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WELLNESS AND ADOLESCENTS:
THE EFFECTS OF A SCHOOL-BASED INTERVENTION

by

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ABSTRACT

The purpose of this study was to examine the effects of a school-based wellness program, *Looking Good...Feeling Great!* (Zacour & Zacour, 1991), on ninth grade students' wellness levels, and to evaluate student and teacher impressions of the program. Experimental groups (n = 62) from one urban and two suburban secondary schools participated in the four day 175 minute *Looking Good...Feeling Great!* program, while control groups (n = 37) from the same schools followed their regular academic schedules. All participants completed Testwell™ (National Wellness Institute, Inc., 1994), a wellness inventory for high school students, as a pretest, one week later as a posttest, and one and one half months later as a follow-up test. Student focus groups and teacher interviews were conducted after the posttest. Results showed that (a) experimental group wellness scores significantly increased from pretest to posttest (ES = .22), (b) experimental groups maintained their increased wellness levels one and one half months following completion of the program (ES = .24), and (c) there was no significant effect of gender on experimental group wellness scores, although females scored significantly higher than males overall. In general, students and teachers conveyed favourable impressions of the program. However, somewhat negative impressions of the program from the students and teacher at the urban secondary school imply that this type of school may benefit from a wellness program that better suits the needs of its constituents. The results indicate that the *Looking Good...Feeling Great!* program can be an effective tool in helping adolescents acquire healthy lifestyles through the enhancement of wellness levels.

PRÉCIS

Cette étude a pour but d'examiner les incidences d'un programme de mieux-être dans les écoles, *Looking Good...Feeling Great!* (LGFG) (Zacour & Zacour, 1991) sur le niveau de mieux-être des étudiants de neuvième année, et d'évaluer les impressions des étudiants et des professeurs sur le programme. Des groupes expérimentaux (n = 62) d'une école secondaire en milieu urbain et de deux écoles secondaires en milieu suburbain ont participé au programme LGFG, d'une durée de quatre jours, ou 175 minutes, alors que des groupes témoins (n = 37) des mêmes écoles ont suivi leur horaire scolaire normal. Tous les participants ont rempli le Testwell™ (National Wellness Institute, Inc., 1994), un inventaire du mieux-être à l'intention des étudiants du niveau secondaire, à titre pré-test, une semaine plus tard, à titre de post-test, et un mois et demi plus tard, à titre de test de suivi. Des entrevues ont été menées auprès des groupes types d'étudiants et de professeurs après le post-test. Selon les résultats, (a) la note obtenue par les groupes expérimentaux pour le post-test a augmenté de façon significative par rapport à celle obtenue pour le pré-test (ES = 0.22), (b) un mois et demi après la fin du programme, les groupes expérimentaux avaient maintenu le niveau accru de mieux-être (ES = 0.24), et (c) le sexe des participants n'a pas eu d'incidence importante sur la note de mieux-être des groupes expérimentaux, bien que, dans l'ensemble, les filles aient obtenu une note plus significative que celles des garçons. En général, les impressions des étudiants et des professeurs sur le programme ont été favorables. Cependant, les impressions quelque peu négatives des étudiants et du professeur de l'école secondaire en milieu urbain laissent supposer que ce genre d'école pourrait bénéficier d'un programme de mieux-être plus adapté aux besoins participants. Selon les résultats, le programme *Looking Good...Feeling Great!* peut être un outil efficace pour aider les adolescents à acquérir un mode de vie plus sain grâce à l'amélioration du niveau de mieux-être.

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TABLE OF CONTENTS

LIST OF TABLES

Page

TABLE

LIST OF FIGURES

Page

FIGURE

CHAPTER I

INTRODUCTION TO THE EXPERIMENTAL STUDY

Nearly two decades ago, the U.S. Surgeon General reported that unhealthy lifestyles were responsible for approximately 50% of premature illnesses and deaths in the general population (U.S. Department of Health, Education and Welfare, 1979). Still today, health educators agree that the major health problems facing Western society are largely preventable and can be addressed through changes in personal health behavior (Allensworth, 1993; Cortese, 1993; Jackson, 1994). Although research on the current status of adolescent health is limited (Griesemer & Hough, 1993), some studies suggest that adolescents are exhibiting signs of these major health problems associated with unhealthy behaviors. Health behaviors and habits are frequently formed in childhood and adolescence (Allensworth; Millstein, 1989; Omizo, Omizo, & D'Andrea, 1992) and are thought to be difficult to break once developed. Helping adolescents acquire healthy lifestyles therefore, is an important undertaking in cultivating their future health. Wellness is an active process or lifestyle that involves becoming aware of and making decisions about the different areas in one's life with the goal of attaining a higher level of health (National Wellness Institute, Inc., 1979). The *Looking Good...Feeling Great!* (LGFG) program (Zacour & Zacour, 1991) is a short-term school-based wellness program that is easy to implement and incorporates popular health behavior change principles. The focus of this research is to examine the effectiveness of LGFG in developing healthy lifestyles in adolescents.

Adolescent Health

Increasing concern for the health of today's adolescents suggests a need for proactive measures. Results of studies and surveys in the last 10 years indicate that signs of lifestyle diseases are being detected in children and adolescents. In 1985, findings from the National Children and Youth Fitness Study demonstrated that in general, adolescents weighed more and had more body fat than their counterparts of 20 years earlier (Ross & Gilbert, 1985). The same findings were documented for younger children, ages six to nine (Ross & Pate, 1987). Results from a 1991 U.S. National Youth Risk Behavior Survey, which involved over 12,000 high school students, showed that numerous students were establishing behaviors that placed them at risk for diseases such as cancer and heart disease (Kann et al., 1993). These findings are supported by recent studies illustrating the presence of precursors of adult cardiovascular disease in children and adolescents (Berenson, Wattigney, Bao, Srinjvasan & Radhakrishnamurthy, 1995; Kannel, D'Agostino & Belanger, 1995; Lipp, Deane & Trimble, 1996).

Although adolescents appear to be showing signs of lifestyle diseases, the worry is not that they will die now as a result of these diseases. The leading causes of death for adolescents in Canada (aged 15-19) are accidents (motor vehicle and others) and suicide (Statistics Canada, 1994). The major concern is that unhealthy adolescent behavior will carry over into adulthood. The result of this carry-over would be adults who continued to exhibit unhealthy behaviors, placing them at risk for premature illness and death.

Little empirical evidence exists that directly associates adult health behavior with adolescent health behavior. In reference to physical activity, Blair, Clark, Cureton, & Powell (1989) hypothesized that adult physical exercise habits may be directly related to physical exercise habits adopted in childhood. The relationship seems logical but is only a component of a conceptual model, and not proven theory. Sallis & McKenzie (1991) reviewed recent studies on the association between physical activity or sports participation in youth and adult activity. The results were conflicting, indicating an unclear association between adult physical activity and adolescent physical activity. However, Rowland and Freedson (1994) contend that no valid studies investigating this

relationship have been performed because of (a) the problems involved in measuring physical activity levels and (b) the difficulty in obtaining longitudinal data.

Similarly, concrete data is lacking to confirm the carry-over effect of other adolescent behaviors into adulthood (Burke, Beilin, Millegan & Thompson, 1995). However, support for this effect does exist (Dennison, Straus, Melltis, & Charney, 1987; Powell & Dysinger, 1987). Freedson & Rowland (1992) believe that generating healthy lifestyle habits in one's youth (specifically a regular pattern of physical activity) is a valuable strategy for developing long-term health.

Today's adolescents are tomorrow's leaders. With the health of our society's future leaders in question, it seems clear that the need to promote the adoption of healthy lifestyles now, amongst our youth, is great. Although conflicting conclusions exist regarding the carry-over of adolescent health behaviors into adulthood, it is in the best interest of our youth to go forward with educational interventions that promote healthy lifestyles. As Burke et al. (1995) contend, " the potential benefits far outweigh the disadvantages..." (p. 213).

Wellness

This project focuses on the effects of a school-based wellness program. Wellness has been described as a theory, a state and even a national movement. The term was first defined in the 1960's by Dunn who described it as "...an integrated method of human functioning where the individual's potential is maximized to its fullest capacity" (Dunn, 1961, p. 4). Since that time other interpretations of wellness with common underlying themes have emerged.

For the purpose of this research, wellness will be described as an active process or lifestyle that involves becoming aware of and making decisions about the different areas in one's life, with the goal of attaining a higher level of health (National Wellness Institute, Inc., 1979). These different areas, known as dimensions, are categorised as physical, social, emotional, intellectual, occupational, and spiritual (National Wellness Institute, Inc., 1979). Key principles of wellness have come to include a preventive

approach to health, personal responsibility for one's health, the interrelatedness of the wellness dimensions, and a healthy lifestyle (Street, 1994).

Wellness education focuses on the development of the whole individual, emphasizing the interrelatedness of its six dimensions. Students are taught that in order to achieve an optimum level of well-being, all dimensions of their lives must be considered and that working on a particular aspect in any one of the six dimensions affects aspects in each and every other dimension (Eberst, 1984; National Wellness Institute, Inc., 1979). It has been shown that presenting health topics in isolation is less effective than an approach [such as wellness] which focuses on the relationships among a variety of health topics (Cortese, 1993).

The crux of the wellness philosophy is the attainment of a healthy lifestyle. Wellness programs focus on developing lifestyles that will help people maintain or enhance healthy behaviors, rather than targeting problem behavior (Petosa, 1984). A person's level of wellness depends on their active involvement in behavior and lifestyle choices (Hatfield & Rickey Hatfield, 1992). Students involved in wellness programs are taught that they have a considerable amount of control over their health and that taking responsibility for their lives and adopting a healthy lifestyle will help them to look and feel good.

School-based wellness education has the potential to influence the present and future choices adolescents make regarding their health. Many researchers contend that there is no better place for youth health education than in the school (DeFriese, Crossland, Macphail-Wilcox, & Sowers, 1990; Lavin, Shapiro & Weill, 1992; O'Rourke, 1985). Further, McGinnis, Kanner, & DeGraw (1991) and Cortese (1985) believe that school-based health education is one of the most viable means of improving youth health. There are approximately 5.5 million students enrolled in Canadian elementary and secondary schools (Statistics Canada, 1993). In most cases, an average child will spend 12 years in our school system - a system that has the unique capacity to greatly affect the lives of society's youth. Fostering healthy lifestyles in adolescents is a challenging goal for our schools, but one that must be pursued. Shillingford &

Shillingford Makin (1991) concur that "...our educational system must help the next generation cope with their lives and their lifestyles. This is the message of Wellness" (p. 461).

Research on School-Based Wellness Programs

There have been few school-based interventions and evaluations that have focused specifically on the wellness concept. The findings from four school-based wellness interventions are shown in Table 1. The studies vary greatly with regard to the participants involved, the type and duration of the independent variable (the intervention), and the choice of dependent variables evaluated.

Participants ranged from grade five students (Omizo et al., 1992) to undergraduate university students (Kushner & Hartigan, 1983; Robbins, Powers & Rushton, 1992) and sample sizes varied between 24 (Kushner & Hartigan) and 1,144 (Robbins et al). Intervention length also varied, ranging from a four week, 800 minute program, to a 16 week program wherein students were involved for approximately 1,600 minutes.

Perhaps the factor that varied most among the studies was the independent variable, specifically the content of the intervention and the methods used for implementation. Although all wellness interventions had a similar goal, to promote healthy, well balanced lives amongst participating students, not all programs focused on the same wellness dimensions. Kushner & Hartigan (1983) evaluated a program that focused on physical health (nutrition, physical fitness) and environmental health, with an underlying theme of self-responsibility. Classroom demonstrations, physical activity, films and problem solving activities were used as implementation tools. The interventions used in the studies by Omizo et al. (1992) and Robbins et al. (1992) focused on physical health (nutrition and exercise) and emotional health (stress management). Implementation tools for Omizo et al. consisted of lectures, recording behaviors, and physical activity, while tools for Robbins et al. consisted of classroom lectures and physical activity sessions. Papenfuss & Beier (1984) focused on five

Table 1. Results of School-Based Wellness Research

Author	Subjects	Methodology: Intervention	Methodology: Dependent Variable	Results
1) Kushner & Hartigan (1983)	24 M&F University students	10 wk wellness course -physical activity -films -problem solving -personal wellness planning	1) Lifestyle Assessment Questionnaire (LAQ) 2) Relaxation Rating Scale	no significant improvement on LAQ score (no follow-up testing done)
2) Omizo et al. (1992)	62 M&F 5th grade students average age=10.4 yrs	10 weekly 45-60 minute classroom sessions -physical activity -recording behaviors -lectures	1) Child Anxiety Scale 2) General Self- Esteem Scale 3) self-developed Wellness Knowledge Test	enhanced self-esteem and wellness knowledge (no follow-up testing done)
3) Papenfuss & Beier (1984)	48 M&F 10th grade students	4 wk, 800min classroom program -lectures on wellness dimensions -personal wellness planning	1) self-developed Wellness Attitudinal Inventory 2) self-developed Wellness Behavior Inventory	enhanced positive attitudes and behaviors towards wellness (follow-up testing done 1 1/2 yrs after intervention: -all students in experimental group made health habit changes -20% of students in control group made health habit changes)
4) Robbins et al. (1992)	1,144 M&F University students	16 wk wellness course -lectures -physical activity labs	1) general knowledge test 2) attitude opinionnaire(of lectures and lab activities) 3) self-developed lifestyle questionnaire	-significant improvement on knowledge test -lifestyle inventory yet to be repeated (no follow-up testing done)

dimensions of wellness: physical, emotional, intellectual, social and spiritual health. Classroom units were developed based on these five dimensions and taught to the participating students. At the conclusion of the intervention, students were encouraged to assess their existing lifestyles and make commitments to attain higher levels of wellness.

Although all studies evaluated aspects of wellness, only Papenfuss & Beier (1984) and Kushner & Hartigan (1983) tested for behavior change with respect to wellness concepts. Omizo et al. (1992) evaluated wellness knowledge, while Robbins et al. (1992), although including a pretest which evaluated wellness attitudes and behaviors, neglected to reassess changes in attitudes and behaviors following the intervention.

Most studies assessed immediate changes on wellness concepts as a result of a wellness intervention. Only one study assessed long-term retention of wellness concepts. Papenfuss & Beier (1984) consulted students one and one half years after the intervention to ascertain if they had made any health habit changes. All students who received the intervention reported having made health habit changes, while only 20% of the students in the control group reported any changes.

Another contrast between the studies was the type of tests used to assess aspects of wellness. Most researchers used self-designed tests and questionnaires developed specifically for the particular study. Only one study, that of Kushner & Hartigan (1983), used a previously existing wellness inventory, the Lifestyle Assessment Questionnaire (LAQ) (National Wellness Institute, Inc., 1976), to assess student wellness levels. At the time of the study, the LAQ had yet to be proven valid and reliable, but has since been deemed a sound measure of wellness for college students (DeStafano & Richardson, 1987; Elsenrath & Fandre, 1982; Palombi, 1992; Richter, 1988). (Validity and reliability co-efficients from these studies are found in Chapter III, in the section entitled "Reliability and Validity of Testwell™".)

Comparing the findings from these school-based wellness interventions is difficult as the studies differ on many aspects. Results of the wellness interventions varied from enhanced student attitudes and behaviors towards wellness (Papenfuss & Beier, 1984)

and enhanced wellness knowledge (Omizo et al., 1992), to no significant changes in student wellness levels (Kushner & Hartigan, 1983). No effect sizes were reported. What is clear from the these findings however, is a need for further research regarding the effectiveness of school-based wellness education.

Research Needs

Findings from the School Health Education Evaluation study indicated that approximately 40-50 hours (2400-3000 minutes) of classroom health instruction were needed to affect stable changes in student behavior (Connell, Turner & Mason, 1985). However, Papenfuss & Beier (1984) found enhanced behaviors towards wellness in 10th-grade students after only 800 minutes of classroom activities (the shortest intervention duration of all studies evaluated), both immediately after the intervention and one and one-half years following the intervention. It is clear that the studies analysed varied greatly with respect to the type and length of the intervention employed, hence producing varied results. Important questions therefore arise concerning the most effective type of school-based wellness program and the amount of time necessary for a program to produce positive results.

The major goal of wellness education is to promote healthy lifestyles through healthy behaviors, yet not all studies evaluated behavioral components. A variety of dependent measures were assessed in the different studies including wellness knowledge, anxiety, and self-esteem. Wellness seeks to enhance positive behavior. Consequently, studies need to be designed to determine the effects of wellness programs on behavioral variables, and not simply to evaluate awareness of the concept or to assess variables not directly related to wellness (Omizo et al., 1992).

Wellness programs focus not only on developing healthy behaviors and lifestyles, but on maintaining these healthy lifestyles. The issue of retention of behaviors related to wellness is therefore an important one. Of the four wellness studies outlined, only Papenfuss & Beier (1984) assessed student retention of wellness concepts and behaviors. Follow-up testing is recommended to assess if wellness programs are

producing long-term behavior change in students (Omizo et al., 1992; Papenfuss & Beier).

Only one study (Kushner & Hartigan, 1983) used a tested wellness questionnaire to evaluate students' attitudes and behaviors concerning wellness. In order to provide more valid and reliable data , it is recommended that wellness be evaluated through tested inventories (Papenfuss & Beier, 1984).

No study asked the participants their thoughts and/or feelings about the intervention. Regardless of student results on wellness questionnaires, benefits of a school-based wellness program are questionable if students do not like or enjoy the experience. There exists a great need for consumer research, asking the students and teachers what they think of programs, in the domain of health education program implementation (O'Rourke, 1995).

To summarize, future research in the evaluation of school-based wellness programs needs to address the following issues:

- efficient use of classtime in implementing wellness programs,
- the effects of wellness programs on student behavioral variables,
- the effects of wellness programs on long-term behavior change in students,
- the validity and reliability of wellness assessment instruments, and
- user (students, teacher) opinions of wellness programs.

This study aims to address some of these research concerns.

Looking Good... Feeling Great!

The *Looking Good... Feeling Great!* (LGFG) program (Zacour & Zacour, 1991) (Appendix G) was the intervention chosen for the purposes of this research. LGFG is a short-term school-based wellness program aimed at encouraging young people to maintain healthy behaviors or change unhealthy ones. The program was designed to be implemented over a period of three to four consecutive days, in either a physical or health education class. The intended users are 14-15 year old secondary school students.

The program was intended to complement or be a supplement to a health education curriculum. It claims to not require a particular implementation sequence or prior training of teachers. The program is currently being used in some Ontario secondary schools, and is endorsed by the Ontario Physical and Health Education Association as an educationally valid tool.

The program focuses on the integration of four components for good health:

1. physical activity,
2. healthy eating,
3. good mental health practices, and
4. sound personal hygiene habits.

Although the program's focus does not encompass all six wellness dimensions as described by the National Wellness Institute, Inc. (1979), major principles of wellness including the notions of personal responsibility, a healthy lifestyle, and the interrelatedness of the mind, body, and spirit are stressed.

The program is implemented with the help of a student lifestyle diary. Students receive their own personal diary. Information on the program's four components is outlined in the diary and is presented by the teacher. Each day students are asked to record and analyse their behaviors and attitudes regarding the four program components. Food intake, physical activity, mental health and personal care issues are recorded on "Daily Personal Records." Also included in the "Daily Personal Record" are sections entitled "For Tomorrow," where students are asked to reflect upon their previous day's health behavior and set new, more appropriate goals. Students are encouraged to share this health information with classmates and to use peer support to help them analyse behaviors and complete the diary. At the conclusion of the intervention, students are asked to set goals with respect to their lifestyles. This goal setting is done in the form of a written contract which involves a three day commitment. The student indicates on the contract which of the four areas (physical activity, healthy eating, good mental health practices, and sound personal hygiene habits) he/she needs to improve upon and outlines

what specific behavior(s) he/she will perform in the stated three day period to make these improvements. The student is encouraged to sign and date the contract.

Although no proof exists, the LGFG program appears to be an ideal tool to promote healthy lifestyles among adolescents. The claim of its being time efficient (3-4 class implementation period) and relatively easy to implement (requiring no prior training of teachers) make the program very appealing.

Another positive aspect of the program is that it appears to reflect current educational thinking about helping young people change behaviors and follow healthy lifestyles. One of the most fully developed behavior change theories that has been used extensively in the field of health education is the Social Learning Theory (Perry, Baranowski & Parcel, 1990). Although the development of LGFG was not officially guided by Social Learning principles, it does embody key Social Learning concepts and uses some of the theory's suggested strategies for health behavior change. Self monitoring, goal setting, and behavioral contracting are Social Learning strategies that are used in the LGFG program, and all are seen as valuable methods for promoting health behavior change (Allensworth, 1993).

Finally, results of a marketing firm survey involving 1,500 students and 42 teachers from various Ontario secondary schools, showed that teachers and students seemed to like the program (Storguard & Associates, 1991). Overall, the teachers liked the design of the program, found it easy to effectively implement in the classroom, and enjoyed working with it. Most students were interested in the information covered and enjoyed their involvement with the program. These positive results suggest that the program may be well received by other students and teachers

Significance

Since there is a strong belief that positive and negative health behaviors adopted in adolescence track into adulthood, the need exists to positively influence the health habits of our youth and promote healthy lifestyles. The promotion of healthy lifestyles is the primary message of wellness, and schools appear to be the optimal setting for getting

this and other messages of wellness across to adolescents. To date however, few school-based studies focusing on wellness enhancement for adolescents have been conducted. Of the studies that have been conducted, most lack a variety of key elements that would enable one to conclude that school-based wellness programs are an effective mechanism in positively enhancing healthy lifestyles among adolescents. The LGFG program is a school-based wellness program designed for adolescents. Various teachers and students surveyed seemed to like the program, but its effectiveness has yet to be empirically evaluated. The need exists therefore to determine, through scientific evaluation, if the LGFG program is effective in positively enhancing student wellness levels, thereby facilitating the adoption of healthy lifestyles in adolescents.

Purpose

The purposes of this research were:

1. To determine what effect the LGFG program would have on secondary student wellness levels.
2. To assess retention of possible changes in secondary student wellness levels one and one half months following participation in the LGFG program.

It was also this researcher's intent to evaluate student and teacher impressions of the LGFG program.

Hypotheses

Because no empirical studies focusing on the effectiveness of the LGFG program have been performed, hypothesizing on the program's ability to enhance wellness levels in grade nine students is difficult. However, because the program reflects current educational thinking about helping young people change behaviors and follow healthy lifestyles, the following research hypotheses were forwarded:

1. Experimental group wellness scores, relative to their prescores, will be significantly higher than control group scores as a result of participating in the LGFG program.

2. Experimental group wellness scores will remain higher than control group scores, one and one half months following participation in the LGFG program.
3. There will be no difference between genders with respect to the effectiveness of the LGFG program.

Operational Definitions

1. Wellness. Wellness is described as a continuous, active process of becoming aware of the different areas in one's life, identifying the areas that need improvement, and making choices that will facilitate a higher level of health and well-being (National Wellness Institute, Inc., 1979). These areas are described as the six dimensions of wellness: physical, emotional, occupational. intellectual, spiritual, and social (National Wellness Institute Inc., 1979). Each dimension affects the others and ultimately affects one's overall level of wellness. The physical, emotional, and social dimensions of wellness have subtests which are outlined and defined in Appendix A. The six dimensions of wellness are defined as follows:

i) Physical dimension: the degree to which one maintains his or her physical health.

ii) Social dimension: the degree to which one contributes to the common welfare of the community, reflecting interdependence and the connectedness one feels towards community, friends, and nature.

iii) Emotional dimension: the degree to which one is able to accept feelings and to express them appropriately, also measures enthusiasm for life and oneself.

iv) Intellectual dimension: the degree to which one engages one's mind in creative, stimulating mental activities, expanding knowledge, improving skills, and sharing this knowledge with others.

v) Occupational dimension: the degree to which one gains satisfaction from one's work and the degree to which one is enriched by it (work refers to one's primary frame of reference, whether it be a job, school, or home).

vi) Spiritual dimension: the degree to which one is involved in seeking meaning and purpose in human existence, including an appreciation for the depth and expanse of life and the natural forces that exist in the universe.

Delimitations

The delimitations of this study were:

1. Ninety-nine grade nine students (and their teachers) from three secondary schools in the Greater Montreal area were the participants in the study.
2. For practical purposes, intact classes were used.
3. Level of wellness was measured by one type of inventory, Testwell™ Wellness Inventory, High School Edition.
4. The intervention chosen, the *Looking Good...Feeling Great!* program, was designed as a three to four day program.

Limitations

The limitations of this study were:

1. The results of this study can only be generalized to classes similar to those employed in this study.
2. Although the college versions of Testwell™ Wellness Inventory and Lifestyle Assessment Questionnaire (the inventory from which Testwell™ was developed) have been proven to be valid and reliable, Testwell™ Wellness Inventory High School Edition has not been extensively employed or tested, and therefore its validity and reliability are unknown.
3. Due to the relatively short duration of the *Looking Good...Feeling Great!* program, there may have not been enough time to realize student behavior change.

CHAPTER II

REVIEW OF THE LITERATURE

Wellness is a concept that embodies the promotion of a healthy lifestyle. Today's adolescents appear to be developing unhealthy lifestyle habits (Kann et al., 1993). This chapter will present pertinent research looking at the health status and habits of children and adolescents and the possibility of a carry-over effect of health behaviors into adulthood.

