

Clearing the Air on Respiratory Protection in Policing

June 16, 2026

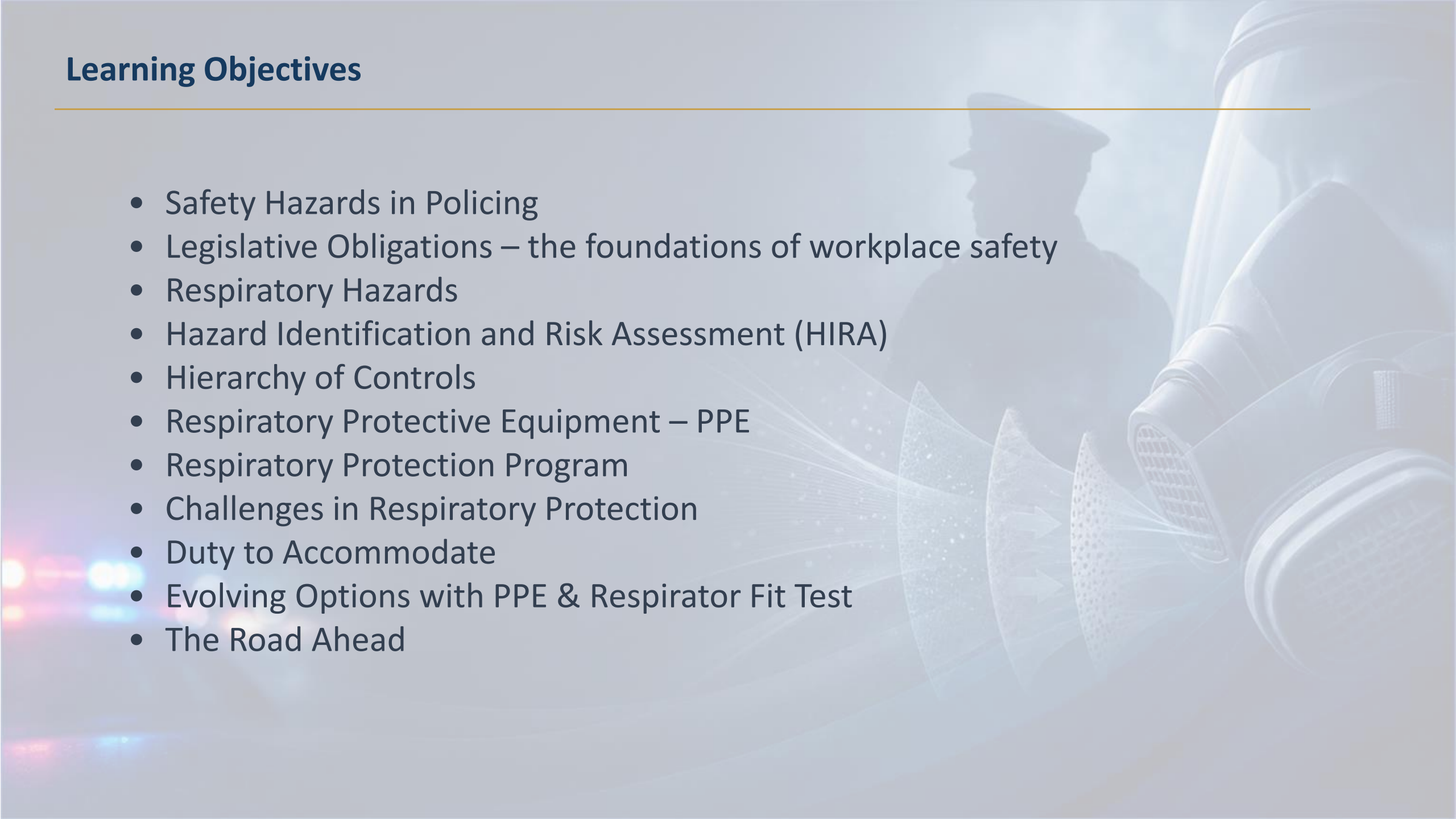
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Learning Objectives

- Safety Hazards in Policing
- Legislative Obligations – the foundations of workplace safety
- Respiratory Hazards
- Hazard Identification and Risk Assessment (HIRA)
- Hierarchy of Controls
- Respiratory Protective Equipment – PPE
- Respiratory Protection Program
- Challenges in Respiratory Protection
- Duty to Accommodate
- Evolving Options with PPE & Respirator Fit Test
- The Road Ahead

