Infection Control-related Administrative Policies and Work Restrictions

Course Author(s): Michaell A. Huber, DDS; Géza T. Terézhalmy, DDS, MA
CE Credits: 1 hour
Intended Audience: Dentists, Dental Hygienists, Dental Assistants, Dental Students, Dental Hygiene Students, Dental Assistant Students
Date Course Online: 07/01/2015
Last Revision Date: 04/08/2021
Course Expiration Date: 04/07/2024
Cost: Free
Method: Self-instructional
AGD Subject Code(s): 148

Online Course: *www.dentalcare.com/en-us/professional-education/ce-courses/ce473*

Disclaimers:

- P&G is providing these resource materials to dental professionals. We do not own this content nor are we responsible for any material herein.
- Participants must always be aware of the hazards of using limited knowledge in integrating new techniques or procedures into their practice. Only sound evidence-based dentistry should be used in patient therapy.

Please Note:

- This course may not satisfy individual state requirements on CDC/Infection Control. Please check with your State Board to verify.
- **Iowa dental professionals:** This course complies with the Iowa Dental Board for recertification in the area of infection control standards, as established by the Centers for Disease Control and Prevention (CDC).

Conflict of Interest Disclosure Statement

- Dr. Terézhalmy has done consulting work for Procter & Gamble and has served on the dentalcare.com Advisory Board. He has no relevant financial relationships to disclose.
- Dr. Huber has done consulting work for Procter & Gamble and serves on the dentalcare.com Advisory Board.

Introduction

Participants in this course will be introduced to evidence-based information on infection control-related administrative policies and work restrictions to minimize (1) adverse reactions to latex products, (2) exposure of susceptible oral healthcare personnel (OHCP) to opportunistic infections, and (3) the exposure of patients to OHCP who have been exposed to or are infected with transmissible pathogens.

Course Contents

Overview

This course provides best available evidence for the development of strategies to minimize latex-related problems among oral healthcare personnel (OHCP) and patients, to minimize the exposure of OHCP with acute or chronic diseases to patients who have been diagnosed with a transmissible infectious disease, and to minimize the exposure of patients to OHCP who have been exposed to or have been diagnosed with an infectious disease.

Learning Objectives

Upon completion of this course, the dental professional should be able to:

- Develop and implement administrative policies and work-practice controls to minimize latex-related adverse effect among patients and OHCP.
- Develop and implement administrative policies and work restrictions for OHCP susceptible to opportunistic infections.
- Develop and implement administrative policies and work restrictions for OHCP exposed to or infected with transmissible pathogens.

Introduction

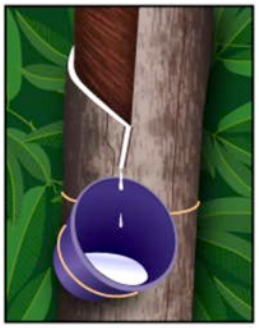
There are three major factors to consider when developing infection control-related administrative policies and work restrictions. OHCP and patients may (1) be susceptible to latex-related adverse reactions, (2) develop acute or chronic medical conditions, which may predispose them to opportunistic infections, or (3) may acquire potentially transmissible pathogens.[1-3] Policies dealing with these issues should (1) be written, (2) include a statement of authority that defines who can exclude OHCP from duty (e.g., personal physicians), and (3) be clearly communicated through education and training.[1-3]

Latex-related adverse reactions may be minimized by (1) reducing exposure to latex-containing materials by using appropriate work-practice controls, (2) substituting non-latex products where appropriate, (3) training and educating OHCP to recognize signs and symptoms of latex-related adverse effects and to monitor for signs and symptoms of latex sensitivity among OHCP and patients, and (4) establishing an institutional infrastructure for the seamless referral of OHCP and patients with signs and symptoms suggestive of latex allergy to a physician to confirm the diagnosis.[1,2]

OHCP and patients may also develop acute or chronic medical conditions such as immune deficiency syndromes, chronic diseases (e.g., diabetes mellitus, cancer, emphysema, heart failure, malnutrition), or undergo immunosuppressive therapy (e.g., radiotherapy, chemotherapy, anti-graft rejection medications, steroids, monoclonal antibodies) that render them susceptible to opportunistic infections. Such individuals should discuss the problem with their personal physician to determine if the condition might affect their ability to safely perform their duties.[1-3]

Finally, OHCP may become exposed to or infected with transmissible pathogens. Policies should encourage OHCP to report exposures or illnesses without jeopardizing wages, benefits, or job status.[3] Decisions concerning work restrictions intended to prevent healthcare-associated transmission of pathogenic organisms should be based on the mode of transmission and the period of infectivity of the pathogen; and, in some instances, the level of circulating viral burden and level of risk for transmitting a pathogen (i.e., HBV, HCV, and HIV) in association with a procedure.[1-3]

Administrative and Work Practice Controls to Minimize Latex-related Adverse Effects



Latex is a product of the *Hevea brasiliensis* rubber tree. A milky sap flows in lactifers under the surface of the bark, which is collected by making diagonal cuts in the bark of the tree. Natural rubber latex contains cis-1,4-polyisoprene (the major component), proteins, lipids, carbohydrates, and numerous inorganic constituents such as potassium, manganese, copper, zinc, and iron.[4] Over 250 proteins have been identified in latex and about 30-60 of these are responsible for virtually all latex-related IgE-mediated immediate hypersensitivity (i.e., Gell and Coombs Type 1) reactions.[4-5]

Fifteen of the principal allergens have been officially named by the International Nomenclature Committee of Allergens in the International Union of Immunological Societies (IUIS).[6]

Once the latex sap is harvested, ammonia is added to prevent autocoagulation and bacterial contamination.[5,7,8] There are two types of ammonia-latex concentrates: high ammonia-latex concentrate (0.7% ammonia by weight) and low ammonia-latex concentrate (0.2-0.3% ammonia by weight). While the higher ammonia concentration is more effective in strengthening and stabilizing natural rubber latex, it also increases the incidence of latex glove-related irritant contact dermatitis.[7,9]

In order to enhance elasticity, the stabilized ammonia-latex concentrate is subjected to vulcanization, i.e., it is heated in the presence of sulfur. To reduce the time and temperature required for the process, numerous "accelerators" and "promoters" (e.g., thiurams, mercaptobenzothiazoles, and carbamates) are added. Residuals of these chemicals are primarily responsible for latex-related cell-mediated delayed hypersensitivity (i.e., Gell and Coombs Type IV) reactions such as allergic contact dermatitis.[7-12]

The incidence of latex allergy in the general population is 1 to 2%.[13] Patients with spina bifida, because of repeated exposure of mucous membranes to latex products during various medical/surgical procedures, are at highest risk of latex allergy with a prevalence rate that ranges from 20 to 67%.[13] Healthcare workers have the second highest risk of developing latex allergy with sensitization rates that are three times higher than in the general population.[7,13-16]

