



Nurturing little minds.

HOW TO CREATE A CALMING ENVIRONMENT FOR BABIES
AND YOUNG CHILDREN.

The sensory environment, overstimulation and the science behind the
stimuli in our spatial environments.

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01

INTRODUCTION

02

ENVIRONMENTS THAT CALM AND NUTURE

03

SENSITIVITIES + RESPONSIVITY TO ENVIRONMENTS

04

OVERSTIMULATION

05

THE PARENT-BABY BOND

06

HOW TO CREATE A CALM ENVIRONMENT

07

SPATIAL RECOMMENDATION CHECKLIST

08

CONCLUSION: THE THREE BIG TAKEAWAYS

NOTE

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01

INTRODUCTION

Our children's wellbeing.

Environments that calm and nurture babies and young children begin with the elements we put into them; low stimuli muted colours inspired by the natural world, organic materials, simple designs and patterns drawn from nature, soft but imaginative visual forms, gentle sounds, low lighting and tactile input, are elements that are vital to our children's physical and emotional health and wellbeing. These design elements create spatial environments that deeply impact the state of our children's nervous system helping them lower their cortisol levels, improve their emotional wellbeing by reducing stress and anxiety levels, and reduce their stress responses which are often triggered by the experience of overwhelming external stimuli. By creating a calming and nurturing home environment, parents not only lay the foundation for their children's physical and psychological wellbeing, but also support their sense of self, foster their creativity and imagination, and nurture their child's emotional wellbeing and resilience.



"By creating a calming and nurturing home environment parents lay the foundation for their children's physical and psychological wellbeing."

- DR.HAMI LAWTON.

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02

ENVIRONMENTS THAT CALM AND NURTURE

The state of our children's nervous system.

A child's home is their first, and perhaps most influential and formative environment. The environments in which our babies and children live, learn and dwell in, have a direct influence on their mood, behaviour, health and wellbeing, shaping not only their emotional and cognitive development, but also their sense of self and their unique sensitivities. By creating a calming and nurturing home environment, parents can lay the foundation for their children's physical and psychological wellbeing, their sense of self and feelings of safety, and their experience of being and belonging in this world.

Environments that calm and nurture babies and young children begin with the elements we put into them; low stimuli muted colours inspired by the natural world, organic materials, simple designs and patterns drawn from nature, soft but imaginative visual forms, gentle sounds, low lighting and tactile input, are elements that are vital to our children's physical and emotional health and wellbeing.

These design elements create spatial environments that deeply impact the state of our children's nervous system helping them lower their cortisol levels, improve their emotional wellbeing by reducing stress and anxiety, reduce their stress responses (nervous system workload, blood pressure, muscle tension and heart rate), and increase their parasympathetic responses of wellbeing, which has a significant impact on the trajectories of our children's future health. Therefore, one of the greatest gifts, we as parents can give our children, is the creation of a calming and nurturing environment to live and dwell in.

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03

SENSITIVITIES AND RESPONSIVITY TO ENVIRONMENTS

Sensing the environment.

Babies, like adults, can be very sensitive to their surroundings. “Babies are very sensitive to their surroundings and can easily become overwhelmed by too much stimulation. Too much noise, light, or activity can be disruptive and stressful for your baby. That’s why it’s important to create a space that is calm and serene. When their environment is chaotic, it can be difficult for them or understand what is happening around them.”¹

Child Developmental Psychologist, Dr. Thomas Boyce, explains the impact of the environment on babies and young children. “We now know that during these early critical periods of great susceptibility to environmental influence, that children are enormously affected and set on developmental trajectories by their early experiences.”² And these development trajectories begin in the womb. “We have belief for a variety of reasons that are grounded in solid science now that children even in the womb — in prenatal life — are sensing things about the environment which they’re going to be born in, and are adjusting — moving up and down — their responsivity to various characteristics of the environment based on that anticipation.”³

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04 OVERSTIMULATION

Reduce their stress load.

“In the first five years of life, children’s brains develop more and faster than at any other time in their lives. Your child’s early experiences — the things your child sees, hears, touches, smells and tastes — stimulate your child’s brain, creating millions of connections.”⁴ This means that at certain times children need to dwell in stimulating environments with increased and varied activity and sensory input in order to meet their sensory needs. But, babies and young children also need quiet time in calm and low-sensory environments to feel secure and to help regulate their nervous system and stress responses.

Overstimulation can easily occur in environments for babies and young children who are deeply impacted and influenced by the physical environments around them. When our brains sense something stressful, our nerves send our whole system into overdrive triggering a flood of hormones into our bloodstream including cortisol and adrenaline. Breathing speeds up, heart rate increases, and we can feel completely overwhelmed. When our stress doesn’t go away cortisol keeps on flowing and our flight, fight or freeze circuit can’t fully shut down. Overtime we get burnt out and fatigued which can lead to high blood pressure, a weakened immune system and elevated blood sugar levels, all increasing the risk of deadly disease.

