

# **BACKGROUND PAPER**

## **FOOD SECURITY: IMPLICATIONS FOR THE EARLY YEARS**

### **EXECUTIVE SUMMARY**

#### **INTRODUCTION**

The early years are a time of enormous growth and development. In the first six years of life children develop the basic physical, cognitive, emotional, social, and communication skills and abilities that they will use in life (Shore, 1997). Children's growth and development during the early years, including the prenatal period, is influenced by a wide range of factors including adequate nutritious food, safe living spaces, nurturing and responsive caregiving, age appropriate stimulation, and opportunities for play. The effects of early experiences on children's health, including their development, can last a lifetime (McCain & Mustard, 1999).

Food security in the early years was recently identified as a key issue for action by Toronto Public Health (TPH). The background paper provides an analysis of food security issues relevant to pregnant women and households with children six years of age and younger to inform the development of a TPH action plan to promote food security for Toronto's early years populations.

#### **PURPOSE**

The purposes of this paper are:

1. To provide background information on the concept of food security relevant to supporting TPH's food security activities centered on the early years.
2. To present information obtained from a scan of selected approaches to promoting food security for the early years at the local, provincial and national levels.
3. To support the development of a TPH action plan for promoting food security among early years populations.

#### **SCOPE**

This background paper will explore a wide range of food security issues relevant to the early years, including:

- Definitions of food security;
- Measurement of household food insecurity, including prevalence data related to young children in Toronto;
- Factors associated with food insecurity and the health implications of household food insecurity for children and their families; and,
- Approaches to addressing food insecurity at the national, provincial and local levels.

Food security issues relevant to families with young children cannot be separated from broader issues of community, national or global food security. Therefore, food insecurity is situated within the context of broader economic, food system and food policy influences.

## METHODOLOGY

A variety of resources was used in gathering materials for this paper. The paper took the form of an academic literature review and included database searches as well as extensive Internet searching. Discussions with key informants within TPH Planning and Policy and Program areas were also an essential part of the information gathering.

## DEFINITIONS OF FOOD SECURITY

The term “food security” originated in international development literature during the 1960s and 1970s. Some individuals and groups have suggested alternatives to the term “food security” in an effort to avoid the perception of “food safety” or to shed the connotation of “food insecurity” being equated with only hunger and poverty. For the purposes of this paper, “food security” will be used because it is still the most commonly used term among a wide range of advocates working to meet the food needs of individuals, households and communities.

The concept of “food security” has evolved and expanded over time to integrate a wide range of food-related issues and to more completely reflect the complexity of the role of food in human society including its nutritional, symbolic, cultural, social and political roles. Most definitions of food security, particularly the more recent and comprehensive ones, answer five specific questions about the distribution, production and consumption of food in human society. The questions, and common answers to these questions, are as follows:

- Who should get the food? → *Everyone/ all people* (UNIVERSALITY)
- When? → *At all times/ sustained access* (STABILITY)
- How? → *Through normal food channels/ not from emergency food assistance programs* (DIGNITY)
- How much food? → *Enough/ enough for a healthy active life* (QUANTITY)
- What kind of food? → *Safe and nutritious* (QUALITY)
- *Culturally appropriate* (QUALITY)
- *Produced in environmentally sustainable ways that promote strong communities* (QUALITY)

The differences in perceptions of the importance of each of the five food security components (universality, stability, dignity, quantity and quality) can vary based on the geographic focus, conceptual starting point or programming priority. Differences among concepts can also stem from differences in level of analysis. Food security can be discussed at international, regional, national, community, household or individual levels.

The household level became an important focus for food security research in the early 1990s. Radimer et al. (1992) identified that food insecurity can manifest itself at the household level in four dimensions: *quantitative* (not enough food), *qualitative* (reliance on inexpensive non-nutritious food), *psychological* (anxiety about food supply or stress associated with trying to meet daily food needs), and *social* (having to acquire food through socially unacceptable means such as charitable assistance, buying food on credit, and in some cases, stealing). Food insecurity typically unfolds in the home as a sequence of events or decisions. Anxiety about household food supply generally occurs first, followed by compromises in the quality and then quantity of parents’ food intakes. Early research noted that children's eating patterns were rarely affected

unless household resources became severely affected. However, more recent research, outlined later in this summary, is beginning to reveal evidence of poor child health outcomes associated with household food insecurity.

