

# Healthy Behavior: Lifestyle and Diet



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# Contents

- **Global and regional food consumption patterns and trends**
- **Diet, nutrition and the prevention of NCD through the life course**
- **Recommendations on healthy eating**
- **Applicable programs to promote dietary modification**

# Global and regional food consumption patterns and trends

# Global and regional per capita food consumption (kcal per capita per day)

Region	1964–1966	1974–1976	1984–1986	1997–1999	2015	2030
World	2358	2435	2655	2803	2940	3050
Developing countries	2054	2152	2450	2681	2850	2980
Near East and North Africa	2290	2591	2953	3006	3090	3170
Sub-Saharan Africa <sup>a</sup>	2058	2079	2057	2195	2360	2540
Latin America and the Caribbean	2393	2546	2689	2824	2980	3140
East Asia	1957	2105	2559	2921	3060	3190
South Asia	2017	1986	2205	2403	2700	2900
Industrialized countries	2947	3065	3206	3380	3440	3500
Transition countries	3222	3385	3379	2906	3060	3180

<sup>a</sup> Excludes South Africa.

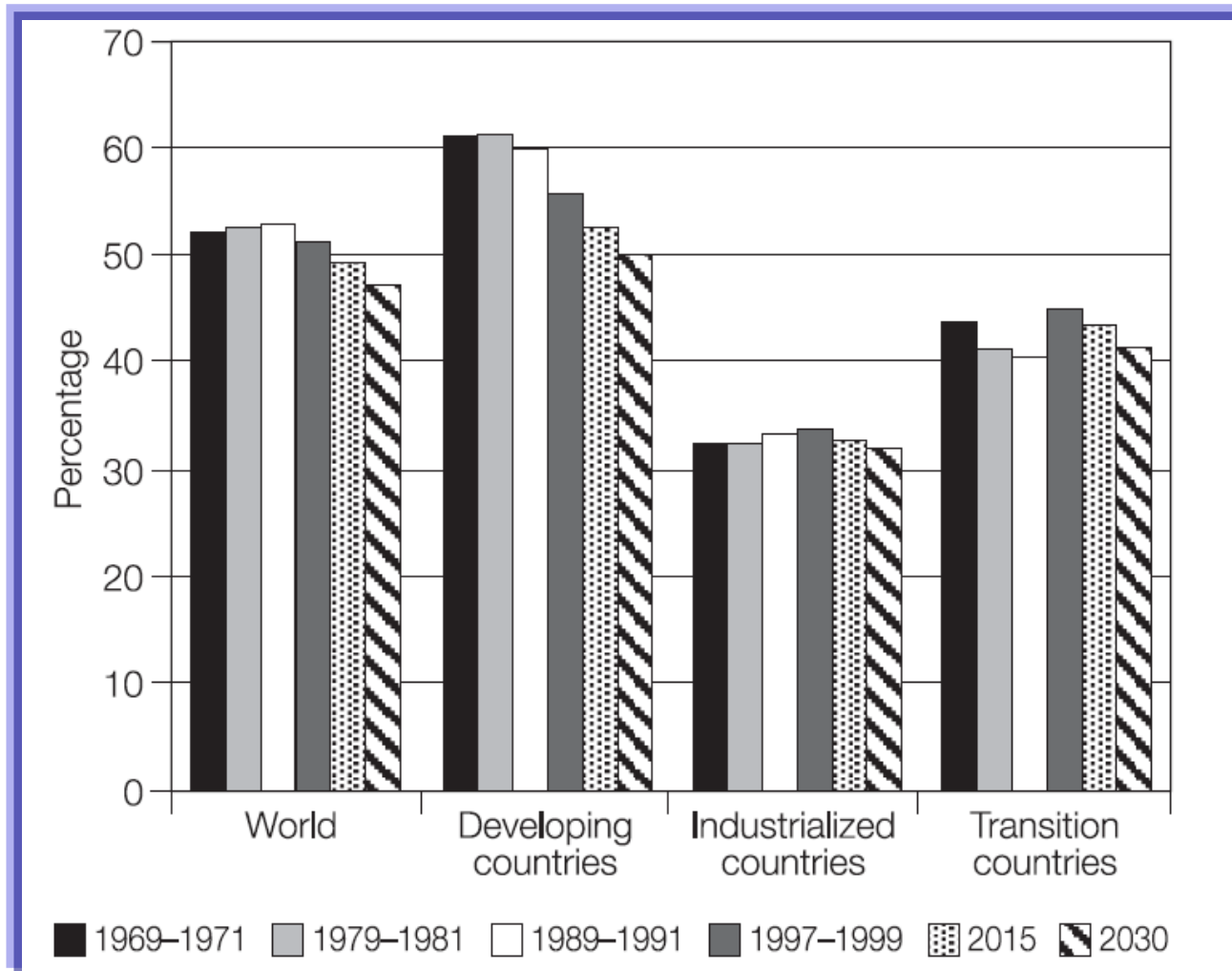
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# Vegetable and animal source of energy in the diet (kcal per capita per day)

