Executive Summary

POTENTIAL APPROACHES FOR THE PROMOTION OF PHYSICAL ACTIVITY
A review of the literature

Jo Salmon
Rachel Breman
Michael Fotheringham
Kylie Ball
Caroline Finch

October 2000

Deakin University
School of Health Sciences
Authors: Dr. Jo Salmon, PhD, School of Health Sciences, Deakin University  
Ms. Rachel Breman, BAppSci (Hons), School of Health Sciences, Deakin University  
Dr. Michael Fotheringham, PhD, School of Health Sciences, Deakin University  
Dr. Kylie Ball, PhD, School of Health Sciences, Deakin University  
Assoc. Prof. Caroline Finch, PhD, School of Health Sciences, Deakin University

Date: October 2000

Contact: For further information about the material contained in this report contact:

Dr. Jo Salmon  
School of Health Sciences, Deakin University  
221 Burwood Hwy  
Burwood, 3125  
Australia  
Email: jsalmon@deakin.edu.au  
PH: 61-3-9251-7254  
FAX: 61-3-9244 6017
EXECUTIVE SUMMARY

The Victorian Health Promotion Foundation (VicHealth) has identified physical activity as one of its priority health areas for promotion in Victoria over the next five years. This report provides background information for the development of strategic directions for the promotion of physical activity in Victoria. In particular, it provides important information about the range of potential strategies for promoting and intervening on physical activity. This information is based on published evidence about approaches to promoting physical activity that have been successful in Australia and internationally. In addition, the potential of other strategies that have not yet been applied to the promotion of physical activity, (but to other health behaviours) is considered. The application of these strategies to different population sub-groups is an important consideration.

This report is written within a public health framework. As such, the physical activity strategies identified are designed not only to shift physical activity behaviours in individuals, but also to achieve shifts in the prevalence of physical activity at a population level. Therefore the recommended strategies to be adopted in the promotion of physical activity in Victoria can be broadly classified as: population approaches and individual approaches.

In Victoria, approximately half of the total adult population is insufficiently active for the accrual of health benefits. The recent national physical activity guidelines recommend that adults should participate in at least 30 minutes of accumulated moderate-intensity activity (e.g. walking) on most days of the week. These new recommendations, adapted from the US Surgeon General's Report on Physical Activity and Health and from the Centers for Disease Control and the American College of Sports Medicine, enable a broader application of these guidelines to the general population. Hence, they are more likely to be achievable for sub-groups such as older adults, minority groups, and other target groups.

The two main approaches that have been adopted both in Australia and internationally to promote physical activity are: population approaches (policy and environmental strategies, and mass media); and individual approaches (print- and web-based, counselling and screening, theoretical models that underpin promotion activities). These approaches can also be applied within different settings of physical activity such as schools and the workplace. In addition to these, other health promotion which have been applied to other public health issues have the potential to also change physical activity behaviour at population and individual levels.

Of the population approaches to promote physical activity, it is clear that there are many independent and government health organisations in Australia that have recently developed physical activity policies and recommendations. The impact of these policies on physical activity behaviour and prevalence is yet to be evaluated. However, as many of the theoretical paradigms suggest, without the support of public policy, it is less likely that population-wide behaviour change will be achieved. As yet, there is little evidence of the success of environmental strategies for the promotion of physical activity in Australia. This is largely due to the nature of research that has been published to date being mainly qualitative and descriptive. However, these studies suggest that this is an area with much promise, particularly with the potential for long-term sustained behaviour change. The use of mass media to promote physical activity in Australia has met with modest success. However, this strategy may have greater success if targeted to particular sub-groups and if supported with other population, environmental, and even individual approaches. The promotion of
physical activity messages through sponsorship or product labelling (guided by health promotion policy initiatives) has not been previously trialed in Australia and may be a promising approach, particularly when it is used to support mass media approaches.

