

# Depression in the very young

## Implication for the teenage years

While depression is commonly first diagnosed in adolescence, evidence shows that the roots of depression lie in the earliest days of life. Stephanie Thornton looks at the implications for care

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**W**hat is depression? That seemingly simple question is in fact rather complex. To what extent is depression reactive, reflecting life experiences and the way we interpret them? To what extent is depression endogenous, reflecting a physiological process? Both factors are likely to be involved, to a greater or lesser extent, in every episode of depression. Understanding how these interact is crucial for our understanding of depression, how to identify it, how to manage it. Limited understanding in this area has, even in the fairly recent past, negatively affected our understanding of depression in early childhood, and thence our understanding of vulnerability to depression in the teenage years, and our understanding of how to provide effective intervention.

### The origins of depression: The preschool years

We tend to think of depression as primarily a problem in adolescence. Indeed, it is most commonly first diagnosed in the teenage years (Pile et al, 2020; RCPsych, 2022). But does depression really begin in

adolescence – or are we under-diagnosing it in very young children? Increasingly, research suggests the latter.

Forty years ago, many doctors doubted the existence of depression in very young children, arguing that they lacked the conceptual capacity to experience such an emotion (Son and Kirchner, 2000). This view may well still be part of the ‘unconscious bias’ of many parents and practitioners. But it ignores any physiological component. Research is increasingly showing the importance of neurological factors in depression, and the roots of those factors in very early infancy.

Scans of adult brains reveal structural differences between the depressed and the undepressed (Barch, 2016; Strawbridge et al, 2017). ‘Depressed’ brains show increased activity in brain areas associated with reactivity to negative emotional events, and reduced or confused activity in brain areas associated with the ability to regulate emotions. These same brain patterns have been identified in 8-year-olds who had manifested signs of depression in the pre-school years (Barch, 2016). The same brain pattern can be found in 2-year-olds with prenatal exposure to stressors such as

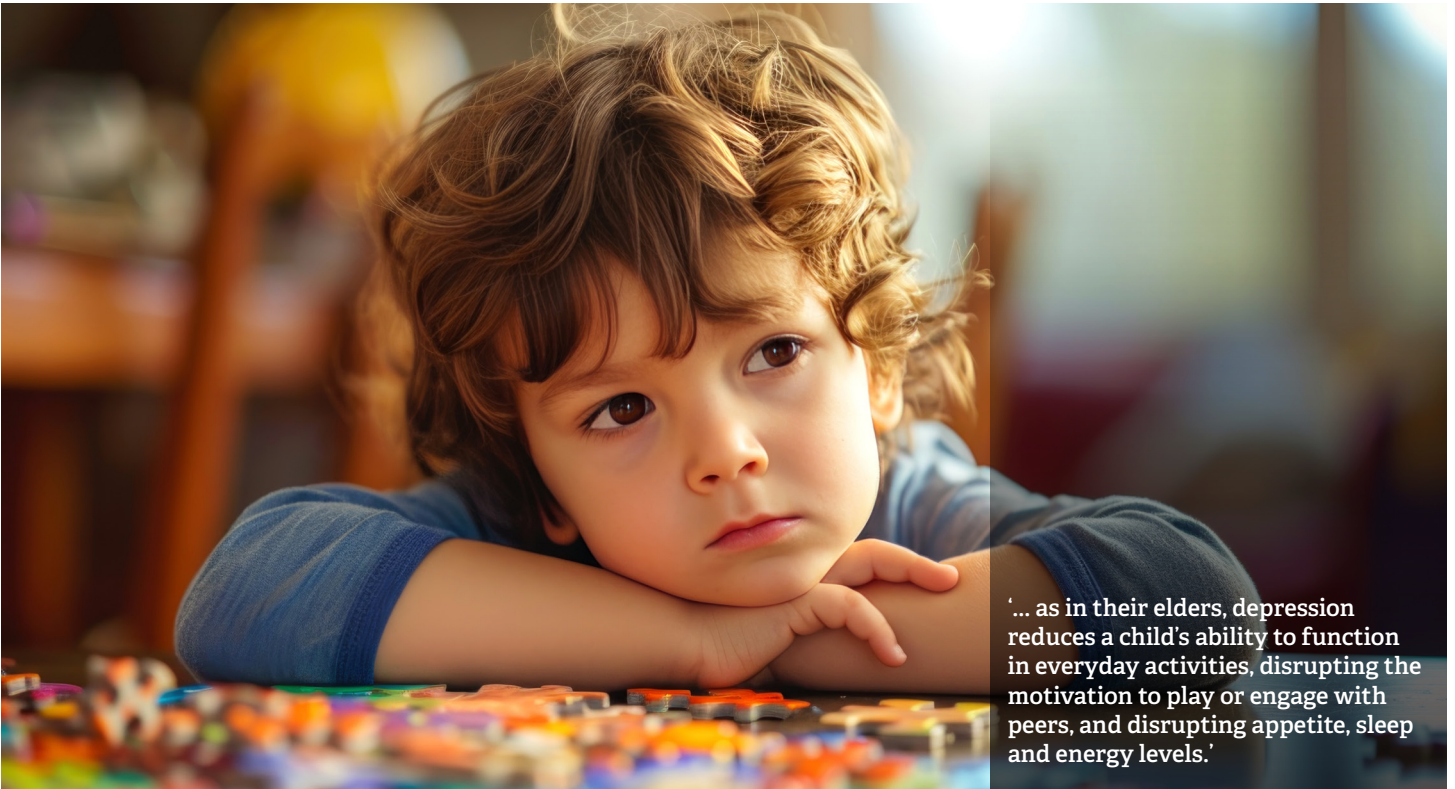
maternal depression while in utero (Roos et al, 2022). There is also some evidence that these brain patterns can be present at birth as a response to prenatal stresses, including factors leading to prematurity, and are predictive of depression at age 2 years (Rogers et al, 2017).