The most recent evolution in the conceptualization of food security has been a shift towards a community level focus. Although household and community food security are closely linked, the focus of household food security is physical and economic access to food (Power, 2005). Community food security shares these goals but also acknowledges the importance of economic, environmental and social aspects of the food system. As a result, community food security work can include promoting adequate incomes for consumers and producers, local and diverse food production, environmental sustainability, widespread access to healthy food and food-based community economic development and social cohesion (Ontario Public Health Association, 2002).

The City of Toronto's vision of food security was proclaimed in the 2001 Toronto Food Charter. The Charter highlights the City's commitment to food security and "to champion the right of all residents to adequate amounts of safe, nutritious, culturally-acceptable food without the need to resort to emergency food providers". The Charter and related initiatives emphasize the importance of advocating for income, employment, housing and transportation policies that support food security. The City also recognizes that a viable and sustainable food system, serving the needs of both consumers and producers, contributes to a food secure city.

Absent from all of the definitions of food security reviewed for this report is an explicit mention of children. This omission is not surprising. Referencing children or any other specific population as part of a definition of food security would conflict with the notion of universality, or equality of food access, one of the original components of the concept. However, all of the dimensions of the concept are equally relevant to an analysis focused on the early years.

#### **FOOD SECURITY: THE ROLE OF ECONOMICS, FOOD SYSTEMS AND FOOD POLICY**

An analysis of selected systemic influences relevant to food security and early years populations is important for the development of a comprehensive action plan to promote food security for early years populations. In spite of the overall improvement in health and longevity that most of the developed world's population has achieved over the last century, many signs point to a widening of the gap between rich and poor, a food system that does not have optimal public health or environmental sustainability as its primary goals, and governments that have been unable or unwilling to sufficiently address these imbalances.

Chronic hunger and less severe manifestations of household food insecurity in Toronto and elsewhere exist against a backdrop of growing inequality in the distribution of wealth. Beginning in the 1990s the gains associated with the economic expansion of that decade went mainly to higher income families in Canada while the earnings of lower income families stagnated and government social transfers fell. Between 1980 and 2000, Toronto saw significant increases in the number of lower-income households and higher-income households, and only a small increase in middle income households (City of Toronto, Urban Development Services, 2004). The percentage of children aged birth to five years living in poverty in Toronto in 2000 was 29%, representing 51,000 children (Statistics Canada. Census 2001, Custom Tabulation).

Although child poverty rates are lower than they have been, the low-income gap measure, often referred to as the “depth” of poverty, has increased. In addition, an increasing proportion of Canadian workers are experiencing a combination of low pay, lack of benefits, insecure working conditions and few opportunities to improve their situation (Canadian Policy Research Network, 2005).

Aspects of the modern industrialized food system, upon which most Torontonians rely, are also a concern. The current model of food production and promotion does not have optimal human health or environmental sustainability as its guiding principles. The food system is characterized by increasing concentration in ownership and production, dependence on cheap fossil fuel inputs, and the ubiquitous production and marketing of foods that are high in calories, fat, salt and/or relatively low in micronutrients. The social responsibilities of business today are generally limited to adhering to regulations related to food safety and product promotion. Historically, those obligations arose out of public demand for regulation. Health and environmental concerns can be seen as the contemporary equivalent (Toronto Food Policy Council, 1995).

Under the current system, it is left to regulators to protect public health and encourage sustainable methods of production. Unfortunately, the deficits of the industrialized food system have not been fully remedied by Canadian governments because policies affecting food security are multi-jurisdictional, fragmented and for the most part uncoordinated (Toronto Food Policy Council, 1995). The issues of product labelling, food marketing and pesticide residues are of particular concern for early years populations. Current regulations governing food labelling in Canada provide consumers with limited information about the contents of food and of the social and environmental externalities (consequences not accounted for in the price of goods, such as air pollution resulting from long distance food distribution) that their spending is supporting. The food industry asserts that in a free market economy the consumer is free to make independent decisions about which products to choose. In Canada, there are few laws in place to require the full disclosure of information on the contents and production of food products.