The National Wellness Institute, Inc. (1979) defines wellness as an active process or lifestyle that involves becoming aware of and making decisions about the different areas in one's life, with the goal of attaining a higher level of health. Key principles of wellness will be outlined as well as rationales for using schools as the access point for getting the message of wellness across to adolescents.

Although the benefits of wellness are quite apparent, few studies focusing on the effects of wellness programs in schools have been conducted. A description of the research that has been done will be provided along with recommendations for future research on school-based wellness programs.

Since wellness seeks to enhance healthy behavior, a discussion on health behavior change will be provided. One of the most developed theories in the area of behavior change is the Social Learning Theory (SLT) (Perry et al., 1990). A brief outline of SLT will be presented along with some of its strategies for health behavior change.

The final section discusses the school-based wellness intervention chosen for the purposes of this research: the *Looking Good... Feeling Great!* (LGFG) program (Zacour & Zacour, 1991). Details about LGFG will be outlined as well as justifications for using this program.

Adolescent Health

There is growing concern regarding the health of today's adolescents. Studies and surveys in the last 10 years indicate that signs of lifestyle diseases are being detected

in children and adolescents. Of primary concern is the possibility of these signs tracking into adulthood.

In 1985, findings from the National Children and Youth Fitness Study demonstrated that in general, adolescents weighed more and had more body fat than their counterparts of 20 years earlier (Ross & Gilbert, 1985). The same findings were documented for younger children, ages six to nine (Ross & Pate, 1987).

A 1991 U.S. National Youth Risk Behavior Survey (Kann et al., 1993) showed that numerous adolescents were forming unhealthy behavior patterns. Over 12,000 randomly selected high school students (grades 9-12) completed a self-report questionnaire that measured health risk behavior. Questions covered the topics of drug use, sexual behavior, dietary behavior, and physical activity. Specific dietary behavior and physical activity results indicated that (a) only 13% of all students reported eating five or more servings of fruits and vegetables (with the younger students more likely to have done so than the older students) and (b) enrolment and attendance in physical education class, along with performance of moderate physical activity, decreased significantly from the 9th to the 12th grade (Kann et al.). A major conclusion from this study was that American adolescents were establishing behaviors that placed them at risk for diseases such as cancer and heart disease.

These findings are supported by recent studies which illustrate that precursors of adult cardiovascular disease are likely to be present in children and adolescents (Berenson et al., 1995; Kannel et al., 1995; Lipp et al., 1996). One of the most highly acclaimed of these studies is The Bogalusa Heart Study (Berenson et al., 1995). One of the aims of this long-term research program is to provide information on pediatric cardiovascular risk factors. Findings from this study show that precursors of adult cardiovascular disease have their beginnings in childhood and that these risk factors persevere over time (Berenson et al., 1995). Current North American statistics show that "...40% of children between the ages of five and eight show risk factors for heart disease such as high blood pressure, obesity and high levels of cholesterol " (CAPHERD, 1996, p. 6). Further, Canadian statistics indicate that four out of ten children have

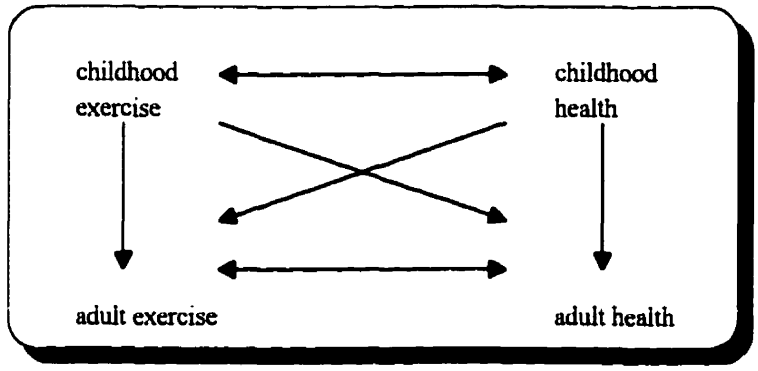
decreased fitness levels due to an inactive lifestyle - a risk factor for cardiovascular disease (CAPHERD, 1996).

Carry-Over Effect

Although adolescents appear to be showing signs of lifestyle diseases, the worry is not that they will die now as a result of these diseases. The leading causes of death for adolescents in Canada (aged 15-19) are accidents (motor vehicle and others) and suicide (Statistics Canada, 1994). The major concern is that unhealthy adolescent behavior will carry over into adulthood, creating unhealthy adults at risk of premature illness and death.

Little empirical evidence exists that directly associates adult health behavior with adolescent health behavior. Of the research that has been done in this area, most of the attention has focused on the relationship between adolescent and adult physical activity patterns. Blair et al. (1989) forwarded a model that hypothesized possible causal relationships between childhood exercise and health and adult exercise and health (Figure 1). The model implies that exercise and health can influence one another, as indicated by the double arrows. Noteworthy relationships are those between (a) childhood exercise and adult exercise and (b) childhood exercise and adult health, both indicated by single direction arrows. These relationships suggest that favourable exercise patterns adopted in youth may carry over into adulthood, producing active, healthy adults. Although the relationships seem logical, they are only components of a conceptual model and not proven theory.

Figure 1. Conceptual model of how childhood exercise habits may affect health throughout life (arrows indicate possible relationships).



Note. From Blair, S. N., Clark, K. J., Cureton, K. J. & Powell, K. E. (1989). Exercise and fitness in childhood: Implications for a lifetime of health. In Gisolfi, C. V. & Lamb, D. L. (Eds.), *Perspectives in exercise and sports medicine, vol. 2. Youth, exercise, and sport*, (pp. 401-430). Indianapolis, IN: Benchmark Press.

Sallis & McKenzie (1991) reviewed recent studies that looked at the association between physical activity or sports participation in youth and adult activity. The results were conflicting, indicating an unclear association between adult physical activity and adolescent physical activity. However, Sallis & McKenzie contend that a reason for the lack of association could be that most studies compared team sport youth activities to adult physical activities, which are typically individual undertakings. As an individual ages and reaches adulthood, the availability of team sport activities tends to decline, while individual activities, which tend to be more health oriented (e.g., jogging, fitness classes), are more accessible. Therefore, it seems logical that a youth activity program that focused on health oriented physical activity would have a better chance at influencing future adult physical activity pursuits than a youth program that focused solely on team sports.

Rowland and Freedson (1994) contend that no valid studies investigating the carry-over of adolescent physical activity patterns into adulthood have been performed because of (a) the problems involved in measuring physical activity levels and (b) the difficulty in obtaining longitudinal data. Without the results of longitudinal studies,

experts contend that it is impossible to say that adequate childhood activity or fitness level will result in good health in either childhood or adulthood (Pate, 1989; Seedfeldt & Vogel, 1989; Whitehead, Pemberton & Corbin, 1990).

There is also a lack of concrete data to confirm the carry-over effect of other adolescent behaviors into adulthood (Burke et al., 1995). However, support for this idea does exists (Dennison et al., 1987; Powell & Dysinger, 1987). Freedson & Rowland (1992) believe that generating healthy lifestyle habits in one's youth (specifically a regular pattern of physical activity) is a valuable strategy for developing long-term health. Similarly, experts contend that one of the best strategies to prevent disease in adulthood is to introduce interventions early in life (Berenson et al., 1995; Kannel et al., 1995; Lipp et al., 1996).

Summary

Increasing concern regarding the health of today's adolescents illuminates the need for action. Research shows that adolescents weigh more and have more body fat than their peers of 20 years before and that they are establishing health behaviors and exhibiting risk factors that place them at risk for such lifestyle diseases as cancer and heart disease. Of major concern is the hypothesis that this unhealthy adolescent behavior will carry over into adulthood. Conflicting conclusions exist regarding this carry-over effect. However, it is believed that generating healthy lifestyle habits in youth is a valuable strategy for developing long-term health. It is in the best interest of our youth to go forward with educational interventions that promote healthy lifestyles. As Burke et al. (1995) contend, " the potential benefits far outweigh the disadvantages..." (p. 213).

School-Based Programs

Schools, like no other institution, are a tremendous access point to children and adolescents. There are approximately 5.5 million students enrolled in Canadian elementary and secondary schools (Statistics Canada, 1993). In most cases, an average child will spend 12 years in the school system - a system that has the unique capacity to

greatly affect the lives of society's youth. Because of the influence schools have on their students' present and future life choices, it is felt that there is no better place for health education than in the school (DeFriese et al., 1990; Lavin et al., 1992; O'Rourke, 1985). The importance of the school's role in educating our youth in the area of health and well-being is highlighted in Healthy People 2000, a series of U.S. national health objectives. Of its 300 objectives, approximately one third focus on preventive health for adolescents through school-based programs (U.S. Department of Health and Human Services, 1992).

Stating that the overall objective of the entire elementary and secondary curricula is to "encourage the pupil to adopt attitudes that promote the attainment of a certain physical, psychological and social well-being" (Ministere de l'Education, 1985a, p. 46; 1985b, p. 49), it is clear that the Government of Quebec also advocates a strong emphasis on school-based student health education. School-based health education is heralded as one of the most viable means of improving youth health (McGinnis et al., 1991), and according to Cortese (1985), "...the future health of the nation is in large part affected by knowledge, attitudes and skills one can learn as a child in school" (p. 3).

Hundreds of school-based health education programs have been developed and evaluated in the past 15 years (O'Rourke, 1995). Because the domain of health education is so broad, each program can differ greatly with regard to program content, intervention length, and number and type of students involved. In reference to previously implemented and evaluated programs, Kolbe (1985) generalizes that "... school health education programs do improve health knowledge, attitudes and skills, but inconsistently affect health behaviors" (p. 116). These programs addressed such issues as drug abuse, nutrition, cardiovascular disease, human sexuality and family planning, smoking, cancer, drinking and driving, safety belt use, and multiple behaviours that influence health.

Wellness

The concepts of health education and wellness education, although not identical, address similar notions. Health education, as defined by the National Professional School Health Education Organizations (1984) includes, among other elements, instruction intended to motivate health maintenance and promote well-being, and integration of the physical, mental, emotional, and social dimensions of health. Proponents of health education assume a holistic view of an individual. They contend that in order for a child to grow and develop, concentrating solely on the child's physical health is not enough. Equal focus must be placed on enhancing the body, mind, and spirit (Oberteuffer, Harrelson & Pollock, 1972).

Wellness has been described as a theory, a state and even a national movement. The term was first defined in the 1960's by Dunn who defined it as "...an integrated method of human functioning where the individual's potential is maximized to its fullest capacity" (Dunn, 1961, p. 4). Since that time other interpretations of wellness, with common underlying themes, have emerged. Ardell & Tager (1982) consider wellness to be "...a focus on the joys of living life to the fullest" (p. 2), and as a movement, something that has the possibility of drastically reducing health care costs. Hatfield & Rickey Hatfield (1992) contend that wellness is a process that requires people to be actively involved in behavior and lifestyle choices in order to enhance their own health. Street (1994) espoused and even expanded upon Dunn's wellness definition by forwarding five major principles of wellness: a preventive approach, personal responsibility, optimal functioning, an interrelated system, and a healthy lifestyle. Also stressed in Street's interpretation of wellness is the emphasis on development of the whole individual, i.e., the mental, the physical and the spiritual.

A definition of wellness that seems to encompass all of these ideas, and one that will be used for the purposes of this research, is forwarded by the National Wellness Institute. The National Wellness Institute defines wellness as an active process or lifestyle that involves becoming aware of and making decisions about the different areas in one's life, with the goal of attaining a higher level of health (National Wellness

Institute, Inc., 1979). These different areas, known as dimensions, are categorized as physical, social, emotional, intellectual, occupational, and spiritual (National Wellness Institute, Inc., 1979).

Although the concepts of health and wellness education link unequivocally, differences exist with regard to the interrelatedness of the dimensions, and the focus on personal responsibility for a healthy lifestyle. Wellness education focuses on the development of the whole individual, emphasizing the interrelatedness of its six dimensions. Working on a particular aspect in any one of the six dimensions affects aspects in each and every other dimension (Eberst, 1984; National Wellness Institute Inc., 1979). Health education, although theoretically embodying a holistic approach, often deals with issues categorically. For example, a school-based intervention addressing teenage smoking would be considered a health education intervention, but not necessarily wellness education, because of its one-dimensional focus. It has been shown that presenting health topics in isolation is less effective than an approach [such as wellness] which focuses on the relationships among a variety of health topics (Cortese, 1993).

The key principle of wellness is the promotion of a healthy lifestyle. Wellness programs focus on developing lifestyles that will help people maintain or enhance healthy behaviours, rather than targeting problem behavior (Petosa, 1984). Students involved in wellness programs are taught that they have a considerable amount of control over their health and that taking responsibility for their lives and adopting a healthy lifestyle will help them to look and feel good.

Research on School-Based Wellness Programs

There have been few school-based interventions and evaluations that have focused specifically on the wellness concept. The findings from four school-based wellness interventions are shown in Table 1. The studies vary greatly with regard to the following factors: the interventions employed, the choice of dependent variables evaluated, the testing inventories used and the question of follow-up testing. Based on

an analysis of these factors, research needs in the field of school-based wellness programs will be forwarded.

Interventions

Perhaps the factor that varied most among the studies was the independent variable, specifically the content of the intervention and the methods used for implementation. Although all wellness interventions had a similar goal, to promote healthy, well balanced lives among participating students, not all programs focused on the same wellness dimensions. Kushner & Hartigan (1983) evaluated a program that focused on physical health (nutrition, physical fitness) and environmental health, with an underlying theme of self-responsibility. Physical activity, films and problem solving activities were used as implementation tools. At the conclusion of the program, students were asked to set goals and develop a six-month personal wellness program that reflected their own needs and interests. Omizo et al.'s (1992) and Robbins et al.'s (1992) interventions focused on physical health (nutrition and exercise) and emotional health (stress management). Implementation tools for Omizo et al. consisted of lectures, self-monitoring in the form of recording health behaviors, and physical activity. Tools for Robbins et al. consisted of classroom lectures and physical activity sessions. Papenfuss & Beier (1984) focused on five dimensions of wellness: physical, emotional, intellectual, social and spiritual health. Details of how the intervention was implemented were simply that units were developed based on these five dimensions and taught to the participating students. At the conclusion of the intervention, students were encouraged to assess their existing lifestyles and to set goals regarding the improvement of their wellness levels.

Intervention lengths also varied greatly among studies, ranging from a 4 week, 800 minute program, to a 16 week program wherein students were involved for approximately 1,600 minutes. Findings from the School Health Education Evaluation study indicated that approximately 40-50 hours (2400-3000 minutes) of classroom health instruction were needed to affect stable changes in behavior (Connell et al., 1985).

However, Papenfuss & Beier (1984) found enhanced wellness behavior in 10th-grade students after only 800 minutes of classroom activities (the shortest intervention duration of all studies evaluated), both immediately after the intervention and one and one half years following the intervention.

It is clear that these studies varied greatly with respect to the type and length of the intervention employed, hence producing varied results. Important questions therefore arise concerning the most effective type of school-based wellness program and the amount of time necessary for a program to produce favourable results.

Dependent Variables

The major goal of wellness education is to promote healthy lifestyles through healthy behaviors. A variety of dependent measures (including wellness knowledge, anxiety, and self-esteem) were assessed in the four different studies. Although they all evaluated dependent variables related to the wellness concept, only Papenfuss & Beier (1984) and Kushner & Hartigan (1983) tested for behavior change with respect to wellness. Omizo et al. (1992) evaluated wellness knowledge, while Robbins et al. (1992), although including a pretest evaluating wellness attitudes and behaviors, neglected to reassess attitudes and behaviors following the intervention. Consequently, studies need to be designed to determine the effects of wellness programs on behavioral variables, and not simply to evaluate awareness of the concept or to assess variables not directly related to wellness (Omizo et al.).

Follow-up Testing

Most studies assessed immediate changes on wellness concepts, as a result of a wellness intervention. Only one study assessed long-term retention of wellness concepts. Papenfuss & Beier (1984) consulted students one and one half years after the intervention to ascertain if they had made any health habit changes. All students who received the intervention reported having made health habit changes, while only 20% of the students in the control group reported any changes. Wellness programs focus not

only on developing healthy behaviors, but on the maintenance of these behaviors, which is symbolised by a healthy lifestyle. The issue of retention of behaviors is therefore an important one. Follow-up testing is recommended to assess if wellness programs are producing positive long-term behavior change in students (Omizo et al., 1992; Papenfuss & Beier).

Testing Inventories

Another contrast between the studies was the type of tests used to assess aspects of wellness. Most researchers used self-designed wellness tests and questionnaires developed specifically for the particular study. Only one study, that of Kushner & Hartigan (1983), used a previously existing wellness inventory, the Lifestyle Assessment Questionnaire (LAQ) (National Wellness Institute, Inc., 1976), to assess student wellness levels. At the time of the study, the LAQ had yet to be proven valid and reliable, but it has since been deemed a sound measure of wellness for college students (DeStafano & Richardson, 1987; Elsenrath & Fandre, 1982; Palombi, 1992; Richter, 1988).

Research Needs

Results of these four wellness interventions varied from enhanced student attitudes and behaviors towards wellness to no significant changes in student wellness levels. Since a clear statement regarding the effectiveness of school-based wellness programs cannot be made from the studies performed to date, it is evident that there exists a need for further research in this domain.

A final point of interest is that no study asked the participants their thoughts and/or feelings about the intervention. An important determinant to the success of a school-based wellness program, and to the probability of its future use, is how teachers and students perceive the program. There exists a great need for consumer research, asking the students and teachers what they think of programs, in the domain of health education program implementation (O'Rourke, 1995).

Based on the knowledge gained from these wellness studies, future research in the area of school-based wellness program evaluation needs to address the following issues:

- efficient use of classtime in implementing wellness programs,
- the effects of wellness programs on student behavioral variables,
- the effects of wellness programs on long-term behavior change in students,
- the validity and reliability of wellness assessment instruments, and
- user (students, teacher) opinions of wellness programs.

Health Behavior Change: Social Learning Theory

Many theories exist in the area of human behavior change. One of the most fully developed and dominant in the field of health education is Social Learning Theory (SLT) (Perry et al., 1990). Ideas and strategies pertaining to SLT have been valuable in the design of effective health behavior change programs (Ewart, 1991; Perry et al.). An in-depth review of health behavior change theories is beyond the scope of this research. However, a brief outline of SLT will be presented, along with some of the theory's relevant constructs.

SLT attempts to explain human health behavior by describing how individuals (personal factors), environments and behavior interact (Perry et al., 1990). According to the theory, it is the interaction among these variables, not simply the influence of one variable, that is responsible for an individual's behavior. Personal factors, as defined by Bandura (1986), a leading figure in the development of SLT, are a person's ability to (a) foresee the outcome of given behavior patterns, (b) learn by observing others, (c) self-determine or self-regulate behavior, and (d) reflect on and analyse experience. The environment variable is defined as all factors physically external to the person that can affect a person's behavior (Perry et al.). In addition to providing an explanation for how people acquire certain health behavior patterns, SLT also addresses strategies used to promote behavior change (Perry et al.).

In order to better understand SLT and how it explains health behavior, Mischel (1973) and Bandura (1977) described a number of SLT concepts. In addition to summarizing these major concepts in SLT, Table 2, proposed by Perry et al. (1990), outlines their respective implications, or strategies, for promoting health behavior change.

Table 2. Major Concepts in Social Learning Theory and Implications for Intervention.

Concept	Definition	Implication
Environmental	Factors that are physically external to the person	Provide opportunities and social support
Situation	Person's perception of the environment	Correct misperceptions and promote healthful norms
Behavioral capability	Knowledge and skill to perform a given behavior	Promote mastery learning though skills training
Expectations	Anticipatory outcomes of a behavior	Model positive outcomes of healthful behavior
Expectancies	The values that the person places on a given outcome, incentives	Present outcomes of change that have functional meaning
Self-control	Personal regulation of goal-directed behavior or performance	Provide opportunities for self-monitoring and contracting
Observational learning	Behavioral acquisition that occurs by watching the actions and outcome of others' behavior	Include credible role models of the targeted behavior
Reinforcements	Responses to a person's behavior that increase or decrease the likelihood of reoccurrence	Promote self-initiated rewards and incentives
Self-efficacy	The person's confidence in performing a particular behavior	Approach behavior change in small steps; seek specificity about the change sought
Emotional coping responses	Strategies or tactics that are used by a person to deal with emotional stimuli	Provide training in problem solving and stress management; include opportunities to practice skills in emotionally arousing situations
Reciprocal determinism	The dynamic interaction of the person, behavior, and the environment in which the behavior is performed	Consider multiple avenues to behavioral change including environmental, skill, and personal change

Note. From Perry, C. L., Baranowski, T. & Parcel, G. S. (1990). How individuals, environments, and health behavior interact: Social learning theory. In Glanz, K., Marcus Lewis, F. & Rimer, B. K. (Eds.), *Health behavior and health education: Theory, research, and practice* (p.166). San Francisco, CA: Jossey-Bass Publishers.

Of the many theories that exist in the field of health behavior change, SLT has emerged as one of the most popular. The theory explains human behavior as a result of the interaction between personal factors, the environment and the behavior itself. SLT also addresses methods used to promote behavior change. Eleven concepts have been devised in order to better understand the theory and its applications. At least four concepts relate explicitly to the *Looking Good... Feeling Great!* program (Zacour & Zacour, 1991), a school-based wellness program designed specifically for use with young adolescents.

Looking Good...Feeling Great!

Looking Good... Feeling Great! (LGFG) (Zacour & Zacour, 1991) (Appendix G) is a short-term school-based wellness program aimed at encouraging young people to maintain healthy behaviors or change unhealthy ones. The program was developed based on recommendations from a report outlining adolescent females' attitudes towards physical education programs. A survey was conducted in Ontario with 700 grade nine and ten female students (Zacour & Campbell, 1985-86). Some of the issues the females indicated as being important to them included weight training and a "slim and trim" program. Based on the girls' responses, a recommendation for a program to help girls analyse their lifestyles was forwarded. The LGFG program was thus developed. The program was designed to be implemented over a period of three to four consecutive days, in either a physical or health education class. The intended users are 14-15 year old secondary school students. The program was designed to complement or be a supplement to a health education curriculum. It does not require a particular implementation sequence or prior training of teachers. The program has been used in some Ontario secondary schools and is endorsed by the Ontario Physical and Health Education Association as an educationally valid tool.

Although the program's focus does not encompass all six wellness dimensions as described by the National Wellness Institute, Inc. (1979), major principles of wellness including the notions of personal responsibility, a healthy lifestyle, and the

interrelatedness of the mind, body, and spirit are stressed. The program focuses on the integration of four components for good health:

1) physical activity,

2) healthy eating,

3) good mental health practices, and

4) sound personal hygiene habits.

LGFG is implemented with the help of a student lifestyle diary. Students receive their own personal diary. Information on the program's four components is outlined in the diary and is presented by the teacher. Each day students are asked to record and analyse their behaviors and attitudes regarding the four program components. Food intake, physical activity, mental health and personal care issues are recorded on "Daily Personal Records." Also included in the "Daily Personal Record" are sections entitled "For Tomorrow," where students are asked to reflect upon their previous day's health behavior and set new, perhaps more appropriate goals. Students are encouraged to share this health information with classmates and to use peer support to help them analyse behaviors and complete the diary. At the conclusion of the intervention, students are asked to set goals with respect to their lifestyles. This goal setting is done in the form of a written contract which involves a three day commitment. The student indicates which of the four areas (physical activity, healthy eating, good mental health practices, and sound personal hygiene habits) he/she needs to improve upon and outlines what specific behavior(s) he/she will perform in the stated three day period to make these improvements. The student is encouraged to sign and date the contract.

Results of a marketing firm survey involving 1,500 students and 42 teachers from various Ontario secondary schools showed that both teachers and students seemed to like the program (Storguard & Associates, 1991). Overall, the teachers liked the design of the program, found it easy to effectively implement in the classroom, and enjoyed working with it. Most students were interested in the information covered and enjoyed

their involvement with the program. However, the program has yet to be evaluated empirically.

A positive aspect of the LGFG program is that it embodies key Social Learning Theory concepts, reflecting current educational thinking about helping young people change behaviors and follow healthy lifestyles. Self monitoring, goal setting, and behavioral contracting are all seen as valuable methods for promoting behavior change (Allensworth, 1993).

Looking Good...Feeling Great! and Social Learning Theory

Although the development of the LGFG program was not "officially" guided by Social Learning principles, the intervention does embody key Social Learning concepts and uses some of the theory's suggested strategies for health behavior change. Of the 11 major Social Learning Theory (SLT) concepts, four pertain directly to the LGFG program: (a) environment, (b) situation, (c) expectancies, and (d) self-control.

Environment

The environment concept in SLT pertains to all factors that can affect a person's behavior but that are physically external to the person (Perry et al., 1990). Examples of social environmental factors are family members, friends, and peers, while physical environmental factors could be the size of a room or the ambient temperature (Perry et al.). Implications for promoting health behavior change with respect to the environment include providing opportunities for a positive environment, such as facilitating parental or peer support.