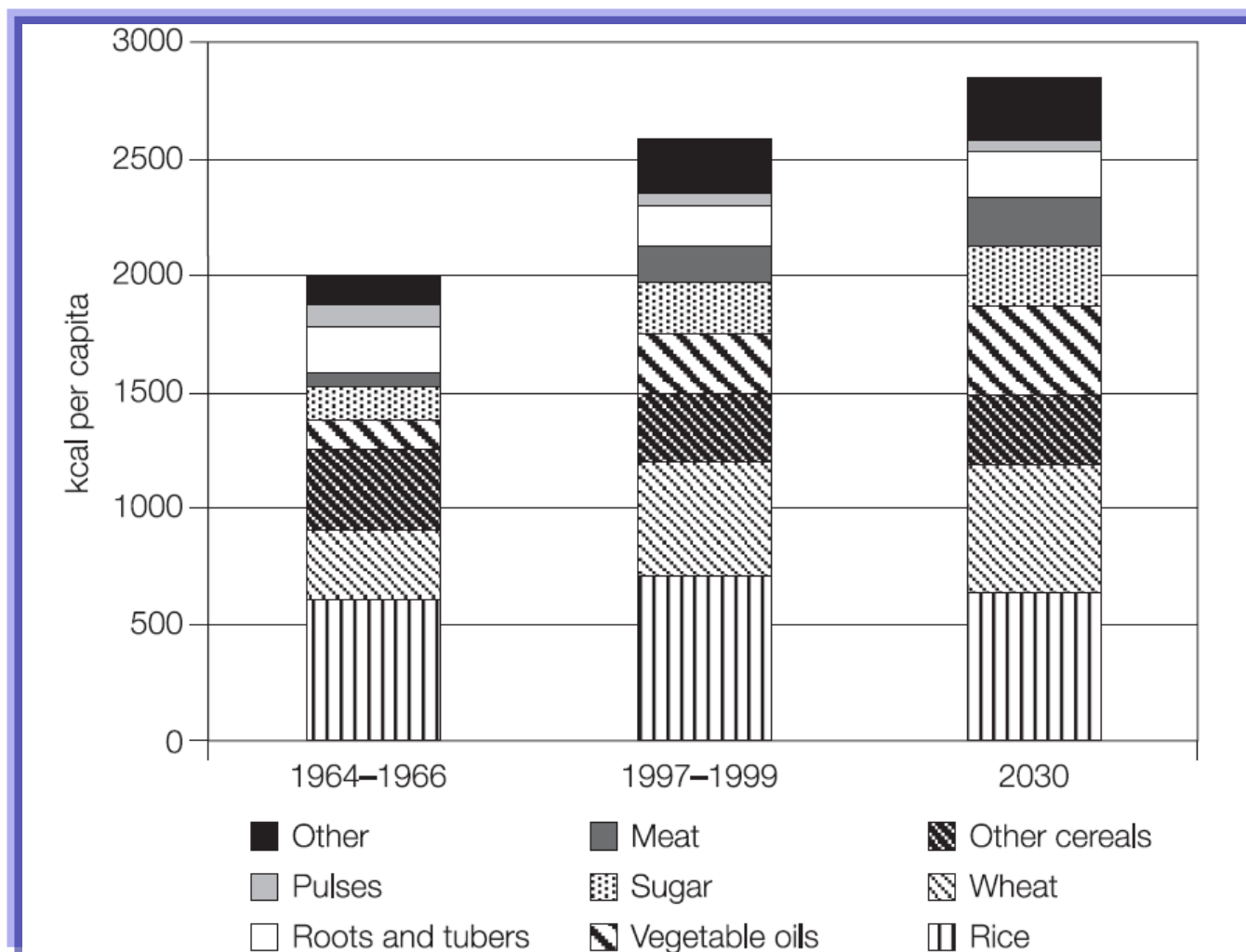
Region	1967-1969			1977-1979			1987-1989			1997-1999		
	T	V	A	T	V	A	T	V	A	T	V	A
Developing countries	2059	1898	161	2254	2070	184	2490	2248	242	2681	2344	337
Transition countries	3287	2507	780	3400	2507	893	3396	2455	941	2906	2235	671
Industrialized countries	3003	2132	871	3112	2206	906	3283	2333	950	3380	2437	943

T, total kcal; V, kcal of vegetable origin; A, kcal of animal origin (including fish products).

Source: FAOSTAT, 2003.



**The share of dietary energy derived from cereals**



## Calories from major commodities in developing countries



# Trends in the dietary supply of fat

Region	Supply of fat (g per capita per day)				
	1967–1969	1977–1979	1987–1989	1997–1999	Change between 1967–1969 and 1997–1999
World	53	57	67	73	20
North Africa	44	58	65	64	20
Sub-Saharan Africa <sup>a</sup>	41	43	41	45	4
North America	117	125	138	143	26
Latin America and the Caribbean	54	65	73	79	25
China	24	27	48	79	55
East and South-East Asia	28	32	44	52	24
South Asia	29	32	39	45	16
European Community	117	128	143	148	31
Eastern Europe	90	111	116	104	14
Near East	51	62	73	70	19
Oceania	102	102	113	113	11

<sup>a</sup> Excludes South Africa

Source: FAOSTAT, 2003.



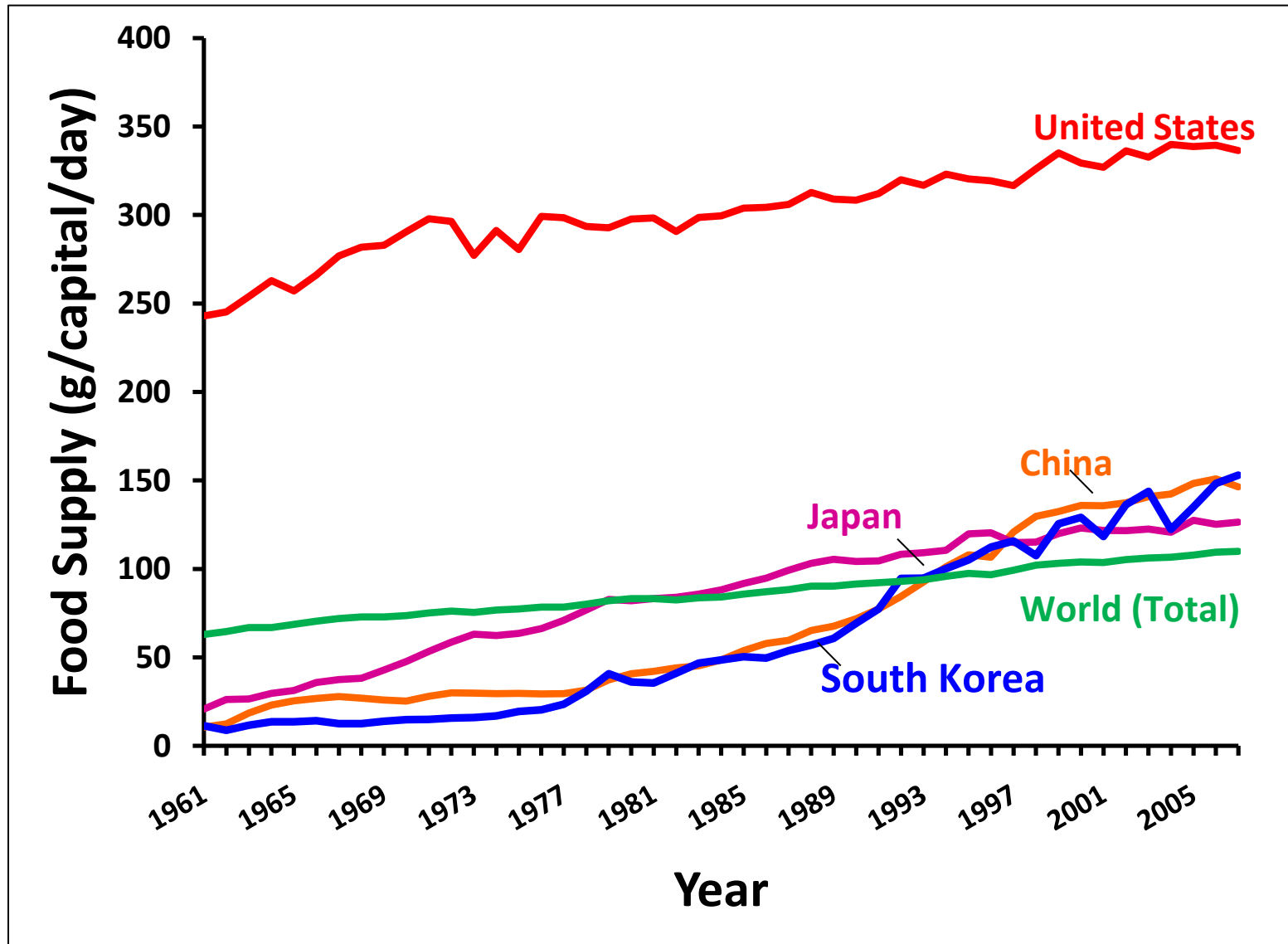
# Per capita consumption of livestock products