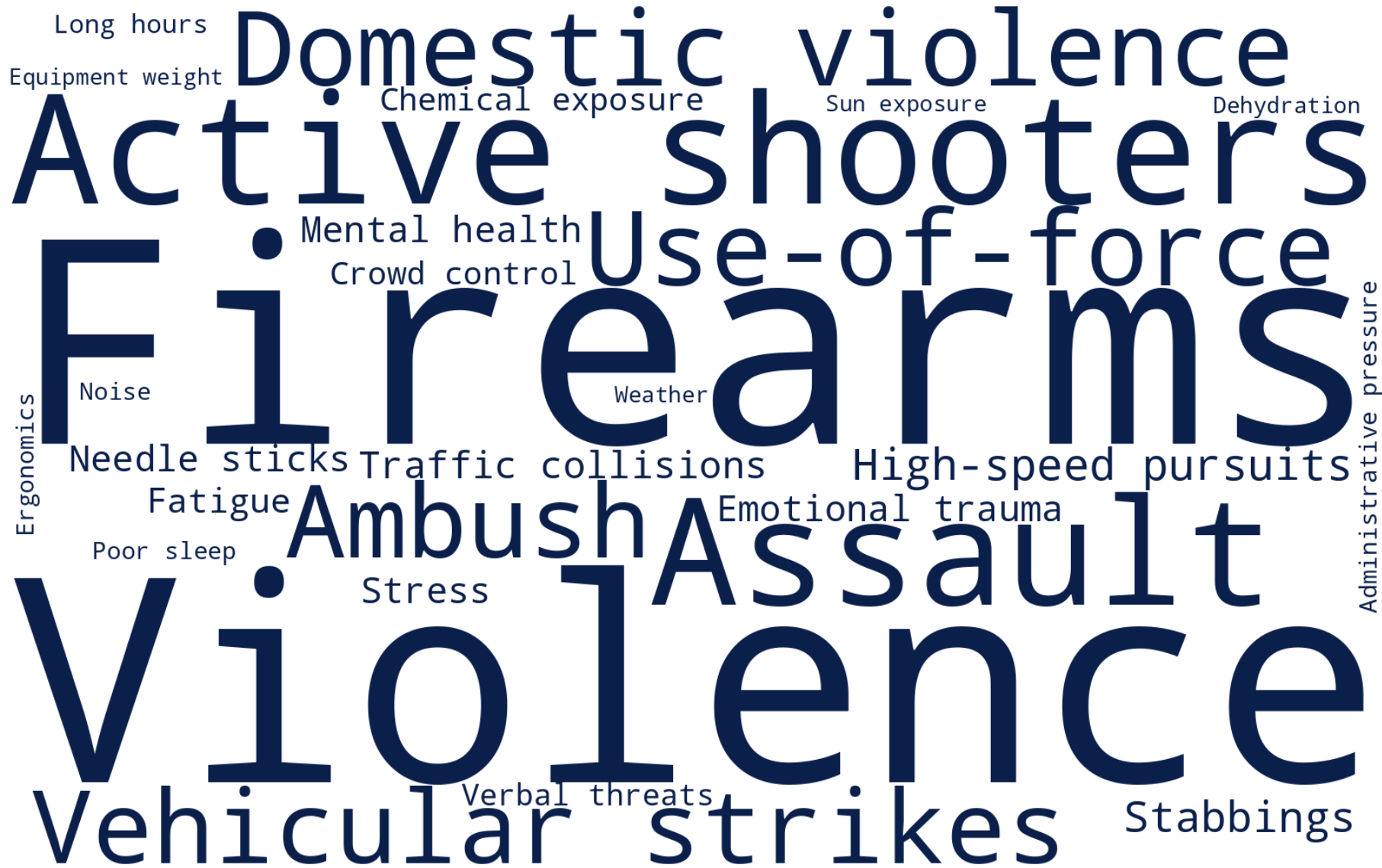


Hazards in Policing

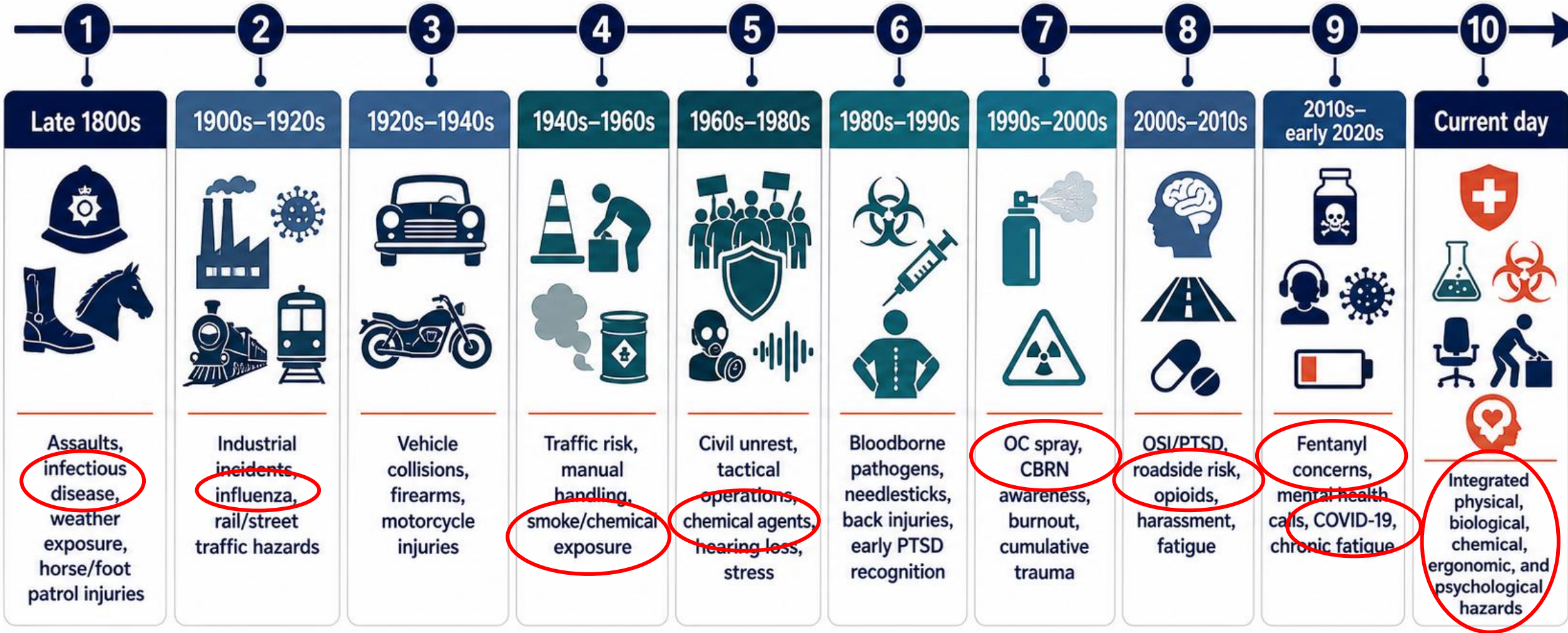


When someone says “**safety hazards in policing**” what words immediately come to mind?

Hazards in Policing



Timeline of Health & Safety Hazards in Policing



Canadian OHS Legislative Duties: General Duty and Hazard Management

Jurisdiction	Legislation	General Duty Clause	Hazard Identification	
Federal	<i>Canada Labour Code, Part II; Canada Occupational Health and Safety Regulations</i>	Federal requirements include informing employees of known or foreseeable hazards and maintaining a hazard prevention program.		
British Columbia	<i>Workers Compensation Act; Occupational Health and Safety Regulation</i>			
Manitoba	<i>Workplace Safety and Health Act; Workplace Safety and Health Regulation</i>	Employer must ensure, so far as reasonably practicable, the safety, health and welfare of workers.	Regulation requires regular workplace and work process inspections to identify risks to health and safety.	
Ontario	<i>Occupational Health and Safety Act</i>	Em rea pro	Prevention program / action plan must include identification and analysis of workplace risks and control measures.	
Quebec	<i>Act respecting occupational health and safety</i>			
Prince Edward Island	<i>Occupational Health and Safety Act</i>	practicable, worker health and safety.	clude processes for reporting ards.	

Respiratory Hazards and Associated Activities

Biological

- Bloodborne pathogens
- Airborne infectious diseases
- Bodily fluids
- Biological evidence
- Decomposing remains
- Mould and fungal contamination
- Animal-related hazards

- Medical calls
- Performing CPR
- Assisting EMS with airway management
- Interacting with people who are unwell
- Prisoner transport
- Grow ops
- Abandoned contaminated buildings

Chemical

- Riot gases
- Powdered substances
- Solvents
- Fuel vapours
- Products of combustion
- Asbestos
- Hazardous materials
- Silica
- Fingerprint powders
- Dust
- Manure

- Search of person/property
- Overdose response/drug calls
- Clandestine labs
- Evidence handling/processing
- Crowd/riot control
- Motor vehicle collisions
- Firearm armouring
- Fire scenes

Hazard Identification and Risk Assessment

- **Hazard Identification** - the process of finding, listing and characterizing hazards associated with a job or task
- **Risk Assessment** – the process of calculating level of risk using a combination of probability, frequency and/or severity that a person will be harmed or experience an adverse effect if exposed to the hazard. The risk calculation can be qualitative or quantitative .

	Low Severity	Medium Severity	High Severity
Low Probability	Very Low Risk	Low Risk	Medium Risk
Medium Probability	Low Risk	High Risk	High Risk
High Probability	Medium Risk	High Risk	Immediately Dangerous

	Negligible Severity (1)	Minor Severity (2)	Moderate Severity (3)	Major Severity (4)	Catastrophic Severity (5)
Rare Probability (1)	Low (1)	Low (2)	Low (3)	Moderate (4)	Moderate (5)
Unlikely Probability (2)	Low (2)	Moderate (4)	Moderate (6)	High (8)	High (10)
Possible Probability (3)	Low (3)	Moderate (6)	High (9)	High (12)	Extreme (15)
Likely Probability (4)	Moderate (4)	High (8)	High (12)	Extreme (16)	Extreme (20)
Almost Certain Probability (5)	Moderate (5)	High (10)	Extreme (15)	Extreme (20)	Extreme (25)

