community food centres
CANADA good food is just the beginning

BACKGROUNDER: BEST PRACTICES IN HEALTHY EATING PROGRAMS FOR CHILDREN & YOUTH

Children and youth in Canada are increasingly are at risk of developing diet-related illnesses[1,2], influenced by increased availability of processed foods[3], increased exposure to unhealthy food advertising[4], and decreased opportunities to develop and practice food skills[5]. In response to these compounding issues, many community organizations, health units, and schools have developed programs focused on improving eating behaviours among children and youth. Child and youth healthy eating interventions have been found to increase fruit and vegetable intake, improve fat intake and BMI in children and youth,[6] and even improve dietary intake of parents[7]. Basing interventions on existing research has been identified as a key to success.[8] This document provides the latest research on best practices for healthy eating programs. Many effective program characteristics have been identified and can inform the development of current and future child and youth programs to increase their impact.

Children and youth living in low-income households are more likely to experience diet-related health problems as a result of systemic health inequities, and are also less likely to participate in health programs.[9,10] Research also suggests that children from lower-income households may have lower levels of nutrition knowledge and lower intake of healthy foods.[11] As a result, it is recommended that healthy eating programs prioritize participation by children and youth from low-income communities. Interventions for children from low-income households have been associated with positive changes, including increased food and nutrition knowledge[12] and increased consumption of healthy foods[13].

Summary of best practices

The following are key findings from the literature, all outlined in more detail later on in this document.

Infants and toddlers:

- Encourage and support mothers to breastfeed for the first six months.
- Encourage parents to introduce solid foods at six months, including pureed, mashed, or whole fruits and vegetables, and discourage fruit juice intake.
- Teach parents to identify signs that their child is ready for the introduction of new foods and to respond to their child's hunger and satiety cues rather than feed on schedule.
- Teach parents to plan healthy snacks and to steer clear of those that are high in sugar.
- Encourage parents to introduce as many new foods as possible early on.

Children:

- Develop longer programs for the most effective behaviour change (e.g. at least 50 contact hours to influence behaviour) and include a follow-up session if possible.
- Teach children age-appropriate food skills as early as possible and focus on experiential learning.
- Make sure to encourage children and praise them for steps forward.
- Provide children with healthy choices and encourage them to make their own decisions.
- Develop programs that include both children and their parents to encourage positive changes to the home food environment. Provide parents with a limited number of simple messages and focus on the repetition of healthy eating behaviours.

Teenagers and young adults:

- Employ the "Youth Engagement Principles" in program development.
- Allow participants to set measurable goals and self-assess their progress.
- Create opportunities for, and encourage, peer leadership.
- Encourage parents to increase the availability of fruits and vegetables in the home.
- Teach food skills and encourage food preparation in programs and at home.

Early interventions

The first two years provide perhaps the best opportunity to shape a child's eating behaviours for life.[14] According to a meta-analysis of 143 studies looking at early interventions, developing positive dietary behaviour as early as possible and parental influence are both important in the establishment of healthy eating patterns.[15]

Interventions for parents and their infants should encourage breastfeeding for at least six months. Health Canada and the World Health Organization both emphasize the importance of breastfeeding to the healthy growth and development of infants and toddlers, and recommend exclusive breastfeeding

for the first six months of a child's life.[16,17] Since not every mother or caregiver can or chooses to breastfeed, it is important to create a supportive and non-judgemental environment where everyone is valued and supported regardless of how they feed their baby.[18]

Interventions should also encourage parents to introduce their infants to complementary foods (i.e. foods and liquids other than breast milk) at around six months. Introducing complimentary foods too early can lead to the development of allergies, digestive problems, and obesity during infancy and into childhood.[19] Parents should be taught to identify signs that their child is ready to try complementary foods, for example, better head control, and the ability to sit up and lean forward.[20] The American Academy of Pediatrics recommends that infants under one year do not consume fruit juice, and can instead be encouraged to eat pureed, mashed, or whole fruit.[21] After one year of age, children can be offered up to four ounces of fruit juice per day as part of a meal or snack.[22] Fruit juice has no essential role in healthy, balanced diets of children.[23]

While young children are innately able to regulate their food intake, this can be countered by their food environment.[24] Young children are prone to overeat when parents do not pay attention to their hunger and satiety cues, so interventions should focus on helping parents identify when children are hungry and full and to practice "responsive feeding," rather than feeding according to a set schedule. In addition, parents should be encouraged to soothe their children without the use of food. Using food as a reward or punishment can lead to unhealthy eating habits and should be avoided.[25]

Various studies state that young children who eat more fruits and vegetables are less likely to overeat.[26] Program facilitators can encourage parents to plan out children's snacks and ensure they consist of fruits, vegetables and whole grains, rather than sugar- and salt-laden foods and drinks.[27] Parents should also be encouraged to introduce a broad spectrum of new foods early on in their child's diet, because children who are exposed to a wide variety of foods at a young age are more likely to have healthier diets later in life.[28,29] Programs should focus on techniques parents can use to introduce new foods as many children will not readily accept them. For example, children are more likely to accept new foods if they are mixed with familiar ones.[30] Also, when children have repeated opportunities to taste a new food, they are more apt to like it and eat it.[31] It can take five to ten tastes before a child begins to like a new food.[32]