Cluttered, disorganised and chaotic environments can have a detrimental effect on babies and young children. “If babies are exposed to high levels of the stress hormone, cortisol, they are most likely to develop behaviour problems and stress-related diseases later in life (Zijlmans et al 2015; Sanchez et al 2015; Asok et al 2013). In the worst case scenario, toxic stress may alter brain growth and shorten the lifespan.”⁵

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05 THE PARENT-BABY BOND

A strong foundation for secure attachment.

It is not only babies and young children who are deeply impacted by both negative and positive environments, but also their parents who spend prolonged periods of time with their babies and young children within the home. Parents with babies and young children will spend a majority of their time with their children in the same environments, and what is beneficial for the baby will be equally beneficial for the parent. Creating a calming and nurturing environment will also strengthen the parent-child bond. When parents are calm they can more deeply connect with their children helping to build a strong foundation for secure attachment. Research shows that in supportive and nurturing environments, and when parents show higher levels of sensitivity towards their babies, these infants have lower baseline cortisol levels.⁶ “Affectionate contact triggers the release of several stress-busting chemicals in the brain, including oxytocin (the so-called “love hormone”) and endogenous opioids (natural painkillers).”⁷

The baby-parent bond is created, supported and sustained in calming and nurturing environments. **So what are the design elements that help to create the types of environments that calm and nurture babies and young children?**

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HOW TO CREATE A CALM ENVIRONMENT

Low stimuli muted colours inspired by the natural world.

Within approximately 6 months of being born, infants transition from having a very limited ability to detect colour to being able to detect colour in the same way adults do.⁸ From this time onwards, babies psychological and physiological experience of colour will remain the same throughout their life. Like adults, babies and children are greatly impacted by the colours they interact with, and priority should be given to colours that are of benefit to the mind and body. Specifically, low stimuli muted colours inspired by the natural world have a profound ability to create a calm and nurturing environment.

Recent research indicates that colors wield significant influence over children's emotional states. According to Dr. Sarah Johnson, a child psychologist at Stanford University, "Soft, muted colors have been shown to promote a sense of calmness and relaxation in babies and young children". In a study published in the Journal of Pediatric Psychology, Dr. David Smith of Harvard University found that environments featuring soothing color palettes were associated with reduced levels of stress and anxiety in children. "We observed a notable decrease in cortisol levels among children exposed to calming colors," Dr. Smith remarked.

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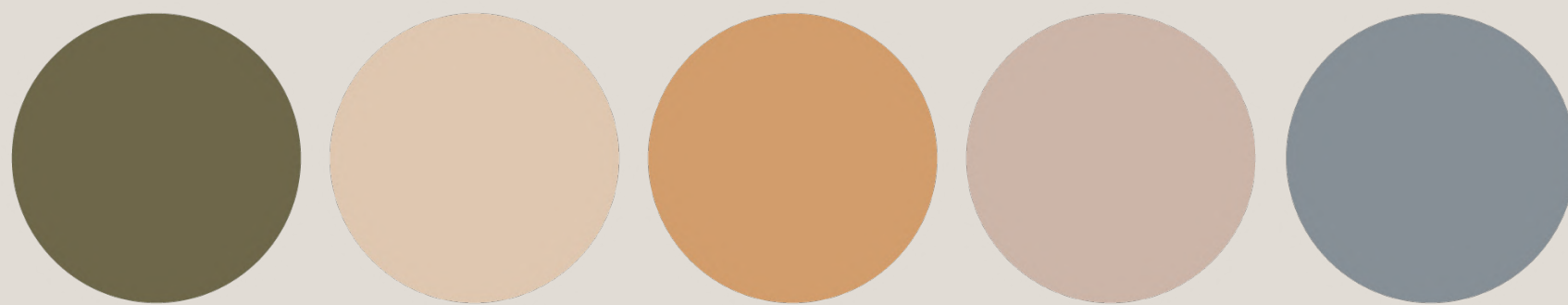
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HOW TO CREATE A CALM ENVIRONMENT

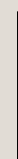
Low stimuli muted colours inspired by the natural world.

Shades of blue and green reminiscent of green fields, clear skies and calm bodies of water have been proven by research to have far reaching psychological and physiological benefits. Research has found that colours with low wavelength are perceived more pleasantly as they are less stimulating to the human mind compared to high wavelength which are significantly more stimulating.⁹ Colours with low wavelength (such as blue and green) were shown to have a clear relationship with experiences of quiet, peace, tranquillity, and association with clear sky. In line with these findings, other research has demonstrated the effects of colour on our automatic nervous system. Specifically, blue was proven to decrease heart rate and skin conductivity response, whereas red and yellow proved to increase them.

