

Menu Labelling – Making Key Nutrition Information Readily Available in Restaurants

Date:	April 15, 2013
To:	Board of Health
From:	Medical Officer of Health
Wards:	
Reference Number:	

SUMMARY

As families consume more of their meals outside the home, more attention is being given to addressing the association between eating out, poor nutrition and corresponding health concerns, such as obesity and hypertension. Menu labelling, whereby nutrition information is provided on restaurant menus or menu boards, is a policy option that can improve the restaurant food environment by ensuring consumers are better able to make informed and healthier choices when eating out.

Menu labelling legislation is recommended by diverse experts and health organizations internationally and in Canada. Most recently, the Healthy Kids Panel, created to advise the province, has identified menu labelling as a strategy to prevent childhood obesity. In 2008, New York City was the first jurisdiction to enact menu labelling legislation that requires large chain restaurants to post calorie levels on menus and/or menu boards. In 2010, the United States federal government passed a similar law.

Voluntary nutrition information disclosure programs in Canada have not fully achieved the goals of providing simple, readily available information by which the public can make informed choices when they eat out. There is growing pressure in Canada for governments to expand on the U.S. model and mandate calorie and sodium labelling on the menu for larger chain restaurants.

Toronto Public Health (TPH) undertook a comprehensive examination of the evidence on menu labelling as a policy approach to promoting food transparency and supportive food environments for people who eat out, and conducted Toronto-based research and consultations with key stakeholders to assess the readiness for menu labelling in Toronto restau-

rants. The findings are captured in the attached technical report, *What's on the Menu? Making Key Nutrition Information Readily Available in Restaurants*.

This Board of Health report summarizes the following from the technical report: the evidence on the benefits and effectiveness of and consumer demand for menu labelling, the current policy context in Canada for menu labelling, and Toronto data on the readiness for menu labelling from resident and restaurant industry perspectives.

There is clear evidence that consumers support having nutrition information when dining out. Furthermore, menu labelling makes nutrition information more visible and more likely to be understood and used by consumers. Menu labelling is used by consumers to make healthier menu choices and can prompt restaurants to create healthier menu options.

This report identifies important actions related to menu labelling that can enhance the ability of Toronto residents to make informed food choices in restaurants. The Board is urged to advocate for provincial menu labelling legislation for larger chain restaurants. If provincial action is not forthcoming, the Medical Officer of Health (MOH) recommends that the Board request the MOH to explore options for a possible municipal menu labelling by-law. In the interim, to help level the playing field, TPH will work with independently owned restaurants and smaller chains on a pilot project in 2013-14 to test the feasibility of these restaurants implementing and sustaining menu labelling. Toronto Public Health is also launching a communication campaign this spring to increase awareness among Toronto consumers of the nutrition content of restaurant foods. The MOH will report back to the Board later this year on progress on these actions.

RECOMMENDATIONS

The Medical Officer of Health recommends that the Board of Health:

1. Urge the Ontario Premier and the Minister of Health and Long-Term Care to develop menu labelling legislation without further delay to support the public's right to know about nutrition content of restaurant foods. The provincial legislation should:
 - a. Be directed to foodservice premises with ten or more outlets nationwide or at least \$10 million in gross annual revenue;
 - b. Require calories and sodium values to be listed on the menu and/or menu board for all standard menu items in the same font/font size as the price;
 - c. Require that comprehensive nutrition information (i.e. calories plus 13 core nutrients) be made available to customers upon request at the point of purchase in the form of a pamphlet, brochure, or alternate format; and
 - d. Require that contextual statements about daily recommended levels of calories and sodium be posted on the menu or menu board;
2. Request the Medical Officer of Health, in consultation with the City Solicitor and relevant stakeholders, to report to the Board of Health in the fall of 2013, if the

- provincial government has not proceeded with menu labelling legislation by September 1, 2013, on a proposed City by-law, that will require:
- a. Chain restaurants in Toronto with ten or more outlets nationwide or at least \$10 million in gross annual revenues to post calories and sodium values on the menu or menu board for all standard menu items in the same font/font size as the price;
 - b. Comprehensive nutrition information (i.e. calories plus 13 core nutrients) to be made available to customers upon request at the point of purchase in the form of a pamphlet, brochure, or alternate format; and
 - c. Contextual statements about daily recommended levels of calories and sodium to be posted on the menu or menu board;
3. Request the Medical Officer of Health to report in the fall of 2013 on progress on the voluntary menu labelling pilot project with independent restaurants;
 4. Urge Boards of Health in the Greater Toronto Area and throughout Ontario to assist in expanding menu labelling legislation for chain restaurants and voluntary menu labelling initiatives for independent restaurants throughout the province of Ontario;
 5. Endorse, in principle, the recommendations of *No Time to Wait: The Healthy Kids Strategy*, the 2012 report of the Ontario government's Healthy Kids Panel;
 6. Forward this report to Ontario's Chief Medical Officer of Health, the Ontario Minister of Health and Long-Term Care, the Ontario Public Health Association, Public Health Ontario, the Council of Ontario Medical Officers of Health, the Association of Local Public Health Agencies, the Ontario Medical Association, the Registered Nurses Association Ontario, the Ontario Stroke Network, Public Health Physicians of Canada, Dietitians of Canada, the Canadian Diabetes Association, the Childhood Obesity Foundation, the Centre for Science in the Public Interest Canada, and the Fitness Industry Council of Canada; and
 7. Forward this report to leaders of official Ontario parties to gain their support for provincial menu labelling regulation.

Financial Impact

This report will have no financial impact beyond what has already been approved in the current year's budget.

DECISION HISTORY

On June 1, 2010, the Board of Health endorsed the Toronto Food Strategy recommendations in *Cultivating Food Connections: Toward a Healthy and Sustainable Food System for Toronto*, which identified menu labelling as one strategy for empowering residents with food skills and information. (See [http://wx.toronto.ca/inter/health/food.nsf/Resources/340ACEEDBF1B2D6085257738000B22F2/\\$file/Cultivating%20Food%20Connections%20report.pdf](http://wx.toronto.ca/inter/health/food.nsf/Resources/340ACEEDBF1B2D6085257738000B22F2/$file/Cultivating%20Food%20Connections%20report.pdf))

On March 25, 2013, the Board of Health considered the recommendations of *No Time to Wait: The Healthy Kids Strategy*, a recently released report of the Ontario Healthy Kids Panel (see <http://www.toronto.ca/legdocs/mmis/2013/hl/bgrd/backgroundfile-56663.pdf>). The Board deferred the endorsement, in principle, of the recommendations of the Ontario Healthy Kids Panel report and referred a motion on menu labelling to the Medical Officer of Health for consideration and report back to the Board of Health on April 29, 2013: (See <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.HL20.5>)