Many studies have used settings to promote physical activity in Australia. Interventions have been conducted in community settings, workplace settings, school and university settings. However, within these settings most of the strategies to promote physical activity have employed individual methods of behaviour change. In addition, although many of the interventions have demonstrated short-term success, few intervention studies evaluated long-term effects, and those studies that did found weak evidence of long-term maintenance of behaviour change.

A small number of international studies have employed relatively new approaches in environmental and policy changes to promote physical activity. As these are long-term strategies, there is, as yet, insufficient evidence of the effectiveness of these approaches in reaching large sections of the population and in achieving lasting behaviour change. It is believed that policy and supportive environments have greater potential to reach larger portions of the community than individual approaches, and also to support sustained behaviour change. However, since behaviour modification is the most effective method for achieving initial behaviour change in individuals, modification of individual behaviours should be used in combination with environmental and policy approaches. The effectiveness of the delivery of individual approaches, such as using computer-mediated systems, still needs to be assessed. Nevertheless, this is a means of physical activity promotion with considerable promise.

Findings from international mass-media campaigns have revealed high awareness (generally around 70% for a televised campaign), increased knowledge, and more positive attitudes to physical activity. Some campaigns resulted in small increases in the population prevalence of physical activity, and also reported increases in individual participation; however, these were generally not sustained for more than a year. Mass media campaigns are most likely to achieve changes in individuals who are at a stage of motivational readiness for physical activity. Therefore, they are likely to be most effective for targeting those segments of the population who are in the precontemplation or contemplation stage of change for physical activity.

A number of international physical activity promotion interventions have been implemented in community, workplace, and educational settings. Large-scale community interventions have generally achieved only modest increases in physical activity within these communities. However, these projects mainly used mass media, combined with individual approaches, to achieve behaviour change. Environmental and policy approaches have not been effectively employed within community settings. These approaches, combined with mass media and individual behaviour change approaches may be the most effective means for increasing adoption and maintenance of physical activity. Interventions focused on special sub-groups (e.g. older adults, ethnic minority groups) within communities have also demonstrated greater success compared to those with a broader focal point. Thus different approaches may be more effective for different sub-groups. Further, individual differences within these sub-groups may require tailored approaches.

Some modifications to general physical activity promotion strategies may be needed to successfully reach different sub-groups, defined by age group, sex, socioeconomic status (SES), ethnicity and for those living in rural and regional areas. Studies of SES have found that the promotion of leisure-time physical activity...
in blue-collar workers is not feasible as these individuals generally have adequate levels of occupational physical activity. Mass media approaches have been found to reach higher SES groups more effectively than lower SES groups. Studies of particular age groups indicate that priorities, responsibilities, and also functional capabilities vary and that strategies to promote physical activity need to reflect changes across the lifespan. Studies of women from non-English speaking backgrounds indicate that these women benefit from individually-tailored programs that include social support, provision of programs in different languages, and culturally-sensitive activities.

The development of promotional strategies that target more than one health behaviour is an approach that has often been used in health promotion. In particular, areas like physical activity and nutrition have common health outcomes such as the reduction of overweight and obesity. More recently, strong links between physical activity promotion and injury prevention have been developed. Evidence of links with other health areas such as mental health, smoking, alcohol, and sedentary behaviour are not as strong compared with the evidence of links between nutrition, physical inactivity and obesity. However, increasing numbers of interventions and health promotion strategies are now focusing on multiple lifestyle risk factors, particularly within contained settings such as the work environment. Where there are clear links across health behaviours, it would be useful to combine approaches and achieve more value for money and endeavour.

