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# Consumption of certain fish during pregnancy associated with poorer cognitive performance

November 12, 2009

**Children who eat fish more than 3 times per week show a worse performance in the general cognitive, executive and perceptual-manipulative areas. Those with higher levels of exposure to mercury show a generalised delay in cognitive, memory and verbal areas. Mercury is a contaminant found especially in oily fish and canned fish and to a lesser extent in white fish.**

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This conclusion emerges from research conducted at the University of Granada, which warns of the need to assess children's health risk according to [fish](#) consumption, distinguishing between varieties or species they consume, especially in those areas where fish is part of the staple diet of the population.

The work entitled "Children's exposure to environmental contaminants in Granada and potential effects on health" was carried out by Carmen Freire Warden, from the Department of [Radiology](#) and Physical Medicine of the UGR, and led by professors Nicolás Olea and Marieta Fernández Serrano Cabrera.

For this study, scientists analyzed the exposure to environmental contaminants through water, air and diet, in a sample of 220 children in the geographic health care area of San Cecilio University Hospital in Granada. This study has described for the first time the extent of childhood exposure to environmental pollutants of special concern, such as trihalomethanes, NO<sub>2</sub>, polycyclic aromatic hydrocarbons and mercury. Following the hypotheses posed, this research assessed the combination of exposure to air pollution, on the one hand, and mercury, on the other, with child neurodevelopment at 4 years of age.

## Mercury concentrations

Thus, total mercury concentrations found in the hair of 4 year-old-children from Granada were between 0.04 and 6.67 g / g. Concentrations were higher than those found in other paediatric populations with a lower consumption of fish, but lower than levels found in high consuming areas.

Important factors in this exposure were the place of residence, maternal age, passive exposure to tobacco smoke and consumption of [oily fish](#). The results suggest that [fish consumption](#) is the main source of exposure to [mercury](#) in the sample population studied.

The work carried out at the University of Granada also suggests that in Granada, children's health risk from exposure to trihalomethanes via drinking water can be considered to be significantly lower than in other areas of the country, and that air pollutant NO<sub>2</sub> concentrations (measured in the external environment of the study area) were also lower than those described in other Spanish cities. Traffic of motor vehicles is the main source of emission of these pollutants in the study area.

Moreover, the research also revealed that there is a direct relationship between children's passive exposure to tobacco smoke and the use of gas stoves inside houses, and the presence of 1-hydroxypyrene, an indicator of exposure to damaging health air pollutants.

Researchers warn that although environmental exposure levels found in children are low enough not to cause any obvious concern, they could have an impact on child development in the long-term, only appearing as symptoms many years after first exposure. Consequently, they explain, "whatever the extent of involvement of environmental exposures in the etiology of the disease, the simple fact of acting very early in life opens the door to a transcendental field in public health: the possibility of applying early prevention measures to minimize problems."

These research results were recently published in scientific journals such as Environmental Research, Journal of Epidemiology and Community Health,

Science of the Total Environment and Gaceta Sanitaria.

Source: University of Granada

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