# PHYSICAL EXERCISE FOR GRACEFUL AGING

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## Abstract

*Graceful ageing as the process of optimizing opportunities to health, participation and security in order to enhance the quality of life as people age. Physical exercise is any bodily movement produced by skeletal muscles that require energy expenditure. The role which physical exercise plays in the prevention, control and treatment of diseases cannot be over emphasized. Physical exercise is associated with improved overall health in these people who survive to old age. It promotes endurance, strength, balance and mobility; it prevents the onset of several diseases associated with ageing, as well as shows the physical decline associated with ageing. This work presents a review of the role physical exercise plays in graceful ageing. This review is hinged on three theories of ageing which are; the activity theory of ageing, the disengagement theory of ageing, and the continuity theory of ageing. It also presents the relationship between physical exercises and the ageing process and the benefits of physical exercises to graceful ageing*

## Introduction

Physical exercise is used to improve healthy living and maintain fitness and is important as a means of physical rehabilitation. Reports of physical exercise participation are associated with reduced mortality (Breslow & Enstrom, 1986) and also protection from ischemic heart disease (IHD) according to American Heart Association (2004). There is also evidence that physical exercise reduces the risk of other chronic diseases including type 2 diabetes (Knowler, Barrett-Connor & Fowler, 2001) Osteoporosis, (Cuori, 2001) obesity, (Wing & Hill, 2001) depression and cancer of the breast (Pollock and Colon (Breslow, Bahard –Barbash & Munoz, 2001). As a general goal target at least 30-40 minutes of physical exercise every day.

Physical exercise is defined as any bodily activity or movement produced by skeletal muscles that result in energy expenditure beyond resting expenditure. Exercise is a subset of physical exercise that is planned, structured, repetitive, and purposeful in the sense that improvement or maintenance of physical fitness is the objective (American College Sport Medicine, 2009).

Physical exercise has been used for centuries as a way to treat a variety of disease and to promote health. Indeed, as early as 600 BC, physical exercise was used by the India physical substrata in the management of certain weight related diseases (Mayo Clinic, 2014). American Heart Association (2011), observed that physical exercise is associated with increases in the rate of and depth of breathing to increase ventilation of the lungs and increases in the heart rate and stroke volume to increase cardiac output. Physical exercise is an important part of a successful long term weight control programme (Brooks, Fahey, white & Baldwin, 2000). During physical exercise, approximately 5 Kcal are used for every litre of oxygen consumed. When dynamic (Isotonic) physical exercise is begun, oxygen uptake by the lungs quickly increases. After the second minute, oxygen uptake usually remains relatively stable (steady state) at each intensity of physical exercise.

Maintaining the grayling years begin from infancy. This is because aging begins few seconds after birth. Whatever one does or fails to do (beginning with parents) will affect him/her positively or negatively. Hence, the need to take note of those things that promotes health and the ones that are detrimental to health. Though ageing is inevitable, it remains one term most people, especially youths do not want to discuss about. This is because ageing or growing old to many is associated with diseases, but this is not always true. Though there may be functional decline as people age, in some ways, the brain improves with age. Healthy.com (2015) found that brain power can improve with age. This is because crystallized intelligence a term used to describe the ability to utilize the knowledge, skills and expertise acquired during an individuals' lifetime peaks between late 60s and early 70s. Therefore, ageing could be pathological or healthy. Healthy or graceful aging is worked for during the youth age, hence there is need for one to indulge in behaviours that prevent diseases and promote health. Such behaviours and activities include, among others, regular medical checkups, physical activities, adequate nutrition, stress management, social activities, mental activities and avoiding sedentary lifestyle, smoking and alcoholism.

Other terms for graceful ageing are active, healthy, successful, optimal, vital, productive, good life and ageing well. Graceful ageing is represented by a combination of active involvement in life through the establishment of social relationship and productive

activities, the absence of disease and maintenance of functional capacity (peel, Bartlett and McClure, 2004). It goes beyond the mere absence of diseases; rather it is a process of adaptation to changes which occur throughout an individual's life. Simply put, graceful ageing allow elderly **individuals** to maintain their physical, mental and social wellbeing. The aim of graceful ageing is to extend healthy life expectancy and quality of life for all people as they age.

