



# Advancing Environmental Health in Child Care Settings

## A Checklist for Child Care Practitioners and Public Health Inspectors

A publication of the  
Canadian Partnership for Children's Health and Environment (CPCHE)

canadian partnership for  
**children's**  
health & environment



partenariat canadien pour la sante  
**des enfants**  
et l'environnement

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Pollution Probe

South Riverdale Community Health  
Centre

Toronto Public Health

*in collaboration with*

Canadian Institute for Public Health Inspectors — Ontario Branch

*and the*

Ontario Association of Supervisors of Public Health Inspectors



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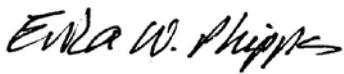
# Preface

The Canadian Partnership for Children’s Health and the Environment (CPCHE), in collaboration with the Canadian Institute of Public Health Inspectors — Ontario Branch (CIPHI-ON) and the Association of Supervisors of Public Health Inspectors of Ontario (ASPHIO), is pleased to present this environmental health checklist for child care settings. This resource helps set a new horizon in environmental health promotion for public health inspectors and child care practitioners.

The ideas and suggestions included in this resource — ranging from choosing safer cleaning products and toys to introducing a scent-free policy or composting program — can help a child care centre go beyond regulatory requirements to create healthier indoor and outdoor environments for the children in their care. Given the nearly daily emergence of new scientific evidence pertaining to the links between toxic chemicals and potential effects on the developing fetus and child, together with the fact that large knowledge gaps remain, we have taken a precautionary approach with the suggestions made in this resource. This means taking protective action to reduce exposures when there is credible cause for concern, even in the absence of full scientific certainty about cause and effect relationships (e.g., between a chemical exposure and a health effect). We believe, as do parents and caregivers across the country, that when it comes to the health of our children, it is better to be safe than sorry.

Whether you are a public health inspector, a child care practitioner or an interested parent, we applaud your efforts to apply this checklist in your local context. We encourage you to use your judgment and understanding of local circumstances to set priorities and goals from among the many options presented herein. Indeed, there may be issues and information that you would like to add, and we invite you to do so. We also encourage you to revisit the checklist periodically to track your progress over time.

We welcome your feedback and suggestions on this resource and on ways we can further support and celebrate your efforts. Together, we can create healthier, safer child care environments and give our children the best possible start on the pathway to lifelong health.



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President, CIPHI-ON



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CPCHE is a multi-sectoral collaboration of 12 organizations with expertise in issues related to children, health, public health and the environment. CPCHE partners have been working together since 2001 to protect children's health from environmental pollutants and toxic chemicals by moving children's environmental health issues into the minds of decision makers, service-provider organizations, individual practitioners, parents and the public. For more information, see

[www.healthyenvironmentforkids.ca](http://www.healthyenvironmentforkids.ca).



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## Introduction

In Canada, more than half of all children aged six months to five years spend the majority of their waking hours in early learning and child care environments, not including kindergarten.<sup>1</sup> During those hours they receive care and nurturing, learn to socialize with their peers, and develop important skills. They may also, however, come into contact with a variety of potentially harmful chemicals or pollutants. While exposures may be small, they can add up and, in combination, have the potential to contribute to asthma, learning disabilities, cancer and other chronic conditions. The good news is that many of these environmental exposures can be prevented.

### About this Document

This hands-on resource is intended to equip child care practitioners (CCPs) and public health inspectors (PHIs) who routinely visit child care centres with practical information on ways to prevent and reduce children's exposure to toxic chemicals and pollutants in these environments. The goal is to support the ongoing efforts of CCPs, PHIs and families to promote optimal child health and development by focusing on environmental exposures as one of the many important factors that determine child health outcomes. This resource also includes suggestions to encourage sustainable operations of child care facilities, including pollution prevention, waste reduction, and energy and water conservation.

<sup>a</sup> This document has been prepared as part of an Ontario-based project, and thus contains some information and references that are Ontario-specific. Most of the information and guidance, however, should be applicable across Canada. Wherever possible, tips on finding information specific to other provinces/territories have been included.

*“Exploring the quality of childcare facilities has become an important aspect of public health by virtue of the fact that such a large proportion of children spend much of their early years in these environments.”*

*– The School of Occupational and Public Health, Ryerson University (2008)*

**Section 1** provides an overview of children's vulnerabilities, health issues and exposures of concern in the child care setting.

**Section 2** presents the checklist of possible actions to improve environmental health in various indoor and outdoor settings.

**Section 3** provides background information and suggested resources relevant to each of the checklist sections.<sup>a</sup>

The suggestions provided herein are not intended to replace or supersede guidance from public health units or provincial regulations. Rather, they are intended to complement the essential actions that CCPs already take to ensure a healthy and safe environment, such as infection control and injury prevention. In some cases,

practices to reduce environmental exposures align nicely with well-established public health practices. For example, frequent hand washing aids in infection control while also reducing toxic exposures that occur via hand-to-mouth activity.

This document follows CPCHE's approach of expanding on the well-understood concept of childproofing by adding to it "hidden" exposures to chemicals and pollutants. As with all childproofing techniques, the first line of defence is to focus on prevention. If there is a chance of harmful effects, CPCHE advises avoiding or reducing exposures and seeking safer alternatives. This is particularly relevant when it comes to the potential effects of toxic chemicals/pollutants on the health and development of young children, especially given the rapidly emerging science and many remaining knowledge gaps in this area.

Our experience has shown that, among CCPs, PHIs, parents and the general public, awareness and knowledge of environmental health issues vary greatly. Some readers will be familiar with many of the practices recommended in this resource and may already be applying them, whereas others may be encountering much of this information for the first time. This resource aims to make this broad and complex subject accessible to a wide range of people.

## **How to Use this Resource**

There are a number of ways in which this document can be used. CCPs may use the document as a self-assessment and planning tool. PHIs may use it with CCPs during routine visits as a tool for introducing environmental health concepts and suggesting possible actions. Parents and caregivers may use it as a basis for engaging in a dialogue with their local child care centre about environmental health issues.

Experience gained in piloting a draft of this resource suggests that the initial evaluation may take over an hour. If a PHI wishes to use it during a visit, the assessment will be faster and more complete if it is sent to the CCPs in advance. Once users are familiar with the checklist, it

## **Make Your Voice Heard**

*While individual actions can be effective at reducing children's environmental exposures, some types and sources of exposure must be addressed at a societal level. As PHIs and CCPs, you can play a powerful role in advocating for precautionary policies to protect child health by voicing your concerns with all levels of government.*

should take 30 to 45 minutes to complete.

CCPs and PHIs may choose to use some portions of the checklist and not others. Individual circumstances and the experience of the CCPs and PHIs will determine which sections and suggestions are appropriate for their situation.

The checklist can be photocopied and used periodically to record a centre's achievements over time in reducing environmental hazards within the child care environment across various categories.

Many public health units have developed resources relevant to the various sections of this resource. Materials created by local public health units provide information specific to their communities. We encourage CCPs and PHIs to customize this hands-on resource by inserting copies and/or a list of these additional materials.

Public health units may undertake to tabulate and aggregate the checklist results to identify areas where more information may be needed for CCPs and PHIs. Using the checklist as a survey tool in this way can assist public health units in evaluating and planning program areas.

Finally, it is hoped that CCPs, PHIs and other users will apply this resource through the lens of their own knowledge of local circumstances. Children's environmental health is a broad area with countless opportunities for exposure reduction. The steps that each centre chooses to take will depend on both the availability of resources and the issues that they and the families they serve identify as the most pressing.

## Methods

Background research for this document was conducted by a consulting team led by the School of Occupational and Public Health at Ryerson University.<sup>2</sup> PHIs, it was found, are knowledgeable in the areas of injury prevention, infection control and food safety, but need more information on environmental health hazard prevention.

This current resource builds upon the Ryerson study, as well as the information and guidance provided in other CPCHE publications (see box on Companion Resources), and Toronto Public Health's comprehensive 2005 report, *Environmental Threats to Children: Understanding the Risks, Enabling Prevention*. It also draws upon and extends the health



promotion workshops, train-the-trainer sessions, local champions' training, teleconferences and other outreach activities undertaken by CPCHE partners and staff since 2005.

### Companion Resources

- *Child Health and the Environment: A Primer*  
[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)
- *Playing It Safe: Service Provider Strategies to Reduce Environmental Health Risks to Preconception, Prenatal and Child Health*  
[www.healthyenvironmentforkids.ca/resources/playing-it-safe-service-provider-strategies-reduce-environmental-risks-preconception-prena](http://www.healthyenvironmentforkids.ca/resources/playing-it-safe-service-provider-strategies-reduce-environmental-risks-preconception-prena)
- CPCHE Fact Sheet Series  
[www.healthyenvironmentforkids.ca/collections/cpche-fact-sheets-feuillets-d](http://www.healthyenvironmentforkids.ca/collections/cpche-fact-sheets-feuillets-d)
- CPCHE Online Collections  
[www.healthyenvironmentforkids.ca/content/resource-collections](http://www.healthyenvironmentforkids.ca/content/resource-collections)
- *Children's Health and the Environment: Public Health Practices in Child Care Settings*  
Ryerson University School of Occupational and Public Health; copy available from CPCHE upon request



## Basic Concepts of Children's Environmental Health

Among the many factors that influence healthy child development — including social, economic and genetic influences — the physical environment, both natural and built, plays a significant role. The physical environment can include a range of hazards, such as pollution, noise and effects of climate change. The focus of this document is on one specific aspect of the physical environment — the potential risks to child health posed by toxic chemicals and pollutants.

Children are more vulnerable than adults to potential adverse health effects from environmental chemical exposures. Their greater vulnerability to harm stems from their smaller size, their differing patterns of eating and drinking, and their behaviour, as well as the fact that their organs and detoxification systems are still developing. Some children are more vulnerable than others due to such things as genetics, parental occupation and socio-economic situation. While some determinants of health can't be changed, many environmental exposures can be prevented.

### Health Concerns

Some links between children's environmental exposures and health outcomes are well established (for example, lead and brain impacts; indoor and outdoor air pollution and childhood asthma and other breathing problems; ionizing radiation and cancer), whereas other links are less well understood. Scientific knowledge is growing about the potential for widespread chronic low-level exposures to result in negative health impacts for the developing fetus and child. Substances such as lead, methylmercury, PCBs, nicotine, dioxins and some solvents are known to harm children's developing brains. Some pesticides are linked to increased risk of cancer and negative effects on the brain and lungs, as well as birth defects and other ill effects on reproduction and endocrine function. Lead, dioxins, PCBs, ionizing radiation and UV radiation are also known to contribute to multiple health

effects at higher levels, but may be affecting children at much lower levels, either singularly or in combination. Many more substances such as brominated flame retardants (PBDEs), polyvinyl chloride (PVC) and bisphenol A (BPA) are also suspected of causing harm. These many potentially toxic chemicals are present in our environment. Air pollution, consumer products, building materials and furnishings contribute to these exposures.

While the science regarding the links between environmental exposures and children's health is complex and often uncertain, the potential risks can be significant. In the face of scientific uncertainty, it is prudent to "play it safe" and prevent or reduce children's exposures to pollution and toxic chemicals where feasible.

## Environmental Exposures in Child Care Settings

Children in early learning and child care environments may be exposed through ingestion, inhalation and dermal contact to a range of environmental contaminants associated with harmful health outcomes. Avenues of exposure in child care settings can include the following:

- **Outdoor air pollution:** inhalation of a range of contaminants including ground-level ozone, particulate matter, nitrogen oxides and metals.
- **Indoor and outdoor pesticide use:** inhalation or absorption of pesticides (used to control weeds and insects outdoors, and insects and rodents indoors) and their residues that may remain on food or in dust.
- **Inadequate ventilation:** inhalation of carbon monoxide and other contaminants that can be intensified by inadequate ventilation during renovations, painting and cleaning and while using art supplies.
- **Dust:** inhalation of contaminated dust from chemicals present in furniture, carpets, televisions, computers, plastic toys and cleaners. Through normal use, very small amounts of these chemicals end up in dust, along with pollutants that are tracked in from outdoors. These chemicals can include flame retardants, plasticizers such as phthalates, mercury, lead, nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), volatile organic compounds (VOCs) and pesticides.
- **Mould:** inhalation of spores from water-damaged drywall, carpets and excess moisture.
- **Lead:** ingestion of peeling or chipped paint on interior and exterior walls, window sills, floors and other surfaces in any building or structure built before 1976, as well as toys illegally painted with lead-based paints.
- **Mercury:** dermal contact with mercury from old-style glass thermometers that have been broken and ingestion of certain fish (e.g., white canned tuna, also referred to as albacore tuna).
- **Radon:** inhalation of this naturally occurring radioactive gas that can enter indoor air from surrounding soil and pose a significant lung cancer risk at elevated concentrations (particularly in combination with exposure to tobacco smoke).
- **Fragrances:** inhalation of fragrances (which often contain many chemicals) from plug-in or spray type air “fresheners” and cleaning agents as well as perfumes from staff members, visitors and parents.
- **Disinfecting/cleaning products:** inhalation or dermal contact with some types of cleaning products. Many commercial cleaning products contain substances known or suspected to be toxic.



**Compared to adults, children are more vulnerable to being harmed by environmental exposures.**

**Here are some reasons why:**

- Children eat, drink and breathe more per unit of body weight.
- Children behave differently and in ways that result in greater exposure to various substances. For example, children crawl and play on the ground, frequently put their fingers in their mouths, and chew on toys and other objects not necessarily intended for mouthing. As a result, they often experience greater exposures to contaminants in old paint, indoor air, dust, toys, carpets and consumer products combined with exposures from outdoor air, food, soil and playground equipment.
- Children tend to be more physically active and hence may inhale more contaminants as their breathing rates increase during active physical play.
- Children’s developing systems are more vulnerable to contaminants. For example, children’s brains and lungs are not fully developed until the end of adolescence. Exposures during development can lead to lifelong impacts.<sup>3</sup>

## Growing Concerns<sup>4</sup>

Over the past 100 to 200 years, patterns of disease among children have changed dramatically in industrialized countries. In Canada, infant mortality has dropped steadily and improvements in sanitation and public health — particularly immunization against historically common infectious diseases of early childhood such as whooping cough, diphtheria and polio — have contributed to longer life expectancy. Nevertheless, there are growing concerns about some increasingly common chronic diseases and developmental challenges among children in Canada. Environmental exposures to toxic chemicals and pollutants are known or suspected to be associated with several of these chronic conditions.

