

Evaluating the National Nutrition Promotion Program in Singapore

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3. Health Services Research & Evaluation Division, Healthcare Performance Group, Ministry of Health, Singapore.



[Acknowledgements]

- Ministry of Health, Singapore
- National Healthcare Group Polyclinics
- SingHealth Group Polyclinics



[Population Statistics]

- Population 4.5 million
- Literacy rate 95%
- GDP per capita US\$30,500
- Unemployment 3.6%
- Diverse, multicultural, multiethnic society

Source: Department of Statistics



Health Statistics

- Average life expectancy 80 yrs
- Infant mortality rate 2.6 per 1000 live births
- Health manpower 1.6 doctors and 4.6 nurses per 1000 population
- Government health expenditure is 6.3% of total government expenditure or US\$330 per capita in 2005

Source: Ministry of Health



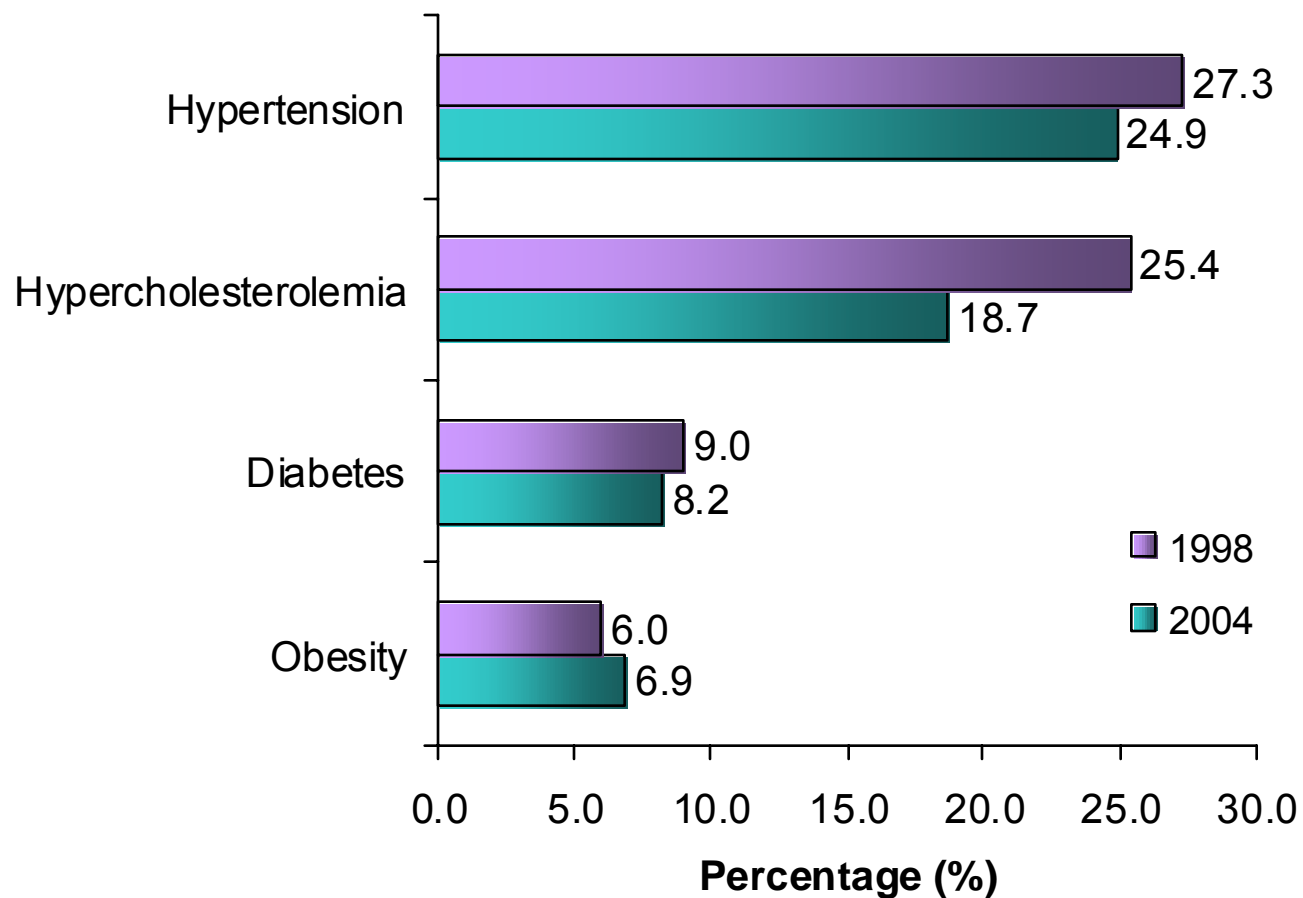
[Major Causes of Death]

■ Cancer	26%
■ Ischemic heart disease	18%
■ Pneumonia	15%
■ Cerebrovascular disease	10%
■ Accidents and poisoning	5%

