

NutriSTEP® Program



Background

NutriSTEP® (Nutrition Screening Tool for Every Preschooler) is a fast and simple way to assess eating habits and identify nutrition problems early in young children 3-5 years of age. The NutriSTEP® questionnaire has 17 items that cover the preschool nutritional risk constructs: food and nutrient intake, physical growth, developmental and physical capabilities, physical activity, food security and the feeding environment. The NutriSTEP® questionnaire is intended for use by community professionals and should be completed by the child's parent or primary caregiver, the one who is most knowledgeable about the child's eating and other health habits.

Unlike many surveillance and screening tools, NutriSTEP® has been scientifically validated with many multiethnic groups and is available in English and French. More than 1500 preschoolers and their parents from across Canada were involved from 1998-2008. A defined methodological template included the following phases:

- 1) Feasibility: a draft NutriSTEP® with items developed from literature reviews and expert opinion underwent testing with parents at school readiness fairs (n=120);
- 2) Further Item Identification: initial questions were reworked in consultation with parents (n=500) and national, provincial and local nutrition professionals using an iterative process;
- 3) Refinement: NutriSTEP® was refined and assessed for content and cultural appropriateness at both provincial and national levels (n=670); and,
- 4) Validation and Reliability: NutriSTEP® was validated and tested for reliability in Ontario (n=450).

The NutriSTEP® program includes:

- The NutriSTEP® questionnaire, which is available online with a license through *Flintbox Technologies* at: <http://www.flintbox.ca/technology.asp?page=3586>.
- The NutriSTEP® Implementation Toolkit and resources including background information, implementation tools, education and training materials and other resources.
- NutriSTEP® Online Community where you can get support from other users of the program, ask questions, post new resources, etc.
- Ongoing and collaborative, community-based research activities.

NutriSTEP® Online (www.nutristep.ca) was launched in June 2009 with a Canadian Institutes of Health Research (CIHR) End of Grant Knowledge Translation Supplement. This funding has allowed for widespread dissemination of NutriSTEP® and its related resources and supports the establishment of preschool nutrition screening programs in Canada and other jurisdictions.

NutriSTEP® as a Surveillance and/or Screening Tool:

- Early identification of potential nutrition problems
- Parent referral to community resources
- Parental nutrition education
- Support in evaluating preschool nutrition interventions
- A means of monitoring community child nutrition programs

The present screening tool can easily be incorporated into existing population level surveys for surveillance purposes with or without reporting a nutrition risk score to the parent (which is done when conducting screening). These data can then be used for local and provincial surveillance efforts, to plan programs and identify implications for further research and practice. The present NutriSTEP[®] questionnaire takes a parent only five minutes to answer.

The NutriSTEP[®] questionnaire has three levels of nutrition risk scores with follow-up guidelines for parents:

- Children whose risk score is less than 20 are low risk and require no immediate follow-up. Parents are encouraged to refer to the educational materials provided with the screening index.
- Parents of children whose risk score is 21-25 are moderate risk and are encouraged to refer to the educational materials provided with the screening index. These parents are also directed to a number of community and provincial programs such as *Eat Right Ontario* (www.eatrightontario.ca) and the provincial toll-free Dietitian Call Centre (1-877-510-510-2) as well as their local public health unit.
- Parents of children whose risk score is 26 or greater are high risk and are encouraged to talk to a health professional such as their child's doctor.

When NutriSTEP[®] is used in the context of screening approximately 10% of the preschool population will potentially be identified as high risk and in need of some form of primary prevention. This proportion is comparable to other provincial screening initiatives in Dental Health and Healthy Babies, Healthy Children. The NutriSTEP[®] questionnaire is listed as a valid and reliable tool to be used in the Child Health Program, Requirement # 11 of the Ontario Public Health Standards, released November 2008. The NutriSTEP[®] program will easily dovetail into existing provincial programs and reach at risk preschoolers and their families in locations such as Best Start hubs, parent education programs, school readiness programs, and primary health care settings such as Family Health Teams (FHTs).

The NutriSTEP[®] program has been led by dietitian researchers from the Sudbury & District Health Unit Public Health Research, Education and Development (PHRED) program, Nutrition Resource Centre and the University of Guelph with the financial support of CIHR, The Ontario Public Health Research, Education and Development (PHRED) Program, City of Greater Sudbury, Ontario Early Years Challenge Fund, Health Canada (Population Health Fund), The Ontario Ministry of Health and Long-Term Care and Danone Institute of Canada.

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Implementation of NutriSTEP[®] in Ontario

NutriSTEP[®] is now a provincially recognized program in Ontario, funded by the Ministry of Health Promotion (MHP), with its implementation being supported by the Nutrition Resource Centre (NRC) (www.nutritionrc.ca) of the Ontario Public Health Association. The goal of the NRC NutriSTEP[®] program is to increase the capacity of individuals, organizations, and communities to improve the nutritional health of young Ontario preschool children.

As the newest NRC program (May 2007), the first two years have been focused on program development and implementation. To date, NRC has increased the feasibility to implement NutriSTEP® in Ontario; implemented in select sites and models; and, increased access and dissemination of the screening tool, Implementation Toolkit and additional supportive educational and training resources in Ontario. Additional MHP funding was also secured to disseminate printed versions of the questionnaires and educational booklets for Ontario residents and service providers through *ServiceOntario Publications* in 2009 (<https://www.publications.serviceontario.ca/ecom/>). There will be additional provincial support with the *Eat Right Ontario* Call Centre who will respond to parent as well as service provider inquiries. The NRC focus this year will be community Registered Dietitians (RDs) (public health, Community Health Centres, FHTs) with training and promotion opportunities at select provincial conferences, a webinar, and other forms of consultation.

