

Passive smoking also affects neurodevelopment in babies

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A new study shows that newborns that have been exposed to nicotine from both active and passive smoking mothers show poor physiological, sensory, motor and attention responses.

[Smoking during pregnancy](#) has been linked to many different problems in infants like [learning difficulties](#), [attention deficit disorder](#) with [hyperactivity](#) and even obesity.

However, although the paediatric and obstetric disorders linked to tobacco during this stage are well defined, the effects on neonatal behaviour have not yet been studied in depth.

A new study headed by experts at the Behaviour Evaluation and Measurement Research Centre (CRAMC) of the Rovira i Virgili University and published in the '*Early Human Development*' journal goes further and analyses the effects of passive smoking during pregnancy on the newborn.

The scientists evaluated the behaviour of 282 healthy [newborns](#) using the Neonatal Behavioural Evaluation Scale. This allows for interaction with the newborn in order to evaluate its behaviour and responses between 48 and 72 hours after birth.

From those mothers studied, 22% smoked during pregnancy and hardly 6% were exposed to passive smoking. Out of the smoking mothers, 12.4% had between 1 and 5 cigarettes a day; 6.7% had between 6 and 10

a day; and 2.8% had between 10 and 15 a day. None of them smoked more than 15 [cigarettes](#) a day.

"Newborns who have had intrauterine exposure to [nicotine](#), whether in an active or passive way, show signs of being more affected in terms of their neurobehavioural development.

This could be an indicator of pathologies, independently of sociodemographic, obstetric and paediatric factors," as explained to SINC by Josefa Canals and Carmen Hernández, the lead authors of the study.

The results reveal that those born to smoking and passive smoking mothers score low in their ability to inhibit [stimuli](#) that could alter the [central nervous system](#).

Furthermore, children of passive smoking mothers have poor motor development and those of smoking mothers have less ability to regulate behaviour and response in physiological, sensor, motor and attention terms.

"Health professionals should encourage future mothers and their families to eliminate or reduce tobacco consumption," states Canals, who outlines the importance of informing mothers on the effects of involuntary exposure to cigarette smoke in order to prevent direct damage to the foetus and infant development.

Smoking during pregnancy is one of the biggest yet changeable causes of illness and death for both mother and infant. Nonetheless, epidemiological studies show that between 11% and 30% of pregnant women smoke or are passively exposed to tobacco smoke.

When a pregnant woman smokes, nicotine concentrations in the foetus

reach more than 15% of that of the mother. In Spain, 43.5% of women between 25 and 44 years of age smoke but this percentage during pregnancy falls to approximately 26.6%.

"However, although women tend to reduce their normal tobacco consumption when falling pregnant, the key is to study the effects of exposure to small amounts of smoke on foetal development," conclude Canals and Hernández.

More information: Carmen Hernández-Martínez, Victoria Arija Val, Joaquín Escribano Subías, Josefa Canals Sans. "A longitudinal study on the effects of maternal smoking and secondhand smoke exposure during pregnancy on neonatal neurobehavior". *Early Human Development* 88:403, June 2012.

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