



# BioSafety Procedures and Agent Descriptions in BSL2 (ABL2, BL2N) Facility HMS Room 106A Training

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# Welcome!!!

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Welcome to OEHN's self-paced on-line course: BioSafety Procedures in BSL2 (ABL2, BL2N) Facility -- Room 106A. This course will be presented in two lessons. The first lesson describes the key concepts, definitions and procedures to stay safe in BSL2 (ABL2, BL2N) laboratories. The second lesson provides a complete description of the specific agents present in Room 106A.

*This course represents a collaborative effort between OEHN and Harvard Medical School to optimize awareness through education and risk assessment, contributing to health and safety of all Harvard Medical School employees.*



# Course Objectives

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This course will introduce the key concepts, definitions and procedures to working in BSL2 (ABL2, BL2N) facilities, including:

- Personal Protective Equipment
- Best Practices
- Safety Equipment
- Facilities
- Facility Assessment
- Emergency Procedures and Phone Numbers



This course will also provide training for the specific agents present in Room 106A.



# Course Outline

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## Lesson 1: BioSafety Level 2

Describes safety procedures when working in a BSL2 (ABL2, BL2N) Facility such as Room 106A.



## Lesson 2: Training for specific agents present in Room 106A:

- Herpes Simplex Virus 1 and 2
- Trypanosoma cruzi
- Pseudomonas aeruginosa

Interspersed within each lesson are review questions.



# Lesson 1: BioSafety Level 2 Topics

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- ▶ General BSL2 (ABL2, BL2N) Agent Hazards
- ▶ Minimum Safety Practices
- ▶ Safety Equipment
- ▶ Facilities
- ▶ Emergency Procedures
- ▶ New Hire Procedures
- ▶ Facility Access Control



# Lesson 1 Objectives

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At the conclusion of this lesson, you will be able to:

- Assess the best practices to observe when working with BSL2 (ABL2, BL2N) agents.
- List the appropriate safety equipment to use when working with BSL2 (ABL2, BL2N) agents, including:
  - Primary Barriers
  - Personal Protective Clothing
- Establish which personnel should be allowed to access a BSL2 (ABL2, BL2N) Facility.
- Ascertain the appropriate training for BSL2 (ABL2, BL2N) personnel.
- Know the procedure to take and the phone number to call in case of an emergency.



# BSL2 (ABL2, BL2N): General Hazards

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The importance to observe safety procedures while working with BSL2 (ABL2, BL2N) agents is that they can cause human disease of varied severity, such as those listed below.

- Agent hazards:
  - Percutaneous exposure
  - Mucous membrane exposure
  - Ingestion
  - Inhalation
- Some agent examples include:
  - Herpes Simplex (HSV)
  - Pseudomonas aeruginosa



# BSL2 (ABL2, BL2N): Minimum Safety Practices

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At a minimum, the following safety practices must be observed when working in a BSL2 (ABL2, BL2N) Facility:

- Good personal hygiene observed.
- Limited access to facilities.
- Biohazard warning signs posted.
- Sharps precautions training.
- BioSafety Standards and Procedures (SOP) manual in visible location.
- Personal Protective Equipment (PPE) used.
- Cages decontaminated prior to washing by animal care workers who have been trained by HMS health and safety personnel and Facility supervisor.
- Infectious waste disposed of in Red Hazardous Waste bag.





# BSL2 (ABL2, BL2N): Safety Equipment (Barriers)

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- Primary Barriers are in place as part of the building structure in order that contamination does not get out of the Facility.
- Secondary barriers describe the BioSafety cabinets where personnel work.\* Examples of secondary barriers include:
  - Pull down glass tables
  - Personnel protective equipment (PPE)
  - A pull down glass table with a hood (Sometimes with a negative pressure system.)
  - Containment equipment used for procedures with high potential for creating aerosols\*\*

\* **Important:** Always protect the breathing zone.

\*\* **Important:** Never use an aerosol outside the special containment equipment.



# BSL2 (ABL2, BL2N): Safety Equipment (Cont.)

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## Personal Protective Equipment (PPE):

- Protective Facility coats, gowns, smocks, or uniforms are designated for Facility use and worn only while in the Facility.
- Gloves, face, eye and respiratory protection are employed as required.
- All Facility garments are removed and placed in the appropriate receptacle before leaving the Facility.
- Protective clothing is never taken home. It should be either disposed of in the appropriate Facility receptacle or laundered by the institution.



# Review Question #1

Which one of the following is NOT a minimum safety requirement for Room 106A?