In sum: even the newborn can have the neurological capacity for depression, and that capacity is predictive of depression later in childhood and adolescence. The roots of depression lie in the earliest days of life. Understanding how this neurological inheritance contributes to later depression is vital if we are to effectively alleviate the burden of depression.

### Innate temperament

We have long known that infants are born with different temperaments (Rothbart, 2012; Thornton and Gliga, 2021). Innate temperament is a matter of how reactive an individual is to events, and how effective they are in regulating, for example damping down, an emotional reaction. The mapping of these two factors to the neuroscience is obvious, as is the relevance to mental health: highly reactive poor regulators will be more prone to depression and

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other mental health problems than the less reactive, the better regulators.

Innate temperament is fixed for life: what you're born with is what you have to deal with forever (Rothbart, 2012). There is a strong genetic component to innate temperament, but (as the neuroscience is confirming) it is also shaped by experiences in the womb: we have long known that exposure to maternal depression or stress in utero is associated with increased likelihood of developing a temperament highly reactive to negative events and poor at regulating emotional responses (DiPietro et al, 1996; Wadhwa, 1998 and 2005; Rothbart, 2012).

### Individual differences in susceptibility to depression

Both studies of temperament and research in neuroscience suggest that endogenous factors which make some individuals more susceptible to depression than others are present from early childhood or even birth. Brain scans to identify this vulnerability in the very young are likely to be rare, for both practical and ethical reasons. Easier to identify are patterns of innate temperament. Lionetti et al (2018) suggest a useful three-part typology which is of relevance here: dandelions, who like

that weed are so robust that they sail above most environmental challenges, thriving in the most hostile environments; orchids, who like that tender plant react sensitively to almost any environmental challenge, and struggle to cope with their emotions; and tulips, who are somewhere in between. Lionetti estimates that about 25–35% of babies are born dandelions, 25–35% are born orchids, and 40–50% are born tulips.

Of course, depression is also reactive: even a 'dandelion' can be depressed if the world is rough enough (for instance, for a refugee child who has lost home and family; a child whose family is struggling with severe economic difficulty and all the strain that goes with that; a child being badly bullied or abused – and so on). With sensitive parenting, even an 'orchid' can avoid depression. But it is 'orchids' who are normally most reactive to events and hence the most vulnerable to depressions.

The fact that some infants are more vulnerable to depression than others, and that that infant vulnerability predicts depression in later childhood and adolescence and even in adult life raises a key question. If we were better at identifying and managing this vulnerability in the very young, could we reduce the burden of depression in the teenage years?

Some experts think that we might.

### Assessing the risk of depression in the very young

Circumstances generally associated with depression in teenagers or adults should be assumed to have similar effect for the very young. For example, infants may not understand the economic pressures putting terrible strain on their family, but that strain will nonetheless impact the quality of their parenting and life experience. And given the power of innate temperament to affect development across many areas, including depression, we should surely be routinely examining temperament in assessing vulnerability to mental health problems of all sorts.

Directly diagnosing an episode of depression in the very young poses challenges. In the 3–5-year-old group, depression manifests in much the same way as in older children and adolescents (Luby et al, 2009). Like their elders, depressed children in this age range show signs of lethargy, withdrawal from previously engaging activities, signs of loss of joy, sadness, extreme fatigue and so forth. And as in their elders, depression reduces a child's ability to function in everyday activities, disrupting the motivation to

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play or engage with peers, and disrupting appetite, sleep and energy levels (Luby et al, 2009; Barch, 2016).

However, diagnosing depression in children under 2 or 3 years of age is less straightforward, and we may be under-diagnosing as a consequence. Some of the clues that identify depression in their elders may be present, but particularly in very young babies, such things may be much less clear. Do we need extra criteria to identify depression in the very young? A recent meta-analysis of research (Finlay-Jones et al, 2024) reports that persistent irritability in infancy (easily provoked; inconsolable; excessive crying) is predictive of mental health problems such as depression in later childhood and adolescence. Should we be using persistent irritability in infancy as a prognostic sign in this context?

As a result of diagnostic challenges, we have poor data on the incidence of depression in the very young. Studies in USA suggest that 1% of preschool children are depressed (Son and Kirchner, 2000), though the basis of that conclusion is unclear. It is likely an underestimate. There appears to be no good data for the UK.

## Effective intervention

As with every mental health problem, the earlier one can intervene to head it off, the better the long-term outcome is likely to be. Identifying depression or the vulnerability to depression in the preschool years could potentially pay a huge dividend in reducing depression in later life – if we had an effective intervention for this very young group.

Few treatments for depression in older children and teenagers seem appropriate for use with preschool children. However, research has shown that parent-child interaction therapy (PCIT) can be effective

in treating depression in this age group (Luby et al 2020). In effect, PCIT aims to teach parents to directly foster healthier emotional development in their child by fostering better recognition of emotions, and better ability to regulate emotional reactions. Luby suggests that this can be done, for example, by inducing mild frustration or sadness and then supporting the child as he or she learns to understand their reaction and find ways to manage their feelings. In effect, PCIT could be construed as countering the very problems of over-reaction and poor regulation that characterise an innate temperamental vulnerability to depression and other mental health problems. **CHHE**

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