

## Sun and Heat Safety

This report provides an overview of sun and heat safety in Windsor-Essex County (WEC) using data from emergency department (ED) visits, hospitalizations, and deaths. This data captures illnesses resulting from the direct effects of heat and sunlight, which include: any exposure to excessive natural heat or sunlight, heatstroke, sunstroke, heat cramp, heat syncope, and heat exhaustion. However, excessive exposure to heat and sunlight can contribute to other illnesses such as respiratory and cardiovascular events and skin cancer, which are not covered in this report. This report also uses data from the Rapid Risk Factor Surveillance System (RRFSS) to provide a summary of sun safety behaviours and community support for shade in outdoor public places.

## Key Findings

- There were 2 heat warnings and 5 extended heat warnings issued for WEC in 2016; these warnings covered a total of 21 days.
- 46.1% of WEC residents said they take extra precautions when a heat advisory/warning is in effect.
- WEC adults (20-44 year-olds) had the greatest rate of heat-related ED visits and were significantly less likely to avoid the sun or wear protective clothing.
- Kingsville and Leamington had the greatest rates of ED visits for illness caused by the direct effects of sun and heat; although, over half of all heat-related ED visits were among Windsor residents.
- Males account for 3 in 4 heat-related hospitalizations in WEC.
- During the ten-year period of 2002-2011, there was one death in WEC due to the direct effects of heat and/or sunlight.
- Among WEC adults: 94.0% said it is important to have shaded areas in outdoor public places; 30.3% had a sunburn in the past 12 months; and 69.7% do not use sunscreen often or always.

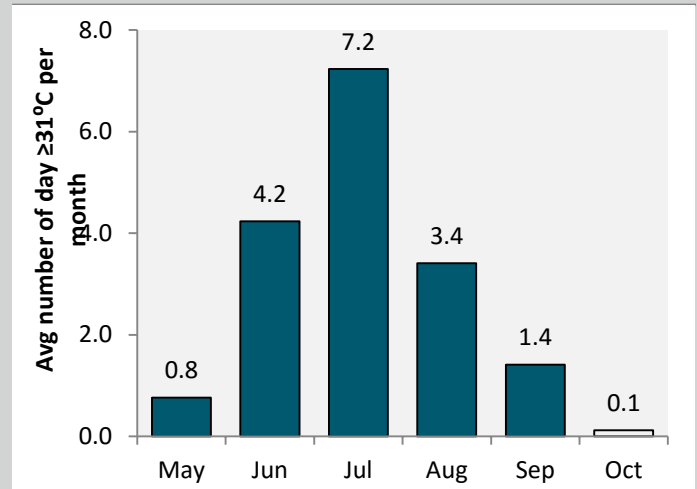
## Data Sources

The data presented in this report were sourced from the National Ambulatory Care Reporting System and the Discharge Abstract Database (Ontario Ministry of Health and Long-term Care IntelliHEALTH ONTARIO; extracted March 3, 2017). The International Classification of Disease (ICD 10-CA) codes used for ED visits (2006-2015), hospitalizations (2006-2015), and deaths (2002-2011) were T67 (effects of heat and light), X30 (exposure to excessive natural heat), and X32 (exposure to excessive sunlight). Data on sun safety behaviours and community support for shade in outdoor public places were sourced from the sun safety and shade modules of the Rapid Risk Factor Surveillance System (RRFSS) May-Aug 2016 cycle. Climate data were sourced from Environment and Climate Change Canada and heat warning data came from internal records of the Windsor-Essex County Health Unit (WECHU).

## Heat Warnings in Windsor-Essex

- The WECHU implemented a new Harmonized Heat Warning and Information System for dealing with heat events in WEC (visit [www.staycoolwindsor-essex.com](http://www.staycoolwindsor-essex.com) for more information).
- There were 2 heat warnings and 5 extended heat warnings issued for WEC in 2016; these warnings covered a total of 21 days (9 days were in July and 7 days were in August).
- On average, July has the most number of days with a maximum temperature of 31°C or greater (see **Figure 1**).
- The number of days with a maximum temperature of 31°C or greater is reported in **Figure 2** for WEC (2006-2016). The year-to-year variation in the number of days at or above 31°C in WEC correlates with the local rate of heat-related ED visits ( $P=0.001$ ).

