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REVIEW ARTICLE

**FORGOTTEN BABY SYNDROME (FBS)-A CRIME OR A MISTAKE OR A LIFETIME REGRET?**

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ABSTRACT

Forgotten Baby Syndrome (FBS) is a term refers to unintentionally leaving a baby or young child in a locked car, often with heartbreaking results. Every year, at least a dozen children die in overheated cars and that incidence increases day by day, somewhere 15 to 25 times a year in the United States. Numerous studies have shown that our stressful, busy lifestyles are causing more forgetfulness. The main reasons behind the FBS is car-safety rules, in that experts recommendation that child seats be moved to the back of the car, so most parents now put their children in the backseat, with babies facing the rear, means that parents may not interact with their children during a car ride and that they may not even be able to see their children. Children left in a MV for even short time periods in moderate ambient temperatures (21<sup>o</sup>C) are at risk for hyperthermia. The greatest increase in temperature happens in the first ten minutes. Many studies have shown that there can be up to 55% rise in temperature in the first five minutes and up to 90% rise in temperature in the 15 minutes even if the car windows are partially open. Excessive heat (usually temperature > 42.2° C [108 ° F]) denatures proteins, destabilizes phospholipids and lipoproteins, and liquefies membrane lipids, leading to cardiovascular collapse, multi-organ failure due to cellular death, and, ultimately, death.

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INTRODUCTION

Forgotten Baby Syndrome (FBS) is a term most parents have hopefully never heard. It refers to accidentally leaving a baby or young child in a locked car, often with tragic results. We are leading a very busy lifestyle so anyone may turn absent-minded and many things can slip our mind but forgetting about one's own child could be too much. Every year, at least a dozen children die in overheated cars in the U.S. because parents forgot they were there. It is an inexplicable, inexcusable mistake, but is it a crime? It is a question for us to decide. What kind of person forgets a baby? Sometime an otherwise attentive parent one day gets busy, or distracted, or confused by a change in his or her daily routine, and just ... forgets a child is in the car. Two decades ago, this was relatively rare. But in the early 1990s, car-safety experts declared that passenger-side front airbags could kill children, and they recommended that child seats be moved to the back of the car; then, for even more safety for the very young, that the baby seats be pivoted to face the rear. That increases the incidence of FBS somewhere 15 to 25 times a year in the United States. Numerous studies have shown that our stressful, busy lifestyles are causing more forgetfulness.

It's just that no one ever thinks this absent-mindedness could extend to their own baby. "Death by hyperthermia" is the official designation for this unforgivable mistake. When it happens to young children, the facts are often the same as hyperthermia. On every 23 May we observe National Heat Awareness Day. The rate of child vehicular heatstroke tragedies begins to rise exponentially around this date, peaking in August.

Recently I have gone through a newspaper there was a tragic news related with FBS- a special new era edition was observed in my city on.....where a child of this techno-friendly era who knows how to operate the remotes of all electronic devices including the car remote. The father returned from temple in the morning to his shop ( upstairs was the residence) and kept the key casually, the child came and with the help of remote entered the car but when it comes to open it he could not and inside the closed car due to Heat and suffocation lost his consciousness which ultimately led to death. In the meanwhile the parents when didn't see the child searched everywhere except for the car, for which they have not even dreamed about, took the life. One recent study found that 11% of all parents have forgotten their children, and 1 in 4 parents of children under age 3 have accidentally left their child in a car.

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*Whenever you don't see your child, make sure to search at suffocating sites including your vehicle first because the time you spent searching here and there will be fatal*

### Reasons Behind the FBS

1. Because of car-safety experts recommendation that child seats be moved to the back of the car, so most parents now put their children in the backseat, with babies facing the rear, to minimize their risks of injury in a car accident. This positive parenting practice means that parents may not interact with their children during a car ride and that they may not even be able to see their children. The tendency of most parents to be overwhelmed and distracted increases the chances that a child in the backseat will slip the parent's mind.
2. A child overheats 3-5 times faster than an adult.
3. The inside temperature of a car increases more than 40 degrees in less than an hour.
4. Most common factor associated with parents who forgot their kids in the backseat: change in routine
5. Most kids who die in a hot car are less than 2 years of age.

### How to Avoid Forgetting Your Child

1. Put something that is an integral part of your daily routine—such as one shoe, your laptop, purse, or office keys—in the backseat. As you get out of the car, you'll notice you're missing something, even if you're not thinking about your child. And once you notice the missing item, you'll discover the item and your child in the backseat.
2. There's an easy way to remember that you have your child in the car: add a carabineers clip to your keys or bag, and attach a toy to it that's too big to ignore until you've dropped him off.

