



## Independent research & further reading

**Guest:** Erica Komisar

**Disclaimer 1:** The literature presented here, directly (or as closely as possible), looks at statements made by the guest. In order to fully understand each topic mentioned, an extensive literature review (beyond the scope of this document) would be required.

**Disclaimer 2:** The information provided in this podcast and any associated materials is not intended to replace professional medical advice. For any medical concerns, it is essential to consult a qualified health professional.

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## Critical periods of brain development

*“for children to be mentally healthy in the future, you have to be physically and emotionally present for them throughout childhood, but particularly in the two critical periods of brain development, which are zero to three and nine to 25 which is adolescents.”*

The period from birth to age three is marked by rapid brain growth and structural changes that are foundational for later cognitive, motor, and social development. These changes are influenced by both biological and environmental factors, highlighting the importance of early life experiences in shaping developmental outcomes.

References 1-5.

## Mental illness in children

*“In America, one in five children will not leave childhood without breaking down at some point, without developing a serious mental illness, anxiety, depression, ADHD, behavioral problems, suicidal thoughts”*

Around 20% (1 in 5) of children in the United States are affected by mental disorders each year (6-8). Approximately 10% of children aged 5-16 years have a clinically diagnosable mental health problem in the United Kingdom (9, 10). Some studies suggest that the prevalence might be higher, with reports indicating that two in five young people score above thresholds for emotional, conduct, or hyperactivity problems (11, 12).

## Skin-to-skin contact between infant and mother

*“from an evolutionary perspective, babies have always needed the physical skin-to-skin contact with their mothers for the first year.”*

Skin-to-skin contact helps regulate stress in infants by influencing biological indicators such as the autonomic nervous system, heart rate variability, cortisol, and oxytocin levels. This regulation is crucial for the infant's emotional and physiological stability (13). Interestingly, it has been reported that in kangaroos, skin-to-skin contact is effective in maintaining infants' body temperature.

improving oxygen saturation and stabilising heart rates, which are critical for the newborn's adaptation to extrauterine life (14).

*“Most parts of the world babies are worn on their mother's bodies because mothers perform a number of really important functions for babies that are biological functions based on our evolutionary need to provide our babies with what we call attachment security.”*

Babywearing is a beneficial practice that supports secure attachment and socio-emotional development in infants. It enhances maternal responsiveness and provides a calming effect, which is crucial for the well-being of both mother and child. These benefits highlight the importance of physical contact in early development and suggest that babywearing can be a valuable tool in parenting practices.

References 15-19.

## **Mothers *versus* fathers roles in mammals**

*“mothers and fathers are interchangeable, but actually, from an evolutionary perspective, as mammals, they're not interchangeable. They serve different functions, and those roles and those behaviors are connected to nurturing hormones”*

In mammals, mothers and fathers have evolved distinct but complementary roles in caregiving, driven by hormonal and neurobiological mechanisms. Mothers are primarily influenced by pregnancy-related hormones, while fathers undergo hormonal changes that support their involvement in parenting, albeit to a lesser extent. More specifically, maternal behaviour in mammals is heavily influenced by hormones such as oxytocin and prolactin, which are crucial for maternal care behaviours like nursing and grooming (20-22). Fathers experience hormonal shifts, including changes in testosterone and oxytocin, which may support caregiving behaviours, although these changes are more variable and less understood than in mothers (23, 24). While only a small percentage of mammalian species exhibit paternal caregiving, those that do show adaptations in neural and hormonal systems to support this role (23, 24).

## Mother's role with infants

*“So mothers are really important for what we call sensitive, empathic, nurturing. When children are infants and toddlers, that means that when children are in distress, mothers soothe babies and therefore regulate their emotions from moment to moment. Every time a mother soothes a baby with skin to skin contact and eye contact and the soothing tone of her voice, she's leaning into that baby's pain, and she is regulating that baby's emotions”*

A mother's attentive and nurturing care in the first three years is crucial for shaping her child's foundational neural and physiological systems, helping to protect against the cognitive effects of adversity (25).