Source: Ministry of Health



Non-Communicable Disease Prevalence



Source: Ministry of Health



Health Promotion Board

■ Our Vision

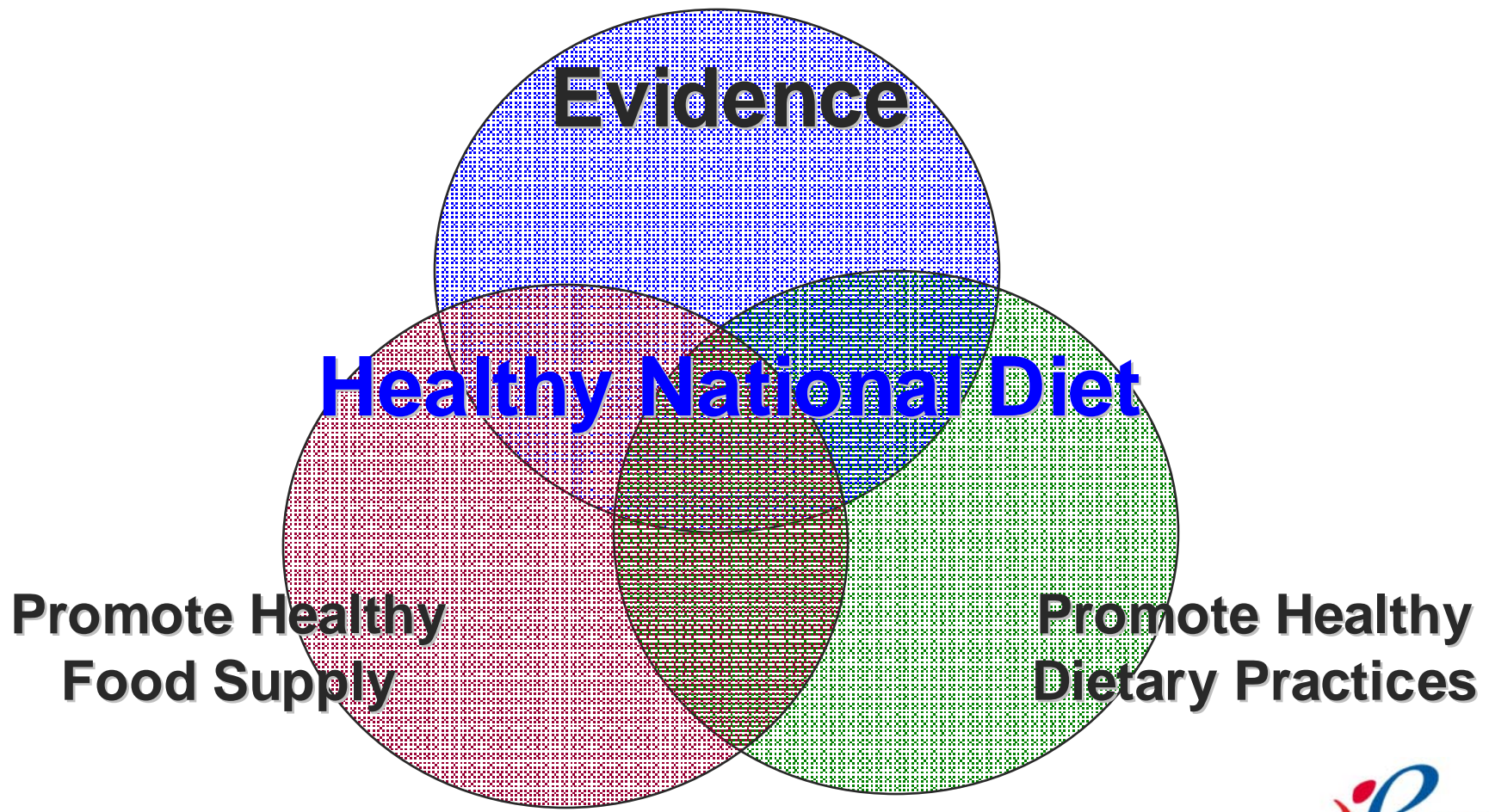
- A nation of healthy and fit Singaporeans.

■ Our Mission

- To **empower** Singaporeans to achieve optimal health throughout life.
- To ensure **accessibility** to health information and preventive health services.
- To **collaborate** with public, private and community organisations in health promotion.
- To create a conducive **environment** for leading a healthy lifestyle.
- To be a centre of **excellence** for health promotion.



Approach to Healthy National Diet



Highlights of Findings, NNS 1998

	Meeting recommendations
■ Adequate fruit intake	20%
■ Adequate vegetable intake	15%
■ Adequate wholegrain intake	8%

Notes:

1. Adequate intake of fruit and vegetables defined as at least 2 servings of fruit and at least 2 servings of vegetables per day.
2. Adequate intake of wholegrain products defined as at least 1 serving of wholegrain products daily. The intake of wholegrain products in this survey is determined by measuring the intake of wholemeal and softmeal bread as a surrogate food item.
3. Due to the very low percentage of population consuming 1 serving of wholegrain products daily, the proportion consuming 0.5 servings of wholegrain products is presented.

Highlights of Findings, NNS 1998

- Excessive fat intake 25%
- Excessive saturated fat intake 84%
- Adding salt/sauces to food at the table 60%

Notes:

