Contents

Foreword ......................................................... 1

Why is an active life beneficial? .......... 2

What is Physical Activity? ..................... 2

Moderate-intensity Physical Activity .......... 3

What is physical fitness? ....................... 4

Exercise is a subset of Physical Activity .......... 5

What is active sport? ........................... 5

How much Physical Activity is recommended? .......... 5

When is medical evaluation necessary? .......... 6

Promotion of Physical Activity .............. 7

The Physical Activity Pyramid .......... 8

How can I obtain further information? .......... 8

Summary ..................................................... 9

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Foreword

‘Physical Activity: A Guide for Professionals’ is a publication produced by the Health Promotion & Disease Prevention Department after consultations with interested parties, including Kunsill Malti għall-iSport and the Maltese Association of Sports & Exercise Medicine. It will complement the booklet titled, ‘Ċaqlaq għal Sahhtek’, (launched on 10th May 2008 for the occasion of WHO, Move for Health Day) which was aimed at targeting the general population.

This new booklet is intended to give an overview of Physical Activity (PA) to professionals and qualified experts from the Health, Education and Sports & Leisure Sectors. It includes the benefits of regular PA and the necessary recommendations.

On the other hand, the general public is being urged to take professional advice from you! In view of this, a set of 2 posters will be accompanying this publication in order to encourage the public to seek your advice.

For the sake of convenience, a list of reference sites, a summary and the Department’s helpline are also included at the end of this booklet.

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Why is an active life beneficial?

Physical Activity (PA) constitutes one of the major components of a healthy lifestyle. Research has proven that the risk for cardiovascular disease (CVD), type 2 diabetes, colon cancer, breast cancer and fractured hips in the elderly, is greatly attributed to physical inactivity. The muscles that are exercised, including the respiratory system and the heart itself, also benefit directly from regular PA.

Regular PA can help prevent and reduce obesity and maintain a healthy weight. It can also promote psychological well-being and reduce stress, anxiety and feelings of depression and loneliness.

Through play, sports and other activities, young people have the opportunity to become self-confident. Physical Activity also helps prevent and control risk behaviour such as: tobacco, alcohol and other substance use, unhealthy diet and violence, especially among children and young people.

What is Physical Activity?

Any bodily movement produced by skeletal muscles that results in energy expenditure above resting level is defined as PA.

The entire spectrum of body movements that each person undertakes in daily life varies from one person to another. The main sources of health-enhancing PA (HEPA) include examples from the following:
Daily living movements including: walking, housework, washing the car, gardening, going up the stairs.

Aerobic (cardio) activities use the heart, lungs and most skeletal muscles over a period of time. Examples include: aerobics classes, jogging, cycling, swimming, dancing, athletics, volleyball, tennis, football, hiking.

Resistance training exercises strengthen the muscles that are worked. These can be done by lifting your own bodyweight (e.g. sit-ups, push-ups), or by using free weights or resistance training machines.

Stretching exercises help improve joint flexibility and reduce muscle tension. Latest research shows that post-exercise stretching entails most benefits. Any static full range of movement should be held for at least 10 seconds.

Moderate-intensity Physical Activity

To gain health benefits in a comfortable way, the majority will find that regular moderate-intensity PA is most effective. Moderate-intensity PA is the type of activity that raises the heartbeat and makes you warm and sometimes, slightly out-of-breath.

Generally, people taking moderate exercise should be able to carry on a conversation without experiencing any discomfort. If a person becomes too much out of breath to carry on a conversation, the activity is considered to be vigorous. On the other hand, the activity is considered as light if a person is able to sing.
In addition to the Talk Test, another way of monitoring PA intensity is to determine whether a person's pulse rate is within the Target Heart Rate Zone.

For moderate activity, a person's target heart rate should be between 50 to 70% of his/her maximum heart rate (MHR). To calculate the MHR, assume that at birth it was 220 beats per minute (bpm), reducing by 1 for every year of life. For example, for a 40-year old person, the estimated MHR would be 220 – 40 = 180 bpm.