Targeted Implementation, Current Results, Next Steps and Other Activities

Sudbury, Thunder Bay and York Region were three Ontario health unit sites chosen for a two-year (June 2007-09) targeted implementation and process evaluation study funded by the Danone Institute and the NRC. The University of Guelph and NRC led these studies with support from the Sudbury & District Health Unit PHRED Program.

In Sudbury, the study goal was to screen 200 preschoolers with the assistance of trained practitioners in the new *Best Start* hubs using a guided referral model. In Thunder Bay, 300 preschoolers were to be screened by trained practitioners and retired teachers through their established *FairStart* program using the assisted referral model. In York Region, 500 preschoolers were to be screened in JK/SK registration packages as a self-referral model. In Sudbury and Thunder Bay, nutrition screening in English and French began early November 2007 and was completed at the end of June 2008. In York Region, screening packages were distributed from January to May 2008. The goal was to recruit 1000 parents of preschoolers with a projection that 50-100 children (10% of the sample size) would be at high risk and parents of these children were initially planned to be the focus of parent perception interviews to evaluate the screening and referral process.

In York Region, 1400 NutriSTEP® questionnaires were distributed to 137 schools; 131 (9.5%) were returned. In Thunder Bay, 153 children were screened; in Sudbury, 80 children were screened; only two parents in each of these latter locations declined the nutrition risk screening. A total of 364 NutriSTEP® and demographic questionnaires were completed in this study. The nutritional risk levels were as follows: 6% high risk, 13% moderate risk, and 81% low risk. Approximately half (51%) of the children screened were males and 64% were aged 3 years. Most (86%) of the children spoke English as their first language and 96% were born in Canada. Most children came from homes where the parents were either married or living common-law (93%). Seventy-one percent of parents had graduated from either college or university and 69% had a family income greater than \$60,000.

Of the 364 parents who completed the NutriSTEP®, 264 agreed to be contacted by a University of Guelph Research Assistant. A total of 164 telephone interviews were conducted (151 English, 13 French) using a scripted questionnaire on parent perceptions of the screening venue, the screening process, nutritional risk, referrals, and usefulness of resources. Parents perceived screening to be a worthwhile experience to obtain a check on their children's nutritional health as well as a location to obtain educational resources. Relatively few referrals were recommended and not all parents followed through with referral. This was reportedly due to the

time constraints to see a health professional for follow-up or the notion that the education materials provided with screening were sufficient to initiate change.

While the Sudbury *Best Start* staff were comfortable and supportive of NutriSTEP® screening, there were a number of challenges in this new setting and a larger, more diverse sample size is needed to evaluate the referral process for the various risk levels as well as community capacity to meet referral needs. Parent feedback indicates this setting is appropriate for nutrition screening but they would like child supervision support to complete the screening process on-site or an option to complete the questionnaire at home. Ongoing Sudbury implementation plans are underway at the health unit.

The Thunder Bay pilot was considered successful at the community level and the NutriSTEP® questionnaire is now disseminated along with the *FairStart* Program's JK Screening booklet. The NutriSTEP® questionnaire and education booklet, *How to Build a Healthy Preschooler*, goes to every child in the city and Greenstone district when the child registers for JK (approximately 1500 preschoolers). Along with ongoing training of practitioners and screen volunteers, the program will be implemented in the HBHC program and district public health nurses will use the tool at JK registration days. The health unit is developing a database to track parent perceptions of their child's eating and activity habits based on parent completed questionnaires.

In York Region, NutriSTEP® was included in another pilot project by a local school board. Eleven schools participated in a health screening fair in late September 2008. Over 1200 children were screened with 635 parents completing NutriSTEP® with health unit nutrition staff while another 70 parents sent in completed screening tools with their children. Of the 635 tools completed on-site, 22% of the children were identified as high risk, 28% were moderate risk and 50% low risk. The school board is advocating for implementation funds for universal health screening.

The York Region health department nutrition staff felt their participation in this event was an appropriate use of their resources and expertise. Some educational resource needs were identified including translation of key resources into other languages and new or additional resources on topics such as: breakfast rationale and tips; bottle feeding; feeding environment and parenting around food; and; seasonal physical activity suggestions.

Other Ontario primary health care sites doing targeted implementation include Hamilton and Stratford through their local family health teams (FHTs) and the Hospital for Sick Children (HSC) through a number of community paediatrician practices and a large family medicine group. The Stratford study began in March 2008 as part of their 18 and 36 month old screening program with another project now started with a different Family Health Team, the health unit and the University of Guelph. In Hamilton, data collection is from August 2008 to June 2009 through 13 FHTs that include seven RDs. The HSC study began July 2008 and will continue for five years with a goal to screen 2400 children aged 1-5 years. This study includes data collection on children's actual weight and height measurements, demographic information, screen time and physical activity habits. To date, approximately 1620 NutriSTEP® questionnaires have been completed with 15-20% (including 1-2 year olds) at moderate to high nutritional risk (n=200-300) which are flagged for pediatrician/physician consult.

Other implementation activities include dietetic intern research projects with the Northern Ontario Dietetic Internship Program (NODIP) and HSC Program. The NODIP project is inter-modal reliability testing of an online version of NutriSTEP® while the HSC project is the applicability of NutriSTEP® with toddlers 12-35 months of age.