

GENERAL INFORMATION BOOKLET FROM AN
OCCUPATIONAL THERAPY PERSPECTIVE FOR
BABIES WITH DOWN SYNDROME



STIMULATION OF YOUR
BABY
Down Syndrome Care Box

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The INTRODUCTION



Congratulations on the birth of your precious baby. Wishing your baby a lifetime of health and happiness!

This booklet has been developed in order to help you to know what kind of exercises to do with your baby and also to be able to understand your baby from a sensory level.

We hope this is helpful to you and that you find this booklet insightful!

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DOWN SYNDROME

from an occupational therapy perspective

Occupational therapy aims to help children with Down Syndrome reach their optimal potential. Children with Down Syndrome can start with occupational therapy from birth - the sooner, the better! The occupational therapist will assist with reaching developmental milestones and will give you exercises specific to your child in order to achieve milestones and develop as optimally as possible. Every child is different and therefore therapy is very individualised and specific to your child's needs.

Areas that occupational therapists often have to work on with children with Down Syndrome are as follow:

- Addressing sensory processing difficulties.
- Working on engagement, joint attention, communication and social interaction (this is done with assistance of Speech therapists).
- Working on motor skills (fine motor and gross motor skills).
- Working on perceptual and cognitive skills.
- Aiming to assist a child with Down Syndrome become as independent as possible.



How to STIMULATE YOUR BABY

It is often difficult to know what to do with your newborn baby. This section serves to give you some ideas of things you can do to promote your baby's general development after discharge.

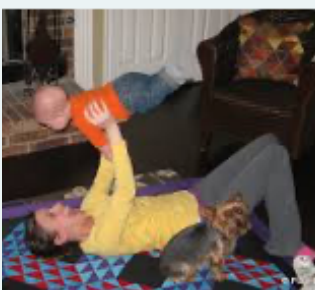
TUMMY TIME

The first important milestone that a child has to reach is head and neck control. Head control means that the baby's neck is strong enough to hold his/ her head up without it being floppy.

The exercise you can do to help your baby to develop good head and neck control is called tummy time.

Use the following tips to develop and build up the strength and stamina your baby needs to independently lie on his or her tummy and actually enjoy it. Here are a few steps that you can progress through to help achieve this. No need to be rigid about the steps. Allow your baby to be the guide. Start with each step a few minutes at a time, frequently throughout the day, building up the time spent in that position and build up to the last step. It is important to do tummy frequently in order for your baby to build up strength.

- Engage with your baby (talking, making sounds, rubbing their back, showing them toys) during tummy time to make the experience more pleasurable. Always supervise your baby during tummy time.
- Hold the baby upright above the adults shoulder while being burped or carried. The higher up on your shoulder, the more expectations you place on your baby to hold their head up and steady.



- Lie baby down on adult's chest or tummy. Talk to your child whilst you in this position. As your baby's tolerance and ability to hold their head up increases, adjust the angle at which your body is lying. Work towards the position where the adult is lying flat down on the floor.
- Have your baby lie with tummy down across adults arms while playing or being carried.
- Hold your baby up in the air whilst playing with him/her. Sing songs to him/her and move him/her up or down or round 'n round. After each movement, stop for a few seconds for your baby to register the movement.

TUMMY TIME CONTINUED

- Have your baby lie on his/her tummy on an exercise ball, big pillow or adult's shins. By placing your baby on these surfaces, you can adjust the angle at which your baby is positioned. A greater incline will be more comfortable, whereas a more flat position will be more challenging. When on the ball, slowly move your child forward and backward, with your body placed in front of him so that he/she can interact with you.



- Place your child tummy down on your shins (whilst lying on your back with your knees 90 degree angles). Vary the angle at which he/she is positioned. Turn this into a game and make it fun.
- Have your baby lie tummy down on the floor, with a rolled towel positioned under his upper chest and his arms over the towel.
- Independently lying on his/her tummy on the floor.