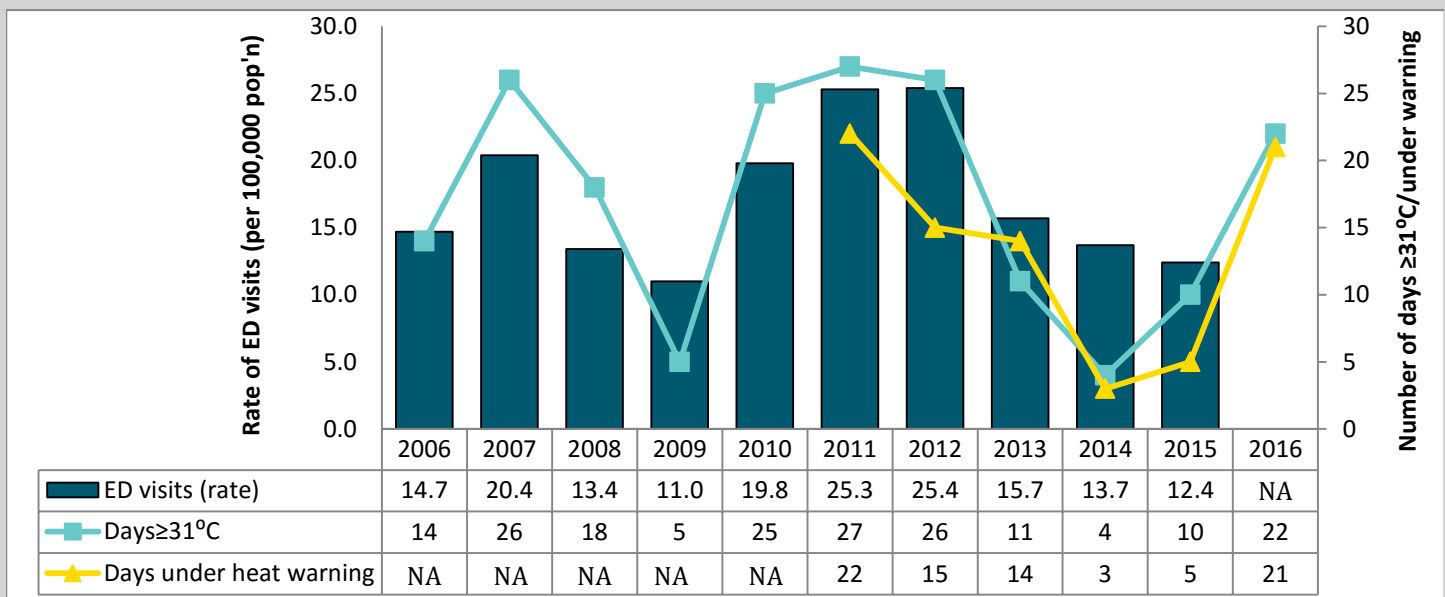
**Figure 1.** Average number of days per month with a maximum temperature of 31°C or greater as measured at the Windsor Airport (2000-2016).



**Note:** For months not shown, there were zero days ≥31°C.

**Source:** Historical Data. Environment and Climate Change Canada. Extracted 17 Mar 2017.

**Figure 2.** The number of days under heat warning and days with a maximum temperature of 31°C or greater (measured at the Windsor Airport) and local heat-related emergency department (ED) visits.



NA – data is currently unavailable for reporting.

**Source:** [1] Historical Data. Environment and Climate Change Canada. Extracted 17 Mar 2017; [2] Ambulatory All Visit Problem Dx and External Cause (CIHI), MOHLTC, IntelliHEALTH ONTARIO, extracted 3 Mar 2017.