Improving children's food skills

Research suggests that children should be taught food skills early on, and people who learn to cook as children or adolescents report more cooking skills, more positive attitudes towards cooking, and better diets than adult learners.[33] One meta-analysis contends that longer food programs in particular can provide children with more skills, literacy, and an increase in their wellness.[34] To impact knowledge, interventions should involve 15 contact hours, and to impact attitudes and behaviours, they should involve 50 hours.[35]

Hands-on cooking classes build children's skills and self-confidence and are an effective way to encourage participation in cooking at home.[36] A review of studies based on participants aged five to 12 showed that cooking classes can increase children's acceptance of new foods, particularly if they have grown or cooked the foods themselves. [37] Cooking classes can also change children's outlooks on cooking, greatly improve their confidence and abilities in the kitchen, and are associated with increased consumption and fondness of fruits and vegetables in children.[38]

Garden programs for kids have been associated with improved knowledge, attitudes, and self-efficacy around eating and preparing fruits and vegetables.[39] It can be especially effective to pair gardening activities with cooking and nutrition education. For example, one garden intervention—which combined whole-family community garden participation with cooking, nutrition lessons, and social activities—found substantial success in weight loss of overweight children, as well as increased availability and consumption of fruits and vegetables among children and families.[40] Community gardens can also appeal to new immigrant communities in some cases as growing food can help to sustain cultural traditions in a new setting.[41]

In addition to providing sufficient space and time for experiential learning and providing children with skills and ownership over their food, programs for children should also involve a lot of support and encouragement.[42] Randomized controlled trial studies have also shown that game-based interventions (e.g. involving board games or computer games) can effectively increase healthy food knowledge and preferences in children.[43,44]

Family-focused interventions and the role of parents

Home food environment and parental behaviour both have a major influence on a child's attitudes and behaviours around food. While there is some disagreement in the literature, numerous authors recommend parental involvement in child-focused healthy eating interventions[45,46] and some meta-analyses have found that the majority of successful interventions involve some level of parental engagement[47]. When parents have healthy eating habits, their children are more likely to follow suit.[48] Parents who eat meals with their children have a positive influence on child nutrition and weight[49], and children are more likely to eat more fruits and vegetables and fewer unhealthy foods during family meals.[50] Parents can promote a healthy home food environment by scheduling regular meals, offering healthy foods in appropriate portions, and modeling healthy eating behaviours themselves.[51]

Parents can also support children by giving them some control over food choices and portion sizes, and allowing them to help with food preparation and cooking at home.[52] Children should also receive positive feedback and praise for healthy food choices from their parents, which has been linked with the consumption of healthy foods.[53] Restriction, on the other hand, is correlated with weight gain in children,[54] and authority and control in parents can lead to unhealthy eating behaviours and

overeating[55]. In addition, once children are out of infancy, being consistent about meal times and healthy eating patterns is important in ensuring children develop the ability to self-regulate their food intake.[56] Children who are able to self-regulate are better equipped to cope with environments where food is abundant.[57]

One study recommends focusing on just a few suggested changes that parents make at home to avoid confusion, and offers the following three as priorities: eating together as a family; encouraging consumption of fruits, vegetables, and other healthy foods and discouraging the consumption of unhealthy ones; and avoiding the consumption of meals in front of the television.[58] Another strategy is to stock up on healthy foods and limit access to less healthy snacks. Unsurprisingly, research shows when more fruits and vegetables are available, children eat more fruits and vegetables, whereas when more juice and granola bars are available children eat fewer fruits and vegetables.[59]

It's important to design healthy eating interventions to go beyond knowledge development, and encourage the development of healthier habits. Habit-based approaches focus on repetition of behaviour in a particular context, which then becomes second-nature and automatic. One such approach was tested in a randomized-controlled study, which found that training parents to adopt three healthy feeding habits effectively changed parental feeding behaviours and positively affect their children's diets.[60] This study suggests that interventions should focus on the repetition of healthy behaviours. To increase habit formation, healthy eating programs could thus be developed around the repetition of a few simple yet key messages rather than attempting to fit in as many lessons as possible. An example of this is the "Live 5-2-1-0" health message: five or more fruits and vegetables, two hours or less of screen time, one hour or more of active play, and zero sugar-sweetened drinks per day.[61]

Parental involvement in interventions can also be successful in that it increases the enthusiasm of both the children and their parents. For example, an Australian program targeting obese fathers and their children was successful in helping the fathers lose weight and in improving health behaviours of their children. [62] The authors posit that interventions targeting parents and their children may be more effective because of the extra incentive parents feel to become better role models for their children and to create healthier home environments. [63] The mutual reinforcement of positive behaviour and the quality time spent together were central tenets of the program.[64] The success of this program points to the importance of programs such as The Table Community Food Centre's Dads and Kids in the Kitchen, which brings fathers and their kids together to prepare and enjoy healthy meals.