### Asthma

According to Statistics Canada, asthma affected approximately ten per cent of young children (aged 0–5 years) in Canada in 2000/2001.<sup>5</sup> While the causes of asthma are not fully understood, most researchers agree that indoor and outdoor air pollution, including environmental tobacco smoke, play a role.



### Neurobehavioural and neurodevelopmental disorders

Information on trends is limited, but data collected during the 1990s through the National Longitudinal Survey of Children and Youth indicate that about one quarter of children in Canada aged six to 11 years have one or more learning or behavioural problems.<sup>6</sup> While all the precise causes of learning disabilities or other neurobehavioural conditions are unclear, children are particularly at risk of exposure to some chemicals, such as lead and mercury, known to affect brain development and function.

### Cancer

Though cancer remains a rare disease in children, and survival from childhood cancer has dramatically improved, it remains the leading cause of illness-related death for children over one year of age.<sup>7</sup> Based on recent trends, it was expected that in Canada 836 children aged 0–14 years would be diagnosed with cancer during 2009.<sup>8</sup> It is suspected that exposures in early life (in the womb and early childhood) contribute to increased risk of cancer in later life.<sup>9,10</sup> According to the Canadian Cancer Society, incidence of several cancers is rising among adolescents and young adults, aged 15–29 years.<sup>11</sup>

### Endocrine Disruption

Given the vital role of hormones as the body’s chemical messengers, disruption of normal endocrine function — especially during critical development stages — can have a wide range of outcomes, including effects on neurodevelopment, the reproductive system and immune function. Although human evidence is still limited, endocrine scientists refer to strong evidence from animal studies for adverse reproductive outcomes from exposure to certain endocrine disrupting chemicals.<sup>12</sup> There is increasing evidence that other endocrine systems including insulin and glucose metabolism (related to diabetes) and thyroid function may also be negatively affected by these same chemicals.<sup>13</sup> Emerging animal evidence suggests that exposure to certain “obesogenic” endocrine disrupting chemicals may increase the potential for obesity.<sup>14</sup>



- **Art supplies:** inhalation of VOCs and chemical fragrances from markers, glues and so on.
- **Chemicals from plastics:** ingestion of various chemicals that have leached into food and/

or beverages after having been microwaved in plastic or poured as hot liquids into plastic containers (e.g., bisphenol A (BPA) from polycarbonate baby bottles), or that have migrated from food packaging (for example, most food cans are lined with BPA-containing epoxy). Chemicals can also be ingested from soft plastic toys made of polyvinyl chloride (PVC) plastic, often referred to as vinyl, as these contain phthalates and sometimes lead; both can pose health risks when the object is mouthed or chewed. Both BPA in baby bottles and phthalates in toys were the subject of federal regulatory reform during 2009.

- **Physical location of building:** VOCs, particulates and other outdoor air, soil and water contaminants may be present at child care facilities if they are sited near busy streets or industrial/commercial facilities.

### **The Canadian Child Care Federation (CCCF): Creating Healthy Spaces for Children**

The Canadian Child Care Federation's **Healthy Spaces** website enables users to tour through a child care centre, home and neighbourhood, picking up practical tips along the way on how to reduce environmental health risks to children. Visit [www.cccf-fcsge.ca/healthy-spaces](http://www.cccf-fcsge.ca/healthy-spaces)

CCCF also publishes **Resource Sheets** on a wide range of child care issues, including a number that address environmental health and safety issues. They are available at [www.cccf-fcsge.ca/publications/resourcesheets\\_en.html](http://www.cccf-fcsge.ca/publications/resourcesheets_en.html)





# Checklist for Creating Healthier, Greener Child Care Settings

Name of child care centre: \_\_\_\_\_

Address: \_\_\_\_\_

Contact person and phone number: \_\_\_\_\_

If this checklist was completed with the assistance of a public health inspector, his/her name and phone number: \_\_\_\_\_

Date this assessment was completed: \_\_\_\_\_

## About this Checklist

Child care practitioners and public health inspectors aim to provide healthy early learning and child care environments. Controlling infection and preventing injury have always been foundational in meeting this aim. More recently, however, there has been increasing interest in further protecting children by addressing environmental health issues — specifically, reducing potential exposures to toxic chemicals and pollutants known or suspected to pose health risks. The checklist has been designed to help staff address these issues.

**The checklist is a self-assessment tool that will help child care practitioners and the public health inspectors who work with them to identify actions that will result in healthier, greener environments for children in their particular child care setting.**

The checklist can be used by child care practitioners and local public health inspectors, either jointly or individually, to **track milestones** achieved, **discuss ideas** in the works, and **explore possible future steps**. It is best if the checklist is applied on a periodic basis (e.g., once per year) as a means of tracking progress and as an aid in planning.

The checklist is **not a regulatory tool** and is not intended to replace or supersede guidance or requirements from public health units and/or provincial agencies.

## A. Outdoor Air Quality

See pp. 17–20 for more information and resources		Yes	In Progress	N/A
A1	a. We check the Air Quality Health Index (AQHI), Air Quality Index (AQI), smog, forest fire and extreme heat and cold alerts daily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We schedule and tailor children’s activities according to the Air Quality Health Index (AQHI), Air Quality Index (AQI), smog, forest fire and extreme heat and cold alerts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A2	We locate children’s activities away from parking areas during drop-off and pick-up times.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A3	a. Our centre has an idling control policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. Our centre has posted signs about idling control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. We provide outreach and educational resources on idling control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4	We have taken measures to reduce the amount of vehicle exhaust that enters the centre through air intake vents, the entrance door and/or windows.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## B. Outdoor Areas

See pp. 21–25 for more information and resources		Yes	In Progress	N/A
B1	Children play in green spaces that are not treated with pesticides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2	a. We take actions to minimize the need for insect repellents, including removing any stagnant/standing water, avoiding outdoor play during peak biting times and encouraging parents to provide protective clothing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. When an insect repellent is used, we apply only those intended for children and registered by Health Canada’s Pesticide Management Regulatory Agency (PMRA) (bearing a <i>Pest Control Products [PCP] Act</i> number) and we closely follow label instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. When an insect repellent is used, we ensure that children always wash their hands when returning inside and before eating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B3	a. We ensure that any play equipment made of chromated copper arsenate (CCA)-treated wood (found in pressure-treated wood structures built before 2004) is treated with a penetrating sealant every one to two years.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We ensure children wash their hands after contact with equipment made of CCA- or pressure-treated wood.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## C. Sun Safety

See pp. 26–28 for more information and resources		Yes	In Progress	N/A
C1	We ensure children avoid direct sun exposure during sun peak hours, typically between 10 am and 2 pm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C2	We check the UV index daily all year long and take appropriate protective actions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C3	We encourage parents/caregivers to provide children with light, loose clothing that covers the body (long-sleeved shirt and pants as removable top layers) and a sun hat with a wide brim that shades ears and eyes (ideally with a flap or “tail” to protect the back of the neck).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C4	a. Natural and/or built shade is available in outdoor play areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. Our centre has a protective shade policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C5	a. We apply sunscreen on children at least 30 minutes before going outdoors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We apply sunscreen before insect repellent, if both are being used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## D. Indoor Air Quality and Dust

See pp. 29–34 for more information and resources		Yes	In Progress	N/A
D1	We require staff members, children and parents to leave outdoor footwear at the door or in the mudroom area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2	All rooms have adequate ventilation and are aired out at least daily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D3	We ensure that mould or mildew, if present, is dealt with promptly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D4	We remove dust with a damp mop or cloth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D5	a. We vacuum all carpets/rugs and vacuum or damp mop floors daily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We dispose of vacuum bags and dryer lint safely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D6	a. We have a fragrance-free or “scent-smart” policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We do not use deodorizers/air “fresheners” (including plug-ins).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D7	We have tested for radon and, if needed, taken remedial measures to reduce levels below the Government of Canada guideline.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## E. Cleaning and Disinfection

See pp. 35–40 for more information and resources

Yes      In Progress      N/A



**Infection prevention is extremely important.**

*The suggestions below do not replace guidance from public health units and may not be appropriate in the case of outbreaks.*

E1	a. We use bleach for the purposes and in the concentrations recommended by our local public health authority.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We consider non-bleach and/or less-toxic alternatives for other tasks, in consultation with our local public health officials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. We are aware that mixing bleach with other cleaning products can be dangerous and we ensure that this does not happen by posting warning signs and educating staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E2	All cleaning products are inaccessible to children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E3	We avoid using disinfectants, sanitizers and other cleaning products in close proximity to children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E4	We avoid using products labelled with hazard symbols whenever possible, while recognizing that we may need to use such products to ensure infection control and disinfection per local public health guidelines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E5	a. We practice proper hand hygiene at all times.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We do not use antibacterial hand soap.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. In the event that access to soap and water is not available, we take proper precautions when cleaning children’s hands with alcohol-based hand sanitizer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E6	We use the least toxic carpet cleaners available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E7	a. We use fragrance-free and biodegradable laundry soap.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We do not use dryer sheets and/or scented fabric softener.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## F. Activity, Learning and Play Areas

See pp. 41–45 for more information and resources

		Yes	In Progress	N/A
F1	a. We check regularly for product recalls on all toys, play equipment, furniture and accessories.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We avoid old, donated or inexpensive toys or other objects that may contain lead.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. We have replaced PVC plastic toys with safer options.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d. We have a toy safety policy that considers environmental health/toxic chemical hazards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F2	a. We use only art and craft materials intended for use by children and avoid products that bear hazard symbols.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We use liquid, gel and paste art materials rather than powders and sprays.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. We use water-based art and craft materials rather than solvent-based products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## G. Kitchen and Food Preparation Areas

See pp. 46–52 for more information and resources		Yes	In Progress	N/A
G1	a. We flush water pipes each morning (or less frequently as specified by local/provincial authorities) to reduce lead levels in drinking water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. For drinking and/or to prepare food or drinks, we use water from the cold water tap.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G2	We do not heat food or drinks in, or put hot food or drinks into, plastic containers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G3	We serve low-mercury fish.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G4	We serve fresh and frozen foods (rather than canned foods) whenever possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G5	We avoid cooking at very high temperatures when using non-stick cookware coated with perfluorinated chemicals (PFCs).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G6	We use the least toxic oven cleaners available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G7	a. We run the dishwasher only when children are not in the kitchen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. There is good ventilation in the room when the dishwasher is running.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. We avoid opening the dishwasher until the dishes are cool to the touch.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G8	a. We employ strategies to reduce the likelihood of pest problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. If a pest problem occurs, we select the least toxic method of eradication/control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## H. Renovations

See pp. 53–54 for more information and resources		Yes	In Progress	N/A
H1	We ensure that precautions are taken during renovations to avoid/reduce the potential for toxic exposures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## I. Surrounding Sources of Chemical Emissions

See pp. 55–56 for more information and resources

		Yes	In Progress	N/A
I1	We are aware of potential sources of chemical exposures in the vicinity of the centre (e.g., industrial facilities, dry cleaners, gas stations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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## J. Sustainability and Other Issues

See pp. 57–60 for more information and resources

		Yes	In Progress	N/A
J1	a. We use energy-efficient light bulbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We use energy-efficient appliances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. We take additional steps, where feasible, to conserve energy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J2	We take steps to foster/support the use of public or active transportation by our staff and/or the families we serve.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J3	a. We buy locally grown and/or organic food when available and affordable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We grow some of our own food (e.g., vegetables, herbs) for use at the centre.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J4	We conserve water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J5	a. We avoid waste by reducing, reusing and/or recycling whenever possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. We compost — either through a municipal program, an outdoor bin or an indoor bin.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. We dispose of electronics, pharmaceuticals and other hazardous materials responsibly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	a. We have done a waste audit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J6	We involve children in composting, recycling, gardening, conservation and/or other activities related to sustainability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Notes and Comments

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# Supporting Information and Resources

The following pages contain supplemental information that will help child care practitioners in using the checklist and will support their efforts to create healthier child care environments. Explanations and practical tips, followed by a list of additional resources, are provided for each section. Each of the checklist questions is repeated here (marked with ☑) for ease of navigation.

## A. Outdoor Air Quality

Outdoor air quality can impact children’s health. Poor air quality may aggravate asthma symptoms and affect lung development, among other health effects.<sup>15</sup>

**☑ A1a. We check the Air Quality Health Index (AQHI), Air Quality Index (AQI), smog, forest fire and extreme heat and cold alerts daily.**

- Check your local weather forecast or Environment Canada’s website.
- Check to see if the AQHI is available in your community.

The AQHI is currently available in several communities across Canada, and there are plans to add more locations. The ten-point scale reports the health risks related to levels of common air pollutants, including ground level ozone (O<sub>3</sub>), particulate matter (PM<sub>2.5</sub>/PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>). See “Outdoor Air Quality Resources” below for more information.



AQHI Actions Recommended by Environment Canada <sup>16</sup>			
Health Risk	Air Quality Health Index	Health Messages	
		At Risk Population*	General Population
Low	1 – 3	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.
Moderate	4 – 6	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High	7 – 10	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High	Above 10	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

\* Children and adults with heart or breathing problems are at greater risk than the general population. Follow your doctor’s usual advice about exercising and managing your condition.

- If your centre is located in Ontario, check the AQI.

The AQI in the province of Ontario is based on air quality standards that take into consideration both environmental and human health concerns. It reports current air quality based on a single worst pollutant (e.g., fine particulate matter, ozone).

