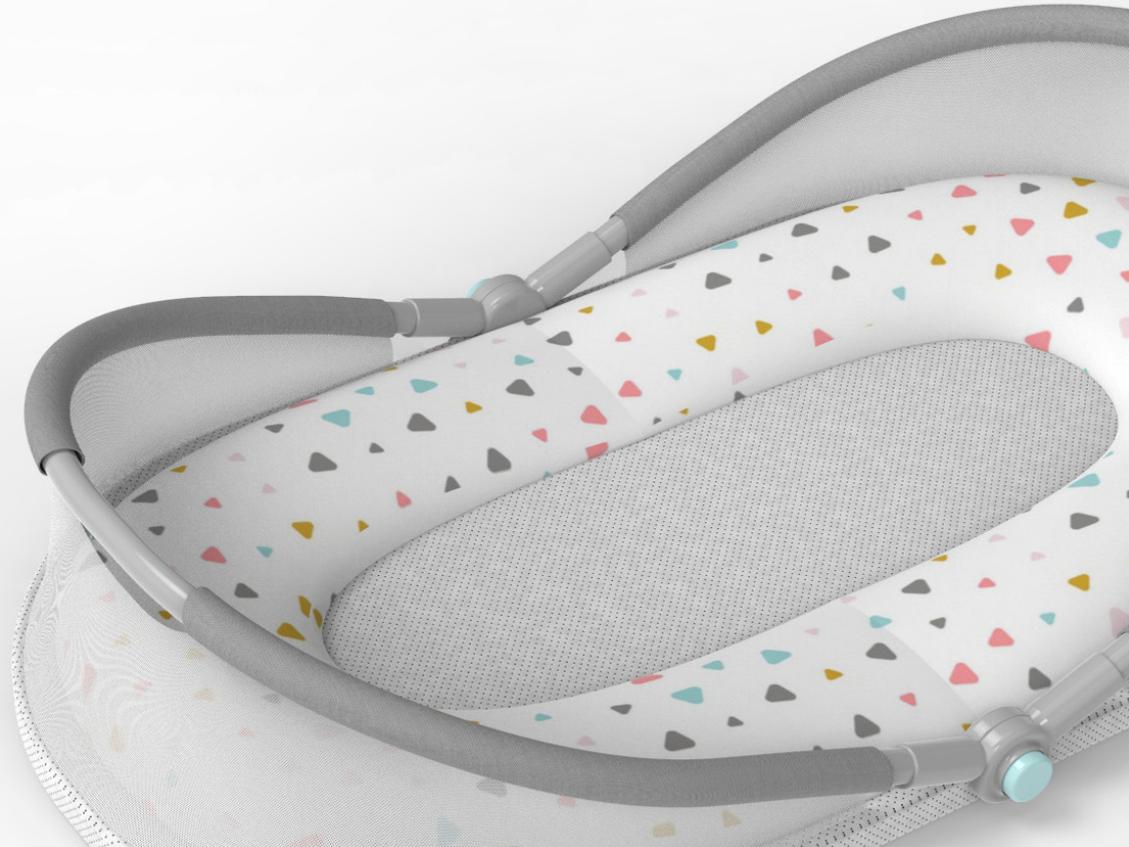




Baby-By

The Multifuncional Co-sleeper



Why Co-sleeping?

“When I had my first baby I had a C-section, and my husband was on leave in the military. I physically could not bend into the crib to get her, and I was on my own. **Co-sleeping always felt so natural to me, and so many other cultures do it, but there is this sense of guilt that accompanies it.** I lied to every pediatrician I had about my co-sleeping. I just hated people saying it was a lazy choice, or that I didn’t care if I rolled over her. **When parents don’t sleep it affects everything”**

-Caitlin Milroy

The benefits:



Better Sleep



Closeness



Comfort



Nursing



This is my nephew, Harry!
Co-sleeping became personal for me when I found out my sister was sleeping with my nephew. It sparked my interest in the subject and lead me to talk to many other co-sleeping parents and find out wonderful an experience it is.

I saw the need for a product that could help moms who had trepidations about co-sleeping feel that they could do it too in a safe and comfortable way. This would help more moms to be able to experience the better sleep and additional benefits that come with co-sleeping.

Research



“Only in a relatively few select cultures have infants ever slept outside the company and presence of their breastfeeding mothers.”

-Professor James J. McKenna
the world’s leading authority on mother-infant co-sleeping in
relationship to breastfeeding and SIDS

 When the baby hears the mother’s heartbeat it **changes their own heart rate**

 The mother’s breath **encourages the baby to breathe**

200,000

The amount of years that mothers and babies have been sharing beds

40% 

The amount of documented cultures that bed share. Most of these have never even heard of SIDS/ have the lowest infant mortality rates in the world

25% 

How developed an infant’s brain is at birth. It **depends** on proximity and contact from caregiver for physiological development

600,000 

The number of deaths linked to SIDS from **stomach sleeping, bottle feeding, and solitary sleeping**, not bed sharing

84%

The amount of bed sharers that reported adequate sleep over only **64%** of solitary sleepers getting adequate sleep

24% 

How much bed sharing has increased from **6%** in 1993

Myths About Co-Sleeping

Myth:

Truth:

If you Co-sleep, you will roll over your baby and suffocate them to death

No sleep environment is risk free for a newborn, but if you are co-sleeping safely there are many benefits including better sleep and better sensory development for your child.

Co-sleeping causes SIDS

There are no detectable risk of SIDS for babies that bed-share without other hazards present. It actually urges the baby to breathe when they hear the sound of it around them.

Your baby shouldn't be waking up to feed that much, they need to learn to self-sooth

Frequent arousals are good for babies, SIDS occurs when babies aren't arousing. The term "sleep like a baby" is dangerous because it promotes that babies should be sleeping through the night.

