

**Prevention**

# **Occupational Disease Action Plan(ODAP): Action & Tools**

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## Prevention

# Reference Group



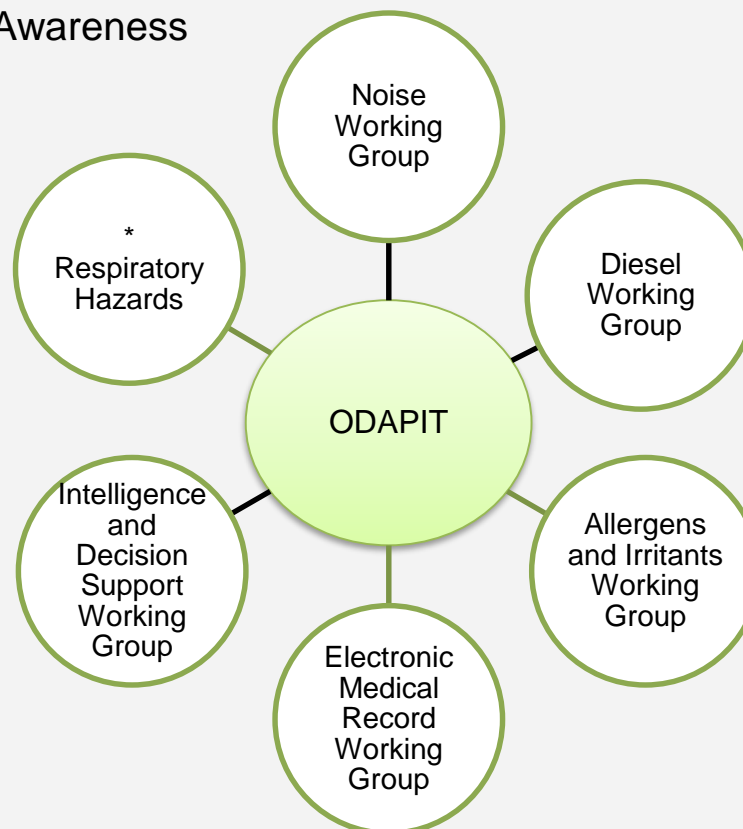
## Prevention

# Background: Development of the Occupational Disease Action Plan

Objective: An Action Plan focused on aligning the efforts of the OHS system toward occupational disease prevention; with the overall objective to prevent hazardous exposures in order to reduce the incidence and burden of occupational disease.

- General Occupational Disease Awareness
- Noise
- Diesel Engine Emissions
- Allergens & Irritants
- Emerging Issues

**\*New for 2019/20 to align with  
MOL Operations ALL Sector  
Priority**



## Prevention

## Background: Occupational Disease 2018-19 Collaborative Action

- In 2018/19 the collaborative action was to:
  - *“Develop and implement a communications and marketing plan focusing on raising awareness of harm and prevention with respect to the priority exposures: noise and/or allergens and irritants and/or diesel hazards in the workplace, with an underlying theme of general occupational disease prevention. Leverage existing tools such as WHMIS in the communications and marketing efforts.*

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## Prevention Tools-Overarching & Emerging

- [www.preventoccdisease.ca](http://www.preventoccdisease.ca) CCOHS/OHCOW



Occupational  
Health Clinics  
for Ontario  
Workers Inc.

Centres de  
santé des  
travailleurs (ses)  
de l'Ontario Inc.

- [Nanotechnology & Health E Course](#) CCOHS/OHCOW  
(Todd Irick, Chair, next speaker....Stay Tuned ...)

**Prevention**

## ODAP WG: Noise

- Initiated broad campaign on the hazards of noise with video, wordmark, wide-scale social media, online campaign- International Noise Awareness Day
- Ongoing promotion (awareness, education) –System Partners & Conferences
- Webinars- 4:
  - Regulatory for General Audience
  - Focus on JHSC/H & S Rep/Worker
  - Focus on H & S Professionals
  - Focus on Employer/Supervisors
- System partner webpages and resources dedicated to noise created/updated
- MOL All Sector Provincial Noise Enforcement Initiative
- WSIB : How Old Are Your Ears ([toneitdown.ca](http://toneitdown.ca))



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## ODAP WG: Allergens & Irritants

- Cleaning Agents
  - Wet Work
  - Isocyanates
  - Preservatives
- 
- Fact Sheets –CRE-OD
  - Upcoming Podcast- Occupational Asthma (May, 2019)

## Prevention

## ODAP WG: Diesel Exhaust

Current exposures to diesel engine exhaust are unacceptably high across a number of industry sectors. Many workers are exposed and we now **known that there is an increased risk of both lung and bladder cancer.**

Need to reduce exposures to diesel exhaust **as low as reasonably achievable (ALARA)** following leading practices.