## Emergency Department Visits due to Sun and Heat Illness

- On average, there are 69 local ED visits per year for illness caused by the direct effects of sun and heat exposure; this rate can vary substantially depending on the year (see **Table 1**).
- The local rate of ED visits for illness caused by the direct effects of sun and heat was greatest among 20-44 year-old males; this population accounted for nearly one-quarter (23.6%) of all ED visits (see **Table 2**).
- Kingsville and Leamington had the greatest rates of ED visits for illness caused by the direct effects of sun and heat compared to all other municipalities in WEC; LaSalle and Lakeshore had the lowest rates (see **Figure 3**).
- Over half (56.2%) of all ED visits for sun and heat illness were from residents of Windsor; the greatest density of ED visits were among people living in the downtown core (Ouellette Ave and Wyandotte St) and the Riverside neighbourhood (Lauzon Rd and Wyandotte St) (see **Figure 4**).
- In Essex County, over two-thirds of (68.3%) ED visits were among residents of Leamington, Kingsville, and Essex, which each have defined density clusters (see **Figure 5**).

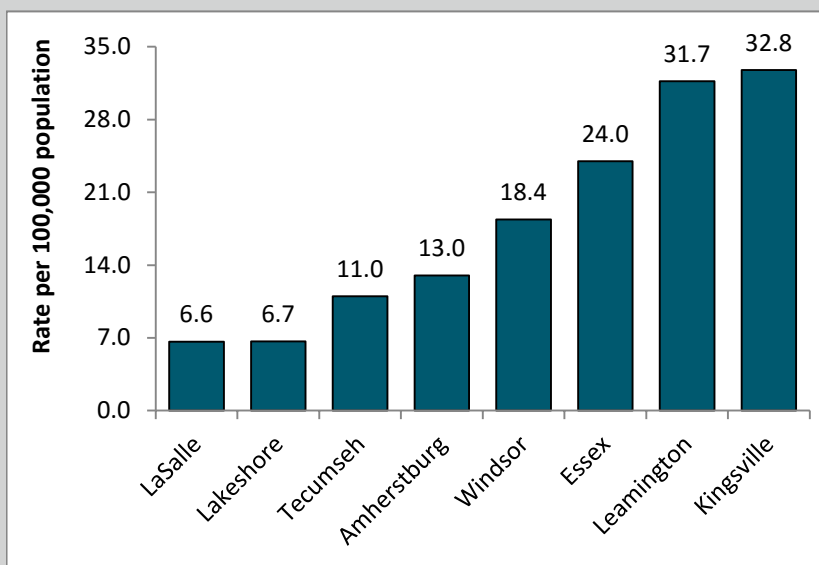
**Table 1.** Emergency department (ED) visits due to the effects of heat and sunlight in Windsor-Essex County (2006-2015).

Year	Number of ED visits	Rate* of ED visits
2006	60	14.7
2007	83	20.4
2008	54	13.4
2009	44	11.0
2010	79	19.8
2011	101	25.3
2012	102	25.4
2013	63	15.7
2014	55	13.7
2015	50	12.4

\*Rate per 100,000 population.

**Source:** Ambulatory All Visit Problem Dx and External Cause (CIHI), MOHLTC, IntelliHEALTH ON, extracted 3 Mar 2017.

**Figure 3.** Emergency department (ED) visits due to the effects of heat and sunlight in municipalities of Windsor-Essex County (2006-2015).



**Source:** Ambulatory All Visit Problem Dx and External Cause (CIHI), MOHLTC, IntelliHEALTH ONTARIO, extracted 3 Mar 2017.