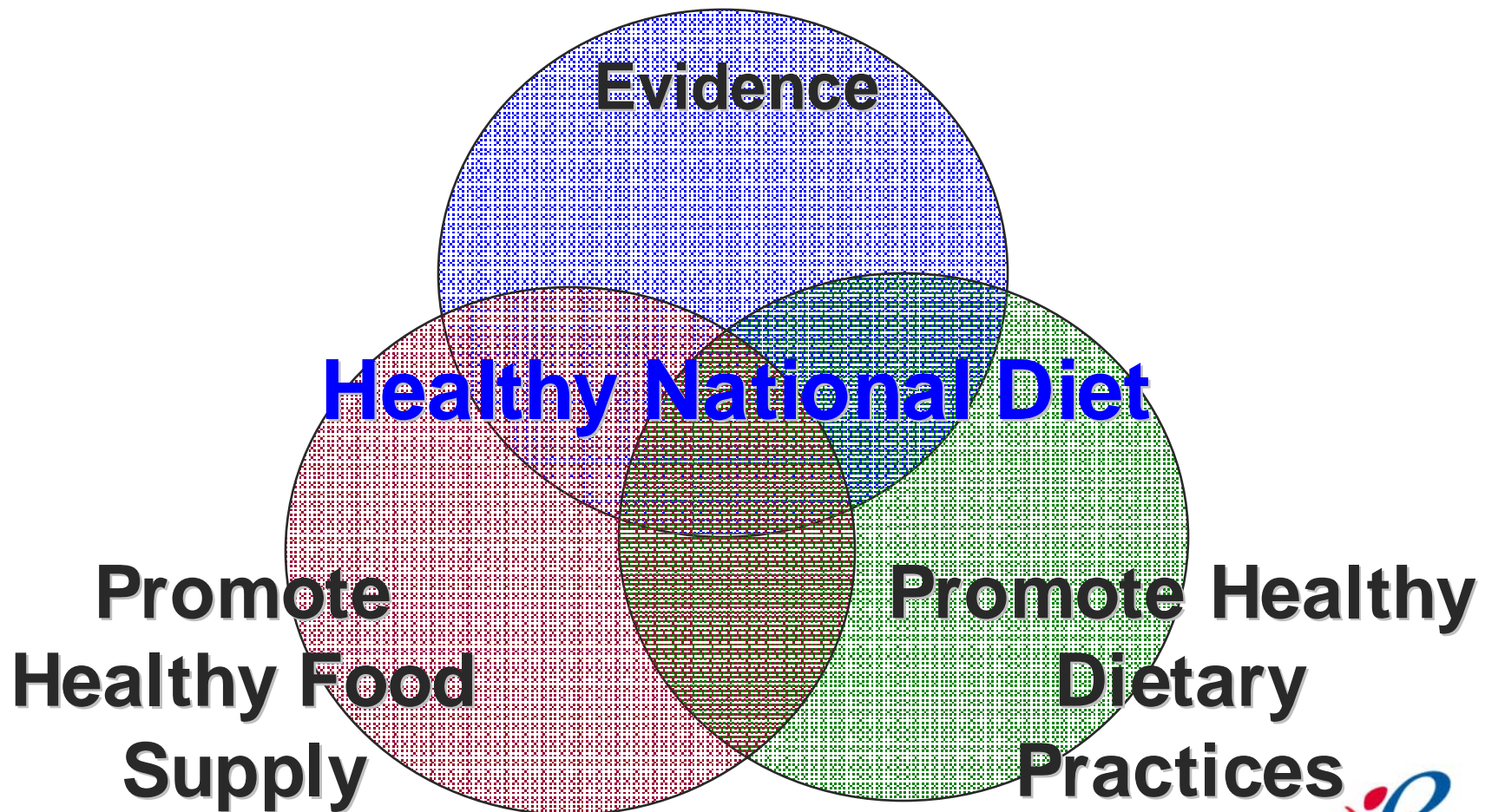
1. Excess total fat intake defined as fat intake contributing to $\geq 30\%$ of recommended energy intake.
2. Excess saturated fat intake defined as saturated fat intake contributing to $\geq 1/3$ of total fat intake.



[Aim of Nutrition Program]

- Priority areas for the nutrition promotion program
 - Increase fruit and vegetable intake
 - Decrease total fat and saturated fat intake
 - Increase wholegrain products intake
 - Reduce salt/sauces addition

Approach to Healthy National Diet



[Healthy Food Supply]

- Healthy Food Supply
 - Restaurants Program
 - Hawker Center Program
 - Healthier Choice Symbol



Eat All Foods In Moderation

[Healthy Dietary Practices]

- Mass media public education
- Settings-based nutrition promotion e.g. schools, workplaces, community
- 'Ask For Program' to promote healthier food options in hawker centers

Mass Media Public Education

What is One Serving?

Example of one serving of vegetables:

- 3/4 mug or 100g of cooked leafy vegetable
- 3/4 mug or 100g of cooked non-leafy vegetable
- 3/4 mug or 100g of cooked leafy and non-leafy vegetables

Example of one serving of fruit:

- 10 grapes
- 1 medium banana
- 2 kiwi fruits
- 1 wedge papaya
- 1 small apple

Eat 2 Servings of Fruit and 2 Servings of Vegetables Every Day.




 For more information, call HealthLine 1800 223 1313, or visit www.hpb.gov.sg

What is One Serving?

Example of one serving of vegetables:

3/4 mug or 100g of cooked leafy vegetables

Example of one serving of fruit:

- 10 grapes
- 1 medium banana
- 2 kiwi fruits
- 1 wedge papaya
- 1 small apple

2+2 reasons to eat more fruit and vegetables:

- Fruit and vegetables provide vitamins, minerals and plant substances (phytochemicals) that are beneficial for health.
- Eating enough fruit and vegetables as part of a balanced diet is one of the best ways to boost immunity.
- Fruit and vegetables contain soluble and insoluble fibre. Soluble fibre helps lower blood cholesterol while insoluble fibre promotes healthy bowel function.
- A diet rich in fruit and vegetables can lower your risk of developing heart disease, stroke and certain cancers by up to 30%.



 Eat 2+2 every day

Eat 2 Servings of Fruit and 2 Servings of Vegetables Every Day.
 For more information, call HealthLine 1800 223 1313, or visit www.hpb.gov.sg



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Mass Media Public Education



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NUTRITION

Overview

[Restaurants Offering Healthier Choices](#)

[Caterers Offering Healthier Choices](#)

[Institutional caterers offering Healthier Choices](#)

[Food Info Search](#)

[Healthy Recipes](#)

[Health Diary](#)

[Nutrition Labelling](#)

[School Tuckshop Programme](#)

[Healthier Dining](#)

[Healthy Eating in Childcare Centres](#)

HEALTHLINE 1800 848 1313 (recorded health advice)
1800 223 1313 (personal advice)



[Nutrition](#) - Overview

Overview - What is a balanced diet?

