

# Synthesized Analysis: Developmental Tools for Week 1 (Node: Internal World)

## I. Executive Synthesis: Definitive Recommendation for Week 1

This analysis synthesizes multiple expert reports<sup>1</sup> to provide a definitive tool recommendation for a 1-week-old infant (experiencing days 8-14) targeting the curriculum node "Internal World (The Self)."

A unanimous consensus across all reports identifies the primary developmental task as the formation of a "proto-self".<sup>1</sup> This is not a cognitive construct but a foundational, physical, and relational one, built upon two key precursors: **(1) Body-Based Differentiation** through proprioceptive and tactile feedback, and **(2) Relational Co-Regulation** through caregiver attunement.<sup>1</sup>

The reports diverged on the Tier 1 tool, prioritizing either body-based differentiation (the DandleLION ROO2<sup>1</sup>) or relational co-regulation (the CarePlus KMC Wrap<sup>1</sup>). This synthesized analysis concludes that the **DandleLION Medical Dandle ROO2 Positioning System** represents the absolute highest-leverage *tool* for this specific node.

While relational co-regulation (Kangaroo Mother Care) is a paramount *practice*, the CarePlus Wrap is a *facilitator* of that practice.<sup>1</sup> The DandleLION ROO2, conversely, is a unique, professional-grade *tool* that provides *contingent proprioceptive feedback*.<sup>2</sup> This is a neurodevelopmental function essential for building the infant's internal body map (Rochat, 2003; Piaget, 1952) that cannot be replicated by standard consumer products.<sup>1</sup> It directly addresses the "practice" mandate by providing a dynamic, 24/7 environment for the infant to execute and receive feedback from their own spontaneous "General Movements" (Prechtl, 1990).<sup>1</sup>

The DandleLION ROO2 is the synthesized Tier 1 recommendation; the CarePlus Wrap is designated as the Tier 2A High-End Alternative.

## II. Consolidated Developmental Framework: The "Proto-Self" at 8-14 Days

The "Internal World" of a 1-week-old is the world of the body. The following principles synthesize the core theoretical frameworks from all expert reports.

### Pillar 1: Body-Based Differentiation (The Physical Self)

The "Internal World" begins as a purely physical, sensory-motor experience. The first "self" is the bodily self, which must be distinguished from the "non-self" (the environment).<sup>1</sup>

- **Evidence (Rochat):** At 1 week, the infant operates at Level 1: Differentiation (Rochat, 2003). They distinguish self from non-self via "self-specifying information," such as the "double touch" phenomenon (feeling both the hand touching and the face being touched) (Rochat & Hespos, 1997).<sup>1</sup>
- **Evidence (Piaget):** The infant is in Substage 1 (0-1 month) of the sensorimotor period. Reflex exercises (rooting, grasping) are not merely automatic; they provide crucial proprioceptive feedback that builds the first "schemas," or body maps (Piaget, 1952).<sup>1</sup>
- **Evidence (Prechtl):** The quality of spontaneous, endogenously generated "writhing general movements" is the earliest expression of the motor self and a primary marker of neural integrity (Prechtl, 1990).<sup>1</sup>

The primary tool implication is that the highest-leverage tools must provide a rich, *contingent* environment for this sensory-motor exploration, offering boundaries and feedback to these self-generated movements.

### Pillar 2: Relational Co-Regulation (The Relational Self)

The infant's internal *state* (interoception) is not yet self-regulated. It must be "co-regulated" by a responsive caregiver, forming the foundation for emotional security and attachment.<sup>1</sup>

- **Evidence (Attachment & Intersubjectivity):** The self emerges through primary intersubjectivity—the innate capacity for engagement with caregivers (Trevarthen,

2001)—and the formation of a secure attachment, which relies on caregiver responsiveness (Bowlby, 1969).<sup>1</sup>

- **Evidence (Porges):** The infant's autonomic nervous system (ANS) is immature. It relies entirely on the caregiver's social engagement system (ventral vagal complex) to modulate arousal (e.g., soothing crying through holding) and achieve homeostasis (Porges, 2011).<sup>1</sup>
- **Evidence (Neuroprotective Care):** Principles of Neuroprotective Care (NIDCAP) (Als, 1986) emphasize that a consistent "holding environment" (proprioceptive containment, co-regulation) protects brain development and builds the neural foundations for self-soothing.<sup>1</sup>

The primary tool implication is that tools must *facilitate* this caregiver-infant synchrony (e.g., Kangaroo Mother Care wraps) rather than *replace* it (e.g., electronic soothers).

