HealthStream Regulatory Script

Latex Allergy

Version: September 2006

Lesson 1: Introduction
Lesson 2: Risk Factors & Diagnosis
Lesson 3: Types of Latex Reactions
Lesson 4: Managing Latex Sensitivity
Lesson 1: Introduction

<table>
<thead>
<tr>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome to the introductory lesson on latex allergy.</td>
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<tr>
<td>Latex allergy can be very limiting to some people.</td>
</tr>
<tr>
<td>In some cases, it can even be life threatening.</td>
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</tbody>
</table>

As your partner, HealthStream strives to provide its customers with excellence in regulatory learning solutions. As new guidelines are continually issued by regulatory agencies, we work to update courses, as needed, in a timely manner. Since responsibility for complying with new guidelines remains with your organization, HealthStream encourages you to routinely check all relevant regulatory agencies directly for the latest updates for clinical/organizational guidelines.

If you have concerns about any aspect of the safety or quality of patient care in your organization, be aware that you may report these concerns directly to JCAHO.
This course will teach you what you need to know to:
- Identify patients who are likely to be latex-sensitive.
- Protect latex-sensitive patients and staff in the healthcare setting.

You will learn about:
- What latex allergy is and what causes it
- Risk factors for latex allergy
- Different types of latex reactions
- What to do if you, a coworker, or a patient is allergic to latex
<table>
<thead>
<tr>
<th>Course Goals</th>
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<tbody>
<tr>
<td>After completing this course, you should be able to:</td>
</tr>
<tr>
<td>• Identify the source of latex and the cause of latex allergies.</td>
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<tr>
<td>• Identify groups of people at increased risk for latex sensitivity.</td>
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<tr>
<td>• Distinguish among three different types of latex reaction.</td>
</tr>
<tr>
<td>• Recognize strategies for managing latex sensitivity.</td>
</tr>
</tbody>
</table>
This introductory lesson gives the course rationale, goals, and outline.

Lesson 2 covers the basics of latex allergy.

Lesson 3 goes into more detail about risk factors for latex allergy and how an allergy is diagnosed.

Lesson 4 discusses types of latex allergy.

Finally, lesson 5 describes steps you can take to protect yourself and your patients from problems with latex.
Welcome to the lesson on latex allergy basics.

After completing this lesson, you should be able to:
- Identify the source of latex.
- Define "latex allergy."
- List possible reasons for the increasing rates of latex allergy in recent years.
- Identify types of latex products that are more or less likely to contribute to allergic reactions.
Latex is made from the sap of a rubber tree.

Chemicals are added to the sap to make the final latex product:
- Stronger
- More durable

Thousands of products contain latex, including tapes, drains, tourniquets, vial stoppers, tubing ports, and blood pressure cuffs.
Latex Allergy

Latex allergy means sensitivity to contact with certain proteins in latex.

Most allergic reactions to latex are mild.

However, some can be life threatening.

Reactions can become more severe with each latex contact.

This means that even small exposures can cause reactions once the sensitization has occurred.
Contact with latex happens in one of three ways:

- Latex items touch the skin or mucous membranes [glossary].
- Latex is breathed from the air.
- Latex enters the blood through a break in the skin.

The development of latex allergy requires contact with latex.

However, not everyone exposed to latex will become hypersensitive.
The first case of latex allergy was documented in England in 1979. Between 1979 and 1988, 50 cases were reported in European medical journals. Latex allergy now affects several million people worldwide. An estimated 8% to 12% of healthcare workers are hypersensitive to latex.
Causes of Increased Allergy Rates

Why have latex allergy rates increased so much in recent years?

Possible causes include:
- More latex products in the home
- More latex products in the healthcare setting, including latex gloves used frequently for Standard Precautions
- Long-term use of latex products, especially among healthcare providers or individuals with chronic health problems
Types of Latex Products

Remember:
- Contact with latex must occur for latex allergy to develop.
- Contact with more and more latex products may be contributing to rapid increases in the latex allergy rate.

So, are certain latex products more likely to trigger hypersensitivity than others?

Yes.

The way in which a latex product is manufactured can influence its ability to trigger a reaction.
### Types of Latex Products

<table>
<thead>
<tr>
<th>Stretchy products</th>
<th>Hard products</th>
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</table>

There are two types of latex products:
- **Stretchy products**
- **Hard products**

Stretchy products are more likely to trigger latex sensitivity than hard products. Click on each type of product to learn why.