Region	Meat (kg per year)			Milk (kg per year)		
	1964–1966	1997–1999	2030	1964–1966	1997–1999	2030
World	24.2	36.4	45.3	73.9	78.1	89.5
Developing countries	10.2	25.5	36.7	28.0	44.6	65.8
Near East and North Africa	11.9	21.2	35.0	68.6	72.3	89.9
Sub-Saharan Africa <sup>a</sup>	9.9	9.4	13.4	28.5	29.1	33.8
Latin America and the Caribbean	31.7	53.8	76.6	80.1	110.2	139.8
East Asia	8.7	37.7	58.5	3.6	10.0	17.8
South Asia	3.9	5.3	11.7	37.0	67.5	106.9
Industrialized countries	61.5	88.2	100.1	185.5	212.2	221.0
Transition countries	42.5	46.2	60.7	156.6	159.1	178.7

<sup>a</sup> Excludes South Africa.

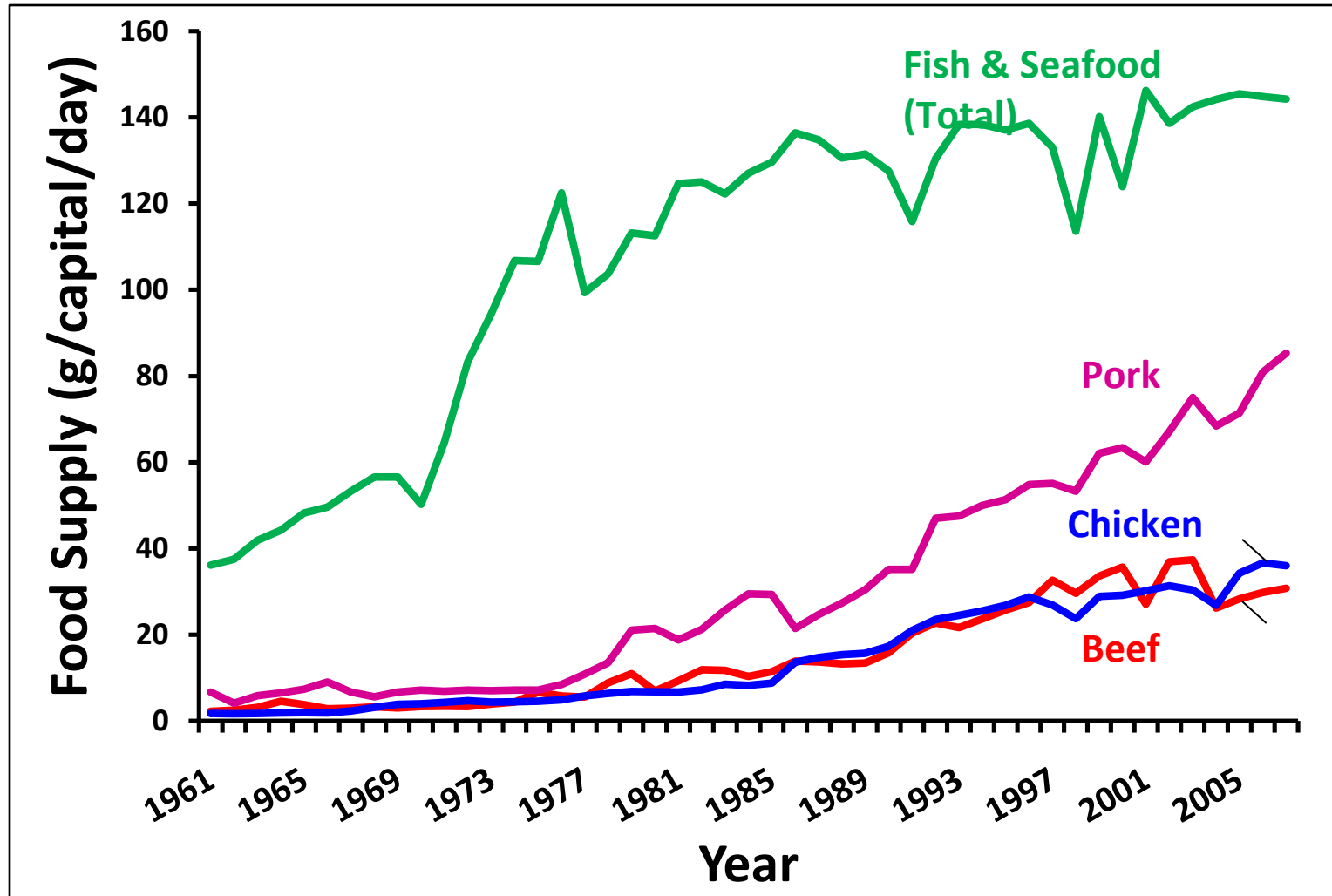
Source: Adapted from reference 4 with the permission of the publisher.

