LATEX ALLERGIES GUIDELINES

APPROVED APRIL, 1999

This article is intended as a guideline to dentists. It is very difficult to obtain full and accurate information on the latex content of products or hand creams/lotions, which may vary between companies and product series. Checking with suppliers on all products, not just those mentioned in this article before use with latex allergic individuals is strongly recommended.

LATEX ALLERGIES – WHAT EVERY DENTIST NEEDS TO KNOW!

Over the past ten years, there has been an escalating increase in dental health care workers developing sensitivities to latex products. Between 5-15% of the dental workforce and 3% of the public experiences some degree of sensitivity to latex. It is estimated that the average health care worker who uses latex gloves on a regular basis will develop a latex sensitivity within 15 years that may be severe enough to prevent them from earning a living in the dental health field.

Types of Reactions

1. **chemical dermatitis**
   This is the development of dry, itchy, irritated areas on the skin, usually the hands, caused by repeated hand washing, use of cleaners or exposure to chemicals/powders added to the gloves. Chemical dermatitis is not a true allergic reaction and is the most common reaction by dental care workers.

2. **latex sensitivity**
   Sensitivity is a physiological inflammatory reaction (rash or oozing skin blisters) to chemicals or powders added during the latex manufacturing process. Usually the reaction is limited to the contact area. A reaction can occur within minutes or up to 48 hours after direct contact has occurred the reaction is not potentially life threatening.

3. **latex allergy**
   A latex allergy is an allergic reaction to products made from natural rubber. The allergic reaction is caused by a protein found in the sap of a rubber tree. Currently, it is unsure whether it is the protein itself or protein transformation during manufacturing process that initiates an allergic reaction. A reaction response usually occurs within the first hour after exposure to the allergen and symptoms may affect any apart of the body beyond the area of direct contact, producing various symptoms. Common symptoms include: skin redness, hives, rhinitis, conjunctivitis, uticaria, asthma and syncope. Life threatening anaphylactic shock, although rare, occurs most frequently when mucous membranes have direct tissue contact with latex products.

Why the concern?

Allergic reactions can occur with indirect exposure to the latex protein. The latex protein, which is commonly found in latex glove powders, becomes airborne when gloves are put on or removed by dental care workers. Indirect exposure occurs when the airborne powder is inhaled or touched on common work surfaces (carpets, upholstery, furniture, etc.). Research suggests that neither wiping nor rinsing has proven effective in totally removing the latex protein powder from inanimate objects but frequent housekeeping does lower the concentration of latex protein in the air.

Testing

The best way to diagnosis a latex allergy is through allergy testing conducted by an allergist. There are presently no vaccines available to control latex allergy reactions.

Which patients may be Latex Sensitive or Allergic?

Dentists can identify potential risk patients through comprehensive medical histories and oral questioning prior to treatment.

Those individuals who may be at a greater latex allergy risk include patients with a history of:

1. Food allergies to bananas, kiwi, avocados, potatoes, peanuts or chestnuts.

2. Medical conditions that require chronic medical care with latex-based products (Examples: spina bifida, genitourinary tract abnormalities, atopic patients)

3. Intolerance to latex-based products: balloons, rubber gloves, condoms, rubber balls

4. Working in healthcare professions where latex gloves are commonly worn

5. Allergic reactions occurring during dental procedures or medical operations

Precautions for the Latex Sensitive Employee

a) Refer the employee to their physician for allergy testing to confirm if they are experiencing a latex sensitivity or a chemical contact dermatitis

b) Create a latex reduced work environment

- ensure thorough hand rinsing techniques and proper infection control protocol are followed to minimize a contact dermatitis
- diminish future reactions by not wearing gloves for longer than needed periods of time
- ensure good and frequent housekeeping practices exist to remove latex dust from the workplace (upholstery, carpets, ventilation ducts and plenums)
- change filters and vacuum bags frequently in latex contaminated areas
- provide low protein, powder- free gloves to employees. Be aware that hypoallergenic latex gloves do not reduce the risk of latex allergy but may
- reduce reactions to chemical additives
- inform employees to avoid using oil-based hand creams or lotions (jojoba, some aloe vera, palm oil, coconut oil, lanolin, petrolatum products, etc.) unless they have been shown to reduce latex related problems and do not degrade the molecular structure of the latex or synthetic glove material. Glycerine and most water soluble based had products are acceptable.