- 50% level: 0.50 x 180 = 90 bpm
- 70% level: 0.70 x 180 = 126 bpm

Thus, moderate-intensity PA for a 40-year old person will require that the heart rate remains between 90 and 126 bpm during exercise.

Activities in which the heart rate is between 70 to 85% of the MHR fall within the vigorous range.

An easy way to monitor heart rate (besides checking the pulse manually or by auscultation), is by using a heart rate monitor watch.

What is physical fitness?

Physical fitness is a set of attributes that people have or achieve in order to perform PA. Fitness is actually a combination of 4 physiological capabilities commonly referred to as the 4 S's of fitness, which are: Speed, Stamina (endurance), Strength and Suppleness (flexibility). These S's vary in relation to one another according to the individual's overall level of fitness. Physically fit people generally have a lower resting heart rate.
Exercise is a sub-set of Physical Activity

Exercise is defined as planned, structured and repetitive bodily movements done to improve or maintain one or more components of physical fitness.

What is active sport?

In its broadest sense, the term ‘sport’ refers to any type of PA that involves an element of competition. However, any sport can also be played for recreational purposes as well. If we keep the HEPA principle in mind, then the sport has to involve an appreciable degree of physical exertion, preferably affecting the whole body, in order to be mostly effective for health.

How much Physical Activity is recommended?

The current World Health Organization’s (WHO) recommendation is that adults should accumulate 30 minutes or more of moderate-intensity PA on most, preferably all, days of the week. This recommended time can be split up into shorter periods of ideally not less than 10 minutes, but even shorter bouts contribute to substantial health benefits. Good examples of this are: using stairs instead of elevators and getting off the bus a stop earlier. Most distances in Malta are less than 5 km, which can be covered by bicycle within 15 - 20 minutes or by brisk walking within 30 - 50 minutes.

Children should undertake at least 60 minutes of moderate-intensity PA per day.
If the school environment is not enough to guarantee this recommendation, children should be encouraged to walk or cycle to school, be enrolled with a dance or sports club and should participate in PA with their parents or other grown-ups to supervise them.

**When is medical evaluation necessary?**

People with chronic diseases such as: heart problems and hypertension, arthritis, and diabetes, should talk to their doctor about what types of PA are appropriate. Most aerobics, certain impact exercises (eg. skipping and jumping) and energy-draining activities (eg. marathon) are usually avoided in such circumstances.

However, there are no hard and fast rules. There are occasions when a person is still permitted to continue that particular exercise or sport because he / she had already attained a certain level of fitness. In such cases, the level of intensity and frequency of training are usually reduced. Training performed beyond the vigorous-intensity level (anaerobic threshold zone: > 85% of MHR), is usually never recommended, let alone to people with heart problems!

On the other hand, as exercise-induced hypoglycaemia can be a problem in diabetic athletes, extra carbohydrates should be ingested if the session is to last longer than 30 minutes or if pre-exercise blood glucose levels are less than 5.6 mmol/L. Alternatively, insulin dosage may be adjusted.

There is also good evidence that regular exercise may improve the quality of pregnancy and make contractions more effective during labour.
However, there are activities that are not recommended during pregnancy. These include: impact exercises / aerobics, skiing, contact sports and scuba diving.

**Promotion of Physical Activity**

As regular PA is a cost-effective way of improving and maintaining people’s health, the promotion of PA should be a fundamental component of public health work, involving all sections of society. It is a task to be shared not only by health, sport and education professionals but should also involve other sectors such as transport, urban planning and environment. Likewise, the media is highly influential.

However, besides encouraging a **moderate** active lifestyle, it is also recommended to **follow up** the person’s progress after a number of weeks have passed.

Ideally, you should suggest an activity that gets the **whole body moving**; preferably, an activity that one **enjoys** and makes him / her feel good. There is no need to think of strenuous exercise. For best results, include **aerobic** activities (best form of exercise to control weight and keep heart healthy), as well as some strengthening (resistance) and stretching exercises in their PA programs.

