

Behaviour modification and swaddling as interventions to improve sleep: a link with obesity?

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Dear Editor,

Taheri's article: "The link between short sleep duration and obesity: we should recommend more sleep to prevent obesity" shows an association between less sleep and obesity not only in adults, but also in young children (1). Short sleep duration at age 30 months predicts obesity at 7 years. Taheri postulates that sleep loss at this young age may alter the hypothalamic regulation of appetite and energy expenditure. Modern Western society is very complex. Thirty years ago parents were told to adhere to very strict childrearing schedules. This approach was abandoned and rightly so. However, now a child rearing approach without any structure at all appears to be the norm. Excessive crying of an infant is a common problem in many western societies and this is partially caused by the lack of structure in baby care. Baby's that cry excessively may also sleep less. Furthermore, infants that persist in excessive crying (after four months of age) often have sleep problems at an older age (2).

We recently published results of a randomized trial in which we compared a standardized approach of regularity and stimulus reduction to the same approach supplemented with swaddling in order to reduce excessive crying and to improve sleep in 398 infants aged 1 week to 12 weeks (3). Parents were coached in three face-to-face contacts and 6 telephone calls how to apply the regularity and stimuli reduction. We applied a recurrent pattern of baby care to provide structure and regularity without being rigid or inflexible (not an on-the-hour schedule). Parents applied a sequence of 1) sleep, 2) feeding, 3) playing/positive interaction with baby, 4) alone and awake in a playpen, and 5) when tired, the baby was put to bed and tucked in tightly, after which a new cycle started. Two hundred and four infants received this intervention, for another 194 it was supplemented with swaddling. Essential is the repetitiveness of the elements; feeding the infant directly after waking up (under the assumption that a well rested baby is able to drink more effectively), not feeding to stop crying, and after being in the playpen putting the child to bed sleepy but still awake. Sleep as reported by parents in 24-hour diaries increased within one week with approximately one and a half hour and after

the intervention of 12 weeks sleep increased with approximately 2 hours (figure 1). Swaddling did not have an added benefit (table 1).

Besides improving sleep, several elements of this approach may be of interest for the prevention of overweight and obesity. In the first place we instructed parents to place the baby in the playpen and not in a baby bouncer, maxi-cosi or other moving chair. In a playpen the child moves himself instead of being moved. Furthermore, we taught parents not to use feeding to stop the crying, as parents of excessively crying infants have the tendency to offer extra feeds. Coping with crying is in fact the first child-rearing problem a parent is confronted with. In fact, we pose that enlarging knowledge of parents about self-regulation capacities of their child and supporting parents' self-efficacy in handling crying, might be a key factor in the fight against obesity. In The Netherlands the approach of regularity and stimuli reduction is being implemented in all well-baby clinics.

We have just started a follow-up study, in which we will evaluate the BMI of the children in the trial at age 3-5 years.

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