**CLICK TO REVEAL**

**Stretchy products**

Stretchy products are made by dipping in latex. If stretchy products are not rinsed properly, latex protein particles may be shed when the products are used. These particles can trigger sensitivity reactions.

**Hard products**

Hard products are molded out of latex. Hard products tend not to shed particles. Therefore, there are no particles to increase latex contacts and add to latex allergy problems.
Choose the true statement(s) about latex allergy:
   a. Latex allergic reactions can be life threatening.
   b. Latex allergy rates have decreased dramatically over the past 20 years.
   c. Stretchy latex products are more likely to cause an allergic reaction than hard products.
   d. Both A and C
   e. All of the above

MULTIPLE CHOICE INTERACTION
Correct: D
A: Not quite. The best answer is D.
B: Incorrect. The correct answer is D.
C: Not quite. The best answer is D.
D: Correct.
E: Incorrect. The correct answer is D.
You have completed the lesson on latex allergy basics.

Remember:
- Latex is made from the sap of a rubber tree with added chemicals.
- Latex allergy is sensitivity to certain proteins found in latex. Sensitivity develops after contact with latex. Reactions can become more severe with each contact.
- Latex allergy rates have increased dramatically in recent years.
- These rising rates may be due to the use of more and more latex products.
- Stretchy latex products are more likely to cause a reaction than hard latex products.
Lesson 3: Risk Factors and Diagnosis

3001

Introduction & Objectives

Welcome to the lesson on latex allergy risk factors and diagnosis.

After completing this lesson, you should be able to:

- Identify people at increased risk for latex allergy.
- List sample screening questions for identifying people at risk.
- Cite methods for diagnosing latex allergy.

FLASH ANIMATION: 3001.SWF/FLA
Who Is at Risk?

Healthcare workers are at elevated risk for latex allergy. This is due to the fact that healthcare workers tend to have high levels of contact with latex products.

Healthcare workers at risk are:
- Physicians
- Nurses
- Nursing aides
- Dentists
- Dental hygienists
- O.R. staff
- Lab techs
- Housekeeping
### Who Is at Risk?

Other groups at high risk for latex allergy are:
- Patients treated with latex medical equipment (e.g., patients with [spina bifida](glossary))
- Patients who have had many surgeries or long surgeries
- People with a history of food allergy (especially allergies to banana, avocado, passion fruit, chestnut, kiwi fruit, melon, tomato, and celery)
<table>
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<tr>
<th>Screening Questions</th>
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**Screening questions** are a good tool for identifying people at risk for latex allergy.

Identifying at-risk patients can help prevent problems.
Sample screening questions for latex allergy are:

- Have you ever had an unexplained problem during surgery?
- Have you ever had breathing problems during a dental exam?
- Have you ever had swelling or wheezing when blowing up balloons?
- Are you allergic to any foods, especially bananas, avocados, kiwi, or chestnuts? Have you ever had rash, oral itching, swelling, or wheezing when exposed to these foods?
- Have you ever had a rash or discomfort after having a medical exam or using a condom?
- Do you have a history of allergy or skin problems?
- Do you have chronic health problems that have caused you to use medical products over a long period of time?

If a patient answers “yes” to any of these questions, he or she is at risk for latex allergy.
When a patient is identified as being at-risk, he or she should have a thorough medical history and physical exam.

For a more definitive diagnosis of latex allergy, blood tests may be ordered.

Skin testing also is available. However, skin tests carry a risk, because of the possibility of a severe reaction.
A patient is at increased risk for latex allergy if he or she is allergic to:

- a. Kiwi
- b. Banana
- c. Avocado
- d. Chestnuts
- e. All of the above

**MULTIPLE CHOICE INTERACTION**

Correct: E

Feedback for A: Not quite. The best answer is E.
Feedback for B: Not quite. The best answer is E.
Feedback for C: Not quite. The best answer is E.
Feedback for D: Not quite. The best answer is E.
Feedback for E: Correct.
<table>
<thead>
<tr>
<th>True or False: Skin testing is a risk-free method for diagnosing latex allergy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. True</td>
</tr>
<tr>
<td>b. False</td>
</tr>
</tbody>
</table>

**TRUE / FALSE INTERACTION**

Correct: B

A: Incorrect. This statement is false. Skin testing carries risks because of the possibility of severe reactions.