<b>Air Quality Index of the Ontario Ministry of Environment</b>	
<b>Reading</b>	<b>Air Quality</b>
<b>Below 16</b>	Very good
<b>16 – 31</b>	Good
<b>32 – 49</b>	Moderate; there may be some adverse effects for very sensitive people
<b>50 – 99</b>	Poor; there may be adverse effects for sensitive members of human and animal populations and significant damage to vegetation and property may result
<b>Above 99</b>	Very poor; there may be adverse effects for a large proportion of people and animals exposed

- Check the humidex.

The humidex is a scale that combines temperature and humidity into one number that describes how hot, humid weather feels to the average person.

<b>Humidex Scale</b> According to the Canadian Meteorological Service	
<b>Humidex</b>	<b>Degree of Comfort or Discomfort</b>
<b>Less than 29</b>	No discomfort
<b>30 – 39</b>	Some discomfort
<b>40 – 45</b>	Great discomfort; avoid exertion
<b>Above 45</b>	Dangerous
<b>Above 54</b>	Heat stroke imminent

- Check smog and forest fire alerts if appropriate to your region.
- Check extreme heat and cold alerts according to the season.

**AIb. We schedule and tailor children’s activities according to the Air Quality Health Index (AQHI), Air Quality Index (AQI), smog, forest fire and extreme heat and cold alerts.**

- Reduce/avoid active play outdoors on days when the AQHI or AQI is high or there is an alert for smog, forest fire or extreme heat or cold.

**A2. We locate children’s activities away from parking areas during drop-off and pick-up times.**

- If drop-off and parking areas are located near the outdoor play areas, move outdoor play to other areas of the centre during the busy pick-up and drop-off times.
- If doors and windows open onto the parking areas, close these windows during the pick-up and drop-off times.
- In the longer term, if possible, consider relocating drop-off/pick-up and parking areas away from outdoor play areas.

**A3a. Our centre has an idling control policy.**

An idling control policy typically

- includes outreach/education for staff and parents through such things as newsletters, e-mail, posters and decals for vehicles
- encourages parents to make a full stop and switch off their engines
- is consistent with local bylaws, if applicable
- may apply to delivery vehicles
- has clear procedures or penalties in case of complaints.

A number of communities now have idling bylaws in place. Many limit idling time to three minutes or less. Some communities allow for some exceptions including those for diesel vehicles or in very cold weather, for which the idling time limits may be longer (up to five minutes).

**A3b. Our centre has posted signs about idling control.**

In some communities with idling control policies, child care centres and other facilities can request signage from the municipality and/or public health unit. Alternatively, free materials are available from Natural Resources Canada.

**A3c. We provide outreach and educational resources on idling control.**

Information can be shared with parents/caregivers through pamphlets, at meetings or with postings on bulletin boards.

**A4. We have taken measures to reduce the amount of vehicle exhaust that enters the centre through air intake vents, the entrance door and/or windows.**

- If air intake vents are located near the pick-up, drop-off and parking areas, ask an air quality inspector or other professional to examine alternative options for air intake.

## Outdoor Air Quality Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### General

CPCHE Online Collection on Indoor and Outdoor Air Pollution  
[www.healthyenvironmentforkids.ca/collections/air-pollution](http://www.healthyenvironmentforkids.ca/collections/air-pollution)

### A1. Air Quality, Smog, Forest Fire and Extreme Heat and Cold Alerts

Environment Canada — Air Quality Health Index  
[www.airhealth.ca](http://www.airhealth.ca)

Ontario Air Quality Index  
[www.airqualityontario.com](http://www.airqualityontario.com)

Canadian Meteorological Service — Humidex  
[www.msc-smc.ec.gc.ca/cd/brochures/humidity\\_e.cfm](http://www.msc-smc.ec.gc.ca/cd/brochures/humidity_e.cfm)

Environment Canada — Clean Air Online  
[www.ec.gc.ca/cleanair-airpur/Regional\\_Clean\\_Air\\_Online-WSA3A931A8-1\\_En.htm](http://www.ec.gc.ca/cleanair-airpur/Regional_Clean_Air_Online-WSA3A931A8-1_En.htm)

Toronto Public Health — Brochures and fact sheets on AQHI, smog and 20/20 The Way to Clean Air  
[www.toronto.ca/health/airquality](http://www.toronto.ca/health/airquality)

Ontario Ministry of Natural Resources — *The Home Owners FireSmart Manual*  
[www.mnr.gov.on.ca/STEL02\\_163826.pdf](http://www.mnr.gov.on.ca/STEL02_163826.pdf)

### A3. Idling Control

Natural Resources Canada — Idle-free Zone  
<http://oee.nrcan.gc.ca/transportation/personal/idling.cfm?attr=8>

Toronto Public Health's idle-free publications  
[www.toronto.ca/health/airquality/smog/smog\\_what\\_is.htm](http://www.toronto.ca/health/airquality/smog/smog_what_is.htm)

Ontario Eco-Schools  
[www.ontarioecoschools.org/index.html](http://www.ontarioecoschools.org/index.html)



## B. Outdoor Areas

### **BI. Children play in green spaces that are not treated with pesticides.**

Compared to adults, children are at greater risk of exposure to pesticides applied to lawns and gardens because they spend more time playing outside, are more likely to play at ground level, put their hands in their mouths more often and may not wash their hands consistently. Pesticides can “drift” from farm lands or golf courses to nearby properties. They can also be tracked indoors on shoes and stroller wheels.

- Use non-toxic pest control measures to maintain healthy lawns and gardens.
- Always ensure children thoroughly wash their hands when they arrive, after playing outdoors and before eating or drinking.

In Ontario since April 2009 the cosmetic use of pesticide products in any green spaces (except certain areas on golf courses) has been banned. Hence, green spaces where children play should be free of pesticides.

In Quebec since April 2003 the use of pesticide products in child care centres and schools, outdoors and indoors, has been regulated to protect children’s health. Child care centres in Quebec are limited to using pesticides containing specific active ingredients. They are also required to have a period of at least eight hours between the time of application and the time the centre is open.

Other provinces have proposed or are considering cosmetic pesticide laws.

Many municipalities also have bylaws that limit the use of pesticides in public and/or private properties.

- If you live in a province other than Ontario or Quebec, check with your municipality to find out if a cosmetic pesticide bylaw is in place in your community.

### **B2a. We take actions to minimize the need for insect repellents, including removing any stagnant/standing water, avoiding outdoor play during peak biting times and encouraging parents to provide protective clothing.**

- Remove any stagnant or standing water to prevent mosquitoes from breeding (and for safety reasons).
- If possible, avoid going outdoors at peak biting time — the hours between dusk and dawn.
- Encourage parents to provide children with lightweight, light-coloured clothing that covers the body (long-sleeved shirt and long pants as removable top layers), as well as shoes, socks and a hat.
- When serving sweet foods such as juices and fruits that may attract stinging insects, keep children’s hands clean and clean up spills quickly.
- Keep garbage containers and compost bins tightly sealed and away from play areas.



- B2b. When an insect repellent is used, we apply only those intended for children and registered by Health Canada’s Pesticide Management Regulatory Agency (PMRA) (bearing a Pest Control Products [PCP] Act number) and we closely follow label instructions.**

In response to the risk of mosquito-borne West Nile virus, many public health agencies recommend the use of personal insect repellents, along with other measures. Most insect repellents contain N,N-diethyl-3-methylbenzamide, also known as N,N-diethyl-m-toluamide (DEET), a chemical associated with neurotoxic effects in children when exposure occurs above recommended limits. Insect repellents approved by Health Canada include products containing DEET and alternatives to DEET.

If using insect repellents on children, take the following precautions:

- Select a product specifically intended for children, with the lowest possible DEET concentration, and not higher than ten per cent. Do not use products intended for adults at a lower application rate.
- Follow product label instructions carefully. The risk assessment of these products is linked directly to the application rate noted on the label. Applying a greater quantity of these products is beyond the level considered an “acceptable risk” and can cause harm.
- Apply the product lightly and only to hats, clothing and exposed skin (not under clothing). Do not apply to children’s hands or faces. Never apply on cuts, wounds, sunburns or irritated skin. Do not use in enclosed spaces and avoid prolonged use.
- DEET products should not be applied to children under six months of age. According to the most recent regulatory re-evaluation by the PMRA (2002), products containing DEET should only be used once a day on children aged six months to two years, and not more than three times a day on children between the ages of two and 12 years of age.<sup>17</sup>
- If using DEET and sunscreen together, always apply sunscreen first (see section C on Sun Safety).
- Eucalyptus-based products should not be used on children under three years of age; eucalyptus can harm the lungs of young children.
- Products containing citronella or lavender oil can cause an allergic reaction in sensitive children and should not be used.
- When choosing alternatives to DEET, select those products that have been registered by the PMRA, which considers both safety and efficacy in its determinations. Some repellents based on soybean oil, for example, have been approved by the PMRA.

Some regulatory agencies and public health units have recommended protocols for the application of insect repellents by child care practitioners.

- As a precautionary measure, child care practitioners who are pregnant or breastfeeding should avoid being responsible for applying DEET-containing insect repellent to multiple children.

- B2c. When an insect repellent is used, we ensure that children always wash their hands when returning inside and before eating.**

**B3a. We ensure that any play equipment made of chromated copper arsenate (CCA)-treated wood (found in pressure-treated wood structures built before 2004) is treated with a penetrating sealant every one to two years.**

Arsenic can leach out of CCA-treated wood.<sup>18</sup> Chronic exposure to arsenic can cause cancer, damage the nervous and cardiovascular systems, and result in skin lesions (including skin cancer).<sup>19</sup> As a result, in 2004, CCA-treated wood was phased out for residential uses including on playgrounds, however some old structures remain. Removal or replacement of CCA-treated structures is generally not recommended by regulatory agencies.

- Coat CCA-treated wood with a penetrating wood-finishing sealant (not paint) to reduce available arsenic. It should be re-applied regularly (every one to two years).

**B3b. We ensure children wash their hands after contact with equipment made of CCA- or other pressure-treated wood.**

All pressure-treated wood contains pesticides. Thus, to minimize potential exposures precautions should be taken with CCA-treated (pre-2004), as well as newer pressure-treated wood structures.

- Cover picnic tables made of CCA- or any other pressure-treated wood.
- If children play on bare soil or sand beneath a CCA- or pressure-treated wood structure, ensure they wash their hands and remove their shoes when going indoors.
- If possible, locate play areas away from CCA-treated wood. Plant shrubs or dense groundcovers around CCA-treated fences, porches or decks to discourage children from playing in the soil beneath or beside them.

Alternatives to CCA-treated wood are widely available. These include cedar, redwood and metal, as well as wood treated with safer preservatives.

- When buying new equipment for your playground, consider the benefits and potential risks of the materials the structure is made of. Were they treated with potentially hazardous chemicals? Was the wood harvested in a sustainable way? How long will the materials last?

When demolishing a structure built of CCA-treated wood or building a structure out of pressure-treated wood, take precautions to avoid creating additional exposure risk:

- Saw, sand and machine pressure-treated wood outdoors using protective gear (dust mask, goggles and gloves).
- Clean up the sawdust to avoid tracking it inside on shoes.
- Dispose of sawdust or woodchips through regular municipal trash collection; do not mulch or compost the waste.
- Never burn pressure-treated wood.

## Outdoor Areas Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### General

CPCHE Online Collection on Indoor and Outdoor Air Pollution

[www.healthyenvironmentforkids.ca/english/special\\_collections/fulltext.shtml?x=4204](http://www.healthyenvironmentforkids.ca/english/special_collections/fulltext.shtml?x=4204)

### BI. Alternatives to Pesticides

CPCHE Online Collection on Pesticides

[www.healthyenvironmentforkids.ca/collections/pesticides](http://www.healthyenvironmentforkids.ca/collections/pesticides)

Health Canada — Pest Management Regulatory Agency

[www.hc-sc.gc.ca/cps-spc/pest/index-eng.php](http://www.hc-sc.gc.ca/cps-spc/pest/index-eng.php)

Government of Ontario — *Going Pesticide Free*

[www.additupontario.ca/en](http://www.additupontario.ca/en)

Toronto Public Health — Go Natural: Tips for Natural Lawn and Garden Care

[www.toronto.ca/health/pesticides/go\\_natural\\_tips.htm](http://www.toronto.ca/health/pesticides/go_natural_tips.htm)

Ontario Ministry of the Environment — Pesticide Legislation

[www.ene.gov.on.ca/en/land/pesticides](http://www.ene.gov.on.ca/en/land/pesticides)

Quebec's Pesticide Management Code

[www.mddep.gouv.qc.ca/pesticides/permis-en/code-gestion-en/index.htm](http://www.mddep.gouv.qc.ca/pesticides/permis-en/code-gestion-en/index.htm)

The Pesticide Action Network of North America (PANNA)

[www.panna.org](http://www.panna.org)

Beyond Pesticides

[www.beyondpesticides.org](http://www.beyondpesticides.org)



## **B2. Insect Repellents**

CPCHE — *Child Health and the Environment: A Primer*

Information on insect repellents, p. 105

[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)

Health Canada — Insect Repellents

[www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/insect-eng.php](http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/insect-eng.php)

Toronto Public Health — *West Nile Virus: Reducing Your Risk* fact sheet

[www.toronto.ca/health/westnile/wnv\\_personalprecautions.htm](http://www.toronto.ca/health/westnile/wnv_personalprecautions.htm)

Canadian Paediatric Society — Insect Repellents for Children

[www.caringforkids.cps.ca/keepkidssafe/repellents.htm](http://www.caringforkids.cps.ca/keepkidssafe/repellents.htm)

Government of Quebec — *Protocol for Applying Insect Repellent*

[www.mfa.gouv.qc.ca/fr/publication/Documents/SG\\_protocole\\_insectifuge\\_en.pdf](http://www.mfa.gouv.qc.ca/fr/publication/Documents/SG_protocole_insectifuge_en.pdf)

Northwest Coalition for Alternatives to Pesticides (NACP) — *Journal of Pesticide Reform*, “Plant-based Mosquito Repellents: Making a Careful Choice”