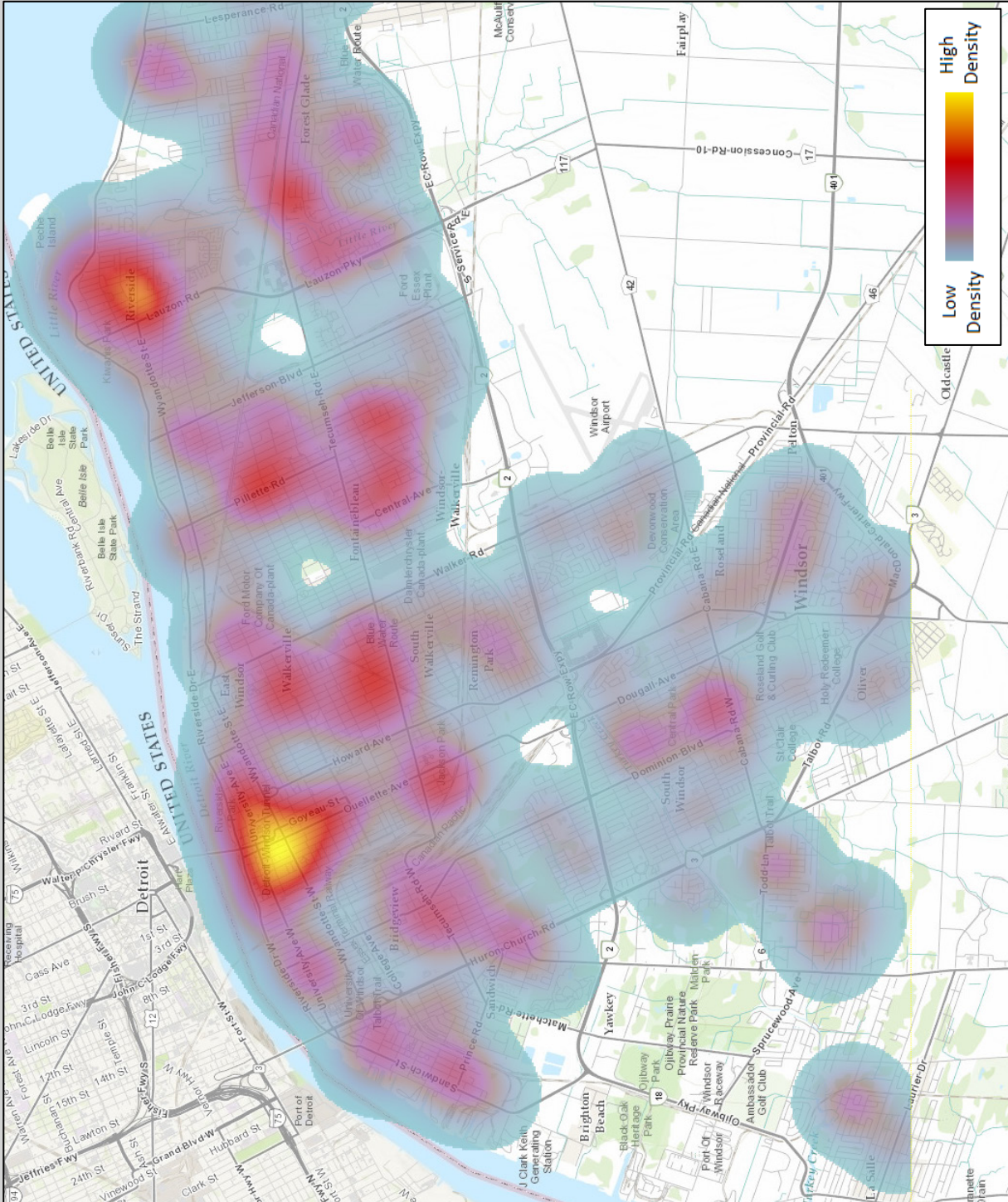
**Table 2.** Rate (per 100,000 population) of emergency department (ED) visits due to the effects of heat and sunlight in Windsor-Essex County, stratified by age and sex (2006-2015).

