

## **The Happiest Baby on the Block**

*THB* is based on the concept that newborns are not fully ready after 9-months gestation and they need a virtual 4<sup>th</sup> trimester of frequent holding, rocking, feeding, etc. This approach hypothesizes a previously unrecognized suite of neonatal behaviors - the *calming reflex* - that can quickly soothe most infant fussing (even colic) and boost a baby's sleep. This reflex is triggered by five activities that mimic the sensory milieu of the womb (the 5 S's – swaddle, side/stomach position, shushing, swinging, sucking).

This video shows a dad quickly calming his crying baby using *THB*:

[http://www.youtube.com/watch?v=WkR\\_e1L6zxl&feature=related](http://www.youtube.com/watch?v=WkR_e1L6zxl&feature=related)

*THB* offers the potential to reduce the morbidity, mortality and financial burden triggered by persistent infant crying and the parental exhaustion it provokes (e.g. PPD - of mothers and fathers; child abuse; SIDS/suffocation; breastfeeding failure; marital stress; neglect; bonding failure; excess visits to MD/ER; over treatment for GERD; maternal smoking; car accidents; and possibly maternal and infant obesity).

Over the past 30 years, numerous peer-reviewed studies have demonstrated the calming/sleep benefits of swaddling, rocking, sound and sucking. A growing body of reports show the benefit of combining those modalities as recommended in *THB*:

\*Boulder Colorado Department of Health nurses taught *THB* to 42 at-risk families (born to teens or addicts, severe prematurity, etc) with fussy babies. 41/ 42 reported an immediate improvement in their ability to calm their babies and many also reported an extra 1-3 hours sleep. The one child who did not initially improve had an ear infection and responded to *THB* after that was diagnosed and treated. (Presented at the 2007 CDC national maternal-child health conference.)

\*A Penn State-NIH study showed breastfeeding babies had significantly increased sleep (30-45 min/avg) if their parents were taught *THB* as part of their new baby education. And - when combined with simple dietary advice - *THB* was associated with a significant drop in excess weight at 1 year (Paul IM, et al, Preventing Obesity during Infancy: A Pilot Study, Obesity, 2011,19; 353-61).

\*Two University of Arizona surveys found that *THB* classes dramatically boosted parental confidence (pre class ~40% were moderate-very concerned about being able to calm their baby's crying; post-class that dropped to .5-1%).

\*A Children's Hospital of the King's Daughter study found *THB* quickly reduced crying after the 2- and 4-month shots and was significantly more effective than routine care or giving concentrated oral sucrose. (Harrington JW, et al. Effective Analgesia Using Physical Interventions for Infant Immunizations. Pediatrics. 2012; 129:815-22.)

In 2004, a program was launched to train parent educators to teach classes in the *Happiest Baby* calming/sleep methods. Like programs teaching parents how to correctly install infant car seats, *THB* educators are trained to teach *correct swaddling*. (Parents are given a *THB* DVD, containing three demonstrations of correct wrapping, and a short,

written guide reviewing key safety points (in English and Spanish).

There are now over 4500 *Happiest Baby* educators (2600 certified, 2000 in training) at university hospitals, clinics, military bases, etc. across the US. Program directors routinely report that *THB* is very valuable in helping parent educators build rapport with the families they serve (e.g. Fayette County, PA Nurse-Family Partnership, CT Department of Children and Families).

Over 1000 *THB* educators work for state and local health departments to reduce the adverse health effects of infant crying/parent fatigue among high-risk parents (e.g. teens, incarcerated, drug users, prior abusers, single parents, poor and parents of foster/adopted babies and preemies).

These programs include: Pennsylvania (~280 - in all WIC breastfeeding clinics); Wyoming (~220 - all home visiting nurses); Minnesota (~150 DOH workers); Massachusetts (~50 - in WIC and the SBS prevention program); Connecticut (~40 - in foster care and DPS).

"We had an amazing class at the Middlesex House of Correction. The inmates were shown the 5 S's and caught on very fast. Watching the *Happiest Baby* DVD was an excellent way to talk about child development. The parenting program gives out the DVD, so a lot more fathers will have seen it when they are released to their families." Becky Sarah, Massachusetts DPH

Several studies are underway/planned to further evaluate the *THB* approach:

- 1) MUSC, effect of *THB* on pregnant mother and father optimism and confidence.
- 2) University of Texas, Houston on *THB*'s effect on babies with colicky crying identified in the ER. (NIH funded.)
- 3) Penn State 3-year study of effect of *THB* on infant sleep/child obesity (NIH funded).
- 4) Boston Medical Center study of *THB* to improve the care of babies withdrawing from drugs and promote maternal bonding. (NIH funded).
- 5) University of Amsterdam study of *THB* to improve parent confidence and reduce infant crying and sleep disturbances.
- 6) University of Michigan pilot of *THB* and teen fathers.

