an average concentration of 1.07 and 1.11 respectively. Recently, a study conducted in Malaysia reported a contamination of lead in all 15 lipsticks with a maximum concentration of 15.44ppm.

The FDA limit for lead is set at no more than 20 parts per million. Meanwhile, Health Canada suggested a limit of 10ppm.
Who are at risk?
Scanty publications had highlighted increased risk among pregnant mothers and children. Concerns were raised pertaining maternal to fetal transfer, accidental ingestion by children as well as maternal to child oral transfer via kisses. Children have increased hand to mouth activity, gastrointestinal absorption up to 50% (compared to 10-15% in adults) as well as the vulnerability in developing nervous system.

Acute toxicity due to lead in lipstick had been ruled out in children. However, we are to be mindful of chronic toxicity, as reported by Monnot A, Christian W, Abramson M, Follansbee M. in their study, as little as <10 μg/dL blood lead levels had been associated with intelligence quotient deficit.

What can be done?
- Reducing re-application of lipstick throughout the day
- Keeping colours for special occasion
- Keep lipstick away from children

Concisely, chronic health implications from lead and lipstick have yet to be ascertained. It is wise to take precautionary measures, especially for pregnant women and children.

References