

【W2-3】

Maximum Levels for Vitamins and Minerals in Functional Foods for Health

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**Maximum Levels for Vitamins
and Minerals in Functional
Foods for Health**

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제 1세부과제 (Intake assessment)

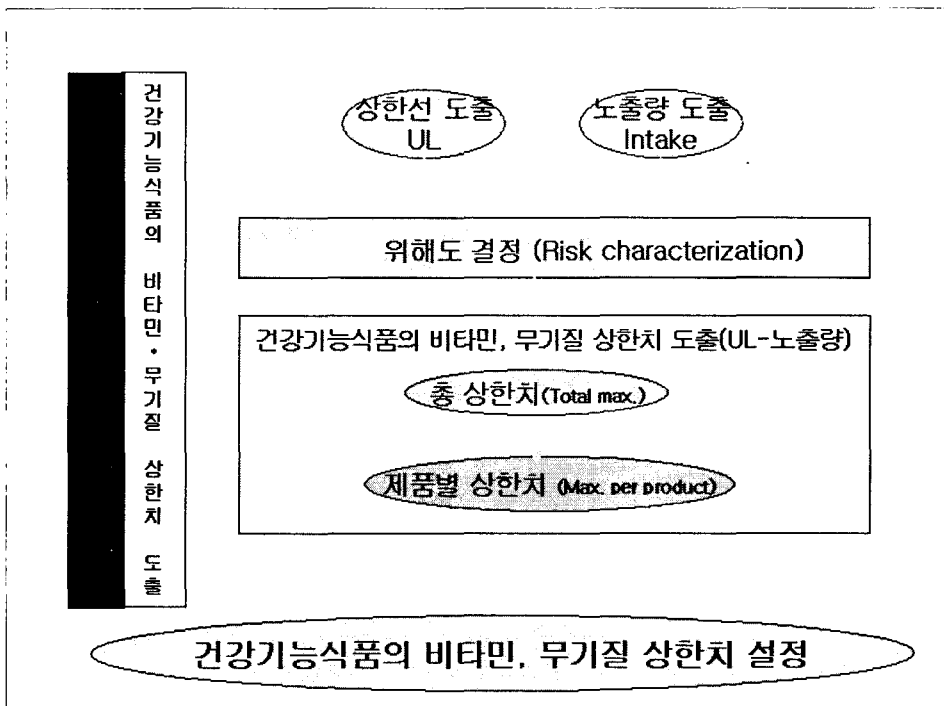
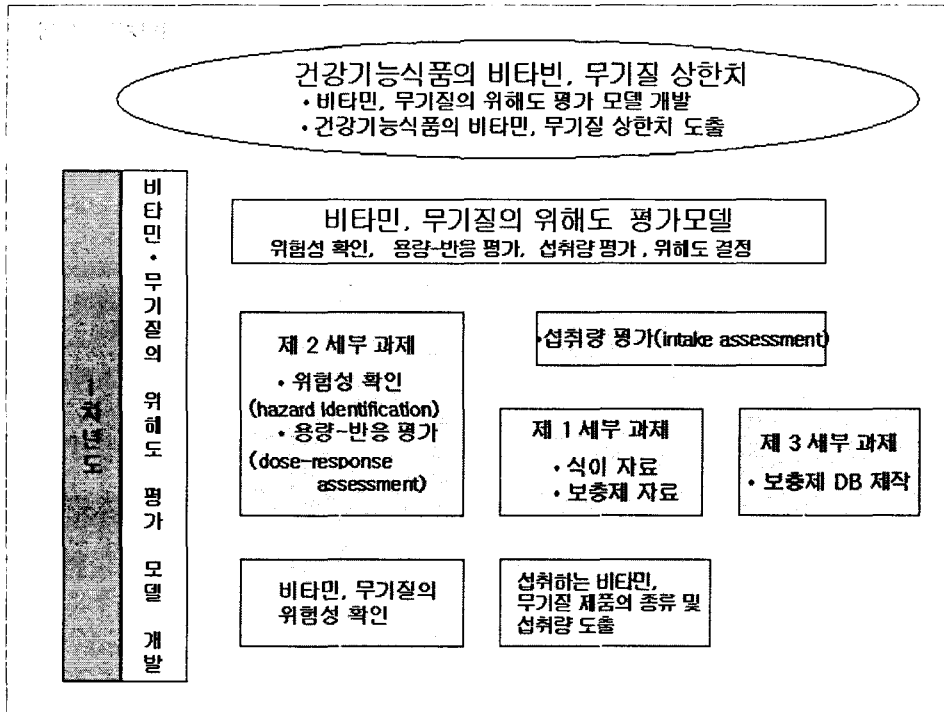
한국인의 비타민 무기질 노출량 평가