The issue of food and beverage marketing has received greater attention recently, in part because children of today are exposed to marketing to a much greater extent, and through many more diverse venues, compared to any previous generation (McGinnis et al., 2006). Furthermore, food marketing is dominated by foods that do not promote optimal health (Canadian Paediatric Society, 2003). A number of studies have documented that up until about the age of seven or eight, children tend to interpret advertising as fun, entertaining, and unbiased information (Butter et al., 1981; John, 1999; Strasburger, 2001). Recent reports from the U.S. National Academies of Science (McGinnis et al., 2006), the World Health Organization (2003) and the U.K. Food Standards Agency (Hastings et al., 2003) have all concluded that food marketing influences children’s food choices. The WHO report concluded that although the current evidence that the heavy marketing of fast food, high calorie, micronutrient-poor food and beverages to children causes obesity is equivocal, sufficient indirect evidence exists to place this practice in the “probable” category for increasing risk of obesity (World Health Organization, 2003). The National Academies report, the most comprehensive review of its kind in 25 years, found much stronger evidence of the influence of advertising on younger children (aged 2-11) compared to older children (aged 12-18). It concluded that television advertising influences young children, in particular, to prefer, request and consume high-calorie and low-nutrient foods and beverages.

Furthermore, it stated that food and beverage marketing practices geared to children and youth are out of balance with healthful diets and contribute to an environment that puts their health at risk (McGinnis et al., 2006).

In Canada, children's advertising is primarily self-regulated through the industry-based organization Advertising Standards Canada. Industry responses to calls for restrictions on advertising to children have generally focused on personal responsibility and media literacy, rather than improving the nutritional content of foods advertised, or an end to direct advertising to young children who have been shown to lack the cognitive abilities to objectively evaluate these messages. Given the considerable research on the effect of advertising on the food habits of young children, the focus of the debate should now be the implementation of strategies to bring food and beverage marketing messages more in line with public health goals.

Pesticides and other chemical toxins used in food production and distribution have been shown to be more dangerous for young children because their livers and kidneys are not as well developed and are less able to metabolize these substances compared to adults. Pesticide residues can be found on or in many foods consumed by children, including fruits and vegetables (Canadian Food Inspection Agency, 1998). The levels of pesticide residue found in foods such as fruits and vegetables rarely exceed Health Canada's thresholds, known as Maximum Residue Levels (MRLs). However the safety of children's consumption of these chemicals is uncertain because the MRLs are calculated based on the size of an average adult male, not children. There is a lack of research to date on the effects of cumulative exposure or the relative contribution of pesticide residues in food to children's overall exposure to these chemicals. Furthermore, government regulation does not provide sufficient levels of precautionary or mandatory child-protective measures.

#### **MEASUREMENT OF FOOD INSECURITY AT THE HOUSEHOLD LEVEL**

Neither Canada nor Toronto possesses a consistent direct measurement system for food insecurity as it can be manifested at the household level. The absence of consistent measurement makes it very difficult to gauge trends in the prevalence of food insecurity and has contributed greatly to the numerous gaps in knowledge about the issue. Information on the prevalence and dimensions of household food insecurity in Canada has come from a range of surveys and research studies over the last ten years that have differed significantly in methodology and focus.

The most widely used measurement tool is the series of 18 questions that make up the United States Department of Agriculture's Food Security Survey Module (FSSM) (Bickel et al., 2000). The FSSM collects information from one member of a household on the quantity and quality of adult and child diets and about the psychological dimension of food insecurity (worrying that the food will run out). It does not measure the social dimension of household food insecurity. An adapted form of the FSSM was used in the 2003 Toronto Perinatal and Child Health Survey (PCHS), the only population level survey to measure the prevalence of these types of dietary compromises exclusively among households with children aged 0-6 years in this city (Toronto Public Health, 2004).

