



## **CHAPTER 4**

# **THE USE OF BABY NECK FLOATS. PHYSICAL, NEUROLOGICAL AND DEVELOPMENTAL RISKS IN AQUATIC ACTIVITIES FOR CHILDREN**

Juan Antonio Moreno Murcia, Rita Fonseca Pinto, Ana Ortiz, Apolonia Albarracín, Luciane de Paula, Pablo I. Marcos Pardo and Flávia Yázigi

### **How to cite this publication:**

Moreno-Murcia, J. A., Fonseca-Pinto, R., Ortiz, A., Albarracín, A., de Paula, L., Marcos, P. I., & Yázigi, F. (2026). The use of baby neck floats. Physical, neurological and developmental risks in aquatic activities for children. In R. Fonseca-Pinto, A. Albarracín, A. Ortiz, F. Yázigi, & J. A. Moreno-Murcia (Eds.), *Integral aquatic education: Foundations, practices, and evidence* (pp. 33-42). Sb editorial.

# THE USE OF BABY NECK FLOATS. PHYSICAL, NEUROLOGICAL AND DEVELOPMENTAL RISKS IN AQUATIC ACTIVITIES FOR CHILDREN

*Juan Antonio Moreno Murcia, Rita Fonseca Pinto, Ana Ortiz, Apolonia Albarracín, Luciane de Paula, Pablo I. Marcos and Flávia Yázigi*

Neck floats meet all the criteria for predatory marketing. This is a well-founded and educational position on the recommendation not to use them for the sake of the baby's well-being, safety and development.

## Introduction

Neck floats have become widely popular on social media and e-commerce sites targeting parents of infants, particularly those aged 0 to 24 months, a critical stage in neurodevelopment (Hadders-Algra, 2007). These are flotation devices that are placed around the infant's neck to keep them afloat in the water, popular in recent years in swimming pools, bathtubs and even “baby spas”. Although they have been promoted for their supposed benefits (from greater mobility and relaxation to improvements in certain childhood conditions), multiple experts and health organisations warn that these floats carry serious physical and developmental risks. Even entities such as the Food and Drug Administration or FDA (2022) and the American Academy of Pediatrics or AAP (2019) have warned of significant risks.

The [Ibero-American Association of Aquatic Education, Special Education and Hydrotherapy \(AIDEA\)](#) aligns itself with international organisations such as the [Swimming Teachers' Association \(STA\)](#), in advising against the recreational and clinically unjustified use of these devices, appealing to the precautionary principle and current scientific evidence.

## Historical context

Baby neck floats are floating rings made of plastic (or other materials) designed to be placed around the baby's neck, keeping them afloat so that their head is supported below the chin and neck, keeping it out of the water. In this position, the baby can move their arms and legs freely in the water without an adult holding them directly (apparent autonomy). Although this concept may seem recent, its origins (in the early 2000s in countries such as Russia and China) date back to therapeutic uses for babies with special needs, always under professional supervision and with high-quality materials.

Subsequently, as Freedman points out, the idea was adopted in recreational settings, for example, in the early 2010s when the first “baby spas” emerged (the first baby spa is cited in Perth, Australia, shortly after the boom in children's spas in China), where these floats were used in conjunction with hydrotherapy and massage. Images of babies floating peacefully with a ring around their necks (Image 1) quickly spread on social media, popularising the device as a fashionable accessory for bathing young children.

Image 1. Baby floating on a neck float ([goodhousekeeping.com](http://goodhousekeeping.com) [goodhousekeeping.com](http://goodhousekeeping.com)).



In 2014-2015, commercial companies began selling neck floats to the general public. A notable example is [Otteroo](http://Otteroo), an American brand founded in 2013, which launched its neck float in 2014. This product gained notoriety on social media and maternity blogs, and its sales reached thousands of units. However, in 2015, it faced a recall of 3,000 units after at least 54 cases of seam breakage were reported, which could cause sudden deflation. At the same time, in the United Kingdom and other countries, authorities and experts in infant swimming began to express concern. In 2017, two leading organisations in baby swimming instruction, the British [STA](http://STA) and the international organisation Birthlight Origin, issued a joint report entitled "[The Hidden Risks of Baby Neck Floats](#)", warning that this material, then booming, could have detrimental effects on the physical, neurological and emotional development of the baby.