The LGFG program encompasses such environmental strategies through the promotion of peer support. The program encourages the student to share his/her personal health information with fellow classmates and to use this peer support to help complete the personal diary.

Situation

Closely linked to the environment concept is SLT's situation concept. Situation refers to how a person perceives the environment and his or her role in the particular situation (Perry et al., 1990). Perry et al. explain how the situation "...guides and limits thinking and behavior" (p.168) to the point where if an adolescent believes that his or her fellow classmates drink eight glasses of water a day, and that they value this healthy behavior, the adolescent may begin to drink eight glasses of water a day too. In this example, the adolescent's peers represent the environment, and the adolescent's perception of what his or her peers were doing represents the situation. Implications for promoting health behavior change with respect to the situation include correcting misperceptions and promoting healthful norms. Since the peer interaction aspect of the LGFG program affects the environment in which adolescents are learning, the adolescent's perception of the environment, or the situation, is therefore also directly affected. Simply sharing personal health information with classmates may help students alter their health behaviors by allowing the thoughts and/or behaviors of students to influence other classmates.

Expectancies

The concept of expectancy refers to the importance a person places on a particular outcome (Perry et al., 1990). The outcome is viewed by a person as either positive or negative. Expectancies influence behavior as a result of a person's desire to maximize positive outcomes and/or minimize negative outcomes. In terms of the ability of a person's expectancies to change health behavior, Perry et al. state that emphasis on immediate positive outcomes or rewards has a greater chance of influencing behavior than a focus on long range benefits. Short-term benefits/outcomes of physical activity (e.g. feeling better, physical attractiveness) are more likely to motivate people to exercise than long term benefits (e.g., risk of heart disease or stroke in 30 years). This belief is substantiated by McAlister (1980), whose study on a smoking prevention program for adolescents showed that programs emphasizing the immediate negative outcomes of

smoking (e.g., bad breath, unattractiveness) were generally more successful than programs that emphasized long term negative consequences (e.g., future risk of developing cancer or heart disease).

The LGFG program strongly emphasizes the short-term benefits of healthy behavior. The following messages, seen throughout the student diary, clearly inform students of the short-term benefits of healthy behavior:

- being less tense,
- sleeping well,
- feeling better about themselves,
- having more energy,
- having an improved appearance, and
- having the ability to achieve their goals.

Self-Control

Self-control is described as the "personal regulation of goal directed behavior or performance" (Perry et al., 1990, p. 166). One of the key principles of wellness is personal responsibility for one's health (Street, 1994). A person's level of wellness depends on their active involvement in their own behavior and lifestyle choices (Hatfield & Rickey Hatfield, 1992). Setting goals for oneself through self-monitoring and contracting is a key concern in the self-control concept. The ability to control one's own behavior heightens the learning and maintenance of that behavior (Bandura, 1986). Of the 11 SLT concepts, perhaps the most implicated in wellness and the LGFG program is the concept of self-control. LGFG allows students the opportunity for self-control of health behavior through the use of self-monitoring, goal setting and behavioral contracting.

Self-monitoring. Self-monitoring is a key element in behavioral programs and is often the first step in realizing behavior change (Brownell & Stunkard, 1978; Ewles & Simmett, 1985). The process involves keeping a detailed record, typically in the form of a diary, of behavior which is to be altered (Ewles & Simmett). The goal of

self-monitoring is to help a person examine his or her behavior patterns in order to become aware of the actions that may have previously gone unnoticed (Ewles & Simmett; Brownell & Stunkard). Specifically, self-monitoring can promote behavior change through (a) increasing awareness of behavior patterns, (b) providing specific information to help a person evaluate his or her performance, and (c) recording one's behaviors (a modification of behavior can be realised by the simple act of recording that behavior) (Brownell & Stunkard). Self-monitoring and goal setting were key behavior change tools in a study done by Coates, Jeffrey & Slinkard (1981). The study assessed the effectiveness of a school-based program in enhancing students' eating and exercise habits. The 161 elementary school students received 12 class lessons on the subjects of eating and physical activity. The students were asked to keep daily goal sheets on which they would list their behaviors and make a commitment to change the behaviors which needed altering. Results indicated substantial positive eating behavior change, which was largely attributed to the goal setting tasks (Coates et al.). There was minimal physical activity behavior change.

Self-monitoring of health behaviors is an important required element of the LGFG program. The student diary requires the students to complete in a daily personal record of their previous day's health behaviors. The daily personal records are included in the diary, and a supplemental recording sheet for the "Nutritional Check-Up" is available to the students from the teacher's guide. Providing students with a convenient recording system is crucial to the behavior change process. According to Brownell & Stunkard (1978), simply providing the student with a recording form "...can sometimes make the difference between success and failure " (p. 408).

Behavioral contracting. A behavioral contract involves a written agreement that specifies behaviors and the provisions needed to promote the behavior change (Epstein & Wing, 1984). A contract can be made with another party or with the person him/herself. The success of a contract requires (a) a commitment on the part of the person for behavior change, (b) a clear description of what behavior is to be changed, and (c) specific provisions for the behavior change (i.e., the events needed to change

behavior, the frequency of the behavior) (Epstein & Wing). Along with the requirements suggested by Epstein & Wing, Kanfer (1975) states that a contract should include (a) a time limit for the attainment of the behavior change goal and (b) specification of the positive reinforcement(s) available to the person upon fulfilling the contract. Rimm & Masters (1974) contend that the contracting procedure has large appeal as it involves many factors associated with behavior change. One such factor is that contracts provide immediate rewards for behavior change and adherence to the behavior change program, i.e., the person can feel a sense of satisfaction and accomplishment by the successful completion of the contract (Epstein & Wing). In order to provide immediate rewards and increase commitment, contracts should cover short time periods and be re-read and re-signed by the person(s) involved (Epstein & Wing).

After reflecting daily upon his/her health behaviors, students involved in the LGFG program are asked to set new appropriate goals in the "Daily Personal Record." The program encourages the student to enter into a written contract with him/herself based on those goals. The contract involves a three day commitment. The student indicates on the contract which of the four areas (physical activity, healthy eating, good mental health practices, and sound personal hygiene habits) he/she needs to improve upon and outlines what specific behavior(s) he/she will perform in the stated three day period to make these improvements.

Table 3 summarizes the SLT concepts relevant to the LGFG program, and gives examples of how these concepts are applied through the program.

Table 3. Examples of Applications of the Major Concepts in Social Learning Theory in the *Looking Good ...Feeling Great!* Program

Social Learning Theory Concept	Application in the *Looking Good ...Feeling Great!* Program
environment and situation: all factors (physically external to the person) that can affect a person's behavior and how a person perceives that environment	peer involvement in completing the diary
expectancies: the importance a person places on a particular outcome	emphasis on short term outcomes of behavior change (e.g., improved appearance, feeling better)
self-control: personal regulation of goal directed behavior or performance	recording health behaviors and setting new appropriate goals in the daily personal record; entering into a written contract outlining provisions for behavior change

Summary

Research shows that many adolescents are establishing health behaviors that place them at risk for lifestyle diseases and that there is a possibility they are carrying these behaviors into adulthood. School-based health education appears to be an approach that is capable of positively influencing youth health. Wellness, a type of health education, promotes personal responsibility for a higher level of health through a healthy lifestyle. Unfortunately, few studies focusing on school-based wellness programs have been conducted. An analysis of the research that has been done identified some issues in need of further research, including the efficient use of classtime in implementing wellness programs and the ability of wellness programs to change student behavior.

Of the many theories that exist in the field of health behavior change, Social Learning Theory (SLT) has emerged as one of the most popular. The *Looking Good...Feeling Great!* program is a short-term school-based wellness program that incorporates several behavior change components of SLT and is considered both time

and cost efficient. However, the program has yet to be evaluated empirically. Therefore, focused investigation of this wellness program is warranted to determine its effectiveness in enhancing student wellness levels and consequently student lifestyles.

CHAPTER III

METHODS AND PROCEDURES

The study employed a quasiexperimental pretest/posttest control group design to assess the effectiveness of the *Looking Good... Feeling Great!* (LGFG) program (Zacour & Zacour, 1991). A quasiexperimental design was chosen as it was not possible or practical to randomly assign students to experimental and control groups. Quasiexperimental designs are common in educational settings because they aim to fit the design as much to the real world setting as possible, allowing for greater generalizability of results (Thomas & Nelson, 1995). Focus groups and interviews were also used to assess student and teacher impressions of the LGFG program.

Participants and Setting

The participants (N = 100) were grade nine students from three English secondary schools in the Montreal area: Milton High School, Little Valley High School and Anderson High School. (Pseudonyms were used for the names of all schools and teachers). Two of the schools were from the same school board (Milton and Little Valley). All three schools were selected based on previously established interest levels on the part of the teachers and the feasibility of incorporating the intervention into the curricula. For practical purposes, intact classes were used. Although the LGFG program was designed for a Health or Physical Education (PE) class, Human Biology and Moral and Religious Education (MRE) classes were chosen for the following reasons:

1. Quebec secondary schools do not offer Health Education courses.
2. The teachers involved felt that it was inappropriate to implement the program in a PE class because it does not require students to be physically active during implementation.
3. The teachers involved felt that the LGFG subject matters were compatible with other topics covered in Human Biology and MRE.

The number of female and male participants was approximately equal: 51 females and 49 males. The students ranged in age from 14 to 17 years, with the average age being 14.8 years. Class sizes were considerably larger at the beginning of the study. However, because (a) some students were not able to complete the wellness inventory at all three testing times, and (b) it was evident that some students spoiled their questionnaires by circling responses indiscriminately, the somewhat smaller class sizes represented those students who responsibly completed the wellness questionnaire at all three test times. Since three different schools were involved in the study, specific information regarding each school and their respective teachers and students will be outlined.

Milton High School

Milton High School is a suburban secondary school located in a middle socioeconomic area in the west end of Montreal. The school population is approximately 580 students with approximately 37 teachers.

Participants were from two coeducational Human Biology classes. One class served as the experimental group and one as the control group. The total number of participants was 30, 15 females and 15 males. The experimental group totalled 19, with 10 females and 9 males. The control group consisted of 11 participants, 5 females and 6 males. Average age of participants was 14.7, with ages ranging from 14-16 years. The vast majority of students were Caucasian.

Both control and experimental groups were taught by the same Human Biology teacher, Susan. Susan is 28 years old, has an undergraduate PE degree and a Master's degree in Sports Administration. She has five years of full time teaching experience (all at Milton), four years experience teaching at the grade nine level, and two years experience teaching grade nine Human Biology.

Little Valley High School

Little Valley is a suburban secondary school located in a middle socioeconomic area in the west end of Montreal. The school population is approximately 1,145 students with approximately 72 teachers.

Participants were from two coeducational Human Biology classes. One class served as the experimental group and one as the control group. The total number of participants was 41, 18 females and 23 males. The experimental group totalled 24, with 14 females and 10 males. The control group consisted of 17 participants, 4 females and 13 males. The average age of participants was 14.7 years, with ages ranging from 14-16. The vast majority of students were Caucasian.

The experimental group was taught by John. John is 41 years old, has an undergraduate degree in PE and a Master's degree in Exercise Physiology. He has 17 years of full time teaching experience (12 years at Little Valley), and 12 years experience teaching at the grade nine level, during which he has taught human and various other types of biology. The control group was taught by another male science teacher.

Anderson High School

Anderson is an urban secondary school located in a lower socioeconomic area, situated close to the city core. Although not confirmed by official school statistics, Paul, the teacher involved at Anderson, stated that "...approximately 35-45% of (the) kids are on welfare or UIC. Many of the other families are fairly poor, working class families." The school population is approximately 360 students, with approximately 22 teachers.

Three classes were used. Two MRE classes, one all female class and one all male class, were used as the experimental group. Participants in the control group were from one coeducational PE class. The total number of participants was 29, 18 females and 11 males. The experimental group totalled 19, with 12 females and 7 males. The control group consisted of 10 participants, 6 females and 4 males. The average age of participants was 15.0, with ages ranging between 14 and 17 years. The ethnic

breakdown of the participants was approximately 50% Caucasian and 50% African Canadian.

Both experimental groups were taught by the same MRE teacher, Paul. Paul is 42 years old and has an undergraduate and Master's degree in Anthropology/Archeology. He has 13 years of full time teaching experience, nine of which were at Anderson teaching at the grade nine level. Paul has four years experience teaching grade nine MRE. The control group was taught by a male PE teacher.

Instrumentation

Looking Good...Feeling Great!

The intervention used for this study was the *Looking Good...Feeling Great!* (LGFG) program (Zacour & Zacour, 1991) (Appendix G). LGFG is a short-term school-based wellness program aimed at encouraging young people to maintain healthy behaviors or change unhealthy ones. Determining the effectiveness of the LGFG program in enhancing student wellness levels was the focus of this study.

Testwell™

All experimental and control group participants were administered Testwell™, High School Edition, a wellness inventory developed by the National Wellness Institute, Inc. (1994) (Appendix B). Testwell™ is a 100 question self-report inventory that measures student wellness levels. The inventory has 10 subtests that provide information on the National Wellness Institute, Inc.'s (1979) six dimensions of wellness (physical, social, emotional, intellectual, occupational, and spiritual) as well as a composite score. Three of the wellness dimensions have subtests (the physical, social/environmental and emotional dimensions), whereas the others (intellectual, occupational and spiritual dimensions) have no subtests . Table 4 lists the six dimensions of wellness with their respective subtests. (Appendix A offers definitions of the dimensions and their respective subtests).

Table 4. The Six Dimensions of Wellness and Their Respective Subtests

Dimension	Subtest
Physical	-physical fitness and nutrition -self-care -safety and lifestyle
Social/Environmental	-environmental wellness -social awareness
Emotional	-emotional awareness and sexuality -emotional management
Intellectual	
Occupational	
Spiritual	

Scoring of Testwell™. Testwell™ questions are answered using a five point Likert-type scale: *1* = almost never (less than 10% of the time), *2* = occasionally (approximately 25% of the time), *3* = often (approximately 50% of the time), *4* = very often (approximately 75% of the time), and *5* = almost always (95% or more of the time). Each of the ten wellness subtests contains 10 questions. The total subtest score is weighted by a factor of two, therefore giving each subtest a potential value of 100 points, with the maximum composite score being 1000 (determined by summing the scores from the 10 subtests). Overall composite scores ranging from 850-1000 represent a high level of wellness or a rating of "excellent"; 700-850 a medium level of wellness or a rating of "good"; and less that 700, a low level of wellness or a rating of "room for improvement" (National Wellness Institute, Inc.,1995).

Validity and reliability of Testwell™. Testwell™ High School Edition is an adaptation of the National Wellness Institute's (1976) Lifestyle Assessment Questionnaire (LAQ). The LAQ was developed by the Board of Directors and Cofounders of the National Wellness Institute, Inc. to assess wellness levels in college students and has been shown to be a reliable and valid instrument. In 1982, Elsenrath & Fandre conducted a study with 39 adults, evaluating test-retest reliabilities of the

inventory. Results indicated an overall reliability coefficient of .76, and test-retest coefficients ranging from .57 to .87 for the 11 subtests of the LAQ. Richter (1988) also reported high test-retest reliability coefficients of .81 to .97 for the 11 subtests, along with internal consistency coefficients (Cronbach's alpha) ranging from .67 to .94 (N= 15 female University students). More recently, Palombi's study (1992), involving over 100 university students, reported a Cronbach's alpha coefficient of .93 for the overall LAQ score.

The LAQ was evaluated for content validity during its development by a panel of health promotion and wellness professionals. Since that time, content validity has also been shown by both Richter (1988) and Palombi (1992). Palombi correlated LAQ scores with scores from two other wellness inventories. The resulting co-efficients of .79 and .70 indicate moderate construct validity. External validity for the 11 subtests of the LAQ was established by DeStafano & Richardson (1987) by comparing the subtest scores to external objective measures.

The high school version of Testwell™ closely resembles the LAQ. Testwell™ and the LAQ are similar in the following ways:

- both address the same 6 dimensions of wellness (physical, social, emotional, intellectual, occupational, and spiritual),
- each contain 10-11 wellness subtests which address very similar concepts,
- questions are answered using a five point Likert-type scale,
- both measure (a) total level of wellness and (b) level on each subtest, and
- scoring of inventories is the same.

Testwell™ and the LAQ differ in the following respects:

- Testwell™ has 100 questions, LAQ has 185,
- wording of questions is different,
- some questions on LAQ are not appropriate for high school students (e.g. questions pertaining to Occupational Wellness), and
- grouping of questions in subtests is not identical.

Probably due to its newness, very few studies have been conducted to evaluate the reliability and validity of Testwell™. However, in an as yet unpublished study, Hofford & Jaeger (1995) evaluated the reliability and validity of the college version of Testwell™, with 288 college students. The results demonstrated internal consistency (Cronbach's coefficient alphas) for the subtests ranging from .67 to .89, and test-retest coefficients (Spearman's) of .70 to .92. Construct validity for Testwell™ was also established (Hofford & Jaeger). Unfortunately, no studies to date have evaluated the validity and/or reliability of the high school version of Testwell™.

In summary, Testwell™ is a relatively new version of the LAQ, a wellness inventory that has been established as a valid and reliable measure of wellness. The college version of Testwell™ has been shown to be valid and reliable, and is very similar to its high school version. Therefore it was felt that Testwell™ would be an appropriate inventory to assess wellness levels in high school students.

Interviews

Interviews were conducted with both students and teachers to assess impressions of the LGFG program.

Student focus groups. Student impressions of the LGFG program were obtained through focus group interviews. A focus group interview is a research technique conducted with a small group of people (typically 6-8 participants) with the objective of acquiring information on a specific topic (Patton, 1990). It is considered an efficient way of generating high quality data and is commonly used for program evaluation (Patton) and obtaining impressions of products and/or programs (Stewart & Shamdasani, 1990). Focus group interviews were conducted by the researcher with participants from the experimental groups immediately after completion of LGFG. The aim of the interviews was to assess student attitudes towards the program. Two separate focus groups were conducted at each school: one for females and one for males. Each focus group involved 5-6 participants. Participants were recruited on a voluntary basis and were randomly chosen from the volunteers. Random selection involved assigning each student with a

number between one and five and subsequently choosing the students with the same number (e.g., all students with the number four) to participate in the focus group. Random selection was not possible at Anderson as many students did not want to be interviewed. As a result, the Anderson focus groups consisted of a group of friends who simply showed interest in being interviewed. Duration of the focus group interviews varied between 12 and 30 minutes. All interviews were audiotaped. (Questions asked by the researcher during the focus group interviews can be found in Appendix C).

Teacher interviews. Teacher impressions of the LGFG program were obtained through informal and formal one-on-one interviews. Brief informal interviews with the teachers were conducted each day of the implementation, to assess his or her impressions of the program. A formal interview to assess teacher opinions was conducted with each teacher immediately following the completion of the LGFG. The formal interview lasted approximately 30 minutes and was audiotaped. (Questions asked by the researcher during teacher interviews can be found in Appendix D.)

Procedure

Permission from the two school boards involved was obtained in November and December 1996. Parental consent forms were distributed to all students prior to the data collection periods (Appendix E). Data collection began in January 1997. Milton students completed the questionnaires and the LGFG intervention immediately following the Christmas holidays, in the months of January and February. Anderson students completed the questionnaires and intervention in late February and early March, and Little Valley students during the months of April and May. The research protocol was as follows:

Testwell™ Data Collection

Preceding the intervention, all students (control and experimental) were pretested with Testwell™ to assess their wellness levels. Then LGFG was given to the experimental students while the control group classes received their regular class

material. The day after completion of LGFG, all students were retested with Testwell™ (posttest-1) (except for the control group at Anderson who were only available to be tested 3 days before Anderson's experimental group had completed the program). Testwell™ was administered a final time (posttest-2) to all students one and one half months following the completion of the intervention to assess retention of possible changes in wellness levels. Testwell™ was administered by the researcher in the classroom and took approximately 40-50 minutes for participants to complete. The teacher was present during all administrations of Testwell™. Informal teacher interviews were conducted throughout the intervention. The formal teacher interview and student focus group interviews were conducted immediately following completion of the LGFG program.

Implementation of *Looking Good...Feeling Great!*

Beginning on the day following the pretest, the experimental groups participated in the LGFG program. At Milton and Little Valley, the program was taught over four consecutive days. However, because Anderson's MRE classes were only held every second day, the program took eight days to complete. LGFG was implemented by the regular teacher. Since the LGFG program ideally does not require any prior teacher training, the method of implementation was left to the teacher's discretion. However, suggestions and/or technical support from the researcher were offered if needed. All teachers followed the implementation suggestions forwarded by the researcher, which were initially provided by the author of the program.

The implementation sequence for all schools was as follows:

Class 1

- introduction to the program
- presentation of the Physical Activity section
- students completed the Daily Personal Record for Day 1

Class 2

- presentation of the Healthy Eating section
- students completed the Daily Personal Record for Day 2

Class 3

- presentation of the Body Image and Mental Health sections
- students completed the Daily Personal Record for Day 3

Class 4 (half class)

- summary, conclusions
- students completed the Personal Contract
- (second half of class was used for the posttest of Testwell™)

Both Milton and Little Valley teachers used the overheads provided by the researcher to help present the material to the students. The overheads were photocopies of the pages from the student diary. Paul, the teacher at Anderson, did not make use of the overheads because he felt they were unnecessary. (Paul later stated that the room in which the classes took place had no screen on which to project the overheads.)

Students were told at the end of each day that they could hand in their lifestyle diaries to the researcher if they wanted input on their progress with the program. If diaries were handed in, the researcher wrote encouraging comments on the diaries regarding the students' efforts.

The researcher was present for each LGFG class in all three schools. Throughout these times, field notes were taken regarding the implementation process and teacher and student activity/behavior.

During the time the experimental group was receiving the intervention, the control group received traditional Human Biology or PE instruction, depending on the school in question. Control group participants at Milton received instruction on the nervous system of the pig. Control group participants at Little Valley received

instruction on the human cell, and the control group at Anderson underwent fitness testing (e.g., strength and flexibility tests).

Summary of Procedures

Day 1-	Pretest - Testwell™
Day 2- Day 3- Day 4-	Implementation of LGFG or regular classes
Day 5-	Conclusion of LGFG and/or Posttest-1 - Testwell™
1 1/2 months later-	Posttest-2 - Testwell™

Treatment of the Data

Testwell™ Data

Descriptive statistics were computed for each school, both genders and both groups (experimental and control). Repeated measures factorial ANOVAs were performed to assess the differences in participants' wellness levels. The designs involved one within subject factor, the repeated factor Time (pretest, posttest-1, and posttest-2) and three between subject factors Gender (male and female), School (Milton, Little Valley and Anderson), and Group (experimental and control).

Due to the use of intact classes and unpredictable student absenteeism, unequal *n*'s were observed. In order to control for unequal *n*'s, a three part analysis using the unweighted means method was employed to examine the effect(s) of the LGFG program on student wellness levels. An overall analysis of between-within effects was not performed because (a)it is not interpretable with unequal *n*'s, and(b) the comparisons considered in the between-within analysis are congruent with the first two research

hypotheses which predicted an enhanced wellness level for the experimental group from pretest to posttest-1, and from pretest to posttest-2. Computations included separate analyses for:

1. effect of school, group and gender on wellness scores (between subject effects)
2. effect of time on wellness scores (within subjects effects), and
3. effect of school, group and gender on the difference between, i) pretest and posttest-1 scores, and ii) pretest and posttest-2 scores (this is a two part analysis which interprets the between-within effects and tests the first two hypotheses.)

An alpha level of .05 was adopted for all tests. Effect size (ES) was calculated using the Pearson Product Moment Correlation *r*, according to the following formula: $ES = r = \sqrt{\frac{F}{F + df_{denominator}}}$. Usually, effect size is presented as *d*, or the standardized difference between two groups. The definitions between small, medium and large effect sizes are not quite consistent between *r* and *d*. The following table is presented to show the levels of *r* equivalent to *d*.

Table 5. Definitions of Effect Sizes and the Equivalent *r* and *d* Values

	d	Cohen's *r*	*r* equivalent to *d*
small	0.200	0.100	0.100
medium	0.500	0.300	0.240
large	0.800	0.500	0.370

Note. From Rosenthal, R. & Rosnow, R. L. (1984), *Essentials of behavorial research: Methods and data analysis* (p. 361). McGraw-Hill, Inc..

Focus Group and Interview Data

Audiotapes of student focus groups and teacher interviews were transcribed. Based on students' and teachers' responses to the researcher's proposed questions and to other themes that emerged during the interviews, impressions of the LGFG program were described.

CHAPTER IV

RESULTS

The purpose of this study was to examine the effects of a school-based wellness program, *Looking Good...Feeling Great!* (LGFG) (Zacour & Zacour, 1991), on adolescent wellness levels. Specific hypotheses were: 1) Experimental group wellness scores, relative to their prescores, will be significantly higher than control group scores as a result of participating in the LGFG program, 2) Experimental group wellness scores will remain higher than control group scores, one and one half months following participation in the LGFG program, and 3) There will be no difference between genders with respect to the effectiveness of the LGFG program. A final purpose of this study was to evaluate student and teacher impressions of the LGFG program.

