

Exercise: How We Can Help Our Patients Exercise Safely and Effectively

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Family physicians play a vital role in helping our patients to lead physically active lives. In my practice as a family physician, I come across patients in various stages with regard to exercise. For simplicity, I have grouped them into 3 main groups, as each group is managed differently. The **'Sedentary Patient'**, who lacks awareness or interest in changing his lifestyle. The challenge here is in motivating the patient. The patient who is **'Becoming Active'** is willing to consider, or has attempted exercise, but may be facing barriers. The barriers here may include ambivalence, uncertainty about how to exercise, medical problems, and even overly restrictive advice from healthcare professionals. The focus is on pre-participation screening, risk stratification and exercise prescription. The **'Active Exerciser'** may be highly motivated and the focus is on safety, avoidance of injuries and maintenance of exercise.

The focus of this article is to work out a plan for each patient according to the stages defined above, thus facilitating risk stratification and exercise prescription. With some fine tuning of our skills, family physicians can be more confident and effective in achieving this. There are many resources available, including the Health Promotion Board (HPB) website, courses run by the Sports Medicine Departments of Changi General Hospital (e.g. "Exercise is Medicine") and of Tan Tock Seng Hospital, and many online resources.

THE SEDENTARY PATIENT

Physical inactivity is listed by the WHO as the 4th leading risk factor for global mortality. In Singapore, almost 40% of Singaporeans (18-69 years old) are physically inactive. The

benefits of regular physical activity, well known to us all, include the improvements in cardiorespiratory fitness, musculoskeletal fitness, mood and cognitive function. Regular exercise is an important part of prevention and treatment of coronary artery disease, hypertension, diabetes mellitus, stroke, obesity and depression.

So why don't more people exercise? Knowledge of the benefits doesn't always equate to behavioural change – how many of us doctors actually fulfil the Singapore National Physical Activity Guidelines (150 minutes of moderate intensity aerobic exercise per week) ourselves?

Motivating your patient

The hardest part of exercise prescription is motivating the patient to start the process towards regular physical activity. There are many methods available to

improve the efficacy of our efforts, including Motivational Interviewing (MI) (HPB holds courses for doctors and allied health professionals) and The Wellness Motivational Pathway (WMP) Approach [recommended by American College of Sports Medicine (ACSM)]. Different approaches may work for different patients. It is worthwhile reading up on or attending these courses to brush up on skills in motivating patients to achieve behavioural changes. The key is to activate the motivation by drawing on the patient's own long term goals. E.g., an elderly grandmother may be more inclined to go for walks regularly if the activity enables her to spend time with her grandchildren. Work in tandem with the patient to develop a plan that is SMART (Specific, Measurable, Achievable, Realistic and Timely)

BECOMING ACTIVE

Pre-Participation Screening & Risk Stratification

Once the patient is willing to consider some physical activity, it is necessary to do risk stratification to assess the patient's medical status to reduce the chance of injury or illness brought on by exercising. The use of a self-guided questionnaire such as the Physical Activity Readiness Questionnaire (PAR-Q) (www.ssc.gov.sg) is the recommended entry level for screening. This 7-question tool identifies conditions or risk factors that require further assessment before commencing exercise. Doctors may receive the PAR-Q from patients that require exercise clearance.

If all 7 questions are answered with "NO", then the patient is at **LOW RISK** and can do exercise without further screening or supervision. Patients with a positive answer or chronic diseases can be risk stratified



further using the ACSM guidelines for exercise testing and prescription. Patients classified as **MODERATE RISK** (2 or more Coronary Artery Disease Risk Factors) can begin light- or moderate- intensity exercise, but should undergo further medical assessment before partaking in vigorous intensity exercise. Patients classified as **HIGH RISK** (Known history or signs or symptoms of Cardiovascular, Pulmonary or Metabolic disease) should undergo further medical testing before starting an exercise program, and require clinical supervision.

