

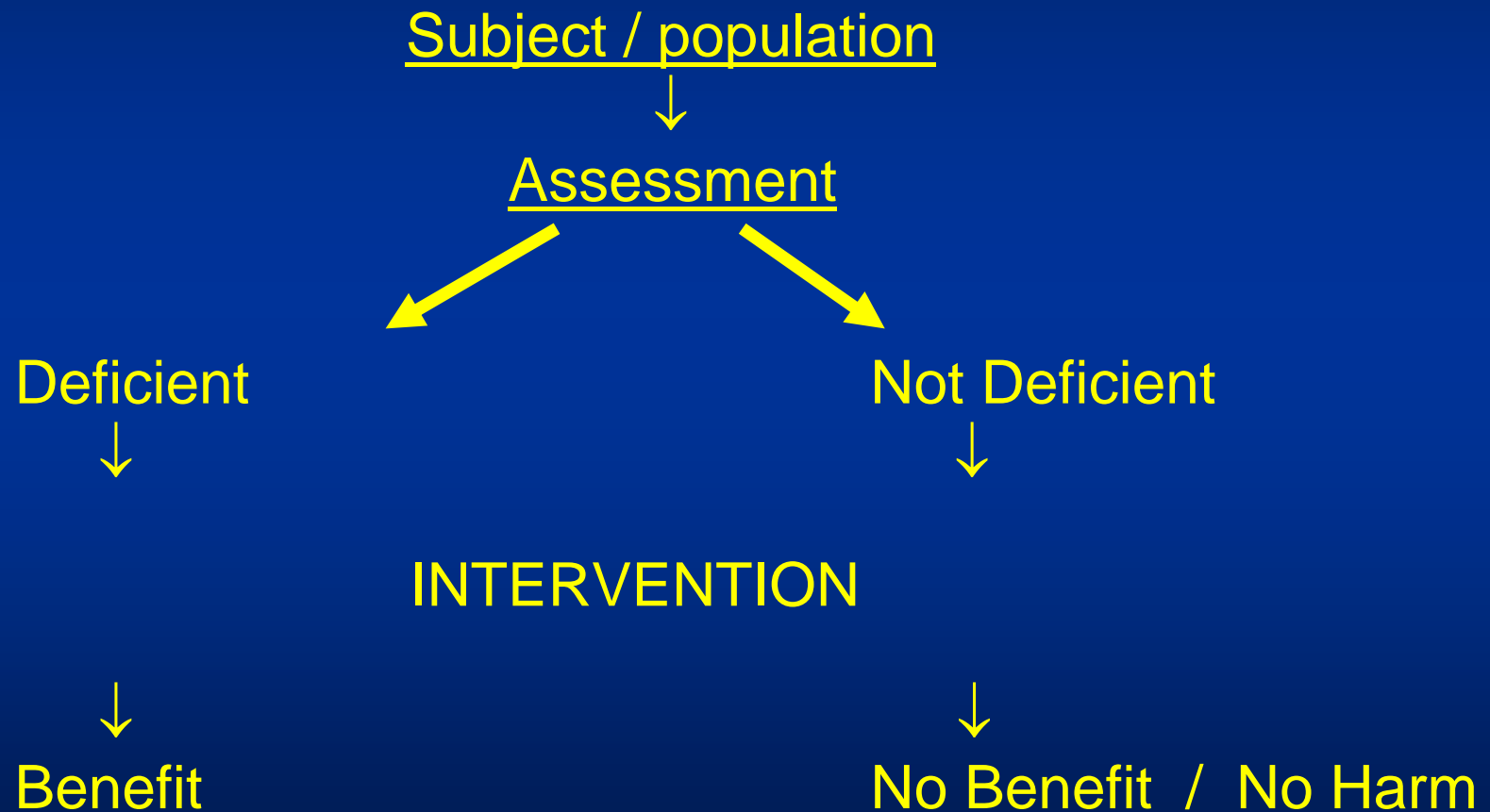
# Assessment and Evaluation

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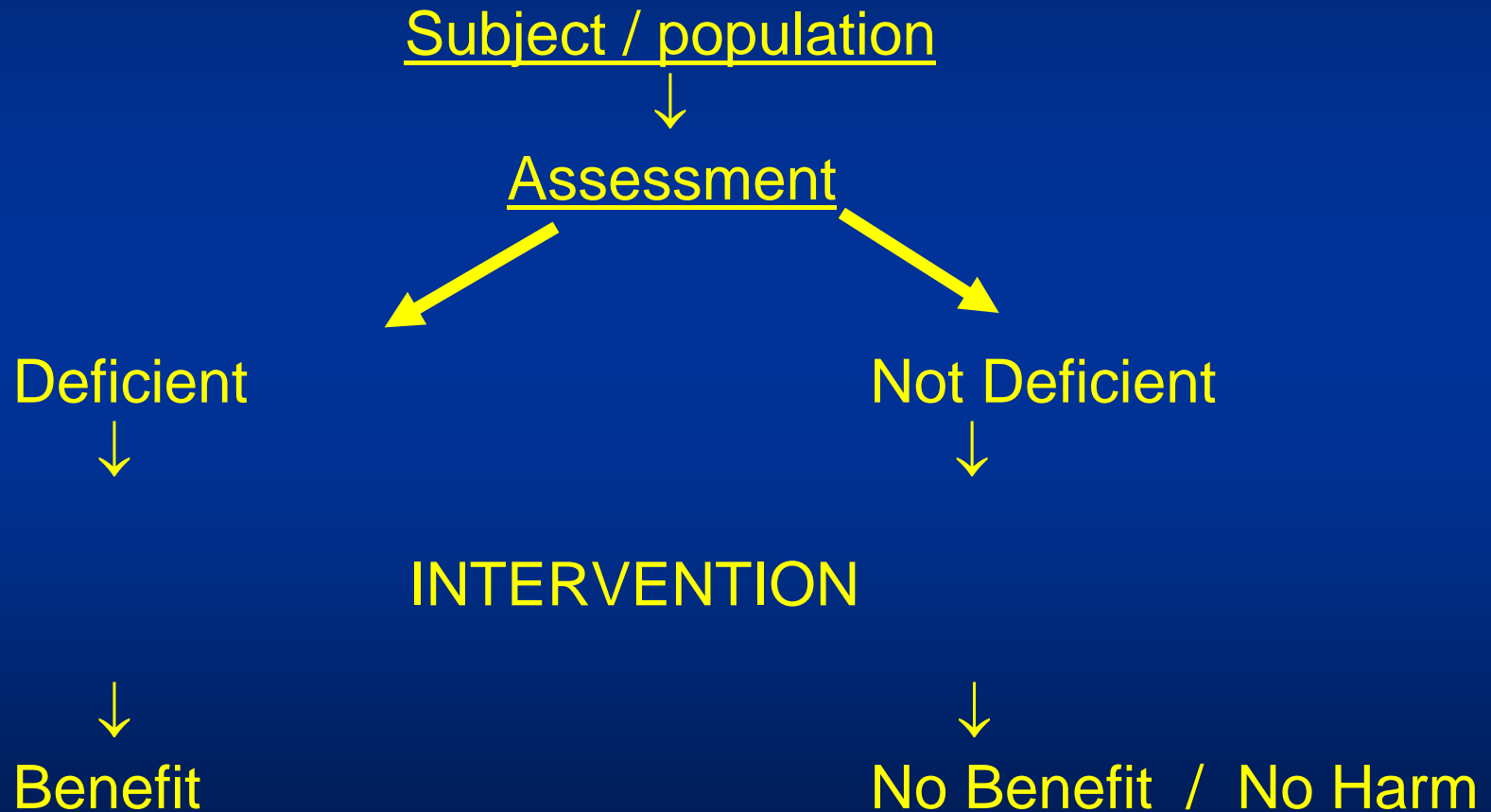
Consequences and Control of Micronutrient Deficiencies

Istanbul, 17 April 2007

# What we used to think.... Old Thinking Frame



Some recent studies however have shattered this idea .....



E.g. Iron supplementation in non-iron deficient children.....