c) Once an employee has confirmed latex allergy diagnosis, the employer has an obligation to modify the work environment, within reasonable limits, to minimize the employee's future exposure to the allergen. Modifications to the work environment might include any or all to the following:

- initiating the above steps
- providing alternative gloves that are free of the offending chemical or allergen
- providing glove liners under the latex gloves, if latex gloves cannot be avoided
- reassigning the employee to areas where no latex gloves are used (if possible)
- having injectable epinephrine on hand
- investigating alternative causative agents in the work such as soaps, detergents, preservatives, colorants ad disinfectants

Precautions for the Latex Sensitive Patient

The best precaution is to avoid exposing the patient to natural latex products.

1. Take a through medical history
2. Refer the patient to see their physician for latex sensitivity testing
3. Ensure the patient's chart indicates "latex sensitivity"
4. A medical emergency kit with non latex airway bags, masks, bandages and tape should be available
5. Place visible signs indicating "latex sensitive" in the operatory area
6. Schedule latex sensitive patients as the first patient of the day in order to minimize their exposure to airborne latex particles
7. Use non-latex devices (gloves, dams, etc.)
8. Medication vials often contain rubber plugs. The rubber plug may need to be removed prior to inserting the needle in the bottle. Ampoules are a safer choice
9. Glass syringes are preferred over plastic or pre-filled or single use syringes since the plunger may contain rubber
10. Some blood pressure cuffs, stethoscope tubing and dental chair coverings often contain natural rubber products. Simply covering the articles with cloth can minimize latex exposure.
11. If a reaction does occur, discontinue treatment immediately and observe the patient for at least 20 minutes. Medical intervention may be needed

Confusing Glove Terms

Latex

Natural latex products are not easily identified. Many natural rubber containing products do not stretch at all. Even more confusing, the term "latex" can refer to synthetic products which have physical characteristics identical to natural rubber. Health Canada now requires that glove composition be stated on glove labels. Other health product labelling of composition is voluntary.

Powder Glove Content

Learn to read labels. A recent study by the Guthrie research Institute in the United States in 1995 indicated that the protein content of various glove brands can vary by as much as 1000%. Furthermore, latex protein levels from the same manufacturer may vary with each production batch lot. A low-powder or lightly powdered brand does not necessarily infer powder free and may have a higher protein content than another manufacture's regular brand.

Hypoallergenic

The term hypoallergenic refers to products which are low in the chemicals known to cause allergic irritant dermatitis. Hypoallergenic products may not be necessarily protein allergen free or latex free.

Non Latex Alternatives-Pros and Cons

Vinyl is a synthetic product made from polyvinylchloride. Vinyl does not have the same stretching or strength characteristics of latex. As a result, vinyl does not provide the same fit or infection barrier as latex. Vinyl gloves will only eliminate the risk of a latex protein reaction. By themselves, they will not eliminate the risk of a chemical allergic reaction or dermatitis.

Nitrile, neoprene, vitron, syrenebutadiene – Pros and Cons

These products vary in elasticity and strength between vinyl and latex. The main disadvantage of their usage is their high cost. The price differential currently makes them non cost-effective for examination gloves.

TABLE A – COMMON LATEX DENTAL PRODUCTS

POSSIBLE LATEX PRODUCTS	POSSIBLE ALTERNATIVE PRODUCTS
Suture materials	Chromic, vicryl, plain, prolene
Disposable bibs, face masks with adhesive strips or elastic ties, goggles	Replace elastic with cloth, twill tape or paper ties
GA props	Check with manufacturer
Oxygen masks	Vital signs
Breathing circuits	Neoprene Circuits
Ventilator or suction tubing	Plastic tubing(Davol, Laerdal,Mallinckrodt, Superior,Yankauer)
Endotracheal/nasotracheal tubes rubber stoppers	Berman, Mallinckrodt, Polamedco, Portex, Rusch, Sheridan, Shiley
IV acess, tubing injection ports, Y sites	Do not use & connector
Adhesive tape	Mastisol (Ferndale)
Rubber stoppers on medication	4% articaine hydrochloride(Ultacaine-by Hoechst-Russell) Bite block (MDT) Remove latex stopper
Teeth protectors/bite blocks	Wire springs Polyvinyl medical sheets
Dental dams	Silicone dams (Hygienic) (Meer Dental Hygienic Corp.) Palm area of a latex free glove
Dental prophy cups	?
Orthodontic rubber bands	PURO/M27 intraoral elastics (Midwest Orthodontic) John O Butler Co.)
Dental sealant	Dental sealant (Delton)
Finger cots	Do not use
Root canal material, Gutta percha	Check with manufacturer
Infant tooth brush-massager	Soft bristle brush or cloth, Gerber/NUK
Rubber aprons	Cover apron completely with cloth
Blood pressure tubing & cuff, stethoscope	Use over clothing

