



IRON DEFICIENCY AND ANEMIA

QANUILIRPITAA? 2017

Nunavik Inuit Health Survey

Anemia is a health problem characterized by a decreased hemoglobin concentration in the blood. It is often due to iron deficiency, which is caused by a poor iron intake, high iron loss or high iron requirements. Iron deficiency and anemia can have a negative impact on cognitive functioning, physical performance, quality of life and immune system functioning. According to the World Health Organization, anemia is a significant public health concern having major consequences on human health as well as social and economic development. Nunavimmiut have been experiencing important changes in lifestyle and dietary habits in the past decades, which have contributed to a decrease in the consumption of iron-rich country foods, and an increase in chronic inflammation and infections. In 2004, the prevalence of anemia among non-pregnant Inuit women in Nunavik (43%) was 10 times higher than among non-Inuit Canadian women in 2011 (4%). The prevalence of iron deficiency and anemia among Inuit men in Nunavik has yet to be assessed. This *Qanuilirpitaa?* 2017 Health Survey report presents the prevalence of iron deficiency and different types of anemia documented among Nunavimmiut in 2017 and describes the evolution of these outcomes among

Inuit women since the *Qanuipitaa?* 2004 Health Survey. The report also examines how the prevalence of anemia and iron deficiency varies according to potential protective and risk factors.

The results of the *Qanuilirpitaa?* 2017 Health Survey indicate that almost one in five Nunavimmiut had anemia (19%) and iron deficiency (18%) at the time of the survey. These proportions are higher than those observed among the non-Inuit Canadian population, but similar to the values noted in other Inuit populations in Canada. Most of the anemia cases noted during the survey were mild (men: 86%, women: 74%), some were moderate (men: 14%, women: 26%), and none were severe. Approximately half the cases of anemia were due to iron deficiency, with most cases observed among women of childbearing age (16 to 49 years old). Among men and women over 50, anemia of chronic inflammation and unexplained anemia accounted for most anemia cases. Overall, the prevalence of iron deficiency, total anemia and iron deficiency anemia was higher among women than men.

In women aged 18 and older, average hemoglobin concentration increased from 122 g/L to 129 g/L and average ferritin concentration increased from 24 µg/L to 35 µg/L between 2004 and 2017. The prevalence of anemia among women 18 and over in 2017 (22%) was 2 times lower than in 2004 (45%) and the prevalence of iron deficiency (24%) was 1.5 times lower than in 2004 (34%). The two-fold decrease in the prevalence of anemia was observed for all types of anemia and among all age groups.

Qanuillirpita? 2017 also showed that traditional Inuit lifestyle and dietary habits seem to have a protective effect on iron status and anemia. People who often spend time on the land tend to have less anemia and iron deficiency. Additionally, country food intake was positively related to iron status and was associated with a reduced prevalence of iron deficiency. In contrast, the consumption of hot beverages (tea, coffee and herbal tea) and that of sweet beverages were positively associated with anemia and iron deficiency, respectively.

Several socioeconomic factors seem to have a protective effect on anemia and iron deficiency, namely, having a higher income, an active work status, being married or in a common law relationship, and having completed secondary school. As expected, being food secure also seems to be a protective factor for both anemia and iron deficiency. Having an adequate or high level of blood selenium, a nutrient present in very high concentrations especially in beluga mattaaq, also appears to be a protective factor for both outcomes. In contrast, having a diagnosed chronic disease or a recent pregnancy (within the last 12 months) both seem to be risk factors for anemia and iron

deficiency anemia. Nunavimmiut in the normal weight category showed an increased prevalence of anemia and iron deficiency compared to those in the overweight/obese category, as previously observed among other Inuit populations in Canada. Those who perceived their health status as fair or poor had a higher prevalence of total anemia and anemia of chronic inflammation compared to those with an excellent, very good or good perceived health status. Multivariate analyses need to be conducted to better identify the different protective or risk factors among men and women and among different age and sex groups.

In summary, although the prevalence of iron deficiency and anemia among women in Nunavik has markedly decreased since 2004, both conditions remain significant public health concerns affecting almost one in five Nunavimmiut women. The majority of anemia cases among women of child-bearing age are related to iron deficiency, while anemia among older men and women is mostly linked to chronic inflammation or falls in the unexplained category. The prevalence of iron deficiency and anemia is comparable to that of other Inuit in Canada but is much higher than in the general Canadian population. Public health and local interventions targeting modifiable risk factors, such as supporting traditional lifestyles and improving socioeconomic status, are still needed to enhance these outcomes.



Qanuillirpita? 2017 is a population health survey carried out in Nunavik from August to October 2017. A total of 1 326 Nunavimmiut aged 16 and over from all 14 villages participated to this survey.

Nakurmiik to all Nunavimmiut who contributed to this important health survey!

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