

# Adaptation of Public Health Recommendations for Extreme Heat in Accordance with Physical Distancing Recommendations

June 3, 2020

## Context

During periods of extreme heat, public health recommendations encourage the population to stay cool in air-conditioned places like shopping malls and libraries, or by frequenting a swimming pool. These recommendations must be adapted to the context of the COVID-19 pandemic and the physical distancing recommendations in effect for the 2020 summer period. The recommendations concerning heat will thus avoid contradicting those concerning COVID-19 and harming the health of individuals as a result.

These recommendations are based on the physical distancing instructions in effect and on the current scientific knowledge at the time of writing this notice to the Ministère de la Santé et des Services sociaux (MSSS), in May 2020. These recommendations will require review in the event of any change. It is also important to note that this document is not an exhaustive review of the scientific literature.

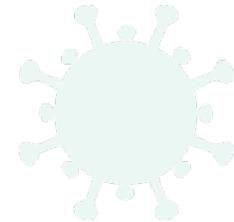
For issues related to air conditioning and ventilation in seniors' residential and long-term care centres (CHSLDs) during heat waves, readers are invited to refer to the interim recommendations "Mesures de prévention et contrôle des infections pour l'utilisation des climatiseurs mobiles et des ventilateurs sur pied en milieux de soins dans un contexte de COVID-19" [in French only.]:

<https://www.inspq.qc.ca/publications/3011-climatiseurs-mobiles-ventilateurs-milieux-soin-covid19>.

## Use of Air-Conditioned Public Areas

A quick review of the available scientific literature and the portals of public health organizations and governments was conducted. At the time of writing, only the Centers for Disease Control and Prevention (CDC) of the United States had officially issued (April 11, 2020) interim recommendations for reducing the risks of introducing and transmitting SARS-CoV-2 in air-conditioned public spaces. Their recommendations include opening air-conditioned public spaces during periods of extreme heat, with physical distancing, ventilation, and cleaning measures in place (CDC, 2020a). A summary of these recommendations is available in the box on page 5.

Although not officially announced, other measures adopted by municipal and public health authorities have been published in the media (e.g., Flavelle, 2020). These measures, which are intended to protect vulnerable and disadvantaged people, cover the use of buses as cooling centers, use of hotel rooms, payment of electricity bills, and distribution of air conditioners, among other topics.



On May 11, the Haut Conseil de la santé publique (HCSP), which is the High Counsel for Public Health in France, published its recommendations in the document “Coronavirus SARS-CoV-2 : gestion de l'épidémie en cas de survenue de vagues de chaleur” (HCSP, 2020). The organization recommends effective communication between their two prevention plans (the heat wave plan and COVID plan). It stresses that the COVID-19 pandemic must neither hinder the monitoring of individuals vulnerable to heat nor cause any delays in the care of symptomatic patients. The HCSP calls for using different cooling methods (for groups and individually), used concurrently with barrier measures to avoid any transmission of the virus. It asks for an increased number of professionals and volunteers to assist these people and prior planning to meet their needs for protective equipment and transportation.

Public Health England (PHE) states that its Heatwave Plan will remain the same for summer 2020, even though their tools for raising awareness have been modified to address the physical distancing measures required during the COVID-19 pandemic (PHE, 2020).

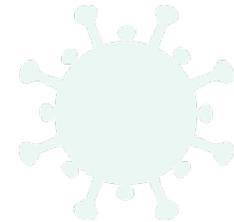
In the United States, based on the CDC's recommendations, the California Department of Public Health (CDPH) has also published similar recommendations to reduce the risk of coronavirus transmission in cooling centres (CDPH, 2020).

## The INSPQ's Recommendations

The Institut national de santé publique du Québec (INSPQ), believes that air-conditioned spaces continue to be essential community resources that can significantly reduce the population's exposure to high temperatures.

Considerations regarding the INSPQ's opinion:

- ▶ The INSPQ is currently finishing a review of the literature on measures to reduce heat-related risks (Bustinza & Demers-Bouffard, forthcoming). The review will be published in August 2020, but its content was consulted in the writing of these recommendations.
- ▶ Air conditioning is an appropriate method for reducing exposure to heat waves and their health impacts (Bustinza & Demers-Bouffard, 2020):
  - ▶ In buildings without air conditioning, the indoor temperature can reach levels 50% higher than the outdoor temperature (Lundgren-Kownacki et al., 2019).
  - ▶ A study carried out in 211 American cities shows that the risk of heat-related mortality is modulated by temperature and by use of air conditioning (Nordio et al., 2015).
  - ▶ Air-conditioned spaces in homes, offices and public buildings provide a cool environment that reduces individuals' exposure to high temperatures (World Health Organization, 2018).
  - ▶ In Québec in 2017, 56% of homes had some type of air conditioner, of which 31% had a central air conditioner (Statistics Canada, 2019). In the census metropolitan areas (CMAs), the percentage of homes with some type of air conditioner is 70% for Montreal, 75% for Gatineau, and 65% for Trois-Rivières. The percentages in the other CMAs are below 41%.
- ▶ Under certain conditions, respect for physical distancing instructions can be encouraged among visitors to public air-conditioned spaces, as recommended by the CDC (2020a).