Learn from leading organisations, transfer knowledge from leading practices, and promote good leadership as an **impetus to follow the internal responsibility system (IRS).**



## Prevention

## Why is exposure to diesel exhaust an issue?

| Organisation             | Year             | Comments  |
|--------------------------|------------------|---|
| HEI <sup>1</sup>         | 1999             | <b>Evidence not strong enough</b>   |
| ACGIH <sup>2</sup>       | 2002             | Recommended 0.02mg/m <sup>3</sup> (measured as REC)   |
| ACGIH <sup>2</sup>       | 2003             | Recommended limit withdrawn   |
| MSHA <sup>3</sup>        | 2008             | <b>Evidence becoming stronger -</b><br>Effective date for Occupational exposure limit (OEL) in the US for underground metal / non-metal 0.16mg/m <sup>3</sup> (TC) ~ 0.12 (REC) |
| IARC <sup>4</sup>        | 2012             | <b>Strong evidence –</b><br>IARC monograph – confirmed carcinogen. <b>Lung cancer.</b>  |
| NCI / NIOSH <sup>5</sup> | 2010 - 2013      | Study findings support a much lower OEL which may have a significant impact on UG mining.   |
| HEI <sup>1</sup>         | 2013             | <b>Expert panel established</b>   |
| HEI <sup>1</sup>         | 2014<br>6 March  | Workshop held in Boston – open to public, academia, regulators, industry and engine manufacturers.  |
| HEI <sup>1</sup>         | November<br>2015 | <b>Expert panel review released. Strong evidence!</b><br><b>Likely significant impact especially in UG mining!</b>  |

## Prevention

## Why is exposure to diesel exhaust an issue (the latest)?

| Organisation                               | Year          | Comments  |
|--|---------------|---|
| <a href="#">BHPB</a> <sup>6</sup>          | November 2015 | After reviews by a leading Australian Epidemiologist and the IOM <sup>7</sup> BHPB (Global Standard) – Exposure must be <b><u>as low as technically feasible</u></b> . Interim target set at <b><u>0.03mg/m<sup>3</sup></u></b> (measured as EC NIOSH 5040)   |
| <a href="#">Health Canada</a> <sup>8</sup> | 2017          | Human Health Risk Assessment for Diesel Exhaust. <b>Causal lung cancer, suggestive <u>bladder cancer</u>.</b>   |
| <a href="#">OCRC</a> <sup>9</sup>          | 2017          | Burden of Occupational Cancer in Ontario.<br>Policy Recommendations For Diesel Engine Exhaust:<br>1. Adopt occupational exposure limits of <b><u>0.02mg/m<sup>3</sup> (elemental carbon EC) for the mining industry and 0.005 EC mg/m<sup>3</sup> for other workplaces</u></b> .<br>2. Upgrade or replace old on-road and off-road trucks and diesel engines.<br>(OCRC, 2017 p.25). |

# Prevention

The screenshot shows the Workplace Safety North website. The header includes navigation links (Home, Accessibility, Links, Contact, Careers, Services en français, A DISPLAY OPTIONS), a search bar, and a login section with fields for USERNAME and PASSWORD. Below the header is a navigation menu with tabs: ABOUT, TRAINING, EVENTS, PRODUCTS, CONSULTING, RESOURCES (highlighted), NEWS, and PUBLICATIONS. The main content area is titled 'HAZARDS ASSOCIATED WITH DIESEL EXHAUST EMISSIONS'. It features a sidebar with links to RESOURCES, PRIORITY HAZARDS, SMALL BUSINESS, WEBINARS, FORESTRY STATISTICS, MINING STATISTICS, and PAPER, PRINTING AND CONVERTING STATISTICS. The main content includes a metadata box with details: Publication Type: Workbook; Topic: Industrial Hygiene, Mine Ventilation; Sector: Forestry, Mine Rescue, Mining, Paper, Printing, and Converting, All Workplaces; Language: English. Below this is a description of the training resource manual and PowerPoint presentation, followed by a list of objectives and a section for attachments including a Participant Training Manual, a Training Presentation, and a Hazard Alert Infographic.