B: Correct. This statement is false. Skin testing carries risks because of the possibility of severe reactions.
<table>
<thead>
<tr>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>You have completed the lesson on latex allergy risk factors and diagnosis.</td>
</tr>
<tr>
<td>Remember:</td>
</tr>
<tr>
<td>- Certain groups of people are at increased risk for latex allergy.</td>
</tr>
<tr>
<td>- Screening questions can help identify at-risk people.</td>
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<tr>
<td>- At-risk people should be further evaluated. They should have a thorough medical history and physical exam. Possible diagnostic tests include blood tests and skin tests.</td>
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</table>
Lesson 4: Types of Latex Reactions

Introduction & Objectives

Welcome to the lesson on types of reactions to latex.

After completing this lesson, you should be able to:
- List three types of latex reaction.
- Identify features of each type of reaction.
Latex can cause three types of contact reaction.

Two are allergic reactions:
- **Type I** or immediate hypersensitivity reaction
- **Type IV** or delayed hypersensitivity reaction or allergic contact dermatitis

The third is an irritation reaction:
- **Irritant contact dermatitis**

Let’s take a closer look at each type of reaction on the following screens.
A type I reaction occurs soon after latex exposure.

Symptoms range from mild to severe:
- A **mild** reaction causes the sudden appearance of red swollen patches (hives) where latex touched the skin.
- A **moderate** reaction causes hives all over the body.
- A **severe** reaction may result in symptoms of asthma [link to glossary] such as wheezing. In rare cases, severe reactions cause life-threatening anaphylaxis [link to glossary].
Breathing powder from latex gloves can trigger a type I reaction in a sensitized person.

Breathing powder from non-latex gloves will **not** produce a type I reaction.
A type IV reaction:
- Is less serious than a type I reaction
- Is not life-threatening
- Is caused by the chemicals added to rubber tree sap to make latex
- Develops after latex touches the skin
Symptoms of a type IV reaction develop gradually. They start to appear **six to forty-eight hours** after contact with latex.

Symptoms are skin problems such as:
- Scaling
- Dryness
- Redness
- Swelling
- Blisters
- Cracks
- Itching
A skin irritation reaction (irritant dermatitis) can occur in people who:

- Wear gloves frequently
- Are frequently exposed to glove powder.

Note that an irritation reaction is not an allergic reaction.

Symptoms of an irritation reaction to latex are skin problems such as redness and itching.
Anaphylaxis is a possibility with a ________ to latex.
   a. Type I allergic reaction
   b. Type IV allergic reaction
   c. Contact irritation reaction
   d. Both A and B
   e. All of the above

**MULTIPLE CHOICE INTERACTION**

Correct: A

A: Correct.

B: Incorrect. The correct answer is A.

C: Incorrect. The correct answer is A.

D: Incorrect. The correct answer is A.

E: Incorrect. The correct answer is A.
Symptoms that start to appear six to 48 hours after contact with latex are characteristic of a:

- a. Irritant reaction
- b. Type I allergic reaction
- c. Type IV allergic reaction
- d. Both A and B
- e. All of the above

**MULTIPLE CHOICE INTERACTION**

Correct: C

A: Incorrect. The correct answer is C.

B: Correct.

C: Incorrect. The correct answer is C.

D: Incorrect. The correct answer is C.

E: Incorrect. The correct answer is C.
Summary

You have completed the lesson on types of latex reactions.

Remember:
• A type I reaction is an immediate hypersensitivity reaction.
• Symptoms of a type I reaction can include hives, wheezing, and anaphylaxis.
• A type IV reaction is a delayed hypersensitivity reaction. Symptoms start to appear six to 48 hours after contact with latex.
• A type IV latex reaction is triggered by the chemicals added to rubber tree sap to make latex.
• Symptoms of a type IV reaction are skin problems in the area of contact, such as scaling, dryness, redness, swelling, blisters, and cracks.
• A skin irritation reaction, or irritant dermatitis, is not an allergic reaction.
• Symptoms of irritant dermatitis are skin problems such as redness and itching.
Introduction & Objectives

Welcome to the lesson on managing latex reactions.