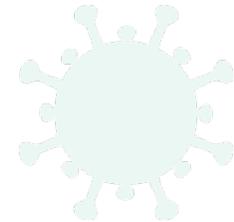
- ▶ Seniors are at higher risk of heat-related health effects:
  - ▶ Seniors are more sensitive to heat given the physiological challenges of temperature regulation and limited mobility associated with advanced age (Hattis et al., 2012).
  - ▶ The risk of heat-related mortality is significantly higher for people aged 65 and older compared with people between 15 and 64 years old (Benmarhnia et al., 2015).
  - ▶ Seniors are more likely to experience the effects of heat due to their lower physical capacity to adapt to heat, degree of social isolation, and higher dependency, as well as the high proportion living in poorly adapted dwellings (Bélanger et al., 2015).
  - ▶ Seniors do not generally perceive themselves as being at risk, with this belief consequently reducing their likelihood to consciously adopt preventative behaviours (Valois et al., 2018).
- ▶ Individuals with chronic health problems are at a higher risk for heat-related health effects:
  - ▶ A pre-existing chronic respiratory illness or cancer increases the risk of an individual being admitted to the emergency room by around 20% (Lavigne et al., 2014).
  - ▶ Quebecers 65 years of age and over with two or more chronic illnesses are nearly four times more at risk of reporting heat-related health problems than individuals without any chronic illness; for individuals under 65 with two or more chronic illnesses, the risk is six times higher (Bélanger et al., 2014).
  - ▶ It is estimated that around 70% of people aged 65 and over living in southern Québec have at least one chronic illness making them vulnerable to heat (Laverdière et al., 2015).
- ▶ Children are at a higher risk of heat-related health impacts:
  - ▶ In Québec, the risk of mortality increases significantly for children less than one year old, and temperatures over 29°C have been linked to a three times higher likelihood of sudden infant death syndrome (Auger et al., 2015); however, these events are rare.
- ▶ Integrated centres<sup>1</sup> are responsible for updating and implementing regional response plans for extreme heat events. This coordination may vary between regions, especially with regard to how integrated centres interact with actors in the field, depending on the specificities of each region. Integrated centres also manage how services are organized in their respective regions, which includes collaborating with local authorities on opening air-conditioned public spaces.

## Importance and Planning of Air-Conditioned Public Spaces

The INSPQ considers it important for local authorities, in partnership with integrated centres, to be able to open designated air-conditioned public spaces (or cooling centers), to meet the significant need of at-risk populations when heat waves are forecast (Bustinza & Demers-Bouffard, 2020). Using spaces that are private, closed, or less frequented due to COVID-19 management measures (e.g., movie theatres and other theatres, hotels), can also be considered as required. At a minimum, designated spaces must be open during the times of day when the indoor temperatures of dwellings, especially poorly insulated homes that are exposed to the sun or located within an urban heat island (UHI), are generally at their hottest (roughly between noon and 9 p.m.).

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<sup>1</sup> The term “integrated centre” refers to an Integrated Health and Social Services Centres (CISSS) or Integrated University Health and Social Services Centre (CIUSSS), as well as to the Centre régional de santé et de services sociaux de la Baie-James, the Nunavik Regional Board of Health and Social Services and the Cree Board of Health and Social Services of James Bay.



Air-conditioned spaces must respect the COVID-19-related instructions in effect. This includes those for individuals carrying COVID-19 or presenting compatible symptoms visiting public spaces, as well as for physical distancing, indoor environments (especially with regard to air conditioning and ventilation), and the cleaning of surfaces (Comité d'experts en santé environnementale, 2020a, 2020b). The opening of air-conditioned spaces would be limited to the duration of the extreme heat wave.

The INSPQ is aware that this recommendation goes against the recommendation in effect for the COVID-19 context encouraging seniors and individuals with chronic illnesses to limit their outings and social contact. However, it remains essential to offer individuals cool areas to reduce their body temperature, especially for people residing in central neighbourhoods with low canopy cover or high UHI values, and those with low socioeconomic status. The authors of a meta-analysis indicate that advanced age and UHIs are independent risk factors for mortality during heat waves; the addition of these factors increases risk (Hajat & Kosatsky, 2010).

## Cooling Off at a Public Swimming Pool

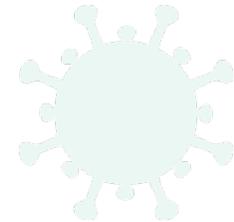
A quick review of the available scientific literature and the portals of public health organizations and governments was conducted. As at May 14, 2020, only the CDC had published recommendations to the public on the use of parks and recreational facilities, in which they specified physical distancing and hygiene standards to follow in and around public pools in the time of COVID-19 (CDC, 2020b, 2020c). An information sheet on the current knowledge regarding the risk of COVID-19 transmission in swimming areas and general recommendations for users and operators has been published and updated by the INSPQ (Comité d'experts en santé environnementale, 2020c).