Co-sleeping will make your child needy later in life

A study by the University of California concluded that solitary sleep toddlers are less able to problem solve and be alone than toddlers who have routinely co-slept.

If you co-sleep your child will never want to sleep in their own bed

Early co-dependence is not a bad thing, but crucial for development. It actually leads to early independence as well as better confidence. All children eventually learn to sleep on their own.

You won't sleep at well if your child is in your bed

Most breast feeding, bed sharing moms actually sleep better because they are getting more stages of being half asleep rather than having to fully wake up to go feed their babies.

People only co-sleep because they think it is cool

Co-sleeping has been around since the beginning of time. It is only recently that Western society has made it out to be wrong or unusual to bed share with your babies.

Outlining the Environment

Who?

Who will be using this product?

Single parents

Fearful parents
Mothers

Experienced co-sleepers

New parents

Parents with limited space
Big families

Parents with sleepless babies

Fathers

Breast feeding moms

First time co-sleepers

What?

What are the pain points and what should be accomplished?

Safe Co-sleeping

Rolling over
Where the baby sleeps

Why people co-sleep
Benefits of Co-sleeping

Negatives of Co-sleeping
Comfort of mother

Comfort of baby
Better sleep for all

Different ages of babies
Blankets, pillows, sheets

Transition to own bed

When/Where?

When and where is the user experiencing this problem?

The bed
While breast feeding

Naps
Nighttime

At home
With a spouse

Queen/king bed
With other kids

At bedtime
During the first 6 months

In a new place

Alone
When your baby is asleep

Why?

Why is this problem worth solving?

Better sleep for mom
No SIDS

Safe sleeping
Better sleep for baby

Extended use of product
Easier breast feeding

Comfortable sleep

To help the baby not flip
Secure sleep

Remove the stigma of co-sleeping

To keep pillows/blankets away

Empathy Map



User Personas

Users



The New Co-Sleeper:

Amanda is a new mother whose baby is often restless, she chose to co-sleep because her baby would always cry when not being held.

Reason for Co-sleeping



Better Sleep



The Long-term Co-sleeper:

Anastasia is a mother of three, but her co-sleeping child is much younger than the other two. He is five and still bed sharing.



Closeness



The Pro Co-sleeper:

Katherine is a mother of two. She started co-sleeping because her c-section made it impossible to lift her daughter from the crib, and kept doing it because she loved it.



Comfort



The Part Time Co-sleeper:

Diana would sometimes co-sleep with her children, and while they needed fed, but generally they slept in their bassinets. She feared the negative stigma around co-sleeping.



Breast Feeding

The New Co-Sleeper



Age: 20-28
Gender: female
Child's age: 3 months

Quotes:

- "I used the portable infant sleeper for awhile, but it would tilt when my husband got into bed, I also was I worried his face would be pressed up against the edge"

- "I had fears at first when he was really small"

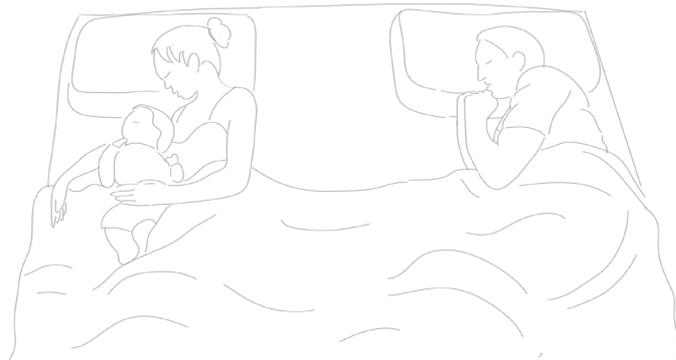
- "We are going to try and transition him out at 6 months"

- "He's not waking up for a bunch of different reasons, just to eat."

- "I'm getting better sleep"

- "We get the best night sleep when bed sharing, I don't have to keep listening for noises"

How they sleep:



Motivations:

Breast Feeding:



Comfort:



Better Sleep:



Closeness:



Insights:

- Keeping that added security feeling of the co-sleeper device while reducing the fear that there is something soft to press their face against is important

- Newborns are an especially scary stage for parents

- Keeping the same security and closeness baby felt when bed sharing is important

- Bed sharing helps both mother and baby to get better sleep

The Long-Term Co-Sleeper 🤝



Age: 35-40
Gender: Female
Child's age: 5 years old

Quotes:

- "With my first one she was nursing so it made it difficult to transition to her own bed"

- "I used a C pillow when I would sit up to nurse"

- "When my son was an infant and my arm was underneath him and I would move, I worried his head was moved in a weird way."

- "It's nice to feel his body right there with me and snuggle up together"

- "When I was nursing my first it just made so much sense to co-sleep"

- "When I put my second child on the edge of the bed she fell off a couple times, so we do the middle always now."

How they sleep:

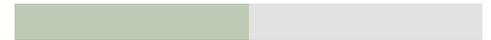


Motivations

Breast Feeding:



Comfort:



Better Sleep:



Closeness:



Insights:

- The transition from a shared bed to their own can be difficult, especially when still nursing.

- Being propped up to breast feed is safer for the baby.

- Sleeping together can cause discomfort when trying to readjust or be in a comfortable position.

- Different parents co-sleep in different ways with their babies, it will be important to have something that works for all sleeping patterns.