This chapter will present the results of test-retest reliability checks on Testwell™ (National Wellness Institute, Inc., 1994), the wellness inventory used in this study, relevant descriptive statistics, and the three part ANOVA analysis. Finally, researcher's observations and student and teacher impressions of the LGFG program will be presented.

Test-Retest Reliability of Testwell™

Pearson product moment correlations were done to establish test-retest reliabilities for Testwell™. This method correlated (a) all scores on the pretest with scores on posttest-1 (post-1), (b) all scores on the pretest with scores on posttest-2 (post-2), and (c) all scores on post-1 with post-2 scores. Resulting correlations of .82, .71, and .83 show moderate to high correlations for all comparisons, implying that Testwell™ is a reliable inventory for grade nine students.

Descriptive Results

Upon analysing the data of all 100 participants, one outlier was detected and removed from all analyses. The outlier, a female control group participant from Anderson was removed based on the rule that authorises the removal of a score that is

±3 standard deviations from the mean. The total number of participants was therefore N=99.

Table 6. Means and Standard Deviations for Testwell™ Scores Across School, Gender and Group

	Testwell™ Scores					
	Pre		Post-1		Post-2	
School (n)	mean	sd	mean	sd	mean	sd
LV(41)	732	82	775	92	774	92
A(28)	695	86	725	103	748	100
M(30)	693	116	724	121	721	108
Gender (n)						
F(50)	719	91	764	102	771	96
M(49)	700	100	726	109	730	106
Group (n)						
Exp(62)	698	97	742	113	752	106
Cont(37)	729	91	750	96	748	99
All Observations (N=99)	709	96	745	107	750	103

As shown by Table 6, Little Valley (LV) scores (732, 775, 774) were consistently higher than Anderson (A) scores (695, 725, 748) and Milton (M) scores (693, 724, 721). On average, females (719, 764, 771) scored higher than males (700, 726, 730) at all testing times. Scores for both the experimental group (698, 742, 752) and the control group (729, 750, 748) increased from the pretest to the posttests. All mean scores obtained are considered by the National Wellness Institute, Inc. (1995) as nearing or at a medium/"good" level of wellness.

Effect of School, Group, and Gender on Wellness Score

This analysis looked at differences on average wellness scores (across time) due to school, group, gender or some combination of these factors. Results, displayed in Table 7, showed (a) a significant overall main effect for school, and (b) a significant overall main effect for gender. No other main effects or interactions were noted.

Table 7. Analysis of Variance of Effects of School, Group, and Gender on Testwell™ Score (Between Effects)

Source of Variation	Sum of Squares	df	Mean Square	F-Ratio	p	Effect Size
School	53900.56	2	26950.28	3.15	0.048	
LV vs. M	52629.32	1	52629.32	6.16	0.030[a]	0.26
LV vs. A	17862.67	1	17862.67	2.09	0.304[a]	
Group	2830.11	1	2830.11	0.33	0.570	
Gender	39236.59	1	39236.59	4.59	0.040	0.22
School *Group	43133.83	2	21566.91	2.52	0.086	
School *Gender	2222.07	2	1111.04	0.13	0.878	
Group *Gender	379.81	1	379.81	0.04	0.834	
School *Group *Gender	8526.71	2	4263.35	0.50	0.609	
Error	743711.98	87	8548.41			

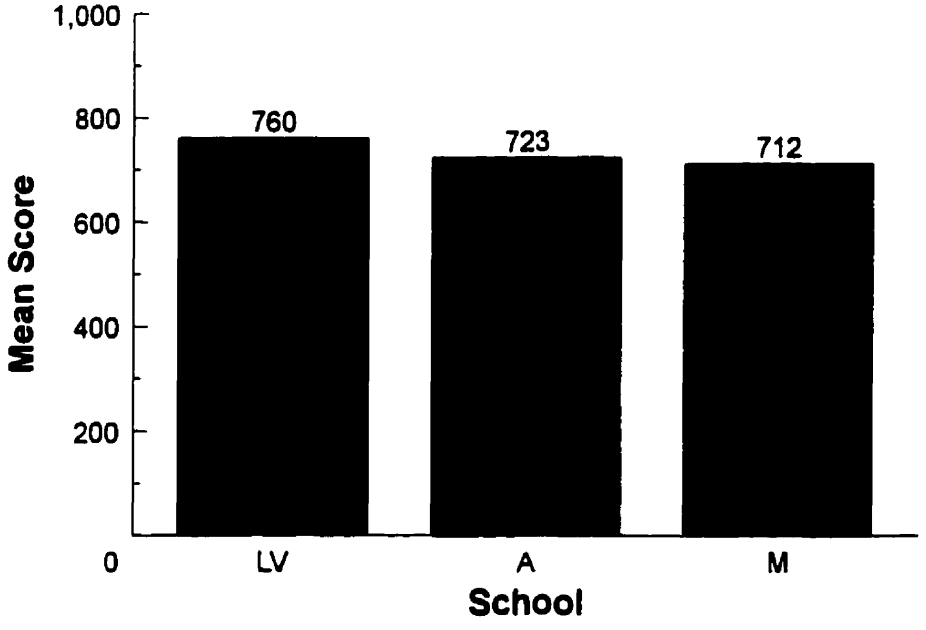
[a] with Bonferroni correction

Effect of School

A significant overall main effect for school was noted, $F(2, 87) = 3.15$, $p < .05$.

Posthoc contrasts showed the difference to be between Little Valley and Milton, $F(1, 87) = 6.16$, $p < .05$, ES= 0.26, with no overall significant difference between Little Valley and Anderson or between Milton and Anderson. A graphical depiction of the differences between school scores is shown in Figure 2.

Figure 2. Effect of school on mean Testwell score



Effect of Gender

A significant overall main effect for gender was noted, $F(1, 87) = 4.59$, $p < .05$, ES = 0.22. At each test time, the average female score (719, 764, 771) was higher than the average male score (700, 726, 730), taking into account all schools and both experimental and control group participants.

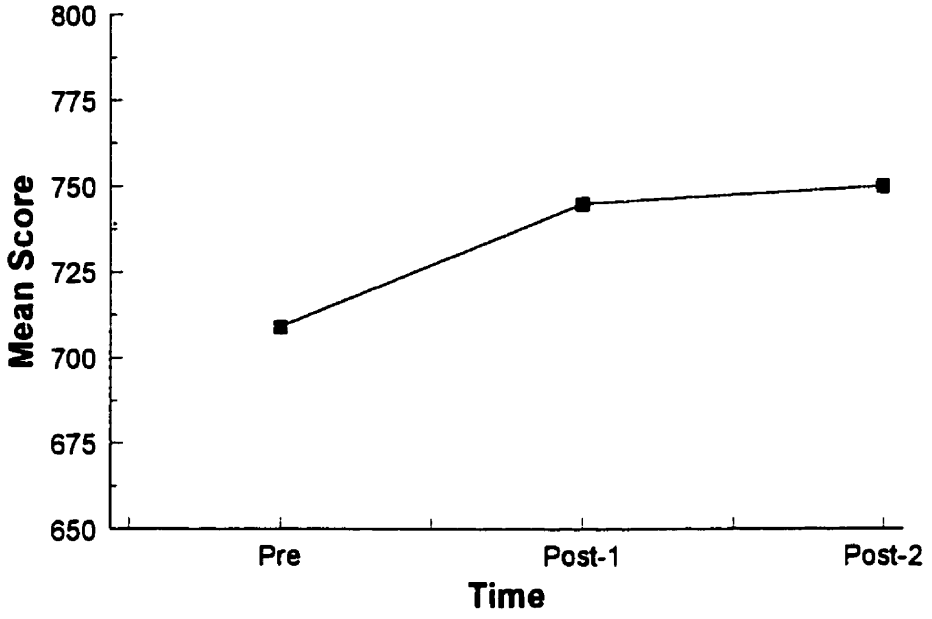
Effect of Time on Wellness Score

Results of the within subjects repeated measures ANOVA (Table 8) show a main effect for time, $F(2, 196) = 26.06$, $p < .05$. Planned contrasts show a significant change over time in wellness scores between pretest and post-1, $F(1, 98) = 44.66$, $p < .05$, ES = 0.56, and between pretest and post-2 scores, $F(1, 98) = 36.63$, $p < .05$, ES = 0.52. No significant change in wellness scores was observed between post-1 and post-2. Table 6 shows the average pretest score (709) to be lower than either of the average post-1 (745) or post-2 score (750). Figure 3 displays the trend of scores over time, showing an increase over time in wellness scores for all participants between pretest and post-1, and pretest and post-2.

Table 8. Analysis of Variance of Effects of Time on Testwell™ Score (Within Effects)

Source of Variation	Sum of Squares	df	Mean Square	F-Ratio	p	Effect Size
Time	98553.54	2	49276.77	26.06	0.000	
Pre vs. Post-1	126510.31	1	126510.31	44.66	0.000	0.56
Pre vs. Post-2	166419.00	1	166419.00	36.63	0.000	0.52
Error	370663.13	196	1891.14			

Figure 3. Effect of time on mean Testwell score



Effect on Wellness Score as a Result of Participating in the *Looking Good...Feeling Great!* Program

Hypothesis Number One: Experimental group wellness scores, relative to their prescores, will be significantly higher than control group scores as a result of participating in the LGFG program.

A repeated measures ANOVA, using pretest and post-1 scores, was performed to assess whether experimental group wellness scores would be significantly higher than control group scores as a result of participating in the LGFG program. Results of the between-within analysis show a significant difference between groups from pretest to post-1, $F(1, 87) = 4.30$, $p < .05$, with an effect size of 0.22 (Table 9). Although all participants showed increases in wellness scores from pretest to post-1 (709 to 745), results from this analysis show that there was a larger increase in Testwell™ scores from pretest to post-1 for the students who received the LGFG program (698 to 742), versus those in the control group (729 to 750). Figure 4 shows the increase in experimental

group scores over time versus control group scores. There were no other significant effects or interactions from pretest to post-1. Neither school nor gender affected scores on Testwell™ from pretest to post-1.

Table 9. Analysis of Variance of Effects of School, Group, and Gender on Testwell™ Score (Between-Within Effects, Pretest-Posttest-1)

Source of Variation	Sum of Squares	df	Mean Square	F-Ratio	p	Effect Size
School	5404.70	2	2702.35	0.96	0.390	
Group	12148.63	1	12148.63	4.30	0.040	0.22
Gender	4754.63	1	4754.63	1.68	0.200	
School *Group	224.52	2	112.29	0.04	0.961	
School *Gender	1683.46	2	841.73	0.30	0.743	
Group *Gender	2605.97	1	2605.97	0.92	0.340	
School *Group *Gender	1481.87	2	740.94	0.26	0.770	
Error	245824.78	87	2825.57			

Maintenance of Wellness Levels Following Participation in the *Looking Good...Feeling Great!* Program

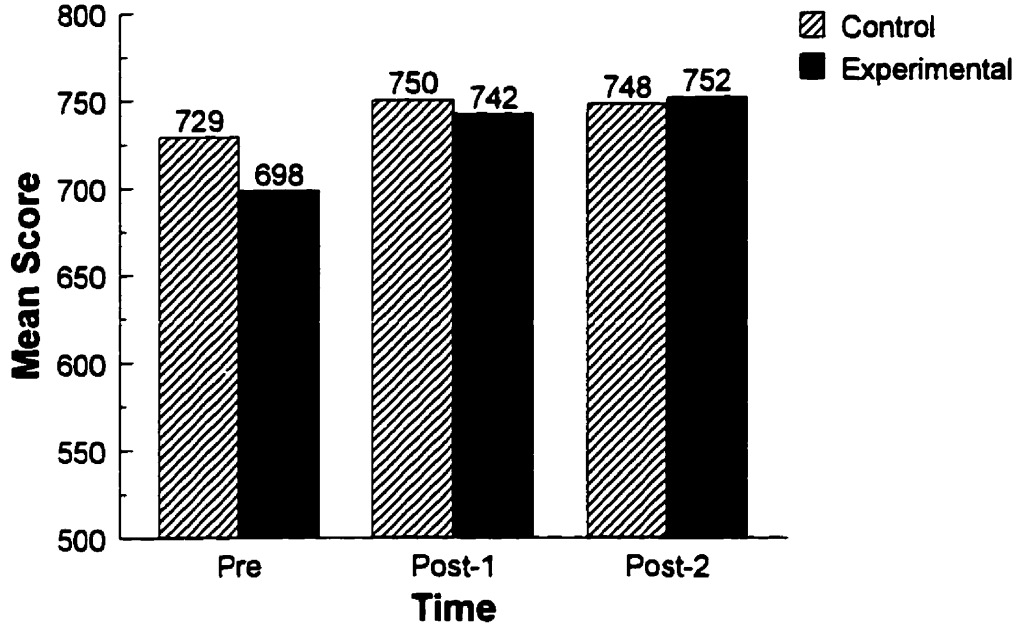
Hypothesis Number Two: Experimental group wellness scores will remain higher than control group scores, one and one half months following participation in the LGFG program.

A repeated measures ANOVA, using pretest and post-2 scores, was performed to assess whether experimental group wellness levels remained higher than the control group wellness levels, one and one half months following the intervention. Results of the between-within analysis (Table 10) show a significant difference between groups in the increase in wellness scores from pretest to post-2, $F(1, 87) = 5.43$, $p < .05$, with an effect size of 0.24. Results from this analysis show that the larger increase in experimental group scores versus control group scores from pretest to post-1 is maintained one and one half months following the intervention. No other significant findings were noted. Figure 4 shows the increase in experimental group scores versus control group scores over time.

Table 10. Analysis of Variance of Effects of School, Group, and Gender on Testwell™ Score (Between-Within Effects, Pretest-Posttest-2)

Source of Variation	Sum of Squares	df	Mean Square	F-Ratio	p	Effect Size
School	7338.74	2	3669.37	0.81	0.450	
Group	24731.97	1	24731.97	5.43	0.020	0.24
Gender	7017.68	1	7017.68	1.54	0.220	
School *Group	5526.53	2	2763.26	0.61	0.547	
School *Gender	4128.92	2	714.46	0.16	0.855	
Group *Gender	138.41	1	138.41	0.03	0.862	
School *Group *Gender	545.02	2	272.51	0.06	0.942	
Error	396125.36	87	4553.17			

Figure 4. Effect of time and group on mean Testwell score



Effect of Gender

Hypothesis Number Three: There will be no difference between genders with respect to the effectiveness of the LGFG program.

The third hypothesis states that there will be no difference between male and female scores as a result of participating in the LGFG program. As evidenced by Table 9 and Table 10 respectively, there was no significant interaction between group and gender from pretest to post-1, $F(1, 87) = 0.92$, $p > .05$, or from pretest to post-2, $F(1, 87) = 0.03$, $p > .05$, implying that males and females benefited equally from the LGFG program.

What Went on in the Classrooms: Researcher's Observations

Based on field notes taken by the researcher during all LGFG classes, resulting observations were grouped into the following categories: implementation issues, teacher behavior/attitude, and class atmosphere.

Implementation Issues

All teachers followed the implementation suggestions forwarded by the researcher, whereby different sections of the LGFG program were covered on different days (the implementation sequence can be found in Chapter III in the section entitled "Procedure"). The teachers from Little Valley and Milton (John and Susan) used the overheads provided by the researcher, which were photocopies of the student diary, and went over every point on the overheads with the students. The students followed along in their student diaries. At times, John and Susan would forward their own knowledge about the topics as well. The teacher from Anderson (Paul) did not use the overheads provided and omitted a large portion of the information contained in the student diary. On average, Paul covered approximately 30% of the material on each page of the diary. He chose certain points to emphasize on each page and subsequently either moved on to the next page of the diary or began speaking about information he knew about the subject (information that was not in the student diary).

Teacher Behavior/Attitude

All teachers appeared interested and enthusiastic about teaching the program when first approached. However, comments made by the teacher at Anderson during the implementation of the program seemed to indicate that this teacher's level of interest in the program declined. In reference to the Personal Care segment of the Body Image section, Paul said to the students that the information "is so common sense that it is a waste of time to mention." Similarly, at the beginning of the last implementation day, he said to the students, in reference to the entire program: "Let's finish and get this out of

the way." Teachers from both Milton and Little Valley appeared interested and enthusiastic about the program throughout the entire implementation process.

Class Atmosphere

The atmosphere in the classrooms at Little Valley and Milton was quite similar. The vast majority of students had their LGFG diaries open when the teacher was going over the material, and most appeared to be listening. Students raised their hands when they had questions and rarely interrupted the teacher while he/she was implementing the program. The majority of students completed their daily personal records (often with the aid of their peers) during the last quarter of the class, the time allotted by the teacher for this activity.

The class atmosphere, both in the male and female classes, was distinctly different at Anderson. Students often spoke among themselves while the teacher was implementing the program. On two implementation days, some students did not open their diaries while the teacher was presenting the material, choosing instead to talk among themselves. At the beginning of one class, it took approximately 10 minutes before the teacher could begin teaching the program because the students were talking, laughing, and moving about the room. During another implementation day, five girls wrote letters, paying little or no attention to the teacher. On another day, a male student verbally interrupted the teacher approximately 10 times in five minutes, noticeably disrupting the teacher and the class. Paul stated that he felt the information presented was "not pertinent or interesting to grade nine students," and that was the reason why the students were "acting up and not listening." Approximately one third of the female students and one quarter of the male students chose not to complete their daily personal records. Finally, at the end of the program, two male students asked the researcher if they had to keep the student diary. The response given was that it was their choice what to do with their diaries. The students threw the diaries into the garbage in front of the researcher and the teacher.

Student Impressions of the *Looking Good...Feeling Great!* Program

Student impressions of the LGFG program were obtained through focus group interviews. General impressions about the program will be presented along with specific comments about each of the four major sections of the program (physical activity, healthy eating, body image, and mental health), and the students' perceptions on how the program helped them. It is this researchers' opinion that the male students interviewed felt shy speaking openly to a female researcher and/or embarrassed to speak out in front of their male peers. As a result, the female interviews were longer and produced more in-depth data than did the male interviews. Participants were recruited on a voluntary basis and were then randomly chosen at Milton and Little Valley. Students at Anderson also volunteered to participate, but random selection was not possible as many students did not want to be interviewed. Consequently, both male and female Anderson groups were made up of a group of friends.

General Impressions

In general, the females interviewed liked the program, thought that it was "straight forward" and that it was well presented. However, all females stated that they already knew between 50 and 90% of the material presented in the student diary, which no doubt contributed to a few females feeling that parts of the program were not very interesting and even "... kind of boring." Little Valley and Anderson females stated that the hair care segment of the Body Image section was their favorite part of the program. Nutrition and physical fitness were mentioned as favorite segments by Milton females. Approximately two thirds of the females interviewed indicated that their least favorite aspect of the program was recording their physical activity and food consumption. One student from Little Valley stated that her least favorite part of the program was the personal contract. She explained her dislike for the contract by saying that "we could write whatever we want but it's not like we're actually going to do it." Almost all female students felt the way the information was presented and the information itself was appropriate for their grade level. One female from Milton felt that one of the topics in

the Body Image section (shaving) was not appropriate for the grade nine level: " I didn't like the shaving part. It wasn't very helpful. It would be more helpful in grade seven." Little Valley and Milton females felt that the amount of class time spent doing the LGFG program was "good." Anderson females however, felt that the amount of time "wasn't long enough" and that the teacher rushed through the entire program.

Relative to Little Valley and Milton females, Anderson females made more negative comments about the LGFG program. Comments about how Anderson females felt about the program included:

- "it was boring,"
- "I found the Physical Activity section boring,"
- "(the) Mental Health section was pointless," and
- "(the) physical and nutrition stuff was boring."

The majority of the males found the program to be "moderately interesting," with some stating that they liked the program and found it to be "a break in the (Biology) routine...." The Physical Activity section appeared to be the favorite section for the majority of male participants. The males' least favorite parts of the program were the shaving and hair care sections. The responses to how much of the program's information they already knew ranged from 10% to most of it, with the majority stating that they knew about half. Little Valley and Milton males felt that the information was appropriate for the grade nine level and that it was easy to understand. Anderson males thought the program "would be better for grade five and six (students)." Little Valley and Milton males felt that the amount of time spent on the program in class was adequate. Anderson males, however, felt that too much time was spent.

In general, the comments made about the program by the Anderson males were negative:

- "it hasn't helped,"
- "(I) would change almost everything. It was really boring. (It) need(s) more interesting topics,"

- "it was trash, not really good,"
- "it was bad," and
- "its just a book, a school book."

The comments from the Anderson males regarding the amount of time spent in class on the program included:

- "the teacher talked way too much" and
- "(the teacher) should have spent a shorter time on it."

Physical Activity Section

Most females found the Physical Activity section to be somewhat interesting. Comments about this section ranged from "It was like OK, but it wasn't that interesting," to " It was pretty good to learn about what kinds of physical activity option you need to stay fit, and how long it takes, like three times per week." Anderson females felt that the section " would be more interesting for Claire (a fellow student) because she is more athletic." Females from Anderson expressed their feelings about doing physical activity by saying that "you just don't want to do it," "Like honestly, we're teenagers, like 15, 16 years old. We're really lazy," and "It says that your supposed to do aerobics or whatever, but you don't really do it."

The majority of males felt that this section was of "average" interest to them. Many students commented on how they already knew the information: "I knew all that stuff about target heart rate and how many times you should exercise" and " I already did all that before."

Healthy Eating Section

Almost all females stated that they already knew the information presented in the healthy eating section. The females from Little Valley stressed that they knew the information presented because prior to the LGFG program, they had completed a nutrition section in their Human Biology class. Some females found recording what they ate to be helpful because "it was neat to see what we were really eating." Anderson

females felt that this section would only be beneficial for overweight people: "(it) is good for somebody who doesn't eat healthy and they want to start...somebody overweight...(it) is good to lose weight." Commenting on healthy eating behavior, one student from Milton stated that "I can't control my eating because if I don't eat what's on my plate, I could get grounded or something."

The male impressions of the Healthy Eating section were generally favorable. The majority found the section to be interesting because "...it shows you how much (food) you need and what categories." Although some males reported to have covered the information before in different classes, some professed to not knowing "...about all of that" and that "it was a reminder."

Body Image Section

Common female comments about the Body Image section included, "we all know how to keep ourselves clean or whatever," and "everyone pretty well knows how to do that now." Although most females indicated that the Body Image section was not giving them a lot of new information regarding personal hygiene, some felt that it was a good reminder while others felt that they learned "little tips." For example, one student from Anderson said, " I knew that you had to throw out your razors and everything, but I didn't know that you had to change it after the third time you used it or whatever."

The males stressed that they knew most of the Body Image information, and "most of it is common sense." In speaking about shaving and brushing and flossing teeth, one male from Anderson commented that "I already know how to do it. You just have to know."

Mental Health Section

Many females could not comment on the mental health section because they could not remember the information covered. However, some comments included, "I think I kind of remember that (the mental health section)," " Was that the one with your attitude and rest?" and "I just remember the compliments part. I don't know. I think

there was a stress thing too." One Anderson student stated that the information did not interest her because she felt unable to use the recommendations given: " ...you can read it you know, (and) you can say to yourself, yeah, I'm going to think positive from now on about myself but you don't really attempt to do it. You know, it's pointless."

The males found the mental health section to be "OK" and/or interesting. One male student from Milton stated the following regarding his opinion of the section: "I found it interesting because I have a poor attitude so it taught me to have a better attitude."

How the Program Helped

When asked how the LGFG program had helped them, female students responded by stating that it helped increase their awareness regarding their eating and physical activity habits. Comments included, "Everything I eat now I think about- it's like in the back of your head," " Maybe I should drink more water because I know I don't drink eight glasses per day," and " It kind of makes you think when you are watching TV...like maybe you should be doing something else instead of sitting on the couch eating chips and stuff....." A few females stated that the program helped them change their behavior with respect to their personal hygiene, with one female from Anderson stating that "Now I know that I have to floss and get rid of all that tartar. Now I floss."

Similar to the females, the males indicated that the program increased their awareness of proper health behavior: " (it) shows us how we're supposed to eat, how we're supposed to sleep...," " (it) helped me to realize what you're doing and what you're not doing and like what you should be doing." The males also attributed some health behavior and attitude change to the LGFG program: " (it) helped my attitude," " it has helped my do those things (referring to proper eating and adequate sleep)," " I eat healthy foods now," and " I started brushing my teeth a little more and flossing."

Teacher Impressions of the *Looking Good...Feeling Great!* Program

Teacher impressions of the LGFG program were obtained through a formal interview (one per teacher) and two to three informal interviews. General impressions about the program will be presented along with specific comments about implementation issues, and how the teachers thought the students benefited from the program.

General Impressions

John, the teacher from Little Valley and Susan, the teacher from Milton, indicated that they thought the program was "well put together" and appeared to perceive the program positively. John stated that "all together I'd say this is a good package....(and) I think it is information the kids should know." Susan seemed very enthusiastic about the program as indicated by the following unsolicited comment: "I would do it again for sure!" Paul, the teacher from Anderson, appeared to have a more negative opinion of the program. He felt that there was no new information offered to the students and that the information that was offered would be of little use to his students because of (a) the socioeconomic situation that the majority of students found themselves in, preventing them from being in homes where nutritious and ample food was served, and (b) his belief that the students' health behavior patterns are already too deeply ingrained to be changed. Both Susan and John felt that the information presented in the student diary was at an appropriate level for their grade nine students. They felt that it was very readable and that generally the students had no problem understanding what was being asked of them. Paul felt that the syntax was "very complicated" for his students, as on average his students had a "reading level of grade six or seven." All teachers found that the information presented in the program related well to the subject matter of their classes, i.e., Human Biology and Moral and Religious Education (MRE).