### III. Consensus Analysis: Developmentally Mismatched Tools (Exclusions)

All reports demonstrated expert discernment by identifying and excluding common but inappropriate products. The following tools are unanimously rejected for a 1-week-old based on the consolidated evidence.

1. **Weighted Sleep Products (e.g., Weighted Swaddles, Sacks, Blankets)**
  - **Identification:** Nested Bean Zen Swaddle, Dreamland Baby Weighted Swaddle.<sup>1</sup>
  - **Consensus Rationale:** These products are explicitly advised against by the American Academy of Pediatrics (AAP) in their 2022 safe sleep guidelines.<sup>1</sup> The U.S. Consumer Product Safety Commission (CPSC) has also issued warnings following infant fatalities.<sup>1</sup>
  - **Mechanism of Harm:** The external weight on an infant's compliant chest wall can impede diaphragmatic excursion, restricting breathing.<sup>1</sup> Furthermore, it may reduce arousal or impair movement, increasing the risk of SIDS.<sup>1</sup> This is a non-negotiable exclusion.
2. **Screen-Based Electronic "Stimulation" (e.g., Apps, Videos)**
  - **Identification:** "Developmental" smartphone apps, Baby Einstein-type videos.<sup>1</sup>
  - **Consensus Rationale:** This violates the AAP recommendation for ZERO screen time before 18 months.<sup>1</sup> At 1 week, visual acuity is approximately 20/400, and color perception is nascent.<sup>1</sup> The screen content is an incomprehensible blur of light. The non-contingent, passive stimulation risks overwhelming the immature sensory system and displacing critical face-to-face interaction.<sup>1</sup>
3. **Visually & Auditorily Overwhelming Devices**

- **Identification:** Multi-sensory activity gyms, complex colorful mobiles, battery-operated soothers with artificial sounds.<sup>1</sup>
  - **Consensus Rationale:** The 1-week-old visual system requires high-contrast, simple black-and-white patterns (Fantz, 1963).<sup>1</sup> Complex color and motion lead to sensory overload and gaze aversion.<sup>1</sup> Similarly, artificial electronic sounds can mask biologically relevant inputs (caregiver's voice, heartbeat) and provide non-contingent, passive input.<sup>1</sup>
4. **Passive "Containers" (e.g., Swings, Bouncers, Mirrors)**
- **Identification:** Infant swings, bouncers, infant mirror toys.<sup>1</sup>
  - **Consensus Rationale:** Prolonged use of containers restricts the spontaneous "General Movements" (Prechtl, 1990) that are critical for proprioceptive feedback and motor-system development.<sup>1</sup> Mirrors are also mismatched, as true self-recognition does not emerge until ~18 months; at 1 week, a mirror is just a confusing visual pattern.<sup>1</sup> The "self" is discovered through self-generated movement, not passive containment.

## IV. Definitive Tiered Analysis: Synthesized Tool Recommendations

This section presents the single best-in-class tool for each tier, synthesized from all reports and justified with consolidated evidence.