### **THB and Prevention of Child Abuse**

Abusive head trauma (AHT) is the most lethal form of child abuse. Approximately 1400 cases are seen in US hospitals each year and the most common trigger of AHT is infant crying. The rate has doubled since the 2008 recession. (Berger et al, *Pediatrics* 2011;128:637–643)

AHT prevention has been elusive. PURPLE is disappointing. It offers meager knowledge or behavior change and may actually increase infant irritability. AHT prevention requires an integrated "family systems" approach (i.e. teaching baby calming skills + having parents commit to never shake their baby).

*THB* is used in many community programs to reduce the stress and infant crying that

leads to AHT (e.g. PCA Illinois, Healthy Families programs, Alabama Child Death Review Board, MIT, Texas Board of Welfare and many departments of health, including WY, MN and MA).

*THB* is listed as an AHT intervention in the Colorado department of public health manual on child abuse prevention; the NACHRI report on child abuse prevention; and is an integral part of the MA Shaken Baby Syndrome Prevention Center initiative.

### **THB and Prevention of SIDS/Suffocation**

Started in 1992, the "Back to Sleep" campaign to prevent SIDS has reduced deaths by 55%, however, for the past 7 years, the incidence of SIDS has plateaued and the incidence of ASSB (accidental suffocation and strangulation in bed) tripled from 1996-2004. To further reduce the incidence of SIDS/suffocation, we need new initiatives that teach baby calming in addition to safe sleep environments.

*THB* and correct swaddling may reduce SIDS/suffocation through 6 mechanisms (increase arousability; reduced rolling prone; boost parent compliance with safe sleep rules; reduce incidence of sleeping on unsafe surfaces; promote nursing; reduce maternal cigarette use).

Doctors at the National Children's Medical Center reported that inner city moms who routinely swaddled their babies were significantly more likely to place them on the back to sleep ( $p < .01$ ). Of the almost 20% of mothers not routinely using wrapping, 52.6% switched their baby from stomach sleeping to the back when they did swaddle. ( $P < .02$ ). (Oden RP, et al. Swaddling: Will It Get Babies Onto Their Backs for Sleep? Clin Ped 2012; 51: 254-9)

### **THB and Breastfeeding**

The CDC found the #1 reason women prematurely stopped BF (after the first 2 weeks) was infant fussing., which made their mothers assume their baby didn't like the milk or wasn't getting enough. (Ahluwalia IB, et al. Why do women stop breastfeeding? Findings from the Pregnancy Risk Assessment and Monitoring System. Peds. 2005;116:1408-12.)

Crying undermines breastfeeding by: interfering with latch-on; causing stress/fatigue that reduce milk production; creating tension that can inhibit let down; leading to marital discord and opposition to breastfeeding by the father and other family members; increasing the risk of postpartum depression. Researchers at UNC Chapel Hill showed that infant fussing leads to premature cessation of nursing and early introduction of solids. (Wasser H, et al. Infants Perceived as "Fussy" Are More Likely to Receive Complementary Foods Before 4 Months. Peds 2011;127;229-37)

*THB* is used by WIC programs in PA, OH, OK, WA and MA. The Pennsylvania Department of Health has certified *THB* educators in all 280 of their WIC-breastfeeding clinics to improve BF initiation and continuation rates.

## **THB and Post-Partum Depression**

PPD affects 10-15% of all new mothers (and at least 25% of their partners). It causes maternal suffering and may lead to impaired bonding, marital stress, decreased breastfeeding, infanticide and suicide.

