



Trades, Toxins, and Tobacco



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For more information and resources on workplace regulations and protection from secondhand tobacco smoke, please see inside back cover.

Introduction

Why are we here?

This Handbook provides you with information about the toxins you are exposed to at work, including the extra risks from tobacco smoke. It is specifically targeted at workers in the following trades: painters, boilermakers, heat and frost insulators, electricians, welders, automotive workers, sheet metal workers, carpenters, and joiners.

Many construction trades are extremely dangerous. The work you do and the tools you use create unique hazards not experienced in other work. You may face the possibility of long-term disability or even death from work-related injuries. This is why safety is continually emphasized in entry-level and apprenticeship trainings.

In addition to work-related injuries, many products and substances you work with contain toxins and thus are trade hazards.

Tobacco is also a workplace toxin. Of concern is that the effects of tobacco are not confined to the smoker. Secondhand smoke causes over 1,000 deaths a year among non-smokers in Canada¹.

Secondhand smoke causes over 1,000 deaths a year among non-smokers in Canada

Identify toxins associated with trades and the health hazards associated with them

Identify toxins associated with tobacco

Investigate the synergistic effects of tobacco smoke and workplace toxins

Learn where to get help if you are a smoker

The number of trades workers in Canada who smoke is almost double that of the rest of the population—as high as 34% in some trades². This means in BC, about 85,000 trades workers are current smokers³. But trades workers are at a particular risk since cigarette smoke interacts with other workplace toxins to create extra health risks. This puts trades workers at risk from tobacco toxins far beyond most other workers.

This Handbook takes a look at what these toxins are and how you can protect yourself from them. For those who want to know how to quit smoking, there are some tips and strategies. The Handbook also gives you information about how to access effective, affordable cessation services. So, read on.



¹ www.gosmokefree.ca

² CTUMS, 2005 (Only 16% of the population in BC are current smokers.)

³ This number of smokers includes both trades and transportation workers. CTUMS, 2005

Toxins in the Trades

Workplace toxins

As a trades worker, you are exposed to many toxic substances.

Is your construction job hazardous? Ask yourself:

- Is there lots of dust in the air?
- Am I breathing solvents?
- Is there polyurethane or epoxy resins in the materials?
- Are there welding or asphalt fumes or chemical vapours?
- Am I exposed to tobacco smoke?



*Fig. 1
Toxins in the Trades*

On the following pages, there is a list of workplace toxins that you may recognize. What do you know about these toxins and how they are harmful?

Do you know anybody who has had health problems because of exposure to any of the chemicals at work?

Can you think of how exposure could have been prevented?

Workplace toxins

DUSTS	SOURCE
Asbestos	Maintenance and demolition work; roof tear-offs. Construction: floor tile, roofing materials, drywall compounds, gaskets, packing materials, electric insulation, corrosion resistant coatings, heat resistant materials, asbestos cement pipe, sheeting, wall boards, pipe lagging, insulation, and mastic. ⁴
Silica	Maintenance; remodeling; demolition work; application of fireproof coatings; sandblasting; tunneling, concrete and masonry work.
Cement	Construction and demolition of foundations, sidewalks and floors, slabs, buildings.
Wood Dust	Construction, remodeling and demolition; sawing: wood, plywood, particle board.
Fiberglass and other insulation materials	Insulation on pipes, other insulation, air conditioning.
METALS	SOURCE
Cadmium, Chromium, Copper, Zinc, and Magnesium	Welding: drilling, cutting and sawing pipes; scraping rust or coatings.
Lead	Cable splicing, demolition, remodeling, painting, pipefitting, plumbing, roofing, sheet metal iron work, grinding, sanding or welding on lead or surfaces with lead paint or coatings; brass fixtures may release lead.
SOLVENTS	SOURCE
Benzene, Methylene, Chloride, Toluene, and Trichloroethylene (TCE)	These solvents may be found in varnishes, finishes, wood sealers, thinners, paints, adhesives, cleaning and degreasing solutions, and other products.
OTHER TOXINS	SOURCE
Epoxy Resins	Impermeable paint, primer for hardwood floors, surface paint and adhesive for concrete walls.
Polyurethanes (isocyanates)	Seam sealers, polyurethane insulation, electrical wire coatings.
Coal Tar Pitch	Roofing, road work.

⁴ WCB Publication

HEALTH EFFECTS

Short term: lung irritation (if very high levels). Long-term: Asbestosis (scarring of the lungs); cancer of the lungs (mesothelioma), stomach, and intestinal tract.

Long-term: serious incurable lung disease (silicosis).

Short-term: eye, nose, skin and lung irritation; causes skin rashes and infection. Long-term: small decrease in lung function, wheezing, shortness of breath.

Allergic skin rash, asthma, nasal irritation, skin and eye irritation. Long-term: nasal and lung cancer.

Short-term: skin, eye, nose and throat irritation; shortness of breath. Long-term: may cause lung cancer.⁵

HEALTH EFFECTS

Short-term: metal dusts can cause irritation to skin, nose, eyes, and lungs. Effects of fumes differ depending on metal. Some metals (such as zinc, copper, and magnesium) cause metal fume fever (flu-like symptoms with fever, nausea, chills and muscular aches and pains). Long-term: depends on metal (see MSDS). Cadmium and chromium can cause cancer, kidney failure.

Note: inhalation of cadmium by smokers may accelerate the development of respiratory diseases.