### Tier 1: Absolute Best (Maximum Developmental Leverage)

#### 1. Tool Name: DandleLION Medical Dandle ROO2 Positioning System

- **Recommended Configuration:**
  - **Model:** ROO2 (Reusable Neurodevelopmental Support System).
  - **SKU:** Size: Small/Term (for 2.5–4.5 kg infants).<sup>1</sup> (Note: XS SKU D14510 B12 is for <1000g).<sup>2</sup>
  - **Specifications:** 100% cotton knit, stretchable, breathable, latex-free fabric. Medical white (hypoallergenic, no dyes).<sup>1</sup>
  - **System Includes:** Base unit (with attached headroll and pouch) and one (1) multi-purpose roll.<sup>2</sup>
  - **Certifications:** ISO 13485 Medical Device Quality Management.<sup>1</sup>

- **Price Breakdown (EUR):** Approximately €80.00 – €120.00 per unit.<sup>1</sup>
- **Key Developmental Domains:**
  - Proprioceptive Feedback & Body-Based Differentiation (First Principle – Rochat, 2003; Piaget, 1952; Prechtl, 1990).<sup>1</sup>
  - Sensory Regulation & Neuroprotective Care (First Principle – Porges, 2011; Als, 1986).<sup>1</sup>
- **Lifespan (Primary Item):** 40–50 weeks.<sup>1</sup> Justification: Medical-grade textile designed for repeated industrial laundering (up to 71°C).<sup>14</sup>
- **Sanitization Protocol:**
  - **Giver Protocol:** Machine wash (up to 71°C) with hospital-grade detergent. High-heat tumble dry. Inspect all fabric and Velcro for integrity. Store in a sealed, sanitized bag.<sup>1</sup>
  - **Receiver Protocol:** Inspect sealed bag. Visually inspect product integrity. Wash hands before use.<sup>1</sup>
- **Purchase Channels & Sourcing Viability:**
  - **Channels:** AGHealth Ltd (UK/EU Distributor for DandleLION Medical).<sup>1</sup>
  - **Viability: Specialty-Professional.** This is a medical device, not a consumer product. Requires direct B2B contact with the medical device distributor.
- **Tier Justification & Fit Analysis (Synthesized):**
  - **Why Tier 1:** This tool is the synthesized Tier 1 winner because it is the *only* recommendation that directly targets the most fundamental precursor of the "Internal Self"—body-based differentiation—using a mechanism of *contingent feedback*.
  - **Head-to-Head Resolution:**
    - **vs. KMC Wraps (Tier 2):** Kangaroo Mother Care is a critical *practice*.<sup>17</sup> The CarePlus Wrap<sup>1</sup> is a world-class *facilitator* of this practice. However, the ROO2 provides a unique neurodevelopmental function that is *not* practice-dependent.
    - **vs. Swaddles (Tier 3/4):** Standard swaddles<sup>1</sup> provide *static containment*. The DandleLION ROO2's 3-way stretch fabric provides *dynamic, contingent feedback*.<sup>2</sup> When the infant executes a spontaneous "General Movement" (Prechtl, 1990), the ROO2 provides a soft boundary and gentle *recoil*, mimicking the uterine wall.<sup>2</sup> This "action-consequence" loop is the essence of Piaget's circular reactions and Rochat's differentiation, actively building the infant's body map.<sup>1</sup>
  - **Week-Specific Fit (Days 8-14):** This tool is optimally timed for the post-hospital transition. It provides a consistent, neuroprotective "holding environment" (Als, 1986)<sup>1</sup> that bridges the gap from the womb to the open crib, managing the Moro reflex and supporting state regulation (Porges, 2011) to maximize "quiet alert" time (Brazelton, 1995).<sup>1</sup>
  - **Brand Justification:** DandleLION Medical is a professional NICU supplier. The ROO2 is an ISO 13485-certified medical device designed by occupational and physical therapists<sup>1</sup>, not a consumer product. Its design is based on decades of NIDCAP research.<sup>1</sup>

## Tier 2: High-End Alternatives (Premium & Domain-Specific)

This tier provides the runner-up from the Tier 1 conflict (supporting Pillar 2) and the best-in-class tools for the secondary sensory domains.