[www.pesticide.org/pubs/alts/pdf/mosquitorepellents.pdf](http://www.pesticide.org/pubs/alts/pdf/mosquitorepellents.pdf)

Public Health Agency of Canada — *Statement on Personal Protective Measures to Prevent Arthropod Bites*

[www.phac-aspc.gc.ca/publicat/ccdr-rmtc/05vol31/asc-dcc-4/index-eng.php](http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/05vol31/asc-dcc-4/index-eng.php)

## **B3. CCA- and Pressure-Treated Wood**

CPCHE — *Child Health and the Environment: A Primer*, p. 41

[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)

CPCHE Online Collection on Metals: Arsenic

[www.healthyenvironmentforkids.ca/collections/metals-arsenic](http://www.healthyenvironmentforkids.ca/collections/metals-arsenic)

Health Canada — Chromated Copper Arsenate (CCA) Treated Wood

[www.hc-sc.gc.ca/cps-spc/pubs/pest/\\_fact-fiche/cca-acc/index-eng.php](http://www.hc-sc.gc.ca/cps-spc/pubs/pest/_fact-fiche/cca-acc/index-eng.php)

Toronto Public Health — *Chromated Copper Arsenate-Treated Wood (Pressure Treated Wood)* fact sheet

[www.toronto.ca/health/pdf/factsheet\\_ptw.pdf](http://www.toronto.ca/health/pdf/factsheet_ptw.pdf)

US EPA — Chromated Copper Arsenate (CCA): Alternatives to Pressure-Treated Wood

[www.epa.gov/oppad001/reregistration/cca/pressure-treated-wood-alternatives.htm](http://www.epa.gov/oppad001/reregistration/cca/pressure-treated-wood-alternatives.htm)

Safe Kids Canada — Pressure Treated Wood (CCA)

[www.safekidsCanada.ca/SKCFForParents/section.asp?s=Safety+Information+by+Topic&SID=10774&ss=Playground+Safety&ssID=11333&sss=Pressure+Treated+Wood+%28CCA%29&ssID=23276](http://www.safekidsCanada.ca/SKCFForParents/section.asp?s=Safety+Information+by+Topic&SID=10774&ss=Playground+Safety&ssID=11333&sss=Pressure+Treated+Wood+%28CCA%29&ssID=23276)

## C. Sun Safety

Outdoor activity, including some time spent in the sunshine, is important for children’s physical fitness and lifelong health. Active outdoor play can help prevent obesity, a growing childhood health concern in Canada. Being exposed for brief periods to peak sunlight also supports the body’s production of vitamin D.

Vitamin D is an essential nutrient needed to build strong bones and to prevent rickets in children and osteoporosis in the elderly. It is also associated with other health benefits, including prevention of certain cancers. Unlike other vitamins, the body can produce its own supply when skin is exposed to sunlight (though sunscreen reduces this ability). Vitamin D can also be obtained from dietary sources, such as oily fish and fortified milk. There is growing evidence that many children are not attaining optimal vitamin D levels, particularly in northern latitudes where the sun’s rays are insufficient during winter months to enable vitamin D production. Compared to those with lighter skin tones, people with darker skin are at greater risk of vitamin D deficiency.

Although sun exposure plays a vital role in ensuring adequate vitamin D production, protecting children from overexposure to the sun remains very important. There is clear evidence that severe sunburns during childhood or adolescence substantially increase skin cancer risks in adulthood.

**C1. We ensure children avoid direct sun exposure during sun peak hours, typically between 10 am and 2 pm.**

- Covering up or staying out of the sun, especially during peak hours, is preferable to relying on sunscreen alone for protection.
- Teach children the simple “shadow rule”<sup>20</sup> (see box).

**C2. We check the UV index daily all year long and take appropriate protective actions.**

- Check your local weather forecast or Environment Canada’s website.

**C3. We encourage parents/caregivers to provide children with light, loose clothing that covers the body (long-sleeved shirt and pants as removable top layers) and a sun hat with a wide brim that shades ears and eyes (ideally with a flap or “tail” to protect the back of the neck).**

- Children can also be encouraged to wear sunglasses with UV protection (“broad spectrum”).
- Clothing that offers UV protection may be appropriate when children spend an extended amount of time in the sun, such as when attending outdoor summer camps.

**C4a. Natural and/or built shade is available in outdoor play areas.**

- Keep babies under one year of age out of direct sunlight.
- Use built-in sun canopies for multi-passenger strollers (or use one made by the same manufacturer as the stroller to avoid safety hazards).

### Teach the Shadow Rule

*Short shadows? Seek shade.*

Children should play in either shady places or indoors when their shadows are shorter than they are. This occurs during the midday hours, when UV rays are most intense. Help children to identify shady places and ways to have fun in the shade.

**C4b. Our centre has a protective shade policy.**

A shade policy might include

- recognition that the provision of shade, either natural or constructed, should be an essential element when planning outdoor play areas
- a requirement to provide a certain proportion of shade coverage
- a requirement to protect existing trees
- consideration for planting trees or creating shade around playground equipment, seating areas and tables
- recognition that shade areas must provide protection in summer while maintaining a cool temperature and allowing for adequate light and ventilation.

**C5a. We apply sunscreen on children at least 30 minutes before going outdoors.**

- Apply a sunscreen with a sun protection factor (SPF) of 30 or higher that gives protection from both UVA and UVB rays.
- Look for a product bearing the Canadian Dermatology Association (CDA) logo.  
Criteria used by the CDA in deciding which products may bear its logo:
  - the product has a UVB SPF of at least 30
  - the product contains a broad spectrum UVA block
  - the product is non-comedogenic,<sup>b</sup> non-irritating and hypo-allergenic
  - the product is minimally or non-perfumed.
- Consider the use of sunscreen that contains physical blockers such as titanium dioxide or zinc oxide (sometimes identified as “sunblock”) rather than chemical blockers. Some chemical blockers have been shown to penetrate the skin, mimic hormones or have other potentially harmful health impacts.
- Applying sunscreen 30 minutes before sun exposure allows time for the active ingredients to reach the stated protection level.
- Apply sunscreen generously to dry clean skin. Apply enough that the skin appears wet.
- Reapply sunscreen every two hours and after swimming, towelling or vigorous play. This includes waterproof sunscreen.
- Check the expiry date of the product and don’t use after the expiration date.
- Sunscreen is not recommended for babies under six months of age because their skin is more permeable and because they engage in frequent hand-to-mouth and hand-to-eye behaviour.

**C5b. We apply sunscreen before insect repellent, if both are being used.**

- If a sunscreen and an insect repellent are both being used, apply the sunscreen 30 minutes before going outdoors (as indicated in C5a) and wait until you are outdoors to apply the insect repellent.
- The effectiveness of sunscreen can be reduced when used simultaneously with insect repellent.<sup>21</sup>
- Evidence suggests that simultaneous use of sunscreen and insect repellent may increase the absorption of DEET through the skin.

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<sup>b</sup> Non-comedogenic describes a substance that does not contribute to the formation of blackheads or pimples on the skin.

## Sun Safety Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### General

CPCHE — *Child Health and the Environment: A Primer*

Safe at Play, pp. 106-107

[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)

The Weather Network — UV Report Index

[www.theweathernetwork.com/uvreport/canuv\\_en](http://www.theweathernetwork.com/uvreport/canuv_en)

Health Canada — Babies, Children and Sun Safety

[www.hc-sc.gc.ca/hl-vs/pubs/sun-sol/babies\\_child-bebes\\_enfant-eng.php](http://www.hc-sc.gc.ca/hl-vs/pubs/sun-sol/babies_child-bebes_enfant-eng.php)

Toronto Public Health — Sun Safety

[www.toronto.ca/health/cancerprevention/sunsafety.htm](http://www.toronto.ca/health/cancerprevention/sunsafety.htm)

Canadian Child Care Federation — *Sunshine: Approach with Caution*

[www.cccf-fcsge.ca/docs/cccf/RS\\_20-e.pdf](http://www.cccf-fcsge.ca/docs/cccf/RS_20-e.pdf)

Canadian Paediatric Society - Sun Safety

[www.caringforkids.cps.ca/keepkidssafe/Sun.htm](http://www.caringforkids.cps.ca/keepkidssafe/Sun.htm)

### C2. UV Forecast

Environment Canada — UV Index Forecasts

[www.msc-smc.ec.gc.ca/education/uvindex/forecasts/forecastmap\\_e.html](http://www.msc-smc.ec.gc.ca/education/uvindex/forecasts/forecastmap_e.html)

Environmental Health Association of Nova Scotia — Guide to Less Toxic Products: Sun Protection

[www.lesstoxicguide.ca/index.asp?fetch=personal#sunpr](http://www.lesstoxicguide.ca/index.asp?fetch=personal#sunpr)

Environmental Working Group — Annual Sunscreen Guide

[www.cosmeticsdatabase.com](http://www.cosmeticsdatabase.com)

Canadian Dermatology Association — Recognized Sunscreens

[www.dermatology.ca/sunscreens.html](http://www.dermatology.ca/sunscreens.html)

Canadian Dermatology Association — *Tips for Daycares*

[www.dermatology.ca/english/newsite/graphics\\_en/daycare\\_eng.pdf](http://www.dermatology.ca/english/newsite/graphics_en/daycare_eng.pdf)

### C4b. Shade Policy

Toronto Public Health — *How to Conduct a Shade Audit*

[www.toronto.ca/health/resources/tcpc/pdf/tcpc\\_shade\\_audit.pdf](http://www.toronto.ca/health/resources/tcpc/pdf/tcpc_shade_audit.pdf)

York Region SunSense Coalition — Shade Policy

[www.sunsafeyork.org/shade-policy.htm](http://www.sunsafeyork.org/shade-policy.htm)

Evergreen — *Shade for Kids Workshop-in-a-Box*

[www.evergreen.ca/en/resources/schools/shade-for-kids.sn](http://www.evergreen.ca/en/resources/schools/shade-for-kids.sn)



## D. Indoor Air Quality and Dust

Indoor air concentrations of some pollutants can be two to five times higher than those found in outdoor air, and, in some cases, up to 100 times higher.<sup>22</sup> Indoor dust is a complex mixture of particles and chemicals. Through normal use of common items such as electronics, furniture, plastic toys and cleaners, very small amounts of chemicals end up in dust, along with pollutants brought in from outdoors. Dust is a major source of exposure for children, due to crawling and hand-to-mouth behaviour. For some contaminants, like lead and brominated flame retardants, dust can be the largest source of exposure, potentially higher than food, air or water, especially for young children.<sup>23</sup>

**D1. We require staff members, children and parents to leave outdoor footwear at the entrance or in the mudroom area.**

- Having the children wear dedicated “indoor” shoes (or non-slip socks or slippers) is good practice.
- Implement a “shoes off at the door” policy for staff, children and parents when they drop off and pick up their children to reduce the quantity of soil, dirt and associated chemicals tracked indoors. It is especially important in infant and toddler care rooms.



**D2. All rooms have adequate ventilation and are aired out at least daily.**

Child care centres need to comply with specific requirements for heating and ventilation systems established in many areas of the country. For example, some provinces require a director (as defined in the legislation) to approve plans. Others require that ventilation meet standards under a specific law or regulation, be approved by a local medical officer of health, and/or provide some other evidence of compliance with building code and local zoning bylaws.<sup>c</sup>

The following are additional suggestions to ensure healthy air in the child care centre:

- Ensure the centre has windows that open.
- If weather permits, keep windows open. For safety reasons, ensure that windows above the first floor cannot open more than four inches (ten centimetres).
- Let a fan run for two or three minutes in front of an open window and use a timer to avoid compromising energy conservation.
- Install ventilation fans for stoves and in bathrooms.
- When windows are open, ensure children can't fall out or get outside.
- Ensure water is adequately diverted away from windows, doors and the building foundation.
- Ensure compliance with no-smoking policies. Most provinces have regulations banning smoking in child care centres. Some provincial regulations specify the minimum distance smokers must keep from building entrances and/or grounds.

<sup>c</sup> For more information, see Beach J. & M. Friendly. 2005. *Child Care Centre Physical Environments*. Available at [www.childcarequality.ca/wdocs/ObD\\_PhysicalEnvironments.pdf](http://www.childcarequality.ca/wdocs/ObD_PhysicalEnvironments.pdf)

- Encourage child care staff who choose to smoke to wear a separate garment or jacket when they smoke to reduce children’s exposure to third-hand smoke — residue that clings to clothing (as well as furniture, carpets, cushions and curtains indoors).<sup>24</sup>
- Ask parents who smoke to do so away from the centre’s entrances, windows and outdoor playgrounds.

**D3. We ensure that mould or mildew, if present, is dealt with promptly.**

To prevent mould from forming,

- ensure adequate ventilation
- keep all areas of the room dry and clean
- address any plumbing problems promptly
- install and use a fan that is vented to the outdoors.

If mould is already present,

- scrub surface mould with warm water and unscented detergent (bleach is not recommended for environmental health reasons and because it may be less effective than detergent), rinse with a wet rag and dry with a clean cloth. Wear rubber gloves and a mask, and keep infants, children and anyone with asthma or allergies out of the space<sup>25</sup>
- get rid of mouldy items that can’t be cleaned and thoroughly dried
- remove mouldy carpets
- get help from environmental service professionals if
  - areas of mould are larger than three patches (each patch in excess of 3 feet x 3 feet, or 1 metre x 1 metre, in size)
  - the mould keeps returning after repeated cleaning
  - children or staff suffer from asthma, respiratory symptoms or other health problems that appear to be aggravated while inside the centre.

**D4. We remove dust with a damp mop or cloth.**

- Use a damp cloth to dust, and dispose of dust rags carefully or wash them separately.

**D5a. We vacuum all carpets/rugs and vacuum or damp mop floors daily.**

Carpeting traps and accumulates dust and, in the presence of moisture, provides a place for mould to grow. For these reasons, it should be avoided as much as possible in child care settings, particularly in kitchen, eating, bathroom and infant/baby areas. Old carpets can contain up to 400 times as much dust as an adjacent bare floor. New carpeting may off-gas chemicals used in its manufacture or applied to it for stain or fire resistance. Vacuuming all floor surfaces daily reduces these hazards and is also important for safety reasons (i.e., to remove small objects or bits of food that may be picked up and mouthed or ingested, or that may pose a choking hazard for young children).