Short-term: effects are very rare. If exposure is high, symptoms similar to long-term may occur. Long-term: damage to brain and nerves (tremors, muscular weakness, lack of coordination), damage to reproductive systems (men and women), stomach problems, anemia, damage to kidneys.

HEALTH EFFECTS

Most solvents you work with, including acetone, TCE, or other degreasers, affect your health in similar ways. Short-term: most organic solvents affect the brain the same way drinking alcohol does. Overexposure causes symptoms resembling drunkenness, including headaches, feeling high, nausea, dizziness, and at high levels, loss of coordination. Other short-term health effects are eye, nose and throat irritation, skin rash, and central nervous system (CNS) effect.

Long-term: repeated, frequent overexposure over months or years may cause long-lasting damage to the central nervous system (the brain and nerves). Benzene will cause leukemia, methylene chloride may cause cancer, toluene causes liver and kidney damage, as well as birth defects, and trichloroethylene damages liver and may cause cancer.

HEALTH EFFECTS

Short-term: irritation of eyes, nose, and throat. Long-term: asthma

Short-term: irritation of eyes, nose, and throat. Long-term: asthma, other allergic lung diseases. May cause cancer. Some isocyanates cause respiratory sensitization, as workers are exposed to isocyanates they may become increasingly sensitized resulting in progressively serious health concerns. After repeated exposures workers get sensitized to these chemicals, and they will become seriously ill at the slightest exposure.

Short-term: irritation of eyes, nose, throat and lungs. Burns, skin irritation, increased sensitivity to sunlight. Long-term: cancer of the lungs, skin, and other parts of the body.⁶

⁵ Wood dust is classified in the table of exposure limits for chemical and biological substances as a carcinogen for a non-allergic hardwood and softwood.

⁶ Adapted with permission from Project BUILT: www.built.org



Mapping your workplace toxins

Draw a map of your workplace. Highlight each area that might contain a toxin and identify the toxins and the health hazards associated with them. You can use the chart on pages 6-7 to assist you in this information.



Tobacco toxins

Did you ever wonder what are the chemicals in tobacco and tobacco smoke? Well, there's lots of stuff you'd probably rather not inhale into your body.

“4,000 chemicals in cigarette smoke?” REALLY?

Yes, there are an estimated 4,000 chemicals in tobacco smoke, including 60 cancer-causing chemicals.

According to several Canadian provincial health and safety studies, 26 of the chemicals found in tobacco smoke are “toxics”; they are so dangerous that any exposure should be avoided.⁷

You may recognize some of these, all of which are in tobacco smoke:

- carbon monoxide
- formaldehyde
- arsenic
- benzene
- nitrogen oxides
- ammonia
- hydrogen cyanide⁸

Tobacco smoke is a Group A carcinogen.

Tobacco smoke contains over 4,000 chemicals and hundreds of irritants and toxins.

Smokers have an average benzene body burden about six times that of non-smokers⁹



A pack-a-day smoker will smoke 7,300 cigarettes a year and will inhale the equivalent of almost 1 gram of formaldehyde that year. Think about it. There are still over 3,999 other chemicals whose effects on the body continue to add up.

(from www.gosmokefree)

⁷ from http://www.hc-sc.gc.ca/hl-vs/pubs/tobac-tabac/work-trav/rationale-raison_e.html

⁸ British Columbia Ministry of Health. Results by smoking conditions and smoke constituents (cited at <http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/legislation/label-etiquette/graph/idledeedly-mortellefumepas14-eng.php>). Though it is noted that WorkSafe BC in Part 5 sets threshold limit values for each of these toxics.

⁹ Health Canada, Environmental Health Division, Great Lakes Health Effects Program, *The Health and Environment Handbook for Health Professionals, Contaminant Profiles*, 1998.

Health effects of tobacco toxins

Now let's look at the health effects of particular chemicals found in tobacco smoke that you may also be exposed to at your workplace.

Usually, more serious exposure causes more severe symptoms.