# Total meat consumption: World, East Asia, & the U.S.A.



*Food and Agriculture Organization of the United Nations, Rome, Italy, 2009.*

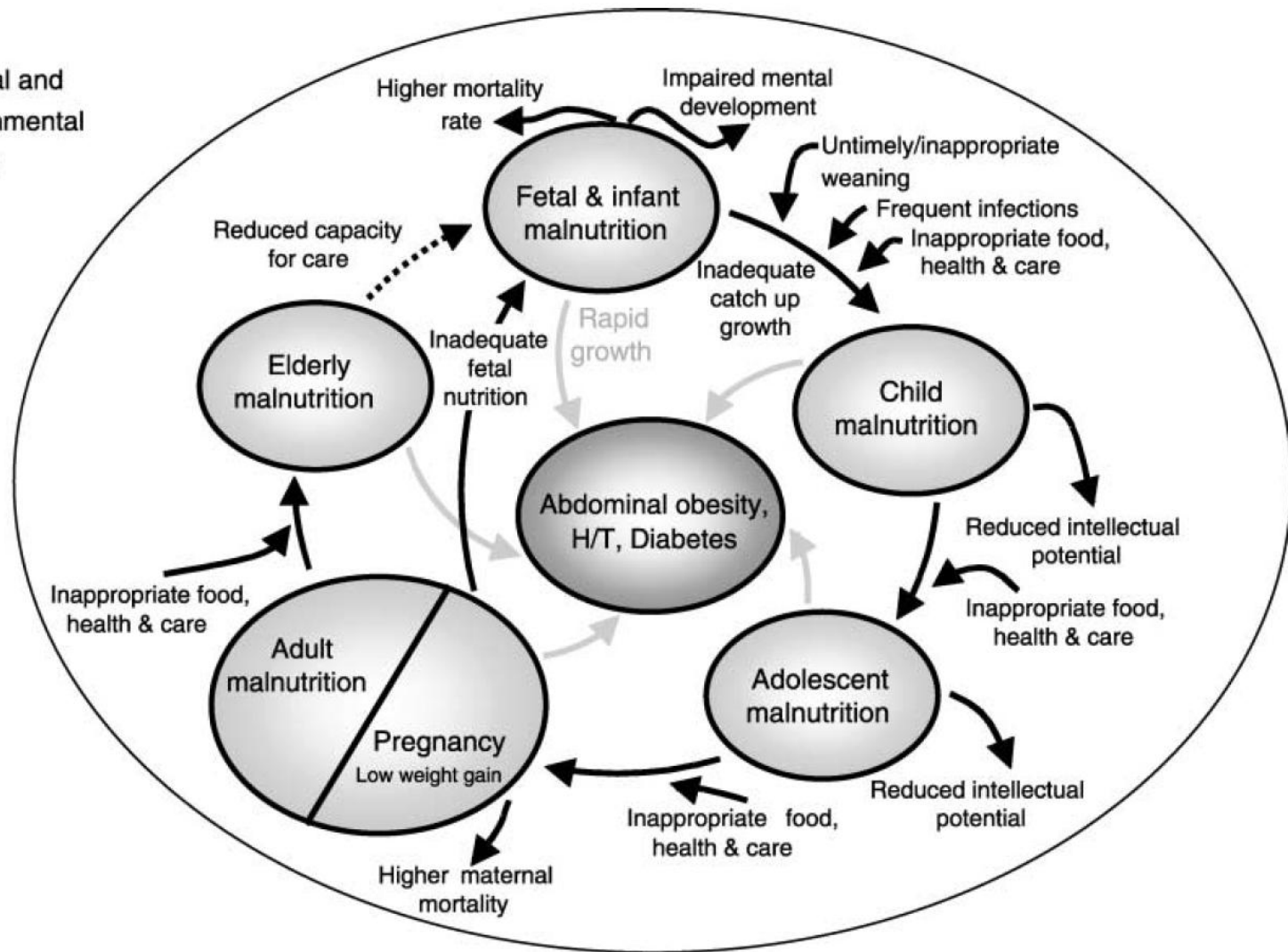
# Fish/Seafood and Meat Consumption: in South Korea from 1961-2007



*Food and Agriculture Organization of the United Nations, Rome, Italy, 2009.*

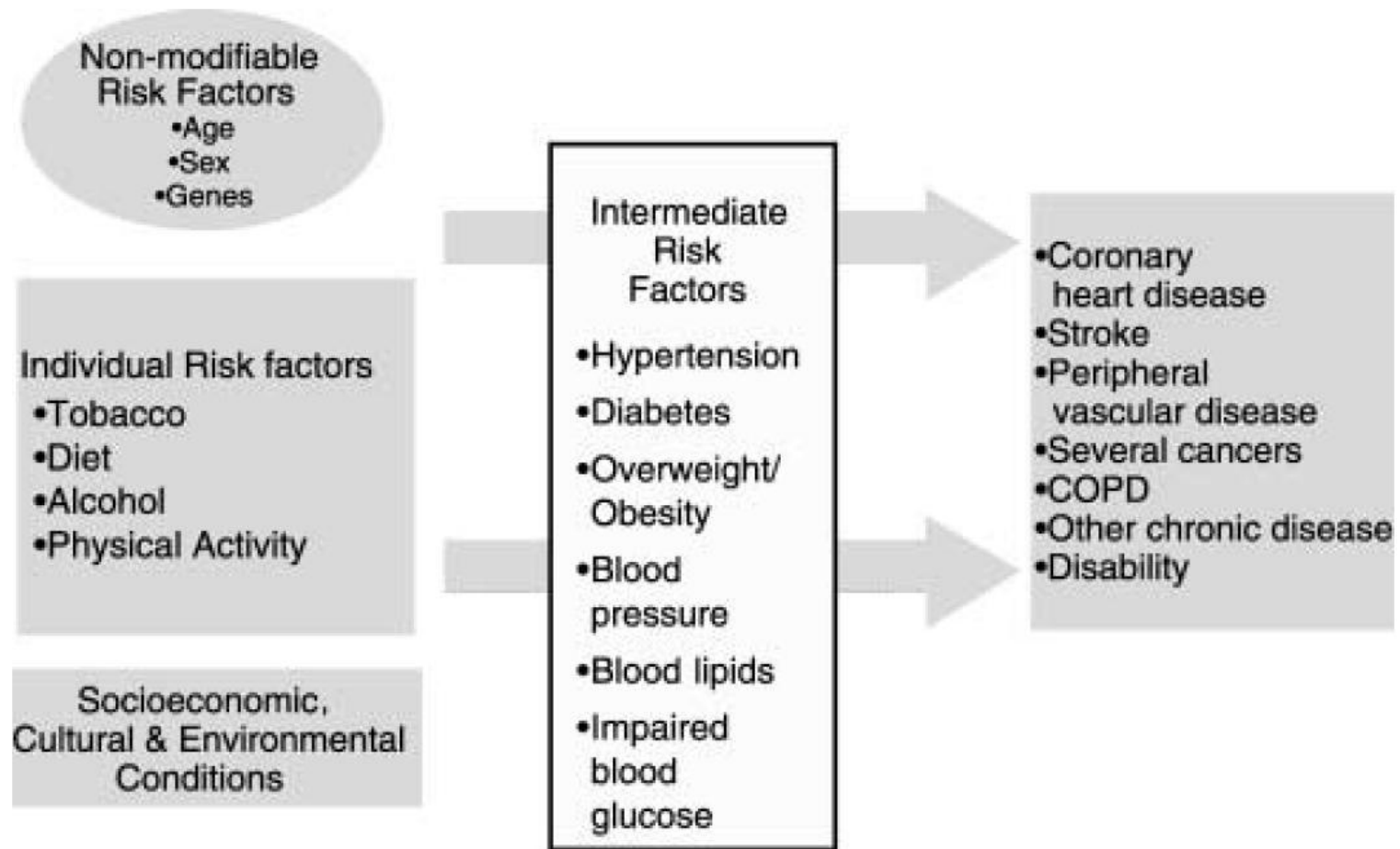
# Diet, nutrition and the prevention of NCD through the life course

