Blue colors in lollipops present health risk to kids, say researchers

By Oliver Nieburg+, 08-Jan-2013

Researchers are urging candy makers to remove two blue food colors from hard candies and lollipops because they may pose a health risk to children.

Brilliant Blue (E133) and Patent Blue (E131), both authorized as food coloring additives in the EU, have been found to disrupt cell metabolism when entering the bloodstream in a recently published study in the journal *Food and Chemical Toxicology* by Jarmila Hojerová et al.

"Too long on the tongue"

Speaking to ConfectioneryNews.com, Hojerová said: "Health risks of these dyes are mainly attributed to their inhibitory effects on mitochondrial respiration of human cells."

She called for candy makers to stop using the colors in lollipops and hard candies.

"These products are too long in contact with the mucous membranes of the tongue," she said.

"Fewer risks in soft candy and drinks"

According to Hojerová the colors may be partially decomposed and destroyed in the gastrointestinal tract after oral intake in common soft colored candies or drinks. But this wasn't always the case for lollipops and hard candies.

"If the dye penetrates through the dorsum of the tongue, it can penetrate undecomposed directly into the bloodstream."

"Due to these results we consider that hard candies and lollipops containing Brilliant Blue, as well as Patent Blue pose some health risk especially when products are repeatedly licked by most vulnerable consumers – children," she said.

Method

The researchers exposed *ex vivo* pig tongues to human saliva containing 15,000 ng/cm² of each color for 20 minutes.

After 24 hours, they found that 34 ng/cm² of Brilliant Blue and 86 ng/cm² of Patent Blue could be directly absorbed into the blood system.

Permitted levels

The permitted acceptable daily intake of Brilliant Blue as a food additive in the EU stands at 10 mg/kg bw/day, while Patent Blue is allowed at 15 mg/kg bw/day.

The research assessed the colors at the maximum permitted levels and found them to pose a health risk.

Brilliant Blue is authorized as a food additive in the US, but Patent Blue is not allowed in many countries including the US, Australia, Canada, Japan, and New Zealand.

The colors have in the past been linked to ADHD (Attention Deficit Hyperactivity Disorder), allergies, and asthma, said Hojerová.

Usage

Nestlé had used Brilliant Blue to color its blue Smarties before moving to Spirulina, a seaweed derivative, in 2008. The company has since removed all artificial colors in confectionery items in the UK as of last year.

The research, funded by the Slovak University of Technology, found 134 lollipops and hard candies in the Slovak Republic that contained artificial colors, 24% of which used the two blue colors.
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