One in six parents of young children in Toronto who responded to the PCHS reported at least one indicator of children's food insecurity related to income inadequacy. The most commonly

reported indicator was relying on only a few kinds of low-cost food to feed one's child(ren) (15.6%), followed by not being able to provide child(ren) a balanced meal (6.8%) and child(ren) not eating enough (3.1%). These indicators were reported at much higher rates among low-income, lone parent and/or recent immigrant households. For example, almost one in five households (19.3%) living near or below the low income cutoff (LICO), 14.1% of lone parent households and 12.9% of recent immigrant households (in Canada less than 10 years) reported not being able to provide their young child(ren) a balanced meal. A total of 5.8% of households were classified as having "food insecure children" (defined as those who reported two to four indicators of children's food insecurity, out of a possible eight). A very small percentage of households reported child hunger (0.5%).

Sample biases suggest that the PCHS results may be underestimates, most notably because higher income households were overrepresented. No other health unit in Ontario has included these same questions in a population level survey focused on the early years. However, the 2002 Northern Ontario Perinatal and Child Health Survey (NOPCHS), using the six-item short form of the FSSM, found similar patterns of vulnerability as the Toronto survey with low-income, lone parent and recent immigrant households reporting higher rates of food insecurity (Northern Ontario Perinatal and Child Health Survey Consortium, 2003).

More data is available on indicators of household food insecurity at the general population level. Based on a number of survey results it can be concluded that the rate of food insecurity for the general population in Toronto, as well as nationally in Canada and the U.S. is approximately 10-14%. A number of groups have consistently reported higher rates of food insecurity than the general population. Low-income households and households headed by a lone parent mother virtually always report the highest and second highest rates of food insecurity, respectively. Other vulnerable groups include renters (or those making housing payments of any kind), households with a higher number of children, immigrant populations and those of Aboriginal status. Households with children also tend to report slightly higher rates of food insecurity compared to childless households.

### **THE HEALTH IMPLICATIONS OF LIVING IN A FOOD INSECURE HOUSEHOLD FOR EARLY YEARS POPULATIONS**

Many authors have documented the extent to which parents will deprive themselves of food to protect their children's diets, with younger children being more protected than older children. Research into the health implications of food insecurity for early years populations in developed countries is limited. However, recently, researchers have begun to explore the issue of food insecurity in the early years, acknowledging that young children possess a unique vulnerability in that deficits early on can impede optimal development and have lifelong consequences.

Preliminary research, primarily from the U.S., has found associations between households classified as food insecure and the health of young children in those homes. Specific associations include poor child health status (as reported by parent/caregiver), iron deficiency, iron deficiency anemia, more frequent hospitalizations, stomach aches and headaches and lower physical function (including problems with walking, running, doing chores and low energy levels) (Alaimo et al., 2001; Casey et al., 2005; Cook et al., 2004; Skalicky et al., 2001). Recent analyses of a study of nearly 21,000 U.S. kindergarten aged children found a negative association between food insecurity and child social interaction skills and emotional state, as

rated by parents and teachers, even after controlling for many variables, including income (Stormer & Harrison, 2003). A longitudinal analysis of the same data set found that, independent of income, food insecurity among kindergarten children predicted impaired academic performance in reading and math for boys and girls and a decline in social skills among boys, when followed to grade three. This analysis used a much lower than normal threshold for classifying households as food insecure (Jyoti et al., 2005). Hunger or food insufficiency among older children (6-12 year olds) has also been shown to predict anxiety, aggression, psychosocial dysfunction and difficulty getting along with other children. These outcomes persisted after controlling for confounding factors, including low income (Alaimo et al., 2001; Kleinman et al., 1998; Murphy et al., 1998).

Research on adults has shown that parents in food insecure households can have increased vulnerability to poor physical health, feelings of anxiety, loss of control, family dysfunction and psychological impairment, even after controlling for low income (McIntyre et al., 2000; Tarasuk et al., 1998; Vozoris & Tarasuk, 2003). It has also been shown that feelings of shame or embarrassment about not being able to feed oneself or one's child(ren) can promote social exclusion, a feeling of isolation from one's neighbours and the community at large (Martin et al., 2004).