Three triggers of PPD are fatigue, infant fussing, unsupportive spouses. (Beck CT. Predictors of postpartum depression: an update. Nurs Res. 2001;50:275-85; Dennis CL, Ross L. Relationship among infant sleep patterns, maternal fatigue and development of depressive symptomatology. Birth 2005; 32, 187-193; Posmontier B. Sleep quality in women with and without Postpartum Depression. JOGNN 2008; 37:722-737; Dørheim SK, et al. Sleep and depression in postpartum women: a population-based study. SLEEP 2009;32:847-55; Vik T, et al. Infantile colic, prolonged crying and maternal postnatal depression. Acta Paed. 2009;98:1344-8)

Most recently, Radesky et al showed that inconsolable crying lasting more than 20 minutes is associated with a 400% increased incidence of PPD. (Radesky J, et al. Inconsolable Infant Crying and Maternal Postpartum Depressive Symptoms. Peds 2013;131:1-8)

*THB can* mitigate all three of these. Swaddling (and white noise) have been demonstrated to reduce infant night waking by 50% (Meyer LE, Erler T. Swaddling: a traditional care method rediscovered. World J Ped 2011. 7:155-60; Spencer JAD, et al. White noise and sleep induction. Arch Dis Child 1990, 65:135-7) and increase sleep has been shown to reduce PPD. (Symon B, et al. Reducing postnatal depression, anxiety and stress using an infant sleep intervention. BMJ Open 2012;2:e001662)

THB is used at the Duke University PPD parent support program and in Southern NJ (including Virtua Health postpartum depression program).

## **Summary**

*The Happiest Baby* approach to infant calming/sleep offers the potential to reduce the morbidity, mortality and high financial cost associated with infant crying and parental fatigue.

Key to the *THB* approach is the use of correct swaddling to avoid overheating, loose wraps, prone sleeping, restricted hip movement. Can parents be taught to swaddle correctly? Yes.

Over the past 20 years, parent education programs have been very successful in changing parent practices regarding: prone sleeping; cigarette smoking and improper use of infant car restraints. We have every reason to believe we can be just as successful in teaching parents how to swaddle.

Strong parallels exist between teaching swaddling and car seat safety. *Incorrect* car seat installation increases injuries, but *correct* use saves lives. So, because of the great

potential offered by *correct* car seat use, in the 1970's our society decided that rather than prohibit car seats out of fear of incorrect use we would launch programs to teach parents correct installation. Similarly, programs can teach parents how to swaddle correctly.

*Happiest Baby* educators teach correct swaddling in classes across North America. Parents are given a *THB* DVD (showing 3 demonstrations of correct wrapping), a white noise CD and a short, written guide reviewing key safety points (in English and Spanish).

THB offers a single, scalable, inexpensive intervention to reduce the national health care costs by over \$1 billion related to infant crying...and simultaneously helps strengthen the shredded family fabric in our nation. This work may particularly benefit at-risk populations (e.g. infants of teens, drug using mothers, premies, military families, foster children, parents with history of abuse/neglect or living in poverty, etc.

### **Academic Response to The Happiest Baby:**

*THB* is translated into over 20 languages and recommended in the AAP parenting guide, *Heading Home With Your Newborn*.

"The Happiest Baby presents the top science about the development of babies. It will guide new parents for many years to come." Julius Richmond, MD, Harvard Medical School, former US Surgeon General

"This is the best way I know to help crying babies." Steven Shelov, MD, editor-in-chief, American Academy of Pediatrics' Caring for Your New Baby and Young Child: Birth to Five

"The Happiest Baby meets a tremendous need for a scientifically sound guide to the care of crying babies. Morris Green, MD, Emeritus Professor, Indiana University, Riley Hospital for Children

"When I became director of the nursery I became THB-certified. I use these techniques every day." Ann Kellams, MD, Medical Director, Newborn Nursery, University of Virginia

"I teach your helpful methods to all residents and am now certified in THB." Julee Waldrop, MS, PNP, Director, Newborn Nursery, U of North Carolina, Chapel Hill

"Absolutely one of the best resources. We see firsthand how it empowers parents." Debra Smith, RN, Director, Perinatal Education, University of Michigan Medical Center, Ann Arbor, MI

"Dr. Karp's insights are a key to reducing the anger and frustration that can lead to shaking." James Hmurovich, President/CEO, Prevent Child Abuse America

"Best resource on how to calm fussy babies, *The Happiest Baby on the Block* by Dr. Harvey Karp." AAP – Healthy Children website: <http://www.healthychildren.org/English/tips-tools/Symptom-Checker/Pages/Crying-Baby-Less-Than-3-Months-Old.aspx>

"We had an amazing class at the Middlesex House of Correction. The inmates were shown the 5 S's and caught on very fast. Watching the Happiest Baby was an excellent way to talk about child development. The parenting program gives out the DVD, so many fathers will have seen it when they go home to their families." Becky Sarah, Massachusetts Dept Public Health