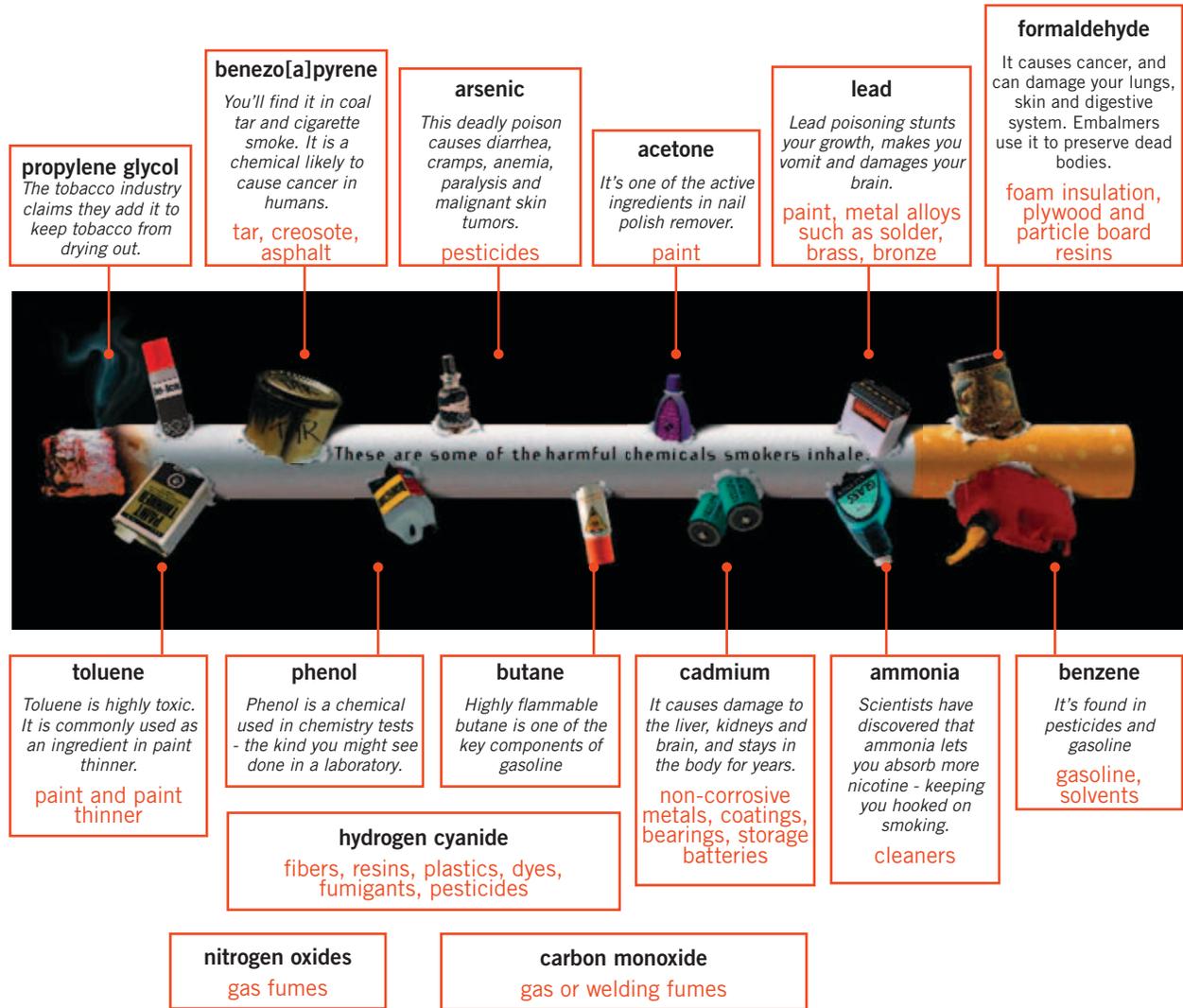
Acetaldehyde	Used in glues and resins; suspected carcinogen; may increase the absorption of other hazardous chemicals into the bronchial tubes.
Acetone	Used in solvents; irritating to the throat, nose, and eyes; long-term exposure can cause liver and kidney damage.
Acrolein	Used in polyester resins and herbicides; an ingredient in tear gas and other chemical warfare agents; extremely toxic; intensely irritating of the upper respiratory tract and eyes.
Acrylonitrile	Used in synthetic resins, plastics and rubber, and as a fumigant; also known as "vinyl cyanide"; suspected human carcinogen.
1-aminonaphthalene	Used in weed control; causes cancer.
2-aminonphthalene	Banned in industrial uses; causes bladder cancer.
Ammonia	Used in cleaners; causes asthma and elevated blood pressure.
Arsenic	Found in pesticides; causes diarrhea, cramps, anemia, paralysis, and malignant skin tumors.
Benzene	Used in solvents, pesticides and gasolines; causes leukemia and other cancers.
Benzo[a]pyrene	Found in coal tar pitch, creosote, and some asphalts; causes skin cancer, lung cancer and reduction in reproductive capability.
1,3 Butadiene	Used in rubber, latex, and neoprene products; suspected carcinogen.
Butyraldehyde	Used in solvents and resins; powerful inhalation irritant; affects the lining of nose and lungs.
Cadium	Used in non-corrosive metal coatings, bearings, pigments and storage batteries; causes cancer, damages kidneys, liver, and brain.
Carbon Monoxide	Produced by burning (in gasoline engines, welding, gas-powered tools, etc.); decreases heart and muscle function; causes fatigue, dizziness, weakness; especially toxic for the unborn, infants and people with lung or heart disease.
Catechol	Used as an antioxidant in dyes, inks and oils; causes high blood pressure, upper respiratory tract irritation, and dermatitis.
Chromium	Used in metal plating and alloys, wood treatment and preservatives, and pigments; causes lung cancer; stainless steel welding involves the greatest exposure.