Societal and  
environmental  
factors



**Life course: the proposed causal links**

## Life course, nutrition and chronic diseases



**CVD, cancer and chronic respiratory diseases risk factors**

# Recommendations on healthy eating



# Ranges of population nutrient intake goals

Dietary factor	Goal (% of total energy, unless otherwise stated)
Total fat	15–30%
Saturated fatty acids	<10%
Polyunsaturated fatty acids (PUFAs)	6–10%
n-6 Polyunsaturated fatty acids (PUFAs)	5–8%
n-3 Polyunsaturated fatty acids (PUFAs)	1–2%
Trans fatty acids	<1%
Monounsaturated fatty acids (MUFAs)	By difference <sup>a</sup>
Total carbohydrate	55–75% <sup>b</sup>
Free sugars <sup>c</sup>	<10%
Protein	10–15% <sup>d</sup>
Cholesterol	<300 mg per day
Sodium chloride (sodium) <sup>e</sup>	<5 g per day (<2 g per day)
Fruits and vegetables	≥ 400 g per day
Total dietary fibre	From foods <sup>f</sup>
Non-starch polysaccharides (NSP)	From foods <sup>f</sup>

<sup>a</sup> This is calculated as: total fat -- (saturated fatty acids + polyunsaturated fatty acids + trans fatty acids).

<sup>b</sup> The percentage of total energy available after taking into account that consumed as protein and fat, hence the wide range.

<sup>c</sup> The term “free sugars” refers to all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and fruit juices.

<sup>d</sup> The suggested range should be seen in the light of the Joint WHO/FAO/UNU Expert Consultation on Protein and Amino Acid Requirements in Human Nutrition, held in Geneva from 9 to 16 April 2002 (2).

<sup>e</sup> Salt should be iodized appropriately (6). The need to adjust salt iodization, depending on observed sodium intake and surveillance of iodine status of the population, should be recognized.

<sup>f</sup> See page 58, under “Non-starch polysaccharides”.

# Summary of strength of evidence on factors that might promote or protect against weight gain and obesity

Evidence	Decreased risk	No relationship	Increased risk
<b>Convincing</b>	Regular physical activity High dietary intake of NSP (dietary fibre) <sup>b</sup>		Sedentary lifestyles High intake of energy-dense micronutrient-poor foods <sup>c</sup>
<b>Probable</b>	Home and school environments that support healthy food choices for children <sup>d</sup> Breastfeeding		Heavy marketing of energy-dense foods <sup>d</sup> and fast-food outlets <sup>d</sup> High intake of sugars-sweetened soft drinks and fruit juices Adverse socioeconomic conditions <sup>d</sup> (in developed countries, especially for women)
<b>Possible</b>	Low glycaemic index foods	Protein content of the diet	Large portion sizes High proportion of food prepared outside the home (developed countries) “Rigid restraint/periodic disinhibition” eating patterns
<b>Insufficient</b>	Increased eating frequency		Alcohol

<sup>a</sup> Strength of evidence: the totality of the evidence was taken into account. The World Cancer Research Fund schema was taken as the starting point but was modified in the following manner: randomized controlled trials were given prominence as the highest ranking study design (randomized controlled trials were not a major source of cancer evidence); associated evidence and expert opinion was also taken into account in relation to environmental determinants (direct trials were usually not available).

<sup>b</sup> Specific amounts will depend on the analytical methodologies used to measure fibre.

<sup>c</sup> Energy-dense and micronutrient-poor foods tend to be processed foods that are high in fat and/or sugars. Low energy-dense (or energy-dilute) foods, such as fruit, legumes, vegetables and whole grain cereals, are high in dietary fibre and water.

<sup>d</sup> Associated evidence and expert opinion included.

# Summary of strength of evidence on lifestyle factors and risk of developing type 2 diabetes

Evidence	Decreased risk	No relationship	Increased risk
Convincing	Voluntary weight loss in overweight and obese people Physical activity		Overweight and obesity Abdominal obesity Physical inactivity Maternal diabetes <sup>a</sup>
Probable	NSP		Saturated fats Intrauterine growth retardation
Possible	n-3 fatty acids Low glycaemic index foods Exclusive breastfeeding <sup>b</sup>		Total fat intake Trans fatty acids
Insufficient	Vitamin E Chromium Magnesium Moderate alcohol		Excess alcohol

<sup>1</sup> NSP, non-starch polysaccharides.

<sup>a</sup> Includes gestational diabetes.

<sup>b</sup> As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health (59).

# Summary of strength of evidence on lifestyle factors and risk of developing cardiovascular diseases

Evidence	Decreased risk	No relationship	Increased risk
<b>Convincing</b>	Regular physical activity Linoleic acid Fish and fish oils (EHA and DHA) Vegetables and fruits (including berries) Potassium Low to moderate alcohol intake (for coronary heart disease)	Vitamin E supplements	Myristic and palmitic acids Trans fatty acids High sodium intake Overweight High alcohol intake (for stroke)
<b>Probable</b>	$\alpha$ -Linolenic acid Oleic acid NSP Wholegrain cereals Nuts (unsalted) Plant sterols/stanols Folate	Stearic acid	Dietary cholesterol Unfiltered boiled coffee
<b>Possible</b>	Flavonoids Soy products		Fats rich in lauric acid Impaired fetal nutrition Beta-carotene supplements
<b>Inufficient</b>	Calcium Magnesium Vitamin C		Carbohydrates Iron

EPA, eicosapentaenoic acid; DHA, docosahexaenoic acid; NSP, non-starch polysaccharides.

# Summary of strength of evidence linking diet to dental caries

Evidence	Decreased risk	No relationship	Increased risk
Convincing	Fluoride exposure (local and systematic)	Starch intake (cooked and raw starch foods, such as rice, potatoes and bread; excludes cakes, biscuits and snacks with added sugars)	Amount of free sugars Frequency of free sugars
Probable	Hard cheese Sugars-free chewing gum	Whole fresh fruit	
Possible	Xylitol Milk Dietary fibre		Undernutrition
Insufficient	Whole fresh fruit		Dried fruits



# Summary of strength of evidence linking diet to osteoporotic fractures

Evidence	Decreased risk	No relationship	Increased risk
<b>Convincing</b> Older people <sup>a</sup>	Vitamin D Calcium Physical activity		High alcohol intake Low body weight
<b>Probable</b> Older people <sup>a</sup>		Fluoride <sup>b</sup>	
<b>Possible</b>	Fruits and vegetables <sup>c</sup> Moderate alcohol intake Soy products	Phosphorus	High sodium intake Low protein intake (in older people) High protein intake

<sup>a</sup> In populations with high fracture incidence only. Applies to men and women older than 50–60 years, with a low calcium intake and/or poor vitamin D status.

