

GUIDELINE

DAILY IRON SUPPLEMENTATION

in adult women and
adolescent girls



2016



**World Health
Organization**

Guideline:

**DAILY IRON SUPPLEMENTATION
IN ADULT WOMEN
AND ADOLESCENT GIRLS**

Guideline: Daily iron supplementation in adult women and adolescent girls

1. Iron - administration and dosage. 2. Anemia, Iron-deficiency - prevention and control. 3. Menstruation - complications. 4. Women. 5. Adolescent. 6. Dietary Supplements. 7. Guideline. I. World Health Organization.

ISBN 978 92 4 151019 6

(NLM classification: WH 160)

© World Health Organization 2016

All rights reserved. Publications of the World Health Organization are available on the WHO website (www.who.int) or can be purchased from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 3264; fax: +41 22 791 4857; e-mail: bookorders@who.int).

Requests for permission to reproduce or translate WHO publications –whether for sale or for non-commercial distribution– should be addressed to WHO Press through the WHO website (www.who.int/about/licensing/copyright_form/en/index.html).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Cover design and layout: Chris Yuen

Document layout: Elysium sàrl

Printed by the WHO Document Production Services, Geneva, Switzerland

SUGGESTED CITATION

Guideline: Daily iron supplementation in adult women and adolescent girls. Geneva: World Health Organization; 2016.

CONTENTS

ACKNOWLEDGEMENTS		VI
	Financial support	VI
EXECUTIVE SUMMARY		1
	Purpose of the guideline	1
	Guideline development methodology	1
	Available evidence	1
	Recommendation	2
	Remarks	2
	Research priorities	3
SCOPE AND PURPOSE		4
BACKGROUND		4
OBJECTIVES		5
SUMMARY OF AVAILABLE EVIDENCE		5
RECOMMENDATION		6
RATIONALE		6
REMARKS		7
RESEARCH PRIORITIES		8
DISSEMINATION, IMPLEMENTATION AND ETHICAL CONSIDERATIONS		8
	Dissemination	8
	Implementation	9
	Regulatory considerations	9
	Monitoring and evaluation of guideline uptake and adaptation	9
GUIDELINE DEVELOPMENT PROCESS		10
	Advisory groups	10
	Scope of the guideline, evidence appraisal and decision-making	11
MANAGEMENT OF COMPETING INTERESTS		12
PLANS FOR UPDATING THE GUIDELINE		13
REFERENCES		14
ANNEX 1.	GRADE summary of findings table	16
ANNEX 2.	Summary of the considerations of the members of the guideline development group for determining the strength of the recommendation for daily oral iron supplementation in menstruating adult women and adolescent girls	17
ANNEX 3.	WHO Steering Committee for Nutrition Guidelines Development	18
ANNEX 4.	WHO guideline development group	19
ANNEX 5.	External resource experts	22
ANNEX 6.	WHO SECRETARIAT	23
ANNEX 7.	PEER-REVIEWERS	24
ANNEX 8.	Questions in population, intervention, control, outcomes (PICO) format	25
	Effects and safety of iron supplementation in menstruating adult women and adolescent girls	25

ACKNOWLEDGEMENTS

This guideline was coordinated by the World Health Organization (WHO) Evidence and Programme Guidance Unit, Department of Nutrition for Health and Development. Dr Pura Rayco-Solon, Dr Lisa Rogers and Dr Juan Pablo Peña-Rosas oversaw the preparation of this document. WHO acknowledges the technical contributions of the following individuals (in alphabetical order): Dr Andrea Bosman, Ms Hala Boukerdenna, Dr Carmen Casanovas, Dr Camila Chaparro, Dr Maria Nieves García-Casal, Dr Viviana Mangiaterra, Ms Zita Weise Prinzo and Mr Gerardo Zamora. We also thank the peer-reviewers Ms Solange Durao, Dr Tran Khanh Van and Ms Terrie Wefwafwa.

We would like to express our gratitude to Dr Susan Norris from the WHO Guidelines Review Committee Secretariat and members of the Guidelines Review Committee for their technical support throughout the process. Thanks are also due to Ms Alma Alic from the Department of Compliance and Risk Management and Ethics, for her support in the management of the conflicts of interests procedures. Ms Jennifer Volonnino, from the Evidence and Programme Guidance Unit, Department of Nutrition for Health and Development, provided logistic support.

WHO gratefully acknowledges the technical input of the members of the WHO Steering Committee for Nutrition Guidelines Development and the WHO guidelines development groups, especially the chairs of the meeting concerning this guideline, Ms Deena Alaasor and Dr Maria Elena del Socorro Jefferds.

Financial support

WHO thanks the Bill & Melinda Gates Foundation for providing financial support for this work. The Micronutrient Initiative and the International Micronutrient Malnutrition Prevention and Control Program of the United States Centers for Disease Control and Prevention (CDC) provided financial support to the Evidence and Programme Guidance Unit, Department of Nutrition for Health and Development, for the commissioning of systematic reviews of nutrition interventions. Donors do not fund specific guidelines and do not participate in any decision related to the guideline development process, including the composition of research questions, membership of the guideline groups, conduct and interpretation of systematic reviews, or formulation of recommendations.

