

PHYSICAL ACTIVITY ADVICE TOOL (PAAT)

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ABSTRACT

Family physicians can play an important role in providing lifestyle advice that aims to prevent or delay chronic disease. Given the vast amount of evidence that regular physical activity improves health and wellbeing, providing brief tailored advice in a clinic setting has the potential to make a positive impact on population health. Working side by side with physicians, the Health Promotion Board has developed the Physical Activity Advice Tool (PAAT) to enable physicians to quickly and accurately provide evidence-based tailored physical activity advice.

KEYWORDS: National Physical Activity Guidelines; Physical Activity Advice Tool (PAAT)

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INTRODUCTION

Evidence-based lifestyle intervention approaches that can be easily disseminated across the population of Singapore are needed. Providing physical activity advice during clinic visits has a logical appeal given that insufficient physical activity is a major public health threat accounting for 6% of deaths globally (ACSM, 2010)¹. Concurrently the 2010 National Health Survey indicates that 39.1% of residents do not obtain sufficient physical activity and the obesity rate has risen to 10.8% (MOH, 2011)².

To help address these problems the Health Promotion Board (2011)³ recently launched the National Physical Activity Guidelines, which advocates a weekly accumulation of 150 minutes of moderate intensity physical activity per week for those ≥ 19 years old. This volume of activity is associated with a 20-50% lower risk of premature death and a reduction in the incidence of cardiovascular disease, stroke, hypertension, colon cancer, breast cancer, type II diabetes, falls, depression and dementia. Markedly, the majority of these health benefits occur independent of body mass index classification if sufficient physical activity is maintained.

Despite the growing pandemic of insufficient physical activity, the capacity and time for a physician to provide tailored evidence-based physical activity advice may be limited. Recognising this problem the HPB-Physical Activity Centre of Excellence (PACE) has developed a tangible solution referred to as the Physical Activity Advice Tool (PAAT). This solution is part of PACE's effort to address the growing ecological problems of insufficient

physical activity and sedentary behaviour (sitting) by applying a broad model for active living (Sallis, et al, 2006)⁴.

ECOLOGICAL MODEL OF ACTIVE LIVING

Evidence has shown there are many factors that influence the physical activity behaviours of individuals including:

- Intrapersonal (demographics, biological, psychological, family situation).
- Perceived environment (safety, access, attractiveness).
- Domain (recreational activities, occupation/household activities, active commuting).
- Behaviour settings (healthcare, workplace, home, community).
- Policy (media, workplace, transport, healthcare).

The areas of behaviour and policy in the healthcare setting present an opportune environment to provide brief physical activity advice to patients. GP and polyclinics are geographically spread out across the nation providing a broad reach into the population. According to the 2010 Primary Care Survey (MOH, 2011)⁵ the daily reach is greater than 55,000 visits per day. Therefore an evidence-based tool designed to help physicians assess patients quickly; reserve time for brief advice; provide tailored guidance; and provide standardisation across the healthcare system is warranted.

EVIDENCE BASED

Given the high reach capacity of the GP and polyclinic settings it is important to consider the current evidence for providing brief tailored physical activity advice. Research shows that as many as 90% of patients would at least consider participating in physical activity if recommended by their doctor (Jimmy et al, 2005)⁶.

Currently the Ministry of Health (2011)⁷ Clinical Practice Guidelines (CPG) for Screening for Cardiovascular Disease and Risk Factors recommends that, "all patients aged 18 and older should be asked if they a participating in any physical activity, and if so, the level, intensity, and duration of such activity" (pg 15). Further augmenting this recommendation a recent systematic review (Sorensen, et al, 2006)⁸ found that 10% of patients who received brief physical activity advice (2-4 minutes) would follow the advice and increase cardiorespiratory fitness by 5-10%. Recent randomised control studies in the International Journal of General Medicine (ter Bogt et al, 2011)⁹ and Archives of Internal Medicine (Baruth, et al, 2011)¹⁰ provided findings that brief advice can significantly reduce CVD risk factors and prevent weight gain respectively. Remarkably both studies showed that brief advice was just as effective as more intensive counselling efforts.

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5 A's

Generally there are three steps for providing brief physical activity advice using the 5A's:

1. ASSESS

- Patient completes PAAT and PARQ questions while waiting (<2 minutes).
- Assistant inputs information into PAAT software (<1 minute).

2. ADVISE/ASK/ASSIST

- Pre-participation screening (check PARQ).
- Print and give tailored advice using the PAAT report (2-3 minutes).

3. ARRANGE

- Referral (<1minute).
- Schedule follow-up visit/contact.

