

“Dad brain” is real

New research tells us about *patrescence* and what fathers need

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Are men wired to care for young children? Although many men believe that they are not equipped for parenthood, my research on the neurobiology of fatherhood suggests otherwise. I've found that parenting changes men's bodies and brains in profound ways, impacting everything from their brain structure to hormones to their mental health and sense of identity. We call this period of rapid adjustment and adaptation following fatherhood “patrescence”. These changes tell us that nature intended human males to participate in parenthood. They also tell us that, as with mothers, the transition to parenthood is a significant one for men and comes with both risks and opportunities.

The alloparenting web

Human fathers are unusual among mammals for the hands-on childcare they provide. Among birds, 90% of species feature active dads, who help build the nest, sit on eggs, and provide food and protection to the young. Fish fathers are often single dads, who take the lead in guarding eggs and watching over babies after they hatch. But only about 5% of mammals include males who participate in child rearing. Among them, humans are notable for the depth and breadth of their paternal contributions. And I would argue that the involvement of men in caregiving is part of what makes humanity so special, flexible and resilient.

Human infants require a lot of sustained attention and investment in order to thrive. That often means that we need more than just one caregiver. We have evolved into what anthropologists call an alloparenting species¹, which means that babies

flourish when they receive care from multiple “parents”, including biological, adoptive and foster parents, as well as extended family members, nannies, daycare staff and preschool teachers. Infants need at least one stable, consistent attachment – long expected by the broader culture to be provided by mothers. Beyond that, children learn best from exposure to a variety of carers, including fathers. Alloparenting also helps young children benefit from different caregiving styles.

How does fatherhood change the brain?

My lab at the University of Southern California conducted a [neuroimaging study of first-time fathers](#), one of the few longitudinal neuroimaging studies of this population (Saxbe, D. and Martínez-García, 2024). These fathers were recruited during their partner's pregnancy and scanned both before and after their infant's birth. We found that their brains changed significantly, in ways that have also been observed in first-time mothers. Specifically, they lost grey matter volume in the cortex, the outer layer of brain tissue that is loaded up with neurons and responsible for higher-order thinking such as critical analysis and problem solving. Although a shrinking brain sounds like a negative, researchers have speculated that grey matter volume loss may represent a streamlining of the brain to work more efficiently in order to handle the cognitive challenges of parenthood.

¹ The practice of “alloparenting” is described by Nikhil Chaudhary and Annie Swanepoel in their article [“Hunter-gatherers teach us that supporting mothers has deep roots”](#), in the 2023 issue of *Early Childhood Matters*.

When asked about the impact of these changes on fathers, I try not to use words like “good” or “bad”. Instead, I prefer to say “adaptive” – men’s brains are changing in ways that might help them to adapt to caregiving, but the jury is out on whether these changes are beneficial or detrimental to men’s wellbeing.

Indeed, our study found that men’s brain change was linked with a mixed bag of effects. Consistent with similar work on mothers, we found that when men lost more brain volume, they were more motivated to engage in parenthood (for example, they told us that they hoped to take more time off after birth); they enjoyed parenting more; and they spent more time with their infants, especially time in the primary caregiver role. But we also found that men who lost more brain volume told us that they were having

more sleep problems, and they reported more symptoms of postpartum depression and distress.

My hunch about these mixed findings is that because parenting requires time and energy, the brain changes that accompany it reflect that investment. In other words, shouldering greater responsibility for childcare might lead to a stronger bond with infants, but also more sleep disturbance. It might also generate more feelings of isolation, boredom and sadness. If fathers’ brains change in ways that resemble those observed in mothers, then perhaps men are susceptible to the same mix of joy, exhaustion and loneliness that new moms have long experienced. They are also susceptible to the stress that comes from caring for their kids in a culture that doesn’t adequately support parents.

How can we support fathers’ mental health?

Parenting is taxing yet important work that deserves to be recognised as such. After all, many studies tell us that both infants and mothers benefit when fathers are more involved in parenting. Fathers themselves also benefit from parenting, when given the right support. Many fathers report that parenting is one of the most meaningful activities they have ever pursued. In fact, [fathers are about as likely as mothers](#) to say that parenting is the most, or one of the most, important aspects of who they are as a person (Schaeffer, 2023).

Supporting dads can look a lot like supporting moms: generous paternity leave can reduce stress on fathers while creating more opportunities to bond, which is good for the long-term wellbeing of parent and child. Unfortunately, paid parental leave policies aren’t universal, and roughly 40% of the countries around the world don’t offer paid paternity leave, including the USA. Even when countries do offer policies, men don’t always take them for cultural reasons. Workplace initiatives and messages that elevate the value of fatherhood can combat this stigma. For example, the CEO of Reddit, Alex Ohanian, [made headlines](#) when he took 16 weeks of paternity leave after the birth of his daughter in 2019 (Ohanian, 2020). High-visibility leaders like Ohanian can help their employees feel more confident in taking the full leave available to



Photo: Isolde Woudstra

them. Where paternity leave is available, incentives or nudge programmes, which have been tried in a few countries like Finland, also work well to foster greater father involvement (World Economic Forum, 2020).

A 2023 United Nations survey from across the Middle East and North Africa found that 86% of those surveyed supported expanded paid leave policies, and 76% of men surveyed said they spent too little time with their children. However, only 23% believed that men would be positively treated in their workplaces should they take paid leave. The UN recommends increasing public awareness of the importance of fathers' roles in their kids' lives as a way to fix this bias and help increase societal acceptance of dads who choose to be the kind of parents and caregivers they want to be (UN Women, 2023).

In some ways, supporting dads brings challenges that are different from those involved in supporting mothers because there are fewer built-in parenting communities specifically designed to enable fathers to connect. I recently spoke to a psychologist who specialises in treating postpartum depression in men, and he summed up his advice in one sentence: "Dude, don't be isolated." Just as mothers have long benefited from finding community with other mothers, fathers can benefit from building their networks and seeking support from other parents.

We are in a loneliness epidemic that seems to be hitting men particularly hard, as evidence



Photo: USC Communications

↑ Darby Saxbe in front of the MRI machine

accumulates that men's social circles are shrinking more quickly than women's (Cox, 2021). Embracing the fatherhood role can help men build stronger connections with their communities, partners and children. But in order to do this we need to recognise that, as an alloparenting species, we all have a role to play in the shared work of rearing the next generation. Rather than assuming that women are innately wired for caregiving and men are not, societies can recognise that both sexes are capable of neurobiological adaptation to support parenting. In other words: great caregivers are made, not born.

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