The World Health Organization (WHO, 2016) defined graceful ageing as the process of optimizing opportunities to health, participation and security in order to enhance the quality of life as people age. It applies to both individual and population groups. Femandez, Ballesteros, Robine, Walker and Kalache (2013) explained that population ageing is the product of long adaption process due to the development of long life education, biomedical advancement, socio economic progress, and the democratic political extension of these social development. On the other hand, individual ageing is a long process across the individual life span governed not only by age and genes but by interactions between socio-environmental condition with personal and behavioural events (Bandura 1986). Thus, at the individual level, the individual is an agent of his or her own ageing process. World health organization (2002) outlined the key aspects of graceful ageing at the individual level, as; autonomy (the perceived ability to control, cope with and make personal decisions about how one lives on a day to day basis, according to one's own rules and preferences); and quality of life (an individual's perception of his or her position in life in the context of the culture and value system where they live, in relation to their goals, expectation, standards and concerns). In order to achieve these key aspects of ageing by an individual there is need for physical exercise.

Physical exercise is any bodily movement produced by skeletal muscles that require energy expenditure (Dipictro, 2007). The more often a person is physically active, the better that persons physical capability. This is because physical exercise according to the department of health UK (2011), physical exercise habit reduces frailty in older people. After age of 40 years, it is possible to detect deterioration of function of physiological system, with associated anatomical and ultra structural changes but Mcpheree et al (2016) revealed that physical exercise helps to improve physical and inertial functions as well as reverses some effects of chronic disease in older people.

## Physical Exercise and Disease Prevention

The role which physical exercise play in the prevention, control and treatment of Diseases cannot be over emphasize for many years, it has been a common belief that exercise has little or no value in programmes of weight reduction and control. Many examples are given in demonstrating the tremendous number of hours of vigorous exercise necessary to obtain even small losses in body weight (Pollock & Wilmore, 1990).

Furthermore, Pollock and Wilmore observed that compared with starvation or semi-starvation diets, physical exercise is not an efficient means of losing body fat. Brooks et al (2000) submitted that physical exercise by itself is less effective than caloric restriction or caloric restriction plus physical exercise. They also noted that most studies have shown that physical exercise plus diet is more effective than dieting alone in maintaining weight loss.

Ayodele (2004), stated that if you are overweight you are susceptible to diseases like hypertension, diabetics, heart attack, stroke, infertility, inferiority complex, stress and so on. Howard (2011), submitted that interdependence of dietary factors and activity patterns, are

risk factors of obesity, which is associated with increased risk for cardiovascular disease, certain cancers, and diabetes and is clearly related to the balance between calories consumed and calories expanded through metabolic and physical exercise.

Physical exercise is associated with improved overall health in these people who survive to old age (Harmer, Levole & Bacon 2013). It promotes endurance, strength, balance and mobility; it prevents the onset of several diseases associated with ageing, as well as shows the physical decline associated with ageing. Therefore, individuals should imbibe physical exercise habit to experience graceful ageing and not pathological ageing for better understanding of ageing.

## Theories of Ageing

These are three theories of ageing and they include:

1. The activity theory of ageing
2. The Disengagement theory of ageing
3. The continuity theory of ageing

The activity theory of ageing was developed by Robert Havighurst in 1961. The theory assumes a positive relationship between activity and life satisfaction. It takes the view that the ageing process is delayed and the quality of life is enhanced when old people remain socially active (Schulz, 2006). Therefore, to the profounder of this theory, successful ageing occurs only when older adult stay physically active and maintain social interaction. The activity theory is also known as the implicitly theory of ageing, normal theory of ageing and lay theory of ageing (Love & Sajatovice, 2008).

The disengagement theory of ageing was formulated, by Cumming and Henry in 1961. The theory states that ageing is inevitable and that mutual withdrawal and disengagement occurs due to decreased interaction between the ageing person and others in the social system he belongs. The disengagement theory claims that it is natural and acceptable for older adults to withdraw from the society.

