

Car Seat Safety Design

Eli Lorenzo

Rewel Maldonado

Jodi Sweatland

Ching Fang Chang

Gabrielle Edelmann

Mike Covitt

Matt Bivona

Donnell Robinson

Jason Nagin

Issues

Distractions

- Technology
- Personal

Sleep
deprived

Stress

- Work
- Life

Obligations

- Schedules
- Routine change

Forgetfulness

```
graph TD; D[Distractions] --> F((Forgetfulness)); SD[Sleep deprived] --> F; S[Stress] --> F; O[Obligations] --> F;
```

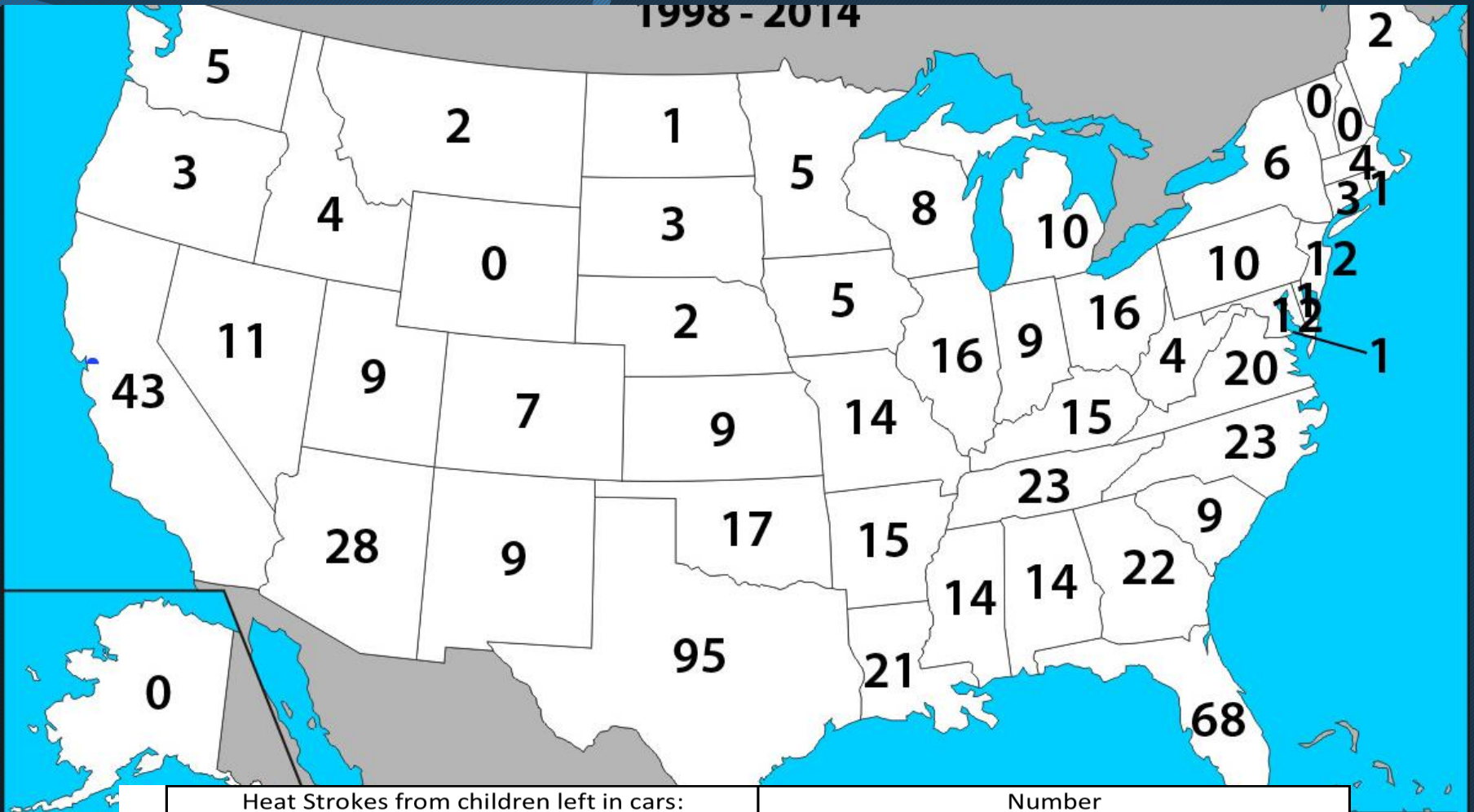
Forgotten Babies

Problematic Facts

- The children that have died from vehicular heatstroke in the United States (1998-2014) have ranged in age from **5 days to 14 years**.
- Majority of Children left in car were 1 year old or younger (53%) and jumps to 73% within 2 years included.
- Main statistics of children death heatstroke
 - 53% - child "forgotten" by caregiver (336 Children)
 - 29% - child playing in unattended vehicle (186)
 - 17% - child intentionally left in vehicle by adult (110)
 - 1% - circumstances unknown (4)
- Most heating up occurs in first 10-15 Mins
 - On average, temperature increases at rate of 3.4 F per 5 minutes
 - Temperatures range from 9 - 19 degrees in the first 10 mins
- Most common heat-caused health effect on children is Dehydration, symptoms, develop faintness, headaches, extreme fatigue, and shortness of breath