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Resources > Hazards Associated with Diesel Exhaust Emissions

RESOURCES

PRIORITY HAZARDS

SMALL BUSINESS

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FORESTRY STATISTICS

MINING STATISTICS

PAPER, PRINTING AND CONVERTING STATISTICS

## HAZARDS ASSOCIATED WITH DIESEL EXHAUST EMISSIONS

Publication Type: Workbook

Topic: Industrial Hygiene  
Mine Ventilation

Sector: Forestry  
Mine Rescue  
Mining  
Paper, Printing, and Converting  
All Workplaces

Language: English

Hazards Associated with Diesel Exhaust Emissions - Training resource manual and PowerPoint presentation for all industries

Because of the seriousness and widespread nature of worker exposure to diesel exhaust in Ontario, Workplace Safety North is making these resources available free to employers, training providers, supervisors, and workers, to help them better understand the nature of the diesel-exhaust hazards, and to assess and control those hazards.

The resource is designed to enable users to:

- Understand the composition of diesel and reasons it is dangerous
- Discuss the debilitating effects (short-term and long-term) of diesel exhaust inhalation
- Identify sources of diesel in various industries
- Read and recognize legislation applicable to diesel-powered equipment use
- Apply the RACE principle to curb the negative effects associated with diesel exhaust emissions

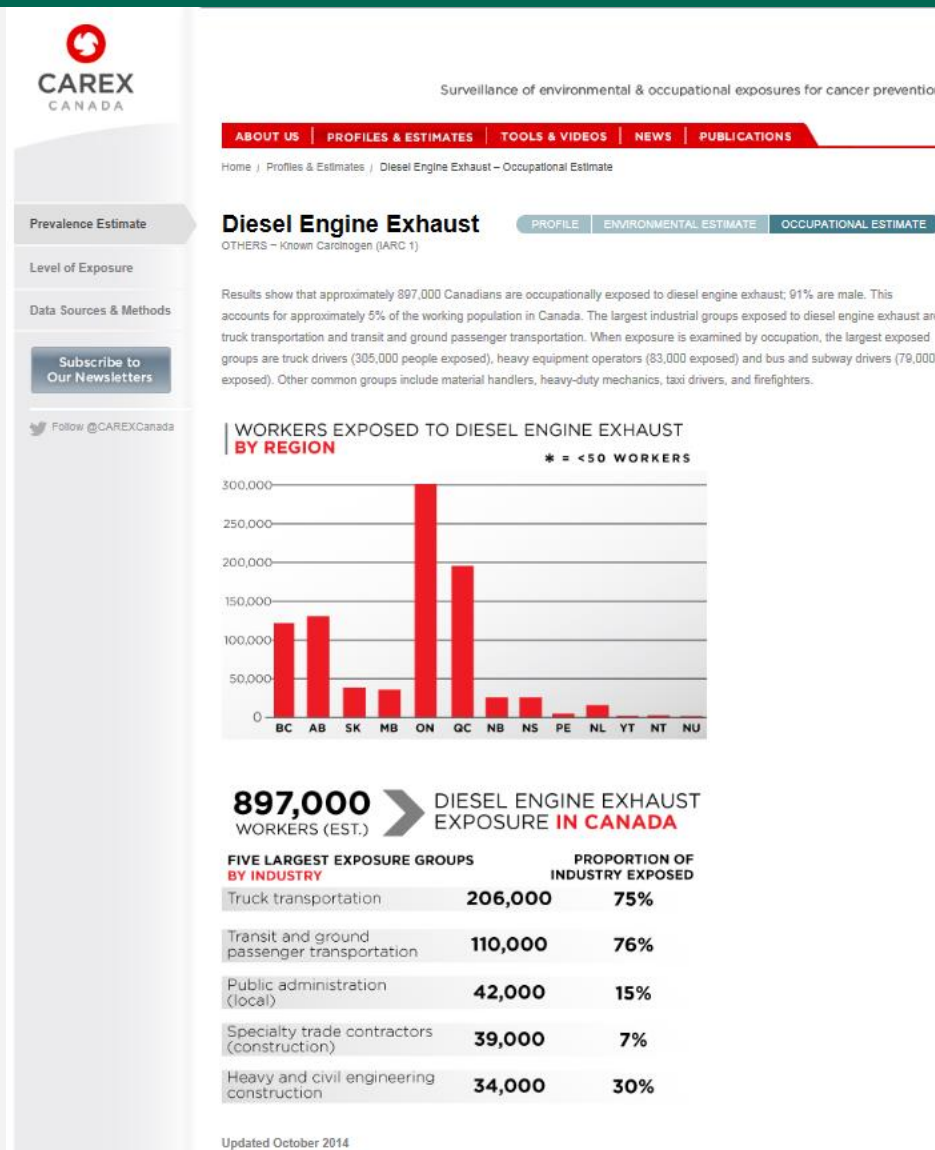
Attachments:

Hazards Associated with Diesel Exhaust Emissions - Participant Training Manual

Hazards Associated with Diesel Exhaust Emissions - Training Presentation

Hazard Alert Infographic: Health effects of diesel exhaust


## Prevention




## Prevention

## New OCRC website

<https://www.odsp-ocrc.ca/lung-cancer/>



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DISEASES

- ASBESTOSIS
- ASTHMA
- BREAST CANCER
- DERMATITIS
- IPF
- LUNG CANCER
- MESOTHELIOMA
- PROSTATE CANCER
- SILICOSIS

More about ODSS

- ODSS DATA
- OVERVIEW
- GLOSSARY

## Lung Cancer

Background


### Key Findings

The greatest risks of lung cancer are observed among workers employed in mining, construction, and transportation occupations.

#### Mining

Workers employed in mining have the greatest risk of lung cancer compared to all other industry groups. Work related to mining and quarrying has consistently shown increased lung cancer risks due to a number of hazards including crystalline silica, radon, asbestos and diesel engine exhaust.

- Mining industry overall: 1.8 times the risk
  - Non-metal mines: 1.7 times the risk
  - Quarries and sand pits: 1.7 times the risk
  - Metal mines: 2 times the risk
    - Uranium mines: 2 times the risk
- All mining occupations: 1.8 times the risk
  - Mining and quarrying including oil and gas occupations: 1.8 times the risk
  - Drilling and blasting: 2 times the risk
    - Rock and soil-drilling: 2 times the risk





# ODAP WG: Diesel exhaust

## Occupational Disease Action Plan Implementation Activities from Diesel Working Group Terms of Reference

How do we **prevent occupational exposures** to diesel exhaust for **“ALL WORKPLACES”**

| Items from <b>Terms of Reference</b>   | Activities   |
|--|--|
| 2.1 Jurisdictional scan  | Look for leading practices – Example requirement for diesels used in construction and tunneling in Switzerland to be fitted with diesel particle filters (DPF)<br><a href="https://www.dieselnet.com/standards/ch/nonroad.php">https://www.dieselnet.com/standards/ch/nonroad.php</a><br>Refer to VERT <a href="https://www.vert-dpf.eu/">https://www.vert-dpf.eu/</a> for certification of filters. Canadian Federal Requirements?  |
| 3.1 Raising awareness  | Occupational Cancer Research Centre (OCRC) has worked closely with Workplace Safety North (WSN) and developed Infographics: Controlling diesel particulate matter - <a href="#">controlling diesel particulate matter from construction</a> from off-road vehicles <a href="#">on-road vehicles</a> and <a href="#">underground mines</a> . <a href="#">OCRC / MIRARCO Lung Cancer and Prevention in Mining Conference</a><br>OCRC <a href="#">Report: Burden of Occupational Cancer in Ontario – Major Workplace Carcinogens and Prevention of Exposure</a> <a href="#">Learn from Mining – Mining Diesel Emissions Council</a> |
| 4.1 Deliver educational opportunities  | <a href="#">WSN has developed a generic training module for Joint Health and Safety Committees (JHSC)</a><br><b>ODAP / OCRC has partnered with CARcinogen Exposure (CAREX – Canada) delivered a Webinar on June 5<sup>th</sup>, 2018 from 11am – 12pm PDT, 2 – 3pm EDT</b>   |
| 5.1 Align system educational resources   | <div><div></div><div><b>Learn from<br/>2019 and beyond<br/>mining</b></div></div>  |
| 5.2 Identify gaps to develop new resources   |  |
| 5.3 Review mandatory training initiatives to identify opportunities to strengthen prevention |  |
| 5.4 Align existing training initiatives  |  |
| 5.5 New training initiatives   |  |

