

The ova of obese women have lower levels of omega-3 fatty acids

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Researchers from the UPV/EHU, Cruces Hospital, the IVI Clinic Bilbao and Biocruces Bizkaia have discovered that the oocytes—immature ova—from obese and overweight women have lower concentrations of

omega-3 fatty acids. A study of the lipid composition of 922 ova obtained during IVF treatment from 205 women of normal build and who were overweight or obese has found that the oocytes of both obese and overweight women have a very different lipid composition; the study was led by Roberto Matorras-Weinig, lecturer at the UPV/EHU's Faculty of Medicine and Nursing, and was published in the journal *Fertility and Sterility*.

Omega-3 fatty acids are essential in the human diet, in other words, they have to be ingested because the body cannot synthesise them. The intake of them tends to be low in the western diet. Moreover, as Dr. Matorras of the Department of Medical and Surgical Specialties at the UPV/EHU points out, "omega-3 fatty acids compete metabolically with omega-6 ones, and the intake of the latter tends to be too high in the western diet. So the high intake of omega-6 [fatty acids](#) contributes towards low levels of [omega-3](#) ones. Presumably this is the mechanism responsible for their low levels in the ova".

Childhood obesity could kick in before conception

Obesity is a well-known public health problem with numerous repercussions on different organs. "One of its implications in pregnancy is the birth of macrosomic babies (with a high weight), and the subsequent risk of childhood and adult obesity. Until now, this had been attributed to the effect of maternal obesity during pregnancy as well as to unsuitable diets during childhood. But these findings raise the possibility that the problems of these children may start even before conception, due to the poorer lipid composition of the ova which have generated them," said Matorras.

On another front, the researcher added that "[obese patients](#) tend to have poorer IVF outcomes, which have been attributed to a whole range of motives. This discovery highlights another possible cause of these poorer

outcomes".

More information: Roberto Matorras et al, Oocytes of women who are obese or overweight have lower levels of n-3 polyunsaturated fatty acids compared with oocytes of women with normal weight, *Fertility and Sterility* (2020). [DOI: 10.1016/j.fertnstert.2019.08.059](https://doi.org/10.1016/j.fertnstert.2019.08.059)

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