Clinical Manifestations of Adverse Reactions to Latex Products

Adverse reactions following exposure to latex products may be categorized as (1) irritant contact dermatitis (not associated with allergy), (2) cell-mediated delayed hypersensitivity reactions (allergic contact dermatitis), and (3) IgE-mediated immediate hypersensitivity reactions (urticaria, angioedema, allergic rhinoconjunctivitis, asthma, and generalized anaphylactic shock).[5,7,9,11,17]

Irritant Contact Dermatitis

The most common adverse reaction to latex products, specifically to latex gloves, is irritant contact dermatitis (ICD). It is characterized by dry, cracked, itchy, irritated areas of the skin (usually of the hands). The time of onset is gradual (over several days) as a result abrasion and maceration from donning and removing gloves, repeated hand washing and drying, incomplete hand drying, the use of cleaners and sanitizers, and exposure to other workplace products and chemicals.[5,7,9,18]

Allergic Contact Dermatitis

Allergic contact dermatitis (ACD) is caused primarily by the accelerators, promoters,

and antioxidants that are added to natural rubber latex during harvesting, processing, or manufacturing.[5,7-10,12,18] It is characterized by a papular, pruritic (itchy) rash (Figure 1); which usually begins 24 to 48 hours after contact with offending products and may progress to oozing vesicles and blisters and spread to areas of skin untouched by latex.[12,19,20] ACD may be the first sign that more serious reactions could occur with continued exposure.

IgE-mediated Immediate Hypersensitivity Reactions

The risk of progression from ACD to more serious allergic reactions is unknown. At least some of the patients, who initially develop ACD with repeated exposure to latex may experience *acute urticaria* considered to be a transitional stage between ACD and IgE-mediated immediate hypersensitivity reactions (Figure 2). Symptoms usually occur within 60 minutes of exposure to a latex product and are characterized by itching, redness, and a wheal and flare reaction at the site of contact.[21]

Angioedema is a feature of urticaria. It is characterized by localized, well-circumscribed, non-pitting swelling (edema) commonly affecting the lips (Figure 3), face, limbs, and trunk. When edema affects the larynx, it can lead to severe, life-threatening upper airway obstruction. Angioedema of the abdominal viscera is associated with severe pain. Other gastrointestinal symptoms of immediate type I hypersensitivity reactions may include vomiting and diarrhea.

Deposits of latex proteins on mucosal surfaces of the eyes and upper respiratory tract can lead to *allergic rhinoconjunctivitis*. Clinical signs and symptoms include watery eyes, nasal congestion, sneezing, rhinorrhea, and an itching sensation of the oropharyngeal mucosa. If sufficient aeroallergens penetrate below the level of the glottis, the allergic response progresses to *acute bronchospasm*.[22] It is estimated that 2.5% of healthcare workers are susceptible to latex aeroallergen-induced *acute asthma*.[23]

When latex proteins interact with IgE antibodies on mast cells and basophiles, a massive release of histamine and other substances result in *generalized anaphylactic shock*. Early signs and symptoms include weakness, dizziness, flushing and urticaria. It progresses rapidly and sequentially to laryngeal edema (resulting in stridor) and

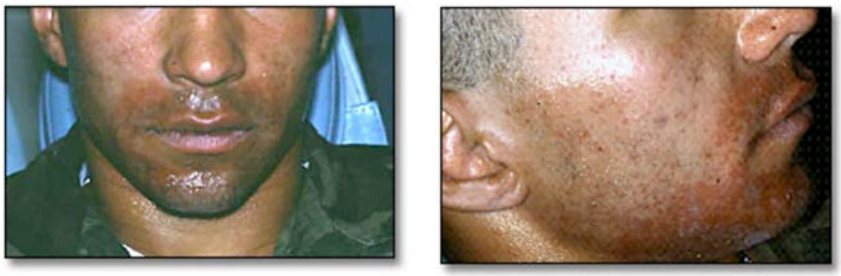


Figure 1. Allergic contact dermatitis characterized by rash, redness, and itching, which began about 24 hours after dental treatment under a rubber dam.

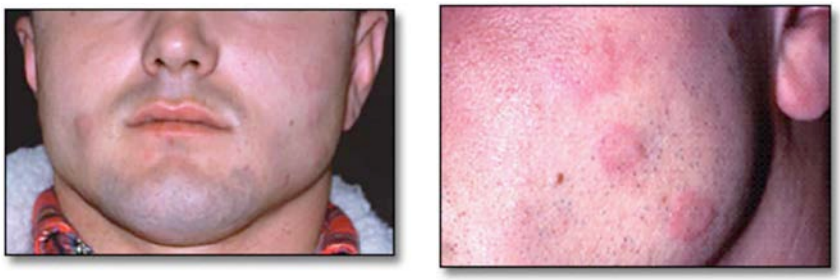


Figure 2. Acute urticaria characterized by pruritic, red wheals that range from 1.5 to 3.0 cm in diameter, which began about an hour after exposure to latex gloves.

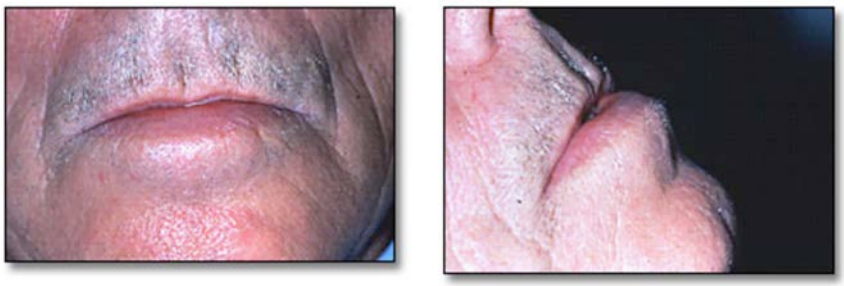


Figure 3. Angioedema characterized by localized, well-circumscribed, non-pitted swelling affecting the lips.

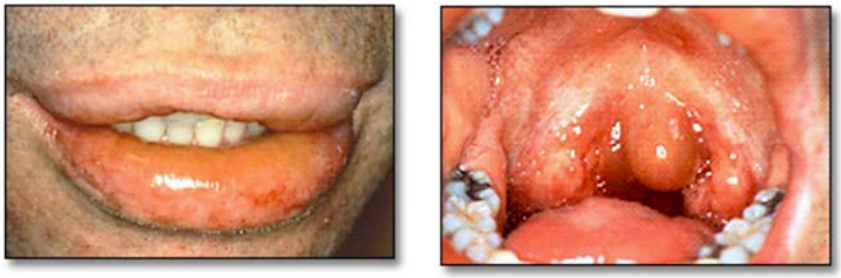


Figure 4. Anaphylactic reactions to latex allergens in the oral healthcare setting characterized by angioedema of the lips and oropharynx associated with stridor, wheezing, hypotension, and tachycardia.

bronchospasm (resulting in wheezing); followed by hypotension, tachycardia, and vascular collapse as a result of decreased systemic vascular resistance (Figure 4).[17,24]