Implementation Issues

All teachers found the program easy to implement and agreed that it did not require a large amount of preparation in order to teach. All teachers also agreed that

prior training with the program is unnecessary for successful implementation, as long as some general guidelines are given.

Thoughts on the teacher's guide were generally positive: " (It) was helpful and easy to understand." "(There was) a lot of good information in (the) guide... (it was) well presented and well put together...." Paul, however, did not find the teacher's guide to be helpful and indicated that he used only the student diary as a reference source.

Differences emerged concerning the amount of class time devoted to the program. Susan felt "...a little rushed" and consequently felt that the program should be taught over four full class periods versus the three and one half used by all teachers. John felt the amount of time spent on the program was "just about right" while Paul indicated that the implementation time could have been shorter as "we tended to have about 15 minutes at the end of every single period."

Student Interest Levels and How Students Benefited from the Program

John and Susan felt that the students were interested in the LGFG program and that the level of interest remained constant throughout the program. They both thought, however, that females showed more interest than males in certain sections. John stated that "more teenage females than males seem to be interested in dieting or watching their weight whereas it is not a big issue with males." Susan echoed that same thought: "I got the sense that girls were more interested in the eating section because guys think they can just eat whatever they want and they won't gain weight." Regarding personal care issues, John felt that females showed more interest and were perhaps more "...aware of that information." Paul thought that the students were "moderately interested," but that "...when they found out that what we were doing was not really a lot different to what we'd been doing prior, then the interest level tended to drop off."

John indicated that students perhaps "gained new knowledge" from the program while Susan believed that they acquired a "clarification of the importance of how all the components (activity, nutrition, hygiene, and mental health) link together." Paul, however, felt that perhaps it served only as a review as there was no new material for the

students to learn. (Paul stated that he had previously covered all of the LGFG's material in the MRE course.) All teachers felt that the males and females benefited equally from the program.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the effects of a school-based wellness program, *Looking Good...Feeling Great!* (LGFG) (Zacour & Zacour, 1991), on adolescent wellness levels, and to evaluate student and teacher impressions of the LGFG program. This chapter will discuss the three research hypotheses. Student and teacher impressions of the LGFG program will also be discussed, as well as the reliability of the testing inventory, Testwell™ (National Wellness Institute, Inc., 1994), which was used to evaluate student wellness levels.

Effect on Wellness Score as a Result of Participating in the *Looking Good...Feeling Great!* Program

The first and perhaps most salient of the three research hypotheses was that experimental group wellness scores, relative to their prescores, would be significantly higher than control group scores as a result of participating in the LGFG program. Results from the statistical analysis showed that students who received the LGFG program showed a significant increase in Testwell™ scores from pretest to post-1 versus students who did not receive the program. The magnitude of the short-term effect of the LGFG program was considered almost medium (ES = .22). The LGFG program therefore seems to have had a positive short term influence on student wellness levels.

The question of effect size, or practical significance, was not addressed in the four school-based wellness evaluations previously outlined (see Chapter I, section entitled "Research on School-Based Wellness Programs"). According to Connell et al. (1985), a program's practical significance is rarely addressed for measures of attitude and self-reported behavior. This lack of reporting of effect sizes makes it difficult to interpret the LGFG's self-reported behavior effects. However, obtaining a medium effect size for a school-based program of such short duration is very encouraging and perhaps provides an indication of the considerable strength of the LGFG program.

Student impressions of the program seem to support these positive statistical results. The majority of students indicated that they understood the information presented in the LGFG program, and that they believed it was appropriate for the grade nine level. Understanding information is the first critical step in applying knowledge. If students did not understand the material presented in the LGFG program, student behavior change as a result of the program would probably not have occurred.

Although the majority of students, both male and female, indicated that they knew most of the material presented in the student diary, the program was perhaps successful in helping them apply this knowledge. Some students indicated that the program helped increase their awareness regarding wellness issues (specifically eating and physical activity). Other students attributed health behavior and attitude change to the LGFG program.

Student learning and/or behavior change as a result of being re-exposed to information is reasonable to expect. Presenting the same topic with a new perspective is the basis of an educational technique known as a spiral curriculum. Spiral curricula involve presenting students with basic information about a topic and subsequently building on that topic each time it is encountered by the students (Bruner, 1977). New information is added at each level and is presented at a higher level of instruction (Jewett, Bain & Ennis, 1995). The spiral could commence at the beginning of the school year and end at the completion of that same school year. Alternatively, the spiral could span many school years, e.g., teaching the concept of dental health in grade one and building on the students' health knowledge and practices up until grade nine when dental health can be presented as a part of the holistic concept of wellness. It is very possible that the majority of students had been previously exposed to the information presented in the LGFG program, either in earlier grades or earlier on in the school year. However, the information was perhaps not presented as a whole, in the context of wellness. Presenting "old" and new information, both in a different perspective, may have helped to positively enhance student wellness levels. As Susan suggested, her students benefited from the wellness program perhaps due to a "...clarification of the

importance of how all the components (of wellness) link together."

Another possible explanation for LGFG's positive treatment effect may have been that the program comprises important concepts and strategies deemed effective in health behavior change. Social Learning Theory (SLT), a dominant theory in the field of health behavior change (Perry et al., 1990), consists of 11 major concepts. The LGFG program encompasses four of these 11 SLT concepts: environment, situation, expectancies and self-control.

Implications for promoting health behavior change with respect to the environment and the situation include providing opportunities for a positive environment, such as facilitating parental or peer support. Allowing the students to talk among themselves while completing the LGFG daily diaries may have provided the students with a environment conducive to positive health behavior change.

Expectancies refers to the importance a person places on a particular outcome (Perry et al., 1990). It is believed that emphasizing short-term positive outcomes of a particular behavior has a greater chance of influencing that behavior than a focus on long range benefits (Perry et al.; McAlister, 1980). The LGFG program clearly informed students of the short-term benefits of healthy behavior. The program's emphasis on issues such as having an improved appearance, having more energy and sleeping well may have helped students adopt healthier behaviors, resulting in higher student wellness levels.

Included in SLT behavior change concepts are strategies aimed at helping a person gain control of his/her behavior: self-monitoring, goal setting and behavorial contracting. Bandura (1986) contends that controlling one's own behavior amplifies the learning and maintenance of that behavior. The LGFG program includes all three of these behavior change strategies in the form of daily personal record sheets and a personal contract. According to Allensworth (1993), these strategies are seen as valuable methods for promoting behavior change. Similarly, Coates et al. (1981) believe that student health behavior change can be facilitated by school programs that include social learning techniques, specifically the use of daily goal sheets in which students are

required to make a written commitment for behavior change. In their study which evaluated the effectiveness of an elementary school health education project, Coates et al. attributed the significant positive change in student eating patterns to the use of these daily goal sheets. Also in reference to changing eating patterns, Brownell and Stunkard (1978) state that the simple act of recording practices can positively influence behavior. Therefore, providing students with a program that includes strategies such as self-monitoring, goal setting, and behavioral contracting may have helped adolescents improve their health behaviors, resulting in enhanced wellness levels.

An important issue in school-based health/wellness interventions is the amount of time necessary for a program to produce positive results. Most teachers struggle with finding the time and resources to complete the curricula that are required of them. Finding time for additional, potentially beneficial programs is at times inconceivable. Earlier studies have suggested that changing student health behavior through a school-based program takes a substantial amount of time. Findings from the School Health Education Evaluation study indicated that approximately 40-50 hours (2400-3000 minutes) of classroom health instruction were needed to affect stable changes in behavior (Connell et al., 1985). Papenfuss & Beier (1984) found enhanced positive behaviors towards wellness in 10th-grade students after 800 minutes of classroom activities, a shorter but still considerable amount of time. Results from this study involving the LGFG program are promising, indicating that a program with an even shorter duration (approximately 175 minutes) may also effect moderate changes in student behavior. A program that positively enhances student lifestyles and that does not require a long implementation period would likely be very appealing to teachers struggling to balance worthwhile course material and time restrictions.

Overall Effect of Time on Student Wellness Score

Taking the test (Testwell™) more than once may have led to the overall effect of time noted. Students may have learned something from taking the test the first time (Thomas & Nelson, 1995). Therefore, the fact that overall student wellness scores

(experimental and control) significantly increased from pretest to post-1 may have been a result of taking the test twice.

It is possible that wellness scores increased over time due to the students learning about wellness simply from completing the Testwell™ questionnaire. Results from a survey of university students who completed the Lifestyle Assessment Questionnaire (LAQ) (the initial version of Testwell™) showed that 87% of students reported learning more about wellness from the inventory and 53% made behavioral changes as a result of completing the LAQ (National Wellness Institute, Inc., 1980). In addition to completing the questionnaire, the university students also received feedback about their wellness lifestyles and information and resources for building a higher level of wellness (a support section included in both the LAQ and Testwell™). It is possible that the students in this LGFG study changed their behavior as a result of taking the wellness questionnaire, which resulted in higher wellness scores on the two follow-up questionnaires. However, they did not receive any questionnaire results nor were they given any advice regarding improving their wellness levels. Any behavior change or learning about wellness directly from the questionnaire would therefore have been accomplished by the students alone, without guidance from the teacher or researcher.

Maintenance of Wellness Score Following Participation in the *Looking Good...Feeling Great!* Program

The second research hypothesis forwarded was that experimental group wellness scores would remain higher than control group scores, one and one half months following participation in the LGFG program. Results from the statistical analysis supported the hypothesis. The magnitude of this maintenance effect is considered medium (ES = .24). The LGFG program therefore had a considerable positive effect on student wellness levels and on the maintenance of these enhanced levels.

Once again, to obtain significant positive results from such a short-term program is very encouraging. Not only did student wellness levels increase after participating in the LGFG program, but these gains were maintained one and one half months later.

Papenfuss & Beier (1984) also noted a maintenance effect with students of approximately the same age. Grade ten students maintained enhanced attitudes and behaviors concerning wellness a year and a half following the 800 minute wellness program (Papenfuss & Beier). The maintenance of healthy behaviors is a key issue regarding the future health of today's youth. It is believed that one of the best strategies to prevent disease in adulthood is to generate healthy lifestyle habits in one's youth (Berenson et al., 1995; Freedson & Rowland, 1992; Kannel et al., 1995; Lipp et al., 1996). Time restrictions on this study prevented a follow-up period of more than one and one half months. However, the fact that students maintained their increased wellness levels after this period of time implies that the LGFG program can perhaps be influential in promoting and maintaining healthy lifestyles for adolescents in the longer-term.

Overall Effect of Time on Student Wellness Score

As discussed in relation to the first hypothesis, completing the Testwell™ questionnaire more than once may have lead to the overall effect of time noted. The significant increase in overall student wellness scores from pretest to post-2 may have been a result of students having taken the test before. However, it is important to note that the significant difference between experimental and control group scores was maintained over the one and one-half month period. In fact, the experimental group mean actually increased slightly between post-1 and post-2, while the control group mean remained unchanged (see Table 6).

Effect of Gender on Student Wellness Levels

The third hypothesis stated that there would be no difference between genders with respect to the effectiveness of the LGFG program. Statistical results confirmed this hypothesis. There was no difference between male and female Testwell™ scores either between the pretest and the post-1, or between the pretest and post-2, for those who participated in the LGFG program. This finding implies that males and females benefited equally from the LGFG program.

Results from the student focus groups and teacher interviews support these statistical findings. Although male likes and dislikes of the program seemed to differ from those of the females, the majority of students interviewed indicated that they liked the program and that they believed it helped them in some capacity. Both genders indicated that the program helped increase their awareness about certain wellness topics. Female and male students also commented about how the program helped change some of their health/wellness behaviors. As well, all three teachers felt that males and females benefited equally from the program. These results are similar to those obtained from Storguard & Associates (1991), whose marketing survey showed that both teachers and students enjoyed their involvement with the LGFG program.

Finding no difference between genders with respect to the effectiveness of the LGFG program was anticipated. Previous research on school-based wellness programs was instrumental in forming this hypothesis. In all four studies examined, gender was not considered as a factor in the research analyses. This researcher was therefore led to believe that males and females stood to benefit equally from the program.

Interestingly, males and females benefited equally from the LGFG program regardless of the gender make-up of the class. Experimental classes at Little Valley and Milton were co-educational, while those at Anderson were either all male or all female. Results indicated that both male and female Anderson students, similar to all Little Valley and Milton students, showed significant increased wellness levels after completing the LGFG program. The class's gender make-up therefore did not appear to be a factor in affecting student wellness levels.

Although there was no difference between genders with respect to the effectiveness of the LGFG program, there was an overall effect for gender. Generally, females scored higher on the Testwell™ inventory than males at all three test times.

A study done with college students seems to support this difference in male and female wellness scores. Cooper (1990) evaluated gender differences in mean scores of the 11 subtests of the Lifestyle Assessment Questionnaire (National Wellness Institute, Inc., 1976). Small yet significant differences between males and female scores on most

wellness subtests were detected (Cooper). On average, females scored higher on 8 of the 11 subtests. Since a total wellness score is tabulated by summing the scores on the 11 subtests, it is clear that the females in Cooper's study also displayed higher overall wellness levels than males.

A possible explanation for females scoring higher than males on the wellness questionnaire could be that the females seemed to show more interest in the topics covered. Females were more open in the focus group interviews, had more to say about issues and seemed to be more curious about the topics discussed. Male focus group interviews were much shorter, although as noted previously, the short duration could have been a result of the males being shy in front of a female interviewer. Generally however, this researcher got the sense that the female adolescents were more concerned than the males about issues that related to their appearance and well-being. This higher level of concern may have translated into females scoring higher on average than the males. Some teacher impressions of female versus male interest in the LGFG program echo these findings. John stated that he felt that females were more interested than males in their nutrition, for the purpose of watching their weight, and seemed more aware of issues dealing with personal care.

Differences Between Schools

Based on the statistical findings, the LGFG program appears to have positively enhanced wellness levels of all students involved, regardless of school. However, differences between schools regarding (a) overall student wellness scores and (b) student and teacher impressions of the LGFG program, were observed.

Overall Wellness Levels

Initial hypotheses did not include an effect of school on student Testwell™ scores. However, results showed an overall significant difference between Little Valley and Milton student scores, i.e., based on the average score from all students at all test times, Little Valley students scored significantly higher on the Testwell™ inventory

than Milton students. There was no significant difference in scores between any other schools. However, similar to Little Valley students, Anderson students scored higher on average than Milton students on the pretest and on post-2. Although differences between Anderson and Milton scores were noted, they were not statistically significant. It is also important to note that although average school scores differed, they were all considered to be nearing, or at, a medium level of wellness according to the standards set by the National Wellness Institute, Inc. (1995). (A total wellness score between 700 and 850 is considered to be a medium level of wellness, or a rating of "good").

One possible explanation for the differences between schools is that both Little Valley and Anderson teachers indicated that they had previously covered "wellness" topics in their respective classes. Little Valley's students had completed a unit on nutrition two weeks prior to receiving the LGFG program. Paul, the teacher from Anderson, indicated that he had previously covered such topics as nutrition, grooming, mental health, and emotional stability with his students throughout the school year. Susan, Milton's teacher, did not indicate that she had covered wellness related topics with her students. It is possible therefore that both Little Valley and Anderson students were more aware of wellness topics, as compared to Milton students, going into the LGFG intervention as a result of being previously exposed to some of the relevant topics in their classes.

Another possible explanation for the difference between Milton and Little Valley student wellness scores is related to the time of year when the Testwell™ questionnaires were completed. Milton students completed the questionnaires and the LGFG intervention immediately following the Christmas holidays, in the months of January and February. Anderson students completed the questionnaires and intervention in late February and early March, and Little Valley students during the months of April and May. The two extreme schools in terms of testing time, Little Valley and Milton, differed in wellness scores. Milton's lower scores could have been the result of students having just returned from a two week break from school in conjunction with celebrating a major holiday during which time they perhaps did not

follow as healthy a lifestyle as during other non-holiday times. The combination of Milton students participating in the study immediately after Christmas break and Little Valley students completing the questionnaires well into the school year, immediately following a unit on nutrition, could have resulted in Little Valley students scoring higher on average than Milton students on the wellness inventory.

Other unknown factors may also have led to the differences noted between schools. Perhaps the school atmospheres or the students themselves were different, on levels unknown to the researcher.

Student and Teacher Impressions

Based on student focus group and teacher interview data, along with researcher observations, it was apparent that there also existed a difference in how the schools viewed the LGFG program. The program appeared to be received differently by the students and teacher at Anderson as compared to those from Little Valley or Milton. A difference in student and teacher impressions of the LGFG program was not hypothesized prior to the study. However, as the research process progressed, it became apparent that the program did not have the same positive impact at Anderson as it had at Little Valley and Milton.

Comments made by the Anderson students during the focus group interviews reflected a somewhat negative attitude towards the LGFG program. Female Anderson students commented on how they thought the program was "boring" and "pointless." Anderson males appeared to hold an even stronger negative opinion of the program, stating that it was not helpful but "boring," "bad" and "trash." Both males and females commented on how the teacher spoke too much in class, perhaps indicating that the program was not interesting and even boring for them. Although students at Little Valley and Milton found some sections of LGFG to be less interesting than others, they generally expressed positive opinions about the program. It is important to reiterate that Anderson student focus groups were made up of groups of friends. Any positive comments that a student may have had about the program was perhaps held back due to

peer pressure. Students may have simply "gone along" with what their friends were saying about the program for fear of being excluded.

Although relatively high at the outset, Anderson's teacher's level of interest in the LGFG program seemed to decline as the program progressed. Paul felt that the information presented was of no interest to grade nine students and consequently made negative statements such as: "let's finish and get this out of the way." His ambivalence to the program was also evidenced by his decision to omit the majority of the information in the student diary. These occurrences indicated to the researcher, and most probably to Anderson students, that he did not think favourably of the program. Paul's unfavourable attitude towards the program likely helped to create a negative atmosphere in his classes.

Class atmosphere was definitely different between Anderson and either Little Valley or Milton. Students at Anderson appeared indifferent to what the teacher was presenting to them. The students often spoke among themselves while the teacher was instructing and repeatedly interrupted the teacher by leaving their seats and/or making irrelevant comments aloud. Many Anderson students did not complete their student diaries. Of those who did, very few handed the diary in to the researcher to be examined. Due to the disruptive nature of these classes and the students failing to complete or hand in the diaries, learning from the LGFG program could have been very difficult for Anderson students. In contrast, class atmospheres in both Little Valley and Milton were more positive and conducive to student learning. The majority of Little Valley and Milton students handed in their diaries and consequently received encouraging comments from the researcher regarding their progress.

The type of school involved and the socioeconomic status of the students and their families are factors to consider when comparing student and teacher attitudes about school programs. Anderson is an urban secondary school situated five miles from a major city core. Although not confirmed by official school statistics, Paul stated that "...approximately 35-45% of (the) kids are on welfare or UIC. Many of the other families are fairly poor, working class families." Both Little Valley and Milton are suburban secondary schools located in similar middle socioeconomic areas. Perhaps

LGFG did not meet the specific needs of the students at Anderson, resulting in the students being negative about the program. However, Anderson students did show increased wellness levels after participating in LGFG, suggesting that the program was beneficial for Anderson students in spite of their apparent attitude toward it.

The LGFG program was evidently strong enough to produce positive results in an environment considered less than ideal for student learning. Further, although the Anderson students and teacher may have appeared to be uninterested in the LGFG program, it cannot be assumed that the students were not able to absorb information and consequently benefit from the program. It seems clear that further research is needed to determine if urban schools like Anderson, would benefit further from a wellness program that better addressed the students' and teachers' needs and likes.

Reliability of Testwell™

Testwell™, the high school wellness inventory used in this research, was evaluated for its test-retest reliability using Pearson Product Moment correlations. Correlations done among the total average scores at the three test times (pretest, post-1 and post-2) resulted in reliability coefficients of .82, .71 and .83. These correlations are comparable to test-retest reliability coefficients of .70 to .92, found by Hofford and Jaeger (1995), for the 11 wellness subtests of the college version of Testwell™.

Psychometric properties of wellness instruments is a key issue in wellness research. Accurate evaluation of student wellness levels is an essential part of determining the effectiveness of a school-based wellness program. Results from this study imply that the high school version of Testwell™ is a reliable measure of wellness. Although more comprehensive validity and reliability checks could and should be done to establish Testwell™ as a sound measure of wellness, the encouraging results from this study may be helpful in promoting increased use of the inventory, and consequently furthering the message of wellness to our adolescents.

Summary

The LGFG program had a positive short-term influence on student wellness levels in this study. Students indicated that they generally liked the program and that it helped increase awareness of wellness issues and promote positive health behavior change. Social Learning Theory concepts and strategies (included in LGFG) deemed effective in health behavior change and a spiral effect - re-exposing students to information in a new perspective, may have helped positively enhance wellness levels. Not only did student wellness levels increase after participating in the LGFG program, but these gains were maintained one and one half months later. Maintenance of these behaviors is an issue of great importance as it has implications on the future health of today's adolescents. These meaningful positive results for a program of such short duration are very encouraging and provide an indication of the strength of the LGFG program.

No gender differences were found in wellness scores for those who participated in the LGFG program, implying that males and females benefited equally. Student focus group and teacher interview data seem to support these statistical findings. Generally, females scored higher on the wellness inventory than males at all three test times, perhaps because females have more interest in wellness topics than males. Gender make-up of the class was not a factor in affecting student wellness levels.

Differences between schools were noted with respect to overall student wellness scores and student and teacher impressions of the LGFG program. Potential explanations for the differences in scores include time of testing and recent exposure to the content of LGFG. Differing impressions of the program may have been related to teacher attitudes, classroom atmosphere, and/or varied needs and interests of the students. However, Anderson student wellness scores improved despite a relatively negative overall environment, perhaps suggesting that the LGFG program is strong enough to produce positive results in an environment seemingly unconducive to student learning. Future research is needed to determine if urban schools would benefit further from a program that better addressed the students' and teachers' needs and interests.

The resulting moderate to high test-retest reliability correlation coefficients imply that the high school version of Testwell™ is a reliable measure of wellness. These encouraging results may be helpful in promoting increased use of the Testwell™ inventory, and consequently furthering the message of wellness to adolescents.

CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Results of numerous studies and surveys in the last 10 years show that adolescents are demonstrating physiological signs and health behaviors that are placing them at risk of developing lifestyle diseases. Of major concern is the strong possibility of these unhealthy behaviors carrying over and persisting into adulthood. Helping adolescents acquire healthy lifestyles therefore, is an important undertaking in cultivating their future health.

The crux of the wellness philosophy is the attainment of a healthy lifestyle. Wellness programs focus on developing lifestyles that will help people maintain or enhance healthy behaviors. The National Wellness Institute defines wellness as an active process or lifestyle that involves becoming aware of and making decisions about the different areas in one's life, with the goal of attaining a higher level of health (National Wellness Institute, Inc., 1979). These different areas, known as dimensions, are categorized as physical, social, emotional, intellectual, occupational, and spiritual (National Wellness Institute, Inc.).

Schools are unique because they provide a tremendous access point to adolescents and have the ability to affect the present and future life choices of society's youth. School-based health education is therefore heralded as one of the most viable means of improving youth health (McGinnis et al., 1991). According to Cortese (1985), "...the future health of the nation is in large part affected by knowledge, attitudes and skills one can learn as a child in school" (p. 3).

Unfortunately, there has been little research conducted on the effectiveness of school-based wellness programs. Of the studies that have been done, most lack a variety of key elements that would enable one to conclude that school-based wellness programs are effective in enhancing healthy lifestyles in adolescents. One important issue that has not been addressed in past wellness studies is consumer research, asking the students and teachers what they think of programs.

Looking Good ...Feeling Great! (LGFG) (Zacour & Zacour, 1991) is a short-term school-based wellness program aimed at encouraging adolescents to maintain healthy behaviors or change unhealthy ones. The program focuses on the integration of physical activity, healthy eating, good personal hygiene habits, and sound mental health practices for good health. Its relatively short implementation period (three to four classes), its claim of being easy for teachers to implement, and its inclusion of highly acclaimed health behavior change strategies makes the LGFG program very appealing. However, until this study, the program had not been scientifically evaluated.

Empirical evaluation of the LGFG program may help to establish this valuable program as an effective tool in helping adolescents acquire healthy lifestyles. The purpose of this study was therefore to examine the effects of LGFG on adolescent wellness levels, and to evaluate student and teacher impressions of the program.

Summary of Procedures

Ninety-nine grade nine students (F = 50, M = 49) from one urban and two suburban secondary schools participated in the study. For practical purposes, intact classes were used. At the two suburban schools, two coeducational Human Biology classes were used. At the urban school, single-gender Moral and Religious Education classes (one male and one female) and one coeducational Physical Education class were used. One teacher at each school was involved in implementing the LGFG program. Their full time teaching experience ranged from five to 17 years.

