

**An-Najah National University**  
**Faculty of Medicine and Health Sciences**



**GRADUATION PROJECT**

**Assessment of Aluminum levels in the breast milk of  
breastfeeding women from different regions of the  
West Bank of Palestine**

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## **Abstract**

**Background:** Breast milk is a bio-fluid that can easily be obtained and used for bio-monitoring aluminum levels in environmentally exposed individuals.

**Objective:** The goal of this study is to find out how much aluminum is in women's breast milk in different parts of Palestine's West Bank to look at the link between a mother's sociodemographic variables and the amount of aluminum in her breast milk.

**Method:** Breast-feeding women's milk samples were collected in metal-free polyethylene tubes from five distinct areas of the West Bank (Nablus, Jenin, Hebron, Tubas, and Qalqilya). The aluminum content of the samples was determined using a pre-validated inductively coupled plasma-mass spectrometric technique, there were 160 aluminum samples examined in all.

**Result:** The median breast milk aluminum level was 0.0212 µg/mL, ranging from 0.016 µg/mL to 0.035 µg/mL, we found that all samples, which were analyzed, are within normal safety range between 0.0092 µg/mL to 0.049 µg/mL according to Agency For Toxic Substances and Disease Registry. Aluminum levels in breast milk were considerably greater in women who consumed multivitamins (p-value = 0.006), ate green leafy vegetables (p-value = 0.009), ate eggs regularly (p= 0.047), mother who had history of general weakness and concentration issue (p-value=0.027).

**Conclusion:** breast milk aluminum level was in safety limit in lactating women in different areas of west bank, Palestine. However, the level of breast milk aluminum was higher in women who consumed white meats.

**Keyword:** breast- feeding, Aluminum, Palestine.