The Pro Co-Sleeper



Age: 28-35
Gender: Female
Child's Age: 5 and 3 years old

Quotes:

- "When my husband came back from leave he was terrified, he didn't sleep well just worrying about the baby"

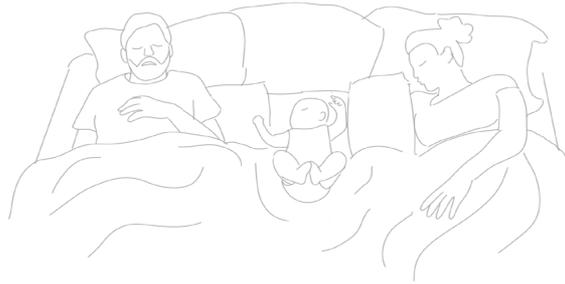
"I just hated people saying it was a lazy choice, or that I didn't care if I rolled over her"

- "When they would wake up, they wouldn't cry frantically"

- "I had a C-section with my first, so I physically couldn't reach into the crib. I started Co-sleeping then and liked it so much I never stopped"

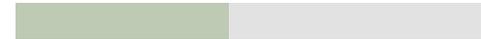
- "I never told either of our pediatricians we were co sleeping. They were always so surprised about how well they were sleeping and how well adjusted they were"

How they sleep:



Motivations:

Breast Feeding:



Comfort:



Better Sleep:



Closeness:



Insights:

-It is important that both care-takers are comfortable with the co-sleeping set up, and are aware of the baby in the bed.

- It is not fair that medical professionals make moms feel guilty about something that is natural and helps both baby and mom to have better sleep.

- The negative stigma surrounding co-sleeping is hurtful and offensive to parents

- Co-sleeping is very soothing to babies and helps them sleep

The Part Time Co-Sleeper



Age: 38-45
Gender: Female
Child's Age: Children are grown

Quotes:

- "I would never admit to my mom or mother-in-law that I was co-sleeping as much as I was. I thought they would think it was wrong or 'primitive'"

- "When the baby would cry my husband would get them and bring them to me so I could nurse, and then take the baby back to their crib when I was done"

- "It just made it easier to feed them in the bed so I could stay half asleep. I would've liked to sleep with them more, but I was always told not to"

- "It just feels so natural to co-sleep"

- "When I had to get out of bed to get the baby I couldn't get back to sleep, and I needed it so much"

How they sleep:

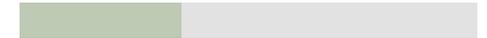


Motivations:

Breast Feeding:



Comfort:



Better Sleep:



Closeness:



Insights:

- It is unfortunate that mothers are made to feel guilty about something that seems natural and helps them and their babies to get better sleep.

- Not co-sleeping can be disruptive to the quality sleep of both parties, and also lead to falling asleep when breast feeding, which is unsafe for the baby.

- Better sleep is a huge reason to co-sleep. Quality sleep affects everything for new parents.