While anaphylaxis is seldom the first sign of latex allergy, latex exposure is estimated to account for 12 to 40% of anaphylactic reactions that occur during adult surgery.[13,25,26] In oral healthcare settings, anaphylactic reactions to latex products have been reported to occur with exposure to gloves, dental rubber dams, and to latex-related aeroallergens.[7] Rapid detection of signs and symptoms with immediate intervention is necessary to prevent serious complications and death.[9,17,27]

Diagnosing Allergy to Latex

OHCP and patients who relate a history of papular, pruritic (itchy) rash of the skin; urticaria, angioedema, and rhinoconjunctivitis; coughing, shortness of breath, or wheezing; and/or a drop in blood pressure following exposure to latex should be suspected of latex allergy. The diagnostic algorithm for latex allergy entails obtaining a thorough medical history, skin-patch testing, serum IgE measurement, and glove provocation testing.[7,13,28,29]

Medical History

Obtaining a complete medical history is the first step in diagnosing latex allergy. As noted earlier, certain patient populations (i.e., those with neural tubal defects and occupational exposure) are at higher risk for latex allergies than the general population. Other risk factors include a history of atopy, multiple surgeries, previous hand dermatitis of any kind, and allergies to foods known to have allergens that cross-react with latex.[13,30]

Many latex proteins, collectively called pathogenesis-related (PR) proteins, serve to protect the rubber tree from a variety of environmental threats such as infections (fungal, bacterial, and viral), wounding, and chemical insults.[31] These same proteins are also expressed in a number of other plant species.[32] For example, the latex protein ß-1,3-glucanase shares high association with the ß-1-3-glucanase proteins found in avocado, banana, chestnut, and kiwi.

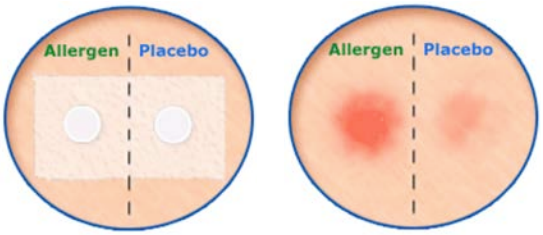
Other latex PR proteins share moderate association with analogous proteins in apple, carrot, celery, melon, papaya, tomato, and potato. Low or undetermined association

exists between still other latex PR proteins and many other fruits and vegetables, e.g., turnip and zucchini.[33] It is estimated that a patient with a history of fruit allergy has an 11% risk of concurrent latex allergy.[34] Conversely, up to 50% of patients with latex allergy are hypersensitive to some plant-derived foods.[5,13,35]

Skin-patch Testing (SPT)

SPT is reliable for diagnosing delayed hypersensitivity reactions to latex additives and helps to differentiate between ICD and ACD. It is performed by applying allergen samples to intact skin and covering them with a dressing. The patient is checked for skin reaction at 30 minutes, 24 hours, and 48 hours.[7,13] Swelling, redness, or blistering characterize a positive test.

If the test is negative, the site is reexamined again at 72 and 96 hours because weak reactions may appear later. A refinement of the technique, the thin layer rapid use epicutaneous (T.R.U.E.) test (SmartPractice, Phoenix, AZ, USA), has been licensed by the FDA and is available commercially. The T.R.U.E. test consists of a pre-prepared testing strip containing 35 of the most common contact allergens, including four rubber screening mixes and mercaptobenzothiazole.[36]



Radioallergosorbent Test (RAST)

RAST is a quantitative measurement of allergen-specific IgE antibodies. It is the test of choice to confirm latex-related immediate hypersensitivity reactions.[13] There are at least five FDA-licensed assays available (e.g., Alastat [Diagnostic Products Corporation, Los Angeles, CA, USA], ImmunoCAP [Phadia AB, Portage, MI, USA], CLA Allergen-Specific IgE Assay [Hitachi Chemical Diagnostics, Mountain View, CA, USA], and HY TECH-288 [Hycor Biomedical Incorporated, Garden Grove, CA, USA]). Their sensitivity and selectivity varies from 50-90% and 80-87%, respectively.[13]

Glove Provocation Testing (GPT)

GPT is useful when a person's clinical history is inconsistent with RAST results.[13] During the test, the patient wears one finger of a latex glove. If there is no urticarial reaction after 15 minutes, the exposed surface area is increased (i.e., two fingers and so on). A negative GPT is confirmed by the absence of urticaria after wearing a full glove for 15 minutes.[7,13] A positive GPT is confirmed by the presence of urticaria. Because of variations of latex content in gloves, GPT may be unsafe in highly sensitized persons.[5]

Preventive Strategies for the Oral Healthcare Settings

The amount of latex exposure to produce sensitization or signs and symptoms of an allergic reaction is unknown. However, reductions in exposure to latex products have been reported to be associated with decreased sensitization and associated signs and symptoms.[19,21,30,37,38] Allergic reactions to latex products in the healthcare setting can be minimized or prevented by following the recommendations of the National Institute for Occupational Safety and Health (Table 1).[39]

Some of the common products used in dentistry that contain latex and a list of alternative products is presented in Table 2. Practitioners should routinely check with their suppliers to stay current on the availability of latex-free substitutes. The cost of using non-latex gloves and other latex-free alternatives in healthcare settings has been analyzed. It was determined that maintaining a latex-free environment is less expensive when compared to potential disability and liability costs associated with exposure to latex products.[40,41]

Treatment Strategies

Once an individual develops an allergy to latex, special precautions are needed to prevent exposure at home, at work, and during healthcare. Patients and OHCP should be aware of common natural rubber latex products, as well as foods with cross-reactive proteins.[13] Pretreatment with antihistamines, corticosteroids, and bronchodilators is unpredictable in preventing IgE-mediated anaphylaxis and is not recommended. Complete avoidance is the most effective approach to dealing with latex allergy.[42]

Table 1. Strategies for the Prevention of Adverse Reactions to Latex Products.[39]

- General strategies
  - Whenever possible, use non-latex gloves and other non-latex products
  - If latex gloves are preferred, use reduced protein, powder-free gloves
  - Do not use oil-based hand creams or lotions unless they have been shown to reduce latex-related problems
  - After removing latex gloves, perform adequate hand hygiene
  - Use good housekeeping practices to minimize latex-contaminated dust in the work place
    - Identify areas contaminated with latex for frequent cleaning
    - Change ventilation filters frequently in latex-contaminated areas
- Strategies for OHCP suspected of latex allergy
  - Avoid direct contact with latex gloves and other latex products until evaluated by a physician
- Strategies for OHCP with allergic contact dermatitis
  - A trial of reduced-protein, powder-free, additive-free, or latex-free gloves may resolve dermatitis
- Strategies for OHCP with evidence of immediate hypersensitivity to latex
  - Avoid all contact with latex gloves and other latex products
  - Avoid areas where latex aeroallergens may be present
  - Follow physicians recommendations for dealing with allergic reactions
- Strategies for the prevention of adverse reactions to latex products in patients
  - Identify patients who may be allergic to or are at high risk for allergy to latex
  - Patients allergic to latex must be treated in a latex-free environment
    - Latex free treatment room
      - Patients should be scheduled for first appointment of the day
      - Latex-free gloves and other latex-free devices
      - Latex-free procedure tray
      - Latex-free emergency kit
- Periodically review and update preventive strategies