### Tool 2.1 (Co-Regulation)

- **Tool Name:** CarePlus Preterm Wrap (by Laerdal Global Health)
- **Recommended Configuration:** Standard version. Material: 100% cotton. Size: \$36 \times 46 \times 2\$ cm. Weight: 0.22 kg. Designed for newborns up to 2.5 kg.<sup>1</sup>
- **Price (EUR):** Approximately €9.00 – €15.00.<sup>1</sup> (Note: Laerdal offers non-profit pricing at ~\$10 USD).<sup>20</sup>
- **Domains:** Relational Co-Regulation (Bowlby, 1969), Proprioceptive Containment.<sup>1</sup>
- **Lifespan:** 52 weeks.<sup>1</sup> Justification: 100% cotton designed for repeated washing.<sup>20</sup>
- **Sanitization:** Giver: Machine wash mild detergent, air dry, inspect fabric.<sup>1</sup> Receiver: Inspect, re-wash if desired.<sup>1</sup>
- **Sourcing: Specialty-Professional/B2B.** Requires direct contact with Laerdal Global Health, which has EU distribution.<sup>1</sup>
- **Justification & Trade-off:** This was the Tier 1 candidate from report.<sup>1</sup> It is placed in Tier 2 not due to a lack of efficacy, but because its function (Kangaroo Mother Care) is a *practice* that can be performed without a tool. The tool itself is a high-leverage *facilitator* that provides safety, comfort, and enables longer KMC duration.<sup>24</sup> Its evidence base for reducing mortality and promoting attachment is exceptionally strong.<sup>17</sup>
  - **Trade-off vs. Tier 1:** Provides exceptional co-regulation and *passive* containment but lacks the *contingent feedback* mechanism of the ROO2 for *active* body differentiation.

### Tool 2.2 (Visual Domain)

- **Tool Name:** Nienhuis Montessori Munari Mobile
- **Recommended Configuration:**
  - **Model/SKU:** Nienhuis Model #048800.<sup>1</sup>
  - **Specifications:** AML-approved.<sup>27</sup> High-contrast black-and-white geometric shapes

(cardstock) and a glass or plastic sphere, balanced on thin rods.<sup>1</sup>

- **Price (EUR):** Approximately €33.00 – €37.00.<sup>1</sup>
- **Domains:** Visual System Maturation (Atkinson, 2000), Attentional Foundations (Fantz, 1963).<sup>1</sup>
- **Lifespan:** 52 weeks.<sup>1</sup> Justification: Paper/cardstock is delicate but non-contact. Requires careful storage between uses.
- **Sanitization:** Giver: Do not immerse. Dust with a dry cloth. Lightly wipe sphere/rods.<sup>1</sup> Receiver: Visual inspection.<sup>1</sup>
- **Sourcing: Specialty-Professional.** Available from Nienhuis Montessori (Netherlands)<sup>1</sup> or official EU distributors.<sup>29</sup>
- **Justification & Trade-off:** This is the synthesized best-in-class tool for visual development. Report<sup>1</sup> nominated 2D Wee Gallery Cards, while<sup>1</sup> nominated this 3D Munari Mobile. The Munari is superior as it adds two critical developmental components: **(1)** it engages 3D perception<sup>33</sup> and **(2)** its gentle, natural movement<sup>32</sup> actively encourages *visual tracking*, a precursor to reading<sup>35</sup>, which static 2D cards do not.
  - **Trade-off vs. Tier 1:** This is a single-domain tool (visual) and is passive (infant observes). It does not provide the multi-modal, active proprioceptive feedback of the Tier 1 tool.

## Tool 2.3 (Auditory Domain)

- **Tool Name:** Yogasleep Hushh Portable Sound Machine
- **Recommended Configuration:**
  - **Model/SKU:** YHUSHH-GY (Gray).<sup>1</sup>
  - **Specifications:** 3 sound options (bright white noise, deep white noise, gentle surf).<sup>39</sup> BPA-free ABS plastic. USB-C rechargeable.
- **Price (EUR):** Approximately €33.00 – €42.00.<sup>1</sup>
- **Domains:** Sensory Regulation (Porges, 2011), State Regulation (Brazelton, 1995).<sup>1</sup>
- **Lifespan:** 60–80 weeks.<sup>1</sup> Justification: Solid-state electronic, no moving parts.
- **Sanitization:** Giver: Power off. Wipe with 70% isopropyl alcohol wipe. Air dry. Full charge.<sup>1</sup> Receiver: Inspect, repeat wipe. Must be placed 200cm from crib and volume set to  $\leq 50$  dB at infant's ear.<sup>1</sup>
- **Sourcing: Standard Retail.** Widely available via Amazon EU, Yogasleep.uk.<sup>1</sup>
- **Justification & Trade-off:** Synthesized best-in-class for auditory regulation. Report<sup>1</sup> nominated the Yogasleep Hushh, while<sup>1</sup> nominated the My Hummy Bear. The Yogasleep is the superior *tool* as it focuses purely on the evidence-based "shushing" sound (Karp, 5 S's)<sup>40</sup> that mimics the ~90dB intrauterine environment.<sup>1</sup> The My Hummy includes lullabies and other features<sup>41</sup> that<sup>1</sup> itself argued against as "artificial sounds." The Hushh is the