A.) The use of personal protective equipment.

B.) Limited access to the lab.

C.) Internet access.

D.) BioSafety Standards and Procedures (SOP) manual located in visible location.



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

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You are correct! Having an Internet connection is NOT a minimum safety requirement for Room 106A, while using Personal Protective Equipment, providing limited access to BSL2 (ABL2, BL2N) and having the BioSafety Standards and Procedures (SOP) manual located in a visible location ARE minimum safety requirements.

[Please click here to proceed.](#)



## Review Question #2

You place garments in the appropriate container before you leave a BSL2 (ABL2, BL2N) lab.

A.) True

B.) False



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

---

You are correct. Protective facility coats, gowns, smocks, or uniforms are designated for facility use and worn only while in the facility. All facility garments are removed and placed in the appropriate receptacle before leaving the facility.

[Please click here to proceed with this course.](#)





# BSL2 (ABL2, BL2N): Facilities

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BSL2 (ABL2, BL2N) facilities should meet the following requirements:

- No recirculation of exhaust air
- Autoclave used for decontamination of all animal cages, food, bedding and water
- Surface chemical decontaminant for BioSafety equipment used
- Handwashing sink in animal rooms
- Biohazard signs clearly posted
- Key card entry



# BSL2 (ABL2, BL2N): Facilities – SOP

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The BioSafety Standard Operating Procedures (SOP) manual must be in a visible location.

- Procedures should be incorporated into the SOP that are specific for the Facility it is located.
- The following SOP pages should be tabbed for quick access:
  - Spills and emergency procedures
  - Worst case scenario course of action
  - Extreme precautions guidelines



# BSL2 (ABL2, BL2N): Facilities – Sharps

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## Handling sharps correctly:

- Adhere to extreme precautions guidelines as described in the SOP.
- Do not recap sharps.
- Put sharps in boxes.
- Boxes must be nearby and accessible.
- Follow proper disposal techniques.
- Do not fill sharp boxes too full.
- Personnel who handle sharps must have completed the online Bloodborne Pathogen Training course.

Refer to the posted Emergency Procedure in case of needle stick incident.



# BSL2 (ABL2, BL2N): Facilities – Sharps (cont.)

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- Alternatives to using sharps:
  - Needleless systems
  - Needle locking syringes
  - Plastic ware

Refer to the posted Emergency Procedure in case of needle stick incident.



# BSL2 (ABL2, BL2N): Facilities – Disinfection

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- Disinfection procedures specific for Room 106A:
  - Use either stock agents or diluted bleach.
  - Thoroughly disinfect facility equipment and work surfaces.
- Adhere to Aerosol and Splash Work Practices Guidelines as described in the SOP. Examples of aerosol and splash protection:
  - BioSafety cabinet
  - Covered Centrifuges



# Review Question #3

Which one of the following is NOT an alternative to using sharps?

A.) Plastic ware

B.) Broken glassware

C.) Needle locking syringes

D.) Aluminum based needles.



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

---

You are correct. Alternatives to using sharps are:

- Needleless systems
- Needle locking syringes
- Plastic ware

[Please click here to proceed with this course.](#)






# BSL2 (ABL2, BL2N): Facilities – BioHazard Signs and Labels

This sign: *Important Occupational Health Information*, is posted outside the BSL2 (ABL2, BL2N) Facility. It provides information on the actions to take in case of Needlesticks or Eyesplashes.

**Important Occupational Health Information:**

<b><i>Needlesticks</i></b>		<b><i>Eyesplashes</i></b>
-Wash area immediately with soap and water. -Wash for 15+ minutes -Phone associated number below	<b>BIOHAZARD</b>	-Rinse eye thoroughly at eyewash. -Rinse for 15+ minutes -Phone associated number below

**HHS, HSPH Staff:**  
In case of accident or emergency during work hours:  
1. Immediately contact your direct Supervisor  
2. Dr. Tom Winters should be phoned at 617-365-4924

**BWH Staff:**  
In case of accident or emergency during work hours:  
1. Immediately contact your direct Supervisor  
2. Phone: 617-732-6034=BWH Emergency

**BIDMC Staff:**  
In case of accident or emergency during work hours:  
1. Immediately contact your direct Supervisor  
2. Phone for BIDMC Emergency: 617-754-2400

**--All Weekend Staff phone your associated number directly!**



# BSL2 (ABL2, BL2N): Facilities – BioHazard Signs and Labels (Cont.)

It is mandatory that the sign shown on this form be affixed to all BSL2 (ABL2, BL2N) cages.

