

Using the Theoretical Domains Framework and the Behavior Change Wheel to Design a Tummy Time Intervention



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Learning Objectives

- List 3 issues that negatively impact tummy time implementation.
- List 3 issues that positively impact tummy time implementation.
- Describe 3 ways to promote parental implementation of tummy time.
- Explain how the overuse of baby gear can negatively impact infant development.

3

Tummy Time

How Did
Tummy Time
Come About?

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1992

Back to Sleep

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The “Back to Sleep” Campaign has been successful.

SIDS declined by more than 50%...
many caregivers have been informed of
the importance of supine sleeping.



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What Were The Consequences?

Reports of Mild Delays
with Motor Skills

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60% increase in referrals for treatment of cranial asymmetry between 1992 and 1994 as compared to the previous years.

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<https://www.cstcenter.com/blog/signs-of-infant-torticollis>

Increased incidence of torticollis

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The American Academy of Pediatrics initially recommended that infants should spend time on their stomachs “tummy time” during waking hours.

Why? For developmental reasons and to prevent Positional Plagiocephaly.



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In 2008, they were more specific:
“Supervised prone play, 2 to 3
times a day for 3 to 5 minutes, with
duration and frequency of time to
increase as baby gets older.”

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Many infants still do not receive the
amount of tummy time recommended
by the AAP.

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How are motor skills impacted by tummy time?

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Increased prone playtime has been significantly associated with earlier attainment of the following milestones:

Supported sitting

Sitting alone

Crawling

Pulling to stand

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**How much daily tummy time
do babies average?**

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ACCORDING TO ONE STUDY:

~50% of infants- less than 30 minutes of tummy
time daily

~35% of infants- intolerant of tummy time

~40% of resistant infants- spend less than 15
minutes in tummy time

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Only a few studies have examined the effectiveness of interventions to promote tummy time adherence.

However, the planning and implementation of the interventions were not guided by the application of an established framework, nor were they informed by parental perspectives.

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In our study,
we applied the Theoretical Domains Framework (TDF) and the Behavior Change Wheel (BCW) to explore tummy time barriers and facilitators and to gain an understanding of the behaviors that influence tummy time implementation.

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Qualitative study design

Open-ended survey

23 parents with typically developing infants
less than 6 months of age

Thematic analysis

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Barriers	Facilitators
Infant fussiness or crying	Flexibility of implementation
Parent remembering	Siblings or Pets entertaining baby or preventing TT
Limited Endurance of infant	Sitter or Day Care Staff implementing TT
Motor skill challenges of infant	Parents enjoy interaction
Limited time and busy schedule	Perception of developmental benefits
Low confidence	Fear of developmental consequences- motor skill delays or flat head
Low self-efficacy- worry about fussing and implementing tummy time correctly	Gaining confidence

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Intervention Planning

- Information about ways to implement tummy time
- Practice implementing tummy time with feedback
- Add reminder to environment (prompts or cues)
- Set regular schedule for tummy time (after diaper changes)
- Set a goal for number of tummy time minutes per day
- Demonstration of tummy time (photos, video clips)
- Verbally persuade about capability (Reassurance)
- Information on evidence of tummy time benefits
- Information about consequences of CA and torticollis
- Social support

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Have a Tummy Time Routine

Make a routine out of tummy time by rolling baby over on her belly after every diaper change or just before naptime.



Photo by sheelamohan

Having a schedule makes it easier to remember tummy time, and baby will likely come to anticipate the routine.

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In 2003, the AAP provided non-specific guidelines to prevent cranial asymmetry.

“Infants should receive some tummy time daily and spend minimal time in car seats or other seating that maintains supine positioning”

24

Baby Gear

Cranial asymmetry can also result from an infant's head resting against firm flat surfaces such as a car seats, swings, or carrier

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Product Manufacturer Claims

Toys hanging from a bouncer seat are good for babies' eye-hand coordination.

A stationary activity center strengthens an infant's legs.

A baby walker helps a child walk earlier?

Smart toys, baby DVDs, and educational programming for infants stimulate intellectual development?



Photo by [sathya](#)

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New and More...Better?

Advances made in the development of baby products and technology for infants and toddlers:

Bouncer seats

Carriers

Baby “educational” videos and TV shows

iPad & smartphone Apps

All are intended to make our daily lives easier and more efficient, but at what cost?

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Babies who spend more time in equipment have lower motor skill scores than those with less equipment use.



Mothercare.com

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Important Questions

Is a baby's nervous system is designed for the technology revolution that has taken place in our society?

Can overusing baby gear, smart toys, and technology negatively affect the development of a child's brain development, social, emotional, and motor skills?

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Car Seat



<https://www.maxicosi.com/us-en/coral-xp>

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Stroller



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Bouncer Seat



<https://nymag.com/strategist/article/best-baby-bouncers.html>

32

Exersaucer



<https://www.walmart.com/ip/Evenflo-Exersaucer>

33

Bumbo Seat



<https://www.wayfair.com/Bumbo->

34

Swing



<https://www.ebay.com/p/20003305387>

35

Jumping Device



<https://www.amazon.com/Jolly-Jumper>

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Feeding, Dressing, and Diapering



37

Positioning for Sleep

Mon, Wed, Fri to the left



Tues, Thur, Sat to the right



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Questions?

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