Our body requires 40-50 different nutrients to maintain health and well-being. The secret towards a balanced diet really means having these different nutrients in appropriate amounts through the foods we eat. Over-eating any one type of food even the kinds we call "healthy" could be harmful. Find out all about healthy eating here.

How much nutrients are needed by the body?



The Recommended [Dietary Allowances](#) provide the average daily levels of the major nutrients that are adequate to meet the nutritional needs of practically all healthy persons.

The [Healthy Diet Pyramid](#) translates these nutrients into foods. It tells you how much food you need to eat in order to get just the right amount of nutrients your body needs.

You will find some useful recommendations and tips below to help you and your family plan healthier meals and adopt a healthier diet.

- [Nutrition for adults](#)
- [Recommended Daily Dietary Allowances for Adults in Singapore](#)
- [Nutrition for children](#)
- [Recommended Daily Dietary Allowances for Children in Singapore](#)
- [Nutrition for the elderly](#)
- [Tips on nutrition for the elderly](#)
- [Nutrition Resource Materials](#) (eg. pamphlets)

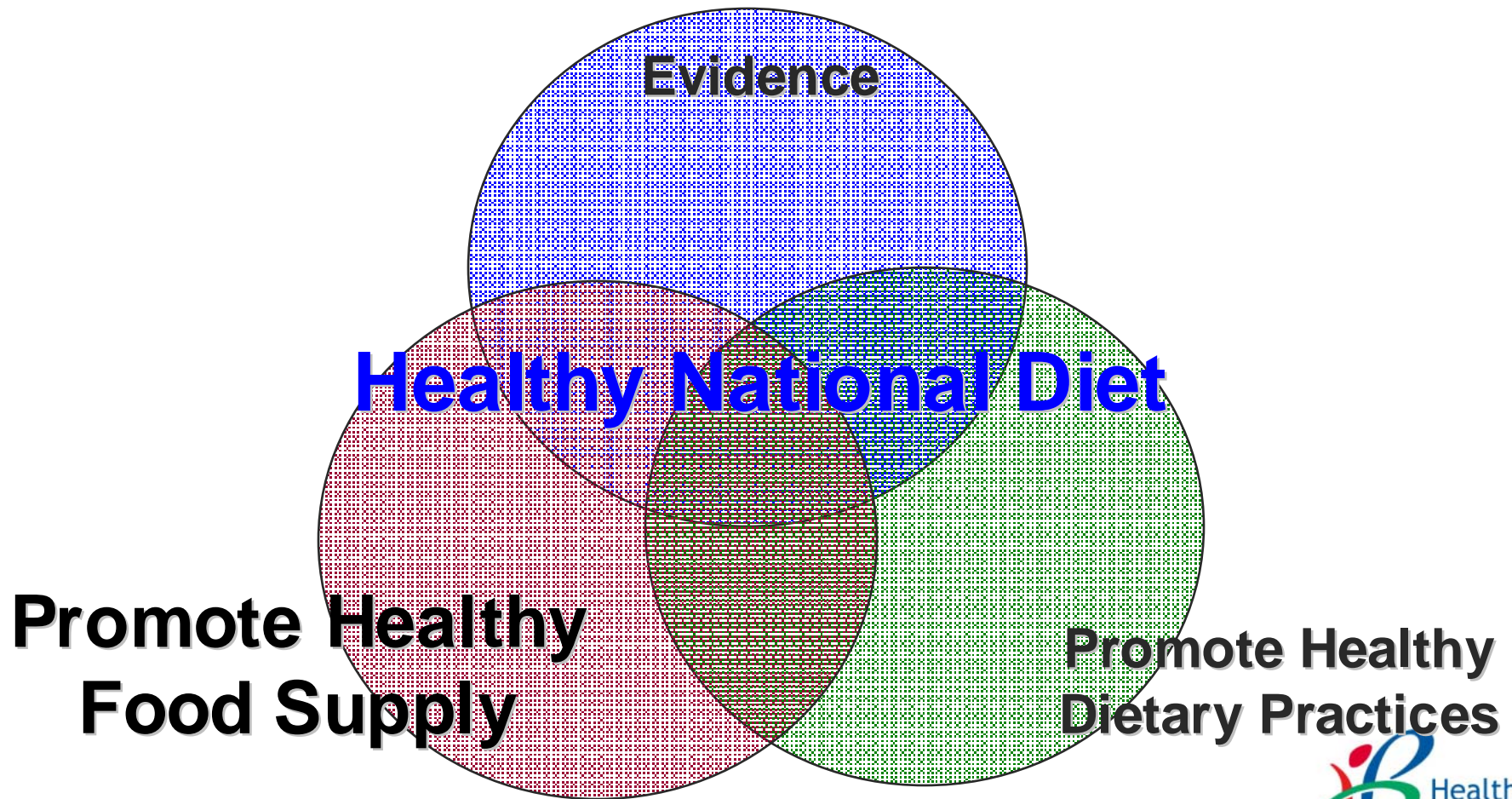
Related link(s):

- [Anaerobic or Aerobic - Which is better for weight loss?](#)
- [More information about Nutrition Programme](#)
- [FAQs on Nutrition](#)

www.hpb.gov.sg



[Evaluating Food Supply]



Restaurants Program

	2003	2004	2005
Number of restaurants offering healthier menus	50	90	120
Percentage of table orders with ≥ 1 healthier choice	25%	35%	40%

[Hawkers Program]

	1999	2002	2003	2004
Percentage of people who ask for healthier modifications in hawker centers	12%	28%	36%	40%



[Healthier Choice Symbol]