### Cortisol and oxytocin

*“the other thing that's important that mothers do is they buffer babies from stress by wearing them on their body for the first year, and then by being as present as possible for three years. They actually protect babies brains from cortisol, the stress hormone. So there is a hormone called oxytocin. It's the love hormone, and it is protective against cortisol. The more a mother nurtures with sensitive, empathic, nurturing. Meaning, when the baby cries, the mother goes, Oh, sweetheart, you know, let me see the boo boo. Let me kiss the Boo Boo that actually raises the oxytocin in the baby's brain, which then protects the baby from cortisol”*

Oxytocin, a key hormone in maternal bonding, enhances sensitive caregiving, strengthening a mother's ability to respond to her child's needs with warmth and emotional connection. Oxytocin enhances mother-infant bonding, which is associated with reduced stress and improved emotional responses. This bonding is facilitated by increased oxytocin levels during interactions such as breastfeeding and skin-to-skin contact, which also help lower cortisol levels.

Neural systems activated by child-related cues enable mothers to recognise and respond effectively to their children's signals, particularly in times of distress. A mother's responsiveness to infant distress not only provides immediate comfort but also plays a vital role in fostering her child's capacity for empathy, shaping their ability to express concern for others. This deep emotional connection between mother and child is further reflected in how children absorb empathic stress. When they witness their mother in distress, they experience emotional stress themselves, highlighting the profound influence a mother's well-being has on her child's emotional development.

References 26-31.

## **Right hemisphere of the brain in infants**

*“So by three years of age, 85% of the right brain is developed”*

By age three, the right hemisphere shows dominance, particularly in posterior associative areas, before shifting to left hemisphere dominance after age three. Despite right hemisphere dominance, left hemisphere specialisation for speech functions is evident by age three. The brain of a three-year-old is remarkably active, with synaptic connections forming rapidly in response to environmental stimuli and experiences.

References 35, 36.

**Note:** No particular study was found to report an 85% development rate for the right hemisphere of the brain by age three. By age 3, a child's brain reaches approximately 80% of its adult volume. The brain experiences significant growth during the first three years, with intracranial volumes increasing rapidly, especially in the first two years. This period is marked by growth spurts in the whole brain and specific regions like the frontal and temporal lobes.

References 37-39.

## **Father versus mother: gender roles in infants**

*“When fathers produce oxytocin, it comes from a different part of their brain, and it makes them more what we call playful, tactile stimulators of babies. What does that sound like to you? Playful, tactful stimulators of babies, throwing the baby up in the air and tickling the baby and running after the baby and roughhousing and so that's important for a variety of reasons. First, it encourages things like exploration and risk-taking. It encourages separation. And fathers do this really important thing, which is they help the baby to learn to regulate certain emotions. So mothers help to regulate sadness, fear, distress. Fathers help to regulate excitement and aggression.”*

### Oxytocin and vasopressin

Studies on how parents' brains respond to infant stimuli show both similarities and differences between mothers and fathers. Both parents activate brain networks linked to empathy and interpreting infant cues. However, mothers tend to show stronger activation in areas associated with emotional processing, such as the amygdala, while fathers exhibit greater activation in regions related to social cognition. These differences are influenced by hormones, with oxytocin playing a key role in mothers and vasopressin in fathers. Vasopressin plays a significant role in regulating aggressive behaviour across various species. In mammals, vasopressin enhances aggression and is linked to the serotonin system, providing a mechanism for modulating aggressive responses. Additionally, genetic variations in receptors for oxytocin and vasopressin are associated with distinct activation patterns in the prefrontal cortex during parent-child interactions. Interestingly, fathers who take on primary caregiving roles display brain activity patterns more similar to those of mothers, suggesting that caregiving experiences can lead to brain plasticity. Moreover, levels of oxytocin in fathers are linked to increased activation in the left prefrontal cortex during interactions with their infants, while maternal oxytocin is associated with right-hemispheric activation.

References 40-44.