Hazard Identification and Risk Assessment



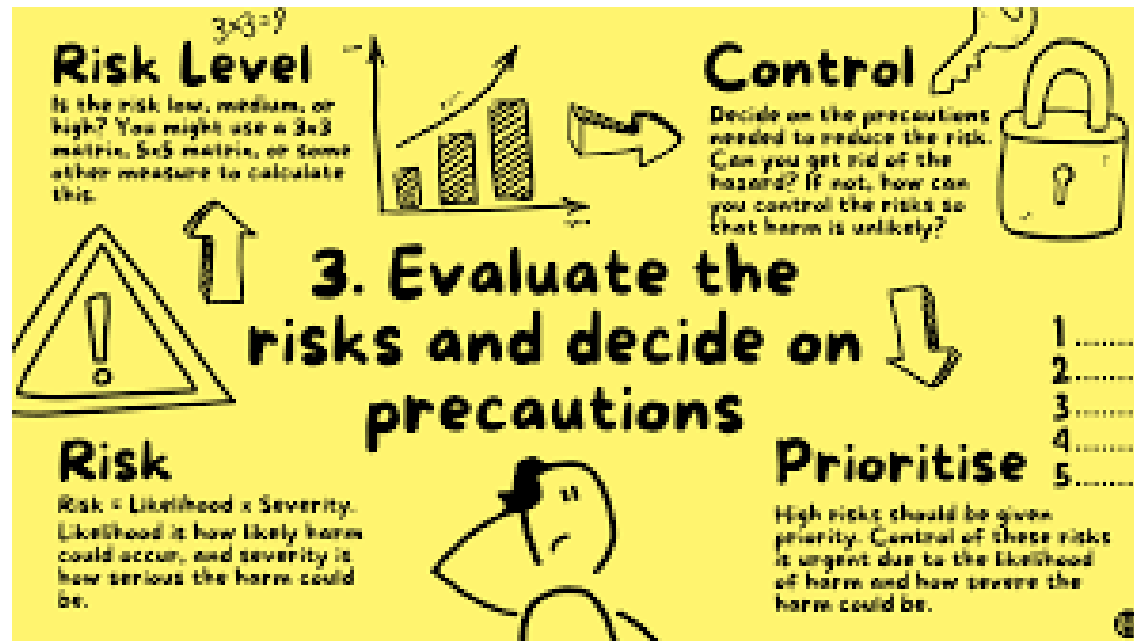
How do you know what the hazards and risks are if they are not assessed



Backbone of health and safety decisions



Used to make informed recommendations or build defensible program



Respiratory Hazard Identification and Risk Assessment – An Example

- Conducted with the JHSC
- Established risk rating criteria
- Established risk groups based on risk rating (Group A, Group B)
- Established safety protocols for each risk group
- Identified tasks for each job position that had potential respiratory hazards
- Watch out for ‘Severity’ it can skew results

Frequency of Task (F)

Score	Definition
1	Rare – May occur only in exceptional situations
2	Unlikely – Could happen but rarely does (e.g annually)
3	Possible – Might occur occasionally (e.g. once a month)
4	Likely – Will probably occur in most instances (e.g. at least once per work block)
5	Certain – Expected to occur frequently (e.g. every shift)

Likelihood of Exposure/Harm (L)

Score	Definition
1	Rare – May occur only in exceptional situations
2	Unlikely – Could happen but rarely does
3	Possible – Might occur occasionally
4	Likely – Will probably occur in most instances
5	Certain – Expected to occur frequently

Exigency of Response/Task (E)

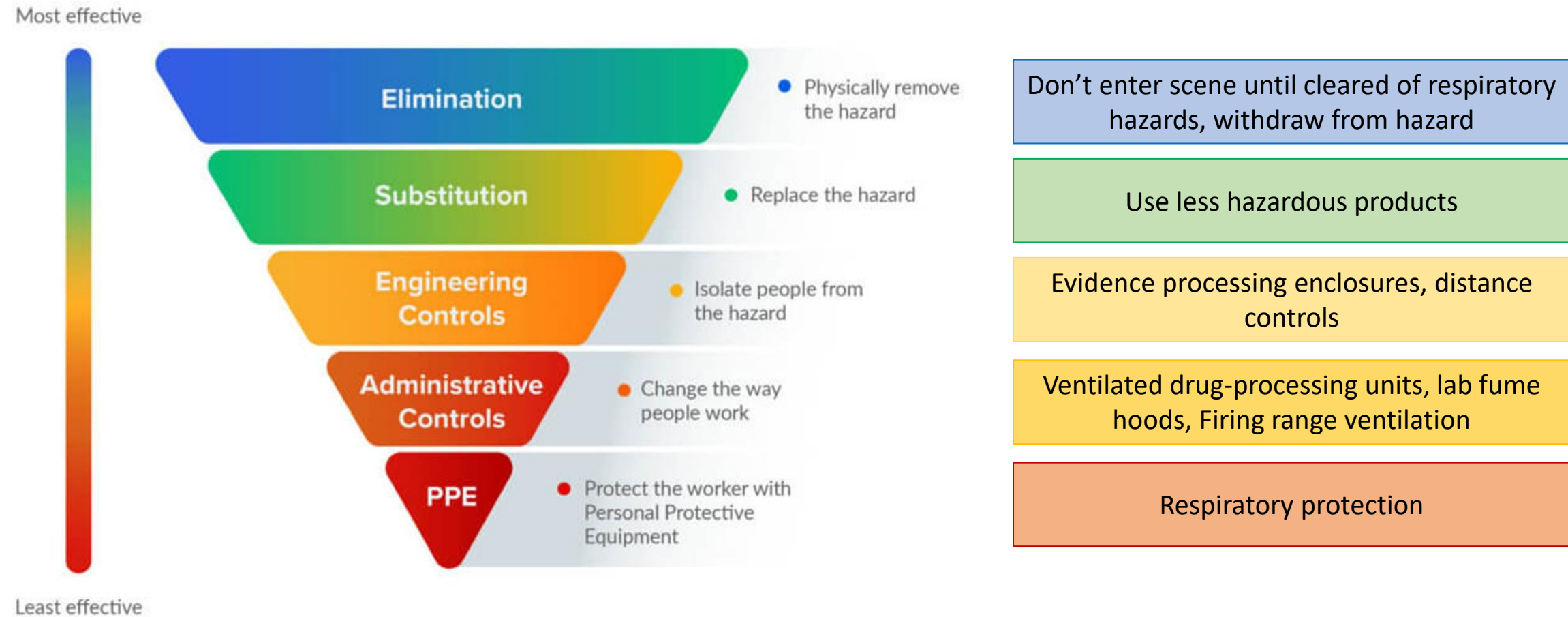
Score	Definition
5	Response/Task optional
4	Scheduled response/task sufficient; within days
3	Non-critical response/task; within hours
2	Urgent response/task needed; within minutes
1	Immediate response/task required

$$\text{Risk Score} = (\text{Frequency} \times \text{Likelihood}) / \text{Exigency}$$

Hazard Identification and Risk Assessment – An Example

Item No.	Equipment / Activity /Task	Respiratory Hazard Description	Frequency of Task	Likelihood of harm/exposure	Exigency of Response/Task	Risk Score	Risk Score	Current Controls/ Comments
1	Search of person/property/vehicles (evidentiary)	Biological (Blood/bodily fluids, infectious diseases), Chemicals (unknown chemicals, hazardous particulates (dust, mould, powdered substances))	4	3	2	6	A	N95 respirator, Half-face respirator with P100/nuisance level organic vapour filter, Tyvek suit, gloves, eye protection
2	Medical call - providing first aid/CPR/AED	Biological (blood/bodily fluids, infectious diseases)	3	3	2	4.5	B	N95 respirator, Half-face respirator with P100/nuisance level organic vapour filter, gloves, eye protection
3	Affecting arrest	Biological (blood/bodily fluids, infectious diseases), Chemicals (powdered substances, odours)	4	4	2	8	A	N95 respirator, Half-face respirator with P100/nuisance level organic vapour filter, gloves, eye protection
4	Guard a scene	Biological (infectious diseases), Chemicals (hazardous particulates (dust, mould, etc), odours)),	3	2	2	3	B	Scene made safe, N95 respirator, Half-face respirator with P100/nuisance level organic vapour filter, Tyvek suit, gloves, eye protection
5	Attending fire scene	Chemicals (smoke, hazardous particulates)	3	4	2	6	A	Stay out of hazard zone as much as possible, Half-face respirator with P100/nuisance level organic vapour filter
6	Collecting/handling evidence	Chemical (gas/vapour), hazardous particulates (dust, mould, powdered substances)), Biological (blood/bodily fluids)	3	2	3	2	B	N95 respirator, Half-face respirator with P100/nuisance level organic vapour filter, Tyvek suit, gloves, eye protection
7	Response to/inspection/investigation of vehicle involved in collision	Chemical (diesel, gasoline), hazardous particulates (carbon-based particles), blood/bodily fluids	5	3	3	5	B	ERAP for hazardous goods, N95 respirator, Half-face respirator with P100/nuisance level organic vapour filter, Tyvek suit, gloves, eye protection
8	Firearms training	Chemicals (lead)	2	2	4	1	B	Air wall/dust collection/ventilation
9	Conducting interviews	Biological (Infectious diseases)	4	2	4	2	B	N95 respirator

Hierarchy of Control



Key point: respirators should not be the first or only control for a respiratory hazard.

