

**39<sup>th</sup> ECNP Congress, Munich: press release**

***Training how mothers respond to babies might reduce the risk of depression after giving birth - but only if they have previously had a baby***

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**Munich, Germany:** Researchers have shown that prenatal training may reduce the risk of postnatal depression in women, - but only if they have previously had a baby. This surprising finding is presented for the first time at the ECNP Congress in Munich.

Postpartum depression is a serious mood condition which affects around 1 in 7 women after giving birth, and may have important consequences for maternal wellbeing and family functioning, including suicide or infanticide. It is distinct from the more common 'baby blues', which typically involve short-lived emotional changes in the first days after birth and usually resolve spontaneously.

The randomised controlled trial enrolled 147 pregnant women considered at heightened risk of postpartum depression. Participants, all from the Copenhagen area, received either prenatal affective cognitive training (PACT) or care as usual. Follow-up data were available for 121 participants: 54 in the PACT group and 67 in the usual-care group.

The training consists of individual computerised and virtual reality-based sessions over a period of 5 weeks. The expectant mothers were given training on how to notice, interpret, and respond to emotional cues from babies, and then to practise different ways of responding in challenging situations. The aim was to prepare the expectant mothers for difficult situations before they arose.

The researchers saw that across all participants women who received training had better outcomes than those who did not receive training, but overall this did not reach statistical significance. However they found that women who had previously given birth had significantly better outcomes after a course of training; in these women, only 5.3% of participants suffered from post-birth depression, as opposed to 34.6% of women who had not received the training.

Study author Anne Juul Bjertrup (of the NEAD Centre, Copenhagen) said: *"The strongest finding was among women who had previously given birth, which was something we didn't expect. One possible explanation is that the intervention asked participants to imagine their future infant and interactions with their baby while completing emotional and cognitive exercises. Women who already have had the experience of giving birth may have had a more concrete reference point for these tasks"*.

*“Our results lead us to believe that that postpartum depression may not only be associated with how women feel during pregnancy, but also with how they process emotional information and that pregnancy may offer a window for preventive treatment before the baby is born,” Bjertrup said. “They also raise the possibility that prevention may work differently in first and subsequent pregnancies. We need larger trials to confirm the parity-specific result, identify which parts of the intervention matter, and understand which women are most likely to benefit.*

*“There are several things which need clarification before we can think about introducing this training on a wider scale. For example, we know that there is no single reason for experiencing postpartum depression, and that this condition is significantly influenced by biological and psychosocial factors. So we need to treat the findings as interesting, but indicative”.*

Commenting, Dr Benedetta Vai, adjunct professor in Psychiatry at Università Vita-Salute San Raffaele in Italy, and core member of the ECNP network in perinatal psychiatry, said,

*“This is an encouraging study, suggesting that pregnancy may be a window to prevent postpartum depression with a brief training that could reach many women. The training appeared to help women read their baby's cues more positively. This can start a virtuous circle, making mutual regulation between mother and baby easier from the very start.” “This can be especially important for women who already have a child: some carry difficult experiences from a first pregnancy, and tuning in to a newborn with a toddler around isn't easy. The study needs to be confirmed in larger trials, also measuring the mother–infant relationship. But it's a promising direction.”*

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## **Notes for Editors**

This work is presented at the 39<sup>th</sup> ECNP (European College of Neuropsychopharmacology) Congress, taking place in Munich and online 10<sup>th</sup>-13<sup>th</sup> October 2026, see <https://www.ecnp.eu/congress2026/> The ECNP Congress is Europe's leading platform for the science and treatment of brain disorders.

## **Conference abstract**

**Targeting affective cognition during pregnancy to prevent postpartum depression: a randomized controlled trial with parity-specific effects**

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**Background:** Postpartum depression (PPD) affects around 17% of women globally [1]. History of mental illness and low socio-economic status increase risk substantially [2]. Emerging evidence indicates that negative cognitive bias in perceiving infant cues and heightened reactivity to infant distress play a key role in PPD risk [3]. In parallel, neuroimaging studies suggest that pregnancy induces adaptive brain plasticity in networks supporting social cognition and attention, with altered neural adaptation associated with peripartum depressive symptoms [4]. This raises the possibility that affective cognitive processing of infant cues reflects a modifiable pathway linking neurobiological adaptation to maternal mental health. In the present study, we explored whether pregnancy represents a window of opportunity to leverage this plasticity by training affective cognitive mechanisms in preparation for motherhood.

**Aim:** The aim of this randomized controlled trial was to investigate the prophylactic effects of prenatal affective cognitive training (PACT) in pregnant women at heightened risk of PPD and examine whether the intervention modifies affective cognition.

**Methods:** The study enrolled 147 pregnant women at heightened risk of PPD. Participants completed baseline assessments of affective cognitive processing, depressive symptoms, and questionnaires, and were randomized to PACT or care as usual (CAU). The PACT intervention consisted of three to five individualized computerized and virtual reality-based sessions over five weeks, targeting cognitive bias, attentional bias, emotion regulation, and working memory in response to infant stimuli. The primary outcome was PPD incidence within six months postpartum, assessed via clinical diagnostic interview. Secondary outcomes included weekly self-reported depressive symptoms during the first six weeks postpartum and changes in affective cognition from baseline to post-intervention during pregnancy.

**Results:** Follow-up data were available for 121 participants (PACT: n=54; CAU: n=67). There was no overall effect on PPD incidence, although odds were lower in PACT than CAU (OR=0.56, 95% CI [0.24–1.30],  $p=0.18$ ). There was a trend toward parity-specific effects (OR=0.11, 95% CI [0.01–1.18],  $p=0.07$ ). In multiparous participants, odds of PPD were lower in the PACT group compared to CAU (OR=0.10, 95% CI [0.01–0.92],  $p=0.04$ ). PACT increased positive interpretation of infant cues ( $p=0.003$ ), particularly for neutral stimuli, and enhanced attention to infant signals among multiparous participants ( $p=0.01$ ). In contrast, reductions in negative affective reactivity to infant distress were specific to primiparous participants in the PACT group ( $p=0.002$ ). Across participants, higher negative affective reactivity predicted more depressive symptoms ( $p=.018$ ) and increased PPD risk (OR=4.63,  $p=0.04$ ). In the PACT group, a significant interaction between affective reactivity and galvanic skin response predicted parental stress ( $p=0.02$ ) and PPD risk (OR=36.48,  $p=0.02$ ), suggesting that distinct combinations of affective and physiological responses are differentially associated with risk.

**Conclusions:** PACT did not prevent PPD overall but was associated with reduced risk among multiparous women. Findings suggest parity-dependent mechanisms: in primiparous women, effects relate to internal affective–physiological regulation, whereas in multiparous women, they are driven by infant-directed perceptual processing. These results support pregnancy as a window for targeted preventive interventions and suggest that PPD prevention may benefit from stratification by parity and mechanism-specific targeting.