Cresol	Used in solvents, disinfectants, and wood preservatives; highly irritating to the skin; acute inhalation levels cause upper respiratory, nasal, and throat irritation.
Crotonaldehyde	Used as a warning agent in fuel gases; causes chromosome aberrations; reported to interfere with immune function.
Formaldehyde	Part of resin used in particleboard, fiberboard, and plywood, also used in foam insulation, causes nasal cancer; can damage your lungs, skin, and digestive system.
Hydrogen Cyanide	Used in making fibers, resins, plastics, dyes, and pesticides and as a fumigant; released in metal treatment operations, electroplating metals, metal ore processing, and developing film; has been used in some gas chamber executions; weakens lungs; breathing small amounts causes nausea, headaches, fatigue, and vomiting; larger amounts may cause gasping, irregular heartbeat, seizures, fainting, and rapid death.
Hydroquinone	Used in paints, varnishes and motor fuel; cause eye injuries, skin irritation, and central nervous system effects.
Isoprene	Used in rubber; similar to 1,3-butadiene; causes irritation to the skin, eyes, and mucous membranes.
Lead	Used in paint and metal alloys (solder, brass, bronze); damages your brain, nerves, kidneys, and reproductive system; causes anemia and stomach problems; may cause cancer; particularly toxic to children.
Methyl Ethyl Ketone (KEK)	Used in solvents; irritating to nose, throat, and eyes; depresses the central nervous system.
Nickel	Used in stainless steel, other metal alloys and alkaline batteries; causes upper respiratory irritation, bronchial asthma, and cancer.
Nicotine	Used as a highly controlled insecticide; exposure can result in seizures, vomiting, depression of the central nervous system, growth retardation, developmental toxicity in fetuses; mild nicotine poisoning results in diarrhea, increase in heart rate and blood pressure, headache, dizziness, and neurological stimulation.
Nitric Oxide	Created by combustion of gasoline; major contributor to smog and acid rain; linked to Huntington's disease, Alzheimer's disease, Parkinson's disease, and asthma.
NNN, NNK, and NAT	These compounds are found only in tobacco, NNN causes cancer and may cause reproductive damage; NNK is a powerful lung carcinogen; NAT is a possible carcinogen.
Phenol	Used in resins in plywood and other construction materials and in epoxy resins; highly toxic; affects the liver, kidney, respiratory, cardiovascular, and central nervous system.

Propionaldehyde	Used as a disinfectant; causes irritation of the skin, eyes, and respiratory system.
Pyridine	Used in solvents; causes eye and upper respiratory tract irritation; causes nausea, headaches, and nervousness; may cause liver damage.
Quinoline	Used as corrosion inhibitor and as solvent for resins; causes genetic mutations; possible human carcinogen; severe eye irritant; linked to liver damage.
Resorcinol	Used in laminates, resins, and adhesives; irritating to skin and eyes.
Styrene	Used in insulation, fiberglass, pipes, and plastic; possible human carcinogen; may cause leukemia; causes headaches, eye irritation, slowed reaction time, fatigue, and dizziness.
Toluene	Used in solvents, oils, and resins; highly toxic; causes fatigue, confusion, weakness, memory loss, nausea, loss of appetite, and drunken-type actions; linked to permanent brain damage.
Zinc	Found in brass and filler metals used in brazing and soldering, as well as coatings and primers. Initially causes flu-like illness called “galvanizing poisoning” or “metal fume fever” causing coughing, shortness of breath, sore throat, fever, and funny nose; swallowing zinc dust can cause nausea, vomiting, and diarrhea. ¹⁰

¹⁰ Adapted with permission from Project BUILT: www.built.org

Don't Get Sucked In¹¹



Can you add any chemicals to this cigarette that you are also exposed to at work?

11 Adapted with permission from bctobaccofacts.org. To activate go to: <http://www.tobaccofacts.org/suckedin/index.html>

The multiplier effect

Voices of labour

“At the workplace, cigarette smoking has long been a concern because of its possible interaction with other toxic airborne substances.” *Alberta OHS, 2004*

“When I was younger, if somebody told me about the dangers of combining workplace chemicals with tobacco smoke, I wouldn’t have listened. You think you’re invincible then. But now, it seems to matter.” *Carpenter, Victoria B.C.*

When combined with tobacco smoke, other chemicals in the workplace can become even more hazardous to your health. This happens because:

1. **THEY ADD UP:** the accumulation and/or the combination of chemicals increases health risks.
2. **THEY MULTIPLY:** the toxic chemicals in tobacco smoke can change workplace chemicals into more harmful ones – in other words, a multiplier or synergistic health effect may occur. Exposure to tobacco smoke multiplies the danger of exposure to some chemicals like asbestos.

Examples of hazardous materials that present a serious health risk when combined with tobacco smoke include aromatic amines, asbestos, coal, cotton dust, grains, ionizing radiation, pesticides, petrochemicals, silica, and welding materials.

Combining smoking with exposure to other hazardous substances at workplaces is a serious health risk.

Smoking and dust exposure have an additive effect on the risk of chronic cough, chronic phlegm, persistent wheeze, and breathlessness.

There is an increased potential for lung disease or worsening of symptoms when smokers are exposed to asbestos, cotton dust, grain dust, and coal.

The sum of the bad parts is greater than the whole.

$$2 \times 2 = 10$$

Smokers who are also exposed to occupational chemicals have an increased risk for lung cancer.

If you work with asbestos, your risk of lung cancer is increased **5 times**

If you smoke, you increase your risk of lung cancer by **10 times**

But, if you smoke AND are exposed to asbestos, your risk of getting cancer is increased **50-80 times**¹²

That's synergistic!

When smoke enters the air or your lungs, it reacts with other chemicals and can combine to form more toxic chemicals.



¹² Berry, G., Liddell, F.D.K, The interaction of asbestos and smoking in lung cancer: A modified measure of effect. *Ann. Occupational Hygiene*, 48(5), 459-462, 2004.

What we know about tobacco use

While smoking prevalence has declined tremendously over the past 10 years, 19% of Canadians still smoke.¹³ But the number of trades workers who smoke is significantly higher: as many as 34% of trades workers smoke or use chew or spit tobacco.¹⁴

Tobacco is deadly

Here is what smoking causes:

- 85% of lung cancers
- 80% of emphysema and bronchitis deaths
- 30% of cancer deaths
- 20% of heart disease deaths

About half of all smokers will die from a smoking-related illness -- this makes smoking the number one cause of death in Canada; as many as 35,000 Canadians die of smoking-related diseases.¹⁵

Tobacco use remains the leading preventable cause of death in Canada.