In summary, international and Australian studies promoting physical activity demonstrate that no single approach has succeeded in effecting long-term physical activity behaviour. To date, most physical activity interventions have focused on the individual, and without supportive environments, it has been argued that physical activity behaviour is less likely to be maintained. Thus, multi-level, multi-strategy approaches that emphasise combined environmental, policy, and individual strategies are likely to have the most potential in initiating and sustaining physical activity behaviour change. Although this type of approach would require support from all levels of society, and substantial infrastructure support, it has the greatest likelihood of achieving long-term sustainability. Furthermore, this approach offers the greatest potential for implementing the National Physical Activity guidelines. There is potential for VicHealth to take a leadership role in this area, especially if it adopts a firm evaluation strategy to accompany any physical activity initiative.
SUMMARY OF RECOMMENDATIONS FOR THE PROMOTION OF PHYSICAL ACTIVITY

Multi-level, multi-strategy approaches that emphasise combined environmental, policy and individual strategies are likely to be the most effective in promoting sustained increases in physical activity in the population. There is strong evidence to support the following strategies:

- Sign postings to promote stair use
- Individual approaches using behavioural strategies such as goal-setting and self-monitoring of behaviour
- Individual print-based and settings-based approaches based on theoretical models of behaviour change including the Theory of Reasoned Action, Transtheoretical Model, and/or self-efficacy and decision-making constructs
- Stage-based, motivationally-targeted interventions
- Combined group- and home-based settings
- Workplace settings approaches incorporating individualised counselling, feedback, health screening, exercise prescriptions and incentives for participation
- School settings approaches including classroom physical education sessions, trained specialists/teachers, behaviour-based curriculum, peer involvement, programs combining multiple strategies
- Improvements in urban design, access and availability (including transport planning); improvements to exercise facilities e.g. walking tracks that are safe, clean, attractive and are purposeful.
SUMMARY OF RECOMMENDATIONS FOR FURTHER STUDIES TO PROMOTE PHYSICAL ACTIVITY

There is emerging evidence for studies to further consider the following:

- Systematic evaluation of the effectiveness of environmental and policy approaches in target versus comparison populations

- Altering the physical environment to be more conducive to recreational physical activity (e.g., provide convenient indoor and outdoor facilities, walking/bike tracks, parks)

- Altering the physical environment to be more conducive to physical activity for transport (e.g., improved safety of commuter routes; provide walking/bike tracks; restrict motor vehicle traffic; increase access to public transport)

- Financial, lottery, and other incentives for active participation (e.g., reduced health insurance premiums)

- Workplace incentives to promote physical activity (e.g., supportive environments with shower facilities, bicycle racks etc; release time policies for workplace physical activity)

- Intersectoral approaches (e.g., government agencies, urban planning, transportation)

- Mass-media approaches targeted to specific sub-groups

- Multi-factor focus, combining physical activity promotion with other health messages (e.g., healthy eating, smoking, alcohol), using either environmental, mass media and/or individual approaches in different settings

- Use of information technologies, such as web-sites and email

- Environmental, policy, mass media and individual strategies with theoretical underpinnings (e.g., Transtheoretical Model; Social Cognitive Theory; Ecological models)

- Informational approaches such as health practitioner counselling and/or telephone-based counselling/automated telephone-delivered health advice

- Use of different settings for physical activity promotion (e.g., higher education setting, home)

- Promotion of physical activity to diverse population groups, considering individual and group differences (e.g., sex, age, SES, ethnicity, rural dwellers) eg using mass media, screening programs, workplace programs, and addressing relevant barriers to participation (e.g., sociocultural and linguistic barriers for ethnic groups)

- Development of strategies to promote physical activity throughout the lifespan and through key life events (e.g., leaving school, marriage, childbirth, retirement)

- Development of mult-social setting activities e.g., exercise for mothers whilst they are waiting for their children at sport

- A greater understanding of indigenous populations and their attitudes, barriers, determinants and patterns toward physical activity

- A greater understanding of barriers toward physical activity such as injury
OTHER CONTRIBUTORS TO THIS REPORT

Dr. David Crawford, PhD, School of Health Sciences, Deakin University

Dr. Judy Ann Jones, School of Health Sciences, Deakin University

Ms. Amanda Telford, School of Health Sciences, Deakin University

ACKNOWLEDGEMENTS

This report was commissioned by the Victorian Health Promotion Foundation. The authors would particularly like to thank Professor Sandy Gifford, Professor of Public Health, School of Health Sciences, Deakin University, for comments on the draft report.

