



Special Sport for Special People



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**SUPPORTING  
MANUAL**

FOR THE KIT

# BODY & SPORT

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# 1. INTRODUCTION



Regular participation in physical activity (PA) is imperative for good health. Active people benefit from higher levels of health-related fitness and are at lower risk of developing many different disabling medical conditions than inactive people. It is widely acknowledged that the health benefits of participation in PA are not limited to physical health but also incorporate mental components. Extensive research has resulted in clear recommendations of the level of PA required to produce health benefits. There are specific health-related recommendations for children and adolescents distinct from those for adults. For people aged 5–17 years it is recommended that they undertake moderate or vigorous activities for at least 60 minutes per day. Regular maintenance of this level of activity by children and adolescents can result in increased physical fitness, reduced body fat, favourable cardiovascular and metabolic disease risk profiles, enhanced bone health and reduced symptoms of depression and anxiety. Whilst many different health benefits of participation in PA are acknowledged, the vast majority of research has focused on the physical health benefits of participation in PA, with less research focused on the mental and social health aspects. Although mental health benefits have been referenced in recent guidelines, to date “insufficient evidence precludes conclusions about the minimal or optimal types or amounts of physical activity for mental health”. Even though the World Health Organisation definition of health (2006) incorporates physical, mental and social health domains, the research providing evidence to the PA guidelines does not specifically address social health. However, the literature informing PA guidelines does suggest that aspects such as social support may contribute to some of the explanations of mental health outcomes. Leisure-time PA is one domain of PA. Sport is one type of leisure-time PA which is organised and usually competitive and played in a team or as an individual. Participation in sport is very popular among children. There is evidence, however, that participation in sport peaks at around 11–13 years before declining through adolescence. Conversely, there is research indicating that children who are active through sport are more likely to be physically active in adulthood than those who do not participate in childhood sport. Furthermore, substantial public investment in sport development has been justified in terms of a range of health benefits, but without a clear understanding of the best way to achieve maximum health benefits - either mental or physical. Extensive research has been conducted on the determinants of participation in PA and on interventions that attempt to increase PA participation, with relatively little research focusing more specifically on sport. Also, with regard to the health benefits of PA, the research has generally not extended to the mental and social health benefits of sport participation in particular. A conceptual model in the public health area has been defined as “diagram of proposed causal linkages among a set of concepts believed to be related to a specific public health problem”. Determinants of PA are increasingly being understood using socio-ecological models, whereby intrapersonal, interpersonal, organisational, environmental and policy variables are identified as influences on participation. As Earp and Ennett (1991) explain, conceptual models in health do take an ecological perspective, implying that behaviours or health outcomes result from the interaction of both individual and environmental determinants. In terms of the sport and health nexus, we are not aware of a conceptual model that depicts the specific mental and social health outcomes of sport participation. Conceptual models have been developed which show the relationship between different types of PA, including sport, and the intensity and context of participation, however they do not extend to the health benefits of participation. In one systematic review of the effectiveness of interventions to increase physical activity, a conceptual model of the relationship between interventions, modifiable determinants, immediate outcomes and health outcomes was developed. However, this study did not specifically identify sport. Furthermore, there are many clinical conceptual models depicting health outcomes of clinical conditions,

however they do not focus on the general population or on preventive health or health promotion. Firstly, this paper presents the results of a systematic review investigating the psychological and social benefits of participation in sport for children and adolescents. Secondly, the information obtained in the systematic review has been used to develop a conceptual model: the conceptual model of Health through Sport, for children and adolescents.

## 2. AIMS



This kit “Body and Sport” has the following specific aims which will help trainees make healthy choices to help reduce a sedentary lifestyle, in turn reducing obesity and stress.

1. to improve the quality of life;
2. to improve self-image and self-esteem;
3. to increase enthusiasm and optimism;
4. to promote sports practice, team-building;
5. to promote healthy competition, fair play and a positive management of competitiveness, allowing for tension discharge without generating conflict and making of fairness a value and point of honour;
6. to stimulate competences and attitudes such as concentration, decision making, memory, coordination, reaching the goal, cooperation, negotiation skills, ethic and solidarity;
7. to develop physical prowess and readiness for personal effort and also social abilities such as teamwork, solidarity;
8. to create a better balance between intellectual and physical activity in school life by encouraging sport in school activities;
9. to use potential of sport for social inclusion, integration and equal opportunities;
10. learn how and why to eat healthily.