ISSUE BACKGROUND

A decade ago, the World Health Organization (WHO) advised that nutrition labelling interventions that provide accurate, standardized and easily understood information about foods could be an important part of preventing the growing burden of non-communicable (or so-called chronic) diseases.^{1,2} Nutrition labels are perceived as a credible and prominent source of information for consumers in selecting food products. There is a consistent link between the use of nutrition labels and healthier diets.³

In Canada, nutrition labelling became mandatory for most pre-packaged foods in December 2005. Restaurant foods were exempted from this legislation. Among Health Canada's goals for mandatory nutrition labelling were to provide information in a standardized format to allow for easy comparison between foods and prevent consumer confusion, and to make information available at the point of purchase.⁴

Menu labelling – extending nutrition labelling to the restaurant environment by providing nutrition information on the menu or menu board – is a logical step in promoting food transparency and supportive food environments. Menu labelling which focuses on a few key nutrient values, such as calories and sodium, has been recommended by diverse experts and health organizations, professional associations, and civic society organizations.^{5,6,7,8,9}

Toronto Public Health reviewed the experiences of other jurisdictions and the scientific studies of the impact and effectiveness of menu labelling as an intervention that would increase food transparency in the restaurant environment. Toronto Public Health has also conducted research and consultations with key stakeholders to assess readiness for menu labelling in Toronto. This report summarizes these findings, discussed in depth in the attached technical report, and identifies actions TPH is taking to address this issue.

COMMENTS

Canadians frequently eat out

Canadians are eating out more than ever before.^{10,11,12} Overall, about 60% of Canadians are eating out one or more times per week.^{13,14} Nearly 40% of Canadians eat out at least a few times per week, and about 7% eat out on a daily basis.¹³ Restaurant foods now make up at least one-fifth of the average Canadian's daily diet,¹³ and 25%-30% of Canadians' food spending is on food eaten away from home.¹⁵ Canadians of all income levels and age groups eat out, but people in higher income groups and young people eat out more

often^{10,13,15} and spend a higher share of their household expenditures on food away from home.¹⁵

Consumers face barriers to healthy eating out

There are barriers in the restaurant environment that affect consumers' ability to make informed and balanced food choices. This may contribute to the association between eating out and poor diet by making it difficult for people to choose healthy options.⁵

High levels and wide variation in calories and sodium content

A recent analysis of menus from major chain restaurants in Canada reveals that many restaurant foods contain high levels of calories and sodium.^{16,17} The average sit-down restaurant meal (with entrée and side dishes) contains 56% of an adult's daily calorie requirement and 98% of an adult's daily limit for sodium.¹⁸ There is also wide variation in calorie and sodium levels in foods in the same category across restaurants. The calorie content of entrees in sit-down restaurants can differ as much as 7.5-fold across restaurants. For example, rib entrées varied from 330 calories to nearly 2500 calories.¹⁶ The range of sodium can vary from a two-fold difference among stir fry entrées to a 78-fold difference among sandwiches/wraps.¹⁷ This wide variation makes it virtually impossible to guess the calorie and sodium content of restaurant menu items based on healthy eating recommendations alone. For example, over half of salads contained more calories compared to lower-calorie hamburgers in Canadian restaurant chains.¹⁶

Large portion sizes

Large portion size is what contributes most to the high calorie levels of restaurant meals,¹⁶ and, to a lesser extent, to high sodium levels in these meals.¹⁷ Large meals prompt people to eat more than usual because it appears appropriate and reasonable to eat the amount of food set before them.^{19,20,21} Large portion sizes also make it more difficult to estimate calorie content.²⁰

Misleading marketing claims

Marketing can create a 'health halo' or bias in estimating calories and other nutrient content.^{19,22} When restaurants claim that a dish is 'healthy,' people tend to underestimate how many calories they are actually eating. Consumers may be more likely to add a beverage, side dish, and dessert of up to 131% more calories to their meal as compared to when they think the main dish is 'unhealthy'.¹⁹ This halo effect has been found to be particularly large for sodium.²²

Consumers underestimate calorie and sodium levels in restaurant meals

Consumers have little understanding of the calorie and sodium levels of many typical restaurant meals, and this is especially true for less healthy meals and/or larger meals.^{19,22,23,24,25,26,27} In one study, participants underestimated calorie levels in typical quick service foods by about 30%. This translated into unknowingly consuming 900 extra calories in a week from restaurant meals,²² the equivalent of 6 kg (13lbs) of body weight over the course of a year. In a survey by the Canadian Obesity Network, 67% of people underestimated the calories in a salad containing 1150 calories. Half of the participants identified

this salad as a 'low-calorie' option and 31% thought that they would be 'sure to lose weight' by eating this salad daily.²³ In another study, a majority of participants underestimated calories of "more healthy" items by 9% and "less healthy" items by 93%. Underestimation of sodium levels was much greater. Participants underestimated sodium levels of "more healthy" items by 254% and "less healthy" items by 341%.²⁶ Estimating calories and nutrient content does not seem dependent on level of nutrition knowledge. When presented with larger portions, even professional dietitians were unable to accurately estimate the calories in a meal.¹⁹

High calorie and sodium intakes pose serious health concerns

The rising prevalence of obesity is a significant national and local health concern. In Toronto, 46% of adults²⁸ and about 21% of adolescents (aged 12-17 years)²⁹ are either overweight or obese. Carrying excess weight is a risk factor for many health concerns including diabetes, cardiovascular disease, high blood pressure, and mental health issues.²⁸ Childhood obesity is of particular concern as it has both immediate and long term health consequences. Estimates of the economic burden of obesity in Canada range from \$4.6 billion to \$7.1 billion annually.³⁰ This includes direct costs to the health care system and indirect costs from premature mortality or disability. The rise in obesity levels is largely attributed to increases in calorie intake.^{31,32} As eating out frequently is associated with higher calorie intake, overweight, and obesity,^{16,33,34} the restaurant environment is an appropriate setting for efforts to reduce population level calorie intakes.³¹

High blood pressure, or hypertension, is among the leading preventable risk factors for death in Canada.⁶ In 2007, 23.4% of Toronto residents 20 years of age and older (4.4% of 20-44 year olds and 27.7% of 45-64 year olds) had high blood pressure.³⁵ High sodium intake increases the risk of hypertension, which can lead to heart disease, stroke, and kidney disease. Canadians consume, on average, 3400 mg of sodium per day.⁶ This is more than twice the recommended adequate intake for adults (1500 mg per day). Action to reduce average sodium intakes to the recommended level would decrease the incidence of hypertension in Canada by 30%. This could prevent 23,500 cardiovascular disease events per year in Canada, which would amount to \$18.47 billion in direct and indirect cost savings (in 1998 dollars).⁶ As food consumed in restaurants and foodservice establishments accounts for 18% of the average total sodium consumed per day,⁶ action to reduce sodium intake in the restaurant environment would contribute to the goal of reducing Canadian's daily sodium intake.^{6,17}