Respiratory Protection Equipment - What the legislation says

Jurisdiction	Legislation	PPE	Respiratory Protection Equipment
Federal	<i>Canada Labour Code, Part II; Canada Occupational Health and Safety Regulations</i>	Provide every person granted access to the work place by the employer with prescribed safety devices and clothing;	
British Columbia	<i>Workers Compensation Act; Occupational Health and Safety Regulation</i>	employers are required to provide appropriate PPE to protect workers	
Manitoba	<i>Workplace Safety and Health Act; Workplace Safety and Health Regulation</i>		Respiratory protective equipment shall be provided, stored, and maintained in accordance with the requirements of the Regulation, and Care of Respirators
Ontario	<i>Occupational Health and Safety Act</i>		Workers shall wear and use a respirator when the employer has determined that a respirator is required.
Quebec	<i>Regulation Respecting Occupational Health and Safety,</i>	The employer shall provide the individual or collective protective equipment	Every respirator provided by the employer must be certified by the NIOSH or the CSA. When providing such a device, the employer must draft and apply a respiratory protection program in compliance with CAN/CSA Standard Z94.4-11, Selection, Use and Care of Respirators
Prince Edward Island	<i>Occupational Health and Safety Act General Regulations</i>	The employer shall ensure that the type and condition of a worker shall be of a type and condition that will not expose the worker to any unnecessary and avoidable hazards.	where the prevention or elimination of the hazard is not reasonably practicable, or where the hazard is present only under extraordinary or emergency conditions only, approved protective respiratory equipment shall be used.

If personal protective equipment is required to protect against a chemical exposure or an oxygen deficient atmosphere the employer must implement an effective **protective equipment program** at the workplace

After taking the measures required under subsection (2), the employer must ensure that workers who may be exposed to any remaining uncontrolled risk use personal protective equipment that

Every respirator provided by the employer must be certified by the NIOSH or the CSA. When providing such a device, the employer must draft and apply a respiratory protection program in compliance with CAN/CSA Standard Z94.4-11, Selection, Use and Care of Respirators

The employer shall ensure that the type and condition of a worker shall be of a type and condition that will not expose the worker to any unnecessary and avoidable hazards.

Respiratory Protection Equipment - What the legislation says

CSA Standard Z94.4-18 Selection, Care and Use of Respiratory Protection

- sets out the requirements for the selection, use and care of respirators and for the administration of an effective respiratory protection program in the workplace and is suitable for emergency and non-emergency situations.
- The standard does not include the requirements for protection for first responders during CBRN (chemical, biological, radioactive, nuclear) events.

Respiratory Protection

- Respiratory protection shall be used to protect a user from inhaling a hazardous atmosphere when engineering or administrative control measures are not practicable or not adequate, while such controls are being instituted, or during shutdown for maintenance or during, repair or emergency.

Hazard Assessments

The Respiratory Program Administrator shall ensure that:

- (b) assessments for respiratory hazards are conducted by qualified persons;
- (c) as list of respirators is maintained in the workplace for each respiratory hazard (as identified in the risk assessment)

Respiratory Protection Equipment - What the legislation says - Ontario

O. Reg. 833: Control of Exposure to Biological or Chemical Agents

Section 7.2(2): The employer shall provide, and workers shall wear and use, a respirator appropriate in the circumstances to protect the workers from exposure to the agent,

- (a) if substitution of the agent is not reasonable or not practical; and
- (b) if engineering controls required by this Regulation are not in existence, obtainable, ineffective, etc.

Section 12(3): A respirator that is designed to be tight-fitting shall not be provided to, or used by, a worker with facial hair that comes between the sealing surface of the facepiece and the face or that interferes with the functioning of the respirator.

Police Adequacy Standard AI-004

Section 9: Every Chief of Police should ensure that every police officer and civilian members who may be at risk of exposure to communicable diseases have available to them the personal protective equipment set out in the *Ministry's Designated Equipment List* on communicable diseases.

The *Ministry's Designated Equipment List* of what must be included in the mobile biohazard kit and made available to all police officers and appropriate civilian members includes a, “**disposable moisture-resistant cone masks (NIOSH approved N95 respirator) for tuberculosis protection, and has boomerang nose sealing.**”

Respiratory Protection Equipment - What the legislation says - Ontario





O. Reg. 392: Adequate and Effective Policing (Community Safety and Policing Act)

Section 4 (14): Public Order Units and Tactical Units and Hostage Rescue Teams shall be provided:

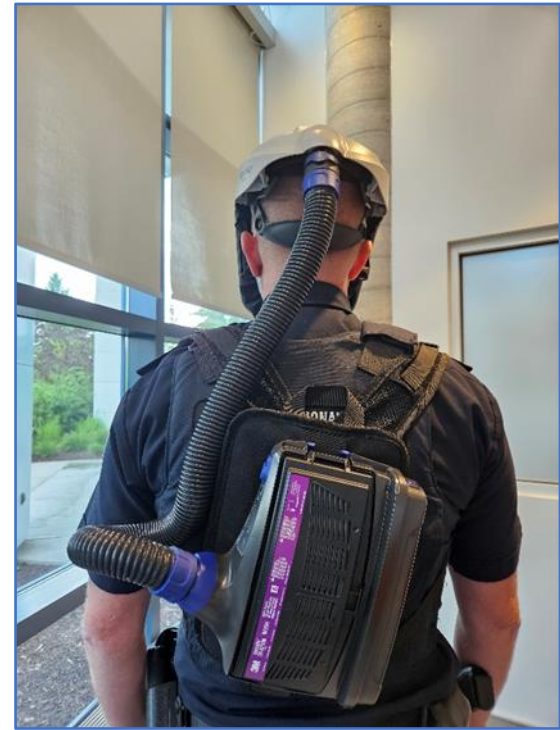
A respiratory mask that,

- i. provides CS chemical agent protection,
- ii. contains a filtration canister,
- iii. is designed not to impair peripheral vision,
- iv. contains a filter system that will not interfere with the ambidextrous shoulder-firing of a weapon,
and
- v. provides hydration capabilities.