### Exploration and risk-taking

Fathers are often viewed as key facilitators of exploration and risk-taking in children. They typically engage in activities that excite and challenge their children, encouraging bravery and self-reliance in unfamiliar situations. This dynamic is part of what is known as the "father-child activation relationship," which contrasts with the mother-child attachment relationship, which centres on comfort and security. In addition, fathers value providing opportunities for risk-taking, recognising the positive aspects of minor injuries as part of learning and development.

References 45-47.

### Aggression regulation

Fathers play a vital role in their children's emotional and behavioural development, particularly in regulating aggression. Their parenting style, level of control, and involvement in play can either help reduce or contribute to aggressive behaviours. Specifically, harsh parenting by fathers is linked to increased aggression in children, with a more pronounced effect on sons than daughters. This

highlights the significant impact fathers' parenting styles can have on child aggression potentially more so than mothers' harsh parenting (48). Additionally, fathers with strong gender-role stereotypes often apply more physical control with boys, which can lead to increased aggression (49).

References 48, 49.

### Infant crying: gender differences

*“There was a study that was done where mothers and fathers lay in bed and the baby cries. It was out of the UK. This study, the baby cries, and the father sleep through the baby's distress cries, but the mothers wake up right away, okay, but with the rustling of leaves outside the window, the mothers sleep through it, and the fathers wake up right away, because the fathers are attuned to predatorial threat, so our nurturing hormones make us different.”*

Research on how parents respond to infant cries reveals a complex interplay between gender, hormonal influences, and experience. Rather than being solely driven by an innate maternal instinct, a father's ability to recognise and respond to their baby's cries is largely shaped by experience (50). While some research indicates that women may be slightly more attuned to softer cries, this sensitivity does not fully account for the unequal division of nighttime caregiving (51). Hormones also play a role, with higher testosterone levels in men linked to less nurturing behaviours but potentially greater vigilance toward external threats (52). In contrast, fathers with lower testosterone and elevated prolactin levels tend to show more empathy and attentiveness to infant distress (53). These findings underscore the influence of both biological and experiential factors in shaping parental responses, challenging oversimplified ideas about gendered caregiving instincts.

## **Single mothers**

*“when there are single mothers raising children without a father, often little. Boys develop behavioral problems”*

Research suggests that boys raised in single-mother families may face increased risks of behavioural problems compared to those in two-parent households (54, 55). However, these risks can be mitigated by structured family environments, effective disciplinary strategies, and positive male involvement (54). Paternal alcoholism, rather than absence, appears to be a stronger predictor of persistent behavioural issues in boys, including physical aggression, opposition, and hyperactivity



(56). Importantly, it seems the absence of a father from infancy does not necessarily lead to negative consequences for children's social and emotional development (57).

## **Attachment styles in infants: how it affects their lives later on**

### **Avoidant**

*“Really can't tolerate that kind of separation when a parent comes when the primary attachment figure, usually the mother comes home and the baby turns away from you and turns toward the babysitter, or just turns away, that baby has the beginning of what's called an avoidant attachment disorder. Now that's correlated later on with things like depression and difficulty forming attachments later on”*

Avoidant attachment in children is linked to decreased support-seeking behaviour during stress, which can lead to increased depressive symptoms over time (58, 59).

### **Ambivalent/anxious attachment**

*“the next kind of attachment disorder is called an ambivalent attachment disorder. And the mother then comes home, and the baby clings to the mother for dear life, because the internal voice, and that baby is my mommy's going to leave me again, so I have to hold on to her now that baby is fractious and can't be soothed and will not let go of that Mother, you know, holding on for dear life, what I call like the rhesus monkeys did to the wire cages, right? And that's correlated later on with anxiety in youth”*

A meta-analysis found that ambivalent attachment showed the strongest association with anxiety, particularly during adolescence (60). Anxious-ambivalent attachment styles were found to mediate the relationship between emotional neglect in childhood and anxiety disorders in young adulthood (61). A longitudinal study confirmed that anxious/resistant attachment in infancy predicted anxiety disorders in adolescence, even when controlling for maternal anxiety and infant temperament (62).

