LATEX ALLERGIC PATIENTS: IDENTIFICATION & MANAGEMENT

PRACTICE GUIDELINE ©

DOCUMENT SUMMARY/KEY POINTS

- An allergy to latex proteins can result in mild to life-threatening allergic reactions.
- This guideline outlines the network's framework for the identification and management of patients sensitive to exposure to latex proteins.
  - The document does address Type 1 (immediate) allergy to latex protein.
  - The document does not address allergy to other chemicals such as curing agents that may be found in natural rubber (latex) products, nor does it deal with allergy to synthetic latex substances.
  - It does not address contact dermatitis which can result from the wearing of latex gloves. (This is a delayed hypersensitivity reaction and can be troublesome, but is not associated with a risk of a sudden severe, generalised allergic reaction or anaphylaxis.)

CHANGE SUMMARY

- This SCHN document replaces the CHW guideline of the same title.

READ ACKNOWLEDGEMENT

- **Discretionary** – local manager to determine which staff, if any, are to read and acknowledge they understand the contents of this document.

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1st March 2016	**Review Period**: 3 years
Team Leader:	Staff Specialist	**Area/Dept**: Allergy/Immunology CHW & SCH

Date of Publishing: 24 February 2016 12:42 PM Date of Printing: 24 February 2016

K:\CHW P&P\ePolicy\Feb 16\Latex Allergic Patients - Identification_Management.docx

TABLE OF CONTENTS

Introduction

- Latex is the sap of the commercial rubber tree. The proteins in latex can cause a range of mild to severe Type 1 allergic reactions. A number of allergenic proteins responsible for Immunoglobulin E (IgE) mediated reactions have been identified.
- A range of equipment and products used in Sydney Children's Hospital Network contain latex. This includes specifically health-related equipment such as endotracheal tubes, catheters, dressings, surgical gloves and other items used extensively in the provision of treatment and care, to essentially domestic products that are used widely in the community.
- An allergy to latex proteins can result in mild to life threatening allergic reactions.
- This guideline outlines the hospital's framework for the identification and management of patients sensitive to the exposure to latex proteins.
    - The document **does** address Type 1 (immediate) allergy to latex protein.
    - The document **does not** address allergy to other chemicals such as curing agents that may be found in natural rubber (latex) products, nor does it deal with allergy to synthetic latex substances.
    - It does not address contact dermatitis which can result from the wearing of latex gloves. (This is a delayed hypersensitivity reaction and can be troublesome, but is not associated with a risk of a sudden severe, generalised allergic reaction or anaphylaxis.)

The guidelines have been designed to assist clinicians, nurses and others involved in the direct care of patients, to identify and manage latex allergy in patients.

Definitions

Type 1 hypersensitivity

- Also known as IgE mediated hypersensitivity. This is due to an allergic reaction mediated by IgE antibody.
- Seen in Type 1 allergic reactions. Common examples of this are:
    - food allergy
    - drug allergy
    - anaphylaxis
    - hay fever

Latex-free

- Areas or products which are totally free of latex (i.e. do not contain latex).

Anaphylaxis

- Acute, systemic allergic reaction involving the respiratory or cardiovascular system; often very severe and potentially lethal.

Latex-safe

- Areas or items against which patients are most unlikely to have an allergic reaction to an exposure to latex. These areas are not necessarily totally free of latex, but latex exposure is minimal and not clinically significant.

Urticaria

- Commonly known as 'hives' – characterised by transient, pruritic, oedematous wheals or erythematous papules.

Guidelines

In the case of planned admissions it is possible to obtain the history of the patient with respect to latex allergy or potential latex allergy. However, not all presentations to the hospital are planned. If a patient history cannot be obtained, the patient should be treated as *potentially* allergic and should be observed closely for signs of latex sensitivity.

The basic principles of caring for the latex-allergic patient are:

- **Recognise the problem**. Patients frequently exposed to latex-containing products may be sensitised to latex.
- **Avoid exposure to latex**. Treat in a latex-safe area with non-latex equipment.
- **Inform the treating staff**. This will help ensure the treatment of the patient in a latex-safe environment before, during and after surgery/treatment.
- **Be prepared to treat anaphylaxis**. Watch for the triad of "hypotension, bronchospasm and angioedema" in anaphylaxis, and have adrenalin available.
- **Plan for all procedures**. From admission to discharge all procedures must be planned. This includes ward placement, ward procedures, monitoring resuscitation, environmental, domestic and kitchen activities.
- **Be vigilant**. This is especially important post-operatively and during follow-up care. Where patients have reactions, arrange ICU admission and allergist referral.