After completing this lesson, you should be able to:

- List common latex products.
- Identify strategies for avoiding contact with latex.
- Recognize other strategies for managing latex allergies.
The first line of defense against latex sensitivity is to avoid latex products:
- In the community
- In the home
- In the healthcare setting

Click on each setting for examples of latex products found in that setting.
**[In the healthcare setting]** – 5002c.JPG

*Common latex-containing products in the healthcare setting include:*

- Latex gloves
- Tape and plastic adhesive strips
- Tourniquets
- Disposable syringes
- IV and other tubing
- Blood pressure cuffs
- Electrocardiogram pads
- IV bags
- Stethoscope tubing
- Wound drains
- IV injection ports
- Some airways
Avoiding Contact with Latex

In the community, if a latex-sensitive person develops symptoms, he or she should be moved out of contact with any known sources of latex.

In the home, remove as many latex products as possible. It is best to create a latex-free environment.

In the healthcare setting, take steps to protect:
- Latex-sensitive providers
- Latex-sensitive patients

Let's take a closer look on the following screens.
If you are a healthcare provider who is allergic to latex:
- Inform your employer.
- Encourage your employer to provide as many latex-free products as possible.
- Use silk or plastic tape instead of adhesive tape.
- Use non-latex gloves only.

Even if you are not sensitive to latex, you should minimize your risk of developing sensitivity, or exposing others to latex. If you must wear latex gloves:
- Use powder-free latex gloves.
- Do not use oil-based hand creams or lotions when wearing latex gloves. Oils can cause the gloves to break down, releasing the proteins that cause reactions.
- Wash hands thoroughly after removing latex gloves.
Protecting Patients from Latex Contact

If a patient is allergic to latex:
- Clearly indicate the allergy in the patient's chart.
- Do not use any latex products, including latex cleaning gloves, in the patient’s room.
- Before entering the patient’s room, remove latex gloves. Wash hands thoroughly with soap and water to remove any glove powder or residue. Otherwise, the powder or residue could trigger a reaction in the patient.
Managing Type I Symptoms

People with type I latex allergy should:
- Avoid all contact with latex, as described above.
- Wear a medic-alert bracelet or necklace.
- Carry an epinephrine (adrenaline) kit, if they have ever had a severe reaction. Kits are available by prescription only.
- Seek medical attention immediately for severe symptoms (difficulty breathing, hives all over the body, swelling in the face, faintness).
### Managing Type IV Symptoms

People with type IV latex allergy should:
- Avoid contact with latex.
- Wash with soap and water after unavoidable contact with latex.
- Take oral antihistamines or use topical creams to help with itching and swelling.
Avoiding Other Allergic Reactions

Remember: Allergies to certain foods increase the risk of latex allergy.

By the same token, latex allergy increases the risk of certain food allergies.

People with latex allergy should be careful about eating avocado, banana, and kiwi. These are the three foods most likely to cause reactions in people with latex allergy.

Other risk foods are listed in the table to the right.
Healthcare providers with type I latex allergy should:
   a. Use non-latex gloves only.
   b. Use powder-free latex gloves.
   c. Not use oil-based lotions under latex gloves.
   d. Wash hands with soap and water after removing latex gloves.

**MUTLIPLE CHOICE INTERACTION**

Correct: A

A: Correct.

B: Incorrect. The correct answer is A.

C: Incorrect. The correct answer is A.

D: Incorrect. The correct answer is A.
Wear a medic-alert bracelet if you have:

a. Type I latex allergy
b. Type IV latex allergy
c. Latex irritant dermatitis
d. Both A and B
e. All of the above

MULTIPLE CHOICE INTERACTION

Correct: A
A: Correct.
B: Incorrect. The correct answer is A.
C: Incorrect. The correct answer is A.
D: Incorrect. The correct answer is A.
E: Incorrect. The correct answer is A.
Summary

You have completed the lesson on managing latex allergies.

Remember:

- Many products contain latex. These products should be avoided by people with latex sensitivity.
- People with type I latex allergy should wear a medic alert bracelet, carry an epinephrine kit, and seek medical attention at once for severe allergic symptoms.
- People with type IV latex allergy should wash thoroughly after unavoidable contact with latex, and use antihistamines and creams to control itching and swelling.
- People with latex sensitivity should be careful about eating avocado, banana, kiwi, and certain other foods.
## Course Glossary