### Incidence and Risk

Heat stroke in the car is the second leading cause of non traffic fatalities among US children, Ninety percent of the children who die of heat stroke in cars are aged 3 years and younger. (Martin, 2012) Nearly, 11% of parents reported mistakenly leaving a vehicle parked and locked with the child inside; Fathers seem more likely to leave kids in cars than mothers. According to the survey, 23% of fathers versus 8% of mothers reported leaving kids alone in parked cars (Martin, 2012). What parents' might not understand and what pediatricians can help to explain is that little bodies heat up fast—at 3 to 5 times the rate of adults' bodies—putting children at high risk for heat stroke. (Payne, 2014) A child whose core body temperature reaches 107°F experiences cell death and organ shutdown, leading to death. (Payne, 2014) Booth and colleagues studied 231 US children who died of hyperthermia in parked vehicles from 1999 to 2007. (Null, 2007) They found that children were unattended in more than 80% of the cases: 25% were playing at the time of death and 60% were male. The victims' body core temperature had reached an average 107.2°F after being left inside cars and other vehicles for an average of 4.6 hours.

### Path physiology

Motor vehicle-related child hyperthermia fatalities (MVRCHF) have raised slightly in the past decade. Children left in a MV for even short time periods in moderate ambient temperatures (21°C) are at risk for hyperthermia. On a sunny day, the temperature inside the parked car rises rapidly and quickly. As sunlight hits the windshield, it enters the car and heats up the interior. The dashboard and seats radiate more heat and the air inside gets warmer than the air outside. Heat moves from hotter bodies to colder ones and the bigger the difference, the faster the heat would move. The hotter the inside temperature, more heat would be transferred. The greatest increase in temperature happens in the first ten minutes. Studies have shown that there can be up to 55% rise in temperature in the first five minutes and up to 90% rise in temperature in the 15 minutes even if the car windows are partially open. If the windows are closed, the temperature inside increased rapidly. Cars with darker colours and harder surfaces become hot faster. Two factors make children more prone to hyperthermia than adults—children have a greater surface area to body mass ratio than adults and a child's thermoregulation is less efficient than an adults. Excessive heat (usually temperature > 42.2° C [108 °F]) denatures proteins, destabilizes phospholipids and lipoproteins, and liquefies membrane lipids, leading to cardiovascular collapse, multi-organ failure due to cellular death, and, ultimately, death.

### FBS and the law

Parents and caregivers often have more than the unimaginable guilt to deal with after these tragedies. The legal consequences for leaving children alone in vehicles vary from state to state. Some states consider it a felony if a child is harmed or dies as a result of being left in a car.

### Treatment

#### First aid for heatstroke

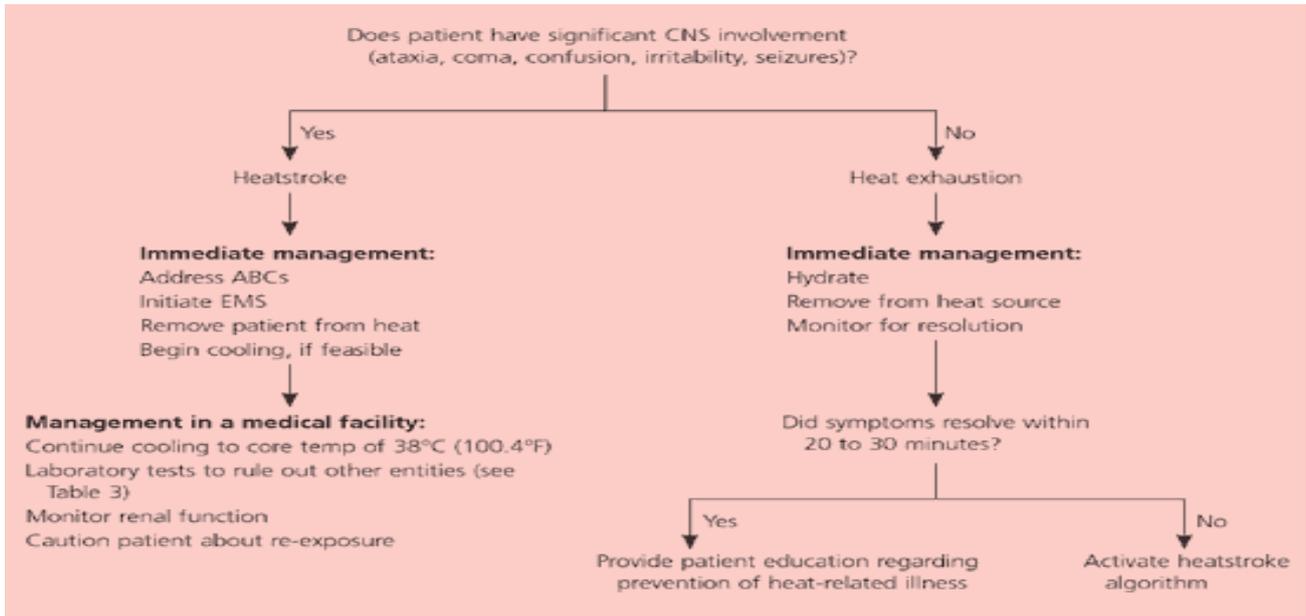
If you suspect that someone has a heatstroke, call 108 immediately or bring the person to a hospital. Any delay in seeking medical help can be fatal. While waiting for the paramedics to arrive, initiate first aid. Move the person to an air-conditioned environment - or at least a cool, shady area - and remove any unnecessary clothing. Fan air over the patient while wetting his or her skin with water from a sponge. Apply ice packs to the patient's armpits, groin, neck and back. Because these areas are rich with blood vessels close to the skin, cooling them may reduce body temperature. Immerse the patient in a shower or tub of cool water, or an ice bath (Bouchama et al., 2007).