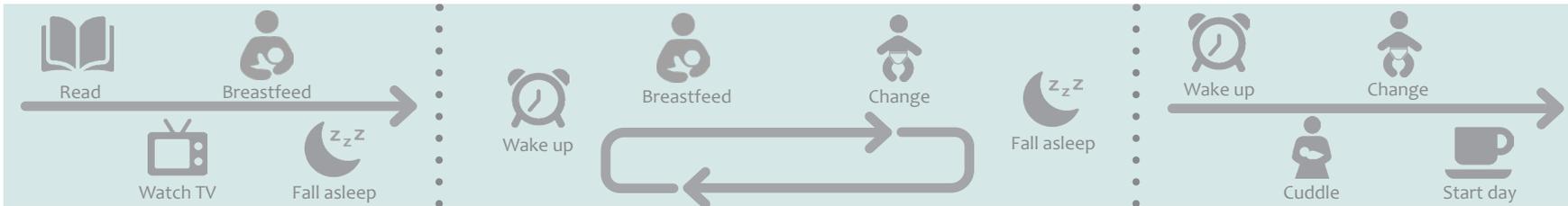
Experience Map

Getting to Sleep

Sleeping

Waking Up

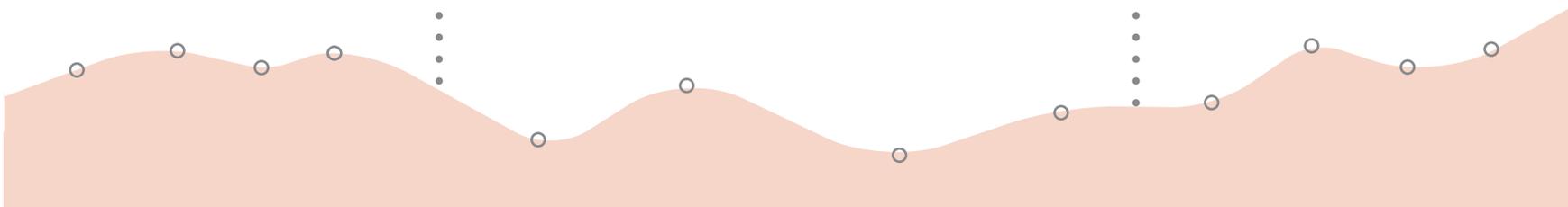
Doing



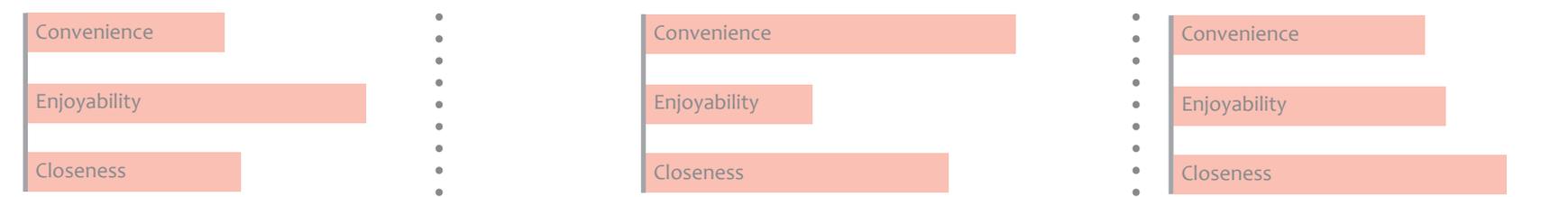
Thinking

- Getting to Sleep:**
 - I am starting to feel tired
 - The baby is asleep
 - I'll feed her once more before bedtime
 - Finally ready for bed
- Sleeping:**
 - Oh she is moving she needs fed
 - I need to prop up a little bit
 - I really want to flip over
 - It is so nice to be so close
 - I need to change her
 - I hope she doesn't wake up
 - Is she breathing?
 - Okay, back to sleep now
- Waking Up:**
 - I love this time together in the morning
 - I don't want to get out of bed
 - Let's get her ready for the day
 - I feel well rested

Feeling



Experience



Market Research



Product Name	Portable Infant Sleeper	Baby Nest	Bassinet to-go	Sensory Lounger	Bed Side Sleeper	Swivel Sleeper
Price	\$64.99	\$69.99	\$74.99	\$156.00	\$179.99	\$279.99
Age of Use	0-3 months	0-12 months	0-9 months	0-9 months	0-5 months	0-5 months
Digestion Help	✓				✓	
Aesthetic		✓	✓			
Incorporated Tech	✓					✓
Washable	✓	✓	✓	✓	✓	
Comfort		✓	✓	✓		
Easily Stowed	✓	✓	✓	✓		
Affordable						
Portable	✓	✓	✓	✓		
In Bed Design	✓	✓	✓	✓		
Durable	✓		✓		✓	✓
Anti-roll		✓		✓		
Breast Feeding		✓		✓		



Competition Matrix

One problematic area of current co-sleepers is that they are very expensive for a short time of usage. I would like my product to be multi-functional or last longer to get more bang for my user's buck.



Target of Product



Baby Nest
\$69.99
0-12 months



Bassinet to-go
\$74.09
0-9 months



Sensory Lounger
\$156.00
0-9 months



Portable Infant Sleeper
\$64.99
0-3 months



Bed Side Sleeper
\$179.99
0-5 months



Swivel Sleeper
\$279.99
0-5 months

Length of use

Longer

Shorter

Price

Low

High

Sleep Research

To try and get a better feel for co-sleeping I conducted three different sleep tests. For each different scenario I had an alarm set for 2:00 am, 4:00 am, and 7:00 am to simulate when the baby would wake up to be fed and test how well I could get back to sleep after each of these disturbances.



Standard Co-sleeping

- **Bedtime** -Had trouble falling asleep on my right side
 - -Was really cold because I couldn't use my comforter
 - -Felt my arm didn't bend right to keep the baby on so I had to put it under my head instead
- **2:00 am** -Realized I had flipped over in my sleep
 - -Was sweating from extra clothes I put on to keep warm
 - -Had difficulty flipping back over
 - -Had trouble getting back to sleep
- **4:00 am** -Had difficulty getting up for a drink of water and to go to the bathroom without squishing the baby
 - -Was very aware of the baby all night and kept opening my eyes to see if the covers had flipped up
- **Wake up** -Overall sleep rating:



Shared Co-sleeping

- **Bedtime** -Had limited space due to putting all the pillows around the baby
 - -Was able to fall asleep in comfortable position for myself while still resting my hand on the baby
- **2:00 am** - Barely registered waking up, went back to sleep almost immediately
 - -Went back to sleep resting on my stomach which is preferred for me
- **4:00 am** - Was not focused or preoccupied with where the baby was while trying to sleep
 - -Realized that my partner would have limited space with the set up
- **Wake up** -Overall sleep rating:



Solitary Sleeping (baby in other room)

- **Bedtime** -No difficulty here, I actually went to sleep great because I wasn't worrying where they baby was in the bed at all
 - -I could lay exactly how I wanted, and spread out
- **2:00 am** -Had a really hard time getting out of bed
 - -I got the baby and brought it back with me
 - -Played on my phone to stay awake which stimulated me and made it very hard to get back to sleep
- **4:00 am** -Sleep was disrupted again
 - -Had tossed and turned all night due to the disruption in REM cycle
 - -Fell asleep with the baby in my bed on accident
- **Wake up** -Overall sleep rating:

