**Physical Activity**

**COMM 311**

**Physical activity** is defined as any bodily movement produced by skeletal muscles that results in energy expenditure. The energy expenditure can be measured in kilocalories. TEE (Total energy expenditure) is the amount of energy needed daily by anyone to complete all regular bodily  activities. Energy expenditure is divided into three components: basal metabolic rate, thermogenesis and physical activity.

**Physical activity** that appears to provide the most diverse health benefits consists of dynamic, rhythmical contractions of large muscles that transport the body over distance or against gravity at a moderate intensity relative to capacity for extended periods of time during which 200 to 400 kilocalories (or 4 kilocalories per kilogram of body weight) are expended. For optimal health benefits, such activity should be performed daily or at least every other day and should be supplemented with some heavy resistance and flexibility exercises. The greatest benefits are achieved when the least active individuals become moderately active.

**Exercise** is a subset of physical activity that is planned, structured, repetitive and purposeful in the sense that the improvement or maintenance of one or more components of **physical fitness** is the objective. It includes exercise as well as other activities which involve physical movement and are done as part of playing, working, active transportation, house chores and recreational activities. The physical activity should not be mistaken with exercise.

**Physical fitness** is a set of attributes that are either health- or skill-related. It is a measure of the body’s ability to function efficiently and effectively in work and leisure activities, and to meet emergency situations.

The degree to which people have these attributes can be measured with specific tests. The **talk test** is a simple way to measure relative intensity. During moderate-intensity activity one can talk, but not sing, during the activity. If doing vigorous-intensity activity, one will not be able to say more than a few words without pausing for a breath.

The ability to relate physical activity to health indicators depends on accurate, precise and dependable measures. By either **self-report or direct monitoring of the physical activity**. Self reported or those based on questionnaire have limitations due to complexity of types of physical activities, recall related to time, duration, and intensity of physical activity. It is commonly measured through mechanical/electronic or physiological measurements. Pedometers are portable devices that count person steps; some advanced pedometers also calculate calories burned.

**Physical activities** vary from jogging, rock climbing and cycling, to more simple things like walking, gardening, and even playing with children. There are some activities that are of **moderate intensity** and others that are **vigorous**. Physical activity falls into one of the four basic categories; **endurance, strength, balance, and flexibility**. Endurance or aerobic activities aim to increase heart rate and breathing thus keeping the heart, lungs, and circulatory system healthy. As a result, they delay and prevent many diseases that are common in older adults such as diabetes and heart disease. Examples include brisk walking, biking, and football. Strength exercises; otherwise know as “*strength/resistance training.*”This type focuses on making muscles stronger and mainly revolves around weight lifting. Strength exercises can be very powerful in reducing the signs and symptoms of numerous diseases and chronic conditions including arthritis and chronic back problems. Balance exercises help prevent falls, a common problem encountered in older adults. Many lower-body strength exercises also will improve balance; e.g. standing on one leg, or walking heel-to-toe. Flexibility exercises stretch the muscles and enable people to carry out their daily routine comfortably. Examples include stretching and yoga.

The World Health Organization (WHO) keeps track of physical activity trends around the world as part of the “**Global Strategy on Diet, Physical Activity and Health” (DPAS)** program. In 2008, around 31% of adults aged 15 and over were insufficiently active around the world (men 28% and women 34%). Accordingly, the prevalence of insufficient physical activity was found to be highest in the Americas and the Eastern Mediterranean region. In both these regions, almost 50% of women were insufficiently active, while the prevalence for men was 40% in the Americas and 36% in Eastern Mediterranean. The lowest percentages were in the South East Asian Region (15% for men and 19% for women). In all countries men were noticeably more active than women. Among Saudi children, youth and adults the prevalence rates of physical inactivity were roughly 60%, 70%, and 80%, respectively in 2004.

**Physical inactivity** leads to accumulation of fats in the body especially among people who eat more than their daily needs and loss of muscle tone too. This can lead to other conditions such as overweight and obesity which acts as risk factors of numerous health conditions includes: Cardiovascular and cerebro-vascular diseases, type 2 diabetes mellitus, atherosclerosis, and complications associated with renal, and hepatic failure. Recently cancers especially of breast and colon have been linked with obesity.

The non-modifiable **risk factor** of physical inactivity is mainly old age group. Modifiable risk factors include; increase in sedentary life style, unawareness, certain occupations, faulty environmental conditions for lack of walking & or biking paths, parks, and play areas.

**Recommendation** for the amount of physical activity differs by age group. Children from ages 5-17 should accumulate at least 60 minutes of moderate to vigorous intensity physical activity daily. 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. People who are 18-64 should accumulate at least 150 minutes of moderate-intensity aerobic physical activity or do at least 75 minutes of vigorous intensity aerobic physical activity throughout the week. The elderly (65 year & above) should follow the same routine as the 18-64 year old group as much as they can. It is also important that older adults with poor mobility should perform physical activity to enhance balance and prevent falls on 3 or more days per week.

**Conclusion**: Physical inactivity is a public health concern that needs state level commitment for educating the public about the benefits of daily recommended physical activity, and provision of facilitated environment and health policies to increase health status of populations.