WHO GUIDELINE¹: DAILY IRON SUPPLEMENTATION IN ADULT WOMEN AND ADOLESCENT GIRLS

EXECUTIVE SUMMARY

Globally, one in three non-pregnant women, corresponding to almost 500 million women, were anaemic in 2011. Iron deficiency is thought to contribute to at least half of the global burden of anaemia. Iron deficiency occurs following prolonged negative iron balance, the major causes of which include inadequate intake (owing to insufficient bioavailable iron in the diet or decreased iron absorption), increased iron requirements (for instance, during periods of growth) and chronic blood loss (from heavy hookworm infection or menstrual bleeding). In adolescent girls, menstrual blood losses, accompanied by rapid growth with expansion of the red cell mass and increased tissue iron requirements, make them particularly vulnerable to iron deficiency compared to male counterparts. This guideline reviews the evidence and updates the recommendation for daily iron supplementation in menstruating adult women and adolescent girls.

Purpose of the guideline

This guideline aims to help Member States and their partners in their efforts to make informed decisions on the appropriate nutrition actions to achieve the [Sustainable Development Goals](#) (SDGs) (1), the global targets set in the [Comprehensive implementation plan on maternal, infant and young child nutrition](#) (2) and the [Global strategy for women's, children's and adolescent's health \(2016–2030\)](#) (3). The recommendation in this guideline is intended for a wide audience, including policy-makers, their expert advisers, and technical and programme staff at organizations involved in the design, implementation and scaling-up of programmes for anaemia prevention and control, and in nutrition actions for public health. The recommendation supersedes those of previous WHO guidelines on iron supplementation in adolescent girls and adult women where they pertain specifically to daily oral iron supplementation among menstruating adult women and adolescent girls.

Guideline development methodology

WHO developed the present evidence-informed recommendation using the procedures outlined in the [WHO handbook for guideline development](#) (4). The steps in this process included: (i) identification of priority questions and outcomes; (ii) retrieval of the evidence; (iii) assessment and synthesis of the evidence; (iv) formulation of recommendation, including research priorities; and planning for (v) dissemination; (vi) implementation, equity and ethical considerations; and (vii) impact evaluation and updating of the guideline. The Grading of Recommendations Assessment, Development and Evaluation ([GRADE](#)) methodology was followed (5), to prepare evidence profiles related to preselected topics, based on up-to-date systematic reviews.

The guideline development group consisted of content experts, methodologists and representatives of potential stakeholders and beneficiaries. One guideline group participated in a meeting concerning this guideline, held in Geneva, Switzerland, on 20–25 February 2010, where the guideline was scoped. A second guideline group participated in a meeting held in Geneva, Switzerland, on 14–18 March 2011, to discuss the safety of iron supplementation in menstruating adult women and adolescent girls living in areas of high malaria transmission, and a third meeting was convened in Geneva, Switzerland, on 23–26 June 2014, where the guideline was finalized. Three experts served as technical peer-reviewers of the draft guideline.

¹ This publication is a World Health Organization (WHO) guideline. A WHO guideline is any document, whatever its title, containing WHO recommendations about health interventions, whether they be clinical, public health or policy interventions. A standard guideline is produced in response to a request for guidance in relation to a change in practice, or controversy in a single clinical or policy area, and is not expected to cover the full scope of the condition or public health problem. A recommendation provides information about what policy-makers, health-care providers or patients should do. It implies a choice between different interventions that have an impact on health and that have ramifications for the use of resources. All publications containing WHO recommendations are approved by the WHO Guidelines Review Committee.

Available evidence

The available evidence comprised a systematic review (6) that followed the procedures of the [Cochrane handbook for systematic reviews of interventions](#) (7) and assessed the effects of daily iron supplementation in menstruating adult women and adolescent girls. The reviews included individually randomized and cluster-randomized controlled trials. All studies compared a group of non-pregnant adolescent girls and menstruating adult women who received daily oral iron supplementation to a group that did not receive iron. The overall quality of the available evidence for daily iron supplementation in menstruating adult women and adolescent girls was moderate for the critical outcomes of anaemia and iron deficiency. No evidence was available for the outcomes of iron deficiency anaemia and malaria-related morbidity. The WHO Secretariat conducted an additional search for evidence prior to the finalization of the guideline (November 2015), and did not identify any additional relevant studies.

Recommendation¹

Daily iron supplementation is recommended as a public health intervention in menstruating adult women and adolescent girls, living in settings where anaemia is highly prevalent ($\geq 40\%$ anaemia prevalence),² for the prevention of anaemia and iron deficiency (*strong recommendation, moderate quality of evidence*).

Suggested scheme for daily iron supplementation in adult women and adolescent girls

TARGET GROUP	Menstruating adult women and adolescent girls (non-pregnant females in the reproductive age of group)
SUPPLEMENT COMPOSITION	30–60 mg elemental iron ^a
SUPPLEMENT FORM	Tablets
FREQUENCY	Daily
DURATION	Three consecutive months in a year
SETTINGS	Where the prevalence of anaemia in menstruating adult women and adolescent girls is 40% or higher ^b

^a 30–60 mg of elemental iron equals 150–300 mg of ferrous sulfate heptahydrate, 90–180 mg of ferrous fumarate or 250–500 mg of ferrous gluconate.

^b In the absence of prevalence data in this group, consider proxies for high risk of anaemia. For the most recent estimates, visit the WHO - hosted Vitamin and Mineral Nutrition Information System ([VMNIS](#)) (8).

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_27088