### The INSPQ's Recommendations

The INSPQ does not see cooling off in a swimming pool during an extreme heat wave as a public health priority, given the other cooling methods that are available and accessible to all, and equally effective for cooling off (e.g., baths and showers). Furthermore, cooling off at a public pool could pose a health risk in the event that physical distancing is impossible (e.g., too many pool users) or it is difficult to follow the hygiene rules (Comité d'experts en santé environnementale, 2020c). Limiting the number of users and swimmers could however help maintain physical distancing and compliance with the hygiene rules.

Considerations regarding the INSPQ's opinion:

- ▶ The limited data available suggests that there is a low risk of COVID-19 transmission through contact with water, especially when the water has been treated. The main modes of transmission continue to be close proximity to an infected person and contact with surfaces contaminated by an infected person (e.g., door handles) (Comité d'experts en santé environnementale, 2020c).



However:

- ▶ It is assumed that it will be difficult to guarantee compliance with the physical distancing instructions by public pool users, especially in swimming contexts. That being said, complying with the rules poses a challenge in all environments.
- ▶ It is already difficult to ensure respect for personal hygiene standards in public pools in Québec (Huppé et al., 2019).
- ▶ It is assumed that individuals most likely to die from COVID-19 complications and those who are at highest risk during heat waves, such as seniors and people with chronic illnesses, are not regular pool users. During heat waves, these populations can cool off by taking a bath or shower at home, thus reducing their risk of being contaminated by COVID-19.

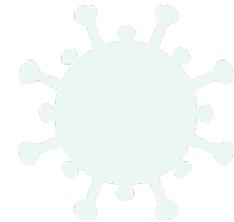
## Recommendation for Updating Regional Heat Wave Plans

The heat wave plans of the *directions de santé publique* (or integrated centres) should be reviewed to include necessary modifications for taking into account the measures in place in the current pandemic context, such as isolation and physical distancing, which may require that the appropriate regular public health recommendations for extreme weather events be modified.

### SUMMARY OF THE CDC'S RECOMMENDATIONS FOR OPENING AIR-CONDITIONED PUBLIC SPACES IN THE PANDEMIC CONTEXT DURING EXTREME HEAT

The following are the CDC's main recommendations:

- ▶ Use programs to finance the purchase of home air conditioners for at-risk, low-income individuals. This measure would help reduce the number of people who need to utilize a cooling centre.
- ▶ Open air-conditioned public spaces, with the following measures in place:
  - ▶ Develop a flexible plan for volunteers and employees (vacations, absences, sick leave, etc.).
  - ▶ Physically separate infected or symptomatic visitors from asymptomatic visitors, whether in different areas, separate rooms with separate bathrooms, etc. The criteria for separation are to be defined by the authorities (temperature, symptoms, etc.). If symptomatic visitors are allowed entry, ensure that emergency services (911, ambulance, etc.) are available in case of complications.
  - ▶ Within air-conditioned public spaces, promote maintaining the 2-metre distance between visitors, using furniture or by creating spaces for individual families.
  - ▶ Consider opening a greater number of air-conditioned public spaces if the spaces are small and cannot accommodate many people in a physical distancing context. It can also be an option to use air-conditioned buses, as well as private spaces such as theatres, movie theatres, etc.
  - ▶ Guarantee appropriate air quality in alternative centres, in particular through the use of a HVAC (heating, ventilation, and air conditioning) air exchange system, with a “clean” to “dirty” directional air flow.
  - ▶ Ensure that objects and surfaces are cleaned in accordance with the recommendations in effect, especially in highly frequented areas such as shared washrooms.

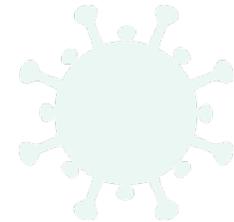


- ▶ Increase COVID-19-related notices in air-conditioned public areas with particular attention given to language and communication barriers (for people with visual impairment, a disability, etc.).
- ▶ If possible, ensure that supplies to protect against COVID-19 are made available in cooling centres (disposable tissues, trash cans, disinfectants, masks, etc.).

Adapted from: CDC (2020a).

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### **AUTHOR**

Ray Bustinza, Scientific Advisor  
Direction de la santé environnementale et de la toxicologie

### **IN COLLABORATION WITH**

Céline Campagna, Specialized Scientific Advisor  
Pierre Gosselin, Consulting Physician  
Mélanie Beaudoin, Scientific Advisor  
Tamari Langlais, Scientific Advisor  
Maxime Boivin, Specialized Scientific Advisor  
Direction de la santé environnementale et de la toxicologie

### **REVIEWERS**

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### **REVIEW AND LAYOUT**

Véronique Paquet, Administrative Officer  
Direction de la santé environnementale et de la toxicologie

### **TRANSLATION**

Emily Wilson

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