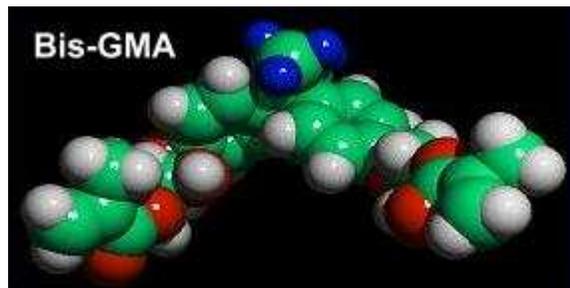


Dental Monomers and Gloves (9/03)

Monomer permeability of disposable dental gloves. Nakamura M, Oshima H, Hashimoto Y. J Prosthet Dent 2003;90: 81-85.

This study examined the permeability of six kinds of dental monomers (MMA, HEMA, TEGDMA, EGDMA, UDMA, Bis-GMA) through five kinds of gloves (latex, powder-free latex, coated latex, polychloroprene, and polyvinyl chloride) for up to 180 minutes at 37°C. Four of the monomers tested (MMA, HEMA, TEGDMA, and EGDMA) permeated the gloves in the study, whereas two (UDMA and Bis-GMA) did not. The polyvinyl chloride glove showed the greatest monomer permeability. Two-way analysis of variance showed significant correlations between MMA, HEMA, EGDMA or TEGDMA and UDMA or Bis-GMA ($P<.01$). Statistical significance was shown between polyvinyl chloride and latex, powder-free latex, coated latex or polychloroprene ($P<.01$). However, there was no significant relation between any kind of dental monomer and any kind of dental glove. **Within the limitations of this study, four of the monomers tested permeated all of the gloves tested. The protection afforded by gloves is incomplete and depends on the properties of the gloves.**



DIS Comment: Dental health-care personnel (DHCP) wear gloves to provide a protective barrier and to prevent contamination of their hands when touching mucous membranes, blood, saliva, or other potentially infectious materials. During dental procedures, gloves commonly contact many types of chemicals and materials (e.g., disinfectants, composite resins, bonding agents) that may compromise the integrity of latex as well as vinyl, nitrile, and other synthetic glove materials. Education about potential monomer permeation of gloves is necessary for DCHP, including dental lab technicians, as well as the importance taking precautions to avoid direct contact with these materials. Also, it's important to remember that in addition to causing glove degradation, repeated contact with these chemicals can lead to allergic contact dermatitis.

Selected Reference

Hamann C, Rodgers PA, Sullivan K. Allergic contact dermatitis in dental professionals. J Am Dent Assoc 2003;134:185-194..