more precise, data-driven option.

- **Trade-off vs. Tier 1:** An environmental-optimization tool. It supports state regulation but does not actively build the body-based self.

### Tier 3: Mid-Range (Strong Value & Accessibility)

- **Tool Name:** Happiest Baby Sleepea 5-Second Swaddle
- **Recommended Configuration:**
  - **Model:** Sleepea 5-Second Swaddle.<sup>1</sup>
  - **Specifications:** Size: Small. Material: 100% GOTS-certified Organic Cotton.<sup>1</sup> Color: Graphite-Planets (high-contrast pattern provides minor visual bonus).<sup>1</sup>
  - **Features:** Inner arm wrap, leg pouch, secure Velcro fasteners, inverted zipper.
  - **Certifications:** GOTS-Certified.<sup>1</sup> Recognized as "Hip-Healthy" by the International Hip Dysplasia Institute (IHDI).<sup>1</sup>
- **Price (EUR):** Approximately €27.00 – €43.00.<sup>1</sup>
- **Domains:** Proprioceptive Containment (Karp, 5 S's)<sup>40</sup>, Sensory Regulation (Porges, 2011).<sup>1</sup>
- **Lifespan:** 104 weeks.<sup>1</sup> Justification: GOTS-certified cotton and high-quality Velcro designed for durability.<sup>1</sup>
- **Sanitization:** Giver: Machine wash cool, tumble low.<sup>1</sup> Receiver: Inspect zippers/Velcro, re-wash if desired.<sup>1</sup>
- **Sourcing: Standard Retail.** Available from Happiestbaby.eu / Happiestbaby.co.uk.<sup>1</sup>
- **Tier Justification & Fit Analysis (Synthesized):**
  - **Why Tier 3:** This represents the pinnacle of *consumer-grade* containment. It is the best accessible, mass-market tool that executes the core principle of proprioceptive feedback. It synthesizes the goals of reports<sup>1</sup> (Sleepea),<sup>1</sup> (Snoo Sack), and<sup>1</sup> (ergoPouch) into a single, affordable product.
  - **Brand Justification:** Designed by Dr. Harvey Karp, it is a direct implementation of the "Swaddling" component of the evidence-based 5 S's.<sup>40</sup> Its fail-safe, hip-healthy design<sup>1</sup> solves the primary drawback of Tier 4 (skill-dependency).
  - **Trade-off vs. Tier 1:** This swaddle provides *static* containment. It does not provide the *dynamic, contingent feedback* of the Tier 1 ROO2.<sup>2</sup> It is an excellent tool for regulation, but a less effective tool for *building* the active, motor-self.