- Use an efficient vacuum cleaner with a power head and HEPA filter.
- Steam clean and shampoo carpets and large area rugs regularly using the least toxic cleaner that will not leave a chemical residue. The Canadian Paediatric Society recommends cleaning rugs in infant areas once a month and in preschooler areas once every three months.<sup>26</sup>
- If cleaning is done by janitorial staff or a professional cleaning service, inquire about the products that they use. Suggest that they investigate safer cleaners.
- Consider replacing carpets with hard-surface flooring and area rugs that are easy to keep clean.
- Sweep or vacuum non-carpeted floors and damp mop with detergent on a daily basis. Take care to choose a cleaning product or process that does not leave a chemical residue that may harm children.<sup>27</sup>

**D5b. We dispose of vacuum bags and dryer lint safely.**

The contents of vacuum cleaner bags and clothes dryer lint have been shown to contain the same contaminants as those found in house dust.

- Avoid dust exposure by carefully disposing of vacuum cleaner bags/central vacuum bin contents. Use plastic bags as a “shroud” to control dust while removing vacuum contents and, if feasible, do this task outdoors. The contents of the vacuum should not be composted.
- Dryer lint should be disposed of carefully. If stored for disposal near a dryer, use a plastic garbage bag inside a container with a lid.
- Dryer lint should not be used for making homemade paper or other crafts with children.
- Dryer lint should not be composted.

**D6a. We have a fragrance-free or “scent-smart” policy.**

Perfumes and scented products are recognized as triggers for asthma in asthmatic children and adults. In sensitive people, fragranced products may cause wheezing, shortness of breath, sneezing, congestion, headaches, migraines, dizziness, lightheadedness, difficulty with concentration, nausea, loss of appetite, irritation of eyes, nose, throat and skin, and fatigue or weakness.<sup>28</sup>

Hundreds of different chemical substances are used in fragranced products, many of them derived from petroleum. There is much uncertainty and controversy about potential health effects in non-sensitive people. In December 2004, the federal government began to regulate cosmetic ingredients by publishing a “hot list” of chemicals that are strictly controlled or banned in cosmetics. Further regulatory action is the subject of ongoing consultations. Some fragrance ingredients, such as phthalates, musk xylene, toluene and others, have been linked to cancer, hormone disruption and other harmful effects.<sup>29,30</sup>

Be aware of the difference between “fragrance-free” and “unscented.” Some products labelled “unscented” contain masking agents to cover the smells of other ingredients. These masking agents are often synthetic fragrances. Fragrance-free products, on the other hand, are likely to be totally free of fragrances. In the absence of fragrance-free products, unscented products are acceptable alternatives.

- Share information with parents/caregivers about the potential health benefits of fragrance-free products.
- Consider creating a fragrance-free policy (see Resources section, below).
- Avoid fragranced household cleaners (also see D6b and E7) and personal care products.

**D6b. We do not use deodorizers/air “fresheners” (including plug-ins).**

Most deodorizers or air “fresheners” rely on chemicals to cover up an odour or overpower an offensive odour with a more pleasing odour. These products can contain a range of chemicals that negatively impact health. In the presence of these chemicals, sensitive individuals can suffer from headaches and/or adverse respiratory symptoms. As alternatives to using these products,

- identify the source of the odour, remove it and ventilate the area
- use a garbage can with a tight-fitting lid, and empty it and change the liner daily or more often if necessary
- use an open container of baking soda or zeolite (a mineral that absorbs odours), placed out of the reach of children, to absorb odours.

**D7. We have tested for radon and, if needed, have taken remedial measures to reduce levels below the Government of Canada guideline.**

Radon is a naturally occurring, radioactive gas formed by the breakdown of uranium in rock, soil and groundwater. Radon can enter indoor air through cracks and other entry points in basements. If allowed to build up to high levels, it poses a significant lung cancer risk (particularly in combination with exposure to tobacco smoke).<sup>31</sup>

- Conduct a radon test. Simple test kits are available at some home improvement and hardware stores, or by ordering via postal mail or the Internet. The test should be performed in the lowest occupied level of the home or building.
- If the average annual radon level exceeds the Canadian guideline of 200 becquerels per cubic metre in an area that is normally occupied, take remedial measures. (A becquerel means one radioactive disintegration per second.)
- Remedial measures can include increasing mechanical ventilation; sealing all cracks and openings in the building foundation, including around pipes and drains; painting and sealing basement floors and walls; and installing ventilation in basement sub-flooring. The most common and effective remedial measure is active soil depressurisation, which should be performed by a qualified contractor.<sup>32</sup>

## Indoor Air Quality and Dust Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### General

CPCHE — *Child Health and the Environment: A Primer*

Information on indoor air quality and dust, pp. 65-69, 101 and 102

[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)

CPCHE — *What's on the Menu Today? Toys...gadgets...sticky fingers...toxic chemicals in dust?* (reproducible PDF poster/flyer)

[www.healthyenvironmentforkids.ca/resources/whats-menu-today-toys-gadgets-sticky-fingers-toxic-chemicals-dust](http://www.healthyenvironmentforkids.ca/resources/whats-menu-today-toys-gadgets-sticky-fingers-toxic-chemicals-dust)

CPCHE Online Collection on Dust — An Indoor Environmental Health Risk

[www.healthyenvironmentforkids.ca/collections/dust-indoor-environmental-health-risk](http://www.healthyenvironmentforkids.ca/collections/dust-indoor-environmental-health-risk)

CPCHE — *Playing It Safe: Carpets*

[www.healthyenvironmentforkids.ca/resources/carpets-les-tapis](http://www.healthyenvironmentforkids.ca/resources/carpets-les-tapis)

Canada Mortgage and Housing Corporation — *About Your House* fact sheet series

[www.cmhc-schl.gc.ca/en/co/co\\_001.cfm](http://www.cmhc-schl.gc.ca/en/co/co_001.cfm)

Health Canada — *Indoor Air Quality: Tools for Schools Action Kit for Canadian Schools*

[www.hc-sc.gc.ca/ewh-semt/pubs/air/tools\\_school-outils\\_ecoles/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/pubs/air/tools_school-outils_ecoles/index-eng.php)

For a hard copy, call 1-866-225-0709 or 613-954-7612 or e-mail [air@hc-sc.gc.ca](mailto:air@hc-sc.gc.ca)

Pollution Probe — *Healthy Schools — Healthy Children: Improving the Indoor Environment in Ontario Schools*

[www.pollutionprobe.org/Publications/Indoorair.htm](http://www.pollutionprobe.org/Publications/Indoorair.htm)

### D3. Mould

CPCHE — *Child Health and the Environment: A Primer*

Information on mould, p. 34

[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)

Toronto Public Health — Mould

[www.toronto.ca/health/mould.htm](http://www.toronto.ca/health/mould.htm)

Canada Mortgage and Housing Corporation — *Fighting Mold: The Homeowners' Guide*

[www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/momo/momo\\_005.cfm](http://www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/momo/momo_005.cfm)

Health Canada — *Dampness, Mould and Indoor Air*

[www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/air-eng.php](http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/air-eng.php)

## **D6. Fragrance-free Products and Policies**

Toronto District School Board — Scented Product Awareness Program  
[www.tdsb.on.ca/\\_site/ViewItem.asp?siteid=133&menuid=13782&pageid=12183](http://www.tdsb.on.ca/_site/ViewItem.asp?siteid=133&menuid=13782&pageid=12183)  
Contact the TDSB at 416-397-3000

New Brunswick Lung Association — *Healthy Schools Video: Towards a Scent Free Environment*  
[www.nb.lung.ca/schools/Downloadableresources/downloads.htm](http://www.nb.lung.ca/schools/Downloadableresources/downloads.htm)

Canadian Lung Association — Scent Free Building Sign  
[www.lung.ca/\\_resources/Scent\\_Free\\_Sans\\_Parfum\\_Sign.pdf](http://www.lung.ca/_resources/Scent_Free_Sans_Parfum_Sign.pdf)

Environmental Health Association of Nova Scotia — Guide to Less Toxic Products  
[www.lesstoxicguide.ca](http://www.lesstoxicguide.ca)

## **D7. Radon**

Health Canada — Radon  
[www.hc-sc.gc.ca/ewh-semt/radiation/radon/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/radiation/radon/index-eng.php)  
Public information line: 1-800-O-Canada (1-800-622-6232)

Canada Mortgage and Housing Corporation — *Radon: A Guide for Canadian Homeowners*  
[www.cmhc-schl.gc.ca/odpub/pdf/61945.pdf](http://www.cmhc-schl.gc.ca/odpub/pdf/61945.pdf)  
For a hard copy, call 1-800-668-2642



## E. Cleaning and Disinfection

Infection prevention is essential in the child care environment. Young children transmit infections in any group setting by doing what comes naturally to them — mouthing toys, sharing utensils, playing closely, holding hands, drooling and sometimes forgetting to wash their hands. Provincial/territorial regulations and public health standards and protocols specify which, when and how disinfectants and sanitizers are to be used in key areas, such as food preparation areas and diaper changing stations. Under the Ontario Food Premises Regulation, for example, chlorine bleach solutions, quaternary ammonium and iodine are the only substances permitted for use as sanitizers on food contact surfaces.

Increasingly, child care practitioners and the families they serve are expressing interest in alternative cleaning and disinfection products and methods that may lower children's exposures to chlorine and other potentially harmful chemicals. The following suggestions are intended to assist child care staff in reducing children's exposures to the cleaners and disinfectants/sanitizers used at their centres and to support efforts to find less toxic alternatives. Selecting less toxic products can be difficult because there is a lack of authoritative guidance on alternatives and there is no legal requirement for manufacturers to provide the ingredient lists on their labels.

Here, information on infection prevention measures, including disinfection and hand hygiene, is presented first, followed by suggestions related to general cleaning tasks.



### ***Infection prevention is extremely important.***

*The suggestions below do not replace guidance from public health units and may not be appropriate in the case of outbreaks.*

### **Disinfectants and Sanitizers:**

Solutions of chlorine bleach (also referred to as sodium hypochlorite or hypochlorite) and water are the most commonly used disinfectants in child care settings. Fumes containing a high concentration of chlorine can irritate and damage the lungs, thus aggravating asthma and respiratory symptoms. Chlorine is also a corrosive substance, capable of damaging skin, eyes and other membranes. Mixing bleach with other chemicals, such as ammonia, can be dangerous (see E1c below).

### **E1a. We use bleach for the purposes and in the concentrations recommended by our local public health authority.**

- Use bleach solutions when and where required and in the concentrations recommended by your public health unit. There is no benefit from using higher concentrations, and doing so may increase the chances of chemical exposure of children and staff.
- Make sure that solution bottles are clearly labelled and safely stored.
- Follow label instructions.

Typical bleach solutions for disinfection and sanitation tasks			
Solution	Bleach : water ratio	Metric bleach : water ratio	Household measures
Very mild bleach solution (for sanitizing dishes only)	1:400	10 mL of bleach to 4 L of warm water	2 tsp. of bleach to 1 gallon of warm water
Mild bleach solution (for low-level disinfection or sanitizing)	1:100	5 mL of bleach to 500 mL of water	1 tsp. of bleach to 2 cups of water
Strong bleach solution (for disinfecting large blood and body fluid spills)	1:10	50 mL of bleach to 500 mL of water	¼ cup of bleach to 2 cups of water

Table reproduced from Grenier, D. & D. Leduc (Eds.). 2008. *Well Beings: A Guide to Health in Child Care*. Ottawa, ON: Canadian Paediatric Society, p. 154. [www.caringforkids.cps.ca/wellbeings/index.htm](http://www.caringforkids.cps.ca/wellbeings/index.htm). Local guidance may differ — please consult your local public health department.

**E1b. We consider non-bleach and/or less-toxic alternatives for other cleaning tasks, in consultation with our local public health officials.**

- For many cleaning tasks, using a detergent is sufficient. When in doubt, consult with your public health inspector.
- When using alternative disinfectants/sanitizers, ensure they are classified as such by Health Canada and each has an approved drug identification number (DIN).

### Possible alternatives to bleach for low-level disinfection

There are commercial products on the market that may be considered alternatives to bleach solutions as sanitizers (low-level disinfectants) and in some cases as disinfectants. Any acceptable alternative to bleach must be approved for use in Canada and bear a drug identification number (DIN) or a pest control product (PCP) number on the label. Products **without** a DIN or PCP number have not been tested for their ability to kill germs.

The most common alternative low-level disinfectants are

- quaternary ammonium chloride (the most widely accepted alternative to bleach), which can be purchased in solution or for dilution with water
- products containing hydrogen peroxide
- thyme oil-based products
- products containing phenol, which require rinsing after use.

Note that vinegar is *not* suitable for either sanitizing or disinfecting.

Use all cleaning products according to the manufacturer's instructions on the label, especially concerning concentrations and contact time. Consult your local public health official to find out whether these products can be used in your child care centre and for which disinfection tasks. With the exception of quaternary ammonium chloride, none of these alternative products are considered suitable for use in food preparation areas.

- ☑ **E1c. We are aware that mixing bleach with other cleaning products can be dangerous and we ensure that this does not happen by posting warning signs and educating staff.**

Dangerous — even potentially lethal — chemical reactions can occur if chlorine is mixed with other substances, such as cleaners, that contain ammonia. Harmful reactions can also occur when bleach is mixed with acid-containing substances, such as some toilet bowl cleaners and even vinegar, which is a mild acid.

- Post a “do not mix” warning on cupboards where bleach and other cleaning products are stored, as well as on the containers themselves (including bottles containing bleach dilutions).
- Inform all staff (and parents/volunteers, if applicable) about the dangers of mixing bleach with other cleaners.
- If possible, store bleach separately from other products.
- Dispose of used bleach solutions in a utility sink rather than a toilet to avoid potential reactions with toilet bowl cleaners that may have been used,
- Be aware that chlorine is often an ingredient in other products, such as automatic dishwashing detergent and chlorinated scouring powders.
- If you suspect a hazardous mixture has occurred, immediately evacuate the area and open nearby windows or doors upon exiting (if this can be done safely) to allow fresh air to enter. If anyone is experiencing respiratory symptoms as a result of fumes or is unconscious, call 911.