Identification of 'at risk' Latex-Allergic Patients

Patients most at risk are those with prolonged or frequent exposure to latex products, especially:

- Patients with neural tube defects (meningomyelocele, spina bifida) and congenital urogenital abnormalities (because they likely have had previous latex exposure).
- Patients who have had multiple surgical procedures.
- To assist with identification of patients at risk a Diagnostic Checklist is provided in Appendix A. The checklist can be part of the pre-admission or admission process and should be administered by staff.

Symptoms of type I (IgE-mediated) Latex allergy

Latex allergy often begins with a rash on the hands when using natural rubber latex gloves. Other symptoms include hay fever type reactions such as itchy swollen eyes, runny nose and sneezing.

Some patients may develop asthma symptoms such as chest tightness, wheezing coughing and shortness of breath, especially if latex powder is inhaled.

Diagnostic Testing

Diagnostic testing is recommended only for those with a suggestive history of reaction to latex or evidence of belonging to a high-risk group. This would include:

- unexplained allergic reactions/anaphylaxis
- intraoperative hypotension, bronchospasm or anaphylaxis;
- a history of multiple surgical procedures;
- reactions to foods known to cross react with latex (e.g. avocados, kiwi, chestnut or banana)

Note:	On rare occasions patients with no apparent risk factors have exhibited severe allergic reactions

- **Tests available are:**
  - Skin-prick test.
  - serum specific IgE antibodies.

Management of Patients with Latex Allergy

Guidelines for the management of patients with latex allergy are contained in Appendix B. Information specific for latex allergy management in the Operating Suite and the Dental Service is contained in separate departmental documents.

Management techniques

- All hospitalised latex-allergic patients should have proper identification of their latex allergy on armbands, hospital charts and beds.
- Latex-allergic patients should be admitted to latex-safe rooms.
- Surgery on latex-allergic patients should be done in latex safe operating rooms suites.
- All hospital personnel entering a latex-safe environment, whether or not they are in direct contact with latex-allergic patients, must only wear non-latex gloves.

Resuscitation Trolleys

- All resuscitation equipment on the resuscitation trolleys throughout SCHN is latex-free. The trolleys routinely have latex-free gloves and latex-free circuits, masks, catheter mount and latex-free oral airways available.
- Product (latex-free) detail is available from the Clinical Product Coordinator.

Pharmacological Prophylaxis

Pharmacological prophylaxis with steroids and antihistamines is **not** considered to be an alternative to latex avoidance. There is **no scientific evidence** to suggest that pre-treatment can prevent anaphylactic reactions from latex exposure.

Fact Sheet – Latex-Allergic Patients

- Refer to Appendix C

Emergency Procedures

- Severe reactions (anaphylaxis) include one or more of the following:
  - Difficulty/noisy breathing,
  - swelling of the tongue,
  - swelling or tightness in the throat,
  - difficulty talking and or hoarse voice,
  - wheeze or persistent cough,
  - persistent dizziness or collapse, pale and floppy (in young children).
- These symptoms are often (but not always) accompanied by hives or angioedema. The onset of anaphylaxis is variable. It may be immediately or occur up to an hour after exposure to the antigen.
- Treat anaphylaxis according to local BTF protocols.
- Latex-free equipment **must** be used.

Responsibility for Maintaining Latex Free Environment

- All clinical staff (Medical and Nursing), Allied Health Staff and auxiliary staff who are in day-to-day contact with the patient.

Documentation

- If a patient is known to be latex-allergic an alert notification **must** be documented.
- The latex allergy **must** be documented in:
  - 'PowerChart' (SCHN's electronic medical record)
  - displayed on the front cover of the medical record
  - Health e-Care (Emergency Department)
- If an incidence of Type 1 allergic reaction occurs, it **must** be recorded in IIMs

Appendix A: Patients at Risk of Latex Allergy - Checklist

It is suggested that the patient questionnaire be administered by a health care professional. The questions can be incorporated into pre-admission questionnaires or other pre-service provision procedures. Tick (✓) where appropriate – give details

Have you ever been diagnosed with Latex Allergy? ❒

Has anyone in your immediate family (e.g. parent, brother or sister) suffered from hives, hay fever or asthma? ❒

Have you had:

❒ Multiple operations
❒ Catheterisation
❒ Other surgical procedures (please specify) _____

Have you ever suffered from:

❒ Hives
❒ Hay fever
❒ Allergic Conjunctivitis/Rhinitis
❒ Unexplained Rash
❒ Bronchitis
❒ Eczema
❒ Sinus Problems
❒ Asthma
❒ Anaphylaxis (please specify cause if known) _____

Have you ever had a skin reaction after using:

❒ Bandaids
❒ Elastoplast
❒ Any Sticky Plaster
❒ Clothing With Elastic Spandex (e.g. bra, underpants)