Common Respirator Types

Mask Type	Image	Testing & Approval	Intended Use	Face Seal Fit	Reusability	Advantages	Limitations
Surgical Mask		Cleared by FDA/Health Canada for fluid resistance	Protects others from wearer's droplets; protects wearer from splashes and large droplets.	Loose-fitting; significant leakage	Single-use	Comfortable, fluid resistant	No seal, limited aerosol protection
N95 Respirator		NIOSH-approved to filter ≥95% of airborne particles (42 CFR Part 84).	Protects wearer from airborne particles including aerosols.	Tight-fitting; requires fit testing.	Disposable; limited reuse	High filtration efficiency. Usually compact and easy to carry on person,	Does not protect against gases/vapours, must be fit tested, can be uncomfortable
Half/Full-Face Elastomeric Respirator		NIOSH-approved, uses NIOSH-approved filters/cartridges (e.g., P100, gas/vapour)	Protects against particulates, gases, and vapors depending on filter type.	Tight-fitting; durable seal; requires fit testing.	Reusable; requires cleaning; replaceable filters.	Durable, high protection, cost-effective.	Bulkier; requires cleaning; communication challenges.
Powered Air Purifying Respirator		NIOSH-approved PAPR systems; blower + HEPA or P100 filters	Protects against particulates, gases, and vapors depending on cartridge; used in high-risk procedures.	Loose or tight depending on hood; positive pressure reduces need for tight seal.	Reusable; requires cleaning; battery and blower maintenance.	Highest protection; positive pressure; comfortable breathing.	Bulky; takes time to don; expensive; battery dependent, not suitable for unsecure scene

Powered Air Purifying Respirators (PAPR) – Things to Consider



What situations can PAPRs be used in

When are they not suitable

Filter type – what are the hazards

Headpiece type – helmet/hood – may not work with a turban

Shared amongst employees on different shifts or individually issued?

Charging and cleaning and maintaining

Training

Escape Hoods – Things to Consider



Used for
escape, not
work

Carry on duty
belt or in duty
bag

Short
protection span

Provides eye
and respiratory
protection

What is the
shelf life

Provides CBRN
protection

Respiratory Protection Equipment – Assigned Protection Factor

Assigned protection factor (APF) – the anticipated level of respiratory protection that would be provided by a properly functioning respirator or class of respirators to properly fitted and trained users.

Acceptable level						Air-purifying options	APF	Atmosphere-supplying options
0	1	2	3	4	5			
					5	No air-purifying option available	10000	SCBA (pressure-demand) full-facepiece SCBA (pressure-demand) tight-fitting hood Multi-functional SCBA/airline
				4 to 5		Powered air-purifying full-facepiece Powered air-purifying helmet/hood with SWPF study	1000	Airline (continuous-flow) full-facepiece Airline (pressure-demand) full-facepiece Airline (continuous-flow) helmet/hood with SWPF study
			3 to 5			Powered air-purifying half-facepiece Air-purifying (negative-pressure) full-facepiece	50	Airline (pressure-demand) half-facepiece Airline (continuous-flow) half-facepiece
		2 to 5				Powered air-purifying loose-fitting facepiece/visor Powered air-purifying helmet/hood without SWPF study	25	Airline (continuous-flow) loose-fitting facepiece/visor Airline (continuous-flow) helmet/hood without SWPF study
	1 to 5					Air-purifying (negative-pressure) half-facepiece (including filtering facepieces)	10	No atmosphere-supplying option available
						No respiratory protection required	<1	No respiratory protection required
Notes: (1) See Tables 1 and 2 for fit test pass/fail criteria for tight-fitting respirators. (2) Fit testing is not required for loose-fitting respirators.								

If a respirator has an APF of 10, a worker is protected up to 10 times the occupational exposure limit. If the conditions are greater than 10 times the exposure limit, a higher APR respirator is needed.

Method of fit testing matters!
Qualitative can only achieve an APF of 10

Respiratory Protection Equipment – Occupational Exposure Limits

- Use legislation and standards as reference and guidance
 - Ontario – Regulation 833 – Control of Exposure to Biological or Chemical Agents
 - ACGIH – Threshold Limit Values
- Only useful if you know the chemical agent and concentration level

Chemical Agent	Situation	Exposure Limit
Hydrogen Sulfide	Chemical suicides	10 ppm
Carbon monoxide	Running vehicles/engines in enclosed spaces	25 ppm
Lead	Firing range	0.5 0.5 mg/m ³
Fentanyl (BC)	Overdoses/handling	0.1 <u>µg/m³</u>

Choosing the Right Respirator for the Task



BIOLOGICAL

HAZARDOUS AGENTS

- Viruses, bacteria, other infectious diseases

SITUATIONAL EXAMPLES

- Apprehending or interacting with an individual with suspected respiratory illness
- Assistance within a health care centre

WHAT RPE TO WEAR?

- N95 Respirator
- Elastomeric Half Face Respirator
- Powered Air Purifying Respirator

OTHER CONSIDERATIONS

- RPE is used in addition to other PPE such as gloves and eye protection (in some cases)
- Tight fitting respirator requires member to be clean shaven



AIRBORNE PARTICLES

- Powdered drugs such as fentanyl and its components
- Bacteria/Disease such as Tuberculosis or Measles

- Overdose situations
- Seizure of powdered substances
- Assistance within a health care centre

- Elastomeric Half Face or Full Respirator
- Powered Air Purifying Respirator

- Greatest route of exposure is through inhalation, then ingestion.
- For large quantities, contact the *Guns, Gangs, and Drugs Unit*



CHEMICAL VAPOURS

- Liquid solvents
- Unknown gases or vapours

- Chemical Suicide calls
- Unknown chemical spills
- Exposure to consumer chemicals
- Crowd Management
- Riot Control agents

- Elastomeric Half Face or Full Respirator
- Powered Air Purifying Respirator

- Risk assessment needs to be conducted prior to arrival and entry, to determine if HAZMAT Unit/ERU assistance is required.



SMOKE/FIRE

- Fires (fire fighting must use SCBA)
- Certain decomposition products

- Residential Fire
- Commercial Fire
- Motor Vehicle Fire
- Forest Fire

- **DO NOT ENTER** burning buildings
- Elastomeric Half Face Respirator
- PAPR (only with approved accommodation)
Perimeter ONLY

- Exposure to combustion by-products may occur through skin absorption, not just inhalation.
- Respirators are not suitable for Immediately Dangerous to Life or Health (IDLH) situations or in Oxygen deficient environment.

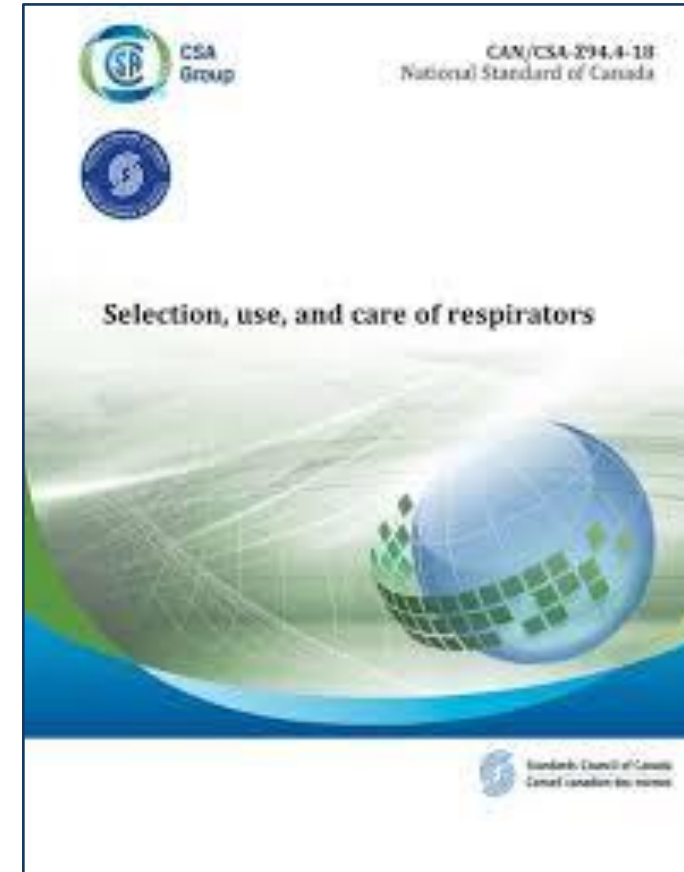
Respiratory Protection Program

The employer shall be responsible for preparing and implementing, in consultation with users, a written respiratory protection program. (CSA Z94.4-18)

Program components

A respiratory protection program shall consist of the following components:

- (a) roles and responsibilities;
- (b) hazard assessment;
- (c) respirator selection;
- (d) training;
- (e) respirator fit testing;
- (f) use of respirators;
- (g) cleaning, inspection, maintenance, and storage of respirators ;
- (h) health surveillance;
- (i) program evaluation; and
- (j) recordkeeping.