Smoking also causes impotence¹⁶



13 http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/research-recherche/stat/ctums-esutc_prevalence-eng.php

14 CTUMS 2005

15 www.gosmokefree.ca

16 Melman A, Gingell JC. (1999). *The epidemiology and pathophysiology of erectile dysfunction*. J Urol 161(10),5-11.

Jeremy JY, Mikhailidis DP. (1998). *Cigarette smoking and erectile dysfunction*. JR Soc Health 118(3),151-5.

Mikhailidis DP, Ganotakis ES, Papadakis JA, Jeremy JY. (1998). *Smoking and urological disease*. JR Soc Health 118(4), 210-2.

Condra M, Morales A, Owen JA, Surr ridge DH, Fenemore J. (1986). *Prevalence and Significances of Tobacco Smoking in Impotence*. J Urol 27(6),495-8.

Tobacco use is addictive

The nicotine in tobacco causes addiction: **nicotine is as addictive as cocaine or heroine;**¹⁷ nicotine makes smokers crave tobacco, even though it damages their health.

And, chewing tobacco is certainly no safer

Chewing tobacco contains: arsenic, cyanide, lead, and benzene.

It also contains fiberglass and dirt, which cause abrasions on the skin so the tobacco can enter the bloodstream more readily.

Chew or Spit Tobacco:

- is NOT a safe alternative to smoking,
- causes cancer of mouth, larynx, and esophagus,¹⁸ and
- is as hard to quit as cigarettes

And chewers:

- are 50 times more likely to get cancer than non-users,
- get three times as much nicotine as smokers from chew, and
- tend to get cancer of the cheek and gum¹⁹



Secondhand smoke facts

Secondhand smoke comes from the tip of a burning cigarette, pipe, or cigar. It is also the smoke that a smoker exhales.

Secondhand smoke is a Group A carcinogen, which means it causes cancer in humans.

Did you know that second-hand smoke is more toxic than the smoke inhaled by the smoker?²⁰

It's true: second-hand smoke has at least twice the nicotine and tar as the smoke actually inhaled from a filtered cigarette, AND AS MANY AS 20 times more carcinogens!²¹

This means that: non-smokers who are exposed to second-hand smoke are also exposed to a host of deadly chemicals.

And that's why: WorkSafe BC Occupational Health and Safety Regulations require employers to protect workers from cigarette smoke.



**Secondhand smoke:
a source of disease and death**

17 The Royal Society of Canada. Tobacco, Nicotine and Addiction. (1989). Royal Society, Ottawa, Ontario.

18 Fisher, M. A., Bouquot, J. E., & Shelton, B. J. (2005). Assessment of risk factors for oral leukoplakia in West Virginia. *Community Dentistry & Oral Epidemiology*, 33(1), 45–52.

Johnson, G. K., & Slach, N. A. (2001). Impact of tobacco use on periodontal status. *Journal of Dental Education*, 65(4), 313–321.

19 Riley III, J. L., Tomar, S. L., & Gilbert, G. H. (2004). Smoking and smokeless tobacco: Increased risk for oral pain. *Journal of Pain*, 5(4), 218–225.

20 British Columbia Ministry of Health. *Results by smoking conditions and smoke constituents*. (Retrieved at <http://www.hc-sc.gc.ca/hl-vs/tobac-tabac/legislation/label-etiquette/graph/idledeedly-mortellefumepas14-eng.php>, July 2, 2008).

21 Ibid.

Symptoms may include . . . Non-smokers exposed to secondhand smoke may experience headaches, worsened asthma—not to mention eye, nose, and throat irritations. Exposure for as little as 8 minutes causes physical reactions linked to heart and stroke disease. When the blood vessels constrict, blood pressure increases and stresses your heart.²²

But wait, there's more! Tobacco smoke adds harmful chemicals to those already in the work environment, increasing the risk of lung cancer (by 25%), heart disease (by 10%), as well as respiratory problems and nasal sinus cancer.²³

Something in the air: The risk of developing cancer from exposure to second-hand smoke is about 57 times greater than the total risk posed by all outdoor air contaminants.²⁴

Are you dying to know? Did you know that more than 1,000 non-smokers will die this year in Canada due to secondhand smoke—over 300 lung cancer deaths and at least 700 deaths from coronary heart disease?²⁵

SIMON SAYS
Did you know that
your kids are twice as
likely to smoke
if you do?³⁰

IT'S A KILLER
Secondhand smoke is
linked to Sudden Infant
Death Syndrome and
kills three times as many
infants as from
child abuse or
homicide³¹

Risky business: Exposure to secondhand smoke toxins and workplace toxins puts you, as a trades worker, at increased risk. This is because the many toxins, including hydrogen cyanide in tobacco smoke, paralyze the cilia (those tiny filtering hairs in your lungs²⁶). Now your lungs have no way to clean the other toxins. Would you spray paint a car without a mask?

Take it to heart: Secondhand smoke gives your body more chemicals than it can handle. For example, welding produces carbon monoxide; tobacco smoke also contains carbon monoxide. Combining them gives you a much larger dose. Your heart will be weakened by long-term exposure to carbon monoxide.²⁷

Say “no” to the combo: Combining tobacco smoke with other cancer-causing substances, such as asbestos, is toxic: the combination hugely increases the risk of lung cancer²⁸ (remember: synergy).