제 2세부과제 (Hazard identification & UL)

비타민 무기질의 위해도 평가 및 안전상한치 설정

제 3세부과제 (Database for intake assessment)

비타민 무기질 영양보충용식품 데이터베이스 구축



Determination of ULs for Vitamins and Minerals in Korea

Started to work on the concept of safe upper intake limits of nutrients from 1995

- Korean RDA, 7th revision (2000) has uls for very limited nutrients
- Korean RDA, 8th revision (2005) will have uls for many of micronutrients

Risk Assessment for Nutrient Toxicity

Food and Nutrition Board, Institute of Medicine, USA

Adopted by UK, EC, other countries, Codex

Names for ULs are different by countries

US: UL (Tolerable upper intake level)

UK: SUL (Safe upper level)

Activities for setting Uls and maximum levels for vitamins & minerals in Korea

- Workshops and meetings (2004. 4~5)
- Risk assessment model workshop (2004. 5)
- Worked on terminology (2004. 6)

Risk assessment model for vitamins and minerals

- Step 1: Hazard identification
- Step 2: Dose–response assessment
- Step 3: Intake assessment
- Step 4: Risk characterization

Activities for Setting ULs for Vitamins & Minerals in Korea

- ▣ Developed a questionnaire for ULs for vitamins and minerals (2004. 6)
- ▣ Made a summary table of US/Canada ULs for vitamins and minerals
- ▣ Identified selected nutrients for Korean ULs (2004. 6)

영양소별 UL 설정필요성 여부 (비타민)

UL 설정필요	UL 미설정	추후 결정
Vitamin A	Vitamin B-1	Choline
β-carotene	Vitamin B-2	
Vitamin D	Vitamin B-12	
Vitamin E	Pantothenic acid	
Vitamin C	Biotin	
Vitamin B-6		
Niacin		
Folic acid		

영양소별 UL 설정필요성 여부 (무기질)

UL 설정필요		UL 미설정	추후 결정
Calcium	Iron	Potassium	Chromium
Phosphorus	Zinc	Sulfur	
Magnesium	Copper		
Sodium	Manganese		
Chloride	Fluoride		
	Molybdenum		
	Selenium		

Activities for Setting ULs and Maximum Levels for Vitamins & Minerals

- 비타민 UL 및 OSL, GL 비교표 작성 – US, EC, UK, Japan (2004. 7)
- 무기질의 UL 및 OSL, GL 비교표 작성 – US, EC, UK, Japan (2004. 9)

Activities for setting ULs and maximum levels for vitamins & minerals in Korea (2004)

Evaluation of current literature on nutrient toxicity (1999~2004) using an evidence-based approach (2004. 9)

한국에 적합한 시나리오 선정 (2004. 10)

Consultation (2004. 11) Dr. Yates from US

한국영양학회 자문회의 (2004. 11)

Things to consider when determining ULs and maximum levels in Korea

Data selection: Human and Animal data

Selection of UF

Adoption of US/Canadian ULs with body weight adjustment

Adoption of OSLs, GLs for nutrients without NOAEL or dose - response data

Risk characterization

- Total Intake assessment
 - Food + functional foods for health
- Dietary and other lifestyle behaviors of Koreans
 - Alcohol intake, cigarette smoking, environmental contaminants, etc
- Special considerations
 - Sub-optimal Nutritional state, chronic diseases

Identifying Maximum Levels

- Total maximum levels =
 - UL- dietary intake
- Maximum levels per product
 - Number of health food products consumed per person
 - Vitamin and mineral contents in health food products