### Tier 4: Minimal Viable (Foundational Tools)



- **Tool Name:** Traditional Muslin Swaddle Blanket (GOTS Certified)
- **Recommended Configuration:**
  - **Brand:** Aden + Anais (Organic line) or similar GOTS-certified brand.<sup>1</sup>
  - **Specifications:** Size: **120cm x 120cm** (minimum).<sup>1</sup> Material: **100% GOTS-certified Organic Cotton Muslin**.<sup>1</sup> Color: White or natural undyed (hypoallergenic).<sup>1</sup>
  - **Certifications:** GOTS <sup>48</sup>, Oeko-Tex Standard 100.<sup>1</sup>
- **Price (EUR):** Approximately €7.00 – €12.00 per blanket (e.g., €28–€35 for a 4-pack).<sup>1</sup>
- **Domains:** Proprioceptive Containment, Sensory Regulation.<sup>1</sup>
- **Lifespan:** 80–100 weeks.<sup>1</sup> Justification: Durable cotton muslin improves with washing.<sup>1</sup>
- **Sanitization:** Giver: Machine wash hot (60°C–70°C) with sanitizer. High-heat tumble dry.<sup>1</sup>  
Receiver: Inspect fabric integrity.<sup>1</sup>
- **Sourcing: Standard Retail / Bulk-Partnership.** Widely available on Amazon EU, brand websites.<sup>1</sup>
- **Tier Justification & Fit Analysis (Synthesized):**
  - **Why Tier 4:** This is the minimal viable foundation, as identified by <sup>1</sup> and <sup>1</sup>. It provides the same *potential* for static containment as Tier 3, but its leverage is 100% dependent on caregiver skill. Report <sup>1</sup>'s analysis of this tool is the most robust.
  - **Resolution:** Report <sup>1</sup> also nominated "DIY High-Contrast Cards" for Tier 4. This synthesis prioritizes the muslin swaddle because *proprioceptive containment* is a more fundamental and constant developmental need for a 1-week-old than periodic visual stimulation. The swaddle addresses the *entire* sensory system (Pillar 1 and 2), while the cards address only a small part of Pillar 1.
  - **Trade-off vs. Tier 3:** Lacks the fail-safe, hip-healthy design of the Sleepea. A poorly executed swaddle has zero leverage and can be dangerous (hip dysplasia risk, suffocation).<sup>1</sup>

## V. Cross-Model Conflict Resolution & Meta-Analysis

This section provides a transparent justification for the most significant synthesis decisions.

- 1. Primary Conflict Resolution: DandleLION ROO2 <sup>1</sup> vs. CarePlus Wrap <sup>1</sup>
  - **Analysis:** This was a conflict between two *different* but *valid* developmental principles: body-differentiation (Rochat) and co-regulation (Bowlby). Both are essential.
  - **Resolution:** The user's prompt demands the highest-leverage *tool*. KMC <sup>1</sup> is a *practice* that can be performed without any tool. The CarePlus Wrap is a superb *facilitator* of this practice, increasing safety, duration, and comfort.<sup>24</sup> The DandleLION ROO2 <sup>1</sup>, however, provides a unique *neurodevelopmental function* (contingent

proprioceptive feedback from dynamic stretch fabric)<sup>2</sup> that *cannot* be replicated by a caregiver or a simple blanket. It is the more unique and potent *tool*. The DandleLION ROO2 is the definitive Tier 1; the CarePlus Wrap is the definitive Tier 2A.

- **2. Secondary Conflict Resolution: The "Weighted" Product Ambiguity (Zaky HUG)**
  - **Analysis:** Report<sup>1</sup> (and supplemental data<sup>4</sup>) issued a non-negotiable exclusion of "weighted sleep products." Report<sup>1</sup> recommended "The Zaky HUG," a weighted, hand-shaped pillow.<sup>50</sup> This is a severe conflict.
  - **Investigation:** The AAP/CPSC warnings<sup>4</sup> are specific to *wearable sleep sacks, swaddles, and blankets* used for *sleep*. The harm mechanism is chest compression and reduced arousal. Supplemental research confirms The Zaky HUG is a NICU *positioning tool* used by therapists<sup>53</sup>, often to provide a "facilitative tuck" or "extra set of hands" *during* procedures or to *support* a position.<sup>54</sup> It is *not* a "weighted swaddle" intended for unsupervised sleep.
  - **Resolution (Expert Arbiter):** Despite its technical validity as a *positioner*, The Zaky HUG<sup>1</sup> is **excluded from the final synthesized list**. The risk of misuse by a layperson (a non-professional) confusing it for a sleep aid is unacceptably high. The benefits it provides (proprioceptive containment) are delivered more safely and effectively by the Tier 1 DandleLION ROO2 (contingent feedback) and the Tier 2 CarePlus Wrap (KMC co-regulation). The ROO2 and CarePlus are objectively superior recommendations as they carry 100% of the benefit with 0% of the severe misuse risk.
- **3. Tertiary Conflict Resolution: 3D Mobile<sup>1</sup> vs. 2D Cards<sup>1</sup>**
  - **Analysis:** Both reports<sup>1</sup> correctly identified the need for high-contrast B/W stimuli based on Fantz (1963).<sup>11</sup>
  - **Resolution:** The Nienhuis Munari Mobile<sup>1</sup> is developmentally superior to 2D cards<sup>1</sup> for this 7-day window. It introduces *depth perception*<sup>33</sup> and *visual tracking* of slowly moving objects.<sup>32</sup> This is a more complex and potent "workout" for the visual system than staring at a static 2D card.<sup>36</sup> The Nienhuis Munari Mobile is the synthesized Tier 2 recommendation for the visual domain.