Age	Males	Females	Total
0-9	10.6	4.2	7.5
10-19	23.1	21.3	22.2
20-44	26.9	18.1	22.4
45-64	21.9	9.6	15.7
65+	22.9	10.3	15.9
<b>Total</b>	22.4	13.3	17.8

**Legend:** Lowest Highest

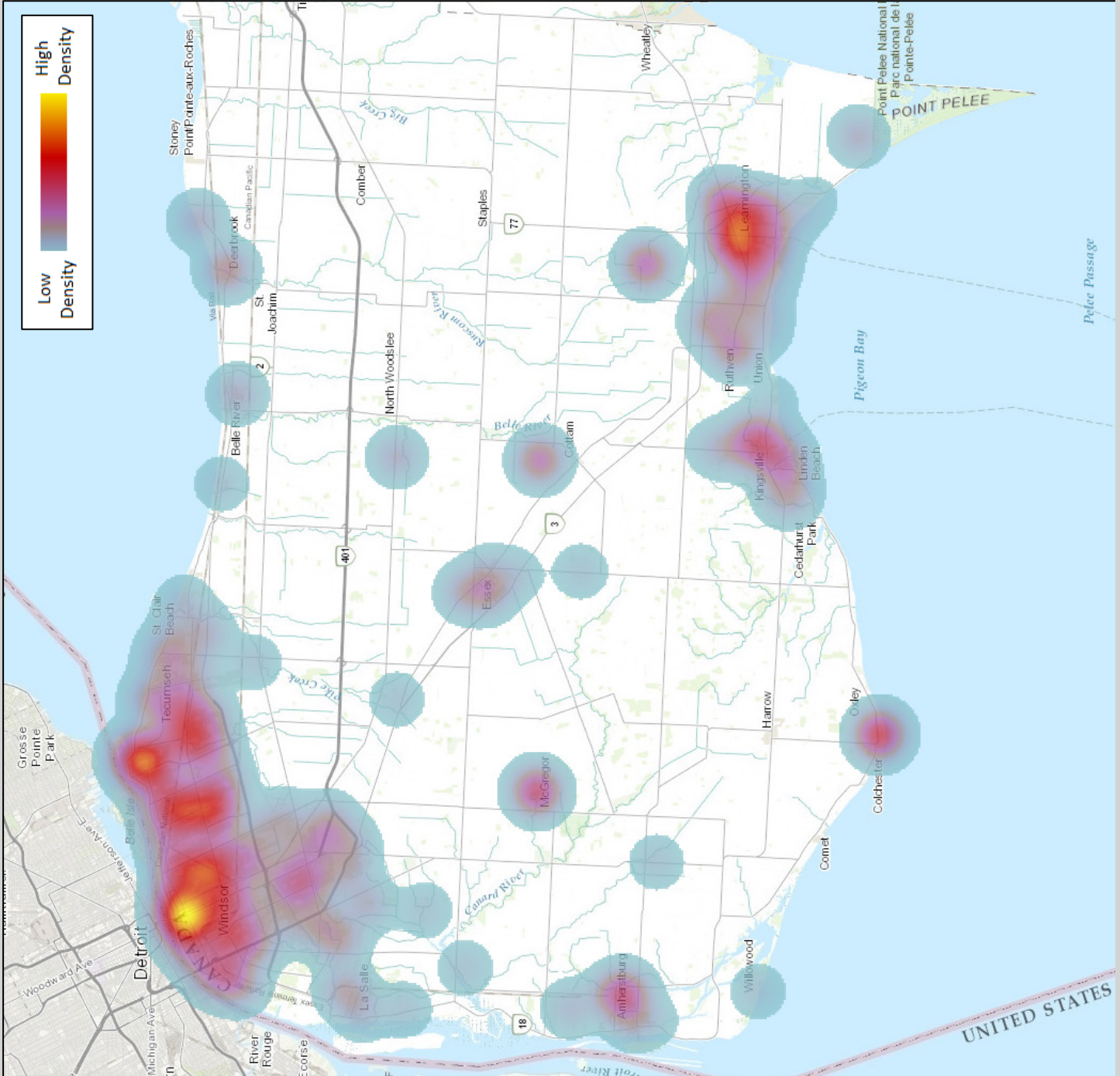
**Source:** Ambulatory All Visit Problem Dx and External Cause (CIHI), MOHLTC, IntelliHEALTH ONTARIO, extracted 3 Mar 2017.