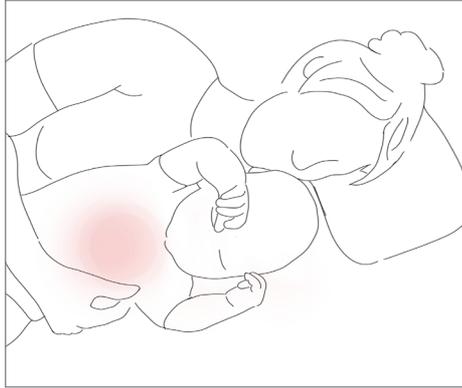


Co-Sleeping vs Solitary Sleeping

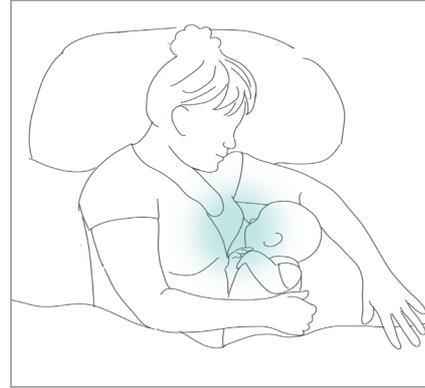
Co-Sleeping



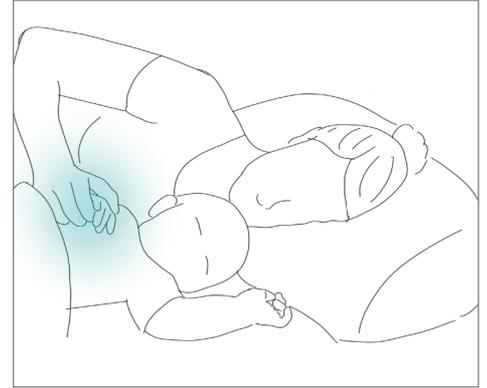
1. Sooth baby to sleep



2. Baby stirs to be fed

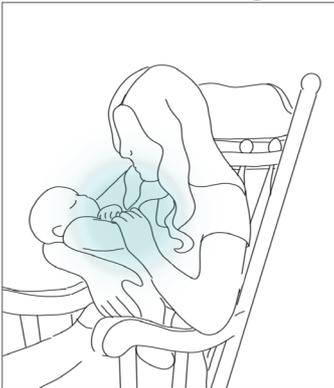


3. Feed baby



4. Fall back to sleep quickly

Solitary Sleeping



1. Rock baby to sleep



2. Hear baby cry from room



3. Go to room and feed baby



4. Try to fall asleep before baby wakes

Narrowing the Problem

10 Problems to look at:

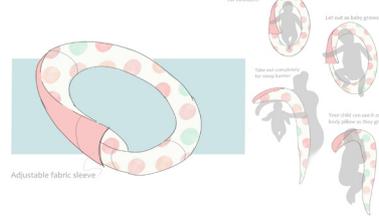
1. Limited usage of product
2. Suffocation due to bed-sharing
3. Disrupted REM cycle for moms
4. Poor angle of breast feeding
5. Messy and overcrowded bed
6. Baby flipping and rolling over
7. Negative stigma surrounding co-sleep
8. Multiple and early waking of baby
9. Short time span of product
10. Poorly aligned sleeping position





Concepts

Adjustable Co-Sleeper



What does it make use of:

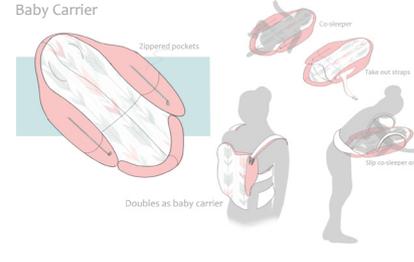


- "I like the concept of it getting bigger. I don't think any co-sleepers would use the option to put it between them and the baby but the rest are good."

- "This one is smart. Who would be on the open side of baby?"

- "We like this idea because it is fully adjustable with no lining so the baby is less likely to overheat. It can be used by the child after the infant phase."

Baby Carrier



What does it make use of:



Mommy favorite: Daddy Favorite:

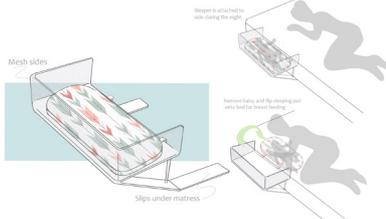


- "If you could get the ergonomics right that's a really good idea. It's hard to transition them to a carrier when they are asleep."

- "I think this one will need a different neck support"

- "Very cool concept! The sizing for infant vs. toddler might be difficult because of different weight and length and having it be safe across ages."

Flip Co-sleeper



What does it make use of:

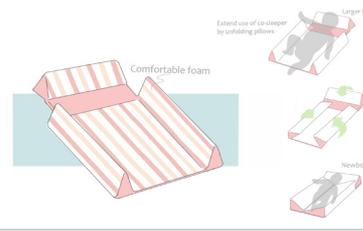


- "This is really good because a lot of people feel better if they're sleeping on their own surface, but I'd do a slide so you could just pull the baby in."

- "This look well thought out."

- "Great concept, worried about the 'flip' function. It might be too much for the middle of the night feeding. Maybe design it to slide out instead, also making sure pad is removable to be washed."

Growing Co-sleeper



What does it make use of:

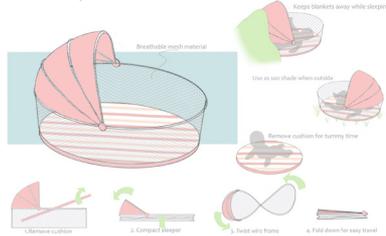


- "Good concept. Be careful of anything with a newborns head raised up though. That's generally not safe since it could bend the windpipe and suffocate them."

- "I don't like the wedge head prop, might be accident prone with a newborn. I don't feel comfortable with this one."

- "Nice because barriers on both sides, equal usage for Mama and Daddy. Simple design and function is appreciated!"

Net Co-sleeper



What does it make use of:

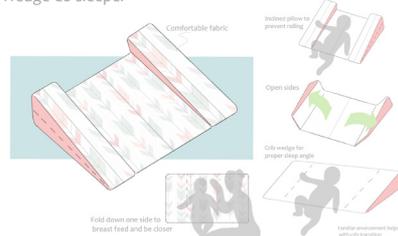


- "I like this one. It reminds me of the popular Moses baskets."

- "I wouldn't buy this for myself because a baby wouldn't fit in it for long, but it's nice to take outside."

- "Really love this one! The easy folding of the sides would help with removing the baby also. The only concern would be sizing of product as it could quickly take over the bed!"

Wedge Co-sleeper



What does it make use of:



- "That's good since it could provide some protection from each side if you wanted to put it in the middle of the bed between the parents."

