

Lithium in drinking water in Andean villages

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That the thyroid can be affected and that the kidneys in rare cases can be damaged are known side-effects of medication with lithium. Female patients who become pregnant are also advised against taking medicine containing lithium, as the substance can affect the foetus.

"The amounts of [lithium](#) that the Latin American women are ingesting via their drinking water are perhaps a tenth of what a patient would take daily for bipolar disorder. But, on the other hand, they are absorbing this lithium all their lives, even from before birth", says occupational and environmental physician Karin Broberg from Lund University in Sweden.

"What this implies for their health, we don't really know in practice. That is why we are planning a new study which will compare the health of two groups of mothers and children: respectively, the ones with the highest and lowest levels of lithium in their blood."

The Andes Mountains are rich in elements, to which the large copper mines in Chile and Peru, among others, bear witness. In several countries, lithium is also extracted, and Bolivia has enormous lithium reserves in its large salt desert, Salar de Uyuni. However the elements in the ground are not just a resource but also an environmental risk.

In an earlier study in which Karin Broberg took part, involving the same mountain villages in the Salta province in Northwest Argentina, high levels of arsenic, lithium, [cesium](#), rubidium and boron were found in the drinking water and in the urine of the women studied.

"Lifelong ingestion of arsenic and lithium brings a clear health risk. What the ingestion of the other substances implies is not known, because there is very little research on their role in ordinary drinking water," she says.

The researchers have carried out their studies with a technique called mass spectrometry. With older techniques it has only been possible to analyse one substance at a time in a water sample for example, but through refinement of [mass spectrometry](#) scientists are now able to measure the content of a long list of substances at the same time.

That is why Karin Broberg thinks the technique should be widely used to analyse people's [drinking water](#).

"Groundwater has in many places been considered better to drink than the often polluted water from lakes and rivers. But in Bangladesh this has caused enormous health problems, when it turned out that the water from drilled wells contained arsenic. Very little is known about the concentration of lithium and other potentially dangerous substances in the groundwater around the world, so this should also be measured," she believes.

Provided by Lund University

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