Consumers have a right to know what they're eating for their health

Given the high frequency of eating away from home and the prevalence of nutrition-related health concerns, people have a right to know what is in their food when eating out, just as they do when grocery shopping. Canadians also recognize the need to have nutrition information readily available when eating out, and support having key nutrient information on the menu.^{10,36,37,38} Two recent surveys found that over 90% of Canadians and Ontarians support menu labelling in fast food restaurants,³⁶ and that 86% of Canadians want nutrition information, including calories, readily available and clearly visible at the point of purchase at all restaurants.²³ Another recent national survey found

that 73% of Canadians felt it was important to require restaurants to display the amount of sodium in the foods they serve.³⁹ A recent panel survey of about 3,000 Canadians found that 75% would like to see calories and 71% would like to see sodium values on the menu. The findings were similar for the sub-sample of Toronto panel participants (79% calories, 74% sodium).³⁸

Nutrition information is not easily found and used in restaurants

Many large Canadian restaurant chains provide nutrition information on their websites or have it 'available upon request' through a brochure rather than making it readily accessible at the point when consumers are placing their order. When nutrition information is not posted at the point of purchase, less than five per cent of customers notice it and/or use it.^{34,40,41} Also, 'available upon request' information may be, in reality, hard to find or actually unavailable in-store.^{40,42,43} A survey of 136 outlets of 27 large chain restaurants in Canada that had committed to providing nutrition information found that 18 (66%) of the chains provided nutrition information at some of their outlets. Only one chain had information available at all outlets surveyed, but the information was available on the tray liner which is provided after the purchase is made.^{43,44}

In addition to not being readily available, the nutrition information that is currently provided on websites can be hard to understand and/or use when eating out. Most chains provide comprehensive nutrition information (calories + 13 nutrients found on pre-packaged foods) using many different formats (chart, nutrition calculator, prompt to send an e-mail request for the information, etc.). However, nutrition information is usually read selectively, and simplified information is more likely to be read and understood.⁴⁵ This may be especially true when eating out where there may be time and/or social pressures to place an order quickly. The elderly and those with less education and lower socio-economic status have more difficulty in understanding detailed nutrition information.⁴⁵

Menu labelling makes nutrition information visible and easier to use

Placing key nutrition information on the menu or menu board improves its visibility to consumers, thereby increasing the chance that it will be used to make a menu choice. When key nutrition information is available at the point of purchase, at least 50% -70% of customers notice it.^{46,47} A study, done before calorie labelling was introduced on menus and menu boards in New York City (NYC), found that only 4% of customers at 10 major fast-food chains saw the calorie information that was being made available by the restaurants.⁴⁰ After calorie labelling on menus/menu boards was mandated in NYC, one evaluation of over 7300 fast-food chain customers found that 72% had seen the information, and 15% had used it to place an order.⁴⁸

In a Tacoma-Pierce County, Washington menu labelling pilot project with independent sit-down restaurants, calories, sodium, fat, and carbohydrate values were posted on the menu. The evaluation of this program found that 71% of customers had seen the nutrition information. Of those who saw and understood the information, 59% acted on it in some way.⁴⁹

Providing too much information on the menu can be counterproductive, however, so it is an important consideration in menu labelling policy initiatives.^{45,47} In one experimental study, participants were presented with three different formats of menu labelling. Over 70% noticed the calorie content when the calories, or calories and a traffic light indicating a healthy/unhealthy choice, were presented. When participants were presented with calories and three other nutrient values, as well as traffic light symbols, only 49% recalled seeing the calorie content.⁴⁷

To increase visibility of nutrition information on the menu, it is recommended that font size, format, colour, and location of the information be carefully considered.^{45,50} Also, studies have shown that displaying a contextual statement explaining an adult's daily intake requirements for the nutrient in question increases understanding and use of the nutrition information.^{45,50,51,57} Education campaigns can be used to increase consumer awareness and understanding about menu labelling information.⁴³ Several jurisdictions, including New York City and Tacoma-Pierce County, incorporated these elements into their menu labelling strategies.

Menu labelling prompts consumers to make healthier choices

What people choose to eat is influenced by many personal and environmental factors. Although menu labelling competes with these factors, it has been shown to influence consumers to make healthier food choices. A recent experimental study conducted by University of Toronto researchers with a panel of about 3,000 Canadians showed that providing calorie, sodium, and fat values on menus can change purchase intentions. About one quarter (26%) of participants changed their menu selection after seeing calories, sodium, and fat values added to the menu. The researchers also found a significant decrease in calories, sodium and fat ordered after participants saw a menu with nutrition labelling.³⁸ Similar results were found among the Toronto sample in this study. Another experimental study by the University of Waterloo with over 600 participants found that 38% of participants who were presented with calorie, sodium, fat and sugar levels on the menu reported that the nutrition information influenced their order.⁴⁷

Evaluations of menu labelling programs in the U.S. have found mixed results, with some evidence of positive impact coming from NYC and Tacoma-Pierce County. One study of 11 chains in NYC found no significant difference in overall calories purchased between the before- and after-legislation periods. Yet, significant calorie reductions were observed for three particular chains (McDonald's, Au Bon Pain, and KFC) in the after-legislation period. Among individuals who reported using the calorie information in these three chains, there was an average reduction of 106 calories purchased per transaction.⁴⁸

The largest, most rigorous study published on NYC's calorie labelling legislation focussed on Starbucks locations in NYC and used Boston and Philadelphia locations as non-calorie labelling comparison sites. This study of over one hundred million sales transactions, including individual-level data from Starbucks cardholders, found that calorie labelling did have significant effects on calories purchased. In the after calorie labelling period, there was an overall 6% average reduction in calories ordered per transaction and a 14% reduction for food items excluding beverages. Among individuals

who ordered more than 250 calories per transaction prior to the labelling rule, there was a 26% reduction in calories ordered. The data also show that consumers exposed to calorie information in NYC Starbucks stores reduced their calorie consumption in neighbouring districts where calories were not posted indicating a "learning" effect.²⁴

Some studies found no effect on calories purchased after calorie labelling in NYC.^{52,53,54} Differences in the design, strength and rigour of these menu labelling evaluations may account for the mixed results that have been found. For instance, to evaluate NYC's legislation, data were collected as early as four weeks after the legislation went into effect,^{52,53,54} which may be too short a time period in which to see behaviour change. In King County, Washington, positive impacts on consumer ordering were seen 18 months after adoption of menu labelling legislation but not upon initial evaluation 6 months after the law took effect.⁵⁵

Only four jurisdictions in the U.S. (California; Philadelphia, Pennsylvania; King County, Washington; and Tacoma-Pierce County, Washington) have implemented a mandated or voluntary menu labelling program that requires posting calories plus additional nutrient values. California's menu labelling law has not been evaluated, and the results of Philadelphia's evaluation are not yet available. The Tacoma-Pierce County voluntary menu labelling pilot project asked independent restaurants to post calorie, sodium, fat, and carbohydrate values. The evaluation found that, in sit-down restaurants, 34% of customers reported using the nutrition information to make a healthier choice - 20% chose an entrée lower in calories and 8% chose an entrée lower in sodium. Those who used the information to make a lower calorie choice were estimated to have ordered about 75 fewer calories.⁴⁹

Menu labelling may contribute to reducing rates of obesity and hypertension

Measuring or estimating the impact of any single intervention, such as menu labelling, on a population health concern such as obesity or hypertension is difficult to do and remains understudied. In one study on the potential effects of menu labelling on obesity prevention, researchers estimated a 40% potential reduction in weight gain at the population level if 10% of restaurant chain customers decreased their average meal by 100 calories.⁵⁶ Evidence cited in the previous section, and in more detail in the technical report, suggests this is a reasonable prediction for the decrease in calorie intake because of menu labelling.

