WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health
231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@sltnet.lk
Epidemiologist: +94 11 2681548, E mail: chepid@sltnet.lk
Web: http://www.epid.gov.lk

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Physical Activity-The Prescription for all (Part I)

Introduction

A combination of physical activity and healthy eating is recommended for maximum health benefits for all ages, as unhealthy diet and physical inactivity are known to be key risk factors for the major non communicable diseases such as cardiovascular diseases, cancer, and diabetes. Lack of physical activity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally. This series of articles highlights the importance of physical activity and provides information on how to optimize your physical level through physical activity.

What is physical activity?

Physical activity is any bodily movement produced by skeletal muscles resulting in an expenditure of energy. This covers all types of activity including sport and recreation, occupational activities, gardening, housework, active transport (e.g. walking to the shops, cycling to work or school) and structured exercise.

Types of exercises

Physical exercises are generally grouped into three types, depending on the overall effect they have on the human body. They are

Flexibility exercises

Aerobic exercises

Resistance exercises

Flexibility exercises improve the range of motion of muscles and joints (e.g. Stretching, Yoga, Tai chi). These gentle stretching exercises should be done almost every day and are the most important of all exercises. Flexibility exercises protect joints by reducing the risk of joint injury, improve relaxation and release of tension and acts as a prelude to more strenuous exercises. These can be done on land or in water such as a pool, hot tub or warm bath and can be particularly useful to relieve muscle stiffness in the morning.

Aerobic exercises focus on increasing cardiovascular endurance (e.g. cycling, swimming, walking, skipping rope, rowing, running, hiking or playing tennis). These exercises use large muscles of the body in rhythmic, continuous motions. The purpose of these exercises is to make heart, lungs, blood vessels and muscles work more efficiently. They also can result in improved endurance, stronger bones, improved sleep, controlled weight and reduced stress, depression and anxiety.

Strengthening exercises increase bone and muscle strength (e.g. weight training). Therefore bones and muscles can absorb shock and protect joints from injury, as well as improve mobility. They use weight or resistance to make muscles work harder, thereby helping them get stronger.

The two types of strengthening exercises are isometric and isotonic exercises.

Isometric exercises are especially good for people with movement restrictions (e.g. people with arthritis) because they work by tightening the muscles without moving the joints. It is easy to target the muscles around the joints with isometric exercises, and that reduces stress on the joints.

Isotonic exercises strengthen the muscles by moving the joints. For example, straightening the knee while sitting in a chair is an isotonic exercise and it helps strengthen the thigh muscle. These exercises can be made easier or more difficult by changing the number of times the exercise is done or by adding or removing weight.

Resistance exercises should be done every other day after warming up with some flexibility exercises.

Intensity of physical activity

Intensity refers to the rate at which the activity is being performed or the magnitude of the effort re-

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quired to perform an activity or exercise. It can be thought of "How hard a person works to do the activity".

The intensity of different forms of physical activity varies between people. The intensity of physical activity depends on an individual's previous exercise experience and their relative level of fitness. Consequently, the examples given below are provided as a guide only and will vary between individuals.

Metabolic Equivalents (METs) are commonly used to express the intensity of physical activities.

MET is the ratio of a person's working metabolic rate relative to his/her resting metabolic rate.

One MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1kcal/kg/hour. It is estimated that compared with sitting quietly, a person's caloric consumption is three to six times higher when being moderately active (3-6 METs) and more than six times higher when being vigorously active (>6 METs)

Moderate – intensity Physical Activity (Approximately 3-6 METs)	**Vigorous – intensity Physical Activity (Approximately >6 METs)**
Requires moderate amount of effort and noticeably accelerates the heart rate.	Requires a large amount of effort and cause rapid breathing and a substantial increase in heart rate
Example of moderate intensity exercise include ; • Brisk walking • Dancing • Gardening • House work and domestic chores • Traditional hunting and gathering • Active involvement in games and sports with children/Walking domestic animals • General building tasks (e.g. roofing, thatching, painting) • Carrying/moving moderate loads (less than 20kg)	Examples of vigorous-intensity exercise include; • Running • Walking/climbing briskly up a hill • Fast cycling • Aerobics • Fast swimming • Competitive sports and games (e.g. Traditional Games, Football, Volleyball, Hockey, Basketball) • Heavy shoveling or digging ditches • Carrying/ moving heavy loads (more than 20 kg)