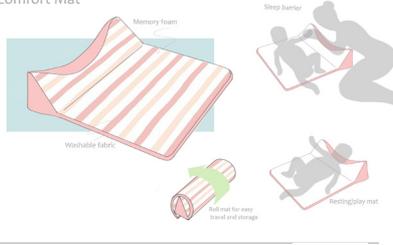
- "I love the incline on this. The fold down sides are very handy."

- "Pretty neutral for this one, unsure if sleeping on the wedge with baby might not be comfortable. The other folding pillows had better dual barriers."



Concepts

Comfort Mat



What does it make use of:



- "I would never use the wedge to prop my baby's head up with. It seems like too much pressure on the throat."

- "This didn't really speak to us, seems like this could be achieved with a slim throw pillow for a barrier."

Mommy favorite: ❤️

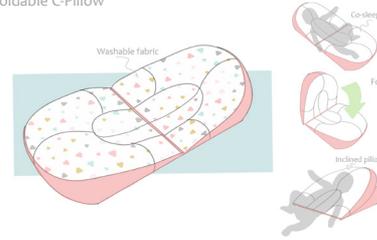
Daddy Favorite: ❤️



- "I like this one, but maybe it could fold the other way so there's still a groove for the head?"

- "Liked this, the inclined pillow conversion, would be easy to use for a colicky baby, acid reflux, or just an older baby that needs a pillow feeding. Make sure the middle portion is thin enough to fold?"

Foldable C-Pillow



What does it make use of:



Flip Co-sleeper



What does it make use of:



- "This is good. People like to get a lot of use out of an item."

- "Dislike due to changing mat 'function', changing mats become disgusting very quickly, so it would need to be washed regularly. Also, infants can't have pillows, so it would just be inconvenient to keep up with them until baby is big enough."

Pack-and-go Co-sleeper



What does it make use of:

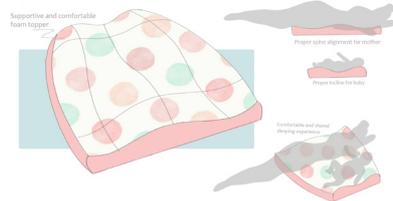


- "I like the portability aspect"

- "Looks very handy."

- "Interesting concept. The only issue would be adding yet another 'bag' into the mix when it doesn't hold anything else."

Shared Alignment Co-sleeper



What does it make use of:

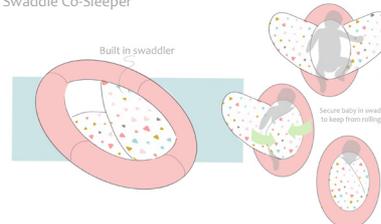


- "I like this in theory since it might make things more comfortable, You'd have to find a way to not let the baby fall off"

- "This looks interesting, and would probably be a big seller marketed to moms who are a few months into the painful affects of side feeding."

- "Neat idea, but this would need to be large for the adult. It would need to be washable or have a removable cover. I'm not keen on adding another layer."

Swaddle Co-Sleeper



What does it make use of:



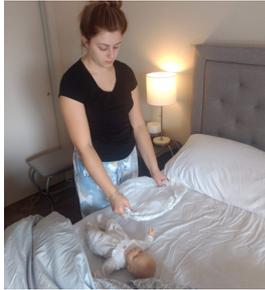
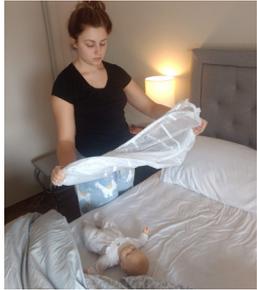
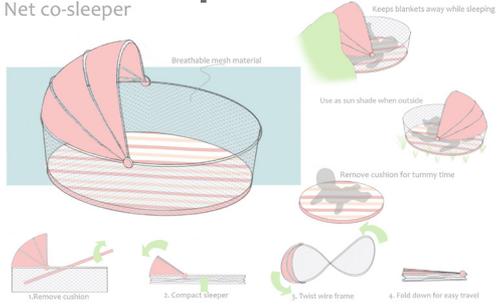
- "I think it's considered dangerous to swaddle while co-sleeping so not sure about that, but maybe a built in blanket would be good?"

- "This is nice for proper swaddling, which is so important in the early weeks, months, and sometimes it's hard to do correctly. I'd give that as a gift to a new mother, but I wouldn't buy it for myself because a baby wouldn't fit for long."

- "I like, but am worried about making the swaddle appropriate across baby sizing. You don't want it to be too big or small!"

Concept edits and mock-ups

Net co-sleeper



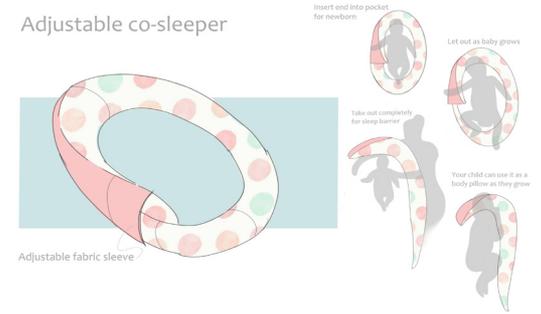
- Netting is nice for breathability
- It takes up a lot of space in the bed
- The baby messed with the sides and didn't like being enclosed

Crib wedge co-sleeper



- Fold down side works well for easy access
- Angle may be too much for some babies and newborns
- As the baby gets older they push up too much off the angle

