WHO guideline: USE OF MULTIPLE MICRONUTRIENT POWDERS FOR POINT-OF-USE FORTIFICATION OF FOODS CONSUMED BY INFANTS AND YOUNG CHILDREN AGED 6—23 MONTHS AND CHILDREN AGED 2—12 YEARS





WHO guideline:

USE OF MULTIPLE MICRONUTRIENT POWDERS FOR POINT-OF-USE FORTIFICATION OF FOODS CONSUMED BY INFANTS AND YOUNG CHILDREN AGED 6–23 MONTHS AND CHILDREN AGED 2–12 YEARS



WHO guideline: Use of multiple micronutrient powders for point-of-use fortification of foods consumed by infants and young children aged 6–23 months and children aged 2–12 years

ISBN 978-92-4-154994-3

© World Health Organization 2016

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; https://creativecommons.org/licenses/by-nc-sa/3.0/igo).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (http://www.wipo.int/amc/en/mediation/rules).

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Sales, rights and licensing. To purchase WHO publications, see http://apps.who.int/bookorders. To submit requests for commercial use and queries on rights and licensing, see http://www.who.int/about/licensing.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. 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 WHO 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 WHO 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 WHO 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 WHO be liable for damages arising from its use.

Design and layout: Alberto March (Barcelona, Spain). Cover photo by Nicole Rodriguez Neufeld and Alberto March. Baby's model: Jason Kamperis.

SUGGESTED CITATION:

WHO guideline: Use of multiple micronutrient powders for point-of-use fortification of foods consumed by infants and young children aged 6–23 months and children aged 2–12 years. Geneva: World Health Organization; 2016. Licence: CC BY-NC-SA 3.0 IGO.

TABLE OF CONTENTS

PUBLICATION HISTORY		vii
ACKNOWLEDGEMENTS		vii
	Financial support	vii
EXECUTIVE SUMMARY		1
	Background	1
	Purpose of the guideline	2
	Guideline development methodology	2
	Available evidence	2
	Recommendations	3
	Recommendation 1	3
	Recommendation 2	4
	Remarks	5
	Research gaps	6
	Plans for updating the guideline	7
WHO GUIDELINE:	Use of multiple micronutrient powders for point-of-use fortification of foods consumed by infants and young children aged 6—23 months and children aged 2—12 years	8
SCOPE AND PURPOSE	,	8
BACKGROUND		8
SUMMARY OF EVIDENCE		10
	Multiple micronutrient powders in infants and young children aged 6–23 months	10
	Multiple micronutrient powders in children aged 2–12 years	12
RECOMMENDATIONS		13
	Recommendation 1	13
	Recommendation 2	14
REMARKS		14
RESEARCH GAPS		16
DISSEMINATION AND IMP		16
	Dissemination of this guideline	16
	Equity, human rights and implementation considerations	17
	Ethical considerations	19
	Monitoring and evaluation	20

GUIDELINE DEVELO	PMENT PROCESS	21
	Advisory groups	21
	Scope of the guideline	22
	Evidence appraisal and decision-making	22
MANAGEMENT OF C	CONFLICTS OF INTEREST ING THE GUIDELINE	23 25
REFERENCES		26
ANNEX 1.	Forest plots on effect estimates and confidence intervals for some critical outcomes, for both individual studies and meta-analyses	32
	A. Effects of the provision of multiple micronutrient powders on anaemia (defined as haemoglobin values lower than 110 g/L) in comparison to no intervention or placebo in infants and young children aged 6–23 months	32
	B. Effects of the provision of multiple micronutrient powders on iron deficiency (as defined by trialists) in comparison to no intervention or placebo in infants and young children aged 6—23 months	33
	C. Effects of the provision of multiple micronutrient powders on haemoglobin concentration (g/L) in comparison to no intervention or placebo in infants and young children aged 6–23 months	34
	D. Effects of point-of-use fortification of foods with micronutrient powders containing iron on anaemia (defined as haemoglobin lower than 110 g/L for children aged 24–59 months and lower than 115 g/L for children aged 5–11.9 years, adjusted by altitude where appropriate) in comparison to no intervention or placebo in children of preschool and school age	35
	E. Effects of point-of-use fortification of foods with micronutrient powders containing iron on haemoglobin (g/L) in comparison to no intervention or placebo in children of preschool and school age	36
	F. Effects of point-of-use fortification of foods with micronutrient powders containing iron on iron deficiency (as defined by trialists) in comparison to no intervention or placebo in children of preschool and school age.	37
ANNEX 2.	GRADE summary of findings tables	38
	A. Micronutrient powders for point-of-use fortification of foods versus placebo/no intervention in infants and young children aged 6—23 months	38
	B. Micronutrient powders for point-of-use fortification of foods versus iron supplements in infants and young children aged 6–23 months	s 39
	C. Iron-containing micronutrient powders for point-of-use fortification of foods versus placebo/no intervention in children aged 2—12 years	40