Signs and symptoms of latex allergy resolve quickly with avoidance; however, elevated IgE levels can remain detectable for more than 5 years after exposure.[43] This observation underscores the importance of a policy of latex avoidance. OHCP and patients with a history of immediate hypersensitivity reaction to latex proteins should carry epinephrine and wear a Medical Alert bracelet.[18] Strategies for the management of emerging allergic reactions to latex are presented in Table 3.[44,46]

Administrative Policies and Work Restrictions of OHCP Susceptible to Opportunistic Infections

OHCP with acute or chronic medical conditions such as immune deficiency syndromes, chronic diseases (e.g., diabetes mellitus, cancer, emphysema, heart failure, malnutrition), those undergoing immunosuppressive therapy (e.g., radiotherapy, chemotherapy, anti-graft rejection medications, steroids, monoclonal antibodies), and older OHCP are susceptible to opportunistic infections or the reactivation of latent vaccine-preventable infections.

Such individuals should discuss the problem with their personal physician to determine if their medical condition might affect their ability to safely perform their duties. Furthermore, this would be an opportune time to review the vaccination status of the individual with respect to vaccine preventable diseases, i.e., hepatitis B, influenza, varicella/zoster, measles/mumps/rubella, human papillomavirus (HPV), tetanus/diphtheria/pertussis, meningococcus, pneumococcus, and hepatitis A infections.

Administrative Policies and Work Restrictions of OHCP Exposed to or Infected with Transmissible Pathogens

Infection is the invasion and multiplication of microorganisms in body tissues resulting in local cellular injury as a consequence of competitive metabolism, toxin production, and immune-mediated reactions. The "chain of infection," the transmission of infectious agents in healthcare settings requires three elements: (1) a source or reservoir of infectious agents, (2) a susceptible host with a portal of entry receptive of the agent, and (3) a mode of transmission for the agent.[1,2]

Table 2. Dental Products that Frequently Contain Latex and Alternatives.

Latex Product	Alternatives
Gloves	Vinyl, nitrile, neoprene, polymer gloves
Bite blocks	Silicone bite blocks
Polishing cups	Non-latex polishing cups
Dental dams	Non-latex dam
Orthodontic elastics	Use ligature wires
Adhesive tape	Cloth, paper or silk tape
Anesthetic cartridges	Latex-free cartridges
Bite wing tabs	Paper loops
Impression materials (check MSDS)	Latex-free alginate
Masks	Non-latex cone-shaped or tie-on
Gutta percha	No good alternative; ensure gutta percha does not protrude through apex

OHCP Infected with a Bloodborne Pathogen

A guideline for the management of healthcare workers who are infected with the HBV, HCV, and HIV was developed by the Society of Healthcare Epidemiology of America (SHEA).[3] It recommends that infected OHCP should not be totally prohibited from patient care solely on the basis of an infection with a bloodborne pathogen and that clinical privileges be graduated according to the level of risk for transmitting a bloodborne pathogen (i.e., HBV, HCV, and HIV) in association with a procedure (Table 4) and the level of circulating viral burden of the infected OHCP.[3]

Table 3. Strategies for the Treatment of Allergic Reactions to Latex Products.[44,45,46]

Allergic contact dermatitis	1. Stop exposure to latex 2. Topical high-potency corticosteroid a. Fluocinonide (Lidex®, others), 0.05% ointment
Allergic rhinitis	1. Stop exposure to latex 2. Intranasal corticosteroid a. Fluticasone propionate (Flonase®, others), 1-2 sprays in each nostril
Acute urticaria	1. Stop exposure to latex 2. Oral H_1-receptor antagonist a. Cetirizine (Zyrtec®, others), 5-10 mg, once per day
Acute asthma	1. Stop exposure to latex 2. Place patient in sitting position 3. Provide immediate oxygen a. 2-4 L/min by nasal cannula 4. Inhaled beta$_2$-adrenergic agonist a. Albuterol (Proventil®, others), 2-4 puffs 5. If wheezing persists, activate EMS
Anaphylaxis	1. Stop exposure to latex 2. Place patient in supine position and elevate legs 3. Administer epinephrine a. Adults: epinephrine (Symjepi®, EpiPen®, others), 0.3 mg, IM (anterolateral thigh) – may be repeated in 20 minutes if necessary b. Child: epinephrine (Symjepi®, EpiPen Jr.®, others), 0.15 mg, IM (anterolateral thigh) – may be repeated in 20 minutes if necessary 4. Activate EMS 5. CPR, if indicated

Table 4. Oral Healthcare-associated Procedures According to the Level of Risk for Bloodborne Pathogen Transmission.[3]

- Category I procedures: minimal risk of bloodborne pathogen transmission
  - History-taking
  - Extraoral physical examination
  - Intraoral examination
    - Including the use of a tongue depressor, mirror, explorer, or a periodontal probe
  - Routine preventive dental procedures - not requiring the administration of local anesthesia
    - Application of sealants or topical fluoride
    - Prophylaxis – not to include subgingival scaling with a hand instrument
    - Orthodontic procedures
    - Prosthetic procedures
      - Fabrication of complete dentures
    - Hands-off supervision of surgical procedures

- Category II procedures: theoretical possibility of bloodborne pathogen transmission
  - Dental procedures requiring the administration of local anesthesia
    - Operative, endodontic, and prosthetic procedures and periodontal scaling and root planing
      - Use of ultrasonic instruments greatly reduce or eliminate the risk of percutaneous injury to the provider
      - If significant physical force with hand instruments is anticipated to be necessary, scaling and root planing and other Category II procedures could reasonably classified as Category III
    - Minor surgical procedures
      - Simple tooth extraction not requiring excessive force
      - Soft tissue flap procedures
      - Minor soft tissue biopsy
      - Incision and drainage of an abscess
  - Insertion of, maintenance of, and drug administration into arterial and central venous lines

- Category III procedures: definite risk of bloodborne pathogen transmission
  - General oral surgery
    - Surgical extractions
      - Removal of an erupted or unerupted tooth requiring elevation of a mucoperiosteal flap, removal of bone, or sectioning of tooth and suturing
    - Apicoectomy and root amputation
    - Periodontal curettage, gingivectomy, and mucogingival and osseous surgery
    - Alveoplasty and alveoectomy
    - Endosseous implant surgery
  - Open extensive head and neck surgery involving bone
  - Trauma surgery, including open head injuries, facial fracture reductions, and extensive soft issue trauma
  - Any open surgical procedure with a duration of more than 3 hours, probably necessitating glove change

This strategy encourages routine voluntary, confidential testing and emphasizes that clinicians who perform Category III procedures should know their immune or infection status, i.e., their relative viral load with respect to HBV, HCV, and HIV.[3] Clinicians who are institutionally based and develop one of these infections are ethically bound to report it to their institution's occupational medicine department. Private practitioners are ethically bound to report their infectious status to the local public health department.