The importance of **warm up** at the beginning and **cool down** towards the end should also be emphasised. One can warm up by jogging for at least 5 minutes and cool down by simply walking for 5 to 7 minutes.
The Physical Activity Pyramid

The Pyramid of PA encompasses examples of daily activities and other activities that we should do less often throughout the week for controlling body weight and feeling physically and mentally healthy.

Starting with the daily activities at the base (green), the Pyramid then lays further importance on aerobic activities (lighter green). It then continues in decreasing order of preference, with the resistance or lesser-aerobic exercises (yellow-orange), until it finishes with the sedentary activities at the peak (red).

The recommended frequencies per week (see diag.) do not mean that throughout the other days, one can exclude the daily living movements.

This Pyramid however, does not apply to persons who have specific goals such as participating in a: sprint (speed), marathon (stamina) or weight lifting (strength) competition.

How can I obtain further information?

More information can be found (in Maltese) in the booklet titled, ‘Çaqlaq ghal Sahhtek’ (2008) on:
www.sahha.gov.mt/entities/publications3.html

Other sources of reference include: WHO, the Irish Heart Foundation, and Centres for Disease Control & Prevention (CDC).

The following are their respective website links:
www.euro.who.int/document/nut/10_things_eng.pdf
www.irishheart.ie/open24/defaultarticlephp?cArticlePath=7_20_83
www.cdc.gov/nccdphp/dnpa/physical/index.htm


The web-links were correct before going to print.
Daily recommendations of accumulated moderate intensity activities for:

- **Adults**: At least 30 mins
- **Children**: At least 60 mins

**The Physical Activity Pyramid**

- **Not recommended**
- **Recommended less often**
- **Mostly recommended**

1. **Everyday**
   - Spend Less Time

2. **2-3 times a Week**
   - 3-5 times a Week

3. **3-5 times a Week**
   - 2-3 times a Week

4. **Mostly recommended**
   - Spend Less Time

5. **Recommended less often**
   - Not recommended
Physical Activity (PA) includes any bodily movements resulting in energy expenditure above resting level.

- PA reduces risks of CVD, diabetes, colon cancer, breast cancer & fractured hips.
- Skeletal muscles benefit from PA.
- PA can help maintain healthy weight & reduce obesity.
- Mental health & self-confidence also improve with PA.
- PA helps prevent certain risk behaviours.
- Examples of HEPA include: daily living movements, aerobic & resistance exercises & stretching activities.

**Moderate-intensity PA is effective & mostly recommended;** it is the type of activity that raises the heartbeat & makes you warm & (sometimes) slightly out-of-breath without impeding you from carrying on a conversation.

- The Target Heart Rate Zone for moderate activity should be 50 - 70% of the MHR (220 - age in years).
- Fitness is a combination of 4 physiological capabilities commonly referred to as the 4 S’s of fitness, which are: Speed, Stamina (endurance), Strength & Suppleness (flexibility).
- Exercise involves planned, structured & repetitive bodily movements.
- Sport is any type of PA that involves an element of competition; it can also be played for recreational purposes.
- The WHO recommends that **adults should accumulate at least 30 minutes of moderate-intensity PA on most days of the week.**

- **Children should accumulate at least 60 minutes of moderate activity throughout the day.**
- These recommended times can be split up into shorter periods of about 10 minutes each.
- Training beyond the vigorous-intensity level is dangerous to everyone.
- Heart problems, hypertension, arthritis & diabetes are conditions that should be referred to a doctor prior to exercise.
- The activities to be avoided during pregnancy are impact aerobics, skiing, contact sports & scuba diving.

**For best results, promote aerobic activities** (best form of exercise to control weight and keep heart healthy); eg. aerobic classes, jogging, cycling, swimming, dancing, athletics, volleyball, tennis, football, hiking.

- **Some strengthening & stretching exercises should also be included in PA programs.**
- A **warm up** at the beginning & **cool down** towards the end are also important.
- It is recommended to **follow up** the person’s progress after a number of weeks.
- The Pyramid of PA illustrates activities to be carried throughout the week for controlling weight & overall health.
For more information you can call us on our helpline.

Be Active Helpline
2326 6115

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