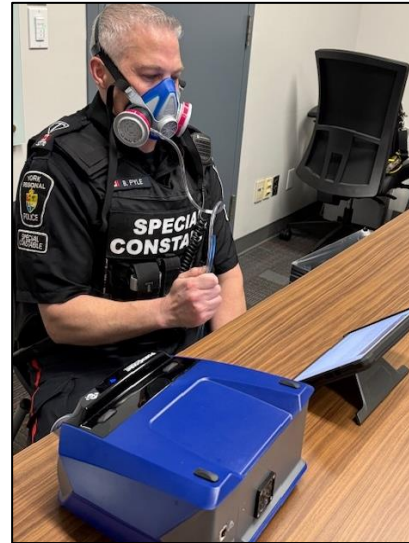
Respiratory Protection Program – Fit Testing



Qualitative Fit Testing (QLFT) - A **pass/fail method** that relies on the wearer's **sense of taste or smell** to detect mask leakage. During the test, a harmless agent like **saccharin (sweet)** or **Bitrex (bitter)** is introduced into a hood while the wearer performs prescribed movements.



Quantitative Fit Testing (QNFT) - An **objective method** that uses specialized equipment to **measure the amount of leakage** between a respirator and the wearer's face. It calculates a **numerical fit factor** by comparing particle concentrations inside and outside the mask, eliminating human bias.



Respiratory Protection Program – Fit Testing

	Qualitative	Quantitative
Method	Pass/fail test based on whether the wearer detects a test agent	Instrument-based test that measures leakage into the respirator
Result Type	Subjective pass/fail	Objective numerical score plus pass/fail
Cost/Training	Lower cost and moderate training needs	Higher cost and higher technical competency
Equipment	Simple – Hood and nebulizer	Specialized instrument – Portacount or Accufit plus adapters
Best Use Cases	Large volumes of routine testing for eligible respirators where a pass/fail method is acceptable	Higher-risk work, full-facepiece respirators, program validation, or where objective data is preferred
Limitations	Only for respirators with APF of 10	For respirators with higher APF
Best For	Routine half-mask testing where permitted	Higher-risk use and where objective data is needed

Challenges With Respiratory Protection in Policing

Hazard recognition

Awareness, appreciation, understanding latency

Hazard identification, assessment & control strategy

What are they, how can they harm us, how to prevent

Suitable response based on task (planned, anticipated, rapid response)

What works best for your organization & response plan

PPE challenges with tasks

Compatible with other equipment, sight & sound,
donning & doffing, cleaning & maintenance

Accommodation & the human element

Religious, medical, personal preference for facial hair

CSA Z94.4 Selection, Use and Care of Respirators





Annex P (informative)

Illustrations of acceptable and unacceptable facial hair for tight-fitting respirators







Notes:

- 1) This Annex is not a mandatory part of this Standard.
- 2) This Annex is to be used in conjunction with Clauses 9.2.2 and 10.1.3.
- 3) The examples provided in this Annex are illustrations of the application of the criteria specified in this Standard. These examples are limited, not comprehensive, and are provided only as guidance for program administrators, fit testers, supervisors, and users. Variations not illustrated in this Annex do not necessarily meet the criteria for acceptable facial hair.
- 4) Acceptable facial hair for respirator fit testing and use does not interfere with
 - a) the respirator sealing surface; or
 - b) valve or respirator function.

Acceptable

<p>A. Clean shaven, ideal for a good seal</p>	
<p>B. Amount of facial hair that will typically allow a good seal</p>	
<p>C. Moustache that does not interfere with the sealing surface, valves, or respirator function</p>	
<p>D. Soul patch that does not interfere with the sealing surface, valves, or respirator function</p>	

Unacceptable

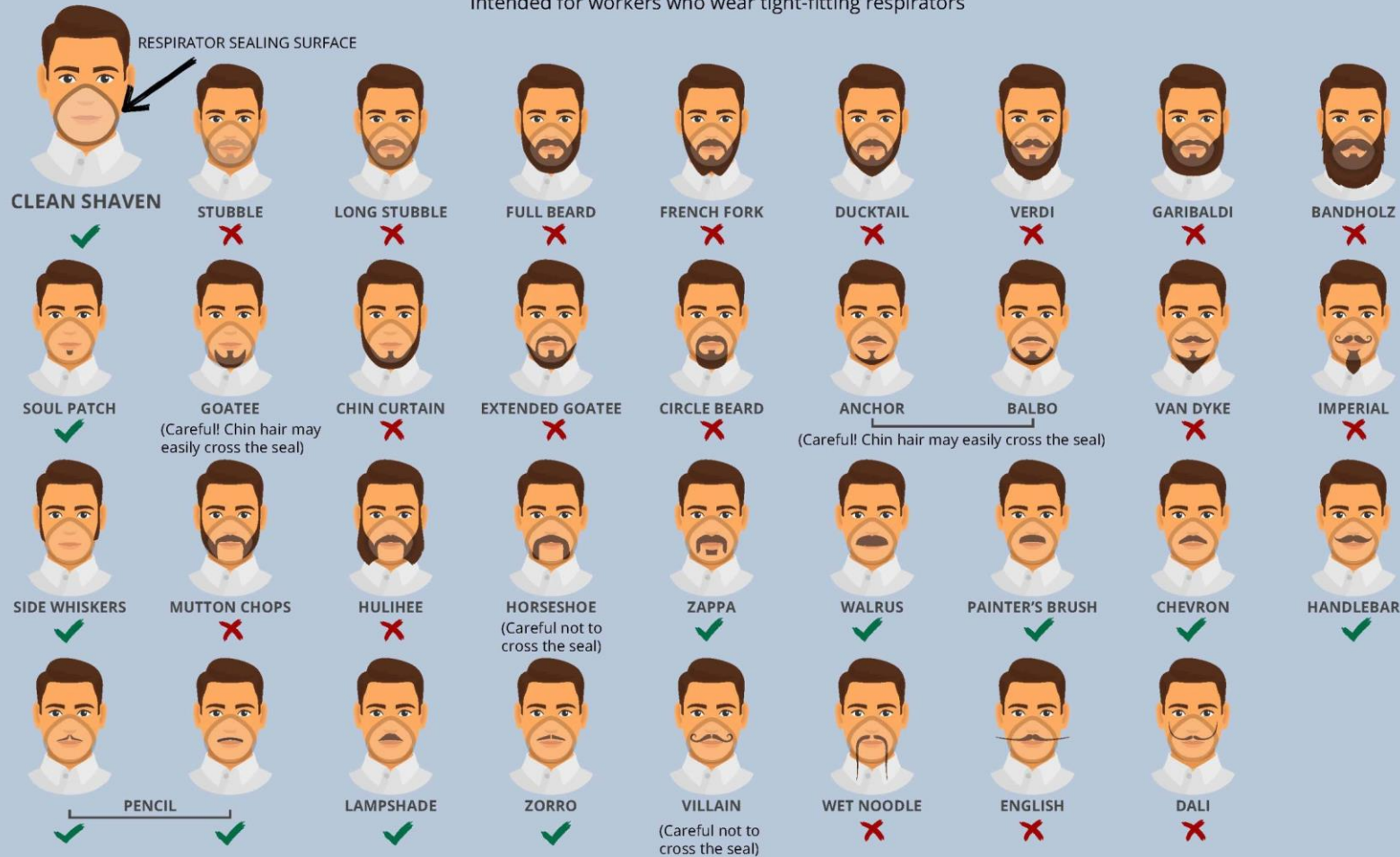
<p>E. Soul patch that will interfere with the respirator seal in the chin area on elastomeric facepieces Facial hair and sideburns that will interfere with the sealing surface</p>	
<p>F. This facial "shadow" (not clean-shaven) will interfere with the sealing surface of a half or full facepiece. It will also compromise a secondary seal inside a tight-fitting hood-style respirator. Degradation of fit can occur during cumulative work hours when an individual grows this amount of facial hair.</p>	
<p>G. Moustache is too thick and too long (down around edge of mouth); will contact a sealing surface and interfere with exhalation valve. Sideburns and/or heavy hair under the chin will prevent a good seal.</p>	
<p>H. Moustache is too thick and too long (down around edge of mouth); will contact a sealing surface and could get stuck in an exhalation valve. The hair on the rest of the face will interfere with a sealing surface</p>	
<p>I. Hair is in sealing region and under the chin. Hair is in chin cup sealing region and on the side of the face.</p>	
<p>J. Moustache is too thick and too long; will contact a sealing surface and interfere with exhalation valve.</p>	