- ☑ **E2. All cleaning products are inaccessible to children.**

- ☑ **E3. We avoid using disinfectants, sanitizers and other cleaning products in close proximity to children.**

- Clean and disinfect tables after each meal and snack, preferably while children are out of the room. Ensure that tables are dry before serving food.
- Disinfect sleeping mats and toys while children are out of the room. For example, mat and toy disinfection could be scheduled at the end of each day after children have left.
- Ensure good ventilation when using bleach solutions or other cleaners. Let a fan run for two or three minutes in front of an open window and use a timer to avoid compromising energy conservation.

- ☑ **E4. We avoid using products labelled with hazard symbols whenever possible, while recognizing that we may need to use such products to ensure infection control and disinfection per local public health guidelines.**

- Use products that have the fewest or are free of hazard symbols (pictured below).



Poison



Corrosive



Flammable



Explosive

- Always follow label instructions.

## Hand Hygiene:

### **E5a. We practice proper hand hygiene at all times.**

Proper hand washing with plain soap and water removes most germs and is an essential component of infection control. Hand washing may also reduce children's ingestion of contaminants via hand-to-mouth activity.

- Wash hands using warm running water and soap (liquid dispensers are preferred); rub hands vigorously for at least 15 to 30 seconds. Wash all surfaces (palms, backs, fingers, thumbs and wrists) and rinse well under running water.
- Wash babies' hands with a wet, single-use cloth and soap. Rinse, then dry with a single-use cloth (or cloth designated for that child).
- Help toddlers to wash their hands properly.
- If personal cloth towels are used, ensure that they are labelled with the person's name, are hung separately (not touching), are changed daily and are laundered, preferably daily, in hot soapy water.



### **E5b. We do not use antibacterial hand soap.**

Use of antibacterial soap contributes to the development of bacteria that are resistant to the chemicals and medications designed to kill them. In addition, many antibacterial hand soaps contain triclosan, a chemical suspected of disrupting the endocrine system.

The Canadian Medical Association (CMA) adopted a resolution at their 2009 General Council Meeting calling upon the federal government to ban the sale of household antibacterial products due to the risk of bacterial resistance, and to recognize that soap and alcohol-based solutions are as effective in preventing household infection.<sup>33</sup>

### **E5c. In the event that access to soap and water is not available, we take proper precautions when cleaning children's hands with alcohol-based hand sanitizer.**

For cleaning hands that are visibly dirty, alcohol-based hand sanitizers are not as effective as soap and water, but they still kill microorganisms, which makes them the next best alternative when a sink is not available.<sup>34</sup> However, they can be harmful if swallowed. To be effective, alcohol-based hand sanitizers should contain 60 to 90 per cent alcohol.<sup>35,36</sup> Ingesting as little as two to three teaspoons (10–15 mL) can cause a small child (20–30 lbs, or 10–15 kg) to become inebriated. It is important to supervise children closely while these products are being used. Absorption of the alcohol through the skin is not a concern.

If alcohol-based sanitizers are used, consider the following:

- A single “squirt” the size of a dime is all that is needed. For young children, dispense the product into your own hands, then rub the surfaces of the child’s hands between yours until fully dry, usually 10-15 seconds.
- Make sure that children do not lick the wet product off their hands. Scented hand sanitizers, particularly those with fruity scents that may entice a child to ingest the product, should be avoided.
- Make sure that children’s hands are dry (i.e., the product has evaporated) before giving children food or drink.
- For hands that are still visibly dirty, wash as soon as possible with soap and water.
- When not in use, hand sanitizers should be kept in a secure location.

### **Cleaning and Laundry Products:**

**E6. We use the least toxic carpet cleaners available.**

- When cleaning carpets, use environmentally friendly products (such as those bearing the EcoLogo) as they are generally less toxic.

**E7a. We use fragrance-free and biodegradable laundry soap.**

- See D6a, D6b and E7b for information on the potential health risks of fragranced products.

**E7b. We do not use dryer sheets and/or scented fabric softener.**

Dryer sheets and fabric softeners coat clothes in a thin film of fragrance chemicals. These chemicals may irritate the skin of people who come into contact with the clothes and may also affect their respiratory system and the respiratory system of those around them.

Labelling on the packaging of dryer sheets and fabric softeners generally includes an acknowledgement by the manufacturers that the regular use of these products over time can increase the flammability of some textiles. It often specifically warns against the use of these products on children’s sleepwear.

## Cleaning and Disinfection Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### General

Canadian Paediatric Society — *Well Beings: A Guide to Health in Child Care*

Information on bleach concentration requirements and cleaning methods for different tasks, pp. 154-158

[www.caringforkids.cps.ca/wellbeings/index.htm](http://www.caringforkids.cps.ca/wellbeings/index.htm)

EcoLogo Program

[www.terrachoice-certified.com/en](http://www.terrachoice-certified.com/en)

Environmental Health Association of Nova Scotia — Guide to Less Toxic Products

[www.lesstoxicguide.ca](http://www.lesstoxicguide.ca)

WebMD — Health eHome

[www.webmd.com/health-ehome-9/default.htm](http://www.webmd.com/health-ehome-9/default.htm)

US Department of Health and Human Services — Household Products Database

<http://householdproducts.nlm.nih.gov>

Toxics Use Reduction Institute — Ten Tips to Find Safer Cleaners

[www.turi.org/laboratory/cleaning\\_chemistry\\_basics/ten\\_tips\\_to\\_find\\_safer\\_cleaners](http://www.turi.org/laboratory/cleaning_chemistry_basics/ten_tips_to_find_safer_cleaners)

### E5a. Hand Hygiene

Health Canada — *It's Your Health: The Benefits of Hand Washing*

[www.hc-sc.gc.ca/hl-vs/alt\\_formats/pacrb-dgapcr/pdf/iyh-vsv/diseases-maladies/hands-mains-eng.pdf](http://www.hc-sc.gc.ca/hl-vs/alt_formats/pacrb-dgapcr/pdf/iyh-vsv/diseases-maladies/hands-mains-eng.pdf)

Ontario Ministry of Health and Long-Term Care — Hand Washing

[www.health.gov.on.ca/english/public/program/pubhealth/handwashing/handwashing\\_mn.html](http://www.health.gov.on.ca/english/public/program/pubhealth/handwashing/handwashing_mn.html)

Canadian Child Care Federation — *Handwashing: The Best Prevention for Colds and Flu*

[www.cccf-fcsge.ca/docs/cccf/RS\\_84\\_e.pdf](http://www.cccf-fcsge.ca/docs/cccf/RS_84_e.pdf)

Canadian Paediatric Society — *Well Beings: A Guide to Health in Child Care*

Information on hand washing, pp.146-147

[www.caringforkids.cps.ca/wellbeings/index.htm](http://www.caringforkids.cps.ca/wellbeings/index.htm)

Canadian Paediatric Society — *Handwashing for Parents and Kids*

[www.caringforkids.cps.ca/healthybodies/Handwashing.htm](http://www.caringforkids.cps.ca/healthybodies/Handwashing.htm)

### E5b. Antibacterial Hand Soaps

Canadian Paediatric Society — *Antimicrobial Products in the Home*

[www.caringforkids.cps.ca/healthybodies/HomeAntimicrobial.htm](http://www.caringforkids.cps.ca/healthybodies/HomeAntimicrobial.htm)

Canadian Medical Association — *Resolutions Adopted at General Council (142nd Annual Meeting, Saskatoon, SK, August 17-19, 2009)*

See Resolution #74

[www.cma.ca/index.cfm/ci\\_id/89632/la\\_id/1.htm](http://www.cma.ca/index.cfm/ci_id/89632/la_id/1.htm)

Food & Water Watch and Beyond Pesticides — *Triclosan: What the Research Shows*

[www.beyondpesticides.org/antibacterial/triclosan-research-3-09.pdf](http://www.beyondpesticides.org/antibacterial/triclosan-research-3-09.pdf)

## F. Activity, Learning and Play Areas

**FIa. We check regularly for product recalls on all toys, play equipment, furniture and accessories.**

- Check the Health Canada Product Safety website at [www.hc-sc.gc.ca/cps-spc/index-eng.php](http://www.hc-sc.gc.ca/cps-spc/index-eng.php) on a regular basis.
- Subscribe to the Health Canada News Digest, a monthly compilation of news headlines at [www.hc-sc.gc.ca/ahc-asc/media/sub-abonn/index-eng.php#digest](http://www.hc-sc.gc.ca/ahc-asc/media/sub-abonn/index-eng.php#digest)

**FIb. We avoid old, donated or inexpensive toys or other objects that may contain lead.**

Lead may be present in painted toys (both old and new). Lead or other metals may also be added to polyvinyl chloride (PVC) plastics to lend colour or fire resistance. Some PVC toys have been recalled in recent years due to high levels of lead.

Health Canada has established regulations controlling the use of lead in a wide range of children's products. Lead could also be present in a number of items not intended for children, but that may find their way into a dress-up area or be otherwise available to children such as

- keychain fobs
- pewter figurines (It is a misconception that pewter does not contain lead. Whether manufactured in Canada or imported, pewter can contain lead.)
- inexpensive jewellery, particularly items that are dull grey in colour, are heavy for their size and mark a piece of white paper when rubbed on it (In Canada, lead is regulated in jewellery intended for children but not in that intended for adults. Jewellery that meets the description above often contains lead.)
- brightly coloured earthenware ceramics from China, Mexico and Italy.

Lead testing kits are available in many hardware stores and pharmacies. Note that these kits only indicate the presence or absence of lead, not the amount. Health Canada has deemed home lead testing kits to be unreliable.<sup>37</sup>

- Avoid old, donated or inexpensive toys from unknown origins (i.e., the manufacturer or brand is not indicated on the toy).
- For disposal of products or materials containing lead, Health Canada advises contacting either your local municipality, or the local office of your provincial or territorial Ministry of the Environment.



☑ **FIG. We have replaced PVC plastic toys with safer options.**



Phthalates are chemicals added to polyvinyl chloride (known as PVC or vinyl) to make it soft and flexible. Phthalates have been detected in indoor air and dust, and in people’s blood via biomonitoring studies, with levels typically higher among children than adults. They have been linked to developmental effects and cancer, and are suspected of disrupting endocrine function. Exposure to phthalates has also been associated with asthma and respiratory problems.<sup>38</sup>

The use of phthalates in toys and other children’s products has been banned for several years in the European Union. In 2008–2009, the United States and Canada undertook similar regulatory action. Phthalates are still allowed for use in

many other flexible PVC products, including some plastic bags, garden hoses, inflatable toys, intravenous tubing and blood storage bags. Additional uses of phthalates include as solvents in pharmaceuticals and pesticide products, and in cosmetics.

Children can be exposed to phthalates when soft plastic toys or other objects containing these substances are mouthed, by breathing in particles suspended in the air, and through ingestion of dust (e.g., through hand-to-mouth activity) as the plastics break down through normal wear-and-tear.

- If buying plastic toys, look for PVC-free or phthalate-free toys from a reputable distributor. Avoid toys with “vinyl” or “PVC” on the label, or that bear the number 3 recycling symbol.
- If possible, choose unpainted or lead-free painted wood toys or cloth toys over plastic toys.
- When purchasing new sleeping mats, consider PVC-free mats. Ask your supplier to look for PVC-free alternatives.



**F1d. We have a toy safety policy that considers environmental health/toxic chemical hazards.**

- Develop a toy safety policy that sets out the parameters for toy donations and purchases. A toy policy might stipulate, for example, accepting or buying only those toys that are
  - not on a recall list
  - phthalate- or PVC-free
  - from a known origin (i.e., the name of the manufacturer is visible)
  - easily washed (including stuffed animals)
  - preferably made of safe and sustainable materials such as wood, fabric or other natural materials
  - free of chipping or peeling paint.
- Check the country of manufacture (even if marketed under a North American brand name). Some countries have insufficient or even non-existent health, environmental or occupational health standards. Try to choose made-in-Canada toys whenever possible. If unavailable, choose those made in the United States or countries in the European Union.

**F2a. We use only art and craft materials intended for use by children and avoid products that bear hazard symbols.**

Some art and craft materials may contain toxic ingredients. Generally speaking, those labelled or marketed as products “intended for use by children” are subject to greater regulatory scrutiny than products with the more generic designation of “non-toxic” (or with no label at all). Manufacturers’ use of the term “non-toxic” on products is not subject to specific regulations or third-party verification and thus may not be a reliable indicator of potential risk.

- Avoid products with labels that include hazard symbols and indicate specific health hazards (e.g., “harmful if swallowed”).
- When using art and craft materials, care should always be taken to prevent ingestion and to minimize exposure through inhalation and/or contact with skin, even when using products labelled as “non-toxic.”
- Solvents in glues and markers can release volatile organic compounds (VOCs). Some VOCs are known to be toxic. Choose water-based, unscented products whenever possible.
- Look for products with the “AP” and “CL” seals from the American Arts and Creative Materials Institute (ACMI) to indicate products that “conform with ASTM D-4236.” This label assures some level of safety. The ACMI seals indicate that radioactive elements, lead in children’s products, and substances banned by the US Federal Hazardous Substances Act are below levels considered to be unsafe. This is currently the only common safety label on art supplies.



**F2b. We use liquid, gel and paste art materials rather than powders and sprays.**

Powders and sprays can be easily inhaled and affect the lungs.

- If powders are mixed with water, they should be mixed in ventilated areas when children are not present.

**F2c. We use water-based art and craft materials rather than solvent-based products.**

Many solvents are highly volatile, can be inhaled and have toxic effects.

- Avoid rubber cement and solvent-based (e.g., permanent) markers.
- Avoid white boards, or if present, use water- or alcohol-based markers. Avoid dry-erase markers, which can contain solvents.