Since then, the alarm sounds have only grown louder: professionals in aquatic education, aquatic safety and physiotherapy have been documenting the risks and advising against their use.



## Device description and alleged benefits

A neck float consists of an inflatable ring (usually made of transparent or coloured PVC) with a central hole that fits around the baby's neck. Some models are made of solid foam or other non-inflatable materials. The aim is for the baby to float upright, with their head and chin resting on the ring and their body submerged from the neck down. This allows the baby to move, kick or relax without sinking their head, staying afloat even without being held by an adult. Sizes are available for babies from newborns (including premature babies, in certain products) up to around 2-3 years of age .



**What benefits do its advocates claim?** Manufacturers and some promoters argue that these devices offer a safe way for babies to enjoy the water with freedom of movement and exercise their bodies. For example, it is argued that allowing babies to move freely in the water from an early age could strengthen their muscles and coordination, improve joint mobility and promote motor development. It has also been suggested that floating in warm water can relax them, improve their sleep quality and even positively stimulate their nervous system. Some neck floats have been used for therapeutic purposes in aquatic physiotherapy interventions for infants with motor disabilities or developmental delays, with the aim of providing support in the water and facilitating certain activities with less gravity. In fact, the founding company [Otteroo](#) stated that its floats were originally designed as therapeutic support devices for babies with special conditions, rather than as water toys .

[Children's spas and early stimulation centres](#) have anecdotally reported that babies are "happier" and more active when floating with these rings, indicating that they enjoy the feeling of weightlessness and that the resistance of the water can help strengthen their legs and improve their balance when they kick gently.

**What does the science behind aquatic activities say?** However, it is important to emphasise that the scientific evidence supporting these benefits is very limited. To date, there are no robust clinical studies demonstrating significant improvements in motor or neurological development from the use of neck floats compared to other conventional aquatic activities.

Reed et al. (2021) explored the use of the Otteroo float and conducted a case study, without a control group and with a very limited sample size ( $n = 4$ ) of infants at risk of motor delay, which prevents generalisable inferences. This type of evidence corresponds to level IV according to the Oxford hierarchy (OCEBM, 2009). The results suggested that some caregivers perceived the experience as enjoyable for the baby, while others did not. In any case, the authors concluded that more research is needed to determine efficacy or real impact before recommending it widely. In short, the



supposed benefits remain mainly theoretical or anecdotal, while the identified risks are better documented and are a cause for serious concern on the part of the community.



## Safety risks: drowning, suffocation and physical injury

Despite their innocent appearance, neck floats pose several water safety risks. **The most immediate and serious danger is the risk of drowning in the event of device failure or improper use.** Unlike a certified life jacket, these inflatable rings can suddenly deflate or come loose. The U.S. Food and Drug Administration (FDA) has emphasised that the risks of these products include death by drowning and suffocation, as well as strain and injury to the baby's neck. In June 2022, the FDA issued an official statement urging parents, carers and professionals not to use neck floats, especially on babies with special needs, after receiving reports of at least one baby dying and another seriously injured in connection with their use. The agency stressed that **the safety and effectiveness of these floats “has not been established” for any of the purposes for which they are marketed** (neither to strengthen the baby, nor to promote motor development, nor as a therapeutic tool). In other words, there is no evidence that they provide benefits, but there is evidence that they can fail catastrophically.

**Why could a baby drown in a float designed to keep them afloat?** Injury prevention experts explain that it is due to a combination of factors: on the one hand, all inflatable devices are susceptible to punctures or deflation. A small hole that could be made by the baby's own bite or suction, rubbing the material against a rough surface or contact with something sharp, a faulty valve or a poorly sealed closure can cause rapid air loss, and if this happens suddenly, buoyancy is lost, and the baby is submerged without warning. In fact, events of this type led to the withdrawal of certain models from the market: as we mentioned, this is what happened in 2015, when Otteroo withdrew its first version after dozens of cases of seam breakage were reported (fortunately without any casualties at the time).