The Toronto PCHS found associations between households with food insecure children (5.8% of respondents) and poor child health status, as reported by the parent, in addition to parental depression and exclusive breastfeeding for less than six months. The analysis did not control for household income.

The importance of good nutrition during pregnancy is well documented but very little research was found that explored the link between households classified as food insecure and the health of pregnant women. The most recent, and the first to measure food insecurity during pregnancy with a substantial sample size, found that food insecure pregnant women were more likely to suffer depression, report stress, anxiety and fatalistic perceptions (believing events happen by chance, outside one's control). Conversely, self-esteem and a sense of control over one's life were inversely related to food insecurity. The study, conducted among women in North Carolina, also found associations between food insecurity and low-income, lower education, single parenthood and African American ethnicity (Laraia et al., 2006).

In summary, the impact of household food insecurity is not limited to the effects of dietary compromise. As parents compromise their diet to protect children, their own health, along with a positive sense of self and outlook on life, can suffer, leading to negative physical, psychological and/or social outcomes. This in turn can increasingly tax the ability of parents to cope with raising a young child. Household food insecurity may serve as a proxy for a combination of poverty and household disorganization or stress that together create an environment in which young children's health, including their development, can be compromised.

## **A SCAN OF APPROACHES TO PROMOTE FOOD SECURITY: FOCUS ON THE EARLY YEARS**

A scan of selected initiatives reveals that the Canadian approach has been characterized by a number of local and community run charitable assistance initiatives and an absence of provincial or federal coordinated plans to achieve food security.

In addition, numerous changes to social programs at the federal level over the last fifteen years have dramatically reduced the supports available to lower income Canadians, making many of them less able to meet their basic daily food needs. These changes included the restructuring of unemployment insurance, significant cuts in federal financial transfers for social services and the clawback of the National Child Benefit Supplement from families receiving social assistance in some provinces, including Ontario. These changes are not conducive to achieving zero hunger and right to food commitments set out in a number of international conventions to which Canada's Federal Government is a signatory, nor do they support Canada's own *Action Plan for Food Security* (Agriculture and Agri-Food Canada, 1998).

In the recent past, provincial governments in Canada have not been major innovators in administering and funding programs and policies that promote increased physical and economic access to nutritious food. Recently, the Province of Ontario changed the eligibility requirements for the Special Diet Allowance available through Ontario Works and the Ontario Disability Support Program. The Allowance is now only payable if an approved health professional (physician, registered nurse or registered dietitian) confirms that an individual requires a special diet because of a diagnosed medical condition.

Public health authorities have been engaged in a range of food-related initiatives for decades. The primary focus has been on food safety standards, education, inspection procedures, and public education on the importance of nutrition. The public health associations of Ontario and British Columbia have been the most vocal on the topic of community food security.

Although the Ontario Ministry of Health's Mandatory Health Programs and Services Guidelines (1997) do not use the term food security, Boards of Health are required to "work with community agencies and groups to promote access to sufficient, safe, nutritious and personally acceptable food for people of all ages" (Ontario Ministry of Health, 1998. pg. 24).

The City of Toronto has provided leadership in promoting food security, particularly through the work of the Toronto Food Policy Council and the Food and Hunger Action Committee. The Toronto Food Charter (2001) is also a good example of an ambitious public vision of a food secure community. In addition, TPH funds, coordinates or provides in-kind support for a number of programs with a food security component targeting pregnant women or households with young children. The initiatives generally offer education in adult and child health and nutrition, as well as training in food skills, with some income support in the form of food certificates and, more rarely, direct food assistance. The amount of money programs can offer in food certificates is relatively small (\$5-10 per visit to the program or less frequently). The depth of research undertaken in this report is not enough to determine the effectiveness of these forms of direct assistance to program participants.