## VI. Consolidated Sourcing & Acquisition Strategy

The highest-leverage tools (Tier 1 and 2) are not "toys" and are not available via standard retail. They are professional-grade medical or educational devices. A dual-channel procurement strategy is required.

1. **Channel 1: Specialty-Professional (B2B)**
  - **Purpose:** Acquisition of Tier 1 & 2 tools.

- **Targets:** DandleLION Medical (via AGHealth UK/EU) <sup>16</sup>, Laerdal Global Health <sup>22</sup>, Nienhuis Montessori. <sup>27</sup>
- **Action:** Requires establishing B2B accounts or partnerships with these medical/educational suppliers.

## 2. Channel 2: Standard Retail / Bulk-Partnership

- **Purpose:** Acquisition of Tier 2 (auditory), Tier 3, and Tier 4 tools.
- **Targets:** Yogasleep <sup>38</sup>, Happiest Baby <sup>43</sup>, Aden + Anais (or other GOTS suppliers). <sup>48</sup>
- **Action:** Can be acquired via standard e-commerce. A Bulk-Partnership <sup>1</sup> is viable for Tier 4 Muslins to reduce unit cost.

All synthesized recommendations are confirmed to be acquirable for delivery to the European Union.

# VII. Comprehensive Implementation Protocol (Tier 1 Winner: Week 1, Days 8-14)

This is a synthesized, actionable 7-day protocol for the **DandleLION ROO2 Positioning System**.

- **Prerequisite:** Upon receipt, inspect and sanitize hands. Review positioning instructions. <sup>14</sup>
- **Day 1-2: Introduction & Baseline Observation**
  - **Action:** Introduce the ROO2 during supervised sleep periods, both day and night. Position the infant in the **supine (back-sleeping)** position per instructions.
  - **Technique:** Place infant's head at the head roll. Lift hips into a posterior pelvic tilt (knees toward chest) and use the **multi-purpose roll** under the knees to maintain this flexion. <sup>13</sup> Bring the short wing across the chest to support rounded shoulders and hands-to-midline, then secure the long wing over top. <sup>56</sup>
  - **Observe:** Document baseline: How long does the infant settle? How often do they exhibit the Moro (startle) reflex?
- **Day 3-5: Intensive Proprioceptive Input & Positioning Rotation**
  - **Action:** Utilize the ROO2 for 40–60% of the 24-hour period. <sup>1</sup> During *supervised, awake* periods ("quiet alert" state), introduce varied positioning.
  - **Technique (Side-Lying):** Place the infant on their side, using the multi-purpose roll *behind* their back to maintain the position. Ensure the head and spine are in neutral alignment and legs are flexed. <sup>14</sup> This provides novel vestibular and proprioceptive input.
  - **Technique (Prone - Supervised ONLY):** Place the multi-purpose roll under the infant's chest and armpits to support the upper body, allowing for head-lifting. <sup>14</sup>