Student wellness levels were assessed through Testwell™ (National Wellness Institute, Inc., 1994), a 100 question self-report wellness inventory. Questions are answered using a five point Likert-type scale. A total score ranging from 850-1000 represents a high level of wellness, from 700-850 a medium level of wellness, and less than 700 represents a low level of wellness (National Wellness Institute, Inc., 1995).

Experimental groups (n = 62) participated in the four day 175 minute LGFG program, while control groups (n = 37) followed their regular academic schedules.

LGFG was implemented by the regular teachers. Suggestions regarding implementation issues were given by the researcher and were followed by all three teachers. Implementation sequence of the program was therefore the same at all three schools. The researcher was present for each LGFG class in all three schools. Throughout these times, field notes were taken regarding the implementation process and student and teacher activity/behavior.

All participants completed Testwell™ as a pretest, one week later as a posttest, and one and one half months later as a follow-up test. The researcher and teacher were present at all three test times. Student focus groups and teacher interviews were conducted by the researcher after the posttest to assess impressions of the program.

Repeated measures factorial ANOVA's were performed to assess differences in participants' wellness levels. Due to (a) the use of intact classes, (b) unpredictable student absenteeism, and (c) some students spoiling their questionnaires by circling responses indiscriminately, unequal *n*'s were observed. To control for unequal *n*'s, a three part analysis using the unweighted means method was employed, resulting in three separate analyses:

1. effect of school, group and gender on wellness scores (between subject effects),
2. effect of time on wellness scores (within subjects effects), and
3. effect of school, group and gender on the difference between, i) pretest and posttest-1 scores, and ii) pretest and posttest-2 scores (this is a two part analysis which interprets the between-within effects and tests the first two hypotheses).

Pearson Product Moment correlations were also performed to assess the test-retest reliability of Testwell™.

Student focus groups and teacher interviews were audiotaped and transcribed. Impressions of the LGFG program were described based on the data obtained from these interviews.

Summary of Results and Discussion

The first research hypothesis predicted that experimental group wellness scores, relative to their prescores, would be significantly higher than control group scores as a result of participating in the LGFG program. Results showed that students who received the LGFG program showed a larger increase in wellness scores from pretest to post-1 than students who did not receive the program. The magnitude of the short-term effect was considered almost medium (ES = .22). The LGFG program therefore seems to have had a positive short-term influence on student wellness levels. Student impressions of the program support these positive statistical results. Students indicated that they generally liked the program and that it (a) helped increase their awareness of wellness issues and (b) helped promote positive health behavior change. One explanation for this increase in student wellness levels is that the LGFG program contains Social Learning Theory concepts and strategies deemed effective in health behavior change. A spiral curriculum effect - re-exposing students to information in a new perspective, may also have helped positively enhance wellness levels. These meaningful positive results for a program of such short duration are very encouraging and provide an indication of the strength of the LGFG program.

Not only did student wellness levels increase after participating in the LGFG program, but these gains were maintained one and one half months later, supporting the second hypothesis. The magnitude of this maintenance effect was considered medium (ES = .24). Establishing healthy behaviors in adolescents is a valuable undertaking. Promoting the maintenance of these behaviors is an issue of even greater importance because it has implications on the future health of today's adolescents. The fact that students maintained their increased wellness levels after the one and one half month follow-up period suggests that the LGFG program may be influential in promoting and maintaining healthy lifestyles for adolescents in the longer-term.

As predicted by the third research hypothesis, no gender differences were found in wellness scores for those who participated in the LGFG program. This finding implies that males and females benefited equally from the LGFG program. Results

from the student focus groups and teacher interviews support these statistical findings. All three teachers felt that males and females benefited equally from the program. Of interest to note was that females and males from all three schools showed increased wellness levels after participating in LGFG, regardless of the class being coeducational or not. Gender make-up of the class was therefore not a factor in affecting student wellness levels.

There was an unexpected overall significant effect for gender. Generally, females scored higher on the wellness inventory than males at all three test times. Explanations for these differences include (a) the researcher's belief (supported by observations and teacher impressions) that the females showed more interest in wellness topics than the males and (b) results from a study done evaluating gender differences in mean scores of a popular wellness inventory showed significantly higher scores for females compared to males (Cooper, 1990), supporting the findings in this study.

Differences between schools were noted with respect to overall student wellness scores and student and teacher impressions of the LGFG program. Overall, Little Valley students scored significantly higher on the Testwell™ inventory than Milton students. Possible explanations for the difference in scores include the time of testing and recent exposure to the content of LGFG. Milton students participated in the study immediately after Christmas break. Little Valley students completed the study well into the school year and immediately following a unit on nutrition.

Differing impressions of the program were noted. The students and teacher at Anderson conveyed somewhat negative impressions of the LGFG program, both generally and relative to Little Valley or Milton. This difference may have been related to the varied needs of the students at Anderson. Further, less than ideal class atmosphere and teacher attitude at Anderson may have provided for unsuitable student learning environments. The improvement in Anderson student wellness scores, despite the relatively negative overall environment, suggests that the LGFG program is strong enough to produce positive results in an environment seemingly unconducive to student

learning. Future research is needed to determine if urban schools would benefit further from a program that better addressed the needs of its constituents.

Accurate evaluation of student wellness levels is an essential part of determining the effectiveness of a school-based wellness program. The resulting moderate to high test-retest reliability correlation coefficients (.82, .71, and .83) imply that the high school version of Testwell™ is a reliable measure of wellness. Although more comprehensive validity and reliability checks should be done to establish Testwell™ as a sound measure of wellness, the encouraging results from this study may be helpful in promoting increased use of the inventory, and consequently furthering the message of wellness to adolescents.

Conclusions

Within the confines and limitations of this study, the following conclusions were drawn:

- the LGFG program can enhance student wellness levels in the short-term,

- students who participate in the LGFG program maintain increased wellness levels one and one half months following completion of the program,

- gender does not significantly affect wellness levels for students participating in the LGFG program,

- female students may have higher wellness levels than males,

- gender make-up of a class is not a factor in affecting student wellness levels,

- in general, students and teachers convey favourable impressions of the LGFG program, and

- students in different types of schools may have different impressions of the LGFG program.

Results of this study suggest that the *Looking Good...Feeling Great!* program can be an effective tool in helping adolescents acquire healthy lifestyles through the enhancement of wellness levels.

Recommendations for Further Research

Based on the findings of this study, recommendations for further research include:

1. Conduct a similar study, but in addition assess the effectiveness of the LGFG program with students of varying grade levels, in order to widen the program's application.
2. Conduct a similar study, but in addition examine the effects of the LGFG program in conjunction with other school wellness approaches, i.e., a nutritious lunch program, parental involvement in student activities.
3. Conduct longitudinal studies to assess the long-term effects of exposing high school students to wellness units/curricula/programs.
4. Conduct a similar study, but in addition include more schools of different type, i.e., rural, inner-city.
5. Conduct a similar study, but in addition evaluate the effect of presenting the LGFG program over different time periods (e.g., over a one, two, or six month period).
6. Examine through qualitative inquiry, the health/wellness interests of adolescents in different school settings.
7. Conduct more studies with Testwell™ Wellness Inventory, High School Edition, evaluating a) its validity and reliability and b) to what extent simply completing the inventory affects student wellness levels.
8. Conduct a study assessing to what degree schools include the wellness concept in their curricula.

In conclusion, although the LGFG program was effective in enhancing adolescent wellness levels, we cannot presume that one program alone will solve the problems adolescents face concerning their present and future well-being. LGFG should ultimately be a part of a school's comprehensive approach to health - an

approach that includes opportunities such as classroom wellness programs, nutritious school lunch programs, health-oriented Physical Education, and family programs that focus on health behavior change. Lawson (1993) extends the idea of a comprehensive school health approach as a challenge to our education system, a challenge to "...create healthy schools" (p. 301). Rising to this challenge will take time and the co-operation of many, but the rewards will undoubtedly benefit the lives of our youth and ultimately, society as a whole.

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APPENDICES

APPENDIX A

WELLNESS DIMENSIONS AND SUBTESTS

Dimension	Subtest
Physical: the degree to which you maintain physical health	*physical fitness and nutrition*: measures one's commitment to maintaining physical activity and the degree to which one chooses foods that are consistent with the dietary goals of the United States as published by the Senate Committee on Nutrition and Human Needs *self-care*: measures the behaviors which help one prevent or detect early illnesses *safety and lifestyle*: measures one's ability to minimize chances of injury or death in a vehicle accident and the degree to which one functions without the unnecessary use of chemicals
Social: the degree to which one contributes to the common welfare of the community, reflecting interdependence and the connectedness one feels towards community, friends, and nature	*environmental wellness* *social awareness*
Emotional: -the degree to which one is able to accept feelings and to express them appropriately -also measures enthusiasm for life and oneself	*emotional awareness and sexuality*: measures the degree to which one feels positive and enthusiastic about one's self and life *emotional management:* measures the degree to which one controls and expresses feelings, and engages in effective related behaviors

Dimension	Subtest
Intellectual:	none
the degree to which one engages one's mind in creative, stimulating mental activities, expanding knowledge, improving skills, and sharing this knowledge with others	
Occupational:	none
the degree to which one gains satisfaction from one's work and the degree to which one is enriched by it (work refers to one's primary frame of reference, whether it be a job, school, or home)	
Spiritual:	none
the degree to one's involvement in seeking meaning and purpose in human existence, including an appreciation for the depth and expanse of life and the natural forces that exist in the universe	

APPENDIX B

TESTWELL™ WELLNESS INVENTORY

HIGH SCHOOL EDITION

(Reprinted with permission)

TEST

NATIONAL WELLNE

WELLN

HIGH S

INSTRUCTIONS

On the answer sheet provided, please circle the number that best identifies your response to each corresponding statement.

1 = Almost Never (less than 10% of the time)
2 = Occasionally (approximately 25% of the time)
3 = Often (approximately 50% of the time)
4 = Very Frequently (approximately 75% of the time)
5 = Almost Always (90% or more of the time)

♦ Physical Fitness and Nutrition

1. I exercise aerobically (continuous, vigorous, sweat-producing exercise for 20-30 minutes) at least 3 times per week. (Examples: basketball, swimming, racquetball)

2. Stretching is a routine part of my exercise program.

3. I increase my physical activity by walking or biking for transportation.

4. My exercise program includes a balance of the three fitness components - cardiovascular (aerobic), strength (muscle tone and development), and flexibility (stretching).

5. If I am not in shape, I avoid sporadic (once a week or less), strenuous exercise. (If you are in shape, answer "5".)

6. I avoid eating foods that are high in fat (fatty cuts of meat, whole milk dairy products, fried foods, hot dogs, processed foods, rich desserts, and creamy sauces).

7. I limit my consumption of beverages containing caffeine (coffee, tea, colas) to two a day.

8. I eat or drink at least two servings of milk products every day. (One serving equals 1 cup of milk, 1/2 cup cottage cheese or yogurt or 1 ounce of cheese.)

9. I maintain my weight without the use of fad diets or yo-yo dieting (alternating periods of eating very little with eating too much).

10. I eat at least five servings (one serving equals 1/2 cup) of fruits and/or vegetables every day.

♦ Self-Care

11. I receive immunizations and boosters at the recommended times.

12. I examine my breasts or testes on a monthly basis.

13. I avoid exposing myself to tobacco smoke.

14. I get 6 to 8 hours of sleep every night.

15. I drink eight glasses of water every day.

16. I floss my teeth once per day.

17. I am aware of community health resources where I can obtain information and services.

18. I use sunscreen and wear protective clothing to protect my skin from sun damage.

19. I maintain my blood pressure within the range recommended by my doctor. (If you have not had your blood pressure checked in the last year, answer "1".)

20. I maintain my blood cholesterol level within the range recommended by my doctor. (If you have never had your cholesterol checked, answer "1".)

♦ Safety and Lifestyle

21. I know how to respond in the event of an emergency situation (such as a fire, power outage, earthquake, volcano, hurricane or tornado).

22. I do not ride with vehicle operators who are under the influence of alcohol or other drugs.

23. I stay within five miles per hour of the speed limit.

24. I wear my seat belt and/or shoulder harness while traveling.

25. I avoid situations that would put myself or others in danger.

26. I enjoy myself without the use of drugs or alcohol.

27. I avoid the use of all tobacco products (including smokeless tobacco).

28. I avoid the use of street drugs or prescription drugs obtained from illegal or unlicensed sources.

29. I use the recommended safety equipment (mouthguard, pads, goggles, life jacket) for any activity in which I participate.

30. When I travel on a motorcycle, bicycle, or all-terrain vehicle, I wear a helmet. (If you do not travel on a motorcycle, bicycle, or all-terrain vehicle, answer "5".)

♦ Environmental Wellness

31. To conserve energy, I turn off lights and electrical appliances such as stereos, televisions or electric rollers, when I am not using them.

32. I carpool or take as many riders as I safely can when I am driving a car. (If you do not drive, answer "5".)

33. I drive a fuel efficient vehicle. (If you do not drive, answer "5".)

34. I avoid eating at fast food restaurants that package their food in styrofoam .

35. To reduce the amount of pollution, I drive a well maintained vehicle. (If you do not drive, answer "5".)

36. I do not let the water faucet run while I am brushing my teeth, shaving, or washing the car.

37. I regularly recycle my paper, plastic, glass, and aluminum.

38. I am concerned about protecting the environment.

39. I encourage my friends and family to protect the environment.

40. I purchase products made with recycled materials whenever possible.

41. My behavior is fair and [illegible]

42. I make an effort to understand my family and friends.

43. I resolve conflict in a positive and respectful manner.

44. I take time to enjoy my family as well as my friends.

45. I am a responsible citizen in my community.

46. I help others in need.

47. I maintain a current CPR (cardiopulmonary resuscitation) certification.

48. When I notice something that is dangerous to others, I take action to correct the situation.

49. I actively participate in at least one organization that strives to better the community where I live.

50. I participate in high school events that help my community. (Examples: food drives, fund raisers, planting trees, and car washes)

♦ Emotional Awareness and Sexuality

51. I am sensitive to other people's feelings.

52. I am able to love others without expecting them to "earn" my love.

53. I have positive interactions with men in my life.

54. I have positive interactions with women in my life.

55. I have satisfying relationships with other people that are not sexual in nature.

56. I am accepting of others who have different sexual orientations.

57. I respect other people's decisions to engage, or not engage, in sexual behavior.

58. I understand how the reproductive organs function in men and women.

59. I do not engage in sexual intercourse. (Answe "5", if true. Complete following if false.) If I choose to engage in sexual intercourse I take steps to prevent unwanted pregnancy.

60. I do not engage in sexual intercourse. (Answ "5", if true. Complete following if false) If I choose to engage in sexual intercourse, I us condoms to reduce the risk of disease.

♦ Emotional Management

61. I express my feelings of anger in ways that are not hurtful to others.
62. I can say "no" without feeling guilty.
63. I feel positive about myself.
64. I enjoy my life.
65. I manage my time well.
66. When I make mistakes, I learn from them.
67. I set realistic objectives for myself.
68. I can relax my body and mind without the use of drugs or alcohol.
69. I accept responsibility for my actions.
70. I accept the things I cannot change about myself.

♦ Intellectual Wellness

71. I keep informed about social and political issues.
72. I am interested in learning about scientific discoveries.
73. I make an effort to maintain and improve my writing and verbal skills.
74. I seek opportunities to learn new things.
75. I participate in activities such as attending plays, symphonies, and concerts or visiting museums, exhibits, and zoos, at least three times a year.
76. I watch educational programs on television. (Examples: news, political discussions, documentaries, public TV, or the Discovery Channel)
77. I actively pursue learning about topics that interest me.
78. I read about different topics from a variety of newspapers, magazines, and books.
79. Before making important decisions, I gather facts.
80. I am interested in understanding the views of others.

♦ Occupational Wellness

81. I am aware of my own strengths and skills.
82. I take advantage of opportunities to learn new skills that will help me gain future employment.
83. I am knowledgeable about the skills necessary for the occupations I am interested in.
84. I am aware of the amount of time it will take to acquire the necessary training for the occupations I am interested in.
85. I take advantage of opportunities to gain work experience.
86. I strive to obtain good work habits. (Examples: punctuality, dependability and initiative)
87. I am satisfied with my ability to make my own choice of occupation.
88. I actively pursue information about different occupations that may be of interest to me.
89. I am aware of occupational choices that I am well suited for.
90. Enjoyment is a criterion that I use to determine possible occupational choices.

♦ Spirituallity and Values

91. I feel that my life has a positive purpose.
92. I spend a portion of every day in personal reflection, prayer, and/or meditation.
93. It is important to me that I maintain the trust of my family and friends.
94. My actions are guided by my own beliefs, rather than the expectations of others.
95. I am concerned about social issues. (Examples: homelessness, starvation, disaster relief)
96. I know what my values are.
97. My faith and values are important to me.
98. I am tolerant of the values and beliefs of others.
99. I discuss the meaning of life with family and friends.
100. I am satisfied with my spiritual life.

APPENDIX C

STUDENT FOCUS GROUP QUESTIONS

1. What would you tell a curious friend about the LGFG program?
2. How interesting did you find the (a) Physical Activity section, (b) Healthy Eating section, (c) Body Image section, and (d) Mental Health section?
3. How much of the program's information did you already know?
4. Where there any parts of the student diary that you did not understand?
5. How do you think the program has helped you?
6. What were your favorite and least favorite parts of the program?
7. How do you feel about the way the topics were covered, i.e., did you find that the way things were presented or the information was too young or too old for you?
8. How do you feel about the amount of time the teacher spent on the program?

APPENDIX D

TEACHER INTERVIEW QUESTIONS

1. What benefits do you think the students got from the LGFG program?
2. Do you think males and females benefited equally?
3. How interested do you feel the students were in the program?
4. Do you feel that the information presented was at an appropriate level for your grade nine students?
5. Does the information relate well to the subject matter of your class?
6. How easy for you was this program to prepare?
7. How helpful did you find the teacher's guide?
8. Do you feel that teachers require training prior to implementing this program?
9. How do you feel about the amount of time allotted to this program?

APPENDIX E

PARENTAL CONSENT FORM

Dear Parent/Guardian:

During the next couple of weeks a study will be conducted in School. The purpose of the study is to determine how effective a health/wellness program is for positively enhancing students' attitudes and behaviours concerning wellness. Wellness is generally understood to be a lifestyle in which a person assumes an active role in determining his or her level of health. Questionnaires will be administered to all participants in the study which will assess their attitudes and behaviours concerning wellness. The participants will receive 4 full classes of instruction on wellness during their regularly scheduled Human Biology classes. To determine the students' thoughts on the wellness program, some students will be asked to participate in a brief interview.

All information collected during the study will be number coded and your son/daughter's name will not be used at any time in reporting or use of information collected. Participation in the study is voluntary and a participant can withdraw at any time. In no way will the decision to participate influence your son/daughter's grade in Human Biology. We expect that this study will provide your son/daughter with some of the tools necessary to maintain or improve healthy behaviours that lead to enhanced wellness.

If you wish to give permission, please sign the attached form. If you DO NOT want your son/daughter to participate, please indicate this by signing the appropriate space on the form. Please return the Consent form by _____. If you have any questions, please feel free to call the number listed below. Thank you.

Sincerely,
Cathy Wagstaff Gergovich
(Masters student, McGill University)
362-0645

PLEASE DETACH AND RETURN TO THE SCHOOL

( ) I give permission for my son/daughter_____
to participate in the study described.

( ) I DO NOT give permission for my son/daughter _____
to participate in the study described.

_____ _____
Signature of Parent or Guardian Date

_____
Signature of Student

APPENDIX F

ETHICS APPROVAL FORM

MCGILL UNIVERSITY
FACULTY OF EDUCATION

CERTIFICATE OF ETHICAL ACCEPTABILITY FOR RESEARCH INVOLVING HUMAN SUBJECTS

A review committee consisting of three of the following members:

1. Prof. E. Lusthaus	1. Prof. M. Maguire
2. Prof. R. Ghosh	2. Prof. G. Isherwood
3. Prof. M. Downey	3. Prof. R. Turcotte

has examined the application for certification of the ethical acceptability of the project entitled:

Wellness and Adolescents: The Effects of a School-Based Intervention

as proposed by:

Applicant's Name Catherine Wagstaff Gergovich Supervisor's Name M.J. Downey

Applicant's Signature C.A. Wagstaff Gergovich Supervisor's Signature M J Downey

Degree Program _____ Granting Agency _____

The review committee considers the research procedures as explained by the applicant in this application, to be acceptable on ethical grounds.

(Signatures)

a) _____ Date NOV 12 / 96

b) _____ Date 14 Nov 1966

c) _____ Date Dec. 4. '96

Associate Dean (Academic) _____ Date Dec 4/96

March 1996

APPENDIX G

LOOKING GOOD...FEELING GREAT!

On the road to looking good... feeling great!

DO YOU:

- **Have trouble sleeping at night?**
- **Worry about your weight?**
- **Worry about your appearance?**
- **Sometimes feel depressed or lonely?**
- **Get concerned about acne?**
- **Often look at yourself in the mirror?**
- **Compare yourself to others?**

If you answered yes to any of these questions, then you are not alone. It's natural for most young people to worry sometimes and to have self doubts about how they look and feel. Your appearance or body image is part of your self-concept and it affects the way you feel about yourself.

The ***good*** news is that **YOU** have to power to change how you look and feel about yourself. By taking action to improve your appearance and health, you can improve your body image. ***If you look good, you feel better about yourself.***

Before Starting

You should:

- find a friend or small group that you are willing to share information with. This is your support group. (You may work on your own, if you prefer.)
- know that your support group will also share information with you
- know that you do not have to share any information that you do not want to
- read over the information on the next several pages (it is your reference information for the diary)

This booklet is for you. It will help you analyse your present life-style and it will provide you with some accurate information on looking good and feeling great.

For the next three days you will be asked to:

- record your activity level
- list your food intake
- do a body image check-up
- state how you feel

Each Day:

- analyse your strengths
- check for weaknesses
- discuss your results with friend(s)
- make adjustments for the next day if needed

good luck!

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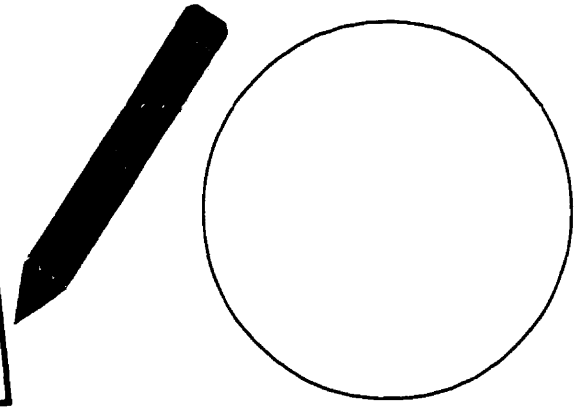
Getting started...

Check here		
I can control:	**yes**	**no**
• food I eat		
• my rest		
• physical activities		
• my weight		
• my gender		
• my anger		
• my rate of growth		
• substances I use		
• my attitude		

Imagine that this circle is you. Shade in the amount of the circle that you think is predetermined by your genes and that you have no control over. Then complete the checklist.



Surprise! Only 16% (less than 1/6) of yourself was determined through your genes. You have partial or full control over the rest. The fact is, everyone has the potential to look and feel great. You need to accept what you can't change and work to improve what you can. It's your right and no one can take it away from you – and only you can do it.

The key components

The right balance of several key components will help you to **look good** and **feel great.** They are:

- **regular physical activity**
- **healthy eating** (eating smart)
- **good body image habits** (skin, hair, dental care)
- **positive attitude** (mental image)

Being aware of what you can't change and changing what you can, can help you to look good and feel great.

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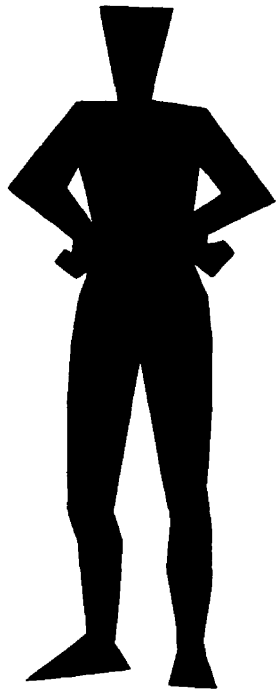
Ontario Physical and Health Education Association

Regular physical activity...



ARE YOU INTERESTED IN:

- having more energy?
- being less tense?
- having an improved appearance?
- having better muscle tone?
- sleeping well?
- feeling good about yourself?
- having a healthy weight?
- having good posture?

YOU CAN HAVE THESE AND MORE BY BEING PHYSICALLY FIT

Physical fitness is the ability to work and play with energy to spare. Most Canadian teens think that they are physically fit. Unfortunately, tests prove otherwise. What kind of shape are you in?

Becoming physically fit does not have to be torture. Here are some practical suggestions. Remember, everyone is different, and you don't have to choose the same activities as others.

EXERCISE SAFELY

- warm-up and cool-down by stretching
- gradually phase in more activities
- be careful when exercising in the sun

EXERCISE EVERY DAY

- power walk (walking quickly)
- cycle instead of driving short distances
- climb stairs instead of taking the elevator

HAVE FUN

- choose sports or activities that you enjoy
- socialize – do them with a friend(s)
- add some music, challenge yourself, add some adventure and zest

DO YOU HATE RUNNING?

