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Maternal diet and lifestyle, levels of selected elements and fatty acid composition in maternal milk from two different areas in Slovenia

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Maternal diet and living environment can affect levels of elements and fatty acid (FA) composition and their stable isotopes in human milk.

The content of ω -6 and ω -3 polyunsaturated fatty acids (PUFAs), could be related to the optimal growth and development of the baby.

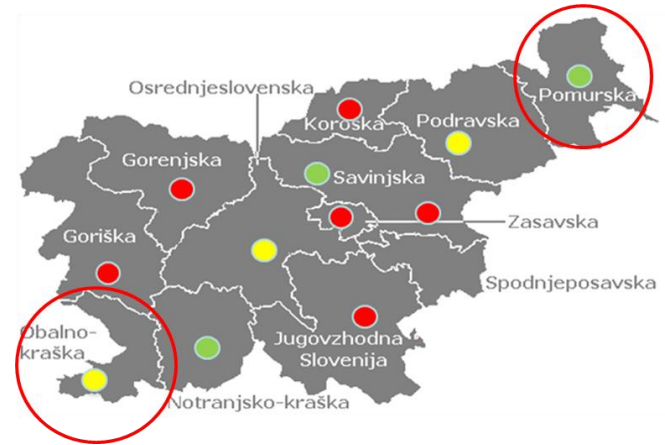


Recruitment:

- 74 pregnant women (19-39 years)
- 2 regions from HBM (2007-2015) in Slovenia:
 - area of Koper and
 - area of Pomurje.

Sampling procedure:

- Informed consent,
- Maternal milk (4-6 weeks after delivery),
- Questionnaire with detailed information about pregnancy and delivery, their lifestyle and dietary information.



Sample preparation and chemical analysis:

- Levels of selected toxic and potentially toxic elements,
- Composition of fatty acids in maternal milk,
- Stable isotopes of fatty acids ($\delta^{13}\text{C}_{\text{FA}}$).





RESULTS AND CONCLUSIONS

Levels of selected elements did not represent any health risk for the mother-child pairs.

Levels of As and Hg in milk were statistically higher in the coastal than in the inland area, so were the levels of saturated and monounsaturated FA.

Whereas PUFAs, ω -3, ω -6 levels were lower in the coastal than in the inland area, despite higher intake of fresh sea food observed in the coast.

The ratio ω -6/ ω -3 levels did not differ significantly among the studied areas.