**Fig.1. First aid for heatstroke**

**Algorithm for a hyperpyrexia patient (Bouchama *et al.*, 2007)**

**First three hours are the "Golden Hour" for Heatstroke Treatment**



**Methods of External cooling**

Heat loss by:

- Evaporation – sprinkling water
- Convection – fanning
- Conduction – Immersion in ice water (not preferred since limits heat loss due to intense peripheral vasoconstriction)
- Putting ice packs in axilla, neck and groin

**Methods of Internal cooling**

- Refrigerated intravenous saline infusion
- Cold water lavage - gastric, peritoneal
- Extra-corporeal cooling – cardiac bypass, hemodialysis

Most preferred practice – sprinkling water at 20° C over the body combined with fanning/blowing of warm air. Body cooling unit (BCU) equipment may also be used for this (McLaren *et al.*, 2005). Dantrolene-an agent that impairs calcium release from the sarcoplasmic reticulum and by doing so reduces muscle excitation and contraction. It is used in the treatment of malignant hyperthermia and neuroleptic malignant syndrome, reducing heat production that occurs as a result of muscle rigidity or hyper tonicity typical of these conditions (Bouchama *et al.*, 2007).

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Fig.2, 3, 4, 5 - Body cooling unit (BCU) equipments

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## REFERENCES

- Cook, G.C. and Zumla A. Heatstroke. Text Book of Manson's Tropical Disease. 21st Edition 2003:550-554.
- Bouchama, A., Dehbi, M. and Chaves, C.E. 2007. Cooling and hemodynamic management in heatstroke: Practical recommendation. *Critical Care*, 11:3-54.
- Accidental deaths of children in US decline. In: Reuters foundation Alert Net: alerting humanitarians to emergencies. 2008. <http://www.alertnet.org/thenews/newsdesk/N28500260.htm>. Accessed 6 May 2008.
- WISQARS leading causes of death report, 1999–2005. In: National Center for Injury Prevention and Control. 2008. <http://webappa.cdc.gov/sasweb/ncipc/leadcaus10.html>. Accessed 6 May 2008.
- Null J. Hyperthermia deaths of children in vehicles. San Francisco State University, Department of Geosciences and Golden Gate Weather Services. 2007. <http://ggweather.com/heat/>. Accessed 15 Dec 2007.
- McLaren, C., Null, J. and Quinn, J. 2005. Heat stress from enclosed vehicles: moderate ambient temperatures because significant temperature rise in enclosed vehicles. *Pediatrics*, 116:109–12.
- Surpure, J.S. 1982. The automobile and heat stress. *Annu Emerg Med.*, 11:263–5.
- Roberts, K.B. and Roberts, E.C. 1976. The automobile and heat stress. *Pediatrics*, 58:101–4.
- Gibbs, L.I., Lawrence, D.W. and Kohn, M.A. 1995. Heat exposure in an enclosed automobile. *J. La State Med Soc.*, 147:545–6.
- Guard, A. and Gallagher, S.S. 2005. Heat related deaths to young children in parked cars: an analysis of 171 fatalities in the United States, 1995–2002. *Inj Prev.*, 11:33–7.
- Martin, L. 2012, March 12. Forgotten baby syndrome. *MailOnline*. Retrieved from <http://www.dailymail.co.uk/femail/article-2113440/Forgotten-baby-syndrome-It-unthinkable-accidentally-leaving-baby-hours-lots-busy-parents-devastating-consequences.html>
- Null, Jan 2014. Heatstroke Deaths of Children in Vehicles. Department of Earth and Climate Sciences, San Francisco State University. Retrieved from <http://www.ggweather.com/heat/>
- Payne, M. 2014, July 16. Shoe trick will prevent child deaths in hot cars. *News-press.com*. Retrieved from <http://www.news-press.com/story/news/investigations/melanie-payne/2014/06/20/tell-mel-neverleft-campaign/11102697/>

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