<table>
<thead>
<tr>
<th>#</th>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>allergic reaction</td>
<td>abnormal immune response to a harmless foreign substance</td>
<td></td>
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<tr>
<td>anaphylaxis</td>
<td>extreme allergic response which can develop rapidly after contact with an allergenic substance; can lead to life-threatening breathing problems and shock</td>
<td></td>
</tr>
<tr>
<td>antibodies</td>
<td>proteins produced by the body's immune system to fight foreign substances such as latex</td>
<td></td>
</tr>
<tr>
<td>antihistamines</td>
<td>medications used to treat allergic reactions</td>
<td></td>
</tr>
<tr>
<td>asthma</td>
<td>condition in which the breathing tubes swell and breathing becomes difficult; may or may not involve wheezing</td>
<td></td>
</tr>
<tr>
<td>direct contact</td>
<td>touching another person's body or breathing the same air</td>
<td></td>
</tr>
<tr>
<td>expose</td>
<td>come into contact with</td>
<td></td>
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<tr>
<td>latex-free products</td>
<td>products made from something other than natural rubber latex</td>
<td></td>
</tr>
<tr>
<td>minimize</td>
<td>to limit as much as possible</td>
<td></td>
</tr>
<tr>
<td>mucous membranes</td>
<td>tissue lining the eyes, nose, and mouth</td>
<td></td>
</tr>
<tr>
<td>Mylar</td>
<td>shiny paper substance used to make some balloons</td>
<td></td>
</tr>
<tr>
<td>origin</td>
<td>where something comes from</td>
<td></td>
</tr>
<tr>
<td>perseverance</td>
<td>the characteristic of continuing to try to achieve a goal</td>
<td></td>
</tr>
<tr>
<td>reaction</td>
<td>response</td>
<td></td>
</tr>
<tr>
<td>repeated contact</td>
<td>contact that occurs over and over again</td>
<td></td>
</tr>
<tr>
<td>screening</td>
<td>looking at a population for individuals of interest</td>
<td></td>
</tr>
<tr>
<td>spina bifida</td>
<td>congenital malformation of the spine, often requiring surgical treatment which may involve the use of many latex products</td>
<td></td>
</tr>
<tr>
<td>symptom</td>
<td>clue that something is wrong with the body</td>
<td></td>
</tr>
<tr>
<td>wheeze</td>
<td>whistling sound made when breathing, usually resulting from swelling or blockage of the breathing tubes</td>
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</tr>
</tbody>
</table>
Pre-Assessment

1. Latex is made from:
   a. Nitrile
   b. Polypropylene
   c. Polyvinyl chloride
   d. The sap of a rubber tree

   Correct answer: D
   Rationale: Latex is made from the sap of a rubber tree with added chemicals.

2. A patient comes in with swelling and redness of the lips and skin around the mouth. He had a dental exam the day before. He reports no food allergies. He does tell you that he avoids using condoms because he tends to develop a scaly rash a day or two later. This patient most likely has:
   a. Irritant dermatitis
   b. Type I latex allergy
   c. Type IV latex allergy
   d. Anaphylaxis

   Correct answer: B
   Rationale: Type IV latex allergy causes skin symptoms six to forty-eight hours after contact with latex.

3. Choose the true statement(s) about latex allergy:
   a. (a) Development of latex allergy requires contact with latex.
   b. (b) Latex allergy develops in everyone who has contact with latex.
   c. (c) Most allergic reactions to latex are mild. However, some can be life threatening.
   d. Both A and C
   e. All of the above

   Correct Response: D
   Rationale: Development of latex allergy requires contact with latex. However, contact with latex does not lead to latex allergy in everyone. Most allergic reactions to latex are mild. Type I reactions can be life threatening.

4. Standard Precautions:
   a. Protect against the spread of latex allergy.
   b. May be a contributing factor in the rising rates of latex allergy.
   c. Should not be followed by healthcare workers who are sensitive to latex.
   d. Should not be followed when treating patients who are sensitive to latex.

   Correct Response: B
Rationale: Standard Precautions may be a contributing factor in the rising rates of latex allergy because of the widespread use of latex gloves under Standard Precautions. Non-latex gloves should be available in healthcare facilities for latex-sensitive staff and patients.

5. Latex can trigger a reaction in sensitive people if:
   a. (a) It is inhaled.
   b. (b) It touches the skin or mucous membranes.
   c. (c) It enters the blood through a break in the skin.
   d. Both B and C
   e. All of the above

Correct Answer: E
Rationale: A reaction can occur as a result of any of these contacts with latex.