In addition to enabling consumers to choose a healthier menu option, there are two other potential effects of menu labelling that may have a positive impact on population health. Menu labelling enables people to balance their eating and physical activity throughout the day or week. So although knowing that a menu option contains a high amount of calories and sodium may not change one's choice to consume it, having that information may lead an individual to compensate in other ways, such as eating less at the next meal or doing more physical activity that day. There is preliminary evidence that this is more likely to happen when menu labelling includes a statement about nutrient daily intake requirements.⁵⁷ This area requires focused study.

Menu labelling may also prompt the restaurant industry to reformulate their food to create more healthy options,^{43,45,58} just as nutrition labelling of packaged goods has resulted in new products to meet the demand for healthier options.⁵⁸ This could improve everyone's diet, even for those who do not use menu labelling to make their choices. There is some preliminary evidence that restaurant menu reformulation has occurred, but this beneficial effect of menu labelling still needs greater study.⁵⁹

An analysis of 245 U.S. chain restaurant menus found that restaurants that made nutrition information accessible on websites had significantly lower energy (calories), fat and sodium levels across menu items than those providing information only upon request.⁶⁰ Requiring nutrition information to be made more visible by putting it on the menu/menu board could increase this effect. A study in King County, Washington assessed menu entrees after menu labelling was legislated. They found that the average amount of calories in entrées had been reduced by 73 calories in sit down restaurants 18 months after the legislation was put into place, and sodium and saturated fat levels also decreased significantly.⁵⁹

Limited action on menu labelling in Canada

Several U.S. jurisdictions have implemented menu labelling legislation, and have demonstrated that it is both feasible and effective. In the U.S., menu labelling legislation has been directed to larger chain restaurants and typically requires the posting of calories on menus and/or menu boards. Three jurisdictions (California, Philadelphia, and King County/Seattle) legislated posting calories, sodium, saturated/trans fats, and carbohydrates on the menu or, in some other format, at the point of purchase. There have been attempts to introduce menu labelling legislation in Canada but, to date, the main approach to menu labelling has been voluntary initiatives where nutrition information does not necessarily have to be placed on the menu.

Federal and provincial government initiatives

Despite all three levels of government in Canada having the jurisdiction to enact mandatory menu labelling legislation,^{61,62} there has been more debate than action. A Federal/Provincial/Territorial Task Group was formed in 2011 to develop a national framework for the consistent provision of nutrition information in restaurants and foodservices. Both voluntary and mandatory options are being considered. The results are not expected for at least another two years.

Private member's bills have been introduced at both the federal and Ontario government levels but have not yet succeeded. In Ontario, NDP MPP, France Gélinas introduced a bill that would require chain restaurants with five or more locations in Ontario and gross annual revenue over \$5 million to display the calorie content of all items, on the menu/menu board, as well as provide warnings for high sodium content. This bill expired when the Legislature was prorogued in October 2012. More recently, Federal NDP MP Libby Davies introduced Bill C-460 calling for implementation of the Sodium Reduction Strategy for Canada, including high sodium warnings on menu items at large chain restaurants and potentially the disclosure of other nutrition information.⁶ As of March 2013, this bill was at second reading.

In August 2011, British Columbia launched a voluntary nutrition information program for restaurants called Informed Dining. It ensures a greater level of consistency in making nutrition information available to customers on-site but falls short of providing clear, visible and simple nutrition information directly on the menu. Rather, a comprehensive listing of nutrient values is made available in a chart format with levels of calories and sodium highlighted. While Informed Dining is a step forward in that it offers participating restaurants a standard framework for providing nutrition information on-site and to highlight calories and sodium, consumers typically still have to ask to see the information.

In March 2013, the Ontario Government released their Healthy Kids Panel report with recommendations to address childhood obesity. The three-part Healthy Kids Strategy recommends building healthier environments for children at the pre- and post-prenatal period, in the community, and in the food environment. Recommendations focused on changing the food environment include requiring menu labelling in all restaurants, including fast food outlets, and in retail grocery stores. The report has been well-received by advocates and health organizations. It may also lead to provincial action on menu labelling as the Province's *Make No Little Plans: Ontario's Public Health Sector Strategic Plan, released on April 4, 2013*, includes achieving the goals of the Healthy Kids Panel report.

Restaurant industry-led initiatives

The Canadian Restaurant and Foodservices Association (CRFA) is in favour of a consistent national approach to nutrition information disclosure as opposed to different provincial and/or municipal approaches. The CRFA showed leadership in 2005 in developing a voluntary Nutrition Information (disclosure) Program. The program provided a mechanism for Canada's largest chain restaurants to provide comprehensive nutrition information to customers, upon request. However, as noted earlier, there is a lack of consistency in the manner in which this information is disclosed. The CRFA was an active participant in the development of B.C.'s Informed Dining program. In the absence of a national framework from Health Canada, the CRFA recently adopted Informed Dining as its new national model for voluntary disclosure of nutrition information and is seeking partnerships with provincial governments to expand it beyond B.C.

Toronto Public Health consultations with CRFA and the Ontario Restaurant Hotel and Motel Association (ORHMA) confirmed that these associations are not in favour of providing information on a few key nutrients on the menu/menu board of chain restaurants. They argue that focusing on one or two nutrients such as calories and sodium does not provide comprehensive information. Yet, research indicates that too much information may not be read or used.^{45,47} They also assert that there is not enough evidence to show that menu labelling influences consumers' eating behaviours, yet evidence from U.S. jurisdictions has become more definitive that menu labelling does result in behaviour change, and to a greater extent for subgroups of the population. Industry associations in Ontario also argue that they are already providing nutrition information via other means, and that customers are not demanding this information on

the menu. However, consumer surveys have consistently shown the opposite, that people want nutrition information readily available at the point of purchase.