The continuity theory of ageing originated through the observation that a large proportion of older adults show consistency in their activities, personalities and relationships despite their changing physical, mental and social status. George L. Moddox, in 1768 proposed the theory, while Robert Atchley described the theory in 1971. Later in 1989, Robert Atchley substantially developed and expanded the continuity theory to explain the development of internal and external structures of continuity. These structures describe how people adapt to their situation and set their goals. The internal structures of an individual such as personality, ideals and beliefs remains constant throughout the life course, while the external structures of an individual such as relationships andsocial roles provide a support for maintaining a stable self concept and life style. The continuity theory of normal ageing states that older adults will usually maintain the same activities, behaviours and relationships as they did in their earlier years of life. The major criticism for this theory is the definition of normal ageing. The theory distinguishes normal ageing from pathological ageing neglecting older adults with chronic illness. Another weakness of this theory is that it fails to demonstrate how social institutions impact the individual and the way they age (Quadagno, 2007).

## Determinants of Graceful Ageing

The World Health Organization (2002), posited six main determinants of graceful ageing and they are:



3. Physical environment: this connotes friendly environment safe houses and absence of pollution.
4. Behavioural styles: this includes smoking, physical activity, food intake, oral health, alcohol intake and medication.
5. Social services: these include services that promote health and prevent diseases, health services, continuous care and mental health care.
6. Economic factors such as wages, work and social security. My Aged Care (2016), gave the following tips.
7. Maintain a balanced diet for healthy body and brain.
8. Do regular physical exercises: This is important for the body and mind as regular physical exercise builds muscles and helps to control weight, blood pressure, cholesterol, diabetes, pain as well as bone and joint problems.
9. Active social participation and engaging with others: these contribute to overall health and well-being by strengthening sense of belonging and creating social relationship.

**Physical exercises for aged persons**

Meyers (2013), enumerated the following physical exercises for aged persons:

a. Walking
b. Game-like activities
c. Shopping
d. Tai-chi
e. Cycling
f. Chiar-rising

**Planned Exercise**

a. House hold jobs
b. Jogging
c. Swimming
d. Yoga
e. Dancing and gardening.

**Relationship between physical exercises and the ageing process.**

Although physical exercise does not necessarily stop the biological ageing process of an individual, regular physical exercise, adequate nutrition, positive lifestyle and medical care can counteract some of the adverse physiological, psychological and cognitive, consequences of ageing: physical exercise promotes independent ageing (Heuvelen, Kempen, Ormel & Rispens, 1998). Physical fitness is one of the most important desires of the elderly. Once one is in this state, maintaining physical and mental health and quality of life is guaranteed. Being physically fitness and graceful ageing by reducing the risk of obesity, high blood pressure, diabetes, stroke depression and osteoporosis commonly found in people who are inactive.

Physical exercise helps the older persons to attain full range of physical qualities, for example; aerobic capacity, strength, speed, agility, coordination and flexibility. It can play very important role on every function of a human being (Skeletal-muscular, cardiorespiratory, thermo-circulator, psycho neurological and endocrine metabolism and structure of the body. Thus, being physically strong implies that the response of these functions and structure will be adequate. Acung-Duab and Black (2005) noted that, anti-ageing related physical activities include those physical exercises associated with prevention of diseases. An epidemiological and prospective study by Thompson (2003), has reported a strong association between physical exercises and ageing. Being physically fit drastically reduces the premature ageing process, the risk of death by 44 percent (Blair, 1999), as well as favourably influences self-image, self-esteem and depression, as well as anxiety and panic syndrome.

The prescription of exercise with the aim of attenuating the physiological consequences of ageing is oriented towards increasing daily physical activity and improving physical fitness. Physical exercises that develop cardiovascular fitness are designed to improve both the capacity and efficiency of cardiovascular and metabolism system. They also help in the control and reduction of body fat and thus reducing the ageing process. Regular aerobic activities for example, walking improves aerobic capacity and leads to significant reduction in the systolic and diastolic blood pressure in hypertensive men and women (Henwood & Taaffe, 2005). Aerobic activities reduce the cause of insulin resistance and have therapeutic effect on certain mental dispositions such as anxiety, depression and panic syndrome which accelerate ageing.