Source- ***What is Moderate-intensity and Vigorous-intensity Physical Activity (WHO)***

Physical Activity for Children and Young People

For children and young people, physical activity includes play, games, sports, transportation, chores, recreation and physical education or planned exercise in the context of family, school and community activities.

Recommended levels of physical activity for children and Young People aged 5 - 17 years

- Children and youth aged 5–17 should accumulate at least 60 minutes of moderate to vigorous intensity physical activity daily.
- Amounts of physical activity greater than 60 minutes provide additional health benefits. Most of the daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone at least 3 times per week.

These recommendations are relevant to all healthy children aged 5–17 years unless specific medical conditions indicate to the contrary.

The concept of accumulation refers to meeting the goal of 60 minutes per day by performing activities in multiple shorter bouts spread throughout the day (e.g. 2 bouts of 30 minutes), then adding together the time spent during each of these bouts.

Benefits of Physical Activity for Children and Young People

- Appropriate practice of physical activity assists young people to
- Develop healthy musculoskeletal tissues (i.e. bones, muscles and joints)
- Develop a healthy cardiovascular system (i.e. heart and lungs)
- Develop neuromuscular awareness (i.e. coordination and movement control)
- Maintain a healthy body weight.

Whenever possible, children and youth with disabilities should meet these recommendations. However they should work with their health care provider to understand the types and amounts of physical activity appropriate for them considering their disability.

These recommendations are applicable for all children and youth irrespective of gender, race, ethnicity or income level.

For inactive children and youth, a progressive increase in activity to eventually achieve the target shown above is recommended. It is appropriate to start with smaller amounts of physical activity and gradually increase duration, frequency and intensity over time. It should also be noted that if children are currently doing no physical activity, doing amounts below the recommended levels will bring more benefits than doing none at all.

Physical activity has also been associated with psychological benefits in young people by improving their control over symptoms of anxiety and depression. Similarly, participation in physical activity can assist in the social development of young people by providing opportunities for self expression, building self confidence, social interaction and integration. It has also been suggested that physically active young people more readily adopt other healthy behaviours (e.g. avoidance of tobacco, alcohol and drug use) and demonstrate higher academic performance at school. (to be continued next week)

Sources

What is Moderate-intensity and Vigorous-intensity Physical Activity?
http://www.who.int/dietphysicalactivity/physical_activity_intensity/en/index.html
WHO Global Strategy on Diet, Physical Activity and Health, available from
http://www.who.int/dietphysicalactivity/factsheet_young_people/en/index.html

Compiled by Dr. Madhava Gunasekera of the Epidemiology Unit

Table 1: Vaccine-preventable Diseases & AFP

27th May– 03rd June 2011(22nd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	00	00	00	01	00	00	01	04	39	38	+ 02.6 %
Diphtheria	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Measles	00	00	02	00	00	00	01	00	00	03	02	63	42	+ 50.0 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	09	12	- 25.0 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	15	10	+ 50.0 %
Tuberculosis	114	09	100	22	15	32	57	10	00	359	467	3674	3952	- 07.0 %

Table 2: Newly Introduced Notifiable Disease

27th May– 03rd June 2011(22nd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	08	04	06	06	02	11	07	02	14	60	47	2195	1695	+ 29.4 %
Meningitis	01 CB=1	02 MT=2	01 GL=1	00	00	03 KN=3	03 AP=1 PO=2	03 Mo=3	03 KG=1 RP=2	16	63	396	749	- 53.1 %
Mumps	02	07	09	00	05	09	02	08	09	51	24	1063	427	+ 148.9 %
Leishmaniasis	00	00	02 HB=1 MT=1	00	00	01 KN=1	05 AP=5	00	00	08	02	289	153	+ 88.8 %

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

DPDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008. .