Have you ever had a reaction after handling or using:

❒ Balloons
❒ Poinsettia Plants
❒ Rubber (latex) Products

(Continued next page)

After having dental procedures, have you ever suffered from:

- ❒ Itching
- ❒ Itchy watery eyes
- ❒ Facial swelling
- ❒ Throat or tongue swelling or discomfort
- ❒ Running nose
- ❒ Breathing difficulties

Have you ever had a reaction after eating:

- ❒ Avocados
- ❒ Chestnuts
- ❒ Kiwi Fruit
- ❒ Bananas
- ❒ Other foods (please specify) _____

Appendix B:

Guidelines for the Management of People with Latex Allergy

Preparation of a Latex-Safe Environment

What equipment has latex in it?

Latex is a component of a large number of medical devices. At present there is no mandatory labelling and so considerable effort is required to keep an up-to-date record of latex-free medical equipment.

Gloves

- These are the most likely to cause serious reactions, especially if they contact mucous membranes (BMJ 1994; 308:246-247).
- All latex gloves need to be removed from the immediate area of the patients.
- Synthetic gloves **must** be used for all procedures. Neoprene gloves are available in sterile gloves and are latex-free. Vinyl and nitrile are synthetic gloves now available for use as examination gloves.

As a general guide the following need to be checked:

- surgical drains, urinary catheters, condom drainage, anti-embolic stockings, bougie dilators, tourniquets, dental dams, embolectomy catheters
- Monitoring equipment: Blood Pressure (BP) leads, oximeters, ECG dots, pulmonary artery catheters, IV lines and infusion bags
- latex stoppers in ampoules
- plungers in some syringes
- catheter leg bags straps
- mattresses
- dressings, 'Elastic' bandages, skin adhesives
- feeding nipples and tubes

Ward preparation of a Latex-Safe environment

Nurse in charge of the ward ensures the following guidelines are followed:

Note: Steps 2, 3, 4, are not necessary if the ward does not use any latex gloves.

1. Synthetic gloves must be used.
2. Prepare a single room, where possible, at least 3 hours before patient admission.
3. All equipment and furniture to be damp-dusted to remove latex powder.
4. For the duration of the patient's admission, the entire ward must use only powderless latex gloves to avoid contaminating the patient area with latex powder.
5. The prepared room must have signs attached to all entrances to ensure a latex-safe area.
6. All procedures must be planned where possible.
7. Be prepared to treat serious reactions.

The following procedures need planning:

1. Blood taking: use synthetic gloves, tourniquet over clothing.
2. Inserting IV cannulation and/or administering IV, IM, SC drugs: see below
3. Bladder catheterisation: use synthetic gloves and non-latex catheter
4. Internal examinations: use synthetic gloves
    - Where possible perform procedures within prepared ward environment.
    - Ensure other departments are aware of the patient's latex allergy if the patient has to go to another area for investigations during admission.

Monitoring equipment

- Oximeter probe may contain latex, but can be used over vinyl glove or a clear dressing.
- Arm for BP measurement must be covered to protect skin from BP leads.
- ECG dots may contain latex in the adhesive.
- Stethoscopes may contain latex in the tubing, ear pieces and bell.
- Pulmonary artery catheters contain latex in the balloon and there has been a case reported of anaphylaxis to such a device (Anesthesiology 1995; 92:220-221). At present there are no non-latex alternatives and risks and benefits must be weighed up on an individual basis.

IV lines and administering drugs

1. Synthetic gloves must be used.
2. Use an IV line without latex ports, or if using a line with latex ports they must be removed and replaced with reflux valves, prior to running through IV fluid. There is a case report of anaphylaxis to an IV line where this was not done (J Allergy Clin Immunology 1993; 92:358-359).
3. Infusions to be made up by injection through giving set port of IV fluid bags rather than through rubber (latex) bung, which is not in contact with the fluid and can be removed.
4. Do not use colloids with latex bungs.
5. No drugs to be drawn up through rubber (latex) bungs.
6. No drugs to be given where there is a rubber stopper within the vial (Aneast Anal 1995; 0:1057-1-58).
7. Use only latex-free IV dressings and skin tapes.

Resuscitation equipment

- All resuscitation equipment on resuscitation trolleys throughout SCHN is latex-free. The trolleys routinely have latex-free gloves and latex-free circuits, masks, catheter mount and latex-free oral airways available.

Environmental Services and Food Services Staff

- Environmental and Food Services staff must be made aware of the location of latex-allergic patients so that they do not use latex gloves when cleaning or preparing food.
- Ensure food allergies are observed when preparing food.