These recommendations take into consideration evidence that (1) the HBeAg is not a sensitive marker for HBV infectivity (2) the availability of molecular tests that measure a patient's circulating viral burden for hepatitis B, hepatitis C, and human immunodeficiency viruses with precision, and (3) the availability of antiviral agents for the treatment of chronic HBV infection, both acute and chronic HCV infection, and HIV infection.[3] Table 5 lists recommended clinical privileges for healthcare providers with HBV, HCV, and HIV infection.[3]

OHCP Exposed to or Infected with Measles, Mumps, Rubella, and SARS-CoV-2

The measles, mumps, rubella viruses and the novel SARS-CoV-2 are spread primarily by droplets and droplet nuclei generated by an infected person during talking, breathing, coughing, and sneezing; by direct contact with nasal or throat secretions; and less frequently by touching freshly contaminated articles and environmental surfaces.[47-50] In oral healthcare settings, administrative policies and work restrictions are primarily predicated on the mode of transmission of these pathogens and the period of infectivity of exposed or infected OHCP (Table 6)[1,2] and (Table 7).[51,52]

OHCP Exposed to or Infected with Herpes Simplex and Varicella Zoster

The herpes simplex and varicella zoster viruses are transmitted primarily from person-to-person by direct contact with vesicular exudates, contaminated saliva, genital fluids (herpes simplex); inhalation of droplet nuclei from infected respiratory tract (varicella zoster); and less frequently, by contact with freshly contaminated articles and environmental surfaces.[53,54] In oral healthcare settings, administrative policies and work restrictions are primarily predicated on the mode of transmission of these pathogens and the period of infectivity of exposed or infected OHCP (Table 8).[1,2]

OHCP Exposed to or Infected with Influenza, *Streptococcus*, *Meningococcus*, and *Mycobacterium Tuberculosis*

Influenza, *streptococcus*, *meningococcus*, and *Mycobacterium tuberculosis* are spread from person-to-person primarily via airborne droplets generated by an infected person during talking, breathing, coughing, and sneezing; contact with respiratory secretions; and less frequently by contact with freshly contaminated articles and environmental surfaces.[55-58] In oral healthcare settings, administrative policies and work restrictions are primarily predicated on the mode of transmission of these pathogens and the period of infectivity of exposed or infected OHCP (Table 9).[1,2]

OHCP Infected with the HAV

The hepatitis A virus (HAV) is primarily transmitted by the fecal-oral route, either by person-to-person contact or consumption of contaminated food or water. In oral healthcare settings, administrative policies and work restrictions are primarily predicated on the mode of transmission of these pathogens and the period of infectivity of exposed or infected OHCP.[59] Infected OHCP should be restricted from patient contact, contact with patient's environment, and food-handling until 7 days after onset of jaundice.[1,2]

Summary

Adverse reactions to latex products in the oral healthcare setting can result in potentially serious health problems. A reasonable reduction of latex products should be considered for the protection of both OHCP and the patient. OHCP with acute or chronic medical conditions should consult with their personal physician to determine if their medical condition might affect their ability to safely perform their duties. Policies dealing with work restrictions should be written and clearly communicated through education and training.

Table 5. Recommended Clinical Privileges for Healthcare Providers with HBV or HCV Infection.[3]

Pathogen	Circulating Viral Burden	Clinical Privileges
HBV and HCV	$<10^4$ GE/mL	Category I, II, and III procedures*
	$\geq 10^4$ GE/mL	Category I and II procedures*
HIV	$<5 \times 10^2$ GE/mL	Category I, II, and III procedures*
	$\geq 5 \times 10^2$ GE/mL	Category I and II procedures*

*Clinical privileges predicated on the infected healthcare provider meeting the following requirements:

- No evidence of having transmitted infection to patients
- Obtained advice from an Expert Review Panel about continued practice
- Follow-up twice a year to determine viral burden
- Follow-up by a personal physician who has expertise in the management of infections with HBV, HCV, and HIV and who is allowed to communicate with the Expert Review Panel about the infected provider's clinical status
- Consulted with an expert about optimal infection control procedures and strictly adheres to the recommended procedures
- Routine use of double gloving and frequent glove changes during procedures (particularly when performing tasks known to compromise glove integrity) for all instances in patient care for which gloving is recommended
- Agreed to and signs a contract or letter from the Expert Review Panel that characterizes the infected providers responsibilities

Table 6. Work Restrictions: Measles, Mumps, and Rubella Infections.[1,2]

Infectious State		Restrictions

Measles	• Susceptible OHCP
	  ◦ Post-exposure
		• Exclude from duty
		  ◦ From the 5th day after first exposure through the 21st day after last exposure
		  OR
		  ◦ For 4 days after rash appears

	• OHCP with acute infection	• Exclude from duty ◦ For 7 days after rash appears

Mumps	• Susceptible OHCP
	  ◦ Post-exposure
		• Exclude from duty
		  ◦ From the 12th day after first exposure through the 26th day after last exposure
		  OR
		  ◦ For 9 days after onset of parotitis

	• OHCP with acute infection	• Exclude from duty ◦ For 7 days after onset of parotitis

Rubella	• Susceptible OHCP
	  ◦ Post-exposure
		• Exclude from duty
		  ◦ From the 7th day after first exposure through the 21st day after last exposure

	• OHCP with acute infection	• Exclude from duty ◦ For 5 days after rash appears

Table 7. Work Restrictions: SARS-CoV-2.[51,52]

Infectious State		Restrictions
SARS-CoV-2	• OHCP with potential exposure*	• Exclude from duty for 14 days after last exposure • Self-monitor for fever (>100°) or symptoms consistent with COVID-19 • Medical evaluation as needed
	• OHCP with confirmed infection	• OHCP with mild to moderate illness who are not severely immunocompromised, exclude from work until: ◦ At least 10 days have passed since symptoms first appeared *and* ◦ At least 24 hours have passed since last fever without the use of fever-reducing medications *and* ◦ Symptoms (e.g., cough, shortness of breath) have improved Note: For OHCP who are not severely immunocompromised and who were asymptomatic throughout their infection may return to work when at least 10 days have passed since the date of their first positive viral diagnostic test. ◦ OHCP with severe to critical illness or who are severely immunocompromised, exclude from work until: ▪ At least 10 and up to 20 days have passed since symptoms first appeared *and* ▪ At least 24 hours have passed since last fever without the use of fever-reducing medications *and* ▪ Symptoms (e.g., cough, shortness of breath) have improved ▪ Consider consultation with infection control expert Note: OHCP who are severely immunocompromised may produce replication-competent virus beyond 20 days after symptom onset or, for those who were asymptomatic throughout their infection, the date of their first positive viral test. Consultation with infectious diseases specialists is recommended. Use of a test-based strategy for determining when these HCP may return to work could be considered.

* Risk criteria for potential exposure:

Prolonged close contact (>15 minutes) with a patient, visitor, or HCP with confirmed SARS-CoV-2 infection *and*

- OHCP not wearing a respirator or facemask
- OHCP not wearing eye protection if the person with SARS-CoV-2 infection was not wearing a cloth face covering or facemask.
- OHCP not wearing all recommended PPE (i.e., gown, gloves, eye protection, respirator) while performing an aerosol-generating procedure.