A scan of food security initiatives would not be complete without mention of food banks, the most prominent community-based symbol of food security efforts in Canada. A total of 66,500 children in Toronto live in households that rely on food banks and other food relief programs every month (Daily Bread Food Bank, 2005). Food banks have a precarious existence, being dependent on food donations from the public and the food industry, and the work of volunteers to stay in business. Much of the debate over the inappropriateness of food banks as a response to hunger has focused on their connection to government social assistance cutbacks and the social stigma associated with food bank use. Food banks were initially established as only a temporary measure during the 1980s. Since then emergency charitable food assistance programs have become legitimized in Canada as the primary response to hunger. It has been argued that the entrenchment of food banks in Canada acts as a public stopgap measure, making it easier for governments to avoid implementing effective food security measures.

## **CONCLUSIONS**

The early years are a time of enormous growth and development. The effects of early experiences on children's health, including their development can last a lifetime (McCain & Mustard, 1999). The issue of food security has been of interest to the City of Toronto and Toronto Public Health for some time. This report applied the broad lens of "food security" to Toronto's youngest residents.

The achievement of food security for early years populations requires supportive social, cultural and economic environments. Numerous conventions and charters, adopted by the City of Toronto or the Federal Government, have expressed visions of a society that supports and promotes optimal early childhood development and/or food security. However, this report has shown that none of the core components of food security, namely, the goals of universality, stability, dignity, quantity, and quality, have been fully achieved in Toronto, not even for early years populations. In terms of satisfying the nutritional needs of children, the 2003 PCHS found that one in six Toronto households with children six years of age and younger reported at least one indicator of children's food insecurity. Low-income, lone parent and recent immigrant households also reported much higher rates of children's dietary compromises. Unfortunately, the absence of consistent long-term direct measurement of household food insecurity in Toronto limits the understanding of experiences of food insecurity, including aspects that may be unique to this city.

Recent research has shown that experiences of household food insecurity should not be overlooked as benign influences on child health. Although research is limited at this point, the literature provides preliminary evidence of associations between households classified as food insecure and health outcomes for young children such as poor child health status, as reported by a parent, iron deficiency, iron deficiency anemia, more frequent hospitalizations and headaches, impaired social interaction skills, as well as parental/familial issues such as increased vulnerability to poor physical health, depression, feelings of anxiety, family dysfunction, social exclusion, and decreased involvement in social activities. These outcomes persist even after controlling for income.

Although it is true that young children tend to be protected more than anyone else from dietary compromises in food insecure households, the co-existence of food insecurity with these issues describes a home environment where the ability of parents/caregivers to offer the critical

nurturing, stimulation, as well as nutrition, required for optimal child growth and development can be made much more difficult. The social inequities that can be borne of poverty and household food insecurity, resulting from reduced learning, increased illnesses, social exclusion and feelings of powerlessness surely limits the optimal functioning of communities and society at large.

Hunger and less severe manifestations of household food insecurity exist against a backdrop of growing inequality in the distribution of wealth. In a city such as Toronto, the existence of any compromises in diet quantity or quality rooted in material deprivation is a violation of numerous charters and conventions proclaiming the right to food, to which the Federal Government is a signatory. The City has also fallen short of the commitments made in the Toronto Food Charter.

Over and above the existence of hunger and milder forms of dietary compromises, this report has highlighted a number of food system and food policy concerns that must be addressed to truly achieve the vision of a food secure city espoused by the Toronto Food Charter. Governments have thus far allowed the private sector, with its relatively unlimited resources, to promote food advertising to children that is dominated by messages that contradict its own public health messages. Similarly, governments have not made the well-being of young children a priority in the regulation of food safety, as is the case with pesticide residues in food, nor do they require industry to disclose sufficient information on the production and content of foods to consumers. Even broader issues of the viability and sustainability of the current food system, given its heavy dependence on fossil fuel inputs, must be a concern to TPH in advocating for a food system that will satisfy all of the future needs of today's young children. Comprehensive public policy changes are needed that focus on coordinated strategies to reduce socioeconomic inequalities by achieving income adequacy, improving the quality of foods available to children, and reforming the food system into one that more effectively supports environmental sustainability and optimal public health.

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