This is not kid stuff: Because children have a higher metabolism and can absorb higher amounts of smoke than adults, children exposed to second-hand smoke are more likely to suffer chronic respiratory illness, impaired lung function, middle-ear infections, and food allergies.²⁹

So you have to think about not only how tobacco users poison themselves, but what others are exposed to by breathing in the secondhand smoke. The next time you're missing your old buddy, the cigarette, take a good long look at this list and see it for what it is: a delivery system for toxic chemicals and carcinogens.

22 Gunther A, Palmblad J. (2000). *New discoveries explain how smoking accelerates atherosclerosis*. *Lakartidningen* 97(5), 4445-7

23 Gaudette, L.A., Altmayer, C.A., Wysocki, M. & Gao, R. (1998). *Cancer incidence and mortality across Canada*. Health Reports, 10(1), 51-66.

24 National Cancer Institute of Canada: Canadian Cancer Statistics 1999, Toronto, Canada, 1999. p.45.

25 from http://www.hc-sc.gc.ca/hl-vs/pubs/tobac-tabac/work-trav/facts-faits_e.html

26 Graf W, Graf H, Wenz M. Tetrahymena pyriformis in the ciliate mobility test. Validation and description of a testing procedure for the registration of harmful substances in the air as well as the effects of cigarette smoke on the human respiratory ciliated epithelium. [Comparative Study. Journal Article] *Zentralblatt fur Hygiene und Umweltmedizin*. (1999). 201(6), 451-72.

27 Gunther A, Palmblad J. (2000). *New discoveries explain how smoking accelerates atherosclerosis*. *Lakartidningen* 97(5),4445-7.

28 Erren TC, Jacobsen M, Piekarski C. (1999). Synergy between asbestos and smoking on lung cancer risks. *Epidemiology*, 10,405-411.

29 U.S. Department of Health and Human Services. (2006). *The health consequences of involuntary exposure to tobacco smoke: A report of the surgeon general* (p. 11). Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease

30 Bauman KE, Foshee VA, Linzer MA, Koch GG. (1990). *Effect of parental smoking classification on the association between parental and adolescent smoking*. *Addictive Behaviours*, 15(5),413-22.

31 Ibid.

The butt stops here for trades workers

Over one third of workers in trades, compared to only 15% of other workers are smokers.³²

Compared to white-collar workers, trades workers begin smoking earlier, are heavier smokers, and are less successful in quitting.³³

Trades workers are more likely than white-collar workers to face workplace exposure to secondhand smoke and other harmful chemicals that combine and interact with tobacco smoke, multiplying workers' health risks.³⁴

Trades Toxin Quiz

1. Which of the following is not a toxin that trades workers are exposed to?
 - a. carbon monoxide and formaldehyde
 - b. arsenic, benzene, and nitrogen oxides
 - c. tetrasodium pyrophosphate, hydrogenated oil, and sugar
 - d. ammonia, hydrogen cyanide, and asbestos
2. How many trades workers in BC smoke?
 - a. 85,000 or 1/3 of all trades and transportation workers
 - b. not enough to fuss about
 - c. most of them
 - d. none
3. Smoking does not cause:
 - a) impotence
 - b) 85% of lung cancers
 - c) 80% of emphysema and bronchitis deaths
 - d) obesity
4. Combining tobacco smoke with toxins at the workplace
 - a) puts workers at greater risk for illness
 - b) less risk for illness
 - c) doesn't matter

32 Canadian Tobacco Use Monitoring Survey (CTUMS) 2005 www.gosmokefree.ca

33 Sorensen G, Emmons K, Stoddard AM, Linnan L, Avrunin J. (2002). Do social influences contribute to occupational differences in quitting smoking and attitudes toward quitting? *American Journal of Health Promotion*, 16(3),135-41.

34 Gerlach KK, Shopland DR, Hartman AM, Gibson JT, Pechacek TF. (1997). Workplace smoking policies in the United States: Results from a national survey of more than 100,000 workers. *Tobacco Control*, 6(3),199-206.



5. Compared to smoke inhaled through a filtered cigarette, second-hand smoke has
- a) 20 times fewer carcinogens
 - b) 20 times more carcinogens
 - c) the same amount of carcinogens

6. New smoking laws in BC have made it illegal for smokers to
- a) smoke within 3 metres of a building
 - b) smoke
 - c) take care of themselves at the workplace

7. True or False (you must answer all of these correctly to get 1 point)

Compared to other workers:

- | | | |
|--|---|---|
| a) trades workers are heavier smokers, | T | F |
| b) trades workers are less successful at quitting, | T | F |
| c) trades workers have less help from employers to quit, | T | F |
| d) trades workers have more chances to smoke on the job, | T | F |
| e) trades workers find it harder to quit than other workers. | T | F |

8. I'm already being poisoned by all the toxic stuff at work, so why worry about tobacco smoke?

Agree Disagree Unsure

Explain your answer _____

(Answer sheet on page 26)



Voices from the Trades

An overwhelming majority of adult smokers want to quit but have not yet succeeded in doing so. The reality is, most smokers succeed in quitting only after they have accessed multiple types of cessation services and made multiple quit attempts.³⁵

“When I graduate, I will be working in a very stressful job where everybody else will be smoking. There’s no point trying to quit now.”

—*BCIT electrician student*

“Ironworkers have one of the highest risk jobs of trades workers. I may fall from a 100 ft scaffolding at any time. What’s it matter if I smoke?”