**Figure 4.** Distribution and density of emergency department (ED) visits due to the effects of heat and sunlight based on the patient's postal code, City of Windsor (2006-2015).



**Source:** Ambulatory All Visit Problem Dx and External Cause (CIHI), MOHLTC, IntelliHEALTH ONTARIO, extracted 3 Mar 2017.

**Figure 5.** Distribution and density of emergency department (ED) visits due to the effects of heat and sunlight based on the patient's postal code, Essex County (2006-2015).



**Source:** Ambulatory All Visit Problem Dx and External Cause (CIHI), MOHLTC, IntelliHEALTH ONTARIO, extracted 3 Mar 2017.

## Hospitalizations and Deaths due to Sun and Heat Illness

- In WEC, there is an average of 5.3 hospitalizations per year for illness resulting from the direct effects of heat and/or sunlight.
- Between 2006 and 2015, males accounted for three-quarters (75.5%) of hospitalizations and seniors accounted for nearly half (47.2%) of hospitalizations. There were less than five hospitalizations among children and youth between 2006 and 2015.
- During the ten-year period of 2002-2011, there was one death in WEC due to the direct effects of heat and/or sunlight.

## Sun and Heat Protection

### Shade

- 94.0% of WEC adults said it is important to have areas in outdoor public places that are shaded from the sun (see **Table 3**).

### Sunburn

- 30.3% of WEC adults said they experienced a sunburn in the past 12 months (see **Table 3**).
- WEC adults aged 18-44 were significantly more likely to have received a sunburn in the past 12 months (52.7%) than 45-54 year-olds (21.9%<sup>E</sup>) and 65+ year-olds (11.2%<sup>E</sup>) (see **Figure 6**).

### Precautions

- 46.1% of WEC residents said they take extra precautions when a heat advisory/warning is in effect<sup>[1]</sup>.

### Avoidance

- 42.8% of WEC adults said they always or often avoid being in the sun between 11 am and 4 pm (see **Table 3**).
- WEC adults aged 18-44 were significantly less likely to avoid the sun (often or always) between 11 am and 4 pm (30.1%<sup>E</sup>) compared to those aged 65+ years (50.8%) (see **Figure 6**).

### Eye protection

- 71.8% of WEC adults said they always or often use sunglasses with UV protection when in the sun.

**Table 3.** Percent of WEC adults ( $\geq 18$  years-old) who believed shaded areas in public areas are important, received a sunburn, and almost/often took sun safety precautions (2016).

Indicator	Percent	95% CI	Responses
<b>Believe shade in outdoor public areas is important</b>	94.0%	91.0 - 96.1%	387 out of 413
<b>Received a sunburn in last 12 months</b>	30.3%	25.6 - 35.4%	120 out of 415
<b>Almost or always avoid the sun between 11 am to 4 pm</b>	42.8%	37.7 - 48.1%	176 out of 411
<b>Almost or always wear sunglasses with UV protection</b>	71.8%	66.7 - 76.3%	300 out of 413
<b>Almost or always wear protective clothing</b>	48.6%	43.4 - 53.9%	195 out of 412
<b>Almost or always use sunscreen</b>	39.2%	34.1 - 44.4%	157 out of 414

Source: Rapid Risk Factor Surveillance System (RRFSS), May-Aug 2016, Windsor-Essex County Health Unit

## Sun and Heat Protection (con't)

### Protective Clothing

- 48.6% of WEC adults said they always or often use protective clothing when in the sun (see Table 3).
- 18-44 year-olds were significantly less likely to wear protective clothing (always or often) when in the sun (31.0%<sup>E</sup>) compared to those 55-64 years-old (55.2%) and 65+ years-old (59.5%) (see Figure 6).
- Females were significantly less likely to always or often use protective clothing when in the sun (37.6%) compared to males (64.3%) (see Table 4).