### 3. IMPROVE QUALITY OF LIFE



By working on the development of self esteem and image through a mixture of multiple sports activities and teaching the importance of healthy eating throughout the Body and Sport kit, students will develop skills and knowledge to enable them to make healthy choices in life. Which in turn will allow them to grow up in the best way that fits for them while decreasing both the nation's inactive population and the illnesses that often result from a sedentary lifestyle.

Making the correct lifestyle choices early in life and understanding their implication can have a beneficial effect on a person's health and wellbeing later in life. Understanding the benefits of setting goals can also become an exercise tool in helping adopt a new active lifestyle.

It is easy to tell somebody to take up a healthy and active lifestyle, but there are many barriers which have to be overcome first. One main barrier especially for females is confidence and self image. This kit will help students overcome the barrier of lack of confidence by enable self esteem to improve.

Other barriers can include the cost of facilities, equipment and gym membership; peer pressures; family life; and limited availability of fitness facilities and healthy food options.

This kit will show teachers and trainees how to overcome these barriers by using inexpensive equipment in small spaces, making healthy food choices using inexpensive products, and delivering class-led sessions to mitigate peer pressure and problems with self-esteem. In addition, the trainer/coach can become an important model for his/her trainees, especially when they have never seen these models and lifestyles adopted at home by their parents.

Providing yourself with an active lifestyle can also have health related effects on the body. It has been proven that stress and anxiety can be controlled and defeated by exercise and other medical conditions. According to the UK Chief Medical Guidelines 2011, sport helps to decrease chances to type 2 diabetes by 40% chances of type 2 diabetes, by 35% cardio diseases, falls, by 30% depression, by 25% joint and back pain, by 20% cancers (colon and breast).

www.hse.gov.uk states that 35% of work related illnesses in the UK is from stress and females tend to become more stressed than males. Nuffield Foundation found that there has been an increase in levels of anxiety and depression in teenagers over the last 30 years and Type 2 diabetes is on the increase due to diet. At the same time, high body mass Index (obesity/overweight) rates are increasing among young people as well as among middle-aged adults. This is related in part to lack of physical activity in leisure time, but is even more likely the result of people spending increasing amounts of time in sedentary behaviours such as watching television, using computers, and excessive use of "passive" modes of transport (cars, buses and motorcycles). Sedentariness is consuming a great deal of people's time, and the health consequences are significant.

Sport can benefit your health, improve sleep, maintain healthy weight, help manage stress and improve quality of life.

### How will the kit help improve self confidence?

Self Confidence is defined as the belief that you can successfully perform a desired behaviour and belief that you can successfully get the task done. Lots of top athletes and successful peo-

ple are very self-confident and state that they are before competitions and in everyday life, in order for them to succeed. The benefits of having self confidence is huge and would make a big difference to people's lives. Benefits can be:

- › to arouse positive emotions in an individual who can reframe his emotions, be it anxiety aggression or assertiveness. Jones and Swain (1995) revealed that athletes with high confidence interpret their anxiety levels more positively than those with less;
- › to facilitate concentration as a person's mind is free from worry and can focus upon the task in hand. Self-confident people are proven to have more productive attentional skills, attributes and coping strategies;
- › to affect goals in which people set themselves. Confident people tend to set higher goals and reach their potential unlike people who are less confident;
- › greater effort to reach a chosen target;
- › effects on life strategy as a confident person will play to win, but a less confident person will play curiously and will not be too concerned about losing;
- › been able to reverse the psychological momentum when losing or things are going against them.

Not everyone has the motivation to succeed; Weinberg and Gould (2003) suggest that there are three types of oriental motivation which most people fit into:

- › **Trait centred orientation** - this is where a particular sportsperson individual characteristics i.e. personality, needs and goals determine his/her motional behaviour. Some people will have high levels of personal attributes which will lead to success, were as, someone else would not have the inner drive to succeed.
- › **Centred orientation** - This type of motivation is determined by the situation the sportsperson is in. They could be motivated at training and get good times in training, but when it comes to competition they may produce poor times and performance.
- › **Interactional orientation** - This motivation is stated by Weinberg and Gould to be endorsed by sports and exercise psychologists and is neither situation focused or participant focused but more about how they work together (2003, p 54).

