

NUTRITION IN THE 1980s

CONSTRAINTS ON OUR KNOWLEDGE

Proceedings of the Western Hemisphere Nutrition Congress VI
Held in Los Angeles, California
August 10-14, 1980

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ALAN R. LISS, INC., NEW YORK

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Library of Congress Cataloging in Publication Data

Western Hemisphere Nutrition-Congress (6th: 1980:
Los Angeles, Calif.)

Nutrition in the 1980s: constraints on our
knowledge

(Progress in clinical and biological research;
v. 67) (Proceedings / Western Hemisphere Nutrition
Congress; 6)

Organized by the American Institute of Nutrition
et al.

Includes index.

1. Nutrition — Congresses. I. Selvey, Nancy.
II. White, Philip Louis, 1922- . III. American
Institute of Nutrition. IV. Title. V. Series.
VI. Series: Western Hemisphere Nutrition Congress.
Proceedings ; 6. [DNLM: 1. Food — Congresses.
2. Nutrition — Congresses. 3. Nutrition disorders
— Congresses. W1 PR668E v. 67 / QU 145 W533 1980n]
TX345.W4 no. 6 338.1'9'1812s [613 2] 81-8454
ISBN 0-8451-0067-X AACR2

Nutrition in the 1980s: Constraints on Our Knowledge, pages 411-413
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Intervention Via Supplementation and Fortification Programs (Abstract)

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Adequate nutritional status of populations is the result of a balanced and sufficient dietary intake in a healthy environment which permits and contributes to the attainment of a state of prolonged well-being and optimal performance. This is usually the result of a socioeconomic-educative-political environment which, through political decision, favors such status. However, even under the most favorable of real-life situations, nutrient inadequacies often exist and are identified as our knowledge advances. This is the case with iodine, iron, and possibly essential fatty acids in highly developed industrialized populations. Obviously, the range and frequency of specific nutrient deficits are greater in developing countries, where well-oriented development should be able to correct major nutrient deficits but, even so, micronutrient deficiencies will probably still remain. Specific target-directed nutritional and non-nutritional actions can correct nutrient deficiencies even before a level of development that will allow a general, overall, well-nourished state of the whole population is achieved. These target-directed actions should complement, but not necessarily wait for, all other efforts to accelerate proper development. Their conception should be integrated with food, nutrition, and development policies; ie, they should not be vertical programs. The major target-directed specific actions are nutrient supplementation and fortification (which should also involve an education component) and educative actions per se. Specific social and economic actions should also be considered. Clearly, these actions are often complementary to each other, and a series of common and specific aspects should be considered in their design and implementation.

All intervention programs should consider the following aspects carefully:

- I. Aims
- II. Target populations
- III. Technical details for optimal results

IV. Evaluation and revision

V. Complementary actions

AIMS

Supplementation programs are to provide a single nutrient, various nutrients or food in amounts that will ensure adequate nutrition, will prevent deficiency, and will correct a nutritional deficit of the target group in a relatively short time. Fortification programs aim at providing enough of a specific nutrient to a population so that status for that nutrient is maintained at an adequate level. Fortification programs do not aim at correcting deficits except as a long-term result of safe intakes for the specific populations for which they are designed.

TARGET POPULATIONS

Target populations are specified in supplementation programs, while in food fortification the population as a whole is generally the target. Exceptions can be fortification programs for specific age groups (infants and preschool children—ie, iron-fortified milk).

TECHNICAL DETAILS FOR OPTIMAL RESULTS

Technical details vary greatly, depending on the nutrient, local dietary habits, target groups, aims, non-nutritional conditioning factors, nutrient interactions, possible undesirable side-effects, availability, and characteristics of desirable nutrient sources and vehicles in the case of fortification. Consideration should be given to supplementation programs to determine whether they are to be continuous, intermittent (at regular intervals or seasons), or only for specific situations (pregnancy).

EVALUATION AND REVISION OF PROGRAMS

Programs must be evaluated periodically, and evaluation guidelines have to be defined with the initial design of the program. Evaluation must include the criteria that serve to define the necessity and type of program most likely to succeed, specific tools to measure its effectiveness (biological, administrative), technical aspects, cost-effectiveness, possible desirable and undesirable side effects, and the performance of complementary actions within and collateral to the program itself. Revision must be scheduled periodically (every three to five years), based on the results of the evaluations. Side effects should include not only biological but also socioeconomic and food-policy implications.

COMPLEMENTARY ACTIONS

Various types of complementary actions must be included in supplementation and fortification programs. Among these are education of the population on

nutritional and dietary aspects with regard to the aims of the programs; complementary non-nutritional actions at the population level which will favor the nutritional interventions; political and economic actions at the government level that will ensure the continuity and adequate surveillance of the programs; and research on nutritional aspects pertaining to the population and on technological aspects of nutrition interventions. Non-nutritional actions on hygienic practices, primary medical care, social organization programs, agronomic and post-harvest technology, economic incentives and direct economic assistance, etc can have important nutritional repercussions and must be considered among the multiple specific actions aimed at improving the nutritional status of the population. Four case studies can be given critical analysis based on the general concepts outlined: 1) salt iodization in Guatemala; 2) food distribution programs in Central America; 3) vitamin A fortification of sugar in Central America; and 4) iron fortification of sugar in Guatemala. Other examples where specific nutritional actions are already in different stages of development and evolution include 1) fortification of cereals with water-soluble vitamins; 2) food supplementation to infants, whole families, or workers; 3) fluoridation of water and of salt; 4) amino acid fortification of protein products; 5) protein supplementation of cereal-based products; 6) efforts to increase essential fatty acid intake; and 7) efforts to increase fiber intake.