—*Ironworker, Burnaby, BC*

“I smoked for 17 years, and my three-year smoke-free anniversary is tomorrow. I reward myself for that because it took me many years to quit smoking. Before I quit, I was up to two packs a day and smoking ran my life. I had a difficult time quitting because everybody I worked with also smoked: we worked outside and the job was stressful—always on the go, so we smoked while we were working, as well as break times—it’s just what we did. Anyways, I’d quit for a week or two, then I’d start smoking again: it was hard to quit when everybody else did it.”

—*Ironworker, Prince Rupert, BC.*

“I quit smoking for 20 years and was on vacation with friends who smoked. After ten days of being around smokers I was buying my own cigarettes. It took me two more years before I managed to quit again.”

—*Painter from Dawson Creek, BC.*



70% of Canadian adult smokers have tried to quit at least once.

Canadian Tobacco Use Monitoring Survey Wave 4

35 Fiore CM. A clinical practice guideline for treating tobacco use and dependence. (2000). JAMA 283(24), 3244-3249.

Smoking Cessation

Quitting strategies

If you talk with ex-smokers, you will hear many useful strategies that have helped them to quit. Explore what works for you.

Cold turkey

Some people are able to quit and just do it.

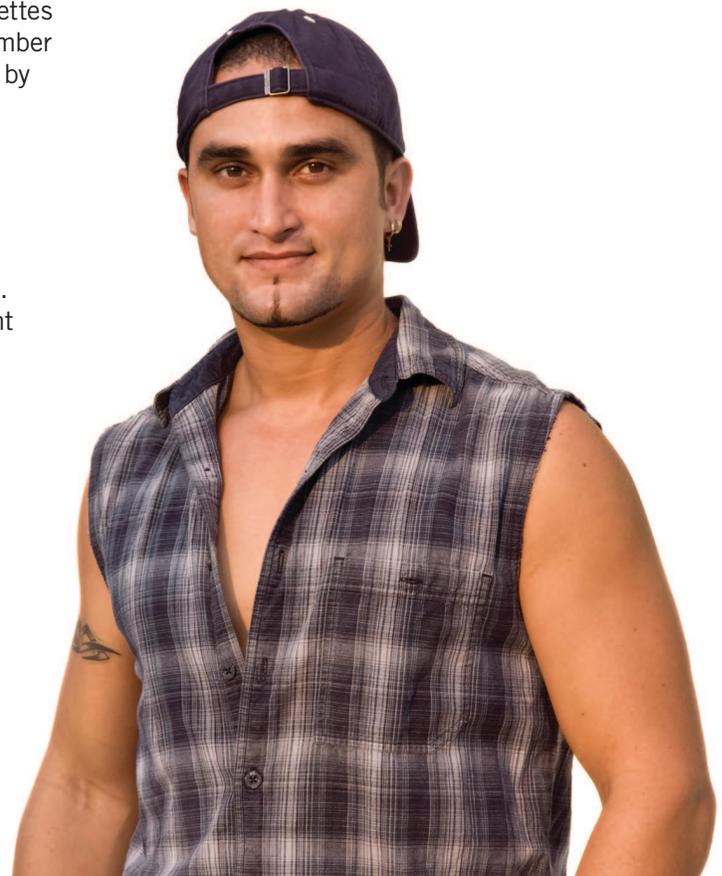
Cutting down

Some people try to ration the number of cigarettes they smoke each day and keep cutting the number down until they quit. Cessation tools can help by lessening the craving for nicotine.

Change is always possible

As with most changes, becoming smoke free is best seen as a process rather than an event. There are lots of ways to get help, and different ways suit different people.

“My wife and I wanted to go on a vacation and we couldn’t figure out how to manage it financially. Over a cigarette one night we began to talk about how much money we were spending on smoking. It was a surprise to find out that we spent almost \$150 a week on cigarettes. That’s \$600 a month or \$7,200 a year! We could have a very nice vacation for that. We quit that very night and in less than a year we were enjoying the beaches in Costa Rica.”



Quit-Smoking tools

Telephone Or Web-Based Programs

quitnow.caTM is a free Internet-based quit smoking service that is available for all British Columbia residents. It combines effective methods for quitting smoking with a powerful individualized program that is available anytime and anyplace. In addition to an online community that offers peer support, it provides expert advice on quitting strategies as well as information about Nicotine Replacement Therapies that may be helpful.

QuitNow is operated by the BC Lung Association and funded by the BC Ministry of Health. This is a 24/7 service in 130 languages.

To access the site, go to www.quitnow.ca.



Group & Individual Counselling Programs

Health Service Departments offer free counseling services to any student who wishes to quit smoking. As well, a number of organizations or private businesses offer both group and individual counseling opportunities. Check the yellow pages of the phone book or contact the Tobacco Reduction Coordinator at your local Health Authority to access these programs.

Self-Help Materials

Any bookstore has a number of self-help materials. Health Canada offers material which you can access at www.gosmokefree.gov.ca. Also, the Regional Tobacco Reduction Coordinator (RTRC) at your local Health Authority can give you suggestions.

Nicotine Replacement Therapy (NRT) & Medication

Nicotine replacement products help relieve some of the withdrawal symptoms people experience when they quit smoking. These include: nicotine patches, gum, nicotine lozenges, nicotine nasal spray, nicotine inhaler and a non-nicotine pill, known as Zyban. A new agent, varenicline (Champix) was introduced in Canada in April, 2007. It shows promise in diminishing withdrawal symptoms and reducing cravings. It also blocks the reinforcing effects of nicotine.