Muted and neutral tones, such as those found in nature, are beneficial for all babies and young children but especially for those who are highly sensitive to their environment. Children with autism, for instance, have been shown to respond more positively to pastel, neutral and muted colours as they act to calm and soothe.¹⁰ Bright, bold, and intense colours by comparison proved to be too distracting and stimulating for these sensitive children.



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HOW TO CREATE A CALM ENVIRONMENT

Organic materials.

The use of organic, natural materials, such as organic cotton, can help create a gentle environment for babies. Organic cotton is produced without the harmful pesticides and chemicals used in the production of traditional cotton. Babies' skin is thinner and more delicate than adult skin, which also makes it more prone to absorbing toxins. "There are so many potential irritants found in conventionally woven cotton fabrics and many babies have a reduced ability to absorb, process or eliminate them."¹¹ Choosing organic cotton for baby clothing, bedding and textiles can help reduce the toxic load on their bodies. Organic cotton is also a more breathable, hypoallergenic and softer textile option. It is less likely to cause irritation to babies' skin, and it can help to keep them cool.



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HOW TO CREATE A CALM ENVIRONMENT

Simple designs and patterns drawn from nature.

Choosing simple natural patterns and textures for a young child's environment can calm their nervous system and reduce stress. Many natural patterns are fractals - repeated visual patterns that recur at different scales, like the branches of trees or the petals of a flower. Research shows a strong relationship between fractals and soothing effects in human beings. We evolved seeing fractal patterns in nature, and so our brains are wired to process them quickly and easily. A research study published in 2006 found that looking at fractals in nature reduced stress by 60%.¹² Even looking at natural imagery can produce similar stress-reducing effects – a further study found that viewing natural imagery with low to mid-range complexity induced relaxation.¹³

Exposure to patterns can also be beneficial to babies' development. "Research shows that babies prefer to look at patterns, rather than at uniform scenes, perhaps because patterns provide opportunities to discern differences."¹⁴



06

HOW TO CREATE A CALM ENVIRONMENT

Soft but imaginative visual forms.

Research shows the positive effect of connection with animals including reduced stress, instilled feelings of calm, arousal in curiosity and interest, and greater empathy for creatures. A study conducted by the University of Leeds in the United Kingdom has found evidence to suggest that looking at animals may contribute to a reduction in stress and anxiety. The study saw blood pressure, heart rate and anxiety decrease in all participants.

There are also deep psychological reasons why babies, young children and adults are drawn to babies of all species, especially baby animals. Scientists believe this comes from our innate human nurturing instinct towards “baby schema”. “People are also animals, and our infants and young children – like the infants and young of most species – have certain consistent traits,” explains David Barash, psychology professor at the University of Washington, who studies human and animal behaviour. “Any predisposition to be especially benevolent toward critters that meet the “baby schema” is likely to be strongly favoured by natural selection,” confirms Barash.

“Looking at animals may contribute to a reduction in stress and anxiety, and a decrease in blood pressure and heart rate.”

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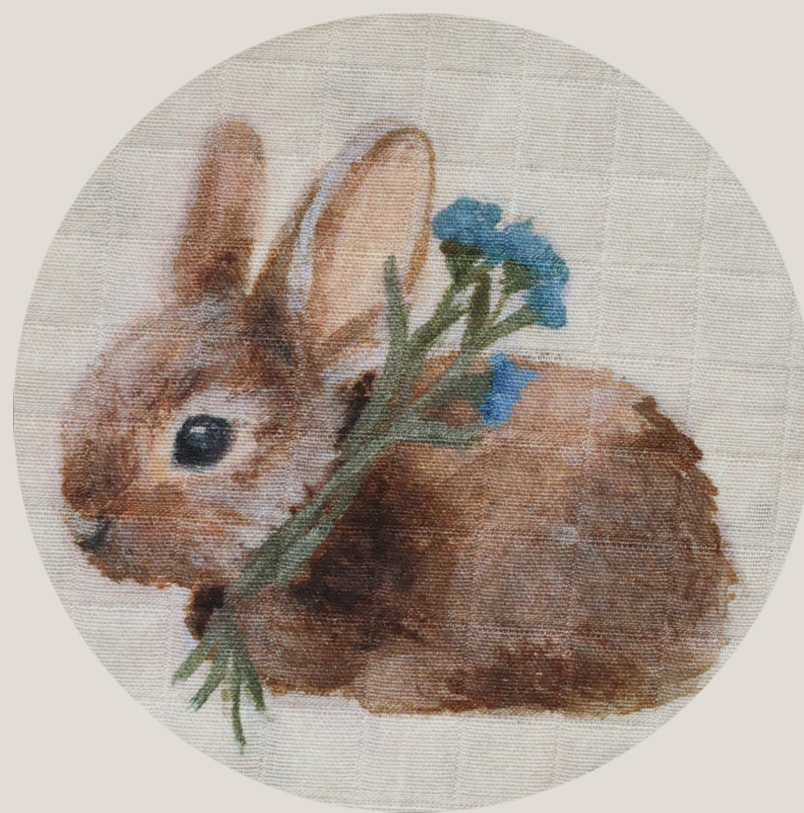


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HOW TO CREATE A CALM ENVIRONMENT

Soft but imaginative visual forms.