Additional suggestions for arts and crafts:

- Ventilate the area where the activity is taking place.
- Allow children to use art and craft materials only under adult supervision.
- Do not allow eating or drinking when children are doing arts and crafts.
- Ensure that staff and children wash their hands after the activity is finished.
- Clean up thoroughly after doing arts and crafts and damp mop floors rather than sweep to reduce dust.
- Store materials in original containers and out of reach of children.
- Avoid certain materials for crafts such as dryer lint (due to concentrations of chemicals and pollutants; see section D about indoor air and dust) and old electronics or computer parts (which can contain high levels of toxic metals).

## Activity, Learning and Play Areas Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### General

CPCHE — *Child Health and the Environment: A Primer*

Safe at Play, pp. 106-107

[www.healthysenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthysenvironmentforkids.ca/resources/child-health-and-environment-primer)

CPCHE Online Collection on Toy Safety

[www.healthysenvironmentforkids.ca/collections/toy-safety](http://www.healthysenvironmentforkids.ca/collections/toy-safety)

Healthy Child, Healthy World, *Healthy Toy Pocket Shopping Guide*

[http://healthychild.org/live-healthy/pocket\\_guides](http://healthychild.org/live-healthy/pocket_guides)

Health Canada — Consumer Product Safety Warnings and Advisories

[www.hc-sc.gc.ca/cps-spc/advisories-avis/aw-am/index-eng.php](http://www.hc-sc.gc.ca/cps-spc/advisories-avis/aw-am/index-eng.php)

Institute for Agriculture and Trade Policy — *Guide to Safer Children's Products*

[www.healthobservatory.org/library.cfm?refID=103921](http://www.healthobservatory.org/library.cfm?refID=103921)

Canadian Child Care Federation — *Safety in the Arts*

[www.cccf-fcsge.ca/docs/cccf/RS\\_21-e.pdf](http://www.cccf-fcsge.ca/docs/cccf/RS_21-e.pdf)

WebMD — Health eHome

[www.webmd.com/health-ehome-9/default.htm](http://www.webmd.com/health-ehome-9/default.htm)



## G. Kitchen and Food Preparation Areas

- G1a. We flush water pipes each morning (or less frequently as specified by local/provincial authorities) to reduce lead levels in drinking water.**
- G1b. For drinking and/or to prepare food or drinks, we use water from the cold water tap.**

Lead can be found in the plumbing and water supply lines of some homes and child care centres. Lead is rarely found in natural water sources but can enter tap water through corrosion of water supply pipes. Water pipes made entirely of lead are rare but may still be present in buildings built before 1950. Until the late 1980s, all copper plumbing was joined with lead solder. When water sits in contact with these joints for several hours, lead can dissolve in the water, especially if the water is “soft” or acidic. Some brass or chrome-plated taps and faucets can also contain lead, which can leach into drinking water, especially hot water. Although there may be only tiny quantities of lead in drinking water, it is important to take precautions. Even low levels of lead can affect the developing brain.

- Before drinking or cooking with water that has been sitting in pipes for six hours or longer, flush pipes by turning on the tap and letting the water run until it becomes cold (about one minute). Flushing a toilet also helps to flush the water pipes.
- Begin with cold water from the cold-water tap for drinking, cooking and making baby formula. Water from hot-water taps can contain higher levels of lead.
- If you use a water filter, check that it can remove lead and replace filters regularly as recommended by the manufacturer.
- If you use a filtration system, check that it is certified to meet the US National Sanitation Foundation (NSF) standard 53 for reducing lead.
- If the centre was built before the mid-1950s, ask municipal officials if water supply pipes are made of lead; if they are, ask about plans to remove lead water supply pipes.
- If feasible, replace lead-containing plumbing, including service lines and fittings.
- Have your water tested for lead. Call the Ministry of Environment, your local water supplier, utility or public health unit for more information.
- In the interest of conserving water, and if lead test results consistently show low levels, you may want to ask your public health inspector whether daily flushing is still required or recommended.

- G2. We do not heat food and drinks in, or put hot food or drinks into, plastic containers.**

While the potential health concerns associated with different types of plastic vary (see box on choosing safer plastics), as a general precaution it is wise to avoid using plastic when preparing or serving hot food or drinks. When heated, some plastics may release potentially toxic substances into food.



- Avoid using plastic containers or plastic wrap in the microwave, and do not put food or beverages into plastic containers while still hot. A designation of “microwave safe” simply indicates that a container will not melt or deform when heated in a microwave.
- In the microwave, cook or warm food in glass, porcelain or ceramic. Place a paper towel or a plate on top to contain splatter.
- Store food in glass, porcelain, ceramic or stainless steel. If storing food in plastic, cool it before placing in the container and do not heat it in its storage container.
- Do not microwave breast milk, formula or milk in plastic bottles. In general, the microwave should not be used to heat breast milk or formula because microwaves often heat unevenly and scalding can result. In addition, microwaving breast milk may affect its quality.<sup>39</sup>
- If you are using plastic baby bottles (polycarbonate), ensure that any heating of milk or preparation of formula is done in non-plastic containers. Allow the liquid to cool to lukewarm in non-plastic containers and then transfer it to bottles. Heat can break down plastic and cause chemicals such as bisphenol A (BPA) to leach into the contents.
- Avoid flexible plastic containers labelled with a number 3 inside the triangular recycling symbol. This symbol refers to PVC plastic that is typically softened with phthalates. Although food containers are rarely made out of PVC plastic (which contains phthalates), they do exist, often as inexpensive novelty items.
- Stop using plastic containers that show signs of wear and tear (e.g., that are scratched or cloudy).

The federal government intends to ban the import, sale and advertising of baby bottles containing BPA with a regulation anticipated in 2010. However, most BPA-containing baby bottles have already been removed from store shelves.

Other clear, hard plastic containers are often made of polycarbonate, which contains BPA. The epoxy linings of most food and beverage cans also contain BPA. Like phthalates, BPA is suspected of contributing to various harmful health effects, including disruption of normal endocrine function. Human and animal data show associations between in utero exposure to BPA and impacts on the male reproductive system.<sup>40</sup>

## Choosing safer plastics

When purchasing any plastic product, opt for plastics bearing recycling numbers 1 (PETE or PET: polyethylene terephthalate), 2 (HDPE: high-density polyethylene), 4 (LDPE: low-density polyethylene) and 5 (PP: polypropylene). Reduce or avoid the use of products with recycling numbers 3 (PVC) and 6 (polystyrene, used to make Styrofoam and other disposable food service items), and most items labelled as number 7. The recycling number 7 is a catch-all category used for polycarbonate, which contains BPA (usually indicated by the letters PC under the recycling symbol), but also for alternative plastics, including generally safer bio-based plastics.<sup>41</sup> Plastics other than polycarbonate that bear the number 7 may have the word “other” underneath the recycling symbol. Many bio-based plastic manufacturers currently don’t use the recycling symbol, but rather identify their products by words such as biodegradable or compostable. If in doubt, ask the manufacturer.

☑ **G3. We serve low-mercury fish.**

Fish, including canned tuna, is an excellent source of protein and contains beneficial omega-3 fatty acids. However, all fish are contaminated with mercury to varying degrees. Mercury is toxic to the developing brain. Generally, larger predatory and long-lived fish (e.g., shark, swordfish and tuna) have higher levels of mercury than smaller and short-lived fish. In terms of tuna, not all tuna is the same. Mercury levels are lower in canned light tuna than in canned white or “albacore” tuna and fresh or frozen tuna.

- Choose low-mercury fish (see box).
- Check provincial governments (generally through the Ministry of Environment) and local public health units for guidance on fish consumption for locally caught fish.



☑ **G4. We serve fresh and frozen foods (rather than canned foods) whenever possible.**

- Most food cans have a plastic liner containing BPA (see G2).

☑ **G5. We avoid cooking at very high temperatures when using non-stick cookware coated with perfluorinated chemicals (PFCs).**

PFCs include some extremely persistent compounds that are known to cause developmental effects, as seen in multiple animal studies, and are associated with additional adverse effects.<sup>42</sup> Since 2006, manufacturers of non-stick cookware have been reducing and aiming to eliminate perfluorooctanoic acid (PFOA), one of the most common PFCs, in their products. Non-PFC non-stick cookware is available on the market.

- Avoid cooking food at very high temperatures (above 350 degrees Celsius, or high enough to cause oil to smoke) to reduce the risk of exposure.
- Ensure that the cooking area is well ventilated when using non-stick cookware. Open a window and/or use a range hood fan while cooking.
- When considering replacing PFC-coated cookware, choose options such as cast iron, stainless steel and ceramic-coated pans.

### Choosing low-mercury fish

- Pregnant women, breastfeeding women and children under 15 years of age should avoid high-mercury fish like swordfish, shark, marlin, orange roughy, escolar and fresh or frozen tuna.
- Choose low-mercury fish such as anchovy, capelin, char, hake, herring, Atlantic mackerel, mullet, pollock (Boston bluefish), salmon, smelt, rainbow trout and lake whitefish. Shellfish such as blue crab, shrimp, clam, mussel and oyster are also low-mercury choices.
- When buying canned tuna, opt for light tuna over white or albacore tuna.

Source: Toronto Public Health. See [www.toronto.ca/health/fishandmercury/index.htm](http://www.toronto.ca/health/fishandmercury/index.htm) for more details and a printable wallet-size guide.

Consumption advice may vary by jurisdiction. Consult your local authority.

**G6. We use the least toxic oven cleaners available.**

- Clean ovens frequently with soap and water to help reduce or eliminate the use of harsh chemicals.
- To remove baked on food, apply a paste of baking soda and water, leave it on overnight and scrub off the following day. This is an effective, non-toxic alternative to most commercial oven cleaners. Another option is to try a less toxic oven-cleaning product. These are increasingly available at environmental, health food and other stores.
- If using commercial oven cleaners, follow instructions, ventilate well, and keep children out of the space while cleaning.

**G7a. We run the dishwasher when children are not in the kitchen.**

Dishwasher detergents and sanitizers can contain many potentially toxic chemicals, such as chlorine, formaldehyde, triclosan (an antibacterial chemical) and fragrance ingredients. Depending on the type of dishwasher the centre uses, a chlorine-containing detergent or sanitizer may be required by provincial/territorial regulations. The steam from the dishwasher can volatilize chlorine and other chemicals contained in dishwasher detergents and sanitizers and lead to increased chemical exposure. When combined with organic matter, chlorine can form toxic compounds called trihalomethanes, a category of disinfection byproducts (DBPs).

- Ask your supplier for safer substitutes for detergents and sanitizers. Request products that are fragrance-free and don't contain triclosan.
- You can also ask for phosphate-free detergents. Phosphates are plant nutrients and their release to waterways can lead to algal bloom. In February 2008, Environment Canada announced it would restrict the amount of phosphates to 0.5 per cent by weight for laundry and dishwasher detergents and some general purpose cleaners by 2010.
- Run the dishwasher only when it is full to conserve water.
- When thinking of purchasing a new dishwasher, consider options that would eliminate the need for chlorine-containing products (such as a high temperature dishwasher for which a sanitizer is not required).

**G7b. There is good ventilation in the room when the dishwasher is running.**

- Having a window open or fan running during the dishwashing cycles will also reduce moisture, which can lead to the formation of mildew and mould.

**G7c. We avoid opening the dishwasher until the dishes are cool to the touch.**

**G8a. We employ strategies to reduce the likelihood of pest problems.**

Here are ways to eliminate the conditions pests need to thrive:

- Seal any cracks that can serve as pest entrances.
- Deal with moisture problems as soon as they appear.
- Keep counters clean.
- Store food in sealed containers.
- Repair leaky pipes and faucets (water attracts pests).
- Keep garbage in tightly covered containers.

☑ **G8b. If a pest problem occurs, we select the least toxic method of eradication/control.**



If the problem appears to be a serious infestation, consult your local public health unit for appropriate measures to deal with it.

- If possible, use traps rather than poisons in places that are inaccessible to children.
- Avoid powders and sprays. These are dispersed into air and can be easily inhaled, resulting in potentially toxic effects. Choose pastes and gels instead.
- Use spot treatments rather than area-wide applications. If area-wide applications are deemed necessary, be sure to protect toys and food areas with covers.
- Follow label instructions carefully.
- Notify staff and parents before pesticides are used, and ventilate well after application.
- Never apply pesticides in the presence of children or while food is being prepared or served.

Schools or other community facilities in which child care centres are sometimes located may have implemented pest control programs based on integrated pest management (IPM) principles. Pest control options are chosen in hierarchical order, beginning with prevention of pest habitat, application of barrier methods, response to problems according to careful assessment, and monitoring and matching the response to the degree of the problem.

- If the centre is located within a school or community facility, check if an IPM pest control program is in place.
- In the province of Quebec, the use of pesticides in indoor spaces where children spend time is regulated and only products containing particular ingredients are allowed. We are not aware of other provincial/territorial legislation currently in place that bans or limits the use of pesticides in indoor spaces where children spend time.

Remember that all pesticides are toxic. The most precautionary approach is to avoid using pesticides unless pests pose a threat to human health and the use of non-toxic alternatives has been unsuccessful.