## Prevention

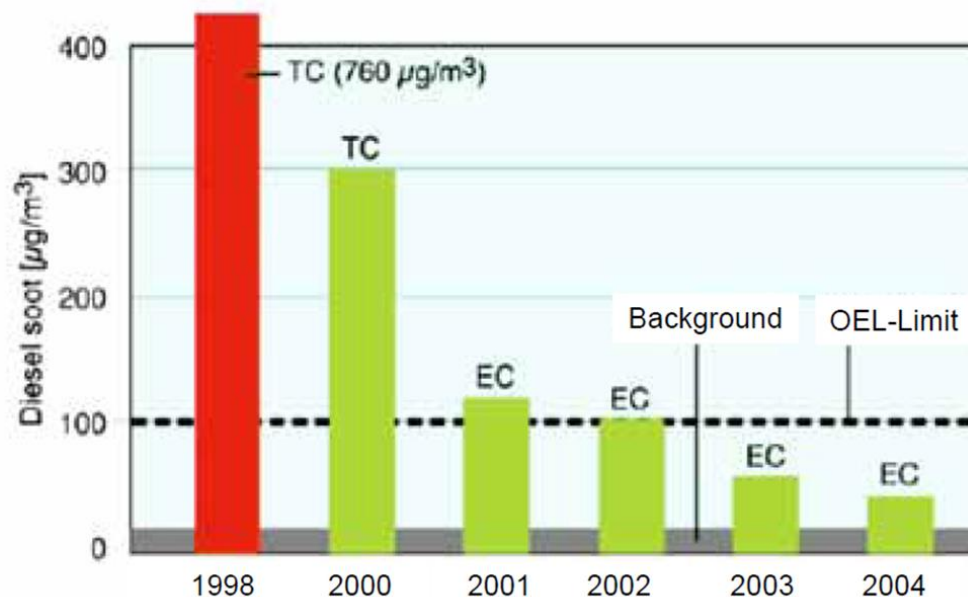
### Why is exposure to diesel exhaust an issue (the latest)?

**Latest from Ministry of Labour ([March 20 2018](#)) current and proposed exposure limits:** On and off-road diesel engines are widely used in other industries such as construction, transportation and warehousing. As an important first step in minimizing and controlling worker exposures to DPM in these sectors, the MOL is proposing to add a new listing and OEL for DPM measured as total carbon, in the Ontario Table (Table 1) in **Regulation 833 based on the revised MSHA limit of  $160 \mu\text{g}/\text{m}^3$ , ( $0.16\text{mg}/\text{m}^3$ )total carbon ( $\sim 0.12 \text{ mg}/\text{m}^3$  Elemental Carbon)(MOL, 2018).** 45 day consultation period due May 4, 2018.

## Prevention

DPM can be controlled well below the proposed MOL limit

## Improvement of air quality in Swiss tunneling



11 J.Schiltknecht MD | Oct. 5th 2017 | Toronto - MDEC

Source: SUVA

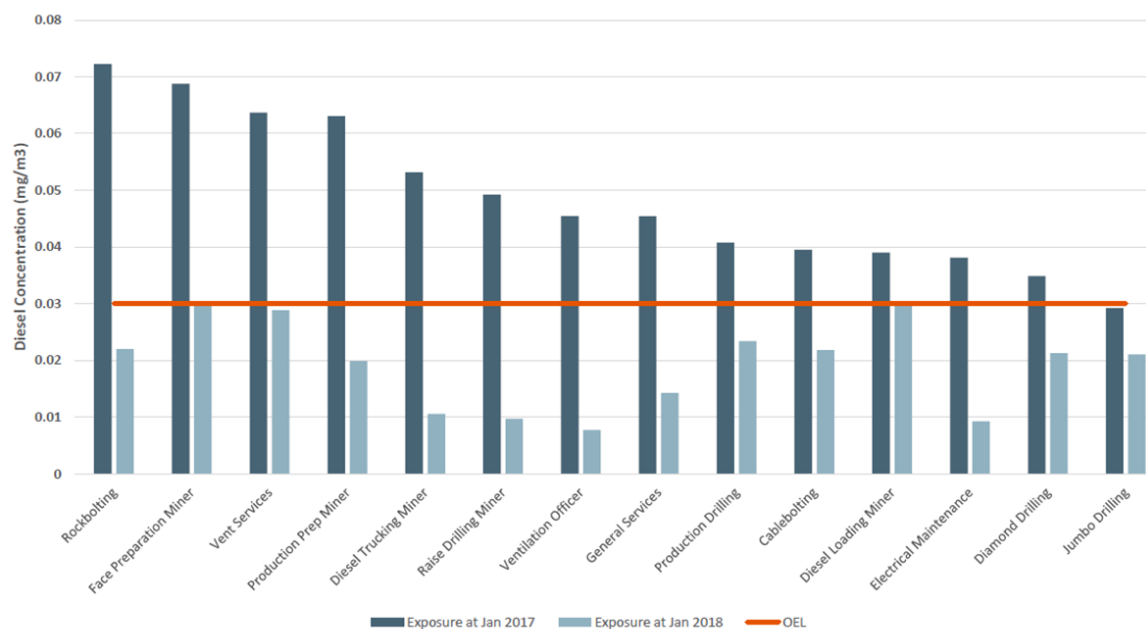


# Prevention

DPM can be controlled well below the proposed MOL limit

## BHP Olympic Dam underground mine DPM results by SEG

### Key Exposure Reductions by Exposure Groups



20

BHP

17