Improving muscular strength is important in promoting graceful ageing. Hung et al (2005) opined that, resistance training reduces the risk factors associated with coronary heart diseases, non-insulin dependent diabetes and colon cancer. Also it prevents osteoporosis, promotes weight loss and weight maintenance, improves dynamic stability, preserves foundational capacity and fosters psychological well-being. Therefore, physical exercises that improve muscular strength also improve physical fitness, and thus prevent age-related diseases and premature ageing.

## Benefits of Physical Exercises to Graceful Ageing

The benefits of physical exercise extend far beyond weight management. Research shows that regular physical exercise can help reduce the risk for several diseases and health conditions and improve the overall quality of life. Musculoskeletal disorders are the most common chronic disabling conditions affecting people aged over 65 tears, followed by heart and circulatory conditions, respiratory conditions endocrine or metabolic conditions and then mental condition (Age Uk, 2010).

Mcphee (2010), revealed that the risk of developing cardiovascular and metabolic diseases, obesity, falls, cognitive impairments, Osteoporosis and muscular weakness and decreased by regularly completing activities. These activities range from low intensity walking to more rigorous sports and resistance exercises. People with higher activity level and physiological fitness have a lower mortality risk (Felman, 2015) and longevity (Magniniet la, 2006; Stessman, 2012). Physical exercises benefit all the body structures and organs in the following ways:

## Exercise improves mood

1. Need an emotional lifted or need to blow off some stream after a stressful day? A workout at the gymnasium or a brisk 30-minute walk can help. Physical exercise stimulates various brain chemicals that may leave an individual feeling happier and more relaxed. An individual may also feel better about his/her appearance and when an individual exercise regularly, it can boost his/her confidence and improve self-esteem.
2. Regular physical exercise can improve individual muscle strength and boost his/her endurance. Exercises and physical activity deliver oxygen and nutrients to tissues and



3. Exercise combats Health conditions and disease. No matter what an individual's current weight is, being active boost high density lipoprotein (HOL) or good Cholesterol and decreases unhealthy triglycerides. This one-two punch keeps an individual blood flowing smoothly which decreases the risk of cardiovascular diseases. Furthermore, regular physical exercises can help an individual prevent or manage a wide range of health problems and concerns, including but not limited to stroke, metabolic syndrome, type 2 diabetes depressions, and certain types of cancer, arthritis and falls.
4. Exercise Help the Nervous system. Regular physical exercise helps to maintain cognitive function and possibly, also the numbers of peripheral motor neurons controlling leg muscle (power, 2012).

## Conclusion

Physical exercise is an important factor in the overall development of the health and fitness in an individual. There are two forms of exercises namely isometric and isotonic exercises. Physical exercise is closely related to energy expenditure of which the metabolic equivalent (MET) is implicated. Physical exercise otherwise known as physical activity, increases the metabolism of fats to improve weight reduction and enhance physical fitness. Ageing is inevitable a though it may be associated with certain health challenges due to decline that occurs after the 40 years, one can age gracefully. Graceful ageing could be attained through continuous physical exercise. There are two types of ageing pathological and active ageing. Pathological ageing could be attributed to certain factors including; sedentary lifestyle. This is because sedentary lifestyle is associated with onset diseases. On the other hand, active ageing could be attributed to physical exercise, proper and appropriate nutrition and medical care. Physical exercise has been found to reduce and even prevent the onset of disease in older persons. The diseases that are associated with old age include but not limited to diabetes type ii and cardiovascular diseases. Through the reduction and prevention of these diseases, physical exercise promotes graceful or healthy ageing. This is because physical exercise helps to improve physical and mental functions, reverses some effects of chronic diseases, and reduces the risk of developing cardiovascular and metabolic diseases through better control of blood pressure and body fats level. In conclusion, it is very important for the individual to know that despite the immense benefits of physical exercise, it can be potentially harmful if not well managed. Remember to check with your doctor before involving in exercise programmes especially if the person has not exercise for a long time, have chronic health problem. Physical exercise recommended for the older people include but not limited to walking, dancing, yoga, household jobs shopping and gardening.

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