	2001	2004	2005
No. of HCS products	300	1,016	>1,200
Purchase volume of HCS products (% of all HCS and regular products)	-	27%	35%

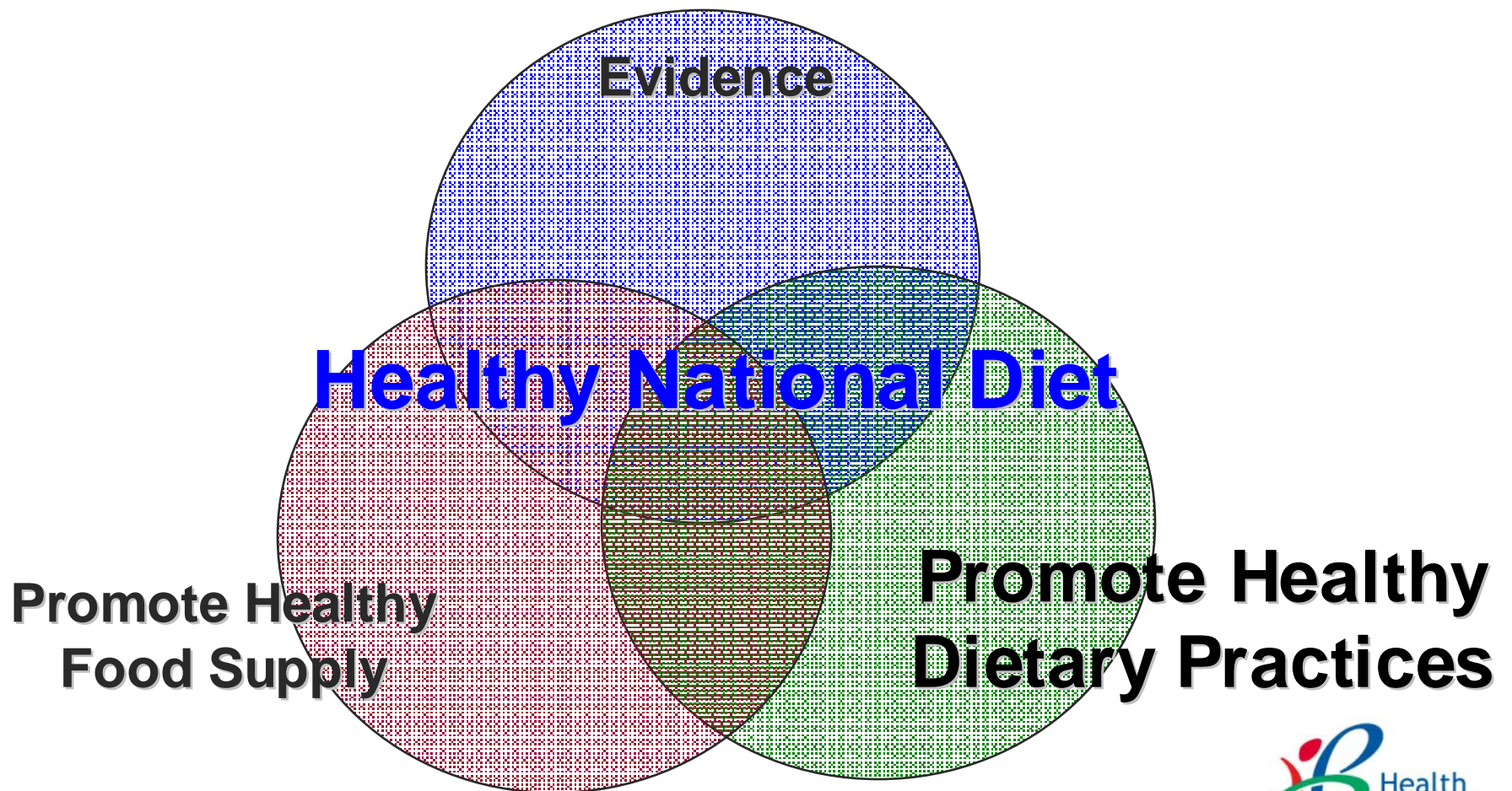


Eat All Foods In Moderation

Notes:

1. Products carrying the HCS are lower in fat, salt, sugar or higher in fiber and nutrients (e.g. calcium) compared to similar products in the same food category.