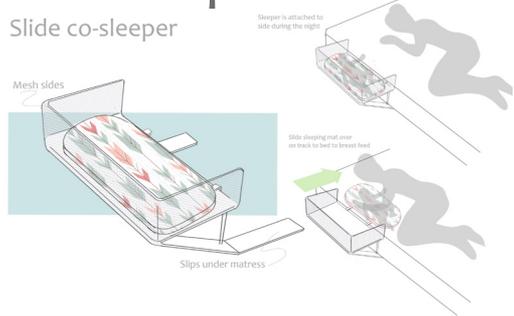
Adjustable co-sleeper



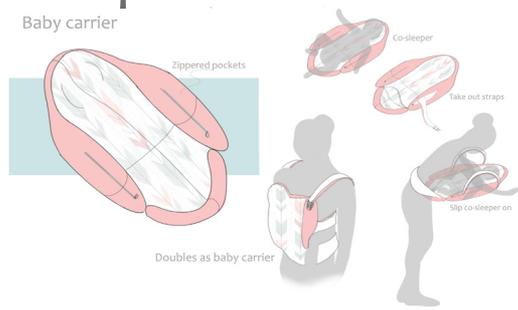
- Adjust-ability would be nice, but too difficult to work out
- Pillow is too fat and short
- Too much stuffing isn't safe

Concept edits and mock-ups

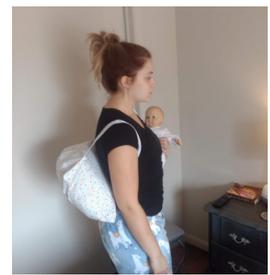
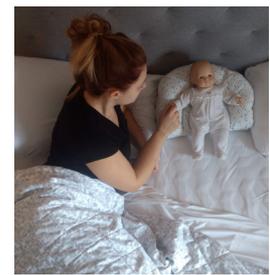
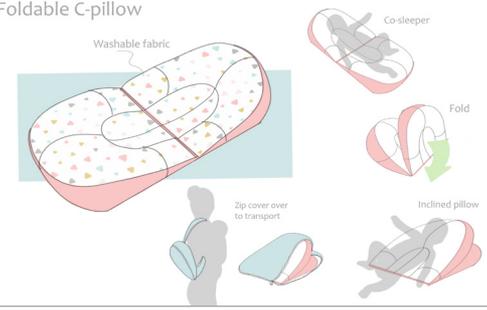
Slide co-sleeper



Baby carrier



Foldable C-pillow



- Functionality, second surface, and concept are really nice
- Would be difficult with different bed heights
- Does not have long term usage appeal

- The transition would be helpful for a sleeping baby
- Would provide good multi-functional usage
- The ergonomics and sizing would be challenging to work out

- Functionality works really well, and portability is nice
- Babies were most comfortable in this one
- Is a bit simple

User Testing

Harry: 4 months



Insight:

-Harry liked the inclined ones so that he was able to look around with craning his neck

-The netting one did not work well because it was too close and not sturdy enough with him playing with it

-Sizing would be important for the carrier or the c-pillow because he was already almost too big

Ethan: 6 months



Insight:

-Ethan seemed fairly happy in all of them, but the c-pillow was his favorite for sure

-The adjustable co-sleeper would be difficult to get the sizing right, not being too long, but also not too short and fat to wrap around

-Ethan pushed up a lot off of the wedge co-sleeper, which would be a problem if you were trying to get him to sleep

Cameron: 7 months



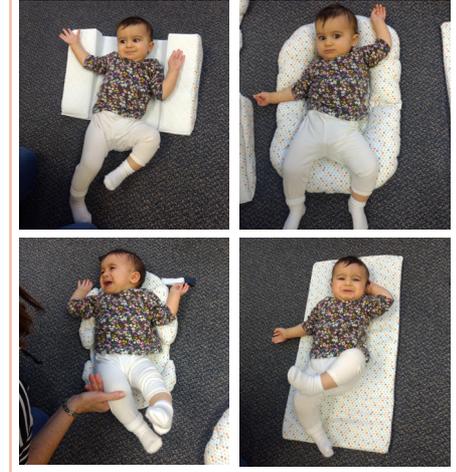
Insight:

-Like Harry, Cameron preferred the ones that were slightly propped so he could look around

-The net co-sleeper and slide co-sleeper would need to be bigger to accommodate a baby this big which might make them too large for a bed

-Cameron is big for his age, but I need to make sure that these sleepers work for all babies.

Yalda: 8 months



Insight:

-Yalda wasn't very happy at the time so it was difficult to know which ones she preferred.

-Yalda laid very spread out which made me consider that not all babies sleep tightly and there should be nothing for them to catch on

- She really disliked the carrier co-sleeper because I don't think it had enough support or comfort



Baby-By

The Multifuncional Co-sleeper



Baby-By

This all in one co-sleeper solution not only provides a safe and comfortable sleeping environment for baby, but also acts as a c-pillow, anti-roll ring, and play mat all in one so you can get more use out of a single product.





How it Works



Use netting in the up position to keep baby from rolling and keep covers out.



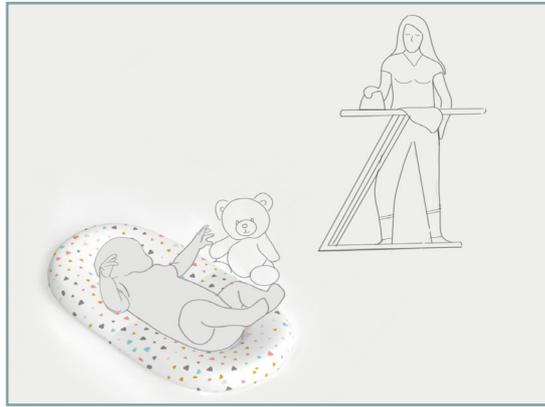
When baby needs to be fed easily press buttons to lower net down