Vealey (1986) stated that 'The belief or degree of certainty in individuals passes about their ability to be successful in sport'. She believed that an athlete who was successful in one sport could transfer much of the confidence derived from success into another sport. Later studies by Vealey and Knight (2002) went on to discuss that sports people have the following types of self-confidence:

- › confidence about one's ability to execute physical skills;
- › confidence about one's ability to utilise psychological skills;
- › confidence to employ perceptual skills;
- › confidence in one's level of physical fitness and training status;
- › confidence in one's learning potential or ability to improve one's skill.

These types of confidence would enable them to succeed in any sport, which in a way backs up her first claim as with these attributes sports people can succeed at most tasks, they set themselves. Other studies carried out by Vealey (2010) suggests that confidence within someone is believed to be a social cognitive construct where the individual is more trait-like in an event, which is stable depending on personality, or more unstable, which is dependent on the day's emotion which is called state-like (Weinberg and Gould 2003, p 309).

This kit will be working on the above theories within the sessions planned to allow students to become self confidence and gain effective qualities to set them up for life.

## How will the kit help the physiological aspects of the human body?

### Circuit training sessions and stretching

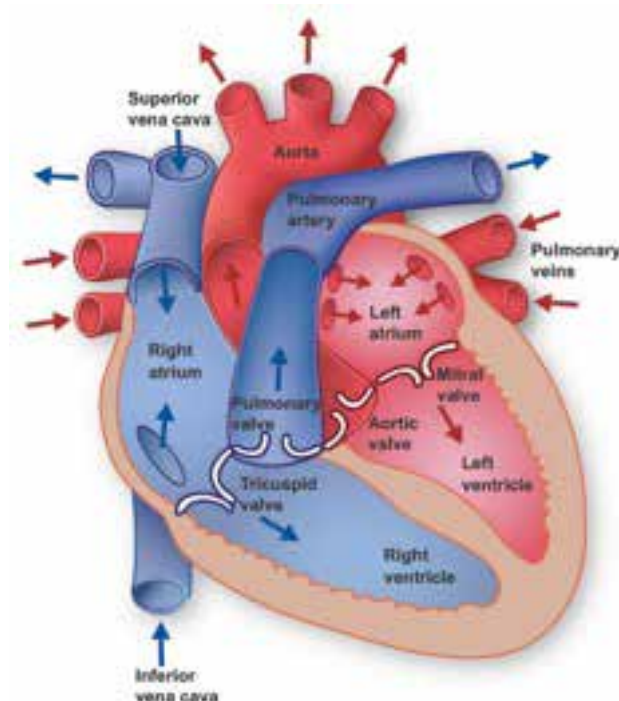
Training the body with circuits will strengthen the body and prevent injury and carried out regularly will improve strength and adapt the body to train for longer. Bean. A. (2005) states that a well conditioned and balanced musculoskeletal system has a smaller chance of sustaining injury and improves overall posture, as well as correcting specific postural faults. Clark and Lucett (2010) talk about the importance of this training to increase strength as when trained under these conditions the body of the athlete is able to create maximal motor unit recruitment and facilitate a greater overall training response (Clark and Lucett pg 4.2010), as this will increase muscular strength by recruiting more muscle fibres and increase the speed of rate coding. According to Daryl Conant, M.Ed CSCS (2015) 'Rate coding is the synchronization impulse speed from the brain to the muscle fibres. The faster the impulse the faster the muscle fibres can be activated or recruited to help with the stimulus'.

### How will the aerobic element of the sessions within the kit help?

Aerobic exercise can decrease blood pressure by 10mmHg. People with pre existing hypertension however could experience a rise in blood pressure and we recommend they seek medical advice before taking part in exercise and make the deliver aware of their history. **Within this kit we will provide a Par Q form which each students needs to fill out before taking part in the kit activities.**

### The Heart

The heart is a cardigan muscle that pumps blood into the different tissues around our bodies. The heart has for chambers: two lower chambers called ventricles and two upper chambers called atriums 2 lower chambers called the ventricles and 2 upper chambers called the atriums. The heart needs to pump blood effectively and to do this there are valves to prevent backflow of the blood. The valves are controlled by the blood pressure in the chambers, which is triggered by the heart beat.