Finally, they note that the cost and practical challenges of putting nutrition information on the menu are a concern. The U.S. Federal Department of Agriculture conducted a cost-benefit analysis of their federal menu labelling legislation.⁶³ They estimate the cost per large restaurant chain for nutritional analysis, replacing menus/menu boards and staff training to be on average USD \$45,720 per year. This may not be a substantial cost for larger chains, and the potential health benefits of menu labelling have to be considered.^{63,64} Menu labelling may also offer opportunities to recover some of these costs through increased sales, as more health conscious consumers indicate that they will eat out more often if easily accessible nutrient and calorie information is available.²²

Municipal action on menu labelling

Challenges in translating federal and provincial dialogue into action have led local health authorities to consider how to protect the health of residents in the face of unhealthy eating out environments. It has been suggested that cities have a role to play in catalyzing further action across the nation as learned through policy experiences with tobacco control and pesticide use.^{7,61} Several municipalities in Ontario are advocating for a national or provincial menu labelling legislation for large chains. Peel Region has gone further by requiring calorie, sodium and fat labelling on foods sold in their two regional government building cafeterias and vending machines. Ottawa Public Health is also exploring calorie and sodium menu labelling in municipal facilities, restaurants and cafeteria programs.

Why calories and sodium on the menu

In order to prioritize which nutrients to include on the menu, TPH considered the following criteria: a) nutrition information that is associated with critical population health concerns because of the high levels found in restaurant foods and the overconsumption of these nutrients; b) nutrients that consumers have difficulty estimating in their restaurant meals; c) nutrients that consumers most want to know about; and d) the amount of the nutrition information which consumers have the capacity to easily see, understand and use at the point of purchase.

Calories and sodium values are recommended as the key nutrients to include on chain restaurant menus/menu boards since they meet all of the above criteria. The evidence linking excess calorie consumption to weight gain and excess sodium intake to high blood pressure is strong, with implications for population level obesity reduction and chronic disease prevention efforts. Previous sections of this report showed that restaurant meals are generally very high in calories and sodium, and that consumers highly underestimate calorie and sodium levels.

A small number of US jurisdictions have included fat (either total fat or saturated fat) and carbohydrates (either total carbohydrates or sugars) in menu labelling initiatives. Although both low-fat and low-carbohydrate diets can lead to weight loss, the most important determinant of maintaining weight loss is the ability to sustain a lower-calorie

diet regardless the source of the calories.^{65,66}

The evidence linking dietary fat and carbohydrate intakes to chronic diseases is not straightforward.⁶⁷ While there is strong evidence linking diets high in saturated and trans fat with cardiovascular diseases, other types of fatty acids (i.e. unsaturated) are considered an important part of a healthy diet. Similarly, there are "good" carbohydrates derived from whole grains, vegetables, fruit and legumes which are health promoting, in contrast to carbohydrates derived from added sugars that are associated with poor health effects such as dental caries and obesity. Therefore, a total fat or total carbohydrate value is not a useful indicator of the healthfulness of a menu item beyond being a proxy for calorie content. Furthermore, adding information on a larger number of nutrients can make it challenging for people to process. As in other jurisdictions, large chain restaurants (both sit-down and quick-service) should also be required to provide customers with comprehensive nutrition information, upon request, so that individuals with particular health or dietary concerns can access the information they need to make an informed choice.

Finally, according to a survey of about 3000 Canadians, the strongest public support is for calorie and sodium values on the menu (75% wanted calories, 71% sodium, 49% fat, 47% sugar, and 43% saturated fat).³⁸

Readiness for menu labelling in Toronto

Toronto residents eat out often and want nutrition information

A TPH survey of about 1700 adult residents conducted between October 2011 and March 2012 found that eating out is very common among Toronto residents.⁶⁸ Over 7 in 10 (71%) Toronto residents report having eaten out at a sit-down restaurant or fast food outlet (or both) at least once in the past week. Over half (54%) reported having eaten at restaurant and nearly half (47%) reported having eaten fast food. Eating out is more common among men and younger age groups (18-34 year olds), for both sit-down restaurants and fast food. Toronto residents with higher education or incomes are more likely to have eaten out at a sit-down restaurant than those with lower education or income.

Most Toronto residents (90%) believed getting "nutritious food" was important, and 78% said that they would use nutrition information 'at least sometimes' if it were readily available. Women, those in younger age groups, and those with higher levels of education were more likely to report that they would use nutrition information if it were readily available.

These findings are consistent with University of Toronto menu labelling survey research.³⁸ Before being shown menus with calorie and sodium labelling, 86% of participants said that having nutrition information would or would somewhat influence their order. After being shown menus with calorie and sodium labelling, 83% of Toronto participants indicated that they would like to have nutritional information available on the menu. Of all the eight nutrients they were asked about, most wanted to see calories (79%) and sodium (74%) on the menu.

There is consumer demand for menu labelling in Toronto. To contribute to the effectiveness of future menu labelling legislation, TPH is launching a communication campaign. This social engagement campaign will increase awareness about the high variability of calories and sodium in restaurant meals and enable the public to demonstrate their interest in menu labelling. The campaign will be evaluated to assess reach and impact.

Chains are reluctant to do menu labelling unless it is mandated

Chain restaurants represent an appropriate focus for regulation. Restaurant chains use highly standardized menu items and can readily analyze nutrient content. Chains with ten or more locations nationwide are also more likely to have the capacity to do menu labelling. Many already have nutrition information available for their menu items so could more easily implement menu labelling.

Interviews were conducted with nine chain restaurants and consultations were held with six additional local chains. Both larger chain and some smaller chain restaurants indicated that they were already providing some type of nutrition or health information to consumers. They see menu labelling as primarily benefitting consumers but having a negative impact on restaurant revenue. Several chains questioned the evidence on effectiveness of menu labelling interventions to shape consumer behaviour. They expect menu labelling to be legislated eventually, but do not want to put nutrition information on the menu/menu board voluntarily. If legislated, they argue that menu labelling should be a requirement for all restaurants so as to create a level playing field. There is a preference among chains for the current voluntary model of nutrition information disclosure as set out by the CRFA (discussed above).

Toronto Public Health will continue to advocate for provincial legislation to require chain restaurants with ten or more locations nationwide, or at least \$10 million in gross annual revenues, to make calories and sodium values visible to the majority of consumers by posting them at the point of purchase for all standard menu items. As many Canadian chains also operate in the U.S. where menu labelling is already mandatory, it should be quite feasible for these chains to apply menu labelling in Canada.

If there is a continued lack of progress on mandating menu labelling, TPH proposes to develop a municipal by-law which will require Toronto chain restaurants with ten or more locations nationwide, or at least \$10 million in gross annual revenues, to disclose key nutrient values, such as calories and sodium, at the point of purchase. Stakeholder consultation would be undertaken as part of by-law development and implementation planning.

"Early Adopters" identified among Toronto independent restaurants

A survey of 256 independent restaurant operators across Toronto done in December 2011/ January 2012 found that the majority of these independent restaurants (72%) at present are not interested in providing nutrition information to their customers. This appears related to their views that people already have a good idea of what is healthy or not (91%) and that a restaurants' ability to provide nutrition information would not affect consumers'

decisions to eat at their establishment (62%). Further, the main concerns from these restaurant operators were the cost (76%) and lack of time to figure out how to do it (64%). Sixty-two per cent of respondents said that they would not provide it unless they absolutely had to.

