

MICRONUTRIENT DEFICIENCY INFORMATION SYSTEM

WORLD HEALTH ORGANIZATION

MDIS WORKING PAPER #2

GLOBAL PREVALENCE OF VITAMIN A DEFICIENCY



World Health Organization



United Nations Children's Fund

THE MICRONUTRIENT DEFICIENCY INFORMATION SYSTEM

The Micronutrient Deficiency Information System (MDIS) was established in 1991 in the Nutrition unit of the World Health Organization (WHO) in collaboration with the Community Systems Foundation of Ann Arbor, Michigan. The MDIS is a global surveillance mechanism for continually assessing the magnitude and distribution of deficiencies in three major micronutrients: iodine, vitamin A and iron. The databases provide the information required both to estimate the prevalence of these forms of micronutrient malnutrition on a national and global scale, and to provide timely and direct support for implementing and monitoring related prevention and control programmes.

Information is based on clinical indicators and selected biochemical and ecological parameters; it has been gathered from scientific journals, government documents, conference reports, and unpublished papers. To facilitate interpretation, every effort is made to specify the methods used in collecting and analysing information. Whenever possible, data are presented in tabular form stratified by administrative region, age, sex and nutrient status. On this basis, national "at-risk" and "affected" populations have been calculated. This degree of detail is provided in support of continuing efforts to standardize methodologies for assessing population-based deficiency rates. It is hoped that this will lead eventually both to improved monitoring of control activities and a better understanding of their impact within countries.

This is the second in the MDIS working paper series, available data on global prevalence of iodine deficiency disorders having been presented in 1993. A third report is in preparation, on the global prevalence of iron deficiency anaemia in children. Although previous efforts have been made to document the worldwide magnitude and distribution of micronutrient deficiencies, the MDIS is the most systematic and comprehensive approach developed thus far to providing robust epidemiological prevalence estimates of deficiencies of these three important micronutrients.

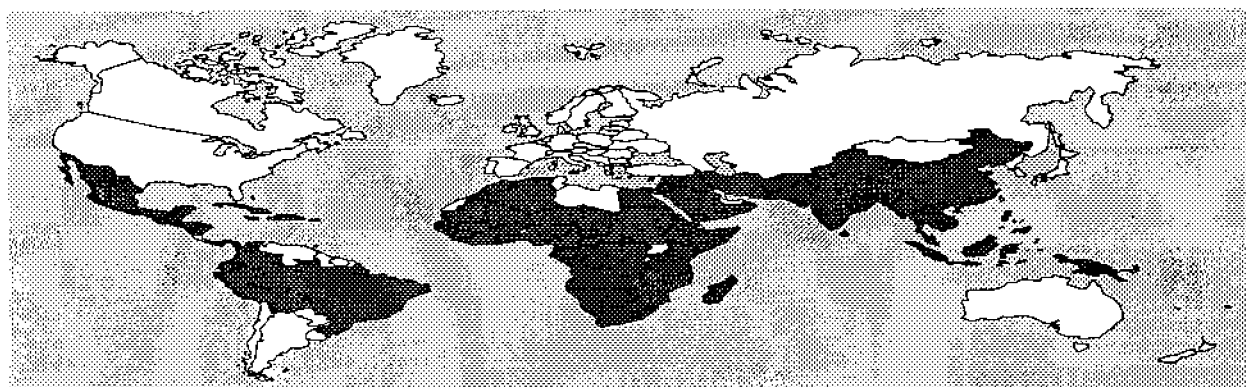
Because of the dynamic nature of global micronutrient malnutrition, WHO expects to update periodically this and other documents in the MDIS working paper series. Readers are urged to provide any missing information so that current estimates may be revised.

MICRONUTRIENT DEFICIENCY INFORMATION SYSTEM

WORLD HEALTH ORGANIZATION

MDIS WORKING PAPER #2

GLOBAL PREVALENCE OF VITAMIN A DEFICIENCY



World Health Organization



United Nations Children's Fund

©World Health Organization 1995

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced or translated, in part or in whole, but not for sale or for use in conjunction with commercial purposes.

The views expressed in documents by named authors are solely the responsibility of those authors.

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.

The World Health Organization welcomes requests for permission to reproduce or translate its documents, in part or in full. Applications and enquiries should be addressed to the Nutrition unit.