*Community and International Nutrition*

**Iron Supplementation Affects Growth and Morbidity of Breast-Fed Infants: Results of a Randomized Trial in Sweden and Honduras<sup>1</sup>**

Kathryn G. Dewey,<sup>2</sup> Magnus Domellöf,\* Roberta J. Cohen, Leonardo Landa Rivera,<sup>†</sup>  
Olle Hernell\* and Bo Lönnerdal

J. Nutrition (2002) 132:3249-55

→ Iron supplementation of iron replete infants negatively affects growth

## E.g. Iron supplementation of children in malarious areas

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Effects of routine prophylactic supplementation with iron and folic acid on admission to hospital and mortality in preschool children in a high malaria transmission setting: community-based, randomised, placebo-controlled trial

*Sunil Sazawal, Robert E Black, Mahdi Ramsan, Hababu M Chwaya, Rebecca J Stoltzfus, Arup Dutta, Usha Dhingra, Ibrahim Kabole, Saikat Deb, Mashavi K Othman, Fatma M Kabole*

Lancet (2006) 367:133-43

- Iron supplementation of iron replete children: harmful
- Iron supplementation of infants with IDA: benefit
- HENCE: Need for screening for iron deficiency !

## E.g. Vitamin A supplementation in HIV infection

Effects of a Single Large Dose of Vitamin A, Given during the Postpartum Period to HIV-Positive Women and Their Infants, on Child HIV Infection, HIV-Free Survival, and Mortality

Jean H. Humphrey, Peter J. Iloff, Edmore T. Marinda, Kuda Mutasa, Lawrence H. Moulton, Henry Chidawanyika, Brian J. Ward, Kusum J. Nathoo, Lucie C. Malaba, Lynn S. Zijenah, Partson Zvandasara, Robert Ntozini, Faith Mzengeza, Agnes I. Mahomva, Andrea J. Ruff, Michael T. Mbizvo, Clare D. Zunguza, and the ZVITAMBO Study Group<sup>a</sup>

J Infect Dis (2006) 193:860-71

→ Vitamin A supplementation (high dose) has beneficial or harmful effects, depending on the timing of the dose, in relation to the moment of HIV infection

## E.g. zinc supplementation in children

### **IMPACT OF DAILY ZINC SUPPLEMENTATION ON PRESCHOOL CHILD MORTALITY IN SOUTHERN NEPAL**

J Tielsch<sup>1</sup>, S Khatry<sup>2</sup>, R Stoltzfus<sup>3</sup>, J Katz<sup>1</sup>, S LeClerq<sup>1</sup>, R Adhikari<sup>4</sup>,  
L Mullany<sup>1</sup>, R Black<sup>1</sup>, S Shrestha<sup>2</sup>

### **EFFECTS OF ZINC SUPPLEMENTATION ON MORTALITY IN CHILDREN 1–48 MONTHS OF AGE: A COMMUNITY-BASED RANDOMIZED PLACEBO-CONTROLLED TRIAL**

S Sazawal<sup>1</sup>, R E Black<sup>1</sup>, M Ramsan<sup>2</sup>, H M Chwaya<sup>3</sup>, A Dutta<sup>1</sup>, U Dhingra<sup>1</sup>, R  
J Stoltzfus<sup>4</sup>, M K Othman<sup>2</sup>, F M Kabole<sup>1</sup>

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- No effect of zinc supplementation in children <12 months old
- Maybe beneficial effect of zinc supplementation in infants >12 months old
- Differential effects boys and girls

Hence.....

ASSESSMENT of micronutrient status

PRIOR to interventions becomes of the

GREATEST importance.

And of course, after the intervention:

EVALUATION

Hence.....

ASSESSMENT of micronutrient status

→ Need for easy field-friendly methods

→ Need for low-tech methods

# New Thinking Frame

Subject / population



Assessment



Deficient



Intervention



Evaluation

Not Deficient



No intervention

# Assessment and Evaluation

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### Consequences and Control of Micronutrient Deficiencies

Istanbul, 17 April 2007

Dr. Michael Zimmerman

Dr. Christine Holtz

Dr. Ivette Sandino

Prof. Xiaoguang Yang

Dr. Shally Awasthi

Iodine

Zinc

Monitoring m.n. interventions

Vitamin A

Vitamin A