<sup>b</sup> At levels used to fluoridate water supplies. High fluoride intake causes fluorosis and may also alter bone matrix.

<sup>c</sup> Several components of fruits and vegetables are associated with a decreased risk at levels of intake within the normal range of consumption (e.g. alkalinity, vitamin K, phytoestrogens, potassium, magnesium, boron). Vitamin C deficiency (scurvy) results in osteopenic bone disease.

World  
Cancer  
Research Fund



American  
Institute for  
Cancer Research

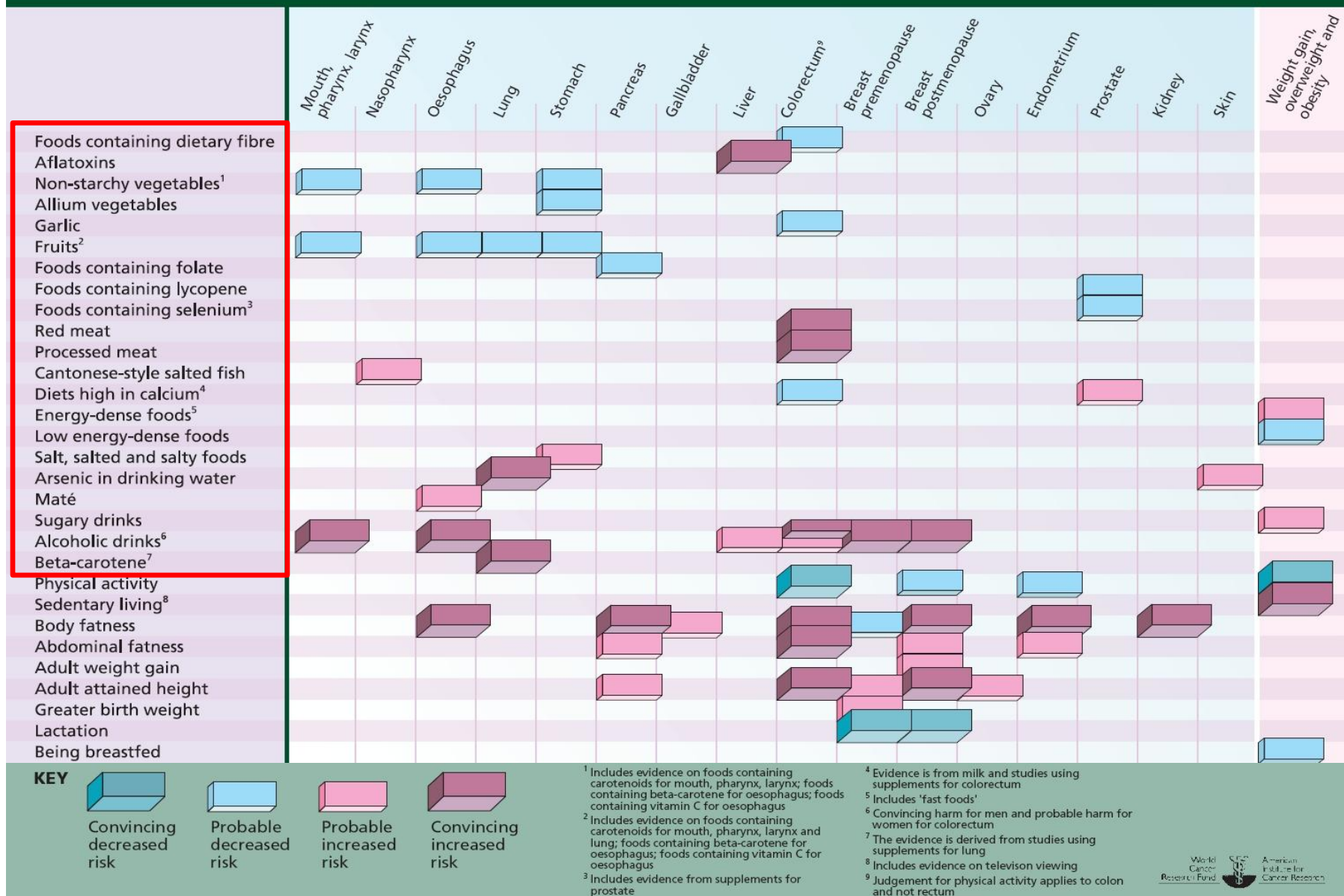
**Food, Nutrition,  
Physical Activity,  
and the Prevention  
of Cancer:**  
a Global Perspective





# Summary of WCRF / AICR Report

## Summary of 'convincing' and 'probable' judgements



## RECOMMENDATIONS

### **BODY FATNESS**

Be as lean as possible within the normal range of body weight

### **PHYSICAL ACTIVITY**

Be physically active as part of everyday life

### **FOODS AND DRINKS THAT PROMOTE WEIGHT GAIN**

Limit consumption of energy-dense foods  
Avoid sugary drinks

### **PLANT FOODS**

Eat mostly foods of plant origin

### **ANIMAL FOODS**

Limit intake of red meat and avoid processed meat

### **ALCOHOLIC DRINKS**

Limit alcoholic drinks

### **PRESERVATION, PROCESSING, PREPARATION**

Limit consumption of salt  
Avoid mouldy cereals (grains) or pulses (legumes)

### **DIETARY SUPPLEMENTS**

Aim to meet nutritional needs through diet alone

### **BREASTFEEDING**

Mothers to breastfeed; children to be breastfed

### **CANCER SURVIVORS**

Follow the recommendations for cancer prevention

# Applicable programs to promote dietary modification

# Applicable programs to promote dietary modification

- <http://www.nhs.uk/livewell/5aday/pages/5adayhome.aspx/>
- <http://www.fruitsandveggiesmorematters.org/>
- <http://ko-kr.facebook.com/notes/hart-total-fitness/5-a-day-challenge/156231231083401>
- <http://www.5aday.co.nz/>
- [http://helpguide.org/life/healthy\\_eating\\_diet.htm](http://helpguide.org/life/healthy_eating_diet.htm)

Enter a search term

Search &gt;

Medical advice

Health A-Z

Live Well

Carers Direct

Health news

Find and choose services

## 5 A DAY

&gt; View all 119 topics

### Popular topics

Alcohol  
Cancer prevention  
Dental health  
Fitness  
Healthy eating  
Incontinence  
Lose weight  
Menopause  
Mental health  
Pain  
Pregnancy  
Sexual health  
Stop smoking  
Winter health

View all 119 topics

Five a day

### Special reports

Class of 1948  
Credit crunch  
Get fit for 2012  
Military medicine

### Child health

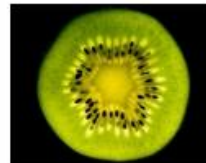
&gt; Babies

&gt; Child health 1-5

&gt; Child health 6-15



Why is 5 A DAY important, and how can you get your five portions of fruit and veg? Watch the video to find out.