TABLE B – SAMPLES OF NON LATEX GLOVES ON THE CANADIAN MARKET

BRAND NAME	INGREDIENT	MANUFACTURER
Dermapren	Neoprene	Ansell, Inc (Dothan, Ala.)
Elastyren	SBS/SiS co-Polymer	E.C.I. Medical Technologies (N.Scotia)
Flexam	Polyvinylchloride	Baxter (Chicago, ILL.)
Neolon	Neoprene	Becton-Dickenson (Rutherford, N.J.)
SensiCare	Polyvinylchloride	Becton-Dickenson (Rutherford, N.J.)
Tactylon	Styrene ethylene butylene	Smart Practice (Phoenix, Ariz.)
TruTouch	Polyvinylchloride	Becton-Dickenson
Safeskin Nitrile	Nitrile-hypoallergenic powder free	Safeskin (San Diego, CA)
Vinylite	Polyvinylchloride	Smart Practice

TABLE C: AMERICAN BRAND HAND CARE PRODUCTS WHICH MAY BE BENEFICIAL FOR CONTACT DERMATITIS WHICH PROVIDE SOME BARRIER PROTECTION

PRODUCT	MANUFACTURER	MAIN INGREDIENTS
Dermal Therapy	Heraeus Kulzer	Urea, Alpha Hydroxy Acid, Silk Amino acids
Epricrem	Septodont-Novocol	Dimethicone, Silocone, Paraffin oil, Triclosan
Glove'n Care	Essential Dental Systems	Emulsifying Wax, Aloe Vera gel, Dead Sea Water Glycerin, Annontoin, Dimethicone

This article is intended as a guideline to dentists. It is very difficult to obtain full accurate and information on the latex content of products or hand creams/lotions, which may vary between companies and product series. Checking with suppliers on all products, not just those mentioned in this article before use with latex allergic individuals is strongly recommended.

REFERENCES FOR FURTHER INFORMATION

1.	Internet World Wide Web	pw2.netcom.com/-nam1/latex_allergy.hmtl	general topics
2.	Health Protection Branch	www.hwc.ca/dataehd/English/mdb/r&s.hmt	labelling requirements
3.	Medical Devices Bureau	hpb 1.hwc.ca:8300/T373	a)Guthrie Research Institute b) Compendium of non-latex gloves d)Latex Allergy Project c/o Andrew Douglas
4.	Canadian General Standards Board	http://w3.pwgcs.gc.ca/cgsb.	Listings of latex/non latex products
	Medical Hot Line	1-800-267-9675 1-800-665-2475	general latex information listing of products

5. "Source to Surgery Newsletter" , February 1994, Vol.2, Issue I
6. "Canadian Society of Allergy and Clinical Immunology Association Booklet", July 1994
7. "Latex Sensitivity in the Operating Theatre-Medical College of Wisconsin Newsletter" Milwaukee USA, Kevin J. Kelly, 1994
8. "Latex Allergy and Finding Gloves that Fit Your Practice" –Communique, Canadian Dental Association – January/February 1997
9. "Latex Allergy Information", Nova Scotia Dental Association December 1996
10. "Issues of Latex Safety in Dentistry", Oral Health, June 1996
11. "Firsthand-A Technical Publication", Safeskin Corporation, Summer 1996
12. "Latex Allergies in Dentistry: recognition and Recommendations", Roy ,Epstein, Onno Canadian Dental Association, Vol.63, No 4, April 1997
13. "Spina Bifida Association of America Latex information Page"' http://www.sbaa.org/Latex.htm
14. "Canadian Dental Association-Annual Review", 1993-1994,p 19-20
15. "Coming to grips with latex glove allergies", Occupational health & Safety Canada Buyers Guide, p 6-12
16. "Those hands, Those hands, Those priceless hands", Oral Health, June 1997 p.29-30