6. Choose the group(s) of people at increased risk for latex allergy:
   a. Surgeons
   b. People who have frequent headaches
   c. People who are allergic to banana, avocado, or kiwi
   d. Both A and C
   e. All of the above

Correct Answer: D
Rationale: Surgeons and people with certain food allergies are both at increased risk for latex allergy. Frequent headaches are not a risk factor.

7. When diagnosing latex allergy, there is a risk of severe reaction from:
   a. Skin testing
   b. Blood tests for antibody titers
   c. Both of the above
   d. None of the above

Correct Answer: A
Rationale: Skin testing is one way to diagnose latex allergy. However, skin testing carries the risk of severe reactions.

8. Breathing powder from latex gloves can trigger a type I latex allergy reaction.
   a. True
   b. False

Correct Answer: A
Rationale: Breathing powder from latex gloves can trigger a type I reaction in a person with type I latex allergy.
10. A patient is diagnosed with type I latex allergy. Choose the type(s) of glove that would be appropriate in the care of this patient:
   a. (a) Non-latex gloves
   b. (b) Powder-free latex gloves
   c. (c) Double-thickness latex gloves
d. Both A and B
e. All of the above

Correct Answer: A
Rationale: People with type I latex allergy should be exposed to non-latex gloves only.

Final Exam

1. Latex comes from the sap of a rubber tree.
   a. True
   b. False

Correct: True
Rationale: This statement is true.

2. Choose the latex reaction(s) that can be life threatening:
a. (a) Irritant reaction  
b. (b) Type I latex allergy reaction  
c. (c) Type IV latex allergy reaction  
d. Both A and B  
e. All of the above

Correct: Type I latex allergy reaction  
Feedback: Only a type I latex allergy reaction can be life threatening. Type IV and irritant dermatitis reactions can be unpleasant and bothersome, but not life threatening.

3. Latex allergy affects _________ of people worldwide.  
a. Billions  
b. Millions  
c. Hundreds  
d. Thousands

Correct: Millions  
Feedback: Latex allergy affects millions of people.

4. An appropriate response to a type IV latex allergy reaction would be:  
a. Use a topical cream to help with the itching.  
b. Use oral antihistamines to help with the swelling.  
c. Rush the person having the reaction to the emergency room  
d. Both A and B  
e. All of the above

Correct: Both A and B  
Feedback: A type IV reaction is not life threatening, so it is not necessary to rush to the ER. Antihistamines and hydrocortisone cream can be used to help with the itching and swelling.

5. Choose the question(s) that would be most useful when screening for latex allergy:  
a. Are you allergic to cats?  
b. Do you work at a computer?  
c. Does your job involve contact with a lot of people?  
d. Have you ever had a rash or irritation after using a condom?

Correct: Have you ever had a rash or irritation after using a condom.  
Feedback: Many condoms are made of latex. Therefore, a rash or irritation after using a condom could be an indicator of latex allergy.
6. A person who is allergic to latex should be careful about eating certain foods. The most important of these foods are:
   a. Banana, avocado, and kiwi
   b. Chocolate, cheese, and beer
   c. Milk, cheese, and strawberries
   d. Grapefruit, tea, broccoli, and green onions

Rationale: Banana, avocado, and kiwi are the foods most likely to cause a reaction in people with latex allergy.

7. In an irritant dermatitis reaction to latex, the likely symptoms are:
   a. Chest pain, nausea, and vomiting
   b. Low blood pressure and feeling faint
   c. Redness, swelling, blisters, and cracked skin
   d. Hives all over the body, difficulty breathing, and shock

Correct: Redness, swelling, blisters, and cracked skin
Feedback: Irritated skin is the result of an irritant dermatitis reaction.

8. A type IV reaction to latex may occur within six to forty-eight hours of exposure to latex.
   a. True
   b. False

Correct: True
Feedback: A type IV reaction is a delayed hypersensitivity reaction. Symptoms develop six to 48 hours after exposure.
9. Direct contact with a latex-sensitive person can increase the risk of developing latex allergy.
   a. True
   b. False

Correct: False
Feedback: This statement is false. Direct contact with latex can trigger development of latex allergy.

10. Choose the group(s) of people at increased risk for latex allergy:
    a. (a) People with spina bifida
    b. (b) People who smoke cigarettes
    c. (c) People who eat a lot of strawberries
    d. Both A and C
    e. All of the above

Correct: People with spina bifida
Feedback: People with spina bifida are at increased risk for latex allergy, because of many medical treatment that use latex products. The other groups listed are not known risk groups.