- Try power walking!

LIKE TO DANCE?

- Dancing is an excellent fitness activity. So get out and **DANCE!**

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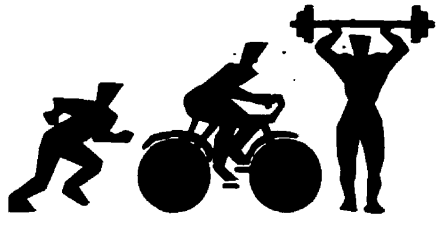
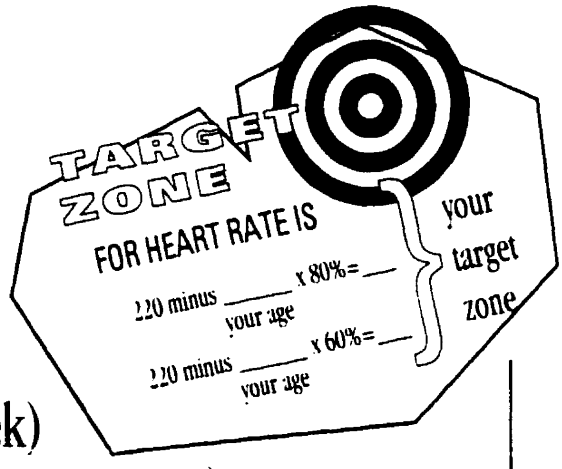


Following the FITT rule... will keep you in...

shape



***f*=frequency (at least 3 times per week)**
***i*=intensity (increase heart rate to the target zone)**
***t*=time (duration — 20 to 30 minutes each time)**
***t*=type of activity (choose ones you enjoy)**

Do you remember the components of **PHYSICAL FITNESS?**

They are:

- aerobic endurance
- flexibility
- muscular strength
- muscular endurance
- body composition

The most important component is ***AEROBIC ENDURANCE*** - the ability of your heart and lungs to efficiently move and use oxygen.

You should participate in aerobic activities at least three times per week for 20 to 30 minutes at a time. Your heart rate will have to be in the target zone for this length of time.

Stretching before and after your aerobic activity will help with **flexibility**. Repeating activities in which you have to handle your own weight will build **muscular strength and endurance** e.g. sit-ups, pull-ups, push-ups.

Exercising three times a week will provide you with an acceptable level of fitness. Exercising every day is even better. Often it is the everyday activities such as walking and climbing stairs that can make the difference.

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healthy eating, healthy weight...

WHAT DO YOU THINK?

(answer true or false)

1. Most teens are concerned about their body shape and weight.

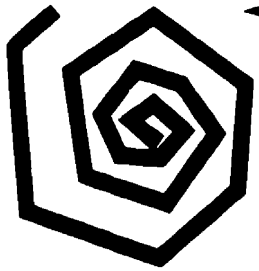
T F

2. Most teenage girls think that they are overweight.

T F

3. There are social pressures on teens to conform to an ideal thin weight.

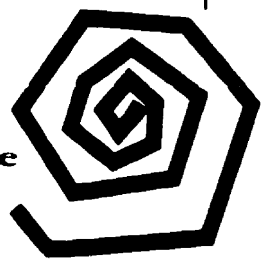
T F



a healthy Weight:

- is not dictated by social pressures
- makes you feel great
- keeps you healthy
- enhances your appearance

The answers to all these questions are true. Not only are teens concerned about their body shape and weight, but so are many children and adults. In many cases, teens think they are overweight but actual tests prove otherwise.



There is no longer an **ideal weight** for individuals but rather a **range** of healthy weights. It is normal for teens to experience weight gains (become chunky) and to then thin out. This is a part of the growth and development stage of the teen years.

THERE IS A NEW AND BETTER WAY TO LOOK AT WEIGHT

It is called ***healthy weight.*** The new approach recognizes that there is no one ideal weight, but rather a range of weights, since people have different shapes and frames. For example, a large framed person should weigh more than a person of the same height who has a small frame. For teens, a healthy weight is difficult to define since body size and composition is changing rapidly as it goes through this growth and development stage.

The best way to achieve and maintain a ***healthy weight*** is by ***eating healthy*** (eating smart) and by ***enjoying regular physical activity.***

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Goals

of thinness are

not

healthy!

They can lead to:

- negative body image
- unnecessary dieting
- low self esteem
- eating disorders
- other health problems

Healthy eating (or eating smart) will ensure that you are getting essential nutrients. It is quite simple. **Healthy eating combined with regular physical activity is the alternative to dieting.** Check the guidelines on this page.

CANADA'S GUIDE-LINES TO HEALTHY EATING

- **Follow** Canada's Food Guide for Adolescents
- Enjoy a **variety** of foods
- **Emphasize** cereals, breads, other grain products, vegetables, and fruits. It is OK to eat more than the minimum number of servings – especially since you are growing and are active
- **Choose** low-fat dairy products, leaner meats, and foods prepared with little or no fat
- **Limit** salt and caffeine

It works!

Hints to achieving and/or maintaining a healthy weight

- follow Canada's Food Guide to Healthy Eating
- cut back on sweets, fats and salt
- if you think that you need to lose weight – consult a doctor first
- to avoid over eating – drink a glass of water before you eat – it makes the stomach feel full
- exercise regularly. It is one of the important weight management factors

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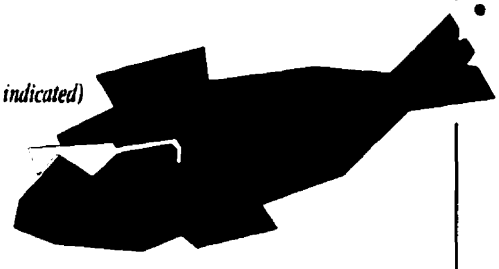
Canada's food guide to Healthy Eating

- Milk Products: 3-4 servings
- Meat and Alternatives: 2-3 servings
- Grain Products: 5-12 servings
- Vegetables and Fruits: 5-10 servings

(daily servings are indicated)



Did YOU know that:

- Crash diets do not supply enough basic nutrients and are harmful to your health. People often lose weight at first, but then gain it back, PLUS 10%.
- During the teen years, females naturally increase their percentage of body fat more than males.
- **The best aerobic burners for maintaining a healthy weight are:**
  - Aerobic Dance
  - Swimming
  - Walking
  - Jogging
  - Cycling

Ask your teacher for a copy of Canada's Food Guide.

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body image...

Do you know?

- how to treat acne?
- the difference between an anti-perspirant or deodorant?
- how to floss your teeth correctly?
- which type of shampoo to use?

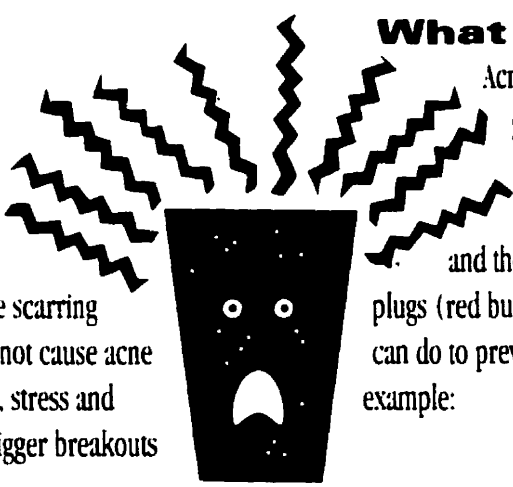
Many young people are concerned about their personal appearance or body image. It's not uncommon for teens to stare at themselves in a mirror and check for acne or to worry about the condition of their hair.

Fortunately, you can take action and do something about your skin, your hair, and your overall body image. There are a number of practices that you can follow to ensure a healthy appearance. A diet based on Canada's Food Guide is essential for healthy skin and hair. The information on the next few pages will also provide you with some reliable and practical suggestions.

HEALTHY SKIN

The facts

- 80% of teens have some degree of acne
- about one third of teens will suffer from severe acne
- picking at acne can cause scarring
- chocolate and sweets do not cause acne
- make-up, poor skin care, stress and menstrual periods can trigger breakouts



"acne"

What can you do?

Acne is caused by overactive oil glands and it occurs when the pores become plugged (whiteheads and blackheads) and then bacteria multiplies behind the plugs (red bumps). There are some things you can do to prevent or reduce breakouts. For example:

- wash daily with non-oilated soap on a face cloth to keep your pores clean (wash gently, pat dry)
- wash infected areas twice a day
- use only water-based make-up, and only if you need it
- avoid moisturizers
- over-the-counter preparations with benzoyl peroxide can be used for mild cases

Be sun smart!

Skin cancer is on the increase. If you are going to be in sunlight, then protect yourself from the sun's burning UVB rays. Use a sunscreen with a Sun Protection Factor (SPF) of 15 or higher. It should be reapplied every two or three hours, or after you swim.

Consult a doctor if your case does not respond to normal treatment. All acne can be treated, no matter how severe.

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Ontario Physical and Health Education Association

Shaving for Young Men

What doYOU think?

1. The average Canadian male has over:
(a) 10,000 (b) 20,000 or (c) 30,000 hairs on his face.

2. Facial hair grows at an average rate of:
(a) 1mm (b) 1cm or (c) 1dm per month.

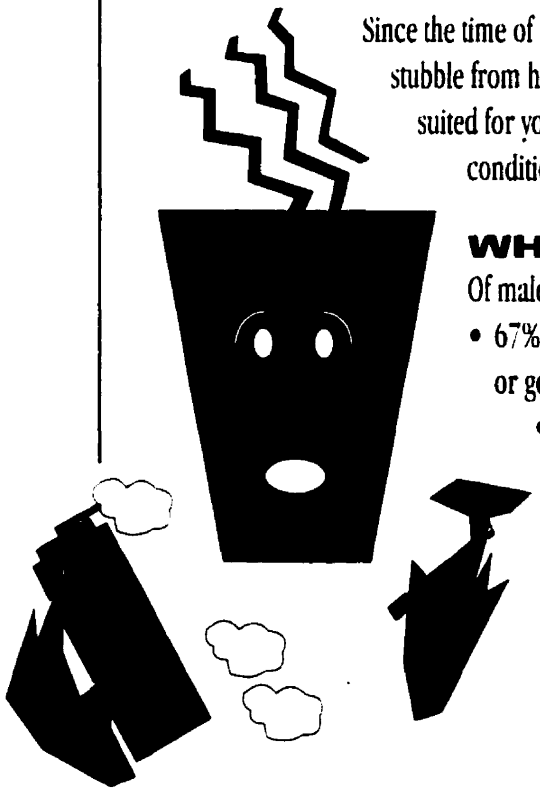
3. In a lifetime, a man will generate an average of:
(a) 5m (b) 9m or (c) 15m of facial hair.

4. A man will spend:
(a) less than 3,000 hours or (b) more than 3,000 hours shaving in a lifetime.

5. Dry beard hair is as tough as copper wire of the same thickness. T or F

THE ANSWERS

1 (c), 2 (b), 3 (b), 4 (b), 5 (T)



Since the time of the ancient Egyptians, man has been trying to remove the stubble from his face. If you decide to shave, choose a method that is best suited for you. This will be a personal decision, since beard and facial conditions vary from male to male.

WHO USES WHAT:

Of males who shave:

- 67% wet shave (with a blade and a lubricant such as shaving foam or gel)
- 33% use electric razors

SHAVING TIPS

- Never share a razor for hygienic reasons
- built-in lubricating strips on some types of razors release moisturizers to make the shave smoother and more comfortable
- shave with the grain (down and not up) except for the neck to the chin line

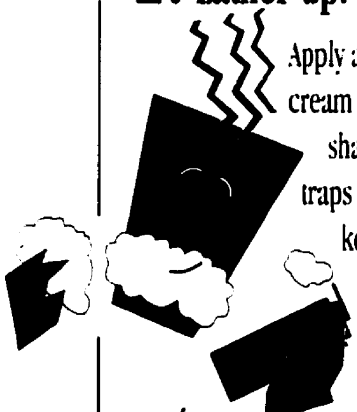
Gillette SERIES

It is important to know that if you have acne, most doctors will recommend wet shaving. For the best results with wet shaving, follow these steps for a closer and more comfortable shave:

1. Wetter is Better:

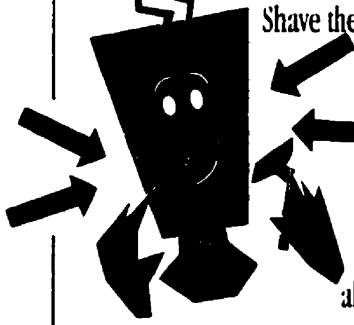
Wash the face with hot water and soap, then rinse thoroughly. Do not dry the face, but leave the skin and beard wet. It takes almost two minutes of soaking to fully soften the beard.

2. Lather up:



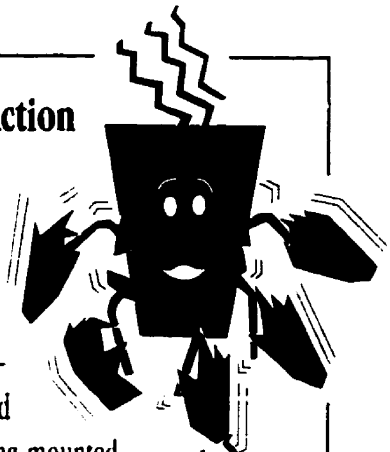
Apply a good quantity of shave cream or gel over the area to be shaved. The shave cream or gel traps moisture in the beard to keep it soft and provides lubrication to ease the razor over the skin.

3. Start at the Right Place:



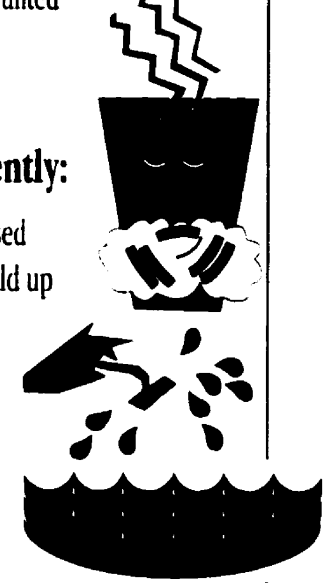
Shave the sideburns, cheek and neck first. The toughest whiskers, which grow on the chin and around the lips, need more time to absorb water and soften thoroughly.

4. Get the Action right:



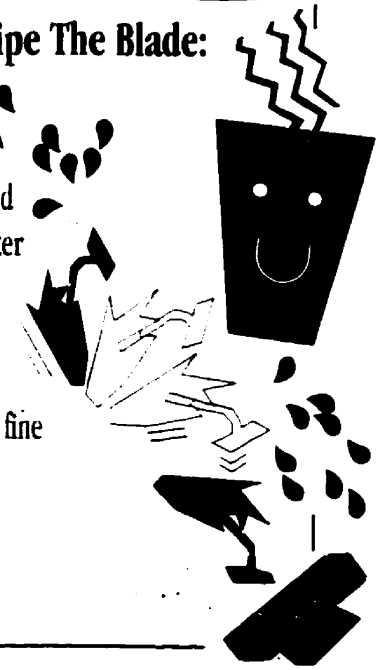
Use light, gentle strokes. Try to use as few strokes as possible. For maximum closeness and comfort, try a spring-mounted twin blade.

5. Rinse Frequently:

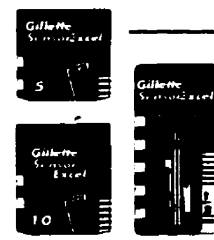


The razor should be rinsed frequently to prevent build up of whiskers and lather.

6. Do Not Wipe The Blade:



At the end of the shave, rinse the blade thoroughly and shake off excess water before storing. Do not wipe the blade with anything since this will damage the fine shaving edge.



Shaving for Young Women

Do YOU know:

- how to prevent nicks and cuts?
- how many times you can use a razor?
- how to prevent dry and flaky skin?
- how to prevent itchy red bumps?

For centuries, many women have chosen to remove leg and underarm hair. This is a personal decision and if you decide to remove this hair, choose a method that is best suited to your skin and hair conditions.

WHO uses what:

Of the 80% women who choose to remove hair:

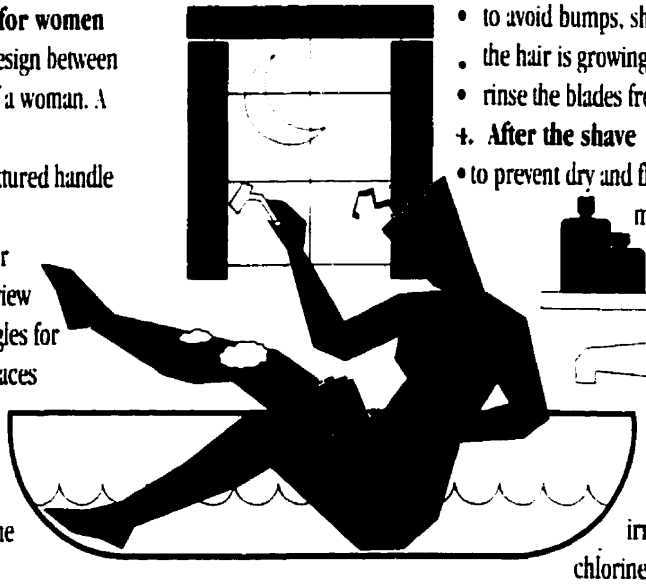
- 87% wet shave
- 8% use electric hair removers
- 1% use depilatory creams
- 3% use wax
- 1% use other methods

TIPS

- Always use a sharp razor. Most blades will be dull after about five shaves.

If you choose wet shaving, follow these tips for a close and smooth shave:

1. **Use a razor designed for women** there is a difference in design between a man's razor and that of a woman. A woman's razor:
   - is lighter and has a textured handle for safety
   - has a curved design for easy use and a better view
   - has different blade angles for those hard to reach places
2. **Preparation for shaving**
   - use plenty of water – the longer you soak, the easier the shave
   - use a razor that has a moisturizer strip and try shaving gel instead of soap
   - a spring-mounted twin blade will give you closer shave
   - be sure the blades are sharp



3. **Shaving action**
   - using light, steady strokes with a twin blade
   - to avoid bumps, shave in the same direction that the hair is growing
   - rinse the blades frequently
4. **After the shave**
   - to prevent dry and flaky skin apply an alcohol-free moisturizer over still damp skin
   - rinse the blades thoroughly under running water
   - never wipe the blades with a towel - shake and air dry
5. **In the summer months**
   - shave the night before a day at the pool or beach to avoid irritation from the sun, salt or chlorine

PERSONAL CARE

WHAT YOU NEED TO KNOW ABOUT BODY ODOUR BUT WERE AFRAID TO ASK!

- sweating is a vital and normal process. It controls body temperature and removes body wastes
- sweat is produced by millions of pores all over your body that are stimulated by heat or emotional stress
- bacteria plus perspiration creates odour

WHAT YOU NEED TO DO (i.e. How to keep your friends)

- clean clothes are important in reducing odour
- a daily shower or bath is recommended to clean out the pores in your skin
- washing frequently can help to keep perspiration and bacteria off your skin, reducing body odour
- you may also wish to use a deodorant or an anti-perspirant

HOW THEY WORK:

An Anti-Perspirant

- reduces the flow of perspiration and thus reduces odour and wetness.
- provides more protection as the body requires it. If you are involved in physical activity, then the anti-perspirant will work harder.

A Deodorant

- is a fragrance delivery system that covers up odour.

CHOOSE A TYPE THAT IS EFFECTIVE FOR YOU

- 50 per cent of Canadian males choose deodorants and 50 per cent choose anti-perspirants
- 95 per cent of Canadian females choose anti-perspirants

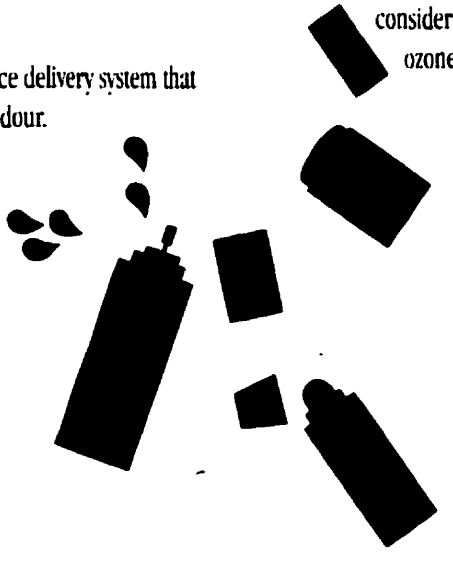
There are three major types of deodorants and anti-perspirants:

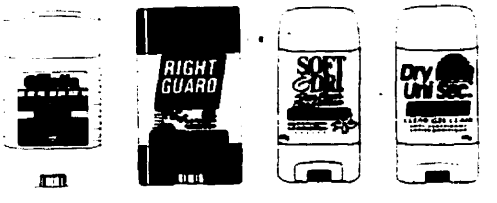
- aerosols
- roll-ons
- sticks/clear gels

Sticks/clear gels are more popular than aerosols and roll-ons because:

- they are easy to handle
- the product goes on dry
- they are the most environmentally friendly

All Canadian anti-perspirant and deodorant aerosols have eliminated the use of CFCs (Chloroflurocarbons) and are now considerably less harmful to the ozone layer.

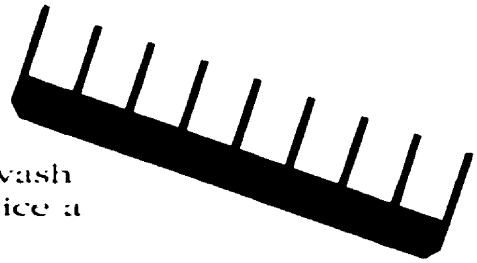




YOUR HAIR

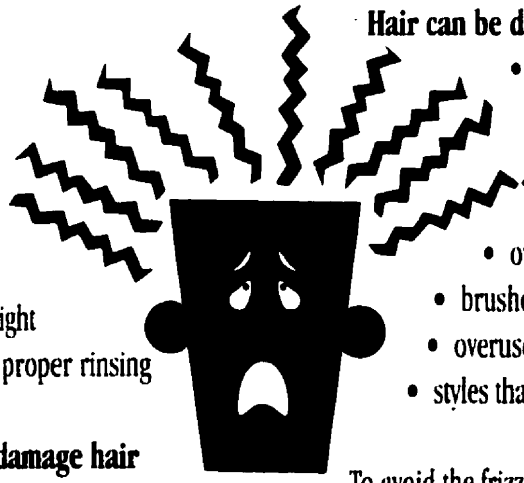
- **How can your hair be perfect one day but not the next?**
- **How can you get rid of frizzies and split-ends?**
- **What type of shampoo and conditioner should you use?**
- **How can you add body and lustre to your hair?**

Great hair needs help to look great. Taking good care of your hair, and knowing the right type of products to use, can help you have perfect hair every day.



Identify the type of hair you have. Is it dry, normal or oily? (Most teens have oily hair due to an influx of hormones). Use a good shampoo according to your hair type and wash it as frequently as required. (Dry hair — twice a week, oily hair — daily).

WHAT YOU SHOULD KNOW ABOUT HAIR



Dull limp hair

- is caused by dirt, dust, pollution and perspiration

The secret to clean hair

- is a combination of the right amount of shampoo and proper rinsing

Frequent washing can't damage hair

- providing that the shampoo is properly suited to the hair type (dry, normal, oily)

Don't brush wet hair

- wet hair is fragile hair (it will break easily)
- use a wide-tooth comb to untangle snarls

Hair can be damaged by:

- overbrushing (25 times is max)
- too much heat with use of curling irons and blow dryers
- careless use of brush rollers
- overteasing
- brushes with sharp bristles
- overuse of dyes and bleaches
- styles that tug at the root (tight braids)

To avoid the frizzies after exposure to the sun and chlorine, wash your hair as soon as possible and then use a conditioner.

hair help

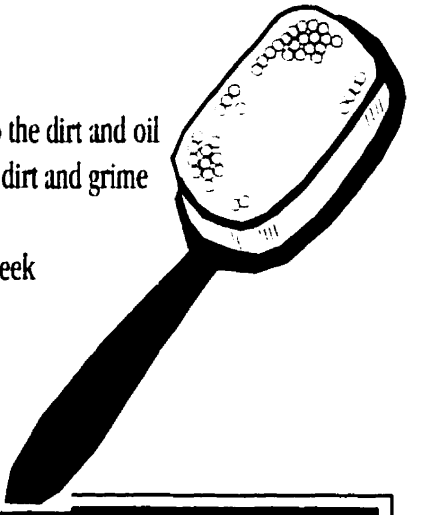
Using a conditioner will:

- improve the lustre and sheen of your hair
- give the hair body and control frizziness
- make the hair softer and easier to comb
- help prevent split ends

Tame®

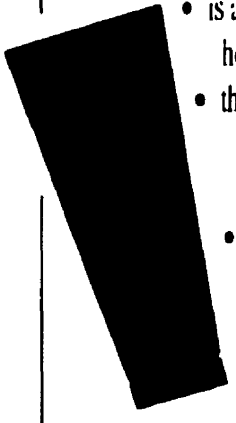
DID YOU KNOW THAT:

- perspiration, pollutants, dust and dirt collect on hair
- during the shampooing process, the shampoo molecules attach themselves to the dirt and oil
- the rinsing process will remove the shampoo molecules and thus remove the dirt and grime
- it is normal to lose up to 150 hairs per day
- 99% of both young men and women use a shampoo more than 5 times per week
- 25% of men and 63% of women use conditioners



WHAT ABOUT STYLING PRODUCTS?