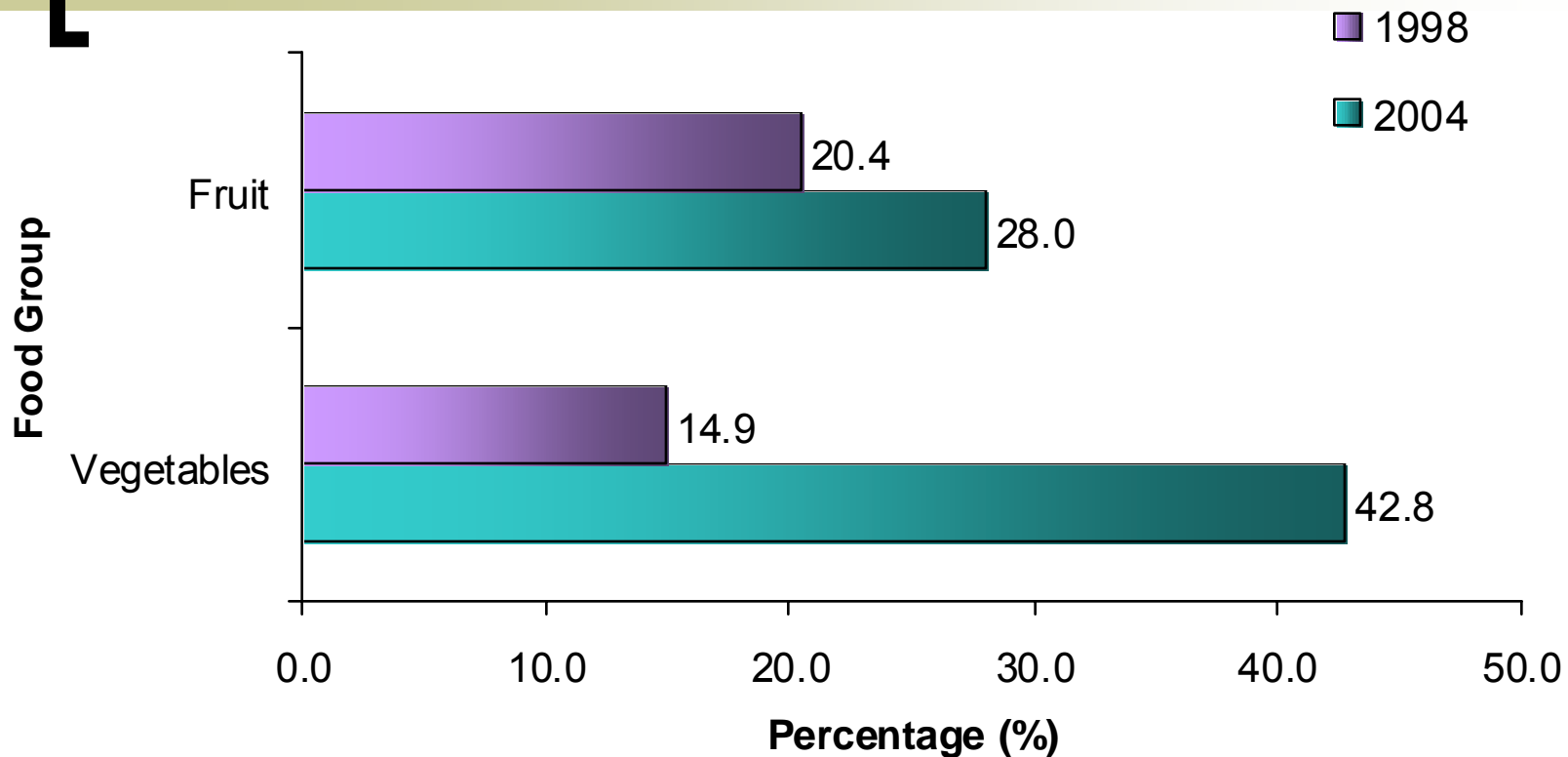
Evaluating Dietary Practices



National Nutrition Survey Methodology

- Subsample of 1,381 participants from 4,168 participants from the National Health Survey in 2004
- Dietary assessment tools
 - Dietary Practices Questionnaire
 - Food Frequency Questionnaire
- Interviewer-administered
- Locally developed nutrient database

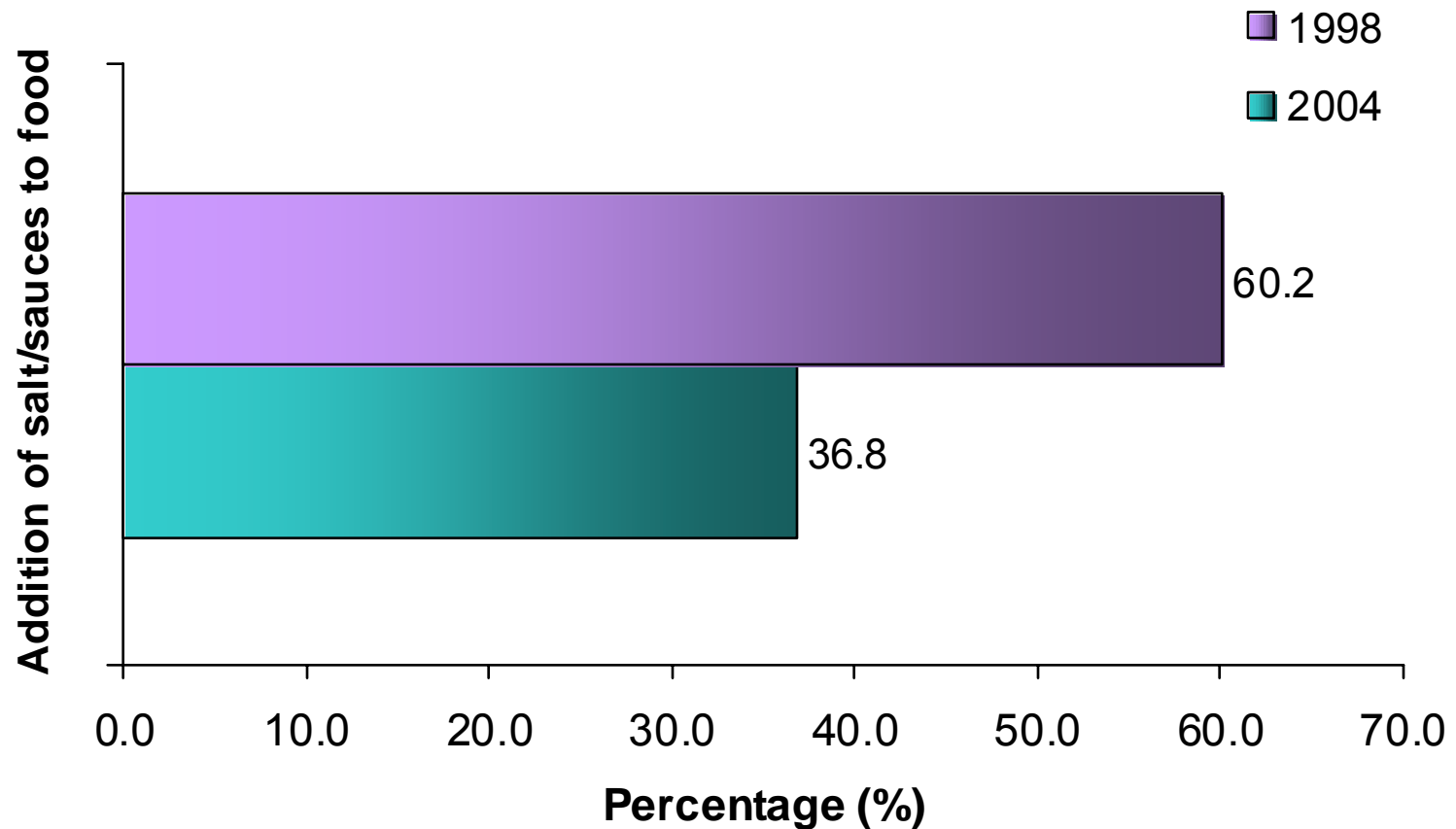
Comparison of Proportion of Singaporeans with Adequate Intake of Fruit and Vegetables, 1998 and 2004



Notes:

1. Adequate intake of fruit and vegetables defined as at least 2 servings of fruit and at least 2 servings of vegetables per day. $P < 0.001$ using Pearson's Chi-Square test for both fruit and vegetable trends.
2. Examples of 1 serving of fruit is 1 small apple/orange/mango (130g), 1 wedge papaya/pineapple/watemelon (130g), $\frac{1}{4}$ cup dried fruit (40g), $\frac{1}{2}$ cup canned fruit, drained (100g) or 1 cup pure fruit juice (250ml).
3. Examples of 1 serving of vegetables is 150g of raw leafy vegetables, 100g raw non-leafy vegetables, $\frac{3}{4}$ mug cooked leafy vegetables (100g) or $\frac{3}{4}$ mug cooked non-leafy vegetables (100g).
4. Percentages presented are age-standardized.

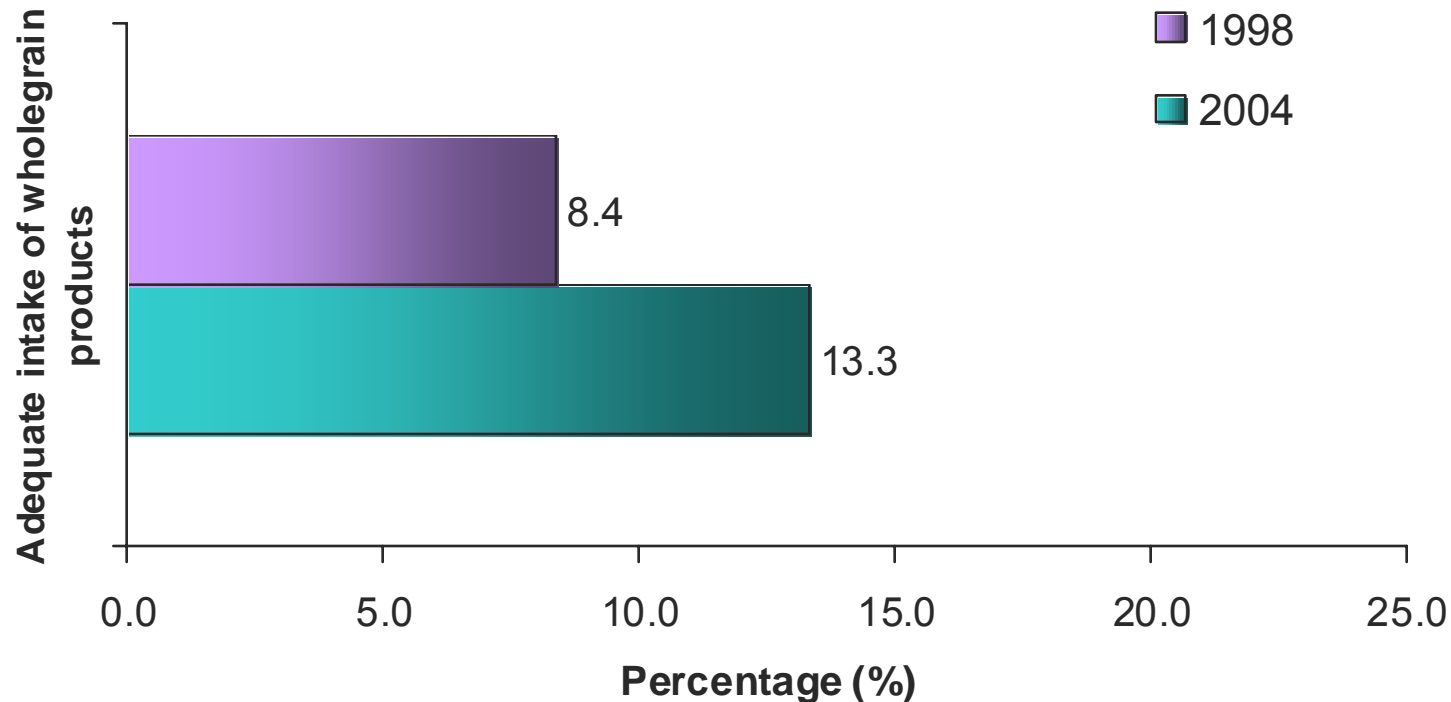
Comparison of Proportion of Singaporeans Adding Salt/Sauces to Food, 1998 and 2004



Notes:

1. $P < 0.001$ using Pearson's Chi-Square test.
2. Percentages presented are age-standardized.

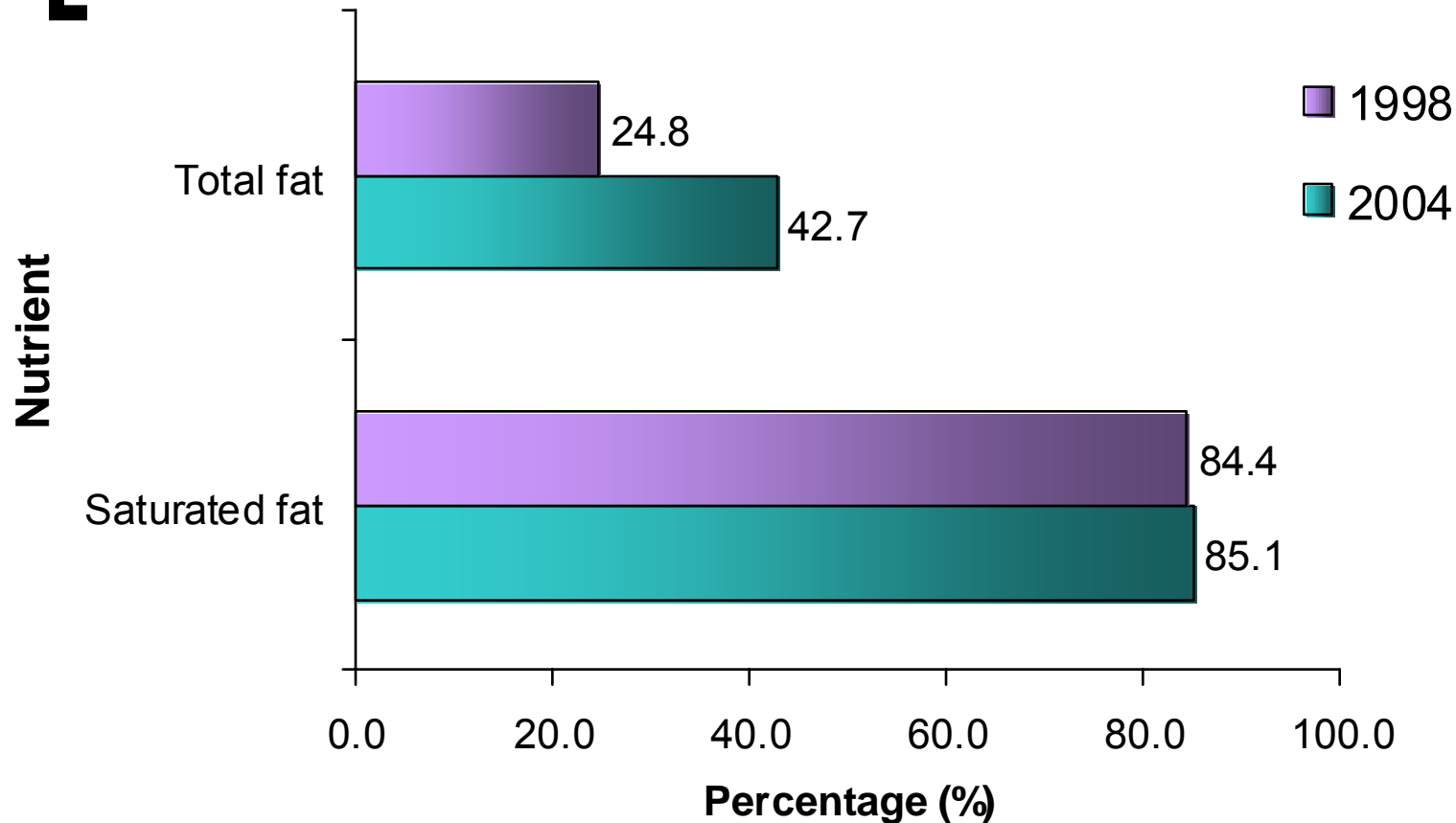
Comparison of Proportion of Singaporeans with Adequate Intake of Wholegrain Products, 1998 and 2004



Notes:

1. Adequate intake of wholegrain products defined as at least 1 serving of wholegrain products daily. The intake of wholegrain products in this survey is determined by measuring the intake of wholemeal and softmeal bread as a surrogate food item.
2. Due to the very low percentage of population consuming 1 serving of wholegrain products daily, the proportion consuming 0.5 servings of wholegrain products is presented.
3. $P < 0.001$ using Pearson's Chi-Square test.
4. Percentages presented are age-standardized.

Comparison of Proportion of Singaporeans with Excess Intake of Total Fat and Saturated Fat, 1998 and 2004



Notes:

1. Excess total fat intake defined as fat intake contributing to $\geq 30\%$ of recommended energy intake. $P < 0.001$ using Pearson's Chi-square test.
2. Excess saturated fat intake defined as saturated fat intake contributing to $\geq 1/3$ of total fat intake. $P = 0.257$ using Pearson's Chi-square test.
3. Percentages presented are age-standardized.

[Summary of Findings]

- Improvement in the supply of healthier food options.
- Improvement in proportion of Singaporeans who consumed adequate amounts of fruit and vegetables.
- Fewer Singaporeans added salt/sauces to their food.

[Areas of Improvement]

- Proportion of Singaporeans with adequate intake of wholegrain products is still low.
- Proportion of Singaporeans having excessive intake of total fat increased while those with excessive intake of saturated fat remained high.

[Strengths]

- Multiple sources of evidence addressing food supply and dietary habits
- Nationally representative sample for NNS

[Limitations]

- Cross-sectional
- Causality
- Long interval between surveys

[Way Forward]

- Behavioral risk factor surveillance system (BRFSS)
 - To evaluate the impact of nutrition programs.
 - To plan for future community-based nutrition programs.



Thank You