Table 8. Work Restrictions: Herpes Simplex and Varicella Infections.[1,2]

Infectious State		Restrictions
Herpes simplex	• OHCP with acute orofacial herpes	• Cover lesions • Restrict from the care of high-risk patients ◦ Until lesions heal
	• OHCP with acute herpetic whitlow	• Exclude from duty ◦ Until all lesions heal
	• OHCP with acute genital herpes	• No Restrictions

Varicella (chicken pox)	• Susceptible OHCP
	  ◦ Post-exposure
		• Exclude from duty
		  ◦ From the 10th day after first exposure through the 21st day after last exposure

	• OHCP with acute infection	• Exclude from duty ◦ Until all lesions dry and crust

Varicella zoster (shingles)	• Susceptible OHCP
	  ◦ Post-exposure
		• Exclude from duty
		  ◦ From the 5th day after first exposure through the 21st day after last exposure.

	• Healthy OHCP with acute infection	• Cover lesions • Restrict from the care of high-risk patients ◦ Until all lesions dry and crust
	• Immunocompromised OHCP with acute infection	• Exclude from duty ◦ Until all lesions dry and crust

Table 9. Work Restrictions: Influenza, *Streptococcus*, *Meningococcus*, and *Mycobacterium Tuberculosis*.[1,2]

Infectious State		Restrictions
Influenza	• OHCP with acute infection and fever	• Restrict from the care of high-risk patients ○ Until acute symptoms resolve
Group A *streptococci*	• OHCP with acute infection	• Exclude from duty ○ Until 24 hours after start of effective therapy
Meningococcus	• OHCP with acute infection	• Exclude from duty ○ Until 24 hours after start of effective therapy
Mycobacterium tuberculosis	• Mantoux tuberculin skin test (TST)-positive OHCP	• No Restrictions
	• OHCP with acute infection	• Exclude from duty ○ Until proven non-infectious

Course Test Preview

To receive Continuing Education credit for this course, you must complete the online test. Please go to: *www.dentalcare.com/en-us/professional-education/ce-courses/ce473/test*

1. Over 250 latex proteins have been identified, but only ten have been formally named by the International Nomenclature Committee of Allergens in the International Union of Immunological Societies.

A. The first part of the statement is true, but the second part of the statement is false.
B. The first part of the statement is false, but the second part of the statement is true.
C. Both parts of the statement are true.
D. Both parts of the statement are false.

2. Naturally occurring proteins found in latex are believed to be responsible for inducing what type of adverse reaction?

A. IgE-mediated immediate hypersensitivity (i.e., Gell and Coombs Type 1) reactions
B. Latex glove-related irritant contact dermatitis
C. Cell-mediated delayed hypersensitivity (i.e., Gell and Coombs Type IV) reactions
D. Latex glove-related allergic contact dermatitis

3. The most common form of adverse reaction to latex glove use is _____.

A. IgE-mediated immediate hypersensitivity (i.e., Gell and Coombs Type 1) reactions
B. Latex glove-related irritant contact dermatitis
C. Cell-mediated delayed hypersensitivity (i.e., Gell and Coombs Type IV) reactions
D. Latex glove-related allergic contact dermatitis

4. All of the following statements regarding irritant contact dermatitis are true EXCEPT for one. Which one is the exception?

A. It is associated with repeated donning and removing of gloves.
B. It is associated with repeated hand washing and drying.
C. It is associated with incomplete hand drying.
D. It develops rapidly (within a couple of days).

5. All of the following statements about allergic contact dermatitis are correct EXCEPT for one. Which one is the exception?

A. It is caused primarily by the accelerators, promoters, and antioxidants that are added to natural rubber latex during harvesting, processing, or manufacturing.
B. It is characterized by a papular, pruritic (itchy) rash, which usually begins 24 to 48 hours after contact with offending products.
C. It is associated oozing vesicles and blisters are limited to areas of skin touched by latex.
D. It may be the first sign that more serious reactions could occur with continued exposure.

6. Type I immediate hypersensitivity reactions are mediated by _____.

A. IgA antibodies
B. IgG antibodies
C. IgE antibodies.
D. IgM antibodies

7. When latex proteins interact with antibodies on mast cells and basophiles, a massive release of histamine and other substances result in _____.

A. acute urticaria
B. angioedema
C. allergic rhinoconjunctivitis
D. generalized anaphylactic shock

8. The radioallergosorbant test (RAST) is used to confirm a delayed hypersensitivity reaction and skin patch testing is used to confirm the presence of immediate hypersensitivity reaction.

A. The first part of the statement is true, but the second part of the statement is false.
B. The first part of the statement is false, but the second part of the statement is true.
C. Both parts of the statement are true.
D. Both parts of the statement are false.

9. Historical clues to a possible latex sensitivity include all of the following EXCEPT for one. Which one is the exception?

A. allergies to foods known to have allergens that cross-react with latex
B. signs and symptoms of an allergic response after exposure to latex
C. previous hand dermatitis of any kind, atopy, and multiple surgical exposures
D. lactose intolerance

10. A positive skin patch testing is diagnostic of _____.

A. a delayed (Type IV) hypersensitivity reaction
B. an immediate (Type I) hypersensitivity reaction
C. irritation contact dermatitis
D. the presence of allergen-specific IgE antibodies

11. To reduce latex exposure, when performing routine restorative dentistry, which of the following is not recommended?

A. Whenever possible, use non-latex gloves and other non-latex products.
B. If latex gloves are preferred, use reduced protein, powder-free gloves.
C. Always use oil-based hand creams or lotions to reduce latex-related problems.
D. After removing latex gloves, perform adequate hand hygiene.

12. All of the following statements are correct with respect to precautions when treating a patient who has a confirmed type I hypersensitivity to latex, EXCEPT for one. Which one is the exception?

A. The patients allergic to latex must be treated in a latex-free environment.
B. The patients should be scheduled for last appointment of the day.
C. Use a latex-free procedure tray.
D. Have a latex-free emergency kit at the ready.

13. The most effective medication available to treat allergic contact dermatitis is _____.

A. Epinephrine, IM
B. oral H_1-receptor antagonist
C. a topical high-potency corticosteroid
D. an inhaled $beta_2$-adrenergic agonist

14. All of the following strategies are appropriate in the treatment of acute asthma EXCEPT which one?

A. Stop exposure to latex
B. Inhaled $beta_2$-adrenergic agonist
C. Place patient in supine position and elevate legs
D. Provide immediate oxygen, 2-4 L/min by nasal cannula

15. Which of the following medication is most critical when treating anaphylaxis?

A. Epinephrine, IM
B. Oral H_1-receptor antagonist
C. An inhaled $beta_2$-adrenergic agonist
D. Oxygen, 2-4 L/min by nasal cannula

16. All of the following acute or chronic medical conditions places an OHCP to an increased susceptibility to opportunistic infections or the reactivation of latent vaccine-preventable infections, EXCEPT for one. Which one is the exception?