Programs aiming to significantly alter children's eating behaviour should consider involving parents in a meaningful way. Teaching parents simple messages about how to create a healthier home food environment and how to encourage healthy eating habits in their children can offer children the best chance of living healthily.

Interventions for older children and youth

An Ontario study on food literacy interventions for teenagers and young adults recommends practical, hands-on approaches[65] and suggests the use of the Ontario Ministry of Health and Long-Term Care's "Youth Engagement Principles." These principles include: being inclusive of diverse populations; encouraging youth to be accountable; facilitating practical skill development; employing a strengths-based approach; flexibility and responsiveness to youth input; providing safe and supportive spaces; transparency about objectives; and involvement of partnerships and collaborative approaches.[66]

Programs geared toward teenagers should also include some aspect of self-assessment and can be based on measurable goals the participants identify themselves, specifically around barriers to changing behaviour, increasing access to and acceptance of healthy foods, and developing skills.[67]

Peer leadership has been identified as a valuable component of youth interventions.[68] A review of the literate found that peer-led nutrition education programs delivered to high school and elementary school-aged students have the potential to improve knowledge, self-efficacy and attitudes towards healthy eating, at least in the short-term.[69] Studies suggest that teens who take on the role of peer-leaders experience greater outcomes than non-peer leaders, and that sometimes peer leaders do not effectively influence attitudes and behaviour of non-leaders.[70,71] This highlights the importance training and supporting young leaders to deliver high-quality programming and interventions to their target audience, whether the audience it be their peers, or younger children.

A study of Australian teens found that the availability of unhealthy snacks increased snacking behaviour and that interventions should focus on decreasing the availability of unhealthy snacks in the home and increasing the availability of fruit.[72] Teens should therefore be taught to identify healthy foods and to ask their parents to stock up on their favourites.

Food skills and food literacy continue to be important into adulthood: one study of young adults found a strong correlation between home food preparation and the regularity of meals and healthy diets.[73] Conversely, watching television while eating and purchasing meals outside of the home were associated with unhealthy dietary patterns.[74] As some young adults do not engage in food preparation on a regular basis,[75] programs aimed at older youth should focus on encouraging the development of food shopping and preparation skills and on easy and delicious recipes.

Overall, programs for teens and young adults should focus on giving participants ownership over the intervention. Youth should receive leadership from their peers and be taught to hone their food skills in order to become healthier adults.

Community-based interventions

Many reviews suggest that school-based interventions are effective[76,77] as children spend much of their time at school and these programs influence them in their learning environment.[78] Since a large proportion of healthy eating interventions are school-based, there is less research on community-based programs and a need for more research in this area.[79,80] Some studies also emphasize the need for interventions that go beyond the school environment and focus on community impact.[81] A Government of Canada report identifies community-based programs as key to success in increasing children's food skills, and the Public Health Association of Canada recognizes non-governmental organizations and communities as vital actors in creating healthy environments.[82] Community-based after-school programs have also been identified by Health Canada as beneficial for encouraging healthy eating in children.[83]

Studies of community-based interventions have identified some criteria for success. One meta-analysis suggests that multi-setting interventions may be more effective in achieving behaviour change than single-setting interventions. The authors found that community-based interventions with a school component were particularly effective.[84] Staff running community-based food programs for children and youth may benefit from partnering with schools.

The length of interventions is also a determining factor in their success. A study looking at a community-based obesity intervention for elementary-school children found that in order to sustain behaviour change, longer interventions, preferably lasting one school year or more, were ideal.[85] Similarly, a meta-analysis on child obesity interventions found that the most successful programs had longer follow-up periods, which assessed the impact for participants months or years after they completed the program.[86] Food program facilitators could consider adding a voluntary follow-up session a few months after program completion to evaluate whether positive outcomes of the program have been sustained.

Community consultation and input into program design has also been identified as a key to program success. Some interventions use a community-based participatory research approach to program development, which gives the community ownership over the intervention and can improve its sustainability.[87]

Successful programs should address barriers to healthy eating and cooking.[88] One barrier to increasing the consumption of healthy foods is lack of economic access. Programs, such as Wholesome Wave's Fruit and Vegetable Prescription Program, offer vouchers that participants can use to purchase healthy foods at farmers' markets and other healthy food retailers.[89] These vouchers not only increase participant access to healthy food, but also encourage sustained healthy eating and shopping behaviours. It should be noted that little evidence supports fruit and vegetable subsidies as a standalone intervention for children, and it is recommended that fruit and vegetable provision be part of a multicomponent program (e.g. combined with nutrition education or cooking classes).[90] The issue of

food access can also be addressed to some extent by focusing on lower-cost and more economical recipes and an emphasis on in-season produce.

Community Food Centre Canada's theory of change

At Community Food Centres Canada, we know that healthy food skills, knowledge and attitudes are key to promoting healthier eating habits. Community Food Centres offer hands-on cooking and gardening programs that help people build the skills, knowledge, and confidence necessary to feed themselves a healthy diet and that empower people to take as much control over their personal health and nutrition as possible within the context of their circumstances. We believe greater self-efficacy and confidence in the kitchen and garden, combined with healthy food knowledge and skills, can improve the quality of one's diet.

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