Yet over half (57%) of independent operators reported feeling some responsibility to provide nutrition information. Half of respondents thought that nutrition information could be good for business in terms of attracting customers. As well, 80 restaurants (42%) expressed interest in working with TPH on a pilot project focussed on providing nutrition information to their customers.

Follow-up consultations with 13 independent restaurants about participating in this menu labelling pilot confirmed these positive findings. These restaurant owners/operators indicated that they want to be leaders and see menu labelling as an opportunity to take advantage of a current trend, create a competitive advantage against chains and promote the healthfulness of their menu. They would be willing to participate in a pilot initiative if they had supports to undertake the nutritional analysis of their menu. The smaller chain restaurant operators who were consulted were reluctant to participate in the pilot.

The voluntary pilot project will test the feasibility of menu labelling with approximately 20 independent restaurants and small chains. The purpose of the pilot is to build a sustainable model for expanding menu labelling among Toronto restaurants that would not likely be affected by legislation but who want to participate on a voluntary basis. This approach has been implemented in Louisville, Kentucky, and Tacoma-Pierce County, to support independent and smaller chain restaurants to meet federal menu labelling requirements.

The consulted independent restaurant operators agreed to the proposed parameters of the Toronto pilot. Restaurants will be expected to standardize their recipes, conduct a computerized nutrition analysis of their standardized menu items, revise/re-print their menus/menu board with values for calories and sodium, and participate in the pilot evaluation. Restaurants would also be encouraged to provide more comprehensive nutrition information to customers who request it. Implementation supports that will be offered by TPH include: access to nutrient analysis software; time limited training and support by registered dietitians to conduct nutritional analyses and menu reformulations; provision of resources on healthy menu reformulations; and recognition of participating restaurants.

Menu labelling is an intervention that addresses some of the challenges consumers face in making healthy choices in the restaurant environment. Federal or provincial action on menu labelling is preferred by stakeholders. Local governments also have a role to play in promoting food transparency and supportive food environments that enhance food literacy. The Board of Health is urged to advocate for provincial menu labelling legislation, and TPH will play a leadership role in promoting menu labelling in Toronto restaurants. Toronto Public Health will report back to the Board of Health later in 2013 on the progress of the voluntary menu labelling pilot project, and a proposed municipal by-

law, if neither provincial nor federal action on menu labelling legislation has taken place by that time.

CONTACT

Monica Campbell, Director
Healthy Public Policy
Toronto Public Health
Phone: 416-392-7463
Fax: 416-392-0713
Email: mcampbe2@toronto.ca

Carol Timmings, Director
Chronic Disease and Injury Prevention
Toronto Public Health
Phone: 416-392-1355
Fax: 416-392-0713
Email: ctimming@toronto.ca

SIGNATURE

Dr. David McKeown
Medical Officer of Health

ATTACHMENTS

Attachment 1: *What's on the Menu? Making Key Nutrition Information Readily Available in Restaurants*. 2013. Report prepared for Toronto Public Health. Available at <http://www.toronto.ca/health/>.

Endnotes

- ¹ World Health Organization. (2003). Diet, Nutrition and the Prevention of Chronic Diseases: Report of a Joint WHO/FAO Expert Consultation. Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases. Geneva: World Health Organization.
- ² World Health Organization. (2004). Global Strategy on Diet, Physical Activity and Health. Geneva: World Health Organization.
- ³ Campos, S., Doxey, J., & Hammond, D. (2011). Nutrition labels on pre-packaged foods: a systematic review. *Public Health Nutrition*, 14(8), 1496-1506.
- ⁴ Canadian Food Inspection Agency. Purpose of the Nutrition Labelling Regulations. Retrieved on February 7, 2013, from <http://www.inspection.gc.ca/english/fssa/labeti/nutrite.shtml>.
- ⁵ Cancer Care Ontario, Ontario Agency for Health Protection and Promotion (Public Health Ontario). (2012). *Taking Action to Prevent Chronic Disease: Recommendations for a Healthier Ontario*. Toronto: Queen's Printer for Ontario.
- ⁶ Health Canada. (2010). Sodium Reduction Strategy for Canada, Recommendations of the Sodium Working Group. Ottawa: Health Canada.
- ⁷ Centre for Science in the Public Interest. (2012). Experts, health and citizens' groups call on governments to mandate nutrition information on menus at outlets of large chain restaurants. Retrieved February 7, 2013, from http://cspinet.org/canada/pdf/expert_ngo_jointletter.menu-labelling.pdf
- ⁸ Leitch, K. (2007). Reaching for the Top: A Report by the Advisor on Healthy Children & Youth. Ottawa: Health Canada. Retrieved on February 7, 2013, from http://www.hc-sc.gc.ca/hl-vs/alt_formats/hpb-dgps/pdf/child-enfant/2007-advisor-conseillere/advisor-conseillere-eng.pdf
- ⁹ Canadian Heart Health Strategy and Action Plan. (2009). Building a Heart Healthy Canada. Retrieved February 7, 2013, from <http://www.chhs.ca/en/reports>.
- ¹⁰ Canadian Council of Food and Nutrition. (2008). Tracking Nutrition Trends VII. Mississauga, ON: Canadian Council of Food and Nutrition.
- ¹¹ Garriguet, D. (2007). Canadians' eating habits. *Health Reports*, 18(2), 17-32.
- ¹² Statistics Canada. (2006). Overview of Canadians' Eating Habits. Ottawa: Statistics Canada.