### Sunscreen

- 69.7% of WEC adults said they do not use sunscreen often or always (see Table 3).
- Males were significantly less likely to use sunscreen (22.1%) than females (51.1%) (see Table 4).

### Sun Safety Knowledge

- 8.4% of WEC residents said they want more information about sun safety<sup>[1]</sup>.

<sup>[1]</sup>Windsor-Essex County Health Unit (2016). [Community Needs Assessment Report](#). Windsor, Ontario.

<sup>[E]</sup>Interpret estimate with caution due to high variability of the estimates.

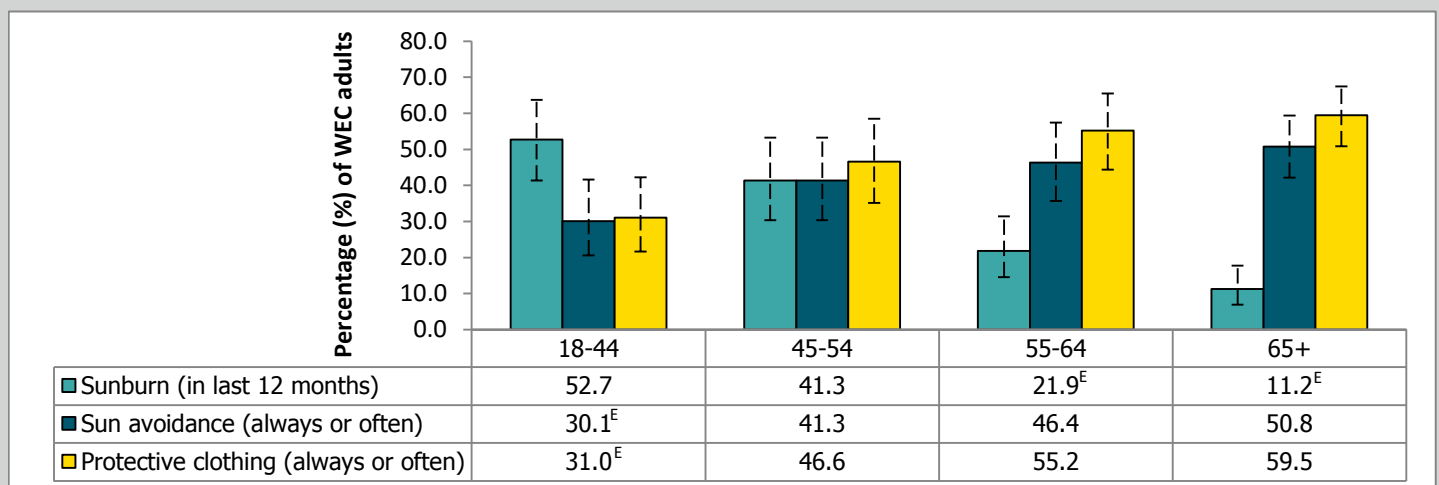
**Table 4.** Percent of WEC adults who always/often wore protective clothing and sunscreen, stratified by sex (2016).

Protective clothing (often or always)	Percent	95% CI	Responses
<b>Males</b>	64.3%	55.8-72.0%	151 of 412
<b>Females</b>	37.6%	31.3-44.2%	261 of 412
Sunscreen (often or always)	Percent	95% CI	Responses
<b>Males</b>	22.1%	15.8-29.9%	152 of 414
<b>Females</b>	51.1%	44.5-57.7%	262 of 414

CI - Confidence Interval

**Source:** Rapid Risk Factor Surveillance System (RRFSS), May-Aug 2016, Windsor-Essex County Health Unit.

**Figure 6.** Percentage (%) of WEC adults who received a sunburn in the past 12 months, and who always/often wore protective clothing and sunscreen, stratified by age (2016).



<sup>E</sup> - Interpret estimate with caution due to high variability of the estimates.

**Source:** Rapid Risk Factor Surveillance System (RRFSS), May-Aug 2016, Windsor-Essex County Health Unit