

WHO guideline development group – the use of ferritin concentrations to assess iron status in populations

WHO/HQ - M505 (M building) and Salle D (main building)
Geneva, Switzerland
15 - 17 June 2016

SCOPE AND PURPOSE

Indicators to assess the micronutrient status in populations are important for determining the magnitude and distribution of deficiency as a public health problem, for choosing the most appropriate intervention, and for monitoring and evaluating the impact of implemented public health programmes. The assessment of micronutrient status is often complex, as indicators are often affected by other conditions such as age, sex, disease, smoking, infection and inflammation.

In 2004, a joint WHO/Centers for Disease Control and Prevention (CDC) technical consultation was held on the *Assessing the iron status of populations*¹ and an analysis of indicators of iron status was undertaken. Several iron indicators were reviewed to assess their ability to measure change in iron status due to an iron intervention. Participants concluded that the concentration of haemoglobin should be measured for the assessment of iron status, even though not all anaemia is caused by iron deficiency, and that the assessment of serum ferritin and transferrin receptor would be the best approach for measuring the iron status of populations. In evaluating the impact of interventions to control iron deficiency in populations it was recommended to use serum ferritin as the indicator of a response to an intervention to control iron deficiency and to measure it along with the haemoglobin concentration in all programme evaluations. Additionally, the consultation concluded that if funding was available, it may also be useful to measure the concentration of one or both of the acute phase proteins, C-reactive protein (CRP) or α -1 acid glycoprotein (AGP), to account for a high serum ferritin caused by inflammation; as well as measuring transferrin receptor during repeated surveys.

WHO convened another meeting in Panama City, Panama in 2010 on *Priorities in the assessment of vitamin A and iron status in populations*² to discuss and initiate the work of updating WHO guidelines on indicators for the assessment of vitamin A and iron status. With regard to the assessment of iron status, serum ferritin and transferrin receptor were ranked of highest priority for undergoing a thorough review.

The WHO Department of Nutrition for Health and Development (NHD) established the **WHO guideline development group – ferritin**. This guideline development group includes experts from various WHO expert advisory panels and those identified through open calls for experts taking into consideration a balanced mix of genders, multiple disciplinary areas of expertise, and representation from all WHO Regions.

¹ http://www.who.int/nutrition/publications/micronutrients/anaemia_iron_deficiency/9789241596107/en/

² http://www.who.int/nutrition/publications/micronutrients/meetingreport_assessment_vitAandIron_status/en/

The WHO guideline development group – ferritin supports WHO’s biennial programme of work related to biomarkers to advise WHO on the following:

1. The scope of the guidelines and priority questions for which systematic reviews of evidence will be commissioned.
2. The choice of important outcomes for decision-making and developing recommendations.
3. The interpretation of evidence with explicit consideration of the overall balance of risks and benefits.
4. The formulation of final drafting of recommendations, taking into account existing evidence as well as diverse values and preferences.

WHO plans to convene a meeting with the WHO guideline development group – ferritin in Geneva, Switzerland from 15 to 17 June 2016.

The main objectives of the WHO guideline development group – ferritin for this meeting are to:

- a. Present and discuss evidence for informing the guideline on the use of ferritin concentrations to assess iron status in populations.
 - Serum/plasma ferritin for assessing iron reserves in populations.
 - Response on ferritin concentration from nutrition-specific and nutrition-sensitive interventions in children and women of reproductive age: an overview of reviews.
 - Accuracy and comparability of methods for measuring ferritin concentrations.
 - Influence of inflammation on ferritin concentrations in children and women: A methodological approach to adjust prevalence estimates in population-based surveys.
 - Defining a public health problem on serum/plasma ferritin for assessing iron status in populations.
- b. Finalize a recommendation on the use of ferritin concentrations to assess iron status in populations.
- c. Determine the strength of the recommendations, considering costs, values and preferences.
- d. Define implications for further research.
- e. Discuss challenges for implementation of the guideline.

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