To be most effective, it is recommended that all nicotine replacement products be used in conjunction with a behavior change program. Consult your doctor or your Health Services Department regarding the use of these products.

Alternative Therapies

Although not proven clinically effective, the following are available and have worked for some individuals.

Acupuncture is based on ancient Chinese medicine.

Hypnosis tries to change your attitudes about smoking to help you quit.

Herbal remedies such as tobacco-free cigarettes which contain a mixture of various herbs, and medications such as Kava Kava, a natural anti-anxiety medication and St. John's Wort, an anti-depressant, are products some people use to help them quit smoking.

All medications, whether natural or synthetic can have side-effects and potential risks, so be informed before you use them. If you are not sure about a medication or treatment, check with your doctor.

11 tips to help you quit

1. Wait a few minutes; the urge will fade.
2. Move: go for a walk, throw a Frisbee, wash your car, stretch, or do anything that makes you sweat.
3. Distract yourself; sort your tools, get musical.
4. Replace tobacco with nicotine gum or a patch.
5. Say out loud, "I choose to quit."
6. Breathe deeply.
7. Call a friend.
8. Think about the money you save.
9. Drink water, milk or juice.
10. Chew some cinnamon gum, suck on a breath mint, or brush your teeth.
11. Take it slow and be positive.

Benefits of quitting

For most smokers, quitting smoking is the single best thing they can do in order to improve the quality and, perhaps, length of their lives. People who quit smoking immediately begin to reduce their chances of developing heart disease, cancer, breathing problems or infections.

For Your Information:

- **Twenty minutes** after smoking the body temperature of hands and feet return to normal.
- **Within 8 hours**, oxygen level in the blood increases to normal and carbon monoxide levels drop. The heartbeat is slower and the pulse rate drops to a normal state.
- **After 24 hours**, the body rids itself of carbon monoxide and the oxygen level in the blood increases.
- **Within 48 hours**, the chance of having a heart attack starts to go down. The lungs may be removing mucus and there will be increased coughing for several weeks. And, the ability to smell and taste rises to normal levels.
- **After 72 hours** there are no more nicotine or nicotine by-products in the body. Lung capacity increases. Bronchial tubes relax and, if undamaged, will make breathing easier.
- **From 2 weeks to 3 months** walking becomes easier and circulation improves. Lung function may increase by up to 30%. And, if you're male, your sperm count will increase to more normal levels.
- **After 1 to 9 months** coughing, fatigue, sinus congestion, and shortness of breath may decrease markedly.
- **After a year** the risk of heart disease drops to half of that of a smoker.
- **After 10 years** the risk of lung cancer is half that of a smoker.
- **And after 15 years** the risk of heart disease is similar to that of someone who never smoked!³⁶



³⁶ Adapted from The Health Consequences of Smoking: A Report of the Surgeon General, 2004 and www.gosmokefree.ca



And – you will save a lot of money!

If a pack of cigarettes costs _____ and I smoke _____ per day, it costs me _____ every day, _____ every week, _____ every month _____ every year.

Ways I could use that money:

1. _____
2. _____
3. _____
4. _____

So, what’s keeping you from quitting?

You will undoubtedly experience nicotine cravings and the Four “D’s” can help them:

- Delay
- Deep breathe
- Drink water
- Do something else

Do you know someone who has quit? Sometimes you can get the best tips and advice from others you know who have managed to quit. Ask them how they did it.

Good luck!

Trades Toxin Quiz Answers

- | | |
|------|-----------|
| 1. c | 7.a. True |
| 2. a | 7.b. True |
| 3. d | 7.c. True |
| 4. a | 7.d. True |
| 5. b | 7.e. True |
| 6. a | |



British Columbia has laws that protect workers in indoor places from secondhand smoke. Since March 31st, 2008- the Provincial Government enacted the **Tobacco Control Act** (TCA) and Regulation which prohibits smoking in offices, industrial establishments, restaurants, bars, pubs, nightclubs, bingo halls, buses, taxis & trucks and workplaces located in a private dwelling. It also bans smoking near public doorways, open opens and air intakes.

For a full list and further information, go to: www.health.gov.bc.ca/tobacco/

As well, there is a WorkSafeBC Occupational Health & Safety Regulation (Regulation 4.81 Controlling Exposure):

“The employer must control the exposure of workers at any workplace to environmental tobacco smoke by:

- a) Prohibiting smoking in the workplace*
- b) Restricting smoking to designated smoking areas or by other equally effective means.*

Workplace regulations and policies that provide support to help employees who smoke or cut down or quit can be found at: www.worksafebc.com

See also: www.hc-sc.gc.ca/hl-vs/pubs/tobac-tabac/work-trav/employe-eng.php#22

You may also want to explore the links with WorkSafeBC Young Worker efforts and the Canadian Centre for Occupational Health and Safety for WHMIS (Workplace Hazardous Materials Information System (WHMIS) and MSDS (Material Safety Data Sheets). These resources can provide specific health and safety information about the workplace toxins, as well as where you can get more information about the toxins. Your employer must also use this information to educate and train workers to work safely with and near toxic chemicals.

Visit the Young Worker website at: www2.worksafebc.com/Topics/YoungWorker/Home.asp

Canadian Centre for Occupational Health and Safety website:

www.ccohs.ca/oshanswers/psychosocial/ets_health.html

You can also call WorkSafeBC at 604 276-3100 in the Lower Mainland or 1 888 621-7233 (SAFE) toll-free in B.C. or see www.worksafebc.com



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