-
- ¹³ Canadian Restaurant and Foodservices Association. (2010). *Canada's Restaurant Industry: Putting jobs and economic growth on the menu*. Toronto: Canadian Restaurant and Foodservices Association.
- ¹⁴ CBC News, July 10, 2012. Visa Canada Report. Retrieved November 1, 2012 from <http://www.cbc.ca/news/health/story/2012/07/10/lunch-eat-out-survey.html?cmp=rss>.
- ¹⁵ Statistics Canada. (2010). Survey of Household Spending, 2010. *The Daily, Wednesday April 25, 2012*, Retrieved on February 7, 2013, from <http://www.statcan.gc.ca/daily-quotidien/120425/dq120425a-eng.htm>
- ¹⁶ Scourboutakos, M. J. & L'Abbé, M. R. (2012). Restaurant menus: Calories, caloric density, and serving size. *American Journal of Preventive Medicine*, 43(3), 249–55.
- ¹⁷ Scourboutakos, M. J. & L'Abbé, M. R. (2013). Sodium levels in Canadian fast-food and sit-down restaurants. *Canadian Journal of Public Health*, 104(1), e2-e8.
- ¹⁸ L'Abbe, M. R. (2012). On-site menu labelling: Helping consumers find healthier foods. Presentation at Centre for Science in the Public Interest Symposium, Writing on the Wall, September 12, 2012, Toronto. Retrieved on February 7, 2013 from http://cspinet.org/canada/pdf/Toronto_MaryLAbbe.pdf
- ¹⁹ Chandon, P. & Wansink, B. (2007). The biasing health halos of fast-food restaurant health claims: Lower calories estimates and higher side-dish consumption intentions. *Journal of Consumer Research*, 34(3), 301-14.
- ²⁰ Wansink, B. & Chandon, P. (2006). Meal size, not body size, explains errors in estimating the calorie content of meals. *Annals of Internal Medicine*, 145(5), 326.
- ²¹ Chandon, P. & Wansink, B. (2007). Is obesity caused by calorie underestimation? A psychophysical model of meal size estimation. *Journal of Marketing Research*, 44(1), 84–9.
- ²² Burton, S., Howlett, E. & Heintz Tangari, A. (2009). Food for thought: How will the nutrition labeling of quick service restaurant menu items influence consumers' product evaluations, purchase intentions, and choices? *Journal of Retailing*, 85(3), 258-273.
- ²³ Canadian Obesity Network/Ipsos-Reid. (2012). What Do Canadians Know and Think About Calories? A National Survey, October 2011. Presented at Calories Count Symposium, October 25, 2012.
- ²⁴ Bollinger, B., Leslie, P. & Sorensen, A. (2010). Calorie posting in chain restaurants. *National Bureau of Economic Research*, Working Paper 15648. Retrieved February 7, 2013, from <http://www.nber.org/papers/w15648>.

²⁵ Burton S, & Creyer E.H. (2004). What consumers don't know can hurt them: consumer evaluations and disease risk perceptions of restaurant menu items. *Journal of Consumer Affairs*, 38, 121–145.

²⁶ Burton S, & Creyer E.H, Kees J, Huggins K. (2006) Attacking the obesity epidemic: The potential health benefits of providing nutrition information in restaurants. *American Journal Public Health*, 9, 1669-75.

²⁷ Rudd Center for Food Policy and Obesity (2008). Menu labeling: Opportunities for Public Policy. New Haven, CT: Yale University.

²⁸ Toronto Public Health. (2011). Toronto's Health Status Indicator Series: Overweight and Obesity, September 2011. Retrieved on February 7, 2013 from <http://www.toronto.ca/health/map/indicators/pdf/overweightandobesity.pdf>.

²⁹ Toronto Public Health. (2010). Toronto's Health Status 2010: Overweight and Obesity. Retrieved on February 7, 2013 from http://www.toronto.ca/health/hsi/pdf/pht_10_obesity.pdf
Source: Canadian Community Health Survey. Note: This estimate is based on low numbers (high sampling variability) and should be interpreted with caution. Also 13.64% of participants (age 12-17) refused to answer or didn't know and therefore are not included in the estimate.

³⁰ Public Health Agency of Canada & Canadian Institute for Health Information (2011). Obesity in Canada: A joint report from the Public Health Agency of Canada and the Canadian Institute for Health Information. Ottawa: Her Majesty the Queen in Right of Canada. Retrieved on April 2, 2013, from <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/oic-oac/assets/pdf/oic-oac-eng.pdf>.

³¹ Slater J., Green C., Sevenhuysen, G., Edginton, B., O'Neil, J., & Heasman M. (2009). The growing Canadian energy gap: More the can than the couch? *Public Health Nutrition*, 12, 2216-2224.

³² Jeffery, R. & Harnack, L. (2007). Evidence implicating eating as a primary driver for the obesity epidemic. *Diabetes*, 56, 2673–2676.

³³ Rosenheck R. (2008). Fast food consumption and increased caloric intake: A systematic review of a trajectory towards weight gain and obesity risk. *Obesity Research*, 9, 535– 47.

³⁴ Roberto, C. A., Schwartz, M. B. & Brownell, K.D. (2009). Rationale and evidence for menu-labeling legislation. *American Journal of Preventive Medicine*, 37(6), 546-51.

³⁵ Toronto Community Health Profiles Partnership. (2007). *Adult Health and Disease (2007)*, City of Toronto and Toronto Central LHIN. Retrieved on February 4, 2013, from http://www.torontohealthprofiles.ca/loaddata/AHD/cot_tc/1_ahd_cot_tc_2007.html.
Source: Institute for Clinical Evaluative Sciences (ICES). Denominator: Ontario Ministry of Health and

Long-Term Care Registered Persons' Database, population with at least 1 health claim in the previous three years. Numerator: derived from validated, disease registries maintained by the Institute for Clinical Evaluative Sciences (ICES). Community Health Centre (CHC) visits and non-OHIP claims are not available. Rate ratios for both sexes were created by dividing the local area rate by the City of Toronto aggregate rate. Rates for City of Toronto are not age-adjusted. For information about definitions, data quality & limitations, and selection and preparation of variables, please go to: <http://www.torontohealthprofiles.ca/aboutTheData.php>.

³⁶ Ipsos Reid, for Public Health Agency of Canada. (2011). Canadians' Perceptions of, and Support for, Potential Measures to Prevent and Reduce Childhood Obesity, Final Report. Retrieved on February 7, 2013, from <http://www.sportmatters.ca/files/Reports/Ipsos%20Obesity%202011.pdf>

³⁷ Harris/Decima Press Release, July 16, 2012. Canadians support a Bloomberg-inspired ban. Retrieved on February 7, 2013, from Harris/Decima Web site: <http://www.harrisdecima.ca/sites/default/files/releases/2012/07/18/hd-2012-07-18-en1460.pdf>

³⁸ Scourboutakos, M. & L'Abbé, M. (2013). Restaurant Menu-Labeling Survey Results. Prepared for Toronto Public Health.

³⁹ Arcand, J., Mendoza, J., Qi, Y., Henson, S. Lou, W. & L'Abbé, M. (2013). Results of a national survey examining Canadians' concern, actions, barriers, and support for dietary sodium reduction interventions. *Canadian Journal of Cardiology*, available online ahead of print.

⁴⁰ Bassett, M. T., Dumanovsky, T., Huang, C., Silver, L. D., Young, C., Nonas, C. et al. (2008). Purchasing behavior and calorie information at fast-food chains in New York City, 2007. *American Journal of Public Health*, 98(8), 1457-9.

⁴¹ New York City Department of Health and Mental Hygiene, Board of Health, Notice of Intention to Repeal and Reenact §81.50 of The New York City Health Code, Notice of Public Hearing, October 18, 2007.

⁴² Wootan, M. G., & Osborn, M. (2006). Availability of nutrition information from chain restaurants in the US. *American Journal of Preventive Medicine*, 30(2), 266–8.

⁴³ Centre for Science in the Public Interest. (2012). *Writing on the Wall: Time to put nutrition information on restaurant menus*. By Bill Jeffery & Natalee Cappello. Ottawa, ON: Centre for Science in the Public Interest.