ROLLING



Rolling is an important developmental milestone as it helps develop your baby's postural control. It also helps stimulate and engage the left and right side of the brain and encourages the communication between both sides of the brain. Some babies are fast at learning how to roll and others take a bit longer. Here are a few tips to help your baby roll:

- Tummy time: As discussed above this helps improve your baby's neck and back muscles, which are important foundational skills to be able to roll.
- Lying on their back: You want your child's back and tummy muscles to develop equally, so that both muscle groups can work together to perform further milestones, such as rolling or sitting. Encourage a rounded position when lying on their backs.
- Side lying: Have your baby lie on their side whilst playing with their toys, looking at mirrors, books or your face. If your baby struggles to maintain a side lying position, place a rolled up blanket behind their back.
- Spend equal amounts of time on all four sides of your baby's body (back, right side, left side and tummy). This encourages equal development of all the different postural muscles. Try vary your baby's position every 15-20 minutes.



- Minimise time spent in baby equipment, such as the car seat, walking rings etc. Rather allow your baby to spend time on the floor, using their muscles and trying out different movements and positions.
- The transitions of movements are important: For example, try avoid placing your child in certain positions (such as from lying on their tummy to picking them up and putting them into sitting). Encourage them to assume a position, by guiding or moving their body in the normal manner at which one assumes that position, such as lying on their tummy, propping self up on knees and arms, weight shifting to the side to assume a side sitting position and pushing self up into sitting.
- Encourage weight shifting to the right and left side when picking up and putting down your baby (performing a rolling motion). By placing your baby down in a side rolling motion, your child will be encouraged to try keep their head in line with their body, which will strengthen the sides of their neck.

ROLLING CONTINUED

- Always encourage playing in the midline.
- Encourage your baby to separate movements of the upper and lower body: A segmental roll starts developing at 4-5 months. This involves twisting and separating the movements of the upper and lower body while initiating the roll with their hips. Move your baby back and forth by using twisting motions whilst singing different songs (such as Row Row Row your boat...). Start with both legs moving together, then progress to having your baby hold their one foot with their opposite hand. Let your child enjoy each movement in every position. Pause after each movement so that they register to movement and position.



- Hold your baby in a flexed position, on his/her tummy (face down) or side lying. Dance with your baby whilst in these positions. Stop every 30 seconds for about 10 seconds to help your baby register the movement.

VISUAL TRACKING

Visual tracking is when your baby sees something that is moving and then follows this object with their eyes. This skill is important for babies to develop, as it is important for them to be able to move their eyes smoothly and to move their eyes separately from their head.

You can use a simple toy that is black, white or red and place it 30cm from your baby's eyes and move horizontally (left to right). Your baby should follow the object with his/ her eyes.

Another way to exercise your baby's eye movements is to put the baby on a swing and move the swing side to side. Try have your baby focus on your face and fixate on your face despite their body moving in the swing. This can be done when your baby has good head control and can sit independently.



Understanding your baby on a **SENSORY LEVEL**

Sensory processing is the foundation to development. Information is received from the environment through sensory systems, it is then processed in the brain and then forms a behavioural response. For example: if you see a red traffic light, your behaviour will be to step on the brake to make the car stop.

We have 8 different senses: sight, hearing, touch, smell, taste, vestibular, proprioceptive and our interoceptors (which tell us if we hungry, tired etc). Our bodies has to process all of these sensory inputs simultaneously. Sometimes some children or babies struggle to process all of this sensory information or some sensory information, leading them to become dysregulated or “out-of-sync”. Some children are more sensitive to sensory input as they struggle to integrate or respond appropriately to the sensory input. This often results in extreme fussing, poor sleeping habits, feeding issues and emotional irritability.

In occupational therapy we focus on helping these children cope better with sensory information and thus processing it better, to promote a more calm-alert and happy child or baby.

Babies are all born with the ability to process sensory information they receive from their environment, however some struggle somewhat. Below is a list of sensory “red flags” that can be seen if a baby has a regulatory or sensory processing disorder (From “Your Sensory Baby” book by Megan Faure).

What are the SENSORY "RED FLAGS"

If the baby is over 6 months of age and displays at least 2 of the following traits, then a referral to an OT who specialises in Sensory Integration may be beneficial. The OT will then determine if he/she has a regulatory or sensory processing disorder.



1

Sleep disturbance

Persistent problem in the regulation of sleep/wake cycles, including difficulty with falling asleep and staying asleep, which are not associated with parental mismanagement.