Exercise Prescription

The exercise training session should incorporate warm-up of 5-10 minutes, conditioning exercise (20 – 60 minutes of aerobic, resistance, neuromuscular and/ or sports activities), cool-down of 5-10 minutes, and stretching (10 minutes).

The components of an exercise prescription may follow the **FITT** format: Frequency, Intensity, Time and Type. This should be customised individually, with regular reviews of goals and objectives of the exercise program. For deconditioned patients, shorter duration with lower intensity but higher frequency is recommended.

FREQUENCY: 3 – 5 days per week of exercise is recommended. The importance of regularity of exercise is emphasised.

INTENSITY: Commonly used measures of intensity include the “**Talk Test**” (Light = can talk and sing; Moderate = can talk but can't sing; Vigorous = has difficulty talking) and “**Percentage of HRmax**”, where predicted maximal heart rate (HRmax) = 220 minus patient's age (Light = <64% of HRmax ; Moderate = 64 – 76% of HRmax; Vigorous = >76% of HRmax)

TIME: Generally, bouts of exercise that last for at least 10 minutes can be added together to give a total duration for a given day. A total of 150 minutes of moderate intensity aerobic or 75 minutes of vigorous intensity aerobic exercise per week is recommended for most adults. For weight loss, the time required is doubled!

Resistance training is recommended for 2 or more days a week.

TYPE: The main types of exercise are

- **Cardiovascular/ Aerobic exercise:** e.g. walking, jogging, cycling, swimming, dancing, racket sports
- **Resistance exercise:** Improves all components of muscular fitness including strength, endurance and power. Includes use of hand-held weights, resistance bands, bodyweight exercises, strength training equipment. Includes mind-body exercises such as Qigong, Tai Chi, Yoga and Pilates. Functional training is a term used for exercise aimed at improving functional capacity - training the body to perform daily physical tasks, occupational or sports specific tasks with ease, efficiency, strength and control.
- **Flexibility exercises** (stretching): Recommended at least 2-3 times per week, for at least 10 minutes duration. Improves joint range of movement and physical function. Most effective when muscles are warm, performed before or after the conditioning phase. Myofascial release with massage or foam rollers is an increasingly used therapy technique that can be self-administered to improve flexibility.
- **Neuromuscular exercise:** Improves balance, especially in the elderly. E.g. core conditioning, balance and gait exercises, Tai Chi.

An example of an FITT prescription: For a 50 year old male with moderate risk profile, the prescription could include:

Aerobic Exercise (e.g. brisk walking) five days per week, at moderate intensity (target HR 110 – 130) for 30 minutes. Resistance exercise (e.g. squats, weight training) two days per week, 2-4 sets with 8-12 repetitions per set. Stretching exercise three days per week.

THE ACTIVE EXERCISERS

We are seeing more and more people in Singapore joining gyms and taking to sports, especially to run, swim, cycle and lift weights, sometimes without



regard for safety. In this group of often highly motivated patients, the focus is on screening for potential hidden or ignored medical problems, and on proper risk stratification and education on proper techniques. Such patients may be required to obtain exercise clearance from a doctor prior to organised events such as marathons. Building up a network of allied health professionals including sports physicians, orthopaedic surgeons, cardiologists, physiotherapists, rehabilitation therapists, fitness instructors and sports nutritionists can be very useful to direct to when appropriate. E.g. the ‘Exercise is Medicine’ program, run by CGH, aims to create a list of suitably trained doctors and fitness professionals who can work together.

References/ Useful Websites:

1. Exercise is Medicine Singapore : Exercise Prescription Course for Primary Care Physicians
2. Health Promotion Board (www.hpb.gov.sg)
3. National Physical Activity Guidelines: Professional Guide
4. American College of Sports Medicine (www.acsm.org): ACSM's Guidelines for Exercise Testing and Prescription, 8th Edition
5. Canadian Society for Exercise Physiology (Par-Q)
6. Singapore Sports Council (www.ssc.gov.sg)
7. Functional Training Institute (www.fti.lwz.com)
8. www.performbetter.com