Dengue Prevention and Control Health Messages

Reduce, Reuse or Recycle the plastic and polythene collected in your home and help to minimize dengue mosquito breeding.

Table 4: Selected notifiable diseases reported by Medical Officers of Health

27th May– 03rd June 2011(22nd Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Received Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	235	2502	3	98	0	4	1	69	0	9	10	199	0	6	0	20	0	2	**77**
Gampaha	54	830	4	65	0	9	3	27	0	13	3	292	1	15	1	39	0	2	**73**
Kalutara	33	469	2	70	0	3	0	27	0	14	6	127	0	0	0	4	0	0	**75**
Kandy	21	219	5	189	0	4	0	14	1	27	1	80	3	51	1	29	0	0	**100**
Matale	17	115	5	64	0	3	1	10	0	8	9	114	2	12	0	4	0	0	**100**
Nuwara	4	59	7	163	0	3	0	26	73	87	0	24	2	42	0	9	0	1	**85**
Galle	22	231	4	41	0	5	0	3	0	5	6	81	1	16	0	7	0	0	**89**
Hambantota	13	221	0	19	0	4	0	2	2	10	18	361	1	27	0	4	0	0	**100**
Matara	12	191	2	33	0	1	1	7	0	10	5	181	1	38	1	11	0	1	**94**
Jaffna	5	149	6	88	0	3	2	134	0	12	0	2	0	165	0	16	0	1	**100**
Kilinochchi	2	35	1	11	0	3	0	5	0	9	0	2	1	8	0	3	0	0	**75**
Mannar	0	20	0	10	0	0	0	10	0	75	0	11	1	28	1	2	0	0	**80**
Vavuniya	2	45	0	20	0	9	0	6	0	36	2	33	0	2	0	1	0	0	**50**
Mullaitivu	0	7	0	27	0	1	0	2	0	0	0	5	0	1	0	2	0	0	**50**
Batticaloa	39	536	16	402	1	4	0	5	0	10	1	19	0	1	0	2	0	4	**79**
Ampara	9	57	1	50	0	0	0	7	0	21	0	51	0	1	0	7	0	0	**71**
Trincomalee	3	88	15	454	0	1	0	1	0	8	4	72	0	3	0	5	0	0	**91**
Kurunegala	25	312	9	156	0	6	2	49	0	36	24	1291	0	43	3	18	0	2	**83**
Puttalam	10	244	6	94	0	0	2	16	0	5	5	83	1	12	1	6	0	1	**78**
Anuradhapu	4	109	2	64	0	1	0	2	0	22	3	221	0	16	1	7	0	0	**79**
Polonnaruw	13	139	15	53	0	1	0	8	0	11	2	70	0	1	1	9	0	0	**86**
Badulla	10	134	3	104	1	5	3	36	0	5	1	31	2	30	0	22	0	0	**87**
Monaragala	05	110	0	29	0	4	1	21	2	10	4	153	3	42	0	35	0	0	**91**
Ratnapura	17	334	7	251	1	4	2	24	0	13	2	276	1	22	1	23	0	2	**78**
Kegalle	19	185	4	51	0	11	2	39	0	18	15	181	1	14	4	45	0	0	**100**
Kalmunai	2	18	22	364	0	0	0	0	0	12	1	4	0	2	0	2	0	1	**69**
SRI LANKA	**576**	**7359**	**139**	**2970**	**03**	**89**	**20**	**550**	**78**	**486**	**122**	**3964**	**21**	**598**	**15**	**332**	**00**	**17**	**85**

Source: Weekly Returns of Communicable Diseases WRCD).
***Dengue Fever / DHF** refers to Dengue Fever / Dengue Haemorrhagic Fever.
****Timely** refers to returns received on or before 03rd June , 2011 Total number of reporting units =320. Number of reporting units data provided for the current week: 273
A = Cases reported during the current week. **B** = Cumulative cases for the year.

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Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk.**

ON STATE SERVICE

Dr. P. PALIHAWADANA
CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10