The specific agent code, found on the facility's door, must be written in the space provided.

## MANDATORY BIOHAZARD POLICY!!

1. Affix THE BELOW LABEL to all BL2 cages!
2. Write specific agent on label in allotted "Agent: \_\_\_\_\_" space.

**BIOHAZARD**

Agent:  
\_\_\_\_\_



# BSL2 (ABL2, BL2N): Facilities – BioHazard Signs and Labels (Cont.)

The label shown on this sign must be affixed to uninfected controls.

The specific agent code, found on the facility's door, must be written in the space provided.

**UNINFECTED CONTROLS  
MUST ALSO BE LABELED!!**

**UC**  
*Uninfected  
Control*

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# Review Question #4

Biohazard labels need not be affixed to control cages.

A.) True

B.) False



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

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You are correct. A label must be affixed to uninfected controls. The specific agent code, found on the facility's door, must be written in the space provided.

[Please click here to proceed with this course.](#)



# BSL2 (ABL2, BL2N): Emergency Procedures\*

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At the end of this section you will know the emergency procedures for the following incidents:

- Needlestick
- Eye and/or Mucous Membrane Splash
- Monkey Bite or Scratch
- Worsening of a pre-existing condition

You will also know the Emergency Phone Numbers to call.

- \* The procedures mentioned in this section are posted outside the laboratories for emergency reference.



# BSL2 (ABL2, BL2N): Emergency Procedures: Phone Numbers

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**HMS and HSPH (or any)** staff, shall in case of accident or other emergency during work hours perform the following actions:

1. Immediately...

- 1) Page Dr. Tom Winters by calling 617-632-3352.
- 2) Provide operator with Pager ID #42038.
- 3) Provide message (less than 150 characters) to submit.

2. Contact your direct Supervisor.

**BWH staff** shall also, in case of accident or other emergency, phone BWH Emergency: 617-732-6034.

**BIDMC staff** shall also, in case of accident or other, emergency phone BIDMC Emergency: 617-754-2400.





# BSL2 (ABL2, BL2N): Emergency Procedure: Needlestick or Sharp Accident

In the case of Needlestick or Sharp accident perform the following procedure:

1. IMMEDIATELY wash area with soap and water for at least 10 minutes.
2. Page Dr. Tom Winters by...
  - 1) Calling 617-632-3352.
  - 2) Providing operator with Pager ID #42038.
  - 3) Providing message (less than 150 characters) to submit.
3. Be certain the Supervisor files an Accident Report with Carolyn Jean – 432-2314.
4. Bring Accident Report to attending physician.



# BSL2 (ABL2, BL2N): Emergency Procedure: Eye and/or Mucous Membrane Splash

In the case of an eye and/or Mucous Membrane splash, perform the following procedure:

1. Go to closest eyewash station.
2. Rinse affected area for 15 plus minutes.
3. Page Dr. Tom Winters by...
  - 1) Calling 617-632-3352.
  - 2) Providing operator with Pager ID #42038.
  - 3) Providing message (less than 150 characters) to submit.



# BSL2 (ABL2, BL2N): Emergency Procedure: Worsened Condition

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If you have a Pre-Existing or new Medical Condition worsened by your job duties you or your supervisor must page Dr. Tom Winters by...

1. Calling 617-632-3352.
2. Providing operator with Pager ID #42038.
3. Providing message (less than 150 characters) to submit.



# Review Question #5

What is the first emergency phone number that HMS personnel must call in case of a monkey scratch?

A.) 617-732-6034

B.) 617-632-3352

C.) 508-432-9814



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

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You are correct. HMS, HSPH (or any) staff, must, in the case of accident or other emergency during work hours, perform the following actions:

- 1) Immediately page Dr. Tom Winters by calling 617-632-3352.
- 2) Provide operator with Pager ID #42038.
- 3) Provide message (less than 150 characters) to submit.

*Refer to Emergency Procedures for your next steps.*

[Please click here to proceed with this course.](#)



# BSL2 (ABL2, BL2N): New Hire Procedures\*

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By the end of this section new hires and new staff additions, will know:

- How to contact Occupational Health
- Which medical and authorization forms to complete, and where to get them.

\*The procedures mentioned in this section are posted outside the laboratories for emergency reminders.