PRE-PARTICIPATION SCREENING AND SAFETY

The benefits of physical activity outweigh the inherent risk of adverse events (Physical Activity Guidelines Advisory Committee (2008)¹¹. Given the voluminous evidence on the health benefits associated with physical activity, not providing physical activity advice possess a potential threat to public health and well-being which may be considered to be on par with not prescribing the appropriate medication for a chronic condition.

Research has now clearly revealed that some physical activity is better than none and sedentary/low active individuals who gradually become more active stand to gain substantial health benefits. Selection of low risk activities and prudent behaviour while doing any activity can minimise the incidence and severity of adverse events and maximise the benefits of regular physical activity. Furthermore, the risks of sudden adverse cardiac events are greater for those who remain sedentary than for those who increase their volume of physical activity in a gradual manner. Risks of sudden cardiac adverse events are lower for light-and moderate-intensity activities than for vigorous activities, and likely depend on relative intensity as much or more than absolute intensity (Physical Activity Guidelines Advisory Committee (2008)¹¹.

While considering both the spectrum of adverse events and their causes, three key factors of any physical activity program must be considered.

1. The type (mode) of activity.
2. The volume (frequency, duration, and intensity).
3. The rate of volume progression.

The PAAT automatically calculates volume using the National Physical Activity Guidelines and the American College of Sports Medicine Guidelines. The printed PAAT report allows for the physician to ask and assist the patient in deciding the best type and progression of activity, thus providing a tailored programme. All programmes use a moderate-intensity relative to the patient's cardiorespiratory fitness level (Garber, et al, 2011)¹².

Chapter 7 of the CPG for Screening for Cardiovascular Disease and Risk Factors (MOH, 2011)⁷ provides guidelines on pre-participation screening for exercise (55-61). Key elements from chapter 7 of the CPG are provided:

- Participants in sports and recreational activities should be encouraged to complete a self-administered pre-participation screening questionnaire annually, and consult a doctor if the questionnaire indicates it.
- For pre-participation screening, a two- or more stage screening process is encouraged, where the first stage consists of personal and family history taking and physical examination. Based on the findings of the first stage, further tests such as a resting ECG (if not already done), chest X-ray, exercise stress test, echocardiogram, blood investigations, urine tests, etc. may be ordered if indicated.
- Routine use of the exercise treadmill testing to screen for coronary artery disease in asymptomatic low-to-moderate risk individuals is not recommended. Its use among those in the highest risk group (10-year predicted coronary artery disease risk of 20%) may be considered.

PHYSICAL ACTIVITY ADVICE TOOL

The PAAT was designed with physicians, for physicians to provide a quick, safe, and effective method to provide brief tailored moderate-intensity physical activity advice in patients without existing heart disease or contraindicated conditions. For some physicians even providing 2-4 minutes of brief advice may be challenging therefore leveraging on clinical staff to assist in the process from check-in to advisement may be necessary.

PAAT incorporates the following evidence-based recommendations that enable the physician to more easily expedite the advice process:

- Incorporates questions regarding the physical activity level and identifies low fit/low active patients
- Attempts to interest patients in adopting a program of regular physical activity by discussing the role of physical activity in disease prevention and by addressing the patient's individual risk of conditions associated with inactivity and their own perceived health status.
- Guides the patient in choosing an appropriate type of physical activity that would be efficacious for health.
- Guides the patient in choosing an appropriate level of participation in terms of intensity, duration, and frequency.
- Helps monitors compliance with physical activity by calculating cardiorespiratory fitness level.
- Encourages gradual increase in volume of physical activity to reduce increased risks for injury and improve compliance.
- Encourages the social support of significant others and community programmes.

(Adapted from USPSTF recommendations on counselling for physical activity)¹³

CONCLUSION

The increase in non-communicable diseases and health conditions such as obesity require population health approaches that also consider the needs of the individual. The PAAT provides a unique opportunity for physicians to provide standardised physical activity advice in a busy clinic environment.

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LEARNING POINTS

- **Sufficient moderate intensity physical activity of 150 minutes per week can provide substantial health benefits.**
 - **Sufficient physical activity may provide a 20-50% lower risk of premature death and a reduction in the incidence of cardiovascular disease, stroke, hypertension, colon cancer, breast cancer, type II diabetes, falls, depression and dementia.**
 - **Because family practice physicians can potentially reach many patients, the cumulative population health impact of even a modestly effective intervention such as PAAT may surpass that of more intensive low-reach interventions.**
 - **PAAT is an evidence-based tool designed to help physicians assess patients quickly; reserve time for brief advice; provide tailored guidance and provide standardisation across the healthcare system.**
 - **Participants in sports and recreational activities should be encouraged to complete a self-administered pre-participation screening questionnaire annually, and consult a doctor if the questionnaire indicates it.**
 - **The likelihood of adherence to physical activity involves tailored counselling, shared decision making, printed tailored activity programme, community referral and follow-up.**
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