

Myths and Misconceptions

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Chewing Gum Is Made of Latex: Are Individuals With So-Called Latex Allergy Allergic to It?

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A 35-year-old nurse with hand dermatitis was referred to the Dermatologic Clinic for patch testing. She happened to mention that her regular dermatologist had warned her against chewing gum because she was known to be allergic to latex. He had emphasized the danger of exposure, particularly of the mucosal membranes, to latex products.

Discussion

Natural rubber latex (NRL) is the milky sap obtained from the *Hevea brasiliensis* tree. The harvested and collected liquid NRL is processed in liquid form and used to produce gloves, condoms, balloons, tourniquets, catheters, and many other everyday products. It can also be processed into a solid, "dry" form of sheets that can be stored or shipped for processing into other products (e.g., tires, vial stoppers, shoe soles). NRL is composed of spherical polyisoprene (a polymer of isoprene) droplets (Figure) coated with a layer of water-soluble proteins. NRL concentrate contains about 1% total protein, a small fraction of which remains in the product as residual extractable proteins. These extractable proteins are responsible for the immediate-type reactions to NRL. There are currently 13 officially accepted NRL allergens.¹⁻³

Chewing gum consists of five main ingredients: a gum base, sugar, corn syrup, softeners, and flavorings. The gum base (the insoluble part left in the mouth while chewing) was traditionally

made by processing the milky juices from certain plants. These were not the *H. brasiliensis* trees, but others; the best known among them being the *Manilkara sapota* tree (chicle). In recent years, synthetic gum base materials have replaced the natural ingredients.^{4,5}

In a nutshell: individuals with so-called *latex allergy* (a misnomer) are allergic to the proteins of the *H. brasiliensis* tree. Chewing and many other gums are, or were, made from the sap of many different trees that do not contain any of the *Hevea* proteins, although they may contain the same polymers (polyisoprene) that are the basis and main ingredient of every gum.

We believe that at least part of the confusion stems from the unfortunate and ill-used expression *latex allergy*. This serves as another example of how words can lead to misconceptions. *Latex* refers to the milky juices, or the sap, from many kinds of plants. It is usually harvested by cutting a groove in the plant and collecting the liquid that oozes out. Latex, then, is a general term for the natural resins and not specific to natural rubber, i.e., the resin of *H. brasiliensis*. A closer look at how chewing and others gums were made historically, and at their ingredients will reveal that they were made of the latex of plants other than *H. brasiliensis* and, as such, have no connection to NRL. In short, the ubiquitous term *latex allergy* is a misnomer and should clearly be replaced with *NRL allergy*.

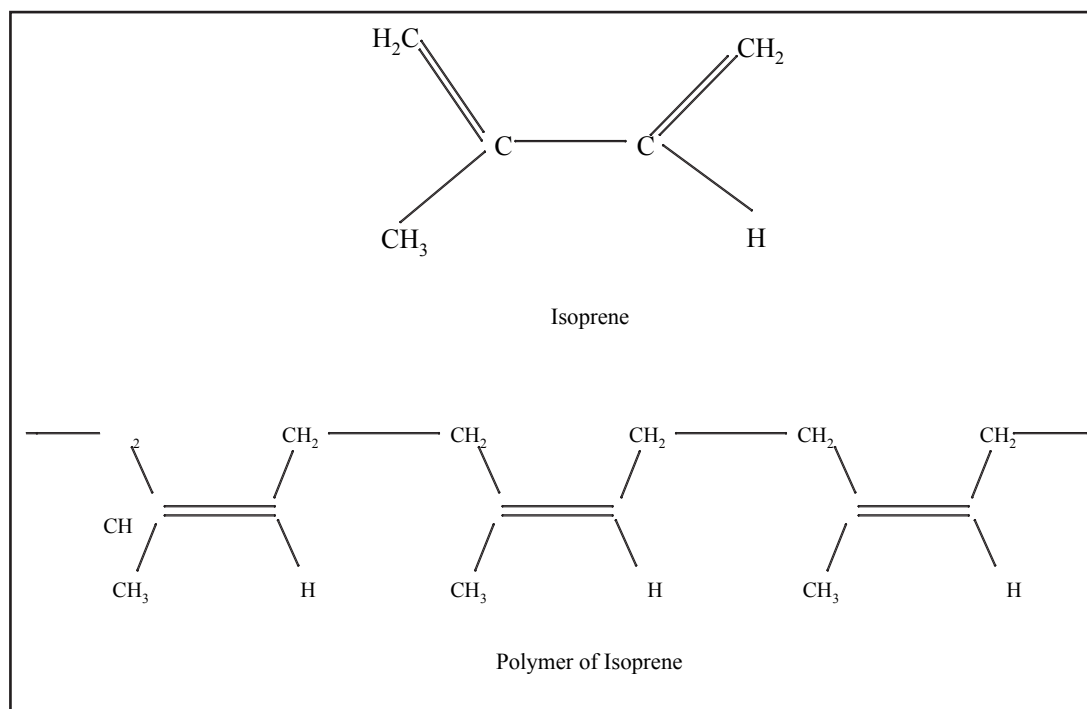


Figure. Polymers of isoprene, the basis and main ingredients of every gum

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