### Drowning risk

Unfortunately, serious incidents were subsequently documented, as in 2020, a 6-month-old baby in Maine (USA) drowned, and a 3-month-old baby in New York suffered severe injuries. Both cases occurred when the baby slipped through the hoop and became submerged. The US Consumer Product Safety Commission (CPSC, 2022) reported in 2022 that it was aware of at least 68 incidents in which babies slipped through the float (without it being visibly deflated), requiring immediate rescue by the caregiver.

By 2024, reports compiled internationally already spoke of at least 85 “scares” or incidents in the last five years, including two confirmed deaths, due to babies partially slipping out and ending up with their heads underwater. In many of these cases, parents claimed to be present and watching, but the incident still occurred suddenly. The causes range from floats that gradually lost air, to surfaces made slippery by soap, to possible sizing errors or simply unexpected movements by the baby. These events underscore

the warning that no inflatable float is foolproof, and therefore, a **baby's safety should not be entrusted to it alone.**

Another risk associated with these floats is suffocation or strangulation. If the size or design of the float is not suitable, the baby's chin could slip inside the ring, trapping the neck in a dangerous position. A float that is too large allows the baby to slip through, while one that is too tight can compress the neck against the windpipe. Recreational models tend to have low weight limits and standard openings, not to mention that every baby has a different physical build, which increases the likelihood of an improper fit.

Specialists point out that if the baby's neck gets stuck in the ring, there is a risk of airway obstruction and suffocation. This problem is less common in high-quality medical devices (custom-designed and made with more reliable materials), but in generic products, it is a real threat. The AAP warns that **relying on inflatable floats can provide a "false sense of security": adults relax their vigilance, believing the child to be safe,** when a single malfunction is enough for a tragedy to occur. For this reason, paediatricians insist that **no float can replace direct supervision,** as even with a float on, the baby must be in the water "within arm's reach" of an adult at all times.

### **Risk of musculoskeletal injuries**

In addition to the danger of drowning, neck floats can cause musculoskeletal injuries. **Hanging from the neck is not a natural position for such a small baby,** as excessive pressure on the chin or base of the skull can cause soft tissue damage. The FDA has reported cases of neck strain and sprains associated with their use, especially in babies with low muscle tone or conditions such as spinal muscular atrophy, whose necks are more vulnerable.

A medical study published in AAP News (American Academy of Pediatrics, 2015) reported incidents where, after using these floats, some babies experienced neck skin irritation, stiffness or pain when moving their heads, symptoms that suggest cervical ligament strain (although fortunately without permanent sequelae). If the size is not exactly right, the float can compress anatomical structures in the neck or, conversely, allow the baby's head to slip down, in both cases with possible physical injury.

Faced with this situation, safety agencies have begun to respond. The FDA not only issued its warning in 2022, but also expressly banned the therapeutic use of neck floats until further notice, instructing aquatic therapists to refrain from using them even for rehabilitation purposes. The CPSC, for its part, formally requested Otteroo and other sellers to withdraw all their models from the market in 2023 after concluding that they presented an "unacceptable drowning hazard". Failing to obtain a voluntary recall from some manufacturers, the CPSC announced regulatory measures, and by the end of 2024, was discussing the implementation of a mandatory safety standard for any neck floats sold in the US and even considered a total ban on this product category. These unprecedented actions reflect how seriously the risks are being taken, showing that **novelty accessories have come to be considered potentially as dangerous as other**

**children's products that have been banned** (e.g., inclined cribs or unsafe baby walkers). While the regulations are being finalised, the provisional recommendation from all these entities is clear: **"Do not use baby neck floats"**.