# BSL2 (ABL2, BL2N): New Hire: Occupational Health

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- All newly-hired animal care and research staff - whether union or non-union - must participate in the occupational health program.
- Human Resources is responsible for providing this information to the potentially newly-hired staff member.
- Authorization Form and the Medical History Questionnaire must be filled out prior to being made a formal job offer.
- To obtain necessary paperwork contact:
  - [Linda\\_janse@hms.harvard.edu](mailto:Linda_janse@hms.harvard.edu).
  - Telephone: 617-432-2738





# BSL2 (ABL2, BL2N): New Hire: Procedures

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All protocol additions, new trainees and/or new access card additions must perform the following procedures:

- Supervisors must be made aware of any new Principal Investigators, research staff, technicians, students, visitors, post-doc, faculty, fellows, etc. who require access.
- Those working with non-human primates, sheep, toxic or infectious materials and/or human blood cell lines must meet with the occupational health nurse in person with medical forms.
- To obtain necessary paperwork contact:
  - [Linda\\_janse@hms.harvard.edu](mailto:Linda_janse@hms.harvard.edu).
  - Telephone: 617-432-2738



# BSL2 (ABL2, BL2N): Facility Access Control

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Access to BSL2 (ABL2, BL2N) facilities are restricted to personnel who have performed this training.

- Personnel training is customized for facility.
- Training addresses a minimum of the following topics:
  - Hazards associated with current work being performed in facility
  - Precautions to prevent exposures
  - Exposure evaluation procedures
  - Review of the SOP
- This training is required to be performed annually.



# BSL2 (ABL2, BL2N): Facility Access (Cont.)

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- Access to the 180 Longwood facility is limited to personnel who have been medically cleared.
- Animal allergy health surveillance is also conducted.



# Review Question #6

How often is training for a BSL2 (ABL2, BL2N) Lab required?

A.) Yearly

B.) Every six months

C.) Every two years

D.) Every five years.



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

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You have chosen the correct answer. Training for a BSL2 (ABL2, BL2N) Lab is required Yearly.

[Please click here to continue with this course.](#)



## Lesson 2: Specific Agent Training Objectives

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By the end of this lesson you will be able to identify, diagnose and know the treatment methods for the following agents that are contained in Room 106A:

- Herpes Simplex Virus 1 and 2
- Trypanosoma cruzi
- Pseudomonas aeruginosa



# Agent: Herpes Simplex Virus (HSV)

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By the end of this segment you will be able to describe the following information about Herpes Simplex Virus (HSV) 1 and 2:

- ID and Reservoir
- Mode of Transmission
- Incubation Period and Communicability
- Diagnosis
- Signs and Symptoms
- Visual Identification
- Prophylaxis
- Post Exposure Treatment





# HSV: ID and Reservoir

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## Herpes Simplex Virus (HSV)

- ID:
  - HSV-1 and HSV-2
  - Herpesviridae
- Reservoir HSV-1 and HSV-2:
  - Humans



# HSV-1: Mode of Transmission

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Mode of transmission for HSV-1:

- Contact with saliva of carrier.
- Infections on hands of health care worker (i.e. dentist) from patients shedding HSV results in herpes whitlow.
- Transmission during birth usually via infected birth canal; less often in utero or postpartum
- Both Type 1 and Type 2 may be transmitted to sites via oral-genital, oral-anal or anal-genital contact, however:
  - Usually sexually transmitted HSV is Type 2



# HSV-2: Mode of Transmission

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Mode of transmission for HSV-2:

- Sexually transmitted resulting in genital herpes.
- Both Type 1 and Type 2 may be transmitted via oral-genital, oral-anal or anal-genital contact.
- Neonatal infections:
  - Disseminated infections involving the liver, often lethal
  - Infections limited to skin, eyes or mouth, often lethal
  - Encephalitides



# HSV: Incubation and Period of Communicability

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Incubation period for HSV-1 and HSV-2:

- From 2-12 days

Period of communicability for HSV-1 and HSV-2:

- HSV can be isolated from 2-7 weeks after primary stomatitis or primary genital lesions
- Both primary and secondary infections may be asymptomatic
  - After both types of infection, HSV may be shed intermittently from mucosal sites for years and possibly lifelong
  - Shedding occurs in presence or absence of clinical manifestations
- In recurrent lesions, infectivity is shorter than after primary infection
  - Usually virus is not recoverable after five days



# HSV: Diagnosis

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## Diagnosis for HSV-1 and HSV-2:

- Differentiated from HSV-2 immunologically by DNA analysis.
- HSV-2: tissue scraping or biopsy; confirmation via Fluorescent antibody tests, isolating virus from oral, genital or brain tissue.



