

Special populations and exercise prescription health

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Health and fitness today, are seen to have much more impact on our lifestyles than ever before, with its benefits no longer confined to budding sports enthusiasts and professionals. The use of exercise to improve function, relieve symptoms and maintain a state of well being are a concept which, more so now than ever, have been embraced and advocated by the medical establishment. In these days where efficacy and cost effectiveness of medical intervention need to be justified therapeutic rehabilitation is seen as a key economic issue. In general, rehabilitation patients have shorter hospital stays and improved recovery rates which in turn places less strain on financial resources.

The need for medical intervention of special population groups is much more common than that of the general populous (Shankar, 1999). Certainly those individuals who fall within the classification of obese are more prone to hospitalization due to relative issues (Quesenberry, C. P, 1998). Clearly then the need for preventative therapeutic intervention plays a large role as does rehabilitation, the latter of the two of course, having less impact on resources (NHS, 2008).

Special Population considerations

In terms of physiology, special populations fall into several distinct categories, and in each of these categories it is necessary for those undertaking any referral or fitness programme to have a good working knowledge of the special considerations necessary for the welfare and safety of the patient.

When considering any type of health and fitness plan, it is imperative that the anatomical and physiological differences are understood (Shankar, 1999). The following section highlights specific differences in special populations.

Obesity

Obesity is fast becoming the developed world's biggest health problem, with over 9, 000 deaths a year in England

being caused by obesity alone (WHO, 2006). Adult obesity rates have almost quadrupled over the last 25 years, and two thirds of UK adults are now considered overweight or obese. Of these, 22% of men and 23% of women are obese (NHS, 2008). This means that they are at least two to three stone overweight and putting their health at serious risk. According to figures from the National Audit Office, being obese can take up to nine years off your lifespan. It also makes you far more likely to develop a range of health-related problems (NAO, 2001). The most common of these include:

- Diabetes - Type 2 or non-insulin dependent diabetes

In type 2 diabetes, the body does not produce enough insulin, or the cells in your body do not react properly to the insulin. Type 2 diabetes is closely linked to obesity. If an individual is overweight, then losing weight, eating a healthy balanced diet, and taking regular exercise, will greatly reduce the risk of developing diabetes. Usually developing over weeks or months some people with type 2 diabetes have few symptoms or even no symptoms at all (NHS, 2008). However, they still need to have treatment so that other health problems, such as kidney disease, do not develop later on.

Coronary Heart Disease (CHD)

CHD is the term that describes the process where the walls of the arteries become furred up with fatty deposits. If the coronary arteries become narrow, due to this build up, the blood supply to the heart will be restricted and potentially cause angina. If a coronary artery becomes completely blocked, it can cause a myocardial infarction or heart attack (McArdle et al, 2006).

CHD is the UK's biggest killer, with one in every four men, and one in every six women dying from the disease. In the UK, approximately 300, 000 people have a heart attack each year (WHO, 2006).

Ischaemic Stroke

Strokes, or as they are correctly termed, Ischaemic strokes occur when blood clots block the flow of blood to the brain. Blood clots typically form in areas where the arteries have been narrowed, or blocked by fatty deposits. Strokes are a medical emergency and prompt treatment is essential. If the supply of blood is restricted, or stopped, brain cells will begin to die; this can quickly lead to brain damage and possibly death.

High blood pressure

High blood pressure (hypertension) is usually defined as having a sustained blood pressure of 140/90 mmHg, or above (McArdle et al, 2006).

High blood pressure often causes no symptoms, or immediate problems, but it is a major risk factor for developing a serious cardiovascular disease (conditions that can affect the circulation of blood around the body), such as a stroke, or heart disease (NHS, 2008).

Osteoarthritis

Osteoarthritis is a condition that affects the joints, such as the hips, knees and spine. It is the most common type of arthritis in the UK, and is sometimes referred to as 'wear and tear' arthritis.

There is no cure for osteoarthritis, but the symptoms can be eased by using a number of different treatments. Mild symptoms can often be managed through exercise or by wearing suitable footwear. However, in more advanced cases, other treatments may be necessary, such as analgesics, physiotherapy, or surgical intervention.

Psychological problems

In addition to the immediate and long term problems of obesity, many people may also experience psychological problems, such as low self esteem or poor self image. This can have the effect of reducing confidence levels, thus nurturing a feeling of societal isolation (Brookfield, J. 2004).

These feelings often have a tendency to exacerbate issues as quite often,

individuals are, as a result of poor self image, reluctant to embark on an exercise regime.

Clearly then, this complex array of problems that are associated with obesity may negatively affect a patient's rehabilitation potential and their ability to participate in fitness activities. It must be stated however that an individual may not be obese but still succumb to one or more of these health problems as a result of age, poor diet and lack of exercise. By looking at obesity however, we can also consider all of these ailments under one umbrella.

As a result of lifestyle choices and poor diet, an individual may slowly, over time, become out of shape and overweight. Fortunately, if tackled early enough these effects can be reversed, and those 'lost years' can be, to a certain extent, regained. Thus the spectre of medical intervention becomes less of a reality. By simply making changes to ones lifestyle, such as exercising more regularly, eating a healthier diet, and cutting back on ones consumption of alcohol the negative effects of ill health can be staved off.

Preventative and remedial exercise prescription

The first consideration should be that the individual is examined by a GP, thus giving the fitness professional a sound basis from which to begin an exercise prescription plan. With this important information they can then tailor the regime to meet the needs of the individual. As a general rule the GP will look at several 'base' values, the most common of these being age, height and weight (thus giving a body mass index (BMI) score), resting heart rate and blood pressure (NHS, 2008). As an integral part of this assignment it was necessary to examine an individual using these measurements, and subsequently make an assessment of their overall physical, and to a lesser extent, psychological condition, with the aim being to formulate a fitness

plan. There now follows the results of the interview and examination.\n\nHealth and Fitness Assessment\n\nThe subject, a 39 year old married mother of two has, during her life, been extremely keen on sports. Her not insignificant sports experience ranges from full time swim training from the age of 8 to 15, where she swam the butterfly stroke. After then taking a 2 year break from swimming, and under her own admission putting on some weight, she then took up club running which included half marathons. She was subsequently instrumental in the formation of the Newcastle-Under-Lyme Women's Rugby Club, where she was an active player.\n\nAs a keen sports participant in the past, the subject does realize the importance of exercise, but since getting married in 1996, almost 12 years ago, has felt that she has been too busy to engage in sporting activities. This is due to a clear dedication to her work, her children and the unfortunate aspect of having to travel almost 40 miles each day in order to work. The individual also reports that, at times, she has suffered problems relating to her Achilles tendons, with the left Achilles presenting a specific problem. As a result of this she is reluctant to engage in high impact activity as she fears the onset of further problems, she has however expressed an interest in swimming and cycling, thus negating the need for high impact activities.\n\nThe subject scored well during a Wellness Self Perception chart examination, falling mostly in the higher levels of psychological self perception 'wellness', this is echoed by her enjoyment and enthusiasm for gardening, a position within her church and her sparkly demeanor. There was however a marked reduction in positive self perception regarding physical wellness, this was a noticeable trait which was clearly seen during interview.\n\nThe subject

clearly knows what she is eating, and although not a terribly bad diet, does admit to having chocolate and crisps on a daily basis, whilst on the weekends enjoys substantial amounts of food. She is also a non smoker who drinks red wine, but not in vast quantities. Supplementary information can be found in the Health and Fitness Assessment Questionnaire in appendix 1.