## Impact on motor and neurological development

Beyond the immediate safety risks, neck floats have raised concerns about their effects on babies' psychomotor development. The first months of life are critical for children to acquire head control, trunk strength and movement coordination, skills that arise from freedom of movement and interaction with gravity and the environment. Neck floats, by artificially restraining the baby, interfere with this natural developmental process. One of the most frequently cited issues is the **forced upright posture imposed by the float**. Newborns and young infants normally adopt an inclined position in the water (approx. 30°-45° from the horizontal) when held by an adult, which allows them to move their head freely and rotate their body. In contrast, with the neck ring, the baby is suspended almost completely vertically, with the neck continuously extended to keep the head in an upright position.

This position is contrary to that needed to enjoy the aquatic environment and observe, **limiting natural interaction with the water**, with the adult carer and with others, thus affecting the transmission of emotions and the adjustment of social relationships. By not being able to lie down partially or completely, the baby loses the opportunity to turn around and experience different spatial orientations, which is essential for the development of balance and the vestibular system (responsible for the sense of position and movement). By immobilising the head in a single orientation, the neck float prevents three-dimensional movements, potentially delaying the maturation of balance and proprioception.

The **load on the cervical spine** is also a concern. When a baby hangs vertically in the water with their head supported by a semi-rigid structure, especially under the age of 5 months, there is concern about compression of the cervical vertebrae, which are very soft, and tension on ligaments and muscles. Under normal conditions, babies develop the natural curve of their neck and strengthen their muscles through tummy time (lying on their stomach) and efforts to lift their head, followed by crawling and postural transitions. The neck float partially negates these efforts, as it holds the head in position without the baby having to actively support it. Paradoxically, this could weaken rather than strengthen certain muscle groups.

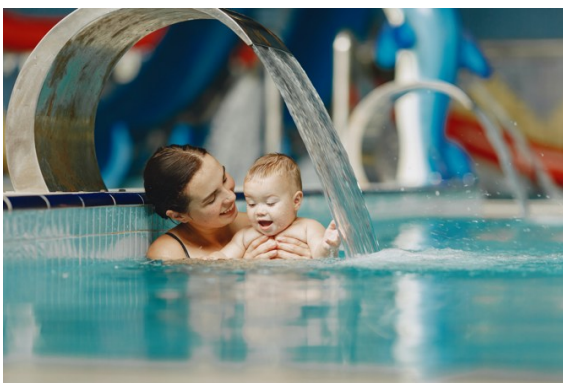
Another possibility is the **risk of stretching** the nerve branches of the cervical spine, which could cause brachial plexus injuries. This type of injury is comparable to what can occur during childbirth, when the baby passes through the birth canal and assistance is required in the process. The brachial plexus is responsible for nerve conduction to the hand and all motor functions of the arm. The positioning of the baby imposed by the float could also cause complications at this level.

Another area of development that may be affected is **gross motor skills and body**

**expression.** Parents who have tried floats report that their babies initially remain very still or “passive” in the water, moving only their arms and legs in a limited way. This makes sense given that the ring restricts the lateral mobility of the neck and torso. Neck floats inhibit full-body rotation and reduce freedom of movement to an essentially linear plane. In addition, there is no observation of the environment; the float itself is wide, and the baby can only look at what is outside the water and above them.

**Sensory isolation** is another factor of concern, as tactile contact with the caregiver and the aquatic environment is greatly reduced, which may affect the multisensory stimulation that water normally provides. In fact, one of the fundamental principles of aquatic stimulation for babies is that it should be a family activity: a moment of bonding and shared play with the parent in the water, full of looks, smiles, songs and rocking (Image 2). All this is difficult to achieve when the baby floats alone in a ring, supported only by the neck, in a confined environment reminiscent of a large individual sink (Image 2).