# HSV: Signs and Symptoms

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## Signs and Symptoms for HSV-1 and HSV-2:

- Primary infection may be mild and inapparent occurring in early childhood.
- 10% of primary infections overt.
- Fever and malaise lasting one week or longer.



# HSV: Signs and Symptoms (Cont.)

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## Signs and Symptoms for HSV-1 and HSV-2:

- May be associated with:
  - Gingivostomatitis with vesicular lesions in oropharynx.
  - Meningoencephalitis or other fatal generalized infections in newborn infants.
  - Severe keratoconjunctivitis. Generalized cutaneous eruption complicating chronic eczema



# HSV: Visual Identification

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## Herpes vesicles and herpetic whitlow



Reference: <http://www.microbes-edu.org/etudiant/dermatoses2.html>





# HSV: Prophylaxis and Post Exposure Treatment

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## Prophylaxis for HSV-1 and HSV-2:

- No antiviral medications are effective against primary infection.
- Acyclovir may be used prophylactically to prevent or reduce incidence of recurrences.

## Post Exposure Treatment:

- Acyclovir has been shown to reduce shedding of virus, reduce pain and accelerate healing time.



# Review Question #7

The correct family name for Herpes Simplex Virus is Herpesviridae.

A.) True

B.) False



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

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You are correct. The correct family name for Herpes Simplex Virus is Herpesviridae.

[Please click here to proceed with this course.](#)



# Agent: Trypanosoma cruzi

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By the end of this segment you will be able to describe the following information about Trypanosoma cruzi:

- ID and Reservoir
- Mode of Transmission
- Incubation Period and Communicability
- Diagnosis
- Signs and Symptoms
- Prophylaxis
- Post Exposure Treatment



# Trypanosoma cruzi: ID and Reservoir

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## ID: Protozoan

- Occurs in humans as a hemoflagellate (trypomastigote)
- Occurs as an intracellular parasite (amastigote) without external flagellum

## Reservoir:

- Humans and >150 domestic and wild mammals
- Dogs, cats, rats, mice marsupials, edentates, rodents, chiroptera, carnivores, primates and others



# Trypanosoma cruzi: Mode of Transmission

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## Mode of Transmission:

- May occur via blood transfusions
- Mainly via infected vectors, i.e. blood-sucking, have the trypanosomes in their feces
- Defecation occurs during feeding
- Bugs become infected when they feed on a parasitaemic animal
  - Parasites multiply in the bug's gut
- Infection occurs when freshly excreted bug feces contaminate:
  - Conjunctiva, mucous membranes, abrasions or skin wounds



# Trypanosoma cruzi: Incubation and Period of Communicability

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## Incubation:

- 5-14 days after bite of insect vector
- 30-40 days if infected through blood transfusion

## Period of communicability:

- Vector becomes infective 10-30 days after biting infected host; gut infection in bug persists for life up to 2 years.
- Organisms are present in blood during acute period
  - May persist in small numbers throughout life





# Trypanosoma cruzi: Diagnosis

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## Diagnosis:

- Demonstration of the organism in blood
  - Direct examination, or
  - After hemoconcentration, culture or xenodiagnosis.



# Trypanosoma cruzi: Signs and Symptoms

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## Signs and Symptoms:

- Acute disease with
  - Fever
  - Lymphadenopathy
  - Malaise
  - Hepatosplenomegaly
- Inflammatory response at the site of infection may persist up to 8 weeks
- Chronic irreversible sequelae include:
  - Myocardial damage with cardiac dilatation
  - Arrhythmias and conduction abnormalities
  - Intestinal tract involvement



# Trypanosoma cruzi: Prophylaxis and Post Exposure

---

## Prophylaxis:

- Search out source/eliminate vectors

## Post Exposure:

- Benznidazole for acute cases
- Nifurtimox, available from CDC
  - investigational basis



# Review Question #8

The incubation period for the agent *Trypanosoma cruzi* is 1-3 days after bite of insect vector?

A.) True

B.) False



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

---

You are correct, the answer is False. The incubation period for the agent *Trypanosoma cruzi* is:

- 5-14 days after bite of insect vector
- 30-40 days if infected through blood transfusion

[Please click here to proceed with this course.](#)



# Agent: Pseudomonas aeruginosa

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By the end of this segment you will be able to describe the following information about Pseudomonas aeruginosa:

- ID and Reservoir
- Sites of Infection
- Mode of Transmission
- Incubation Period
- Period of Communicability
- Diagnosis
- Signs and Symptoms
- Prophylaxis
- Post Exposure Treatment



# Pseudomonas aeruginosa: ID and Reservoir

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ID:

- Gram negative bacteria

Reservoir:

- Human





# Pseudomonas aeruginosa: Sites of Infection

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Sites of infection: Almost all sites of the body and can colonize almost any site subjected to injury.