Micronutrient Deficiency Information System

World Health Organization
Nutrition unit
1211 Geneva 27 SWITZERLAND
Tel: 41.22.791.3318
Fax: 41.22.791.4156

Cover photo courtesy of the International Center for Eye Health

ACKNOWLEDGEMENTS

This document was prepared by the Nutrition unit, World Health Organization, Geneva with the technical support of the Micronutrient Deficiency Information System project initially based in Ann Arbor, Michigan, USA. Financial support was provided by UNICEF, New York and the Micronutrient Initiative, Ottawa, Canada. Dr Graeme Clugston heads the Nutrition unit and Dr Barbara Underwood is responsible there for matters dealing with micronutrient malnutrition. The group in Michigan is under the direction of Jonathan Gorstein and includes Suzinne Pak, Sanjaya, Peter Rycus, Helen Matzger and Claudia Gras. Special thanks are due to Suki McClatchey, seconded by James Akre of the Nutrition unit, for the excellent technical support she provided in organizing and presenting the information. Technical comments and review of sections of the document that deal with at-risk and affected populations were made by the following:

Dr David Alnwick	Senior Micronutrient Advisor, UNICEF
Dr Ken Bailey	Consultant, Nutrition unit, WHO
Dr Djamil Benbouzid	Nutrition unit, WHO
Dr Indira Chakravarty	Former Acting Regional Advisor, Nutrition unit, WHO Regional Office for South-East Asia, New Dehli
Dr Ian Darnton-Hill	Former Regional Advisor, Nutrition unit, WHO Regional Office for the Western Pacific, Manila
Dr Bruno de Benoist	Regional Officer, Nutrition unit, WHO Regional Office for Africa, Brazzaville
Dr Miguel Gueri	Regional Advisor, Nutrition unit, WHO Regional Office for the Americas, Washington, D.C.
Dr Elisabet Helsing	Regional Advisor, Nutrition unit, WHO Regional Office for Europe, Copenhagen
Dr John Mason	Technical Secretary, ACC/SCN
Dr Anna Verster	Regional Advisor, Nutrition unit, WHO Regional Office for the Eastern Mediterranean, Alexandria

TABLE OF CONTENTS

Preface	ix
-------------------	----

INTRODUCTION & BACKGROUND

Vitamin A deficiency (VAD)	1
Epidemiology of VAD	4
Ecological factors	5
Social factors	5
Economic factors	5
Clustering	6
Host factors	6
Age	6
Sex	6
Feeding practices	7
Disease patterns	7
Periods of increased physiological need	7
Indicators of VAD	8
Clinical indicators	8
Serum retinol	8
Other biological indicators	10

TABLES SUMMARIZING VAD PREVALENCE BY COUNTRY IN EACH WHO REGION

Interpreting data in the MDIS	15
Survey design	15
Subject selection	15
Data aggregation	15
Limitations	15
Guide to using summary tables	16
Summary of VAD status	
Global distribution of VAD prevalence	19
Regional distribution of VAD prevalence	
Africa	21

Americas	31
South-East Asia	39
Europe	45
Eastern Mediterranean	51
Western Pacific	57

DISAGGREGATED DATA TABLES

Guidelines for using disaggregated tables	65
Prevalence of ocular signs and symptoms	67
Prevalence of serum retinol levels suggestive of a public health problem	85

REFERENCES

References	97
------------------	----

ANNEXES

WHO regions	115
UNICEF regions	116

LIST OF TABLES

1. Estimated requirements for vitamin A ($\mu\text{g RE/day}$)	2
2. Available supply of vitamin A by WHO and UNICEF region ($\mu\text{g RE/day}$)	3
3. Type of data available by WHO region	4
4. Estimates of clinically affected and at-risk populations	4
5. Classification of xerophthalmia and prevalence criteria constituting a public health problem	9
6. Prevalence of VAD in children ≥ 1 year of age of serum values $\leq 0.70 \mu\text{mol/l}$	10

LIST OF ABBREVIATIONS

ACC/SCN	United Nations Administrative Committee on Coordination/Subcommittee on Nutrition
AED	Academy for Educational Development
AMR	Region of the Americas
AFR	African Region
CIC	Conjunctival Impression Cytology
EMR	Eastern Mediterranean Region
EUR	European Region
FAO	Food and Agriculture Organization of the United Nations
HKI	Helen Keller International
HPLC	High Pressure Liquid Chromatography
ICN	International Conference on Nutrition
IDA	Iron deficiency anaemia
IDD	Iodine deficiency disorders
IEC	Information, education and communication
IVACG	International Vitamin A Consultative Group
MDIS	Micronutrient Deficiency Information System
MOH	Ministry of health
MSG	Monosodium glutamate
PEM	Protein-energy malnutrition
RDA	Recommended dietary allowance
RDR	Relative dose response
RE	Retinol equivalents
SC	Save the Children
SEAR	South-East Asia Region
TFNC	Tanzania Food and Nutrition Centre
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAD	Vitamin A deficiency
VAST	Vitamin A Supplementation Trials
VITAL	Vitamin A Field Support Project
WHO	World Health Organization
WHO/PAHO	World Health Organization/Pan American Health Organization
WPR	Western Pacific Region

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_30687