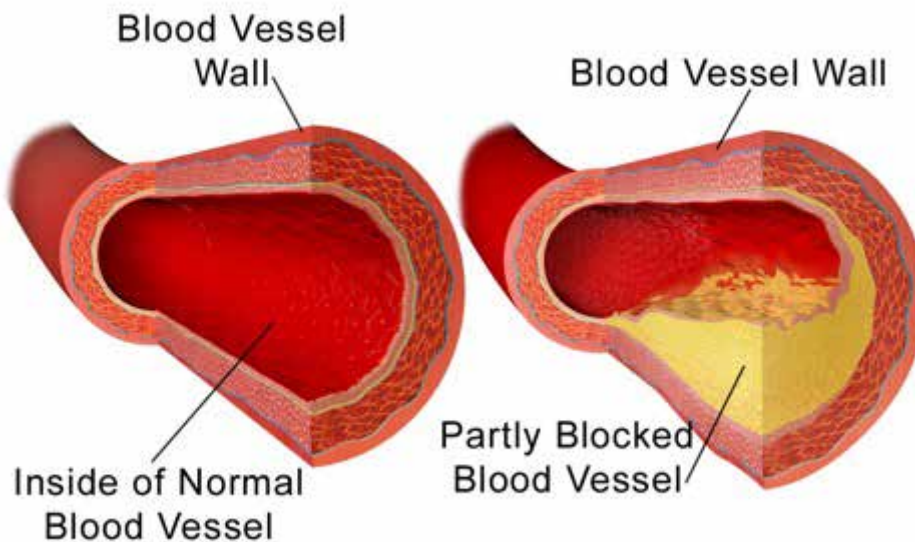


Muscular Heart

## Coronary circulation

The heart requires oxygen and nutrients to function. Within the heart is a network of veins to ensure the oxygen is pumped continuously into the heart.

Heart diseases such as vascular disease occur mainly due to poor coronary circulation as a result of a blood clot, fatty plaque built up or a spasm in the smooth muscle of the walls. This is due to heart not receiving the adequate amount of oxygen and nutrients.



Normal and Partly Blocket Blood Vessel

## Stroke Volume

Regular aerobic activity can increase stroke volume.

The body under exercise sees an increase in Stroke Volume. McArdle, Katch and Katch 1996 p: 347 propose 'there are three physiologic mechanism increases in the heart's stroke volume during exercise'. Firstly, diastole filling and systolic dilation contraction, which occurs when the ventricular walls are stretched under exercise to enable more blood to enter, which in turn allows for more cross bridges on the myocardial cell, which creates more force. This is called the Frank-Starling mechanism and occurs during less intense exercise. After this Neurohormonal influence encourages normal ventilation filling, with an increase in force of the systolic contraction. This is because the left ventricular decreases in size at the ESV, which will cause more force when contracting. Also, the sympathetic nerve causes contraction to increase and catecholamine, which increases SV during exercise. This increases the ejection fraction. Lastly, stroke volume increases with the expansion of blood volume from exercise which reduces the resistance to blood flow in pheripheral tissue.

## Cardiac Output

Increase of stroke volume and heart rate causes cardiac output to increase. 'Stroke volume also increases with exercise, further increasing cardiac output.' (2012, pp.188 ). When VO<sub>2</sub> max is reached cardiac output plateau out.

## Blood Pressure

Hypertension is high blood pressure, which is an indication of a strain on the blood vessels. Hypertension increases the risk of heart disease.

Normal blood pressure is 120/80mmHg.

High blood pressure is 140/94mmHg.

## Blood Flow

The blood is sent directly to areas of the body in greatest need of oxygen and metabolic substances i.e. muscles under contraction. With the help of cardiac output and blood pressure, blood flow is increased by the amount of active capillaries per muscle fibres. The more trained an athlete the greater number of capillaries which help with blood flow. To accommodate these muscles, blood is taken from areas with less need, i.e. liver, pancreas, kidneys. This is called 'sympathetic vasoconstriction'. According to McArdle, Katch and Katch this as needs is partially met through sympathetic stimulation of vessels in those areas which blood flow is reduced, the resulting vasoconstriction in those areas allows for more (increased) cardiac output to be distributed to the exercising skeletal muscles. In the skeletal muscles, sympathetic stimulation to constrictor fibres in the arteriolar walls also increase: however, local vasodilation substances are released from exercising muscle and overcome sympathetic vasoconstriction, producing an overall vasodilation in the muscle (sympatholysis).'

## Reflection

During and after each session, it is good practice for students and their tutor to reflect on different situations. This allows students to think more deeply and for longer. Reflection "happens at the time of the incident, is often unconscious, is pro-active and allows immediate changes to take place". Additionally, a further reflection can place after the incident, which is a "more conscious process and is reactive. This allows time to think about incidents, consider a different approach, or talk to others about it before making changes". Allowing students to reflect during placement also enables them to develop and grow as individuals, as they gain new knowledge through researching set subjects. This knowledge can be applied throughout the course or employment.