Heat Stroke Issue

1998 - 2014

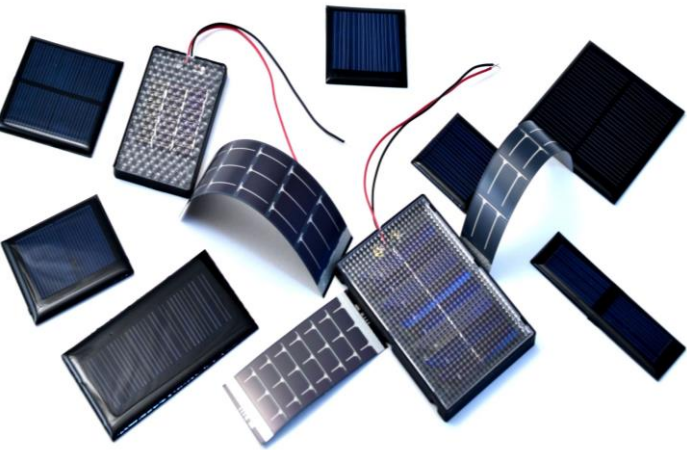


Heat Strokes from children left in cars:	Number
2014	30
2013	44
Average (1998-2014)	37
Total:	636

Product Pieces



Electrical Components



Baseline

“ Purpose

“ Wireless Awareness Trigger (distance based)

“ Pieces

“ Cuddler/seat cushion, car seat pad

“ Solar panels, Bluetooth, battery, Microcontroller, and charge controller, load sensor

“ Function

“ 1) Load sensor active

“ 2) Bluetooth range broken

“ 3) App notification

Baseline + Feature 1

“ Purpose

“ Car Function Control

“ Pieces

“ Temperature sensor, OBDlink MX version

“ Function

“ 1) Load sensor active

“ 2) Bluetooth range broken

“ 3) App notification

“ 4) Temperature danger level exceeds

“ Car alarm, air or heat on, car on

Baseline + Feature 2

(future ideas)

“ Purpose

“ Car Function Control

“ Visual aids (psychology of forgetting)

“ Emergency contact

“ Pieces

“ Temperature sensor, OBDlink MX version

“ Video feed

“ Wifi, GPS, Sim card (GSM) service

“ Function

“ 1) Load sensor active

“ 2) Bluetooth range broken

“ 3) App notification

“ 4) Temperature danger level exceeds

“ Car alarm, air or heat on, car on

Benefits

- Awareness
- Safety
- Washable
- Mobility
- Universal feature
- Convenience