

# ***Life!* – Information for the Physiotherapist / Exercise Physiologist**

Thank you for participating in the *Life! Taking Action on Diabetes Program*.

This information is designed to familiarise you with the *Life! Program*, and guide you in delivering *session 3*. The Facilitator will give you a copy of the *Life! Participant Manual* where you will note that prior to session 3, participants should have twice completed a *Physical activity diary – version 1* and have an understanding of the key messages of the *National Physical Activity Guidelines*. In session 3, participants are working towards setting short-term physical activity goals and this is where your expertise is required. Please study the manual carefully and discuss any queries with the *Life!* Facilitator who is conducting the program.

Please find attached a copy of the *Session 3: Overview*, the *Outline of topics and timings* and *Instructions*. It is expected that you will facilitate **activities 3.2 – 3.6** and that you contact the *Life!* Facilitator if you have queries related to the activities. It is important for you to get a copy of the *Session 3 PowerPoint presentation* from the Facilitator prior to the session. You are also asked to please to bring to the session, a list of contacts for local physical activities to distribute to the participants.

The *Physical Activity Pie* is a model to assist participants with understanding the health benefits associated with an active lifestyle and participation in regular exercise to promote endurance and or strength and balance. A copy of the *Physical Activity Pie* is in the appendices of the Participant Manual. Further information on this model is available electronically.  
<http://www.ukkinstituutti.fi/en/liikuntavinkit/542>

**Facilitators:** please copy THIS page AND Session 3 Instructions for Facilitators pages 27-32 and give to the Physiotherapist / Exercise Physiologist



# Session 3: Overview

1 ½ hours

## Objectives

To support *Life!* participants with goal setting and making plans for lifestyle change

To support *Life!* participants to enhance motivation and reduce barriers to increasing their level of physical activity

To show *Life!* participants that doing regular physical activity doesn't need to be difficult; there are ways to make it easier

## Main messages

- I am more likely to achieve my goals if I make plans
- It is possible to be physically active and fit at any age – there is something for everyone to be involved in and benefit from

## Session materials

PARTICIPANT  
MANUAL



- Physical activities – what would you like to try?
- Goal setting. Ideas for setting physical activity goals
- Steps to achieve my physical activity goals – short term
- Self-care activities
- Session 3 rating and review

## Homework materials

PARTICIPANT  
MANUAL



- Physical activity diary – Version 2
- How do I reward myself?
- Positive thinking
- My physical activity goals – how did I go?
- Option to complete a three day food diary – see appendix of participant manual

## Pre-session reading

FACILITATOR  
TRAINING  
MANUAL



Facilitators are advised to review the following sections of the Facilitator Training Manual prior to session 3 of the program:  
Section 4: Physical activity and eating habits to prevent diabetes  
Section 7: Effective communication  
Section 8: Positive and negative thinking  
Section 9: Goal setting and problem solving

## Preparation before session 3

Prior to the session, you should have a discussion with the Physiotherapist / Exercise Physiologist about arrangements for co-facilitation of session 3.

Give the Physiotherapist / Exercise Physiologist:

- *Life!* Participant Manual
- Photocopy of the *Information for Physiotherapist / Exercise Physiologist* (page 50 of *Session Instructions for Facilitators*)
- *Session 3: Overview*, the *Outline of topics and timings* and *Instructions* (pages 50 and 27-32 of *Session instructions for Facilitators*)
- A copy of the session 3 PowerPoint presentation from the multimedia DVD

In session 3, participants are working towards setting short-term physical activity goals and this is where the Physiotherapist's / Exercise Physiologist's expertise is required. Asked them to:

- Read through the materials you have given them carefully, prepare to facilitate **activities 3.2 – 3.6** and contact you if they have queries
- Bring to the session, a list of contacts for local physical activities to distribute to the participants.

Also let them know that while they attend the session because they have physical activity expertise, it is important that they guide discussion and clarify queries rather than dominate the session.