## Disorganised attachment disorder

*“Disorganized attachment disorder is the hardest to treat, because the baby has no strategy. So the baby cycles through many strategies. The baby will go from clinging to avoiding to being enraged and even to slapping or hitting the mother and then cycling through again, and that baby that develops a disorganized attachment disorder, those are more those babies. It's correlated later with borderline personality disorder, and we're seeing a huge rise in borderline personality disorders, and those are the kids who are cutting themselves, who are trying to commit suicide, you know.”*

A disorganised attachment pattern is characterised by an approach-avoidance dilemma where caregivers are simultaneously a source of threat and security (63, 64). Maternal withdrawal in infancy and disorganised controlling child behaviour at age 8 have been identified as significant predictors of both borderline symptoms and suicidality/self-injury in late adolescence (65).

*“that's disorganised. Yeah. They have a very hard time forming relationships, holding on to relationships? Yeah, I would say it's, it's, they're the most complicated to treat, and they're also the most complicated in terms of, you know, being able to have successful relationships in the future”*

Individuals with disorganised attachment may experience lapses in self-regulation during high-stress interpersonal situations, potentially leading to violent or frightening experiences that disrupt close relationships (66). Longitudinal studies have shown that infant attachment disorganisation correlates with relationship quality issues, behaviour problems, and psychopathology in childhood and adolescence (67).

## **Continuity of attachment disorders**

*“attachment disorders are pathological defenses, meaning they don't usually last a lifetime”*

Attachment disorders can have long-lasting effects, but they are not always permanent. With early intervention and positive life changes, attachment patterns can shift over time. The stability of these styles depend on early experiences, major life events, and ongoing psychological and social influences.

Reference 68.

## Secure attachment

*“secure people with secure attachment will be drawn to healthy, reciprocal, loving, deep connections, because they've had a deep and loving connection with their mother”*

Research suggests that secure attachment in early childhood, particularly with mothers, is associated with positive outcomes in adult relationships and overall well-being. Securely attached individuals demonstrate higher levels of trust, closeness, and intimacy in their romantic relationships (69). Interestingly, neuroimaging studies have found that secure attachment is related to increased white matter integrity in specific brain regions, suggesting a biological basis for attachment security (70).

## Maternal depletion syndrome

*“there's something in the developing world called maternal depletion syndrome, which is that mothers can actually die in the developing world of having too many children in too short a period of time, they get depleted physically, but they also get depleted emotionally.”*

Maternal depletion syndrome refers to the potential negative health effects on mothers and infants due to frequent pregnancies and inadequate nutrition (71). However, the existence of MDS is controversial (72). Some studies suggest that socioeconomic factors and maternal work may be more significant determinants of nutritional status than reproductive history (72). A different definition of MDS has been proposed, focusing on changes in maternal nutritional status over one reproductive cycle and considering initial nutritional status (73).

## Fertility rates

*“fertility rates are plummeting across Western Europe”*

Recent studies indicate a global decline in fertility rates, with most developed countries falling below replacement levels (74, 75).

## **Oocyte cryopreservation via vitrification, commonly known as freezing of eggs**

*“when you freeze eggs, it's not a guarantee of fertility. It's not a guarantee that those eggs will turn into embryos”*

Oocyte cryopreservation via vitrification has become an increasingly common strategy for fertility preservation, offering similar results to fresh oocytes. While it provides hope for women to extend their reproductive options, it does not guarantee fertility or successful embryo development (76). The procedure is most effective for women under 35, with better outcomes when freezing at least 8-10 oocytes, though 20 is deemed optimal (77). Age-related decline in ovarian reserve and oocyte quality has led to increased involuntary childlessness, making egg freezing an attractive option for women approaching their late thirties (78). However, it's crucial to inform women about their specific probabilities based on age at vitrification, emphasising that while egg freezing increases the possibility of having a biological child in the future, it does not guarantee success.

## **Fathers role in dealing with separation**

*“when fathers aren't around in those days, when children are starting to explore the world, those children have a harder time separating from mothers”*

Father-infant interactions reduce separation anxiety and enhance ego autonomy, differentiation, and individuation, though there is a paucity of research regarding fathers role in helping infants with separation (79).