[All NHS Choices videos](#)


### Why 5 A DAY?

Your 5 A DAY forms part of a healthy, balanced diet, and getting it is easier than you think.



### 5 A DAY: what counts?

Almost all fruit and vegetables count towards your 5 A DAY, including frozen, canned and dried varieties.

1 comment

### 5 A DAY Shopping Planner



### Plan your 5 A DAY

This meal planner makes it easy to get your 5 A DAY. It's packed with tasty recipes.



### Getting started

- > Plan a healthier diet
- > Make a diet Change4Life
- > Download 5 A DAY resources and materials



### Services near you

Find addresses, phone numbers and websites for services near you

Choose a service:

GPs



Located in:

Enter a postcode or place name

Search Q



### Tools promotion



#### 5 A DAY meal planner

Recipes to make healthy eating simple



#### Supermarket health checker

Make your weekly shopping healthier



#### Healthy eating self assessment

Find out if your diet is healthy



#### Are you a healthy weight?

Check your weight and get personal advice



#### Atlas of risk

See the risks associated with obesity



### Sign up for our monthly e-newsletter





## Fight the Flu with Your Fork!

A WELL-ROUNDED, HEALTHFUL DIET THAT INCLUDES  
PLENTY OF FRUITS AND VEGETABLES CAN  
PROVIDE THE NUTRIENTS YOUR BODY NEEDS TO STAY HEALTHY.

[READ MORE](#)

## Need Help Figuring Out How Much Food is in One Serving?

How about a visual representation of how much food is one cup or one half cup? See our "How Much Is A Cup" page

>>



## Healthy Eating Tips

Combine frozen 100% juice and berries, then freeze to make popsicles.

## INSIDER'S VIEWPOINT KIM KIRCHHERR, JEWEL-OSCO



## PACK ASSORTED COLORS FOR KIDS

Here's a great way to teach your kids how to get a variety of fruits & veggies!



## CONTEST WINNERS

We found out how you get your kids to eat their veggies ... and more! [Read Success Stories](#)



## VEGETABLES IN THE NEWS

The BUZZ: Fruits and veggies help control and prevent acne? Fact or Fiction? [Our Advice](#)

## Recipes



## Cool Quesa

From the Cool Fuel Cookbook for Kids ...[Learn more >](#)

## Top 10 Lists

Ways to Eat Belgian Endive  
Reasons to Eat Fruits & Veggies  
Ways to Eat Pears  
Fruit Snacks for Kids  
Healthy Ways to Cook

## Most Popular

Fruit & Veggie Nutrition Database  
Fruit & Veggie Recipes  
Healthy Meal Planning  
Recipes for Kids  
What's in Season? Fall

## Hot Topics!

Vegetables & Improved Memory  
Take the Veggie PLEDGE!  
Vegetables & Breast Cancer  
Fight the Flu with Your Fork!  
Fruits/Veggies? Fill 1/2 Your Plate



Video Center



Kids' Healthy Eating Website



Catalog

가입하기

Facebook에서 전세계에 있는 친구, 가족, 지인들과 연락을 주고받고 정보를 공유하세요.

## Hart Total Fitness

For a strong body and a peaceful mind...

- Hart Total Fitness님의 노트
- Hart Total Fitness님에 관한 노트

## 태그된 사람



## 구독하기

- Hart Total Fitness님의 노트

## 5 A Day Challenge

작성 : Hart Total Fitness 2010년 10월 16일 토요일 오전 4:49

I was recently watching The Biggest Loser (USA Edition...and yes, I know there are lots of problems with this series) but something came up that I've been saying for a long time: why are so many meals these days BEIGE!?!? I don't like the colour beige under normal circumstances but on my plate it makes me crazy.

So, here's what I'm proposing. A one month challenge to get **FIVE DIFFERENT COLOURS ON YOUR PLATE**! Food, the real, natural kind is beautiful. The deep reds, the purples, the oranges, it's like a work of art yet we replace it for beige, bland, unhealthy food choices because they are 'convenient'. Ugh. Convenient. Just how convenient is diabetes? Heart disease? Cholesterol? Back and knee pain from excess weight?

Join me. Join the challenge to brighten up your plates. Feel free to check in and report back how it is going. Let's get more colour in our lives and stop the beige from taking over!!

Let's go!!! 30 days of a minimum of **FIVE COLOURS A DAY** (and ketchup doesn't count!)



The Beige Platter -- add some beige plum sauce and you're good to go!





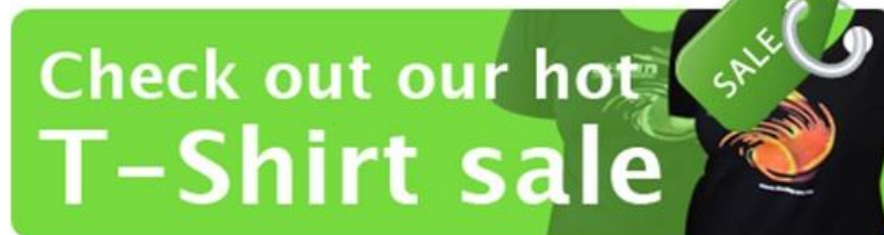


## Latest News

### Press Release - 5+ A Day Fruit and Vegetable Month November 2010:

Help us get to 50% of New Zealanders eating 5 + A Day by 2015

One of the easiest and tastiest ways to eat a healthy diet is to increase your consumption of fruit and vegetables. They are low in fat, low in calories, high in fibre, and rich in vitamins, minerals, antioxidants, and other nutrients. [Read more...](#)



### New Research and International Information

International Fruit and Vegetable Alliance latest newsletter - September 2010

 48. Dietary Patterns in Adolescents

### Check out Famous Fredge's latest appearances

[Click here to read more](#)





### Latest News

21 October 2010

News Summaries

Media Room

Upcoming Events

### Resources

Recipes

5+ A Day Clothing

Early Childhood Centres

Primary Schools

Intermediate Schools

Health Professionals



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[Depression](#)

[Eating Disorders](#)

[Grief & Loss](#)

[Schizophrenia](#)

[Stress](#)

[Trauma & Abuse](#)

Family & Relationships

[Parenting & Family](#)

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[Childhood Challenges](#)

Healthy Living

[Eating & Diet](#)

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[Mind, Body & Spirit](#)

[Work & Career](#)

Seniors & Aging

[Aging Well](#)

[Alzheimer's / Dementia](#)

[Caregiving & Support](#)

NEWSLETTER SIGN-UP

Email:

## Healthy Eating

### EASY TIPS FOR PLANNING A HEALTHY DIET AND STICKING TO IT



using them in a way that works for you.