The authors would also like to thank the following staff from the School of Health Sciences at Deakin University for their assistance with this report: Ms. Shelly Maher; Ms. Mary Mahoney; Dr Mardie Townsend.
METHODS

Literature for this report was obtained by searching the following electronic databases: WebSpirs (including Medline, Psychlit, Sportsdiscus); Infotrack; Ebsco; and AusportMed. Other information sources included experts in the field, personal resources (journals and books), back referencing from journal articles and text-books, world wide web-based searches, and electronic journal alert services. Keywords used in the literature search included: physical activity and policy, environment, mass media, schools, community initiatives, workplaces, health promotion, SES, women, ethnicity, children, elderly, middle age, sedentary behaviour, television viewing, safety, obesity/overweight, children, mental health, alcohol, smoking.

The most recent review papers (from 1995 onwards) were gathered on international studies on the promotion of physical activity. A search for newly published studies that were not contained in the review papers was performed. For example, the most recent thorough review of studies of physical activity promotion in workplaces was by Dishman (1998), thus databases were searched for new published studies from 1998 onwards.
### TABLE OF DEFINITIONS

<table>
<thead>
<tr>
<th><strong>Physical activity</strong></th>
<th>Movement of the body by the contraction and relaxation of skeletal muscles resulting in increased energy expenditure above the resting level.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health-related physical activity</strong></td>
<td>Defined as participation in moderate-intensity physical activity for at least 30 minutes (may be accumulated in 3x10 minute sessions) on most days of the week, OR can also be defined as energy expenditure greater than 800kcal* per week.</td>
</tr>
<tr>
<td><strong>Physical activity for cardiovascular fitness</strong></td>
<td>Defined as participation in vigorous-intensity physical activity for at least 20 minutes, three times per week or more, OR energy expenditure greater than 1600kcal (including 60 minutes of vigorous-intensity activity) per week.</td>
</tr>
<tr>
<td><strong>Physical fitness</strong></td>
<td>A potential outcome of any type of physical activity if it is performed at a sufficient intensity, frequency and duration. It is usually defined as being able to carry out daily tasks comfortably and independently without undue fatigue</td>
</tr>
<tr>
<td><strong>Health-related fitness</strong></td>
<td>Includes cardiovascular and muscular endurance, muscular strength, flexibility, and body composition</td>
</tr>
<tr>
<td><strong>Performance-related fitness</strong></td>
<td>Includes muscular power, speed, agility, balance, and reaction time</td>
</tr>
<tr>
<td><strong>Functional fitness</strong></td>
<td>Refers to the ability to be able to function in everyday living such as tasks involving personal care. The latter is of specific relevance to older age groups</td>
</tr>
<tr>
<td><strong>METS</strong></td>
<td>Metabolic equivalent units. These are defined as the energy expenditure required to perform behaviours where sitting resting, is allocated 1 MET (1kcal · [body weight] kg⁻¹ · hr⁻¹). Moderate activity such as walking briskly is given a value of 3.5-4 METS.</td>
</tr>
<tr>
<td><strong>Physical inactivity</strong></td>
<td>A lack of physical activity behaviour. Also defined as low levels of energy expenditure (&lt;50kcal/week).</td>
</tr>
<tr>
<td><strong>Structured/planned physical activity</strong></td>
<td><em>Exercise</em> and <em>sport</em> are two sub-components of physical activity that are structured or planned and repetitive behaviours, often for the purpose of improved or maintained physical fitness and social benefits.</td>
</tr>
<tr>
<td><strong>Incidental physical activity</strong></td>
<td>Includes unstructured and unplanned physical activity where the primary goal is often not physical activity, but some other objective (e.g., walking to the letterbox to post a letter).</td>
</tr>
<tr>
<td><strong>Sedentary behaviour</strong></td>
<td>Refers to behaviours that require low METS to perform (1-2 METS) such as watching television, using a computer, reading, etc. These behaviours can occur during leisure-time, at work, at home, in transportation.</td>
</tr>
</tbody>
</table>