- Respiratory tract (acute pneumonia, chronic respiratory disease – common in cystic fibrosis)
- Skin infections
- Eye and ear infections (conjunctivitis, swimmer's ear)
- Bone and joint infections, urinary tract infections



# Pseudomonas aeruginosa: Mode of Transmission

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Mode of transmission:

- Inhalation, aspiration
- Contact with discharge from conjunctivae
- Contaminated fingers, clothing, water, medical devices
- Multiple dose eye medications



# Pseudomonas aeruginosa: Incubation Period, Period of Communicability and Diagnosis

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Incubation period:

- Usually 24-72 hours

Period of communicability:

- During the course of active infection

Diagnosis:

- Microscopic examination of stained smear or culture of infected secretions



# Pseudomonas aeruginosa: Signs and Symptoms

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## Signs and symptoms:

- Respiratory infection: Ranges from acute fever, chills, and productive cough to indolent, slowly, progressive disease
- Eye infection:
  - Lacrimation, irritation and hyperaemia of palpebral and bulbar conjunctivae of one or both eyes
  - Edema of eyelids
  - Mucopurulent discharge
- Ear infection: Tender external ears sometimes with exudate
- Skin: Folliculitis, papular or vesicular lesions, and superinfection of underlying lesions



# Pseudomonas aeruginosa: Prophylaxis and Post Exposure Treatment

## Prophylaxis:

- None

## Post Exposure Treatment:

- Systemic: AP penicillin, imepenam, tobramycin
- Eye: Local application of drops or ointment containing ciprofloxacin, tobramycin or gentamicin



# Review Question #9

To diagnose *Pseudomonas aeruginosa* a microscopic examination of a stained smear or culture of infected secretions is taken.

A.) True

B.) False



Sorry!!

[Wrong Answer. Please click here to try again.](#)

# Congratulations!

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You are correct, the answer is True. To diagnose *Pseudomonas aeruginosa* a microscopic examination of a stained smear or culture of infected secretions is taken.

[Please click here to proceed with this course.](#)





# Room 106A: Summary

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In this course you discovered the key concepts, definitions and approaches to staying safe in BSL2 (ABL2, BL2N) laboratories. Topics you learned included the correct protective equipment to wear and appropriate facilities for BSL2 agents.

You also gained extensive knowledge about specific agents contained in Room 106A:

- Herpes Simplex Virus 1 and 2
- Trypanosoma cruzi
- Pseudomonas aeruginosa

Congratulations!! You now have the training that personnel should have who work in a BSL2 (ABL2, BL2N) facility.



# Room 106A: Summary (Cont.)

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Safety in the workplace is a direct result of:

- Awareness of risk
  - Ask questions
  - Bring potential risk issues to PI
- Adherence to protocols.
- Education regarding:
  - Agents in use
  - Vaccine availability
  - Prophylaxis
  - Timely post exposure treatment



# Further Reading

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- Control of Communicable Diseases Manual, 18th Edition; Heymann, David L., MD, Editor. ATHA Press.
- BioSafety in Microbiological and Biomedical Laboratories, 4th Edition; Centers for Disease Control (CDC); National Institutes of Health (NIH).
- Occupational Health and Safety in the Care and Use of Research Animals, National Research Council.
- Cohen and Powderly. Infectious Disease. 2nd Ed., 2004 Mosby



# Questions?

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If you have any questions about the content of this course please contact Dr. Tom Winters at [TWinters@caregroup.harvard.edu](mailto:TWinters@caregroup.harvard.edu).

If you need any Technical Support regarding this course, please contact Tanya Robinson at 781-290-2210 or [TRobinson@OEHN.net](mailto:TRobinson@OEHN.net).



# Thank You!

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Thank you for taking the time to learn this material on BioSafety Procedures and Agent Descriptions for BSL2 (ABL2, BL2N) Facility Room 106A.

**IMPORTANT:** Please [click here](#) to access and complete the compliance sheet which indicates you completed this course.



# Have You Let Us Know that you Have Taken This Course by Completing the Compliance Sheet?

If Yes, then exit this course by [clicking here.](#)

If No, then access the Compliance Sheet by  
[clicking here.](#)