A. Immune deficiency syndromes.
B. Immunosuppressive therapy such as radiotherapy, chemotherapy, anti-graft rejection medications, steroids, monoclonal antibodies.
C. Chronic diseases such as diabetes mellitus, cancer, emphysema, heart failure, malnutrition.
D. Younger age.

17. All of the following administrative policies and work restrictions of OHCP exposed to or infected with a bloodborne pathogen are correct EXCEPT for one. Which one is the exception?

A. Clinical privileges should be graduated according to the level of risk for transmission in association with a procedure.
B. Clinical privileges should be graduated according to the level of circulating viral burden of the infected OHCP.
C. Strategies should encourage routine voluntary, confidential testing and emphasize that OHCP who perform Category III procedures should know their immune or infection status.
D. OHCP who develop to HBV, HCV, and HIV infections are ethically bound to report it to the CDC.

18. With one exception, an OHCP with any of the following acute infections should be restricted from providing patient care. Which one is the exception?

A. Varicella (chicken pox)
B. Herpetic whitlows
C. Genital herpes
D. Tuberculosis

19. OHCP with a positive Mantoux tuberculin skin test (TST) are not infectious and, therefore, there are no associated work restrictions.

A. True
B. False

20. All of the following statements are correct with respect to OHCP infected with the HAV, EXCEPT for one. Which one is the exception?

A. The hepatitis A virus (HAV) is primarily transmitted by the fecal-oral route, either by person-to-person contact or consumption of contaminated food or water.
B. In oral healthcare settings, administrative policies and work restrictions are primarily predicated on its mode of transmission and the period of infectivity.
C. Infected OHCP should be restricted from patient contact, contact with patient's environment, and food-handling until 7 days after onset of jaundice.
D. Infected OHCP should be restricted from patient contact, contact with patient's environment, and food-handling until 7 days after resolution of jaundice.

References

1. Centers for Disease Control and Prevention. Guidelines for Infection Control in Dental Health-Care Settings. 2003. MMWR 2003;52(No. RR-17):1-76.
2. Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Am J Infect Control 2007;35:S65-164.
3. Henderson DK, Dembry L, Fishman NO, et al. SHEA guideline for management of healthcare workers who are infected with hepatitis B virus, hepatitis C virus, and/or human immunodeficiency virus. Infection control and hospital epidemiology, 2010 Mar; 31(3): 203-32.
4. Sussman GL, Beezhold DH, Kurup VP. Allergens and natural rubber proteins. J Allergy Clin Immunol 2002;110(2 Suppl):S33-S39.
5. Ahmed SM, Aw TC, Adisesh A. Toxicological and immunological aspects of occupational latex allergy. Toxicol Rev. 2004;23(2):123-34. doi: 10.2165/00139709-200423020-00005. PMID: 15578865.
6. Allergen Nomenclature Sub-Committee. Allergen Nomenclature. Accessed April 8, 2021.
7. Critchley E, Pemberton MN. Latex and synthetic rubber glove usage in UK general dental practice: changing trends. Heliyon. 2020 May 5;6(5):e03889. doi: 10.1016/j.heliyon.2020.e03889. PMID: 32405551; PMCID: PMC7210590.
8. Ahmed DD, Sobczak SC, Yunginger JW. Occupational allergies caused by latex. Immunology Allergy Clin North Am 2003;23:205-19.
9. Spina A, Levine H. Latex allergy: A review for the dental professional. Oral Surg Oral Med Oral Pathol Oral Rad Endod 1999;87:5-11.
10. Farrell AL, Warshaw EM, Zhao Y, et al. Prevalence and methodology of evaluation for latex allergy among allergists in the United States: results of a cross-sectional survey. Am J Contact Dermat 2002;13:183-189.
11. Hamann CP, Turjanmaa K, Rietschel R, et al. Natural rubber latex hypersensitivity. Incidence and prevalence of type I allergy in the dental professional. J Am Dent Assoc 1998;129:43-54.
12. Hamann CP, Rodgers PA, Sullivan KM. Allergic contact dermatitis in dental professionals. Effective diagnosis and treatment. J Am Dent Assoc 2003;134:185-194.
13. Taylor JS, Erkek E. Latex allergy: diagnosis and management. Dermatol Ther 2004;17:289-301.
14. Schmid K, Cristoph BH, Niklas D, et al. Latex sensitization in dental students using powder-free gloves low in latex protein: a cross sectional study. Contact Dermatitis 2002;47:103-108.
15. Bousquet J, Flahault A, Vandenplas O, et al. Natural rubber latex allergy among health care workers: a systematic review of the evidence. J Allergy Clin Immunol 2006;118:447-454.
16. Larese Filon F, Bosco A, Fiorito A, Negro C, Barbina P. Latex symptoms and sensitization in health care workers. Int Arch Occup Environ Health. 2001 Apr;74(3):219-223.
17. Lieberman P, Nicklas RA, Oppenheimer J,et al. The diagnosis and management of anaphylaxis practice parameter: 2010 update. J Allergy Clin Immunol. 2010 Sep;126(3):477-80.e1-42.
18. Antezana M, Parker F. Occupational contact dermatitis. Immunol Allergy Clin North Am 2003;23:269-290.
19. Hamilton RG. Diagnosis of natural rubber latex allergy. Methods 2002;23:22-31.
20. Hamilton RG, Peterson EL, Ownby DR. Clinical and laboratory-based methods in the diagnosis of natural rubber latex allergy. J Allergy Clin Immunol 2002;110(2 Suppl):S47-S56.
21. Charous BL, Tarlo SM, Charous MA, et al. Natural rubber latex allergy in the occupational setting. Methods 2002;27:15-21.
22. Fish JE. Occupational asthma and rhinoconjunctivitis induced by natural rubber latex exposure. J Allergy Clin Immunol 2002;110(2 Suppl):S75-S81.
23. Fish JE. Occupational asthma and rhinoconjunctivitis induced by natural rubber latex exposure. J Allergy Clin Immunol 2002;110(2 Suppl):S75-S81.
24. Neugut AI, Ghatak AT, Miller RL. Anaphylaxis in the United States. An investigation into its epidemiology. Arch Intern Med 2001;161:15-21.
25. Lieberman P. Anaphylactic reactions during surgical and medical procedures. J Allergy Clin Immunol 2002;110(2 Suppl):S64-S9.