## 4. SPORT PRACTICE AND TEAM BUILDING



“TEAM- Together Everyone Achieves More.” Participating in team sports helps to develop character. It helps teach discipline, which is something every person needs to include in life. A team sport also encourages people to work with others as they try to reach for the same goal. People argue that sports are strictly for fun, and that they do not build character. Team sports help build character because they teach people discipline, how to work in a group, and how to have good sportsmanship.

Teamwork is a very versatile character trait. It can be used in many parts of life, including sports, educational institutions and the workplace and the workplace. They teach you not only how to lead, but how to take directions from someone else. This is a trait that many people can use in their careers. They can handle stressful situations, and make quick decisions. Team sports teach teamwork, which is valuable to know in life.

Team sports help build character because they teach people discipline. Discipline is something that everyone should practice in life and working in a group it something that is necessary for any aspect in life. Some people say that nothing is learned in sports, but the lessons are not straight-forward. They are hidden within each sport and valuable in other parts of life. Team Sports are great for people to participate in, and can teach lessons that expand into the real world.

Participating in a sport can be a helpful way of reducing stress levels and increasing feelings of physical and mental well-being. Engaging in a solitary sport can also provide stress-relieving benefits. Regular exercise should be a part of everyone’s regular stress-management routine due to its numerous physical and mental rewards.

Whether you choose to engage in a group sport like football or dodgeball or a solitary sport/activity such as swimming or pilates, physical activity of any type stimulates your body’s production of neurotransmitters or brain chemicals known as endorphins. Endorphins are the chemicals responsible for the feeling known as “runner’s high.” A study published in 2008 in the journal ‘Cerebral Cortex’ found that elevated levels of endorphins account for the runner’s high feeling due to increased binding with opioid receptors in the limbic and prefrontal areas of your brain, which are responsible for positive changes in mood. Increased levels of endorphins cause a “feel-good” response, decrease pain and help relieve symptoms of stress and tension.

Sports and regular exercise provide physical and mental stress relief, which can help certain mental health disorders like depression and anxiety. Anxiety and depression are often triggered or exacerbated by excessive levels of stress. According to the ‘Mayo Clinic’, exercise can decrease mild symptoms of depression and anxiety and promote improved quality of sleep, a problem for many people suffering from mental health disorders.

For most people, socialization is a necessary part of any stress-management routine. According to an article on the ‘Volunteer Behavioral Health’ website, socialization helps stress relief by promoting the release of the hormone oxytocin, which increases feelings of relaxation and reduces anxiety. Participating in a group or team sport can provide a powerful medium for acquiring the stress-relieving benefits of social contact. By joining a team sport, you may feel more motivated to exercise regularly. You will also have the opportunity to make new friends and develop a feeling of camaraderie by working toward a mutual goal.

Engaging in a sport can help increase feelings of self-esteem and self-efficacy, which can significantly reduce your overall level of stress. According to the 'American Council on Exercise', regular exercise can help increase your feeling of self-worth, which can be a powerful mechanism for alleviating stress.

## 5. STIMULATING COMPETENCES AND ATTITUDES



The overriding emphasis on sports and physical activity is at odds with the motivations and drivers of many of the young people who are currently inactive. Sports policy should not just provide for young people, but should put them at the centre of the process. Sports policy makers need to better understand the needs and motivations of young people and structure delivery around these. In order to increase and sustain the numbers of young people taking part, sports policy should be rooted in an understanding of the motivations, interests, needs and lifestyles of young people.

From taking ownership of any programme, motivation for young people to attend sessions/classes will occur. Abraham Maslow's motivation theory states that self actualisation, esteem, belonging, love, safety and physiological needs will improve motivation (Petty, 2009).

Sport and exercise will encourage young people set goals whether it being to lose weight or get faster or stronger. Personal realistic goals will motivate them to achieve and can be used as stepping stones to success. It will benefit individuals to set short, medium and long-term goals so that they can review them regularly and adapt if need be. Playing team sports or exercising within groups promotes solidarity within that group as well as a sense of belonging. Players or participants within a team/group will share the same interests and goals and show unity by encouraging each other to achieve these goals. Support and co-operation is also developed through participation in team sports/activities which will then be transferrable to school/college life and working careers.

Sporting opportunities can develop and build character. The reasoning is that moral behaviour is acquired through social interaction that occurs through sport and physical activity conducted in a collective. Whether or not