⁴⁴ Centre for Science in the Public Interest. (2008). January 22, 2008 Press Release: Most “Volunteers” in Restaurant Industry’s Nutrition Information Program Stepped Back Two Paces. Retrieved on March 13, 2013, from <http://www.cspinet.org/canada/pdf/twopacesback.pdf>

⁴⁵ Morestin, F., Hogue, M-C., Jacques, M. & Benoit, F. (2011). Public Policies on

Nutrition Labelling: Effects and Implementation Issues – A Knowledge Synthesis.
Montreal: National Collaborating Centre for Healthy Public Policy.

⁴⁶ Driskell, J., Schake, M. and Detter, H. (2008). Using nutrition labeling as a potential tool for changing eating habits of university dining hall patrons. *Journal of the American Dietetic Association*, 108(12), 2071–2076.

⁴⁷ Hammond, D. (2012). Efficacy of menu labelling: Summary of Canadian research. Presentation at Centre for Science in the Public Interest Symposium, Writing on the Wall, September 12, 2012, Toronto. Retrieved on February 7, 2013 from http://cspinet.org/canada/pdf/Toronto_DavidHammond.pdf.

⁴⁸ Dumanovsky, T., Huang, C. Y., Nonas, C. A., Matte, T. D., Bassett, M. T. & Silver, L.D. (2011). Changes in energy content of lunchtime purchases from fast food restaurants after introduction of calorie labelling: Cross sectional customer surveys. *British Medical Journal*, 343, d4464.

⁴⁹ Pulos, E. & Leng, K. (2010). Evaluation of a voluntary menu-labeling program in full-service restaurants. *American Journal of Public Health*, 100(6), 1035-9.

⁵⁰ BMRB Social Research. (2009). An Evaluation of Provision of Calorie Information by Catering Outlets. Prepared for the U.K. Social Science Research Unit, Food Standards Agency. Retrieved February 7, 2013 from http://foodbase.org.uk/admintools/reportdocuments/471-1-839_evalcalinfocateringoutlets.pdf.

⁵¹ Fitch, R., Harnack, L., Neumark-Sztainer, D., Story, M., French, S., Oakes, J., et al. (2009). Providing calorie information on fast-food restaurant menu boards: Consumer views. *American Journal of Health Promotion*, 24(2), 129-132.

⁵² Elbel, B., Kersh, R., Brescoll, V. L., & Dixon, L. B. (2009). Calorie labeling and food choices: A first look at the effects on low-income people in New York City. *Health Affairs*, 28(6), 1110-21.

⁵³ Elbel, B., Gyamfi, J., & Kersh, R. (2011). Child and adolescent fast-food choice and the influence of calorie labeling: A natural experiment. *International Journal of Obesity* 35, 493–500.

⁵⁴ Vadiveloo, M.K., Dixon, L.B., Elbel, B. (2011). Consumer purchasing patterns in response to calorie labeling legislation in New York City. *International Journal of Behavioral Nutrition and Physical Activity*, 8, 51. Available online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3123618/>

⁵⁵ Ta, M. 2012. Menu labelling implementation and evaluation: Experiences from King County, Washington. Presentation at Ontario Society of Nutrition Professionals in Public

Health Nutrition Exchange 2012, May 10, 2012, Toronto, ON.

⁵⁶ Kuo, T., Jarosz, C. J., Simon, P. & Fielding, J. E. (2009). Menu labeling as a potential strategy for combating the obesity epidemic: A health impact assessment. *American Journal of Public Health, 99*(9), 1680-1686.

⁵⁷ Roberto, C. A., Larsen, P. D., Agnew, H., Baik, J. & Brownell, K. D. (2010). Evaluating the impact of menu labeling on food choices and intake. *American Journal of Public Health, 100*(2), 312-8.

⁵⁸ Centre for Science in the Public Interest. (2012c). Product Reformulation: A beneficial outcome of menu labeling. Retrieved on March 13, 2013, from http://cspinet.org/new/pdf/reformulation_fact_sheet.pdf

⁵⁹ Bruemmer, B., Krieger, J., Saelens, B. E. & Chan, N. (2012). Energy, saturated fat, and sodium were lower in entrées at chain restaurants at 18 months compared with six months following the implementation of mandatory menu labelling regulation in King County, Washington. *Journal of the Academy of Nutrition and Dietetics, 112*(8), 1169-76.

⁶⁰ Wu, Helen W. & Sturm, R. (2012). What's on the menu? A review of the energy and nutritional content of US chain restaurant menus. *Public Health Nutrition, 16*(1), 87-96.

⁶¹ von Tigerstrom, B. (2010a). Menu Labelling as an Innovative Solution for Obesity: Final Report. Prepared for Public Health Agency of Canada.

⁶² von Tigerstrom, B. (2010b). Mandatory nutrition disclosure for restaurants: Is menu labelling coming to Canada? *Windsor Review of Legal and Social Issues, 28*, 139-70.

⁶³ U.S. Department of Health and Human Services, Food and Drug Administration. (2011). Food Labeling: Nutrition Labeling of Standard Menu Items in Restaurants and Similar Retail Food Establishments Notice of Proposed Rulemaking - Preliminary Regulatory Impact Analysis. Retrieved on March 13, 2013, from <http://www.fda.gov/downloads/Food/LabelingNutrition/UCM249276.pdf>. Note: This cost is based on calculations for chains with 20 or more units in the US.

⁶⁴ Centre for Science in the Public Interest. (2012d). The cost of menu labeling. Retrieved on March 13, 2013, from <http://cspinet.org/new/pdf/menu-labeling-cost-sheet.pdf>

⁶⁵ Sacks, F., Bray, G., Carey, V., Smith, S., Ryan, D., Anton, S., McManus, K., Champagne, C., Bishop, L., Laranjo, N., Leboff, M., Rood, J., de Jonge, L., Greenway, F., Loria, C., Obarzanek, E., & Williamson, D. (2009). Comparison of weight-loss diets with different compositions of fat, protein, and carbohydrates. *New England Journal of Medicine, 360*(9), 859-73.

⁶⁶ Dansinger, M., Gleason, J., Griffith, J., Selker, H., & Schaefer, E. (2005). Reduction: A randomized trial and zone diets for weight loss and heart disease risk. *Journal of the American Medical Association*, 293(1), 43-53.

⁶⁷ Institute of Medicine. (2006). *Dietary Reference Intakes: The Essential Guide to Nutrient Requirements*. Edited by J.J. Otten, J.P. Hellwig, & L.D. Meyers. Washington, DC: The National Academies Press.

⁶⁸ Mah, C., Vanderlinden, L., Mamatis, D., Ansara, D., Levy, J., Swimmer, L., (in press). Ready for Policy? Stakeholder Attitudes Toward Menu Labelling in Toronto, Canada. *Canadian Journal of Public Health*.