**Image 2. Family activity in an aquatic environment and a baby floating in a neck ring.**



It is worth mentioning that not all specialists are totally against their use in controlled therapeutic contexts. Some [paediatric physiotherapists](#) have explored neck floats to allow babies with motor disabilities to move in the water with some autonomy, under the **direct supervision of qualified professionals**. In these specific cases, there could be benefits such as facilitating the exercise of limbs without weight bearing. However, even within this field, professional bodies urge caution: the FDA has made it clear that **“the safety and efficacy of neck floats for increasing strength, promoting motor development, or as a physiotherapy tool have not been established,”** advising against their use even in hydrotherapy for babies with conditions such as spina bifida, Down syndrome, or cerebral palsy. In other words, **there is no guarantee that the potential therapeutic benefit outweighs the inherent risk**. Many therapists opt for more traditional alternatives (manual support, specific flotation vests, etc.) to achieve similar goals with greater safety.



## **Institutional conclusion**

Considering the identified risks and the lack of solid scientific evidence to support their



supposed benefits, the [Ibero-American Association of Aquatic Education, Special Education and Hydrotherapy \(AIDEA\)](#) **does not recommend the use of neck floats on babies or children, either in recreational or therapeutic contexts**, without rigorous clinical justification and continuous specialised professional supervision.

AIDEA urges health, aquatic education, physiotherapy, paediatrics and early stimulation professionals to promote safe, effective practices based on human accompaniment, prioritising bonding, communication, respect for the child's natural development and well-being, as reflected in the document "[Bases for Respectful Aquatic Education in Childhood](#)". The aquatic environment should be a safe place for play, learning and strengthening emotional bonds, not for isolation or passive restraint.

AIDEA concludes that:

- **There is insufficient clinical evidence** to justify the use of neck floats in recreational, educational or therapeutic contexts.
- **There are documented risks** to the physical safety, respiratory safety and motor development of babies.
- **It is recommended to avoid their use** and opt for aquatic activities with direct supervision by specialised aquatic educators, emotional support and respect for natural development.

This position will remain in force until the safety and efficacy of these devices have been reliably demonstrated. To this end, AIDEA will continue to monitor research progress in the field to update its guidelines in accordance with scientific, ethical and public health criteria.



## References

- American Academy of Pediatrics. (2019a). *Infant Swimming Programs*. AAP Publications. [goodhousekeeping.com](http://goodhousekeeping.com)
- American Academy of Pediatrics (2019b). Prevention of Drowning. *Pediatrics*, 143(5), e20190850. <https://doi.org/10.1542/peds.2019-0850>
- American Academy of Pediatrics. (2015). *Baby flotation devices*. AAP News, 36(8), 33. [10.1542/aapnews.2015368-33f](https://doi.org/10.1542/aapnews.2015368-33f)
- Consumer Product Safety Commission. (2022). *Product Safety Warning: Otteroo infant flotation rings*. CPSC Release 23-051. [cpsc.gov](https://www.cpsc.gov)
- Food and Drug Administration. (2022). *Do not use baby neck floats due to the risk of death or injury – FDA Safety Communication*. FDA.gov. [abcnews.go.com/telemundo.com](https://www.fda.gov/oc/2022/safety-communication-do-not-use-baby-neck-floats-due-to-the-risk-of-death-or-injury)
- Freedman, F. (s.f.). The hidden risks of floating neck rings for babies. The Swimming Teachers' Association & Birthlight. <https://www.sta.co.uk/>
- Hadders-Algra, M. (2007). *Putative neural substrate of normal and abnormal general movements*. *Neuroscience and Biobehavioral Reviews*, 31(8), 1181–1190. doi:10.1016/j.neubiorev.2007.04.009.
- Reed, I., Menz, S., & Smith, B. A. (2021). The Otteroo: A Case Series Exploring Its Potential to Support Physical Therapy Intervention in Infants with or at Risk for

Developmental Delay. *Healthcare* (Basel, Switzerland), 9(2), 109.  
<https://doi.org/10.3390/healthcare9020109>

Swimming Teachers' Association & Birthlight (2017). *The Hidden Risks of Floating Neck Rings for Babies*. Comunicado conjunto. <https://www.sta.co.uk/news/>

Swimming Teachers' Association. (2017). Comunicado de prensa: *Baby Swimming Experts Warn Parents About the Hidden Risks of Floating Neck Rings*. STA.co.uk.  
[sta.co.uk](https://www.sta.co.uk)