## Kitchen and Food Preparation Areas Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### G1. Lead in Drinking Water

Toronto Public Health — *Lead in Drinking Water*

[www.toronto.ca/health/lead/pdf/factsheet\\_lead\\_drinkingwater\\_0109.pdf](http://www.toronto.ca/health/lead/pdf/factsheet_lead_drinkingwater_0109.pdf)

Ministry of Environment — Letter to all schools, private schools and day nurseries on the requirements of Ontario Regulation 243/07

[www.ontario.ca/drinkingwater/158287.pdf](http://www.ontario.ca/drinkingwater/158287.pdf)

Ministry of Environment — *Summary of Amendments to O. Reg. 243/07, Made under the Safe Drinking Water Act, 2002: Lead and Drinking Water for Schools, Private Schools and Day Nurseries*

[www.ontario.ca/drinkingwater/278820.pdf](http://www.ontario.ca/drinkingwater/278820.pdf)

Canada Mortgage and Housing Corporation — Lead in Older Homes

[www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu\\_007.cfm](http://www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu_007.cfm)

Health Canada — *It's Your Health: Effects of Lead on Human Health*

[www.hc-sc.gc.ca/hl-vs/alt\\_formats/pacrb-dgapcr/pdf/iyh-vsv/environ/lead-plomb-eng.pdf](http://www.hc-sc.gc.ca/hl-vs/alt_formats/pacrb-dgapcr/pdf/iyh-vsv/environ/lead-plomb-eng.pdf)

### G2. Plastic Food Containers

CPCHE Online Collection on Phthalates

[www.healthyenvironmentforkids.ca/collections/phthalates](http://www.healthyenvironmentforkids.ca/collections/phthalates)

CPCHE Online Collection on Bisphenol A

[www.healthyenvironmentforkids.ca/collections/bisphenol](http://www.healthyenvironmentforkids.ca/collections/bisphenol)

Institute for Agriculture and Trade Policy — *Guide to Safer Children's Products*

[www.healthobservatory.org/library.cfm?refID=103921](http://www.healthobservatory.org/library.cfm?refID=103921)

Institute for Agriculture and Trade Policy — *Smart Plastics Guide: Healthier Food Uses of Plastics*

[www.healthobservatory.org/library.cfm?refid=102202](http://www.healthobservatory.org/library.cfm?refid=102202)

WebMD — Health eHome

[www.webmd.com/health-ehome-9/default.htm](http://www.webmd.com/health-ehome-9/default.htm)

Toronto Public Health — *Improving Children's Environmental Health in the Child Care Setting*

[www.toronto.ca/health](http://www.toronto.ca/health)

### G3. Mercury in Fish

CPCHE Online Collection on Metals: Mercury

[www.healthyenvironmentforkids.ca/collections/metals-mercury](http://www.healthyenvironmentforkids.ca/collections/metals-mercury)

Toronto Public Health — Fish and Mercury

[www.toronto.ca/health/fishandmercury/index.htm](http://www.toronto.ca/health/fishandmercury/index.htm)

Ontario Ministry of the Environment — *Guide to Eating Ontario Sport Fish*

[www.ene.gov.on.ca/en/water/fishguide/index.php](http://www.ene.gov.on.ca/en/water/fishguide/index.php)

Check your provincial/territorial government's resources on sport fish for recommendations on locally caught fish.

#### **G4. Nutrition Issues**

Canadian Child Care Federation — *Children's Healthy Eating*  
[www.cccf-fcsge.ca/docs/cccf/RS\\_54-e.pdf](http://www.cccf-fcsge.ca/docs/cccf/RS_54-e.pdf)

Équiterre — Soup's On! Educational Kit  
[www.trousseals.com](http://www.trousseals.com)

#### **G5. Perfluorinated Chemicals (PFCs)**

US EPA — 2010/2015 PFOA Stewardship Program  
[www.epa.gov/oppt/pfoa/pubs/stewardship/index.html](http://www.epa.gov/oppt/pfoa/pubs/stewardship/index.html)

#### **G6. and G7. Oven Cleaners and Dishwasher Detergents**

See “Cleaning and Disinfection Resources” in Section E

#### **G8. Indoor Pesticides**

Quebec — The Pesticides Management Code  
[www.mddep.gouv.qc.ca/pesticides/permis-en/code-gestion-en/index.htm](http://www.mddep.gouv.qc.ca/pesticides/permis-en/code-gestion-en/index.htm)

## H. Renovations

### ☑ HI. We ensure that precautions are taken during renovations to avoid/reduce the potential for toxic exposures.

Removing floors, walls and fixtures can release dust, asbestos, mineral fibres, lead from old paint, pesticide residues and mould into the air. Rebuilding and installing new materials can also release potentially harmful substances, including volatile organic compounds (VOCs), dust and fungicides. The good news is that renovations are also an opportunity to create healthy indoor environments by choosing safe materials and products.

- Renovations should be scheduled at times when children are not present. If products containing solvents are used (e.g., glues, caulking, paints), children should not return to the area until the products are completely dry and no longer releasing odours, and the area has been well ventilated.
- Care should be taken at every stage of renovations, especially with dust control, to minimize exposure to toxic substances that may be present in the existing structure and/or in the materials being used.
- In buildings constructed before 1977 (the year lead in paint was initially regulated), special precautions should be taken in the demolition stage to control for lead-contaminated dust. Professional assistance may be required.
- In buildings constructed before 1980, asbestos may be present. Special precautions may be necessary to minimize exposure and professional assistance may be required. When replacing vinyl (PVC) flooring and carpets, choose flooring products made of natural materials, for example cork, wood, ceramic, or traditional or genuine linoleum — a material made of linseed oil (and/or tall oil) and resins (wood flour, powdered cork, or other natural materials).
- When selecting paint, choose low- or no-VOC paints.



## Renovations Resources

*Websites are listed here as information only. Their inclusion does not constitute an endorsement.*

### **General**

Canada Mortgage and Housing Corporation — Renovating a Home

[www.cmhc-schl.gc.ca/en/co/renoho](http://www.cmhc-schl.gc.ca/en/co/renoho)

CPCHE — *Child Health and the Environment: A Primer*

Renovation information, pp. 108-109

[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)

CPCHE — Safe Renovations fact sheets

[www.healthyenvironmentforkids.ca/collections/cpche-fact-sheets-feuillets-dinformation-pcsee](http://www.healthyenvironmentforkids.ca/collections/cpche-fact-sheets-feuillets-dinformation-pcsee)

CPCHE — Online Collection on Metals: Lead in Paint

[www.healthyenvironmentforkids.ca/collections/metals-lead-paint](http://www.healthyenvironmentforkids.ca/collections/metals-lead-paint)

## I. Surrounding Sources of Chemical Emissions

**II. We are aware of potential sources of chemical exposures in the vicinity of the centre (e.g., industrial facilities, dry cleaners, gas stations).**

- Check out available local information on emissions, such as through the National Pollutant Release Inventory (NPRI) or Toronto Public Health's ChemTRAC program.
- Talk to neighbouring businesses. Make them aware of the impact their releases can have on children in your care. For example, ask them not to idle their delivery trucks.
- Get involved in advocacy. Inform parents and organize information sessions.
- Get involved in local political decisions such as zoning.



## Surrounding Sources of Chemical Emissions Resources

*Websites are listed here as information only. Their inclusion does not constitute an endorsement.*

### **General**

Pollution Watch

[www.pollutionwatch.org](http://www.pollutionwatch.org)

Environment Canada — National Pollutant Release Inventory (NPRI)

[www.ec.gc.ca/inrp-npri/default.asp?lang=En](http://www.ec.gc.ca/inrp-npri/default.asp?lang=En)

Toronto Public Health — ChemTRAC

[www.toronto.ca/chemtrac](http://www.toronto.ca/chemtrac)

## J. Sustainability Issues

### J1a. We use energy-efficient light bulbs.

Energy saving measures not only help cut costs, they also decrease emissions from power plants (leading to better outdoor air quality) and help combat climate change.

- Use compact fluorescent light bulbs (CFLs) and other energy-efficient light bulbs. Be aware that CFLs contain minute quantities of mercury and should be handled appropriately. When these bulbs burn out, they should be recycled through CFL-recycling programs or disposed of appropriately with other hazardous wastes.
- Familiarize yourself with proper cleanup methods in the event that a CFL should break.<sup>43</sup> In the presence of a broken CFL, remove children and pets from the room, and ventilate well for at least 15 minutes before starting cleanup. Do not vacuum up the broken bulb, as this could disperse mercury into the air. Visit the Health Canada website (listed below) for step-by-step instructions.



### J1b. We use energy-efficient appliances.

- When replacing existing appliances, consider Energy Star-rated appliances and check for government rebates or subsidies available for energy-efficient choices.

### J1c. We take additional steps, where feasible, to conserve energy.

- Consider hiring a certified home energy advisor to conduct an energy assessment of the facility.
- Share with parents energy-saving tips and information on safe disposal of CFLs.

### J2. We take steps to foster/support the use of public or active transportation by our staff and/or the families we serve.

Taking public transit or engaging in active transportation, such as walking or cycling, not only create less pollution and carbon emissions, but can also improve fitness, reduce stress and increase social interaction in the community.

- Share information on public transit options.
- Consider providing a public transit stipend to employees.
- Provide bicycle racks for use by staff and parents.

**J3a. We buy locally grown and/or organic food when available and affordable.**

While not feasible in all communities, buying locally grown foods can reduce the carbon footprint associated with food transport and, in some cases, may be a lower-cost alternative than purchasing imported goods. On July 1, 2009, the Canadian government enacted the federal Organic Products Regulations. Under these regulations, organic foods must be certified according to the Canadian Organic Standards, though the application of the Canada Organic logo is voluntary. To be certified as organic in Canada, these products must be produced without synthetic pesticides or synthetic chemical fertilizers and must not be irradiated. The organic standards also provide for the health and welfare of livestock animals.

**J3b. We grow some of our own food (e.g., vegetables, herbs) for use at the centre.**

**J4. We conserve water.**

- Encourage children to develop good water conservation habits.
- Repair all leaks and leaky toilets.
- Consider water-efficient taps and appliances.
- If appropriate (and if they can be installed in a manner that won't create a drowning hazard or a mosquito breeding habitat), use rain barrels to collect water for lawn and garden use.

**J5a. We avoid waste by reducing, reusing and/or recycling whenever possible.**

Reducing wastes by identifying and addressing wasteful practices, reusing materials, recycling and composting can save money, protect valuable resources and serve as a model for children and parents.

**J5b. We compost — either through a municipal program, an outdoor bin or an indoor bin.**

**J5c. We dispose of electronics, pharmaceuticals and other hazardous materials responsibly.**

- Find out about local programs for take-back/recycling of electronic waste, such as old computers and televisions.
- Do not flush or discard expired pharmaceutical products; consult your local pharmacy or municipality for safe disposal options.
- Consult your municipality about hazardous waste drop-off/pick-up services for items such as paint, solvents and other hazardous materials.

**J5d. We have done a waste audit.**

**J6. We involve children in composting, recycling, gardening, conservation and/or other activities related to sustainability.**

## Sustainability Issues Resources

Websites are listed here as information only. Their inclusion does not constitute an endorsement.

### J1. Energy Efficiency

CPCHE — *Child Health and the Environment: A Primer*

Information on air pollution from energy production and fossil fuel combustion, including health effects and strategies for reduction, pp. 70-71 and 103

[www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer](http://www.healthyenvironmentforkids.ca/resources/child-health-and-environment-primer)

Clean Air Partnership — 20/20 The Way to Clean Air

[www.cleanairpartnership.org/2020](http://www.cleanairpartnership.org/2020)

Natural Resources Canada — Office of Environmental Efficiency

<http://oeo.nrcan.gc.ca/residential/energystar-portal.cfm>

Natural Resources Canada — Switch and Save: Questions and Answers on CFLs

<http://oeo.nrcan-rncan.gc.ca/residential/business/manufacturers/questions-answers.cfm?attr=8>

Health Canada — *The Safety of Compact Fluorescent Lamps*

[www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/cfl-afc-eng.php](http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/cfl-afc-eng.php)

Environment Canada — Mercury and the Environment

[www.ec.gc.ca/MERCURY/EN/index.cfm](http://www.ec.gc.ca/MERCURY/EN/index.cfm)

Natural Resources Canada — ecoENERGY Retrofit: Homes — Provincial, territorial and municipal entities offering grants and incentives

[www.oeo.nrcan.gc.ca/residential/personal/retrofit-homes/provincial-municipal.cfm?attr=4](http://www.oeo.nrcan.gc.ca/residential/personal/retrofit-homes/provincial-municipal.cfm?attr=4)

### J2. Active Transportation

Active and Safe Routes to School

[www.saferoutestoschool.ca](http://www.saferoutestoschool.ca)

Clean Air Partnership — 20/20 The Way to Clean Air

[www.cleanairpartnership.org/2020](http://www.cleanairpartnership.org/2020)

### J3. Local and Organic Food Production

Canadian Child Care Federation — *Growing a “Green” Garden: Organic Gardening in a Child Care Setting*

[www.cccf-fcsge.ca/docs/cccf/RS\\_93-Eng.pdf](http://www.cccf-fcsge.ca/docs/cccf/RS_93-Eng.pdf)

Food Action Network and Thunder Bay District Health Unit — *Get Fresh! in Thunder Bay: Your Guide to Local Food 2009*

[www.tbdhu.com/NR/rdonlyres/7041EB70-49BC-4036-A89D-BFEDB5B1049D/0/EatLocalGuide\\_2009\\_PROOF4.pdf](http://www.tbdhu.com/NR/rdonlyres/7041EB70-49BC-4036-A89D-BFEDB5B1049D/0/EatLocalGuide_2009_PROOF4.pdf)

Canadian General Standards Board (CGSB) — Standards for Organic Agriculture

[www.tpsgc-pwgsc.gc.ca/cgsb/on\\_the\\_net/organic/index-e.html](http://www.tpsgc-pwgsc.gc.ca/cgsb/on_the_net/organic/index-e.html)



#### **J4. Water Conservation**

Ministry of Environment and Energy — *10 Ways to Be More Water Wise*  
[www.ene.gov.on.ca/cons/3557e.pdf](http://www.ene.gov.on.ca/cons/3557e.pdf)

Ministry of the Environment — *Water Conservation Tips for Kids*  
[www.ene.gov.on.ca/cons/3782-e.pdf](http://www.ene.gov.on.ca/cons/3782-e.pdf)

City of Toronto — Toronto's WaterSaver Programs  
[www.toronto.ca/watereff/index.htm](http://www.toronto.ca/watereff/index.htm)

#### **J5. Waste Audit**

Ontario EcoSchools — Waste Minimization Guide  
[www.ontarioecoschools.org/program\\_guides/waste.html](http://www.ontarioecoschools.org/program_guides/waste.html)



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