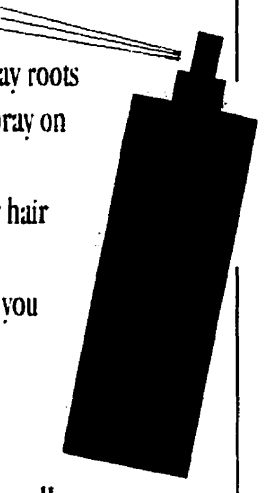
GEL



- is a styling product that helps shape and hold any hairstyle
- the user rubs a small amount into his/her hands and applies evenly to damp hair
- because they're heavier than mousse, gels work best on short hair and sculptured looks or on extra thick hair

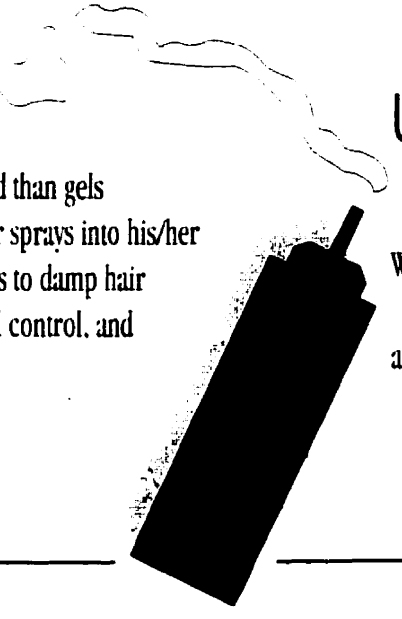
SPRAY

- is used to hold a style or can be used as a styling tool
- for styling purposes, lightly spray roots of dry hair for a quick lift or spray on wet hair as you blow dry
- using too much will make your hair sticky
- comb your hair out carefully if you want the style to stay



MOUSSE

- gives a softer hold than gels
- is a foam the user sprays into his/her hands and applies to damp hair
- adds texture, curl control, and shine

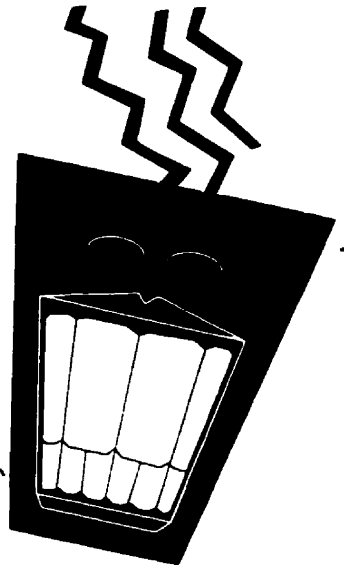


USE environmentally friendly PRODUCTS

When choosing shampoos and conditioners choose those that are environmentally friendly. Canadian aerosol hair sprays do not contain CFCs.

Tame®

DENTAL HEaLTH



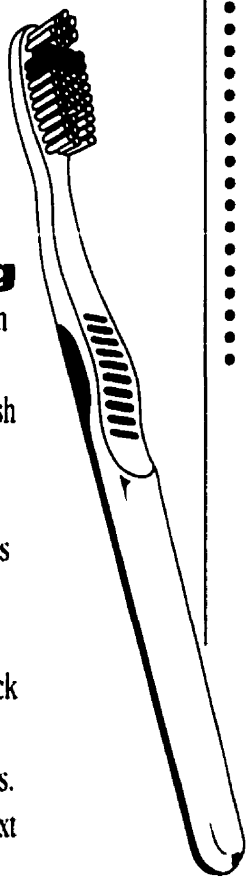
Do you have:

- fresh breath?
- an attractive smile?

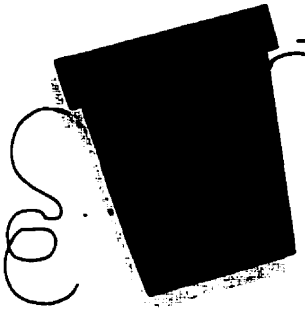
The secret to having fresh breath and an attractive smile lies in having a clean mouth. A clean mouth requires daily removal of plaque and food particles from between the teeth and under the gumline. Plaque is a thin, sticky, colourless film that constantly forms on teeth. Plaque contains bacteria and is the main cause of tooth decay and gum disease. A daily program of tooth brushing and flossing will remove the harmful plaque. The Canadian Dental Association recommends the following basic techniques for daily removal of plaque and food particles:

Toothbrushing

1. For general use, choose a toothbrush with soft, end-rounded bristles. Remember to change your toothbrush every 2-3 months.
2. Place the head of your toothbrush beside your teeth, with the bristle tips at a 45 degree angle against the gum line.
3. Vibrate the toothbrush in a slight back and forth or circular motion, directing gentle pressure towards the gums.
4. Count to 10 and then move to the next group of teeth using the same technique. Do all inside and outside surfaces. Tilt the toothbrush vertically to clean the inside surfaces of the front teeth.
5. The top surfaces of the back teeth are cleaned with a back and forth motion.



It only takes 2 to 3 minutes to properly clean your teeth.



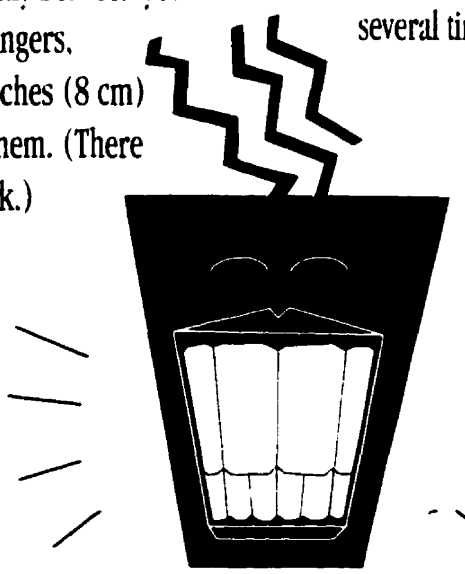
Flossing

1. Break off about 18 inches (46 cm) of dental floss and wind most of the floss around the middle finger of one hand. The other hand should "take up" the floss as it becomes soiled.

2. Hold the floss tightly between your thumbs and forefingers, leaving about 3 inches (8 cm) of floss between them. (There should be no slack.)

3. Using a gentle sawing motion, guide the floss between the teeth. When the floss reaches the gum line, curve it into a C-shape around the surface of one tooth. Gently work the floss under the gums until a slight resistance is felt.

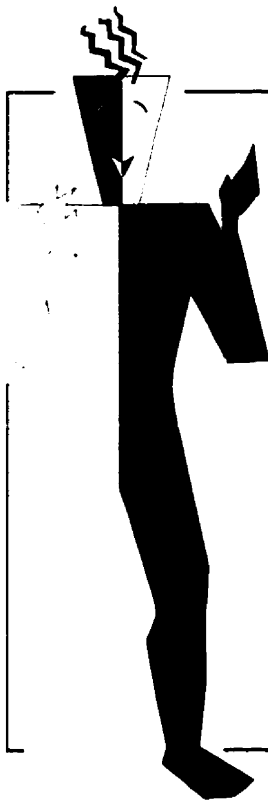
4. Holding the floss against the tooth in a C-shape, move the floss up and down several times.



5. Repeat this method on the next tooth, using a new section of floss for each tooth, until all teeth are cleaned.

Oral-B

Mental health...

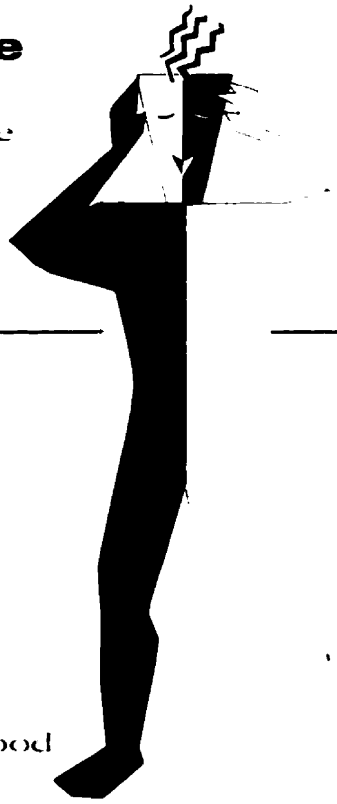


Believe in yourself

- be positive, convince yourself that you can do it!
- you are a unique individual and made of good stuff
- you are in control, if you choose to be

Have a good sense of humour

- laugh, and try to be fun to be around
- laugh at your mistakes
- have fun and look at the lighter side



With others

- want a compliment? – then give sincere praise and compliments to others
- be friendly and smile
- show people you care
- don't put others down
- be a good listener

Rest and relaxation

- adequate sleep will help put you in a good mood
- normally you need 8 - 10 hours of sleep per night
- 80% of teens have difficulty getting to sleep. Don't worry, try reading, having a warm bath, or drinking a glass of warm milk. You will be able to cope the next day.

A POSITIVE ATTITUDE

Being physically fit, eating smart, maintaining a healthy weight, and following good body image habits will certainly help you look good. But equally important is your attitude. Having a positive attitude and believing in yourself will help you achieve your goals of looking good and feeling great. Outlined on this page are some practical suggestions from other teens that will help you reach these goals.

Ophea
Ontario Physical and Health Education Association

GETTiNG STARTED

On each of the next three days, you will be asked to record your activity level, your food intake, do a body image check-up, and indicate how you feel. You will do all your recording in the next pages of this booklet (Lifestyle Diary section). Here are some specific instructions to follow.

1. GET A SUPPORT GROUP

- if you have not already done so, find a friend(s) with whom you will be able to share some or all of this information
- this is your support group. They will help you analyze your results, keep you on the right track and help you set some goals for the next day. You will do the same for them.

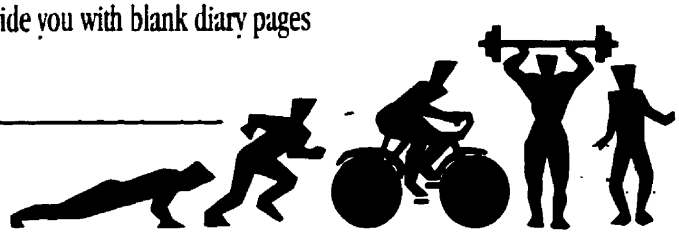
NOTE: if you feel some information is too personal, do not share it. In fact, if you prefer to do the entire diary on your own, that's OK too.

2. EACH DAY

- after you have recorded your behaviour and answered the questions, analyze your strengths and weaknesses and decide if you will have to make any changes for the next day
- use the reference pages if you need further information
- consult with your peer group if you have chosen one
- consult with your teacher if you have questions or would like him/her to check your diary

3. TURN THE PAGE

- and get started
- after three days, complete the summary and decide if you want to repeat the exercise
- if you do, your teacher can provide you with blank diary pages
- good luck!



Gillette Canada Inc.

daily personal record

date:_____, day 1

NUTRITIONAL CHECK-UP

Make a list of all the foods that you have eaten today on a separate page and transfer the results to the chart beside. Put a check mark (✓) in each box to indicate a serving. (The recommended number of servings are in brackets.) Put a circle around the (✓) if the food was a low-fat dairy product. Put a box around the (✓) if the meat was lean. It is OK to eat more than the minimum number of servings identified, especially fruits and vegetables, and breads and cereals. Since you are growing and have high energy needs, it is advisable to eat more servings from these two food groups.

Food Group	No. of servings	Total
Milk Products (3-4)		
Meat and Alternatives (2-3)		
Vegetables and Fruits (5-10)		
Grain Products (5-12)		
Other Foods (includes junk food)		

1. Did you ignore any food groups?
   yes___ no___
   If so, which ones?_____
2. Did you use the minimum amount of salt?
   yes___ no___
3. Did you eat the proper number of servings for each food group?
   yes___ no___
4. Did you eat a variety of foods?
   yes___ no___
5. Did you choose low-fat dairy products and lean meats?
   yes___ no___

FOR TOMORROW

To meet Canada's Food Guide, I will need to:		
Maintain	Increase	Decrease

MENTAL HEALTH CHECK-UP

1. Did you take time to relax today? yes___ no___
2. Did you have a good laugh today? yes___ no___
3. How many hours of sleep did you get last night? _____
   Was this adequate? yes___ no___
4. Rate your day for enjoyment. _____
   Low High
5. Rate your stress level for today. _____
   Low High

FOR TOMORROW

In order to enjoy tomorrow, I will need to:

Maintain _____

_____

_____

Change _____

_____

_____

ACTIVITY CHECK-UP

List all the activities that you participated in today. Evaluate the level of intensity and duration of each activity. Indicate if the activity was aerobic.

Activity	Duration (in minutes)	Level of Intensity low moderate high	Aerobic

1. Are you satisfied with your activity level?
   yes___ no___
2. Were there any obstacles in your way?
   yes___ no___
   what_____
3. Did you do activities that you enjoyed?
   yes___ no___
4. Did you do an aerobic type activity for 15-30 minutes?
   yes___ no___

FOR TOMORROW (be realistic)

To achieve an acceptable (or improved) activity level for the next day, I will need to:

Maintain	Increase	Decrease

TOTAL WELL-BEING FEELING FOR TODAY

(fill in the bar graph)

lousy ok feeling great

BODY IMAGE CHECK-UP

1. Did you wash your face carefully to prevent acne? yes___ no___
2. Did you use a deodorant or anti-perspirant? yes___ no___
3. Did you brush and floss your teeth at least twice? yes___ no___
4. If you washed your hair, did you rinse it well? yes___ no___
5. Rate the status of your hair today._____

   oily/stringy soft/shiny dry/fizzy

FOR TOMORROW

In order to enjoy tomorrow, I will need to:

Maintain _____

_____

_____

Change _____

_____

_____

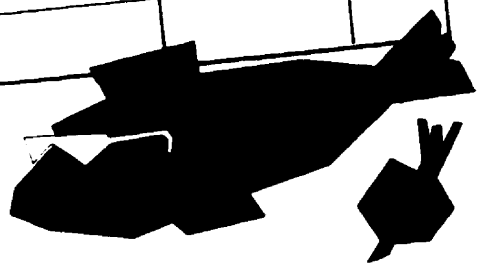
daily personal record

date:_____, day 2

NUTRITIONAL CHECK-UP

Make a list of all the foods that you have eaten today on a separate page and transfer the results to the chart beside. Put a check mark (✓) in each box to indicate a serving. (The recommended number of servings are in brackets.) Put a circle around the (✓) if the food was a low-fat dairy product. Put a box around the (✓) if the meat was lean. It is OK to eat more than the minimum number of servings identified, especially fruits and vegetables, and breads and cereals. Since you are growing and have high energy needs, it is advisable to eat more servings from these two food groups.

Food Group	No. of servings	Total
Milk Products (3-4)		
Meat and Alternatives (2-3)		
Vegetables and Fruits (5-10)		
Grain Products (5-12)		
Other Foods (includes junk food)		



1. Did you eat the correct number of servings for each food group?
   yes___ no___
2. Did your breakfast have some protein (meat and alternatives group) in it?
   yes___ no___
3. Did you choose mostly nutritious snacks (low in fats and sugar)?
   yes___ no___
4. Were your foods prepared with little or no fat?
   yes___ no___
5. Did you emphasize cereals, breads, other grain products?
   yes___ no___

FOR TOMORROW

To meet Canada's Food Guide, I will need to:		
Maintain	Increase	Decrease

MENTAL HEALTH CHECK-UP

1. Were you able to maintain a positive attitude for most of the day? yes___ no___
2. How long did it take you to fall asleep last night?_____
3. Did you give any compliments? yes___ no___
4. Did you receive any compliments? yes___ no___
5. How did you feel when you woke up this morning?

   _____

   tired OK great

FOR TOMORROW

In order to enjoy tomorrow, I will need to:

Maintain _____

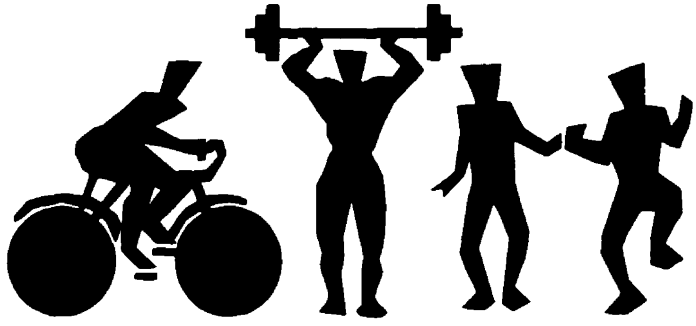
_____

_____

Change _____

_____

_____



ACTIVITY CHECK-UP

List all the activities that you participated in today. Evaluate the level of intensity and duration of each activity. Indicate if the activity was aerobic.

Activity	Duration (in minutes)	Level of Intensity low moderate high	Aerobic

1. Are you satisfied with your activity level?
   yes___ no___
2. Did you do adequate warm-up and cool-down stretching exercising?
   yes___ no___
3. Did you get your heart rate up to 150 beats per min. for at least 15 mins?
   yes___ no___
4. Did you do some power walking (walking quickly)?
   yes___ no___

FOR TOMORROW (be realistic)

To achieve an acceptable (or improved) activity level for the next day, I will need to:

Maintain	Increase	Decrease

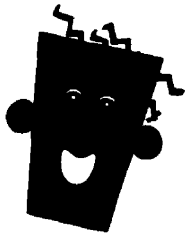
TOTAL WELL-BEING FEELING FOR TODAY

(fill in the bar graph)

lousy ok feeling great

BODY IMAGE CHECK-UP

1. Did you brush and floss your teeth at least twice?
   yes___ no___
2. If you shaved today, did you follow the recommended method?
   yes___ no___
3. Did you use a deodorant or anti-perspirant?
   yes___ no___
4. Did you use a low heat setting on your hair dryer?
   yes___ no___



FOR TOMORROW

In order to enjoy tomorrow, I will need to:

Maintain _____

_____

_____

Change _____

_____

_____

daily personal record

date:_____, day 3

NUTRITIONAL CHECK-UP

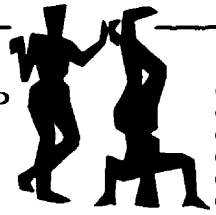
Make a list of all the foods that you have eaten today on a separate page and transfer the results to the chart beside. Put a check mark (✓) in each box to indicate a serving (The recommended number of servings are in brackets.) Put a circle around the (✓) if the food was a low-fat dairy product. Put a box around the (✓) if the meat was lean. It is OK to eat more than the minimum number of servings identified, especially fruits and vegetables, and breads and cereals. Since you are growing and have high energy needs, it is advisable to eat more servings from these two food groups.

Food Group	No. of servings	Total
Milk Products (3-4)		
Meat and Alternatives (2-3)		
Vegetables and Fruits (5-10)		
Grain Products (5-12)		
Other Foods (includes junk food)		

1. Did you drink 8 glasses of water?
   yes___ no___
2. Did you select the recommended no. of servings for each food group?
   yes___ no___
3. Did you eat three meals?
   yes___ no___
4. Did you limit your salt and caffeine?
   yes___ no___
5. Did you eat a nutritious breakfast?
   yes___ no___

FOR TOMORROW

To meet Canada's Food Guide, I will need to:		
Maintain	Increase	Decrease



MENTAL HEALTH CHECK-UP

1. Did you take some time to relax (e.g. enjoy a hobby?)
   yes___ no___
2. Did you have a fun and enjoyable day? yes___ no___
3. Did you try and maintain a positive attitude? yes___ no___
4. Were you generous with your compliments (sincere ones)? yes___ no___
5. Write down something that made you feel good today (e.g. a good mark, someone liked your new haircut). _____

_____

FOR TOMORROW

In order to enjoy tomorrow, I will need to:

Maintain _____

_____

_____

Change _____

_____

_____

ACTIVITY CHECK-UP

List all the activities that you participated in today. Evaluate the level of intensity and duration of each activity. Indicate if the activity was aerobic.

Activity	Duration (in minutes)	Level of Intensity low moderate high	Aerobic

1. Did you feel that you have worked off your food intake today? yes___ no___
2. Did you choose activities that you enjoy? yes___ no___
3. Did you do at least 30 mins. of moderate exercise today? yes___ no___
4. Did you meet your goal for today? yes___ no___

FOR TOMORROW (be realistic)

To achieve an acceptable (or improved) activity level for the next day, I will need to:

Maintain	Increase	Decrease

TOTAL WELL-BEING FEELING FOR TODAY

(fill in the bar graph)

lousy ok feeling great

BODY IMAGE CHECK-UP

1. If you wet shaved today, did you:
   (a) let your skin soak for at least 2 mins? yes___ no___
   (b) use light gentle strokes? yes___ no___
   (c) rinse frequently? yes___ no___
2. Did you get that "squeaky-clean" sound after flossing? yes___ no___
3. If you washed your hair today, did you rinse it well? yes___ no___
4. For good posture, did you sit-up straight for most of the day? yes___ no___

FOR TOMORROW

In order to enjoy tomorrow, I will need to:

Maintain _____

_____

_____

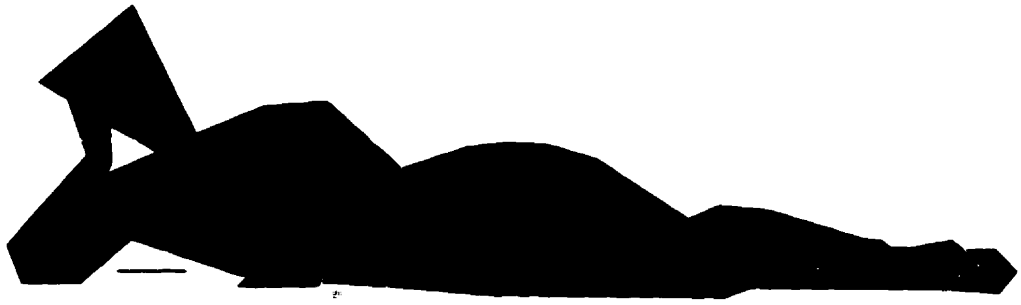
Change _____

_____

_____

Summary • conclusions • contract...

The purpose of this section is to: allow you to summarize your findings, draw some conclusions, and make up a contract for next week if you are not happy with your results. Mark them on the continuums below how you would rate yourself for the past three days. then combine the four first continuums (add the numbers) to set an overall rating on the "Personal Well-Being" continuum below.



nutrition

unhealthy eating — healthy eating

activity

lazy — very active

body image

poor habits — excellent habits

mental health

poor — excellent

TOTAL WELL-BEING

low well-being — excellent well-being

1 2 3 4 5 6 7

What conclusions can you make from examining the continuums? Are you satisfied with your position on your "Personal Well-Being" continuum? Are you in the 5 to 7 range? If so, that's **GREAT.** You are maintaining a healthy lifestyle and are on the right road to **looking good and feeling great.** Continue to maintain or improve your healthy behaviours. **However,** if you are not totally satisfied, where would you like to be? Mark this position on the continuum above.

If you are not satisfied with your results, would you like to try this activity again? If so, your teacher can provide you with blank copies of the "Lifestyle Diary." This time, set some realistic goals for yourself. In the space below, outline the goals you wish to attain. The contract on the next page will help you reach those goals.

Personal contract

Your own personal contract can help you to achieve your new goals. Be sure to set realistic standards for yourself that are attainable. For example: "I will get off the bus four blocks from school so I can walk the rest of the way." Also, you may be quite satisfied with your activity and body image habits and only need to improve in nutrition and mental health. In this case, you should concentrate on those two areas that require improvement and maintain the other two. Complete the contract below, sign it, and then go to work. You may also want to use a support group again.

During the days of_____

I, _____ will attempt to improve (use a ✓) or maintain (use a *) my behaviours in the following areas:

- ☐ nutrition
- ☐ activity
- ☐ body image
- ☐ mental health

I will do this on each day by doing the following:
(indicate on the lines how you hope to achieve this).

I will sincerely try to achieve these goals.

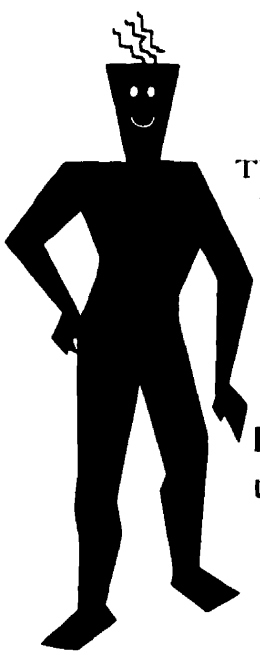
_____
signed

_____
dated

day 1

day 2

day3



THREE DAYS LATER...

Were you successful in completing your contract? If so, CONGRATULATIONS! You are maintaining a healthy lifestyle which will help you achieve good health and: LOOK GOOD and FEEL GREAT! Continue to maintain or improve on your healthy behaviours for a long and healthy life.

If you were not totally successful in reaching your goals, keep working at them until you reach them.