Referrals and further Investigations

- Whenever the patient is referred to other facilities or wards, ensure that those wards etc are informed of the patient's latex allergy and its significance.
- If the patient has to go for further investigations, notify the pathology, or radiology service to ensure they are aware of the patient's condition and its significance and how to manage the patient.

Appendix C

Advice for Latex Allergic Individuals

What is natural rubber latex?

Natural rubber latex is a particular kind of rubber that is manufactured from the sap of rubber trees. It is used to manufacture various consumer products.

What is 'latex allergy'?

A 'latex allergy' is an allergy to products made from the natural rubber latex. This is different from a 'rubber allergy' which is an allergy to the chemicals found in manufactured natural rubber latex products. If you are found to have a 'rubber allergy' you may require referral for patch tests.

Who suffers from latex allergy?

People most at risk of having or developing a latex allergy are those who have other allergies (such as hay fever, asthma) and regularly use natural rubber latex products (such as latex gloves) in their everyday occupation (eg. physicians, nurses, dentists, dental hygienists & dental assistants) or if multiple operations have been experienced early in life (say for spina bifida).

What are the symptoms of latex allergy?

Latex allergy often begins with a rash on the hands when using natural rubber latex gloves. Other symptoms include hay fever type reactions such as itchy swollen eyes, runny nose and sneezing.

Some patients may develop asthma symptoms such as chest tightness, wheezing coughing and shortness of breath.

How are latex and rubber allergies identified?

People at risk or with symptoms of possible latex allergy should be tested with a latex skin prick test by an allergy specialist or undergo a blood test which will detect specific antibodies to latex.

Can latex allergy get worse?

There is evidence that the more one is exposed to latex, the more allergic you may become.

If you only have a minor latex allergy, you should minimise your exposure to latex so that you do not risk becoming more sensitive.

Can a latex allergy be life-threatening?

While it is uncommon, some latex allergic individuals can suffer a potentially life threatening allergic reaction (called anaphylaxis) when they come in to contact with natural rubber latex. Some situations in which anaphylaxis can occur include when blowing up a balloon, during dental surgery or any other surgical procedure, when using a condom, during the examination of the vagina, rectum or colon, and the administration of an enema.

Anaphylaxis occurs within minutes of exposure , especially following direct tissue contact with natural rubber latex products. It is characterised by generalised hives, followed by breathing difficulties and low blood pressure. The reaction may be fatal and must be promptly treated by adrenaline injection.

Is there a relationship between latex allergy and other allergies?

People who are sensitive to other substances (atopic) are more likely to develop latex allergy. This includes people with atopic eczema. It has been found that there is a strong cross reactivity between certain foods and latex allergy. The foods with the strongest reaction are bananas, avocados and kiwi fruit. Other foods include pawpaws, mangoes, apples, oranges, peanuts, potatoes etc. All these foods contain a common substance. If you experience tingling, itching or discomfort in the mouth or throat whilst eating these foods, you must cease eating these foods. However we believe it is not necessary to avoid these foods until sensitivity develops. This is a subject of continuing research.

Can latex allergy be treated?

No treatments are yet available to cure natural rubber latex allergy. The best 'treatment' is to avoid exposure to latex. Medications are available to temporarily alleviate symptoms.

What precautions should patients with latex allergy take?

- You need to avoid all latex products. The biggest risk comes from contact with rubber gloves, not just in the medical or dental setting. Balloons, household gloves, gardening gloves, many adhesives and condoms can cause a severe reaction if you use them.
- Please tell your doctor or dentist about your 'latex allergic status' when asked about 'drug allergy'. Remember to inform anyone else likely to perform a procedure on you (even your hairdresser!).
- Wear a 'medic alert' disc and carry a letter of explanation from your allergy specialist.
- Have a first aid kit available. Epipen is a safe and easy form of self injectable adrenaline, but remember to keep a check on the expiry date.
- Carry your own supply of non-latex gloves. Don't rely on others to have them in an emergency. They must be used when you have any procedure - pap smears, dental work, blood collection etc.
- Any surgical procedure needs to be carefully planned. Your anaesthetist and surgeon will need to be aware of your problem well before the date of the operation, so the operating theatre may be specially prepared.
- Condoms are made from latex and cannot be safely used. Unfortunately, there are no latex-free condoms yet available in Australia.
- If you are a health care worker (doctor, dentist, nurse etc.) you need special consideration in the workplace in order to avoid exposure to latex. The biggest problem for you is airborne latex particles which arise as a result of powdered glove use. All other staff in your work area will need to wear non-powdered gloves. Your special requirements will need to be discussed with the management team.

See more at: http://www.allergy.org.au/health-professionals/papers/management-of-latex-allergic-patients/latex-allergy-advice#sthash.pTSsVdGb.dpuf