

# Outdoor Heat and Risk of Placental Abruption

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## 1 Background

Placental abruption is an obstetric emergency associated with major morbidity and mortality.

Environmental risk factors for placental abruption are poorly understood.

**Objective:** To assess the association of outdoor heat with risk of placental abruption.

## 2 Methods

**Study design** Case-crossover study

**Data** 17,172 placental abruptions in Quebec, Canada, May-October, 1989-2012

**Exposure** Maximum weekly temperature, defined as the highest temperature reached during the week before abruption

**Outcome** Placental abruption by timing of gestation (preterm: <37 weeks, term: ≥37 weeks)

**Analysis** Conditional logistic regression to estimate odds ratios and 95% confidence intervals between temperature and abruption, adjusted for relative humidity and public holidays

## 3 Results

**Table 1 Distribution of placental abruption according to temperature**

Maximum weekly temperature, °C	No. placental abruption (%)		
	Any	Preterm	Term
<15	792 (4.6)	247 (4.7)	545 (4.6)
15-19.9	1,815 (10.6)	560 (10.6)	1,255 (10.6)
20-24.9	3,940 (22.9)	1,279 (24.2)	2,661 (22.4)
25-29.9	7,328 (42.7)	2,213 (41.8)	5,115 (43.1)
≥30	3,297 (19.2)	995 (18.8)	2,302 (19.4)
Total	17,172	5,294	11,878

## 5 Conclusion

Elevated temperature was associated with an increased odds of placental abruption at term.

Pregnant women may be more sensitive to heat near the end of gestation, and should consider preventive measures such as air conditioning and hydration during hot weather.

## 4 Results

**Figure 1 Association between maximum weekly temperature and placental abruption**