## **The rhesus monkey study: skin-to-skin**

*“they took these baby rhesus monkeys, and they they let some be with the mothers, and the mothers nurtured those babies, and those babies became healthily attached and secure, and those were The healthy, emotionally healthy babies. Then they gave another subset of monkeys a wire mother covered with a piece of cloth or fur or something, and those babies became very neurotic, but at least they were clinging. They became like the ambivalent attachment babies, because there was no response from the mother, but at least they were holding on to this mother, and then they gave, and these babies became very neurotic, and then they gave the subset of babies nothing, and those babies literally lost their minds.”*

**Reference 80.**

*“One was Michael Meaney study. He did, a study on licking and grooming animals who lick and groom their young meaning, are nurturing skin to skin. Lick and groom in human terms that would be holding, touching, loving, skin to skin, those if a mother licked and groomed her young, that baby would become more resilient to stress in the future, the babies who were not licked and groomed by their mothers become became less.”*

**References 81, 82.**

## **Parental/maternity leave**

*“in Hungary, they have three years. Slovenia, Slovakia, Estonia has three years. Hungary, I think, has two years of paid leave. Sweden, I have some issues with Sweden, but Sweden has 14 months”*

- Hungary (83)
- Sweden (84)

## **Stability of attachment styles and mental disorders**

*“Research shows that children who are insecurely attached at 12 months of age, 20 years later, are insecure. 80% of them are insecurely attached and suffer from mental disorders.”*

### Stability of attachment styles

A significant portion of individuals seem to maintain their attachment style from infancy into adulthood. One study found that 72% of infants retained their secure or insecure attachment classification into early adulthood. However, a different study reported no continuity from 1 to 18 years (87). It's important to note that negative life events can lead to changes in attachment security (85, 86). A meta-analysis found medium-sized stability in attachment security over time but noted that stability decreases over longer intervals, particularly when longer than 15 years (88). In conclusion, the current research therefore suggests that, while attachment patterns can remain stable, they are also susceptible to environmental influences and may impact adult emotional regulation and adjustment.

### Insecure attachment style and mental illness

Research consistently shows a high prevalence of insecure attachment styles among those with mental health disorders. A significant portion of people with conditions such as psychosis, bipolar disorder, depression, and schizophrenia exhibit insecure attachment, with rates higher than those found in the general population (89). Insecure attachment has also been linked to an increased likelihood of suicidal ideation, suicide attempts, and other mental health challenges (90). These findings suggest that insecure attachment may act as a risk factor for mental health disorders, highlighting the need for further investigation into its role in the development and treatment of such conditions.

## **Prevalence of sleep aids in America**

*“about 50% of Americans, the figure might be a little lower, but not much lower, are on some kind of sleep aid.”*

While the National Sleep Foundation reports that 48% of Americans experience nightly insomnia symptoms (with higher rates among females and older adults) (91), a survey of adults aged 65-80 found that 35.4% used some form of sleep aid, with over-the-counter products being the most

common (92). Another study found that 4% of U.S. adults aged 20 and over used prescription sleep aids in the past month (93).

## **Mental health of children and young adults**

*“20% of children aged 12 to 17 in the US reported at least one major depressive episode. 2021 in the US, the rate of depression amongst three to 17 year olds has increased from has increased by 30% Yeah, yeah. Recently and in the US, antidepressant prescriptions for young adults and teens have risen by nearly 65% since 2020 and I'll put some of these graphs on the screen for anybody to see, yeah, children who reported attending a religious service, however, yeah, at least once per week had a lower risk of to play.”*

- A comprehensive analysis of federal data systems from 2013-2019 revealed that 20.9% of children aged 12-17 had experienced a major depressive episode (94).
- Antidepressant prescriptions for U.S. adolescents and young adults rose by 66.3% between 2016 and 2022, with the rate of increase accelerating by 63.5% following the COVID-19 outbreak (95).

## **Religious service attendance and depression**

Some studies indicate that frequent religious participation may offer protection against depression, while others point to reverse causality, where early-onset depression leads to reduced religious involvement, particularly among women. However, the connection between religiosity and depression is multifaceted, as different aspects of spiritual well-being may influence depression risk in varying ways.