Healthy eating begins with learning how to “eat smart”—it’s not just *what* you eat, but *how* you eat. Your food choices can reduce your risk of illnesses such as heart disease, cancer, and diabetes, as well as defend against depression. Additionally, learning the habits of healthy eating can improve your health by boosting your energy, sharpening your memory and stabilizing your mood. Expand your range of healthy food choices and learn how to plan ahead to create and maintain a satisfying, healthy diet.

Healthy eating is not about strict nutrition philosophies, staying unrealistically thin, or depriving yourself of the foods you love. Rather, it’s about feeling great, having more energy, and keeping yourself as healthy as possible— all of which can be achieved by learning some nutrition basics and

#### IN THIS ARTICLE:

- [Set yourself up for success](#)
- [Moderation is key](#)
- [It’s not just what you eat](#)
- [Fill up on fruits & vegetables](#)
- [Eat more whole grains](#)
- [Enjoy healthy fats](#)
- [Put protein in perspective](#)
- [Add calcium & vitamin D](#)
- [Limit sugar & salt](#)
- [Plan healthy meals ahead](#)
- [Related links for healthy eating](#)

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AUTHORS

TEXT SIZE

### Healthy eating tip 1: Set yourself up for success

To set yourself up for success, think about planning a healthy diet as a number of small, manageable steps rather than one big drastic change. If you approach the changes gradually and with commitment, you will have a healthy diet sooner than you think.

- **Simplify.** Instead of being overly concerned with counting calories or measuring portion sizes, think of your diet in terms of color, variety and freshness—then it should be easier to make healthy choices. Focus on finding foods you love and easy recipes that incorporate a few fresh ingredients. Gradually, your diet will become healthier and more delicious.
- **Start slow and make changes to your eating habits over time.** Trying to make your diet healthy overnight isn’t realistic or smart. Changing everything at once usually leads to cheating or giving up on your new eating plan. Make small steps, like adding a salad (full of different color vegetables) to your diet





## **Eating Smart: A Nutrition Resource List for Consumers**

### **September 2010**

This publication is a compilation of resources on general nutrition and healthy eating for the consumer. The resources are in a variety of formats: books, newsletters, and materials on the World Wide Web.

The resources listed contain accurate nutrition information and are available nationwide. Opinions expressed in the publication do not necessarily reflect the views of the U.S. Department of Agriculture. Contact information is provided for Web sites, organizations, and for government publications. Your local library or bookstore can help you locate books and print newsletters. Materials cannot be purchased from the National Agricultural Library (NAL).

This resource list is available from the Food and Nutrition Information Center's (FNIC) web site at <http://www.nal.usda.gov/fnic/pubs/bibs/gen/eatsmart.pdf>. A complete list of FNIC publications can be found at <http://fnic.nal.usda.gov/resourcelists>.

### **Table of Contents:**

- I. General Nutrition Information Resources
  - a. Books
  - b. Newsletter Subscriptions
  - c. Magazines
  - d. Web sites
- II. Healthy Cooking Resources
  - a. Cookbooks
  - b. Recipes on the Web
- III. Online Tools You Can Use
  - a. Food and Meal Planning
  - b. Search Engines for Nutrition and Health Information
  - c. Guides to Choosing Reliable Health Information on the Web

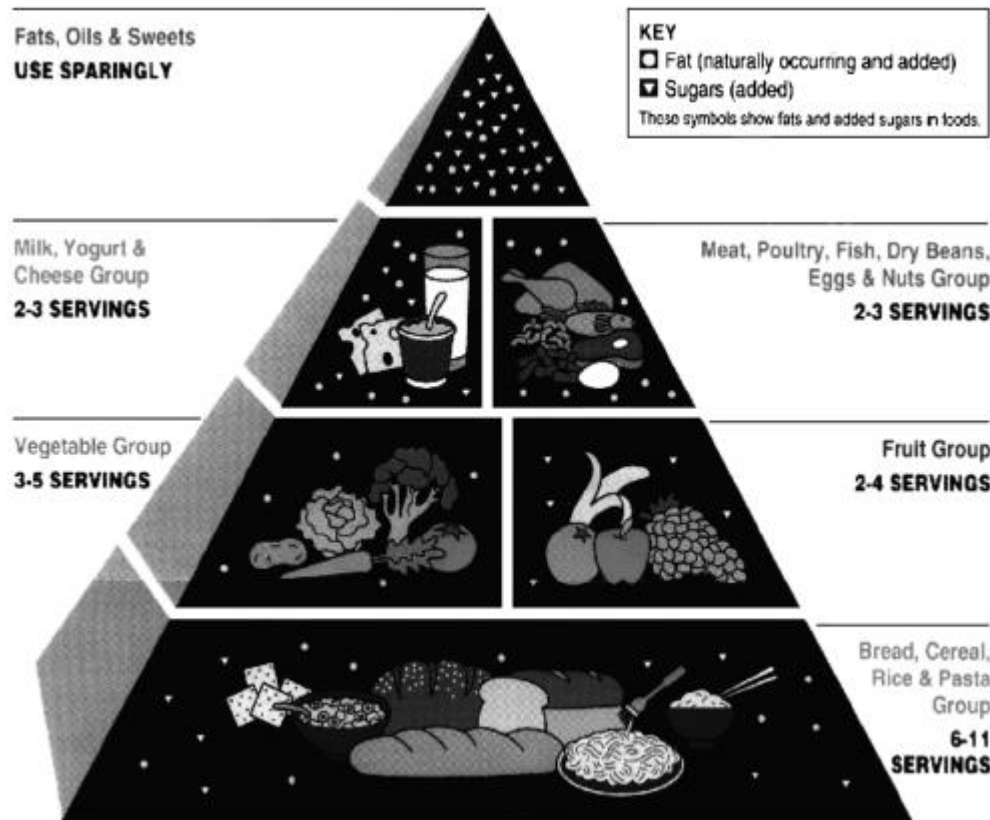


Figure 1 Original (1992) USDA Food Guide Pyramid\*

# Original (1992) USDA Food Guide Pyramid



**MyPyramid.gov**  
STEPS TO A HEALTHIER YOU

**New USDA Food Guide Pyramid:  
'MyPyramid' ([www.mypyramid.gov](http://www.mypyramid.gov))**



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- [http://fnic.nal.usda.gov/nal\\_display/index.php?info\\_center=4&tax\\_level=1&tax\\_subject=252](http://fnic.nal.usda.gov/nal_display/index.php?info_center=4&tax_level=1&tax_subject=252)

**Thank you!**