Eloise Stark studies parent-child interactions in the psychiatry department at the University of Oxford. She believes that the mere sight of something cute leaves a big impression on our minds. "We know that [when we see a young animal or child] there is a really fast burst of activity in the orbitofrontal cortex, an area of the brain involved in reward," she says. "We think this early activity biases the brain towards processing the cute stimulus – for example, by making sure we give it our full attention. The effect of this may be to approach the infant or cute animal, wanting to pick it up or look after it."¹⁵



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HOW TO CREATE A CALM ENVIRONMENT

Gentle sounds, low lighting and low-sensory input.

Babies and young children often need a soft, quiet, protected space where they can relax and have some space away from loud or busy areas in the home. Research shows how the incorporation of gentle sounds, low lighting and low-sensory input, has a calming effect on babies and young children helping to switch off the production of cortisol and increase feelings of calm and relaxation. And these design elements within spatial environments can lead to better sleep for babies and young children.

A calming environment for babies and young children promotes enhanced sleep quality which is critical for children's physical and psychological health and wellbeing. "A quiet and clutter-free space allows children to relax and unwind, making it easier for them to fall asleep and stay asleep throughout the night."¹⁶

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07 SPATIAL RECOMMENDATION CHECKLIST

Spatial Checklist 1/2.

- Minimise visual distractions, eliminate choice, novelty and distractions.
- Keep space uncluttered (consider closed shelving).
- Use storage solutions to maintain an organised space (ensure high-use items are easily accessible and in a logical location).
- Avoid excessive furniture and decor - make logical and restrained selections.
- Break up unnecessary visual site lines to busy areas (this will help prevent and reduce visual disturbance).
- Utilise negative space (visually clear walls, voids, open space), to help reduce cognitive load.
- Where possible draw upon key design principles of harmony and balance.
- Ensure clear pathways through space.
- Ensure the environment is uncluttered and remove any obstacles (when we have to navigate around clutter our proprioceptive system has to work harder).
- Order and structure space to help support everyday rituals and routines.
- Ensure accessible and clear entries and exits.
- Limit major and novel changes in the environment.
- Maximise predictability and familiarity.
- Create low-stimulation/ low-arousal environments to help reduce cognitive load and help minimise experiences of dysregulation.
- Increase connection to nature (incorporate and accommodate plantings).
- Maximise views to nature and natural elements.
- Integrate biophilic-based spaces to help calm the nervous system.
- Create quiet conversation spaces with inclusive seating arrangements (for example create conversation nooks and spaces for one-to-one conversations).

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07 SPATIAL RECOMMENDATION CHECKLIST

Spatial Checklist 2/2.

- Create low-arousal, low-stimulation spatial modes.
- Use natural and limited quantity of materials.
- Integrate soft textures (soft carpets, rugs, curtains and upholstered furniture) to help absorb and reduce noise and prevent noise reflection).
- Consider soft-closing doors.
- Consider noise isolation and acoustic insulation (double glazed windows, solid core doors, consider using strategically placed joinery as sound buffers between rooms, keep rest spaces (for example, bedrooms), away from the main activity areas of the home and avoid shared walls with living spaces).
- Control lighting (lower lighting, target lighting, warmer colour temperature and ability to dim lighting), acoustics (minimise noise from external sources) and temperature (consider odour and air quality and make it adaptive to the levels of people in the space).
- Use matt, muted and neutral colour palettes (limited quantity of colour).
- Consider the effect of smells (use unscented cleaning products, use low or nil VOC products, materials and finishes and ensure good ventilation).
- Simple art (landscapes and biophilic fractals which are calming).
- Controlled windows and glazing connecting views (shield harsh lighting and external views where required).

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CONCLUSION

The three big takeaways.

01 By creating a calming and nurturing home environment, parents can lay the foundation for their children's physical and psychological wellbeing, their sense of self and feelings of safety, and their experience of being and belonging in this world. **Environments that calm and nurture babies and young children begin with the elements we put into them;** low stimuli muted colours inspired by the natural world, organic materials, simple designs and patterns drawn from nature, soft but imaginative visual forms, gentle sounds, low lighting and tactile input, are elements are vital to our children's physical and emotional health and wellbeing.

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Please do not hesitate to reach out to us if you would like to discuss any of the content in this guide. We'd love to hear from you.

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