References 96-98.

## **Nihilism and depression**

*“nihilism, which is the belief in nothing, does nothing for mental health that human beings have to live with.”*

Meaninglessness, a significant threat in modern times, is associated with depression and suicide (99). A longitudinal analysis indicated that decreases in existential meaning lead to increases in depressive symptoms, suggesting a unidirectional influence (100).

## **Raising a child with healthy self-esteem**

*“the best way to raise a child with healthy self esteem is to admire them for their strengths, not to admire them for things that aren't their strengths”*

Research suggests that while nurturing children's self-esteem is important, the way parents approach it matters. Inflated or person-focused praise—emphasising personal traits rather than effort—can have unintended consequences, particularly for children with low self-esteem. It may lead to feelings of shame after failure and, in some cases, contribute to narcissistic tendencies. Instead, experts recommend offering realistic feedback, emphasising growth, and providing unconditional support. Process praise, which highlights effort and behaviour rather than inherent qualities, is generally more effective in fostering resilience and healthy self-esteem.

References 101, 102.

## **Generational expression: narcissism**

*“generational expression, narcissistic parents are more likely to produce narcissistic children”*

Children's narcissistic traits are linked to parental narcissism, with overvaluation—especially by fathers—playing a partial role in this connection. The intergenerational transmission of narcissism may occur through differential pathways for mothers and fathers. While positive parenting is generally associated with healthy narcissistic tendencies, narcissistic parenting can lead to hidden forms of abuse, including manipulation, triangulation, and isolation.

References 103-105.



## **ADHD diagnosis and prescriptions**

*“the shocking rise in diagnosis and prescriptions over the last 10 years between 2010 and 2018 ADHD diagnosis in the UK rose approximately 20 fold. Yes among boys aged 10 to 16, diagnosis increased for. 1% roughly to about 3.5% in 2018 and in men aged 18 to 29 there was a nearly 50 fold increase in ADHD prescriptions during the same period. And the same applies to the United States, where an estimated 15.5 million adults in the US have been diagnosed with ADHD. Approximately one in nine US children have been diagnosed with ADHD at some point, with 10.5% having a current diagnosis”*

References 106-109.

## **Genetic precursors to mental disorders**

*“there is no genetic precursor to mental illness, there is no genetic precursor to ADHD, there is no genetic precursor to depression and no genetic precursor to anxiety”*

### **ADHD**

ADHD is strongly influenced by genetics, with a significant role in its development. More specifically, recent Genome-Wide Association Studies have identified multiple genetic loci associated with ADHD. A significant study identified 12 genome-wide significant loci, while another more extensive analysis found 27 loci, implicating various neurodevelopmental pathways and brain-expressed genes.

In children, twin studies show ADHD is highly heritable, with estimates around 70% to 80%. In adults, the heritability drops to about 30% to 40%. This difference is mostly because of variations in how ADHD is reported—adults tend to self-report, while teachers and parents provide feedback for children. However, when combining multiple sources of data, the heritability in adults can actually match that seen in kids.

References 110-117.

## Depression

Research indicates that depression has a significant genetic component, with multiple genes involved in its etiology. However, gene-environment interactions are likely important in depression development. Despite progress, the genetic basis of depression remains complex and not fully understood, with multiple genetic factors interacting with environmental influences to confer risk.

References 118-125.

## Anxiety

Anxiety disorders have a substantial genetic component, with common genetic variations accounting for a significant portion of the genetic architecture underlying these disorders. Anxiety is influenced by interactions between genetic predispositions and environmental factors, such as early-life stress and trauma, which can induce lasting changes in brain structure and function.

References 126-131.

## **ADHD and sensitivity to stress**

*“Someone with ADHD is more sensitive to stress”*

Research indicates that adults with ADHD exhibit increased sensitivity to stress compared to healthy controls (132-134).

## **Side effects of medication for ADHD**

*“It’s a stimulant. And so what stimulants do is they cause they can cause great anxiety. They can cause panic attacks. In adolescence, they can cause growth issues”*

## Anxiety

In a meta-analysis, the authors found that ADHD medications did not significantly affect anxiety or depression symptoms in children and adolescents. However, they reported that the number of trials that reported anxiety and/or depression as an outcome or side effect was too limited and more research is needed (135). A recent review also concluded there is a lack of research in this field (136).