Note: Adapted with permission from Brookhaven National Laboratory.

National Institute for Occupational Safety and Health (NIOSH)

Facial Hairstyles and Filtering Facepiece Respirators

Intended for workers who wear tight-fitting respirators



Original image vector by fredrisher/Shutterstock.com

*If your respirator has an exhalation valve, some of these styles may interfere with the valve working properly if the facial hair comes in contact with it.
 †This graphic may not include all types of facial hairstyles. For any style, hair should not cross under the respirator sealing surface.
 Source: OSHA Respiratory Protection Standard
https://www.osha.gov/pls/oshweb/owadisp.show_document?p_table=standards&p_id=12716
 Further Reading: NIOSH Respirator Trusted-Source Webpage
https://www.cdc.gov/niosh/nppt/topics/respirators/disp_part/resresource3fittest.html

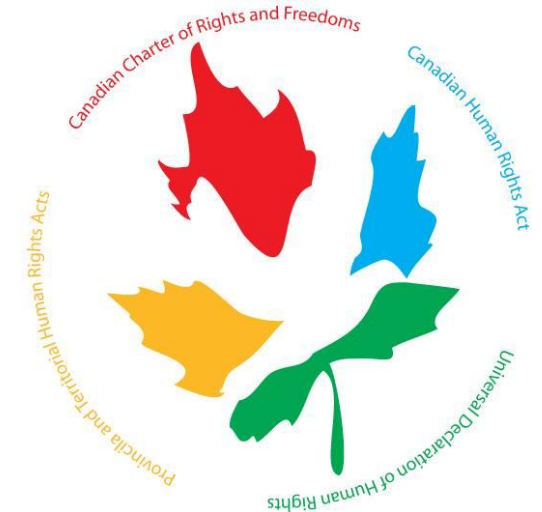


Centers for Disease Control and Prevention
 National Institute for Occupational Safety and Health

Duty to Accommodate

While the legislation across each jurisdiction varies slightly, across the country most Canadian human rights laws protect against discrimination based on core grounds such as:

- race
- colour
- ancestry / ethnic or national origin
- religion / creed
- age
- sex
- sexual orientation
- gender identity / gender expression
- marital status
- family status
- disability



Common Accommodation Requests

	Religious	Medical
	Sikhism	Respiratory conditions
	Islam	Cardiovascular conditions
	Judaism	Anxiety / psychological conditions
	Certain Christian traditions	Dermatological conditions
	Some Hindu or other spiritual traditions	Musculoskeletal or neurological issues

Evolving Options for Respiratory Protection

Department of National Defense (DND)

The C5B is a hood-style accessory to the C5 respirator. A CAF member places the respirator against their face, pulls the hood back over their head, and then tucks the hood edges into their CBRN protective suit.

“The new concept is a clean chamber around your head,” explains Maj Christian Doucet, with J CBRN. The hood is tightened snug against the head and neck, helping to keep the chamber clean of tear gas. The fabric also has an aerosol filtration membrane similar to an N95 mask further providing an extra layer of protection.

The result is sufficient respiratory protection to complete the same **training drills** as members wearing other in-service respirator such as the C4 or C5, without tear gas getting in their eyes or nose.

The protection level achieved by the C5B is sufficient for training purposes, and **more research and development would be required to develop a respirator that meets the higher protection levels required for operational uses**, while still accommodating beards, long hair, headdresses and uniquely shaped faces



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DRDC helps military members breathe easier during training

March 1, 2024

Shaved skin used to be the only way to get a good seal and adequate respiratory protection wearing a gas mask, but research trials on a new respirator, called the C5B, promise a “breath of fresh air” during training drills for Canadian Armed Forces (CAF) members who have beards, long hair, headdresses or uniquely shaped faces.

CAF members train to use a chemical, biological, radiological, nuclear (CBRN) respirator in a gas hut during basic military qualifications and regularly renew this training throughout their careers. For CAF members with beards, long hair, headdresses or uniquely shaped faces, who were not able to achieve a good seal on their respirator, this training regularly included stinging eyes and runny noses from the tear gas, used to test their skills in the gas hut.

Evolving Options for Respiratory Protection

Royal Canadian Mounted Police (RCMP)

Respiratory protection for persons with facial hair remains a significant challenge given the current legislative requirements in Canada, and current commercially available respirator options. As per current legislative requirements, the **vast majority of respirators on the market are designed to be worn on clean-shaven faces, with no equivalent alternative for those with facial hair.** Further, respirator options that are marketed to work with facial hair, are **generally not suitable for police work**, as there are many features that can adversely impact critical police functions.

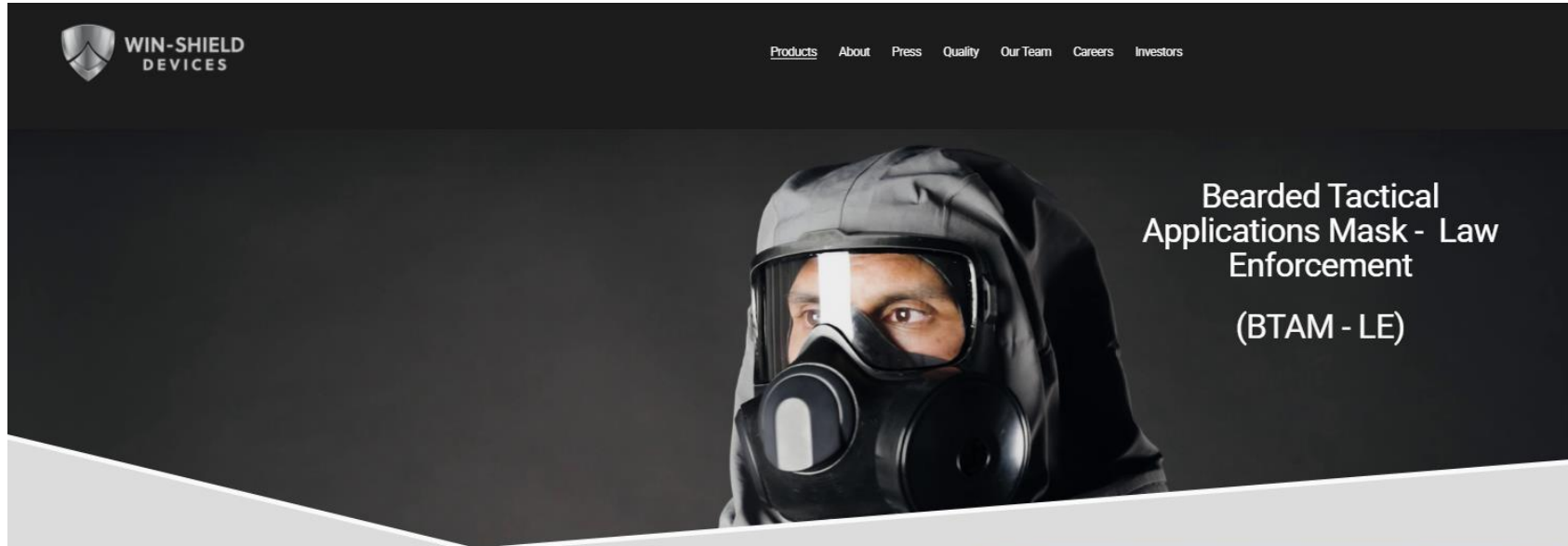
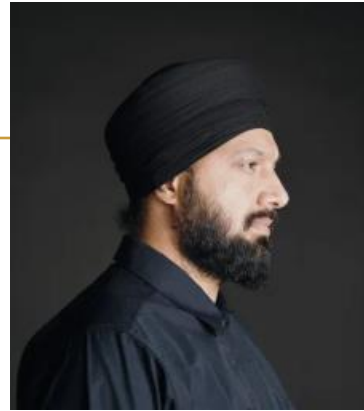
In the policing environment, officers are often required to respond **to complex and dynamic events**, some of which may require respiratory protection from a number of different hazards. It is impossible to prepare for all situations that a police officer may be required to respond to, thus it is **critical that police officers with facial hair have access to a respiratory protective device.**