26. Porri F, Lemiere C, Birnbaum J, et al. Prevalence of latex sensitization in subjects attending health screening: implications for a perioperative screening. Clin Exp Allergy. 1997 Apr;27(4):413-417.
27. Pumphrey RSH, Duddridge M, Norton J. Fatal latex allergy. J Allergy Clin Immunology 2001;107:558.
28. Fisher AA. Contact urticaria and anaphylactoid reactions to corn starch surgical glove powder. Contact Dermatitis 1987;16:224-225.
29. Wakelin SH, White IR. Natural rubber latex allergy. Clin Exp Dermatol. 1999 Jul;24(4):245-248.
30. Nettis E, Assennato G, Ferrannini A, et al. Type I allergy to natural rubber latex and type IV allergy to rubber chemical in healthcare workers with glove-related skin problems. Clin Exp Allergy 2002;32:441-447.
31. Nettis E, Assennato G, Ferrannini A, et al. Type I allergy to natural rubber latex and type IV allergy to rubber chemical in healthcare workers with glove-related skin problems. Clin Exp Allergy 2002;32:441-447.
32. Sicherer SH. Clinical implications of cross-reactive food allergens. J Allergy Clin Immunol 2001;108:881-890.
33. Pereira C, Tavares B, Loureiro G, et al. Turnip and zucchini: new foods in the latex-fruit syndrome. Allergy. 2007 Apr;62(4):452-3. doi: 10.1111/j.1398-9995.2006.01313.x. PMID: 17362260.
34. Hamilton RG, Adkinson NF Jr. Diagnosis of natural rubber latex allergy: multicenter latex skin testing efficacy study. Multicenter Latex Skin Testing Study Task Force. J Allergy Clin Immunol. 1998 Sep;102(3):482-490.
35. Sanchez-Monge R, Blanco C, Lopez-Torrejon G, et al. Differential allergen sensitization patterns in chestnut allergy with or without associated latex-fruit syndrome. J Allergy Clin Immunol 2006;118:705-s10.
36. T.R.U.E. test package insert. Accessed April 8, 2021.
37. Baur X, Chen Z, Allmers H. Can a threshold limit value for natural rubber latex airborne allergens be defined? J Allergy Clin Immuno 1998;101(1 Part 1):24-27.
38. Bernstein DI, Management of natural rubber latex allergy. J Allergy Clin Immunol 2002;110(2 Suppl):S111-S116.
39. Centers for Disease Control and Prevention. National Institute of Occupational Safety and Health. Preventing allergic reactions to natural rubber latex in the workplace. Accessed April 8, 2021.
40. Phillips V, Goodrich M, TJ S. Health Care Worker Disability Due to Latex Allergy and Asthma: A Cost Analysis. Am J Public Health 1999;89:1024-1028.
41. Tarlo SM, Easty A, Eubanks K, et al. Outcomes of a natural rubber latex control program in an Ontario teaching hospital. J Allergy Clin Immunol 2001;108(4):628-633.
42. Yunginger JW. Latex-associated anaphylaxis. Immunol Allergy Clin North Am 2001;21:669-677.
43. Smith AM, Amin HS, Biagini RE, et al. Percutaneous reactivity to natural rubber latex proteins persist in health-care workers following avoidance of natural rubber latex. Clin Exp Allergy 2007;37:1349-1356.
44. Drugs allergic disorders. Med Lett Drugs. Ther. 201 May;59(1520):71-80.
45. Drugs for asthma and COPD. Treat Guidel Med Lett. 2013 Aug;11(132):75-86.
46. An epinephrine prefilled syringe (Symjepi) for anaphylaxis. Med Lett Drugs Ther. 2019 Feb 25;61(1566):25-26. Corrected and republished in: JAMA. 2019 Apr 2;321(13):1306-1307.
47. Centers for Disease Control and Prevention. About Measles. Accessed April 8, 2021.
48. Centers for Disease Control and Prevention. About Mumps. Accessed April 8, 2021.
49. Centers for Disease Control and Prevention. About Rubella. Accessed April 8, 2021.
50. Centers for Disease Control and Prevention. Guidance for Dental Settings: Interim Infection Prevention and Control Guidance for Dental Settings During the COVID-19 Response. Accessed April 8, 2021.

51. Centers for Disease Control and Prevention. Interim U.S. Guidance for Risk Assessment and Work Restrictions for Healthcare Personnel with Potential Exposure to SARS-CoV-2. Accessed April 8, 2021.
52. Centers for Disease Control and Prevention. Return to Work Criteria for Healthcare Personnel with SARS-CoV-2 Infection (Interim Guidance). Accessed April 8, 2021.
53. Centers for Disease Control and Prevention. About Chickenpox. Accessed April 8, 2021.
54. Centers for Disease Control and Prevention. About Shingles (Herpes Zoster). Accessed April 8, 2021.
55. Centers for Disease Control and Prevention. Influenza (Flu). Information for Health Professionals. Accessed April 8, 2021.
56. Centers for Disease Control and Prevention. Pneumococcal Disease. Accessed April 8, 2021.
57. Centers for Disease Control and Prevention. Meningococcal Disease. Accessed April 8, 2021.
58. Centers for Disease Control and Prevention. Tuberculosis (TB). Accessed April 8, 2021.
59. Centers for Disease Control and Prevention. Hepatitis A FAQs for Health Professionals. Accessed April 8, 2021.

Additional Resources

- No Additional Resources Available

About the Authors

Michaell A. Huber, DDS

Professor
Department of Comprehensive Dentistry
The University of Texas Health Science Center at San Antonio, School of Dentistry, San Antonio, Texas

Dr. Huber received his DDS from the University of Texas Health Science Center at San Antonio Dental School, San Antonio, Texas in 1980 and a Certificate in Oral Medicine from the National Naval Dental Center, Bethesda, Maryland in 1988. He is certified by the American Board of Oral Medicine. As an officer of the Dental Corps, United States Navy, Dr. Huber's assignments included numerous ships and shore stations and served as Chairman, Department of Oral Medicine and Maxillofacial Radiology and Director, Graduate Program in Oral Medicine, National Naval Dental Center, Bethesda, Maryland. In addition he served as Specialty Leader for Oral Medicine to the Surgeon General of the United States Navy, Washington, DC; and Force Dental Officer, Naval Air Force Atlantic, Norfolk, Virginia. He has many professional affiliations and over the past 24 years, he has held a variety of positions in professional organizations.

Since joining the faculty in 2002, Dr. Huber has been teaching both pre-doctoral and graduate dental students at the UT Health School of Dentistry. In 2014, he was awarded the UTHSCSA Presidential Teaching Excellence Award and in 2019, he was awarded the University of Texas Regents' Outstanding Teaching Award. He is a Past President of the American Academy of Oral Medicine. Dr. Huber has spoken before many local, state, and national professional organizations. He has published over 70 journal articles, book chapters, and online postings.

Phone: (210) 567-3360
Fax: (210) 567-3334

Email: huberm@uthscsa.edu

Géza T. Terézhalmy, DDS, MA

Dr. Terézhalmy is Professor and Dean Emeritus, School of Dental Medicine, Case Western Reserve University. Dr. Terézhalmy earned a BS degree from John Carroll University; a DDS degree from Case Western Reserve University; an MA in Higher Education and Human Development from The George Washington University; and a Certificate in Oral Medicine from the National Naval Dental Center. Over the past 40+ years, Dr. Terézhalmy held more than 30 positions in professional societies, served as editor or contributing editor for several publications, co-authored or contributed chapters for several books, conducted oral healthcare related research, and had over 250 papers, and abstracts published.

Email: gtt2@case.edu