It is important to note, though, that there are also studies showing that psychostimulants used to treat ADHD may cause anxiety (137).

### Growth rates

Studies indicate that high doses of stimulants over extended periods can lead to measurable effects on growth rates in school-age children with ADHD. The mechanism behind this growth attenuation may involve increased dopamine and noradrenaline levels inhibiting the secretion of growth hormone and related hormones. Clinicians should be aware of these potential effects and carefully monitor growth in children receiving stimulant treatment, considering the balance between improved learning and social function against possible growth suppression.

### References 138-141.

*“On this point of stress, living with ADHD, looking at some research from the injury.com Research Education Group. It says that children with an ACE score, which is the trauma score, where I think it goes up to 10 different questions, with an ACE score of four or more, so four experiences of trauma or more, have maybe four times, which is 400% more chance of having parent reported ADHD compared to children with no aces. Yeah, and some of the factors that have big impact as social socio economic hardship increases your probability of having ADHD by 40% parental divorce by 35% familial mental illness or parent having a mental illness increases up to almost 60% 55% I believe, and neighborhood violence, almost 50% legal incarceration. So if a parent goes to prison, then that increases your probability of ADHD by about 40% as well. And that's published by the think it's the New England, yeah, or the National Library of Medicine, center of biological information,”*

Multiple studies have found that children exposed to four or more ACEs have significantly higher odds of ADHD diagnosis compared to those with fewer ACEs.

### References 142-145.

## Daycare

*“Daycare raises salivary cortisol levels in children. The studies show, meaning those babies are put into stressful states at a very young age when their brains are developing, daycare has been known to increase aggression and anxiety and behavioral problems in school in the school years, and those children are more likely to develop attachment disorders.”*

Children in daycare often experience higher cortisol levels compared to when they are at home, with a significant increase observed from morning to afternoon, but only in daycare settings. This rise in cortisol is particularly pronounced in younger children, especially those under 36 months, and is linked to the stress of group interactions. Elevated cortisol levels in daycare have been associated with aggressive and anxious behaviours, with boys tending to show more aggression and girls more anxiety. However, secure attachments to caregivers and high-quality daycare environments can help buffer these stress responses, potentially reducing the risk of behavioural issues. Additionally, the transition to daycare can impact attachment security, with securely attached infants showing lower cortisol levels during the adaptation phase.

References 146-152.

## Father's sensitivity

*“fathers are not sensitive empathic nurturers, because it's against their evolutionary instinct”*

Research challenges the misconception that fathers lack empathy and nurturing instincts. When responding to infant cues, fathers activate brain regions involved in both emotional processing and social cognition, with increased caregiving experience strengthening these connections. Brain plasticity plays a key role, allowing fathers to develop stronger bonds with their children over time. The concept of "responsive masculinity" suggests that fatherhood has evolved not just as a provider role but as an adaptive trait that supports caregiving and emotional engagement. These findings challenge previous evolutionary views on paternal empathy, emphasising the biological foundation of involved fatherhood.

References 42, 153-157.

## Same-sex parenting

*“You cannot have two fathers for a child, a child needs a mother and a father. If you're going to have two men, then one of them has to play that sensitive, empathic role, the other has to play the playful, tactile stimulation role. Same with two women who are raising children. It's better to have a father and a mother than two mothers.”*

Although same-sex parents, particularly female couples, often report higher levels of parenting stress, this does not negatively affect their children. Research shows that family relationship quality and child outcomes are equally positive in same-sex and different-sex parent households (158). Notably, same-sex parents—especially women—tend to spend more time engaged in child-focused activities, which may further support child development (159).

Academically, children raised by same-sex parents often outperform their peers from different-sex parent households. Studies from the Netherlands reveal that these children achieve higher standardised test scores, excel in primary and secondary education, and have higher high school graduation and college enrolment rates (160, 161, 162).