## Preparation before session 3 – checklist

- Check access to the room and facilities
- Organise the room
- Laptop, data projector, projection screen and multimedia DVD with PowerPoint presentation
- White board or butcher paper and markers
- Name tags or stickers
- Spare box of pens or pencils
- Calculators (to determine *Fat and fibre barometer* scores)
- Diabetes Australia – Vic Reply Paid* envelope for return of session evaluation forms
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## Session 3: Outline of topics and timings

|        |                                      |
|--------|--------------------------------------|
| 5 min  | Review session 2                     |
| 35 min | Overview of physical activity issues |
| 30 min | Physical activity goal setting       |
| 10 min | Discussion of homework               |
| 5 min  | Homework preparation                 |
| 5 min  | Session evaluation                   |

## Session 3: Instructions

### Topic: Review session 2

#### Activity 3.1: Revisit main messages from session 2

- Facilitate a brief group discussion of session 2. Ask the participants to complete the review of homework on page 50; question 3.

### Topic: Overview of physical activity issues and investigating my physical activity habits

- Introduce the Physiotherapist / Exercise Physiologist.

#### Activity 3.2: Mini-presentation – delivered by Physiotherapist / Exercise Physiologist

- Go through the session 3 PowerPoint presentation which is on the multimedia DVD that accompanies this manual. It covers:
  - Health benefits of physical activity
  - Revisit the program goals related to physical activity and weight introduced in session 2.
  - Energy balance.

#### Activity 3.3: Physical activities – what would you like to try?

- Ask participants to complete the worksheet titled: *Physical activities – what would you like to try?*
- Distribute a list of contact details for physical activity in the local area.

#### Activity 3.4: Discussion of the physical activity diaries

- Introduce the *Physical activity pie*; it is in appendix 1 of the participant manual. Point out that *Physical activity diary – Version 2* uses the same two categories as presented in the *Physical activity pie*; lifestyle activities and exercise which include endurance and strength/balance training.
- Ask participants to reflect on the information in the two copies of the *Physical activity diary – Version 1* that they have completed. They are to use this information when completing activity 3.6

MULTIMEDIA  
DVD



PARTICIPANT  
MANUAL  
WORKSHEET



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MANUAL  
WORKSHEET



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## Topic: Physical activity goal setting

- Ask the group to brainstorm the benefits of goal setting in general, then specifically brainstorm the benefits of physical activity goal setting. Explain that the goal setting process helps to provide direction and make plans for behaviour change. Goal setting helps with motivation and can promote commitment to lifestyle change. There are several points for discussion on page 44 of the participant manual.

PARTICIPANT  
MANUAL  
WORKSHEET



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### Activity 3.5: *Ideas for setting physical activity goals*

- Allow about five minutes for participants to complete the checklist designed to prompt ideas for setting physical activity goals. Mention to them that if they have answered 'yes' to the questions then they should keep up the good work. If they have answered 'no' or 'sometimes' then they may like to think about making changes in these areas.

PARTICIPANT  
MANUAL  
WORKSHEET



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### Activity 3.6: *Steps to achieve my physical activity goals – short term*

- Ask participants to complete the *Steps to achieve my physical activity goals – short term* form. As they progress through the worksheet, discuss the following:
  - The concept of SMART goals
  - The recommendation that goals focus on behaviours rather than outcomes  
*A good example is that weight loss is an outcome and a behaviour might be to get out of bed 30 minutes earlier on Mondays and Thursdays to have time to walk to work*
  - The benefits of social support and using healthy rewards to improve likelihood of achieving the planned steps in the goal setting process
  - The images of self-care activities in the participant manual (page 48) are useful prompts to assist with completion of the goal setting worksheet
- Note that if participants find it challenging to complete the steps to achieve their physical activity goals, encourage them to write something for at least the week ahead and they can do the rest at home when they have more time to think. Acknowledge that there are differences in the pace that individuals work through such a task and that it is fine to take more time.

