Preparing for Extreme Heat and Smoke:
A Guide for Pool Operators
Health Protection

Extreme heat and smoke events are becoming more common during the summer months. Swimming pools can offer an effective way for people to stay cool during these events.

This guide in intended to provide pool operators with information on how to prepare for an extreme heat or smoke event and ensure their pool is a safe, healthy environment for pool users.

Extreme Heat

Why is extreme heat a health concern?
Extreme heat events, commonly referred to as heat waves, involve high temperatures that may be combined with high humidity.[1] Exposure to extreme heat can result in heat-related illnesses such as heat exhaustion and heat stroke, as well as worsen pre-existing health conditions. Long term exposure to dangerously hot conditions can lead to permanent disability or death.

Who is most at risk?
People who should take extra care include: people over 65, people with multiple health conditions, people who use substances, people on certain medications, people who are pregnant and young children.

Signs of heat illness include:
- Dizziness/fainting
- Nausea/vomiting
- Rapid breathing and heartbeat
- Extreme thirst
- Decreased urination with unusually dark urine
- Confusion or changes in behavior
- High body temperature
- Lack of coordination

How can extreme heat affect your pool?
Direct sun and high temperatures can also pose pool maintenance challenges:
- Body oils and sunscreen from the increased bather load may affect water clarity and quality.
- Warm temperatures provide the ideal environment for bacteria and other harmful microbes.
- Sunlight and warm temperatures can also encourage the growth of algae. Algae can cause surfaces to become slippery, pool water to become cloudy and make disinfection less effective.
- UV rays from the sun can breakdown the sanitizer in the pool, making it less effective against harmful microbes that cause illness, such as:
  - *Staphylococcus aureus* that causes pink eye and skin infections.
  - *Pseudomonas aeruginosa* that causes hot tub rash.
  - *Giardia lamblia* that causes Beaver Fever.

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[1] https://www.canada.ca/en/health-canada/services/climate-change-health/extreme-heat.html

Tips to ensure your pool is a safe and healthy environment during an extreme heat event:

Maintain adequate sanitizer and stabilizer concentrations

- Free available chlorine levels should be **2 − 3 ppm.**
- Stabilizer levels should be **30 − 50 ppm.**
- Check chlorine and stabilizer concentrations more frequently during peak temperature and bather load times.

Monitor water levels

Heat, sunlight and increased bather load can lower the water level in your pool. **Keep water level above pool intakes** to prevent the pump from running dry. Use a pool cover or blanket when the pool is not in use to prevent evaporation, even at night.