Breastfeed at an optimal angle without disrupting or moving baby from sleeper



Unvelcro net, push buttons, and raise bar for play time with hanging toys



Remove washable pillow insert as baby grows or to keep baby from rolling



Fold pillow in half for breast feeding, inclined resting, and tummy time

Details

Baby-By folds up for easy travel and storage

Easy wipe fabric for cleaning



Washable fabric

Handle to take on-the-go

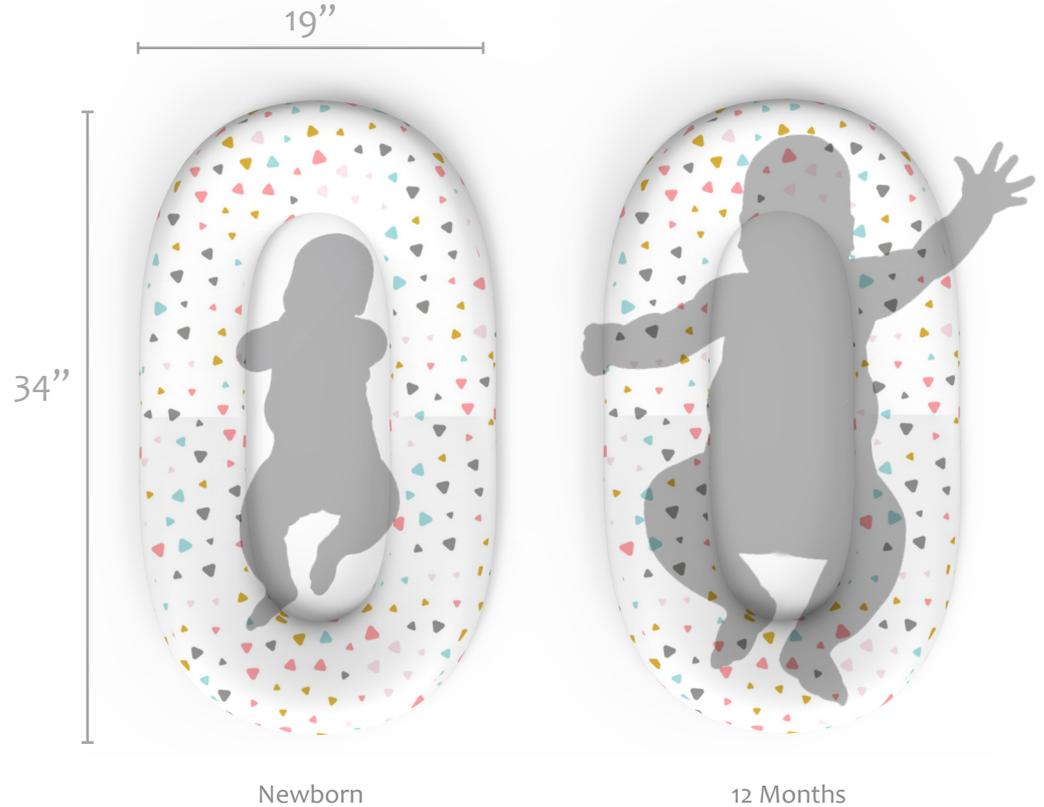
Breathable mesh fabric to keep baby safe in case of rolling

Push button hinges that lock in place for safety



Sizing

Age	Average for Boys	Average for Girls
1 Month	21 1/2 in (54.7 cm)	21 in (53.7 cm)
2 Months	23 in (58.4 cm)	22 1/2 in (57.1 cm)
3 Months	24 1/4 in (61.4 cm)	23 1/2 in (59.8 cm)
4 Months	25 1/4 in (63.9 cm)	24 1/2 in (62.1 cm)
5 Months	26 in (65.9 cm)	25 1/4 in (64.0 cm)
6 Months	26 1/2 in (67.6 cm)	25 3/4 in (65.7 cm)
7 Months	27 1/4 in (69.2 cm)	26 1/2 in (67.3 cm)
8 Months	27 3/4 in (70.6 cm)	27 in (68.7 cm)
9 Months	28 1/4 in (72.0 cm)	27 1/2 in (70.1 cm)
10 Months	28 3/4 in (73.3 cm)	28 in (71.5 cm)
11 Months	29 1/4 in (74.5 cm)	28 1/2 in (72.8 cm)
12 Months	29 3/4 in (75.7 cm)	29 in (74.0 cm)



As a newborn, your baby will fit snugly in the center ring of Baby-By, as they grow they will comfortably be able to lay on the top of the ring pillow while still having a safe and cozy resting and sleep environment.



Pattern Options



The pillow insert comes in several different patterns for baby boys and girls as well as some neutral patterns. These covers are washable and replaceable.

The Solution

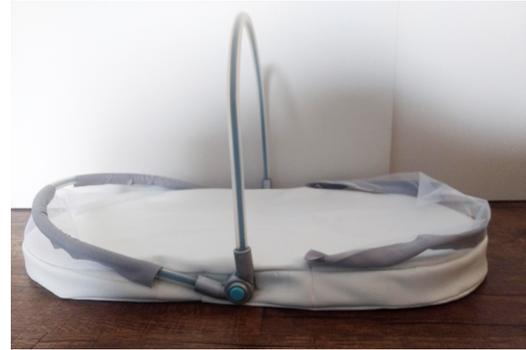
With Baby-By, new mothers are able to sleep better because they are not having to move from their bed during the night. They can stay in a state of half-sleep to nurse and be more rested for the morning. The closeness of baby to mom and dad encourages baby to breathe and helps them to grow and develop. With the multiple uses of Baby-By, parents can get more for their money by combining several products into one. Baby-By helps moms to get better sleep to have better days.



“Thank you for trying to fix a problem lots of parents are facing by giving safe options for co-sleeping! Now if we could just recruit more parents to do it!”

-Caitlin Milroy

Working Prototype





 Thank You