The screenshot shows a government website page. At the top, there is a navigation bar with the Government of Canada logo and the text 'Government of Canada' and 'Gouvernement du Canada'. To the right is a search bar labeled 'Search Canada.ca'. Below the navigation bar is a 'MENU' dropdown. The main content area has a breadcrumb trail: 'Canada.ca > Innovation, Science and Economic Development Canada > Programs > Innovative Solutions Canada'. The title of the page is 'Inclusive Respirator'. Below the title, it says 'From: Innovation, Science and Economic Development Canada'. There is a large teal banner with a white outline of a respirator mask and the 'INNOVATIVE SOLUTIONS CANADA' logo. Below the banner, there is a paragraph of text: 'The Royal Canadian Mounted Police (RCMP) is seeking the design and production of an inclusive respiratory protection option that can be safely used by front-line police officers who have facial hair for religious, cultural, medical and/or gender identity reasons. An innovation in this field would be a breakthrough, and address systemic barriers faced by Canadian first responders.'

Collaborative Initiative – RCMP & DND / CAF

BTAM / UTAM – await press release end of May



Designed to provide respiratory protection for law enforcement, including those with beards, head coverings and hard-to-fit faces.



Evolving Options for Respirator Fit

Occupational Cancer Research Centre

Men with facial hair are currently not able to wear tight-fitting respirators in Ontario workplaces, which could limit job opportunities for those who are unable to shave. The goal of this study is to evaluate the **Singh Thattha technique**, which uses an **over-the-beard covering to improve respirator fit among men with facial hair**. If effective, this technique could increase the options available for men with facial hair who need to wear respirators. This study is funded by the Ontario Ministry of Labour, Immigration, Training and Skills Development. The grant funds are administered through the Occupational Cancer Research Centre (OCRC) at Ontario Health.



OCRC Occupational Cancer Research Centre

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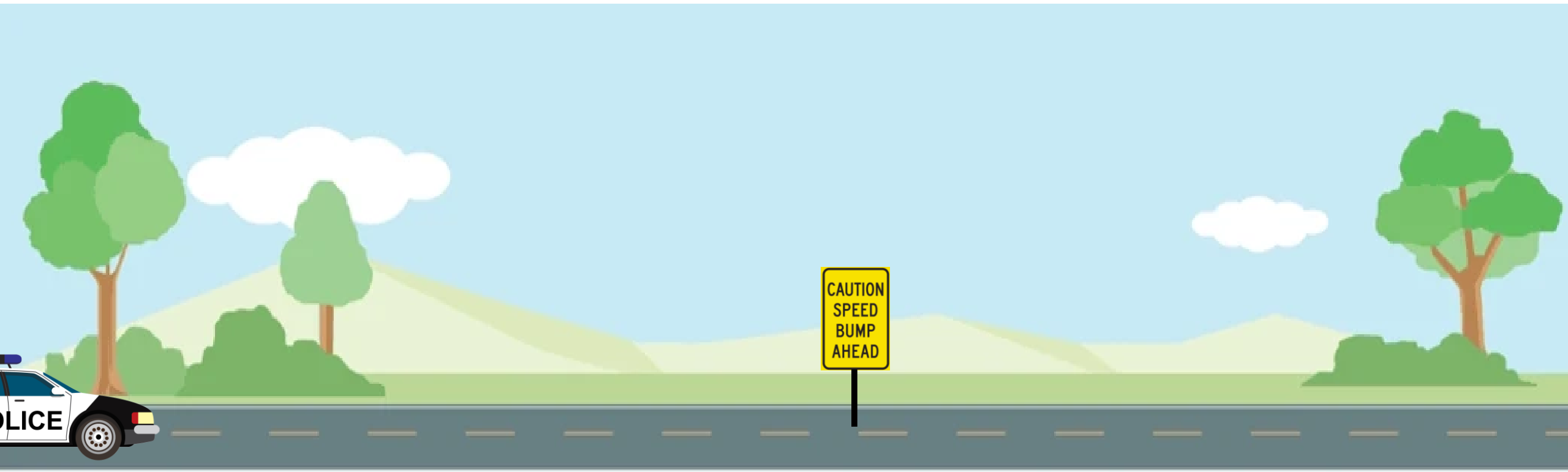
Pilot Investigation of the Singh Thattha technique among bearded Sikh men

Purpose

This study is recruiting Sikh men with facial hair to help test the Singh Thattha technique – a method to allow individuals with facial hair to wear tight-fitting respirators.

<https://www.occupationalcancer.ca/project/beard-study/>

The Road Ahead



Back to Basics

Respiratory hazards are hazards!

Engage Stakeholders & SME's

Identify hazards and evaluate the risk

No Dedicated H&S Team? No Problem!

Consult, collaborate, seek support!

Build a Defensible Program

That works for your service, based on legislative requirements, HIRA, industry best practices

Progress Over Perfection!

R – recognize
A – assess
C – control
E – evaluate

Closing Thoughts

Respiratory protection isn't just equipment, policy, or procedure—it's a commitment to members and their safety

Change doesn't happen all at once. It happens through small, consistent decisions. These choices add up to shape safety culture.

Move forward with confidence. Take what you know and what you've learned today and turn it into action.

Together, we can refuse to accept preventable harm is just 'an inherent risk of policing.'

Resources

- [CAN/CSA-Z94.4-18 \(R2023\) Selection, use, and care of respirators](#)
- [Identifying NIOSH Approved Respirators](#)
- [Canadian Centre for Occupational Health and Safety \(CCOHS\) - Hazard and Risk – Risk Assessment](#)
- [Public Sector Health and Safety Association \(PSHSA\)](#)
- [Canadian Centre for Occupational Health and Safety \(CCOHS\) – Respirators – Respirator Selection](#)
- [Defense Research and Development Canada – C5B respirator development](#)
- [RCMP Inclusive Respirator](#)
- [Occupational Cancer Research Centre – Singh Thattha](#)
- [Win-shield Devices – Bearded Tactical Applications Mask \(BTAM\)](#)