Increase scheduled maintenance

- **Vacuum and scrub pool basin more frequently** to control algae and prevent stains from skin oils and sunscreen.
- **Clean or backwash filter more frequently** to remove build up of dirt and oil from increased bather load.
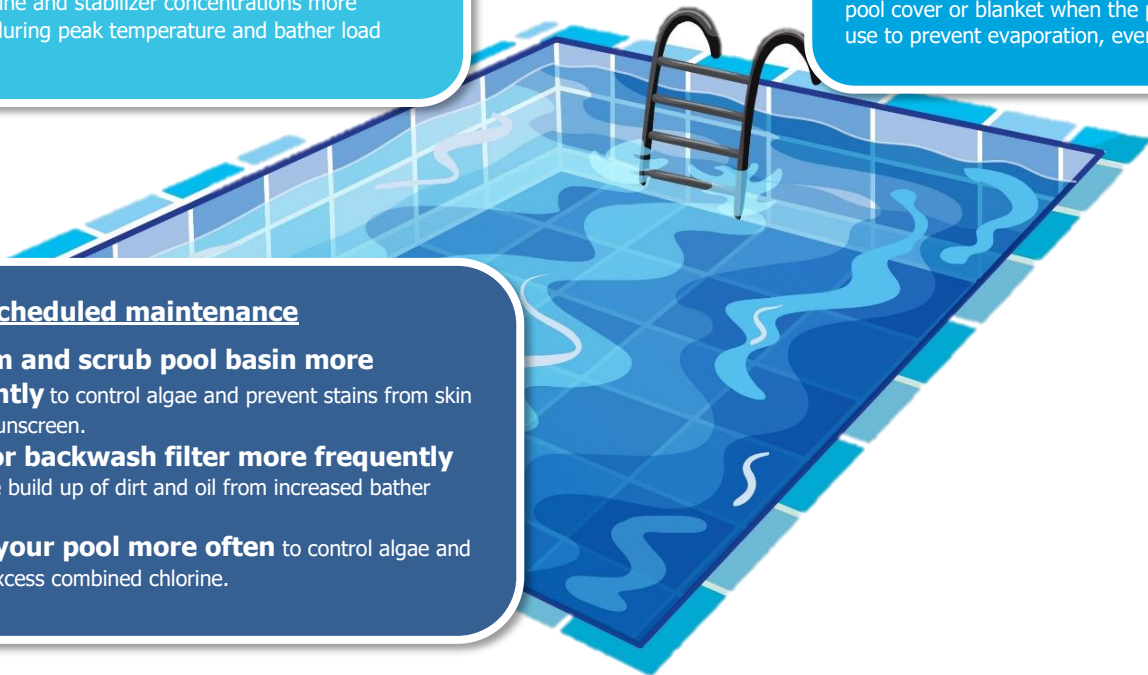- **Shock your pool more often** to control algae and remove excess combined chlorine.

Image provided by Graphics RF on Vecteezy

Help people stay cool and hydrated

- Follow weather notification apps, such as WeatherCAN. If notifications are issued, take extra care to educate and support people who may be susceptible to extreme heat.
- Post extreme heat infographics in multiple languages in change rooms and other easy to see places. Educate staff on signs of heat illness and what action to take, if needed.
- Seniors and those with chronic illness, including mental health concerns, are more susceptible to heat. Be sure to provide information specific to seniors with your other brochures.
- Provide access to a water fountain or bottled water.
- Provide shaded areas for people when they are out of the pool (e.g. canopies, umbrellas, cool indoor spaces).
- Evening temperatures may not come down significantly during extreme heat emergencies – consider extending your pool operating hours.
- In extreme heat emergencies, consider reducing costs, or other ways to make your pool more accessible to at-risk people. Providing cooling options to the public can be lifesaving.

Smoke Events and Air Quality

Why is smoke a health concern?
Wildfire smoke events are becoming more common and can affect people's health, especially outdoors.

Who is most at risk?
People who should take extra care include: people with chronic health conditions such as respiratory disease, people with lung infections, people who are pregnant, people over 65 years old and young children.

Common signs of smoke related illness include:
- Sore throat
- Irritated eyes
- Runny nose
- Mild cough
- Coughing up thick, sticky phlegm
- Headaches
- Wheezy breathing

More severe signs include:
- Shortness of breath
- Severe cough
- Dizziness
- Fast heartbeat
- Chest pain

The Air Quality Health Index (AQHI) provides ratings on air quality and health messages for communities in BC.

Tips to reduce exposure of pool users to wildfire smoke and minimize health impacts:

- Educate staff on the health effects of smoke. Post infographics for both staff and the public in easy to see places.
- Know what the current air quality is and if any advisories have been issued for your community by checking the Metro Vancouver AirMap.
- If it is smoky, encourage people to spend time indoors. Adjust your HVAC system to support air cleaning or temporarily run portable air cleaners or home-made box air fan filters inside to create a cleaner air space.

If your facility is outdoors and you have questions about operation during periods when the AQHI is in the "high" or "very high" health risk category, consult with your local Health Protection office.

For more information on extreme heat and air quality, including the resources linked above, please visit our Fraser Health webpages:

Sun and Heat Safety

Scan for Webpage

Air Quality

Scan for Webpage

If you have any questions, please contact your local Health Protection office.

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