- **Observe:** Watch for "General Movements".<sup>1</sup> Notice how the infant pushes against the flexible boundaries of the ROO2 and how the fabric provides recoil. This is the active "self-discovery" process.
- **Day 6-7: Observation Synthesis & Community Handover**
  - **Action:** Consolidate observations. Has the Moro reflex decreased? Does the infant settle more quickly? Do they appear to have more organized, less chaotic movements?
  - **Community:** Prepare for handover. Explain to the "younger neighbor" (next Week 1 member) how to use the multi-purpose roll for the pelvic tilt, as this is the most critical technical step.<sup>13</sup> Share observations on how the tool calmed the infant's startle reflex.
  - **Sanitization:** On Day 7, perform the Giver Protocol (Machine wash 71°C, high-heat dry) to prepare the tool for the next member.

## VIII. Appended Data: Consolidated Specification & Evidence Repository

Table A: Master Tool Specification Matrix (Synthesized Recommendations)

| Tier | Tool Name                      | Model / SKU                   | Material / Specs                                                             | Certifications             | Price (EUR) | Lifespan (Weeks) | Sourcing                                      |
|------|--------------------------------|-------------------------------|------------------------------------------------------------------------------|----------------------------|-------------|------------------|-----------------------------------------------|
| T1   | <b>Dandle LION Dandle ROO2</b> | Size: Small/Term (2.5-4.5 kg) | 100% stretch cotton knit. System: base, headroll, pouch, multi-purpose roll. | ISO 13485 (Medical Device) | €80 – €120  | 40–50            | <b>Specialty-Professional</b> (AGHealth Ltd.) |
| T2   | <b>CarePI</b>                  | Standard                      | 100%                                                                         | N/A                        | €9 –        | 52               | <b>Special</b>                                |

|           |                                       |                |                                                                                             |                          |              |        |                                                      |
|-----------|---------------------------------------|----------------|---------------------------------------------------------------------------------------------|--------------------------|--------------|--------|------------------------------------------------------|
|           | <b>us<br/>Preterm<br/>Wrap</b>        | d              | cotton.<br>\$36<br>×<br>46<br>×<br>2\$ cm.<br>0.22 kg.                                      | (Medical Use)            | €15          |        | <b>ty-Professional</b><br>(Laerdal)                  |
| <b>T2</b> | <b>Nienhuis<br/>Munari<br/>Mobile</b> | #048800        | Cardstock,<br>wood/plastic<br>rods,<br>glass/plastic<br>sphere.<br>B/W<br>high<br>contrast. | AMI-Approved             | €33 –<br>€37 | 52     | <b>Specialty-Professional</b><br>(Nienhuis)          |
| <b>T2</b> | <b>Yogasleep<br/>Hushh</b>            | YHUSH<br>H-GY  | BPA-free<br>ABS<br>plastic.<br>3<br>sounds.<br>USB-C.<br>≤<br>50\$ dB.                      | CPSC,<br>FCC             | €33 –<br>€42 | 60–80  | <b>Standard<br/>Retail</b><br>(Amazon,<br>Yogasleep) |
| <b>T3</b> | <b>Happiest<br/>Baby<br/>Sleeper</b>  | Size:<br>Small | 100%<br>GOTS<br>Organic<br>Cotton.<br>Inner<br>arm<br>wrap,<br>Velcro.                      | GOTS,<br>IHDI-Recognized | €27 –<br>€43 | 104    | <b>Standard<br/>Retail</b><br>(Happiest Baby<br>EU)  |
| <b>T4</b> | <b>Traditional</b>                    | 120cm<br>x     | 100%<br>GOTS                                                                                | GOTS,<br>Oeko-T          | €7 –         | 80–100 | <b>Standard</b>                                      |

|  |                        |       |                        |        |     |  |                                      |
|--|------------------------|-------|------------------------|--------|-----|--|--------------------------------------|
|  | <b>Muslin Swaddlee</b> | 120cm | Organic Cotton Muslin. | ex 100 | €12 |  | <b>Retail</b><br>(Aden+ Anais, etc.) |
|--|------------------------|-------|------------------------|--------|-----|--|--------------------------------------|

**Table B: Full Citation Repository (Consolidated)**

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