Executive Summary: Addressing Childhood Obesity: The Evidence for Action – March 15, 2004

Introduction

Current prevalence estimates indicate that approximately 15% of Canadian children may meet CDC criteria for "overweight", and that another 30-40% may be "at risk for overweight"[1,7,72]. This high and rapidly increasing prevalence will significantly impact the health of Canadians over the course of the next century. While action to stabilize and reverse this trend is urgently required, such action must be based on the best available evidence to ensure optimal outcomes and cost-effectiveness. This report reviews existing high-quality evidence for interventions to prevent and treat childhood obesity. Interventions supported by high-quality evidence are presented as recommendations for action. Where evidence is lacking or conflicting, recommendations for research priorities highlight information urgently required to direct future interventions.

Main Findings

Intervention:

Summary of systematically reviewed literature of obesity prevention or treatment yielded the following recommendations regarding interventions for childhood obesity:

- There is currently no systematically reviewed evidence to support a specific approach to obesity prevention through childhood.
- *Any* treatment intervention is associated with significantly increased chance of improvement or resolution of obesity, and is favoured over no treatment.
- Exercise included in the treatment intervention improves outcome, but no specific type or amount of exercise can be favoured over another for all children.
- Parental involvement may be best directed at support and reinforcement, while the intervention focuses on child-centred behaviour change.
- Behaviour modification is an important component of obesity treatment interventions and is strongly associated with improved outcomes.
- Degree of obesity does not predict success or failure of interventions. Obesity treatment should therefore be offered when the condition is recognized.
- School-based physical activity interventions can effectively increase regular physical activity and are useful in obesity treatment.
- School-based nutrition programs focused on changing dietary behaviour may be useful in obesity treatment.

Research

Based on evaluation of systematically reviewed literature of obesity prevention, future studies addressing prevention should address the following issues:

- Study of populations unselected by weight status,
- Obesity prevalence as primary outcome measure,
- Adequate power to identify clinically significant differences,
- Comparability between intervention and control groups, and,
- Prolonged follow up to determine characteristics associated with favorable long-term outcome.

Priority research issues related to obesity treatment identified by review of systematically reviewed literature were as follows:

- Interventions require long-term follow up of *both* behaviour patterns and weight status to determine the specific aspects of intervention associated with *long-term* success.
- The role of reinforcement in treatment interventions requires further investigation to determine the efficacy of periodic reinforcement and to identify strategies which support long term successful weight control.
- Comparative studies on dietary interventions should be conducted specifically in populations of overweight children to determine the characteristics associated with improved dietary habits.
- Investigations geared to implementation in school or community settings should be developed and evaluated to provide a scientific basis for population-based interventions.
- Duration of treatment should be evaluated as a specific outcome variable to guide resource utilization and optimize outcomes.
- Age of intervention (independent of degree of obesity) should be evaluated as a specific outcome variable to assist in targeting available resources to achieve maximum impact.
- Pharmacologic and surgical treatment should be systematically evaluated in pediatric patients as literature becomes available.
- Existing and future research should be systematically reviewed to determine appropriate strategies for minority populations, particularly Canadian aboriginal children.
- Interventions to increase physical activity in schools should include measures of both in-school and out-of-school physical activity to determine the effect of these interventions on global behaviour change.
- Long-term follow up is critical to determine the relationship between physical activity interventions and life-long patterns of activity and should be included as a measure of efficacy of the intervention.
- Existing literature regarding the development of eating behaviours in young children should be expanded and replicated to provide a scientific basis for population-wide feeding guidelines consistent with maintaining or achieving a healthy weight.

Methodology

Studies must have met the following criteria to be included in this report:

a) Evidence summary, meta-analysis, systematic review or narrative summary of prevention and/or treatment of obesity,
b) Subjects 0-18 years of age, and,
c) Outcomes summarized using a measure of adiposity (e.g., BMI or % overweight) or a measure of dietary intake and/or physical activity.

Relevant evidence was extracted from these documents and sorted according to the specific questions addressed. All resulting evidence is presented in detail, summarized, and synthesized to produce recommendations.

Conclusion

This report highlights the strengths and weaknesses of the systematically reviewed literature relating to the prevention and treatment of childhood obesity. Prevention is disturbingly under-represented in the existing literature and no specific approach to intervention can be recommended. As prevention is generally considered the most effective, economical and socially acceptable approach to addressing the "obesity epidemic", the need for clear principles upon which to base prevention strategies must be considered an urgent research priority.

Despite the potential benefits of obesity prevention, current prevalence data indicates that many children will also be candidates for treatment. At present, the reviewed literature can provide an evidence-based framework for treatment interventions. It is clear that treatment programs should include strategies to address diet, physical activity and behavioural change. Many details regarding the optimal design of these components remain to be clarified. Research to determine those specific characteristics associated with successful interventions must also receive priority attention. This research lends itself to a clinically oriented approach, combining the delivery of treatment with the advancement of knowledge in the science of obesity treatment. The research recommendations highlight areas where clarification may have significant impact on treatment efficacy.