Furthermore, meta-analyses and broader studies indicate no significant differences in psychological adjustment, cognitive abilities, or gender identity between children of same-sex and different-sex parents (163, 164). According to current research, it seems the gender of parents correlates with parent-child relationships but is not crucial for children's psychological and social outcomes (165). However, there is still a need for high-quality research on same-sex families, particularly those with gay fathers (166).

## Children socialising before the age of three

*“No, children don't need socialization before three unless they're mothers with them.”*

There is very limited research on the importance (or lack thereof) of social interactions between infants. The current available research found that infants' preference for social interactions increases from 7 to 13 months, indicating a natural inclination towards engaging with others, including peers. This preference is linked to developments in their social attention behaviours. Between 9 and 13 months, they begin to explore and imitate other babies, which includes cooperative play and social use of materials. This period also marks the beginning of more complex social interactions, such as cooperation and imitation, which are important for social learning.

References 167-169.

## **Abusive fathers**

*“If a father was abusive to a little girl, then you know that little girl may do what we call a neurotic repetition, which is she seeks out abusive men because that's the only kind of love that she knew”*

The research highlights a concerning pattern where daughters of abusive fathers are at increased risk of choosing abusive partners. This is influenced by the intergenerational transmission of abuse, attachment issues, and the normalisation of violence.

References 170-174.

## **Trends in male sexual activity**

*“I was looking at some stats earlier on that said there's been increased sexual inactivity amongst young men, which is an interesting stat. It's risen to almost 31% of men between the ages of 18 and 24 reporting no sexual activity in the past year. So that's almost doubled in a in about the space of 18 years.”*

Reference 175.

## **Mental health of young men**

*“Men account for nearly 80% of all suicides in the US, rate observed among 45 to 64 year olds. Globally, suicide is the leading cause of death amongst young men. And a survey conductor in the UK found that an increasing amount of men feel hopeless and worthless and that are struggling with finding meaning and purpose in the world.”*

References 176-178.

## Relationship preference and education level

*“studies show that men will marry at their educational level or below. Women will only marry at their educational level or above. And by diminishing men so much in terms of our education and professions, we’ve basically taken men’s purpose away.”*

Recent research shows that women with higher education levels are more likely to form relationships with less educated men rather than staying single. Meanwhile, women with moderate education levels are less likely to form relationships with highly educated men. For men, there is no indication that they have a greater tendency to partner with highly educated women.

References 179-181.

## Testosterone levels during fatherhood

*“I’ve read so many stats around men’s testosterone dropping when they become fathers.”*

*“there was a longitudinal study done in the Philippines that followed 624 men over almost five years and found that those who became fathers experienced a significant decline in testosterone levels. Specifically, newly partnered fathers had a medium decrease of almost 30% in morning testosterone and 35 evening testosterone, which was significantly greater than the declines observed in single non fathers. Moreover, fathers who reported spending three or more hours daily in childcare, had lower testosterone levels compared to those less involved in caregiving. And there’s also an impact on co sleeping, where research indicates that fathers who co sleep with their children exhibit lower testosterone levels than those who do not. This suggests that close proximity during sleep may further influence hormonal changes associated with parental caregiving.”*

A longitudinal study in the Philippines found that men with higher testosterone were more likely to become fathers but experienced significant declines in testosterone after fatherhood (182). This decrease was greater for fathers involved in childcare. Similar findings were reported in a Canadian study, where expectant fathers had lower testosterone levels compared to non-father controls (183). These hormonal changes may reflect a shift from mating to parenting effort, as seen in other species where males care for offspring (184).

## **Increased dopamine sensitivity in adolescents**

*“there was some research to show that technology raises a dopamine in an adolescent's brain tenfold to that of of so in other words, it would be like if you smoked a joint, it would, you know, make you high. If an adolescent smoked the same joint, it would make them 10 times higher. It has to do with the the sensitivity of the brain to dopamine and the lack of regulation.”*

Adolescence is a critical period characterised by heightened dopamine sensitivity and reward-seeking behaviour, which can increase vulnerability to substance abuse and psychiatric disorders (185, 186).



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