ANNEX 3.	Systematic review teams	41
	Systematic review 1	41
	Systematic review 1	41
ANNEX 4.	QUESTIONS IN POPULATION, INTERVENTION, CONTROL, OUTCOMES (PICO) FORMAT	42
	Effects and safety of multiple micronutrient powders for infants and young children aged 6–23 months and children aged 2–12 years	en 42
ANNEX 5.	Summary of the considerations of the members of the guideline development group for determining the strength of the recommendations for use of multiple micronutrient powders for point-of-use fortification of foods consumed by infants and young children aged 6–23 months and children aged 2–12 years	
ANNEX 6.	WHO Steering Committee for Nutrition Guidelines Development	44
ANNEX 7.	WHO guideline development group – nutrition actions 2013–2014	46
ANNEX 8.	WHO Secretariat	48
	WHO headquarters	48
	WHO regional offices	48
ANNEX 9.	External resource experts	49
ANNEX 10.	Peer-reviewers	50

PUBLICATION HISTORY

This guideline, Use of multiple micronutrient powders for point-of-use fortification of foods consumed by infants and young children aged 6–23 months and children aged 2–12 years is an update of the 2011 WHO guideline, Use of multiple micronutrient powders for home fortification of foods consumed by infants and children 6–23 months of age. The present guideline supersedes the previous publication.

The word "home" has been substituted by "point-of-use", to reflect the variety of settings where this intervention may take place. The population groups covered in the guideline have been expanded to include preschool and school-age children (i.e. children aged 2–12 years).

In order to produce this current guideline, the standard guideline development process was followed, according to the <u>WHO handbook for guideline development</u>.

ACKNOWLEDGEMENTS

This guideline was coordinated by Mr Gerardo Zamora and Dr Lisa Rogers, under the supervision of Dr Juan Pablo Peña-Rosas. Thanks are due to Dr Susan Norris, Ms Myriam Felber and staff from the World Health Organization (WHO) Guidelines Review Committee Secretariat for their support throughout the process and to Ms Alma Alic from the WHO Compliance, Risk Management and Ethics Office for her support in the management of conflicts-of-interest procedures. Thanks are also due to the office of the Deputy Minister for the Prevention and Promotion of Health, Ministry of Health, Mexico, for their support in the preparation of one of the consultative meetings where this guideline was discussed. WHO acknowledges the technical contribution from the following individuals (in alphabetical order): Ms Evelyn Boy, Ms Mónica Flores-Urrutia, Ms Hala Boukerdenna, Dr Maria Nieves Garcia-Casal, Dr Pura Rayco-Solon, Ms Rebekah Thomas Bosco and the peer-reviewers. 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 Nutrition Steering Committee and the WHO guidelines development group – nutrition actions 2013–2014, especially the chairs of the meetings, Dr Rebecca Stoltzfus and Ms Rusidah Selamat. WHO is also grateful to the staff of the Cochrane Developmental, Psychosocial and Learning Problems Group, for their support during the development of the systematic review used to inform this guideline.

The International Micronutrient Malnutrition Prevention and Control Programme (IMMPaCt) of the Centers for Disease Control and Prevention (CDC), United States of America and the Micronutrient Initiative, Canada provided technical support to the Evidence and Programme Guidance Unit for the commissioning

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 26671