The criteria for sleep disturbance are:

- The baby takes over 30 minutes to fall asleep. Even after calming techniques and bedtime routines have been carried out.
- Frequent waking (more than two) in the night, that are unrelated to nutritional or habitual night feeds.



2

Difficulty self-consoling

The baby has trouble with soothing himself by bringing his hands to his mouth, looking at certain sights, or listening to voices or sounds.

Once upset, the baby requires extreme efforts to calm down.

This differs from normal unsettledness in that the caregiver will spend 2-4 hours a day over a period of 3 weeks or longer, to calm the baby.



3

Feeding difficulties

The child must display at least 2 of the following behaviours:

- Does not have an established, regular feeding schedule;
- Demonstrates distress around the process of feeding, with regurgitation and spitting out of food, particularly when eating textured or lumpy foods;
- Eats only soft foods;
- Had difficulty latching onto the breast for longer than 5 days as a newborn;
- Will not tolerate the change from the breast to a rubber or silicone teat.



4

Distress with changes in routine

The baby becomes very distressed by changes or transitions from one activity to the next, which is shown in prolonged periods of crying or fussing (over 5 minutes) that occur at least 3 times a day



5

Distress with routine caregiving and play experiences which offer a sensory challenge

The baby responds by crying, withdrawal, or other negative behaviours when confronted with normal everyday sensory stimulation, such as touch (being held by someone), movement, sight and sound. These behaviours include at least 3 of the following:

- Resists cuddling, pulls away or arches,
- Resists being swaddled,
- Is distressed at having his face or hair washed,
- Hates being placed in the car seat,
- Resists being placed in certain positions (e.g. on back or stomach),
- Avoids touching certain textures or getting hands messy,
- Doesn't want to wear certain clothing or wants to wear too many layers or very warm clothes,
- Fears of being swung in the air, involved in boisterous play or being roughhoused,
- Is excessively startled or distressed by loud sounds (e.g. vacuum cleaner, door bell or barking dog).



6

Emotional stability

The baby displays fussiness, irritability, negative moods and a tendency to rapidly escalate from a contented mood to distress without any apparent cause. In many cases, this is very disruptive to the family. This child is never very happy and (over 9 months of age) does not initiate interaction with the caregiver.

How to read YOUR BABY'S SIGNALS

Babies have sleep and awake cycles that they go through. The development of these cycles are important as it reflects the maturation of the central nervous system and influence growth, development and learning.

It is important for you as a parent to be able to identify the different states of your baby, as it will influence the way in which you interact with your baby. The best state in which to play with and feed your baby is in the quiet-alert stage. When your baby is in the active-alert stage it is important to change your interaction with him/ her and to employ calming strategies. Below is an image that displays pictures of each stage.

1. Deep sleep

- Lies still
- Eyes closed
- Deep and regular breathing pattern
- Not easily awoken



4. Quiet-alert

- Fully awake and content
- Bright shining eyes
- Predictable responses
- Best time to play and engage



2. Light sleep

- Eyes closed, but might be some eye movements
- Facial movements
- Irregular breathing and movement



5. Active-alert

- Transitional state to crying
- Jerky movements
- Startles easily
- Avoids eye contact and pulls faces



3. Drowsy

- Eyes open and close, but look glazed in appearance
- Some smooth movements of limbs
- Can be stimulated to a more alert state or to calmed to a sleep state



6. Crying

- Can show hunger, discomfort, over stimulation



Since babies cannot talk at birth, they use behavioural cues to communicate their needs to their parents. A baby who is tired or over-stimulated will send out signals that says, "I need a break!" These warning signs tell you to stop what you are doing and give the baby a rest. If warning signs are misinterpreted and ignored your baby will go into a state of stress and show stress signals. See below images of common stress cues used by babies:

Yawn



Gaze aversion



Arching



Stop sign



Finger splaying



Stretching out arms and legs



Images from: <https://www.kopabirth.com/newborn-sleep-schedule/>

Information from: <https://www.centreforperinatalpsychology.com.au/states-of-alertness/>

Should you have any queries
PLEASE DO NOT HESITATE TO CONTACT US

sensoryscape

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