

## Consideration of trace elements deficiency and excess in patients with chronic renal failure

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### Abstract

Patients with chronic renal failure (CRF) undergoing hemodialysis are potentially at risk of deficiency of essential trace elements and excess of toxic trace elements. The aim of the study was to evaluate for excess or deficiency of trace elements in patients with chronic renal failure.

Fifty-three CRF patients and fifty-four healthy individuals were included in the study. The plasma and hair levels of trace elements (aluminum, bromine, iron, copper, zinc, selenium, lead, chromium, mercury, strontium, cobalt, nickel, gallium, titanium and molybdenum) were measured by PIXE method.

The plasma levels of aluminum, bromine, iron, zinc, selenium, chromium and titanium were lower, levels of mercury and cobalt were higher in CRF patients compared healthy individuals. However, many elements in the hair was not higher than healthy individuals, only aluminum, copper and nickel were slightly lower than healthy individuals.

In CRF patients, although some elements were somewhat lower, the elements of most were kept at the same level as healthy individuals.