## Topic: Discussion of homework

### Activity 3.7: Excuses for physical inactivity

- Facilitate a whole group discussion or break into small groups to discuss excuses for physical inactivity. The guide discussion toward strategies for dealing with *excuses for physical inactivity*.

PARTICIPANT  
MANUAL  
WORKSHEET



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## Topic: Homework preparation

### Activity 3.8: Discussion of homework for next session

- *Physical activity diary – Version 2*
  - *How do I reward myself?* – to be completed and brought to session 4
  - *Positive thinking* – to be completed and brought to session 4
  - *My physical activity goals – how did I go?* – to be completed and brought to session 5
  - *Eating habits diary* – if participants have not already done so, they are required to complete page 33 for session 4
  - Option to complete a *Three day food diary* – see appendix 2 of participant manual
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- At this point it may be helpful to mention to participants that completing the diaries is essential for them to progress in goal setting. The homework worksheets are short tasks that cover issues related to overcoming barriers or difficulties with behaviour change.
  - Tell participants that a dietitian will attend session 4 of the program to provide additional support with setting eating habits goals. The dietitian will answer specific diet or nutrition related questions as is feasible in the session.
  - Invited participants to complete an optional task; the *Three day food diary* which is in appendix 2 of the participant manual (pages 97 – 101). The task enables participants to get an overview of their food intake and estimate their fat and fibre intake over a three day period. All instructions to complete the diary are listed and the *Fat and fibre checkers* are also included. Participants are encouraged to complete the task independently and can bring it to session 4, where it will provide additional information for setting eating habits goals. The dietitian attending session 4 will be able to provide assistance with participants understanding of this task as is feasible in the session.
  - Ask participants to complete the homework titled: *My physical activity goals – how did I go?* (page 54 – 55) for session 5. They need the extra weeks to determine whether they have been able to achieve the steps towards the goals that they planned for themselves.



## Topic: Session evaluation

### Activity 3.9: Session 3 rating and review

- Ask participants to complete the *Session 3 rating and review* form and put them in the *Reply Paid* envelope to be sent to *Diabetes Australia – Vic.*

## **Physical Activity Pie: A Graphical Presentation Integrating Recommendations for Fitness and Health**

**Mikael Fogelholm, Jaana Suni,  
Marjo Rinne, Pekka Oja, and Ilkka Vuori**

In Volume 1, Issue 2 of the *Journal of Physical Activity and Health*, Roy Shephard raised an important issue on the need to develop clear physical activity messages.<sup>1</sup> More recently, the editors of the *Journal* expressed their concern about potentially confusing physical activity recommendations presented in the new Dietary Guidelines for Americans 2005.<sup>2</sup> Although the main focus of the *Journal* must be the publication of good original studies, we share Dr. Shephard's view that the *Journal* should also be a vehicle to discuss problems concerning physical activity and health, with implications for public health policy. During the last year, we at the Urho Kaleva Kekkonen (UKK) Institute for Health Promotion Research in Tampere, Finland, have been developing a new way to present a clear physical activity message for adults. The graphical presentation is meant for health professionals responsible for physical activity counseling, and secondarily for lay audiences. We have named our presentation as the "Physical Activity Pie." This commentary describes the arguments for and rationale behind the pie. The purpose of this article is to further stimulate discussion about physical activity messages.

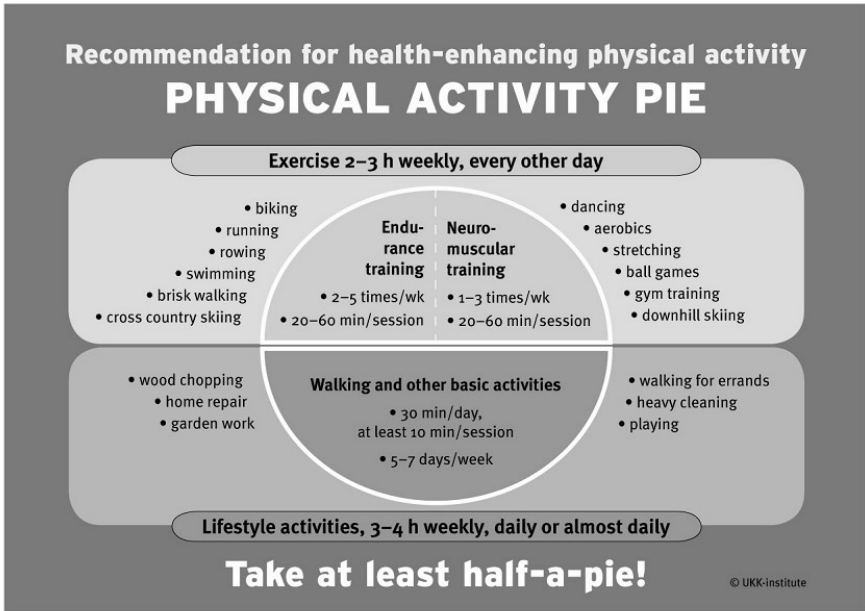
### **Physical Activity Pie—A Suggestion for a Graphical Presentation of the PA Recommendations**

The UKK Institute's Physical Activity Pie was developed to combine the physical activity recommendations for health and fitness<sup>3-8</sup> and the known dose-response relationships between different kinds of physical activity and various aspects of health<sup>9</sup> into a graphical form that would be useful and for physical activity counseling (Figure 1). Therefore, the pie is not a new recommendation, but another way to present and hopefully clarify the existing recommendations. The encouraging main message of the pie is that both the total volume (energy expenditure) and a selection of various types of physical activities are needed to improve fitness and health.

In the pie, the *recommended basic level of physical activity* equals an energy expenditure of approximately 4.2 MJ or 1000 kcal/wk. This energy expenditure is

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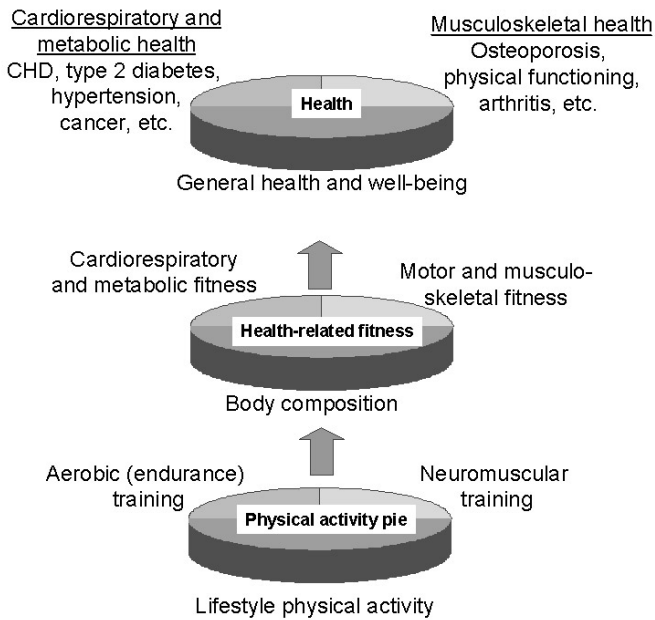


**Figure 1** — Integrating physical activity messages: the Physical Activity Pie. The lower half represents lifestyle activity (recommendation for health), the upper half represents exercise training (recommendation for fitness). The recommended amount of physical activity (half-a-pie, representing exercise energy expenditure of approximately 4.2 MJ or 1000 kcal/wk) can be achieved by dividing the pie in any direction (horizontally, vertically, diagonally, etc.).

adequate to offset many, if not most, of the health risks related to inactivity.<sup>7, 9, 10</sup> The recommended level can be achieved *either* by 3 to 4 weekly hours of lifestyle activity (recommendation for health) *or* by 2 to 3 weekly hours of exercise training (recommendation for fitness). The pie also recommends a frequency which is daily or almost daily for lifestyle activities and 3 to 5 days a week for exercise training. The *optimal physical activity* level for health includes both halves of the pie. This is close to an energy expenditure of 8.4 MJ or 2000 kcal/wk which should bring about additional health benefits and improved weight control, compared to the recommendation of 4.2 MJ or 1000 kcal/wk.<sup>7, 9, 11-13</sup>

## Health-Related Fitness and Physical Activity

The Physical Activity Pie is based on a slightly modified health-related fitness (HRF) concept. HRF has been introduced as one of the major components of the “Toronto model” on physical activity, fitness, and health by Bouchard and Shephard.<sup>14</sup> In this model, HRF refers to those components of fitness that are related to health and well being and are affected by physical activity and inactivity. The health effects of physical activity are at least partly mediated through changes in HRF in a 3-layer fashion (Figure 2). According to the “Toronto model,” the components of



**Figure 2** — From physical activity recommendations (the pie) through health-related fitness to components of health. The figure illustrates how components of physical activity (parts of the pie) are connected with different components of health-related fitness and, further, with health.

HRF are cardiorespiratory, metabolic, motor, muscular, and morphological (body composition, bone density, flexibility) fitness.<sup>14</sup> In our presentation, we have grouped cardiorespiratory and metabolic fitness together, all components and factors related to musculoskeletal health together, and body composition (BMI, fat distribution) as the remaining part. Motor fitness might be the only component of HRF with less evident connections to health. Balance, however, is an important part of motor fitness and therefore this component of HRF is connected as well with e.g., prevention of falls in the elderly.<sup>15</sup>

Figure 2 shows how different components of HRF are improved by different kinds of physical activities (as illustrated by the pie) and further how different components of health are related to HRF. As an example, aerobic exercise improves cardiorespiratory and metabolic fitness, which in turn is related to prevention of cardiovascular diseases, stroke, type 2 diabetes, etc. On the other hand, strength (muscular) training improves muscle fitness, which is related to improved functional ability in the elderly.

Lifestyle activity consists of incidental muscular work in daily life, for instance, household and other chores, commuting from home to work, shopping, gardening, playing with young children etc.<sup>14</sup> The intensity of lifestyle activity is typically moderate (3 to 6 METs).<sup>7, 16</sup> The recommendation of 3 to 4 h/wk leads to a total activity of approximately 15 MET h. For a 70-kg man, with a resting energy expenditure of roughly 290 kJ/h (70 kcal/h), this activity corresponds to a

weekly energy expenditure of approximately 4400 kJ (1050 kcal). The frequency should be daily or almost daily (accumulating physical activity to a minimum total duration of 30 min/d) and a single activity session should last at least 10 min.<sup>7,17</sup> Lifestyle activity is beneficial for general health by abolishing many, if not most, effects of a sedentary lifestyle, and it is also an integral part of weight control.<sup>13</sup> Lifestyle activity is not likely to be optimal for developing cardiorespiratory or musculoskeletal health, but it provides a safe base for more specific and typically more vigorous exercise.

Exercise, according to Bouchard and Shephard, is a form of leisure-time physical activity that is performed on a repeated basis over an extended period of time with a specific external objective such as the improvement of fitness, physical performance, or health.<sup>14</sup> Exercise activities (often more than 6 METs) are typically more vigorous than lifestyle activities and they might require more advanced motor skills. The recommended weekly duration (2 to 3 h/wk; the lower total duration for vigorous and higher for moderate intensity exercises) leads again to a weekly total activity of approximately 15 MET h and an energy expenditure of approximately 4400 KJ (1050 kcal) per week. The recommended frequency of these exercises is 3 to 5 times per week.<sup>3,6</sup> Exercise activities develop specific components of HRF, such as cardiorespiratory and metabolic (running, cycling, Nordic walking, etc.), motor (dance, downhill skiing, ball games, etc.) or musculoskeletal fitness (resistance training, stretching, etc.) and thus enhance cardiorespiratory, metabolic, or musculoskeletal health.<sup>3,6</sup>

## Physical Activity as a Two-Dimensional Behavior

The current (CDC, ACSM, US Surgeon General) physical activity recommendation for public health (accumulate 30 min or more of moderate intensity physical activity on most days of the week)<sup>7,18</sup> can be regarded as a major change in our view of health-enhancing physical activity. The previous fitness paradigm emphasized cardiorespiratory fitness and vigorous exercise, but with lower frequency.<sup>3</sup> One of the advantages of the public health recommendation is that inactive people, who cannot or will not participate in intensive or vigorous exercise, might be motivated to increase their lifestyle physical activity.<sup>19</sup>

As also noted by Pate et al.<sup>7</sup>, reaching the recommendations for fitness<sup>3,4</sup> is also compatible with health, not only with fitness. Nevertheless, people might believe that the “health recommendation” has replaced the “fitness recommendation,” although the 2 recommendations rather complement each other.<sup>7</sup> Moreover, the emphasis on brisk walking as a common activity to meet the recommendation might leave motor and musculoskeletal fitness more or less unnoticed. This is detrimental considering the importance of strength and balance for the maintenance of mobility and functional independence, especially among the elderly.<sup>15</sup> The above facts point out a need for a model integrating recommendations for health and fitness.<sup>1</sup>

As mentioned earlier, physical activity can be seen as a two-dimensional behavior, that is, as exercise and lifestyle activity.<sup>20-22</sup> Some epidemiological studies have suggested that high activity (individuals who belonged to the highest third of physical activity) in both lifestyle and vigorous physical activity domains simultaneously might be related to the lowest prevalence of obesity<sup>21</sup> and lowest incidence of cardiovascular morbidity.<sup>22</sup> Low activity (lowest third) in both domains

was related to the poorest health status, while activity in either domain already had a health-promoting effect.<sup>21, 22</sup> Vigorous activities could be needed to achieve the best possible cardiorespiratory and musculoskeletal health. Moreover, it is possible that some high-intensity activities might simply be needed to increase the total energy expenditure up to levels that are optimal for health.<sup>12, 21-23</sup>

## Summary

The health-enhancing physical activity recommendation of 30 min daily or almost daily, moderate activity<sup>7, 18</sup> remains well founded and it has not been challenged by more recent studies.<sup>2</sup> A single recommendation emphasizing moderate activity might not appeal to everyone,<sup>1</sup> however, and this form of recommendation does not capture the important health benefits of other kinds of physical activities.<sup>6</sup> A way to convey the total multiple physical activity messages to the general public is clearly needed.

The UKK Institute's Physical Activity Pie is a new suggestion for a graphical presentation integrating physical activity recommendations for health and fitness. The pie is divided into two halves, lifestyle physical activity and structured exercise activities. The latter half is further divided into endurance (aerobic) and neuromuscular exercise. The recommended durations are (3 to 4 h/wk for lifestyle or 2 to 3 h/wk for exercise. Both amounts lead to an energy expenditure of approximately 4.2 MJ (1000 kcal)/wk. Either half of the pie is enough to offset health risks related to inactivity, but the entire pie gives additional benefits for fitness and health. Moreover, the pie illustrates how versatile health-enhancing physical activity really is.

We realize that this is not the first time physical activity recommendations are shown as a graph. The Physical Activity Pyramid is apparently the most common of the earlier forms.<sup>12</sup> The advantage of the pie, however, is in the symmetrical form of the circle: the pie can be divided in 2 halves in any direction (horizontally, vertically, diagonally, etc.) and the resulting half-a-pie still represents the weekly recommended physical activity energy expenditure of approximately 4.2 MJ (1000 kcal).

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