

THE ECONOMICS OF INFORMATION: FUNCTIONAL FOODS AND HEALTH CARE COSTS

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INTRODUCTION

- ❖ The high incidence of diet-related chronic diseases results in increased health care costs, which reached an estimated **10.3%** of the GDP in 2006 (CIHI) [1].
- ❖ In 2006 Canada spent an estimated **\$148 billion** on health care (CIHI) [1].
- ❖ Functional Food Market is characterized by 2 market failures:
 - Information Asymmetry Problem
 - Moral Hazard Problem
 } Affect negatively the economic welfare
- ❖ **Food Labeling**: can correct the asymmetry of information and decrease the medical costs.

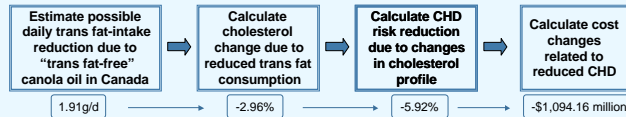
OBJECTIVES

- ❖ Examine and estimate the welfare implications of nutrition information through labeling, nutrient content and health claims.
- ❖ Estimate the potential health benefits of 2 functional foods:

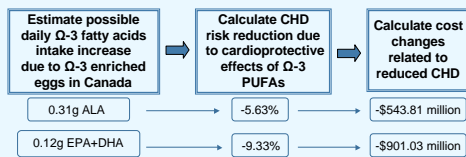
- ➡ Natreon Canola Oil
- ➡ Omega-3 (Ω-3) Enriched Eggs

METHODOLOGY

Natreon canola oil (Malla et al., 2007 [2])

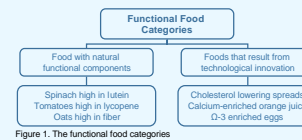
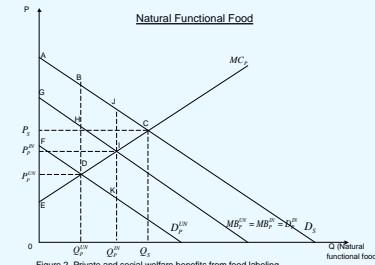


Omega-3 enriched eggs



THEORETICAL FRAMEWORK

- ❖ Health Canada (1998) [3]:
 “A *functional food* is similar in appearance to conventional foods, is consumed as part of a usual diet, and has demonstrated physiological benefits and/or reduces the risk of chronic disease beyond basic nutritional functions”.
- ❖ December 12, 2005: Mandatory Nutrition Facts Table
- ❖ Nutrient Content Claims
- ❖ 5 Generic Health Claims



PRELIMINARY RESULTS

THE CASE OF Ω-3 ENRICHED EGGS

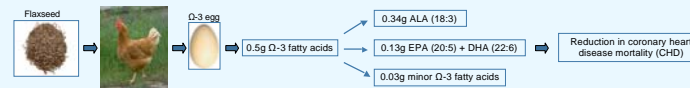


Table 1. Estimated health-care savings due to CHD mortality reduction via increase ALA consumption

	Average %ΔCHD mortality due to 1 g/d ALA	Average ALA content in regular eggs (g)	Extra ALA intake from D-3 eggs (g)	Total change in CHD mortality (%)	CHD mortality to cost ratio	Total annual indirect cost (millions of \$)	Total annual cost (70.8% of total indirect cost) (millions of \$)	Total annual change in cost (millions of \$)	
High	-27	0.34	0.027	0.313	-8.45	1	13,642	9,659	-815.72
Base	-18	0.34	0.027	0.313	-5.63	1	13,642	9,659	-543.81
Low	-9	0.34	0.027	0.313	-2.92	1	13,642	9,659	-271.91
Very Low	0	0.34	0.027	0.313	0	0.5	13,642	9,659	\$0

Table 2. Estimated health-care savings due to CHD mortality reduction via increase EPA-DHA consumption

	Average %ΔCHD mortality due to 1 EPA+DHA	Average EPA+DHA content in regular eggs (g)	Extra EPA+DHA intake from D-3 eggs (g)	Total change in CHD mortality (%)	CHD mortality to cost ratio	Total annual indirect cost (70.8% of total indirect cost) (millions of \$)	Total annual change in cost (millions of \$)		
High	-107	0.13	0.010	0.120	-12.80	1	13,642	9,659	-1,236.02
Base	-78	0.13	0.010	0.120	-9.33	1	13,642	9,659	-991.03
Low	-38	0.13	0.010	0.120	-4.54	1	13,642	9,659	-443.96
Very Low	0	0.13	0.010	0.120	0	0.5	13,642	9,659	\$0

Table 3. Total estimated health-care savings

	Sum of the total annual change in cost (millions of \$)
High	-82,051.74
Base	-81,444.84
Low	-443.96
Very Low	\$0

CONCLUSIONS

- ❖ The supply of health information via food labeling can lead to significant health-care savings and potential increases in economic welfare, e.g., omega-3 eggs can save \$1.4 billion per year.
- ❖ A well-organized regulatory system is necessary to encourage research, investment and international trade and improve Canadian economy.
- ❖ There is a need for further research regarding the correction of consumers' incentives.

REFERENCES: 1.Canadian Institute for Health Information (CIHI), 2006. National Health Expenditure Trends, 1975-2006. 2.Malla, S., Hobbs, J. E., and Perger, O., 2007. Valuing the Health Benefits of a Novel Functional Food. Canadian Agricultural Economics, 55:115-136. 3.Health Canada, 1998. Nutraceuticals/Functional Foods and Health Claims on Foods. Policy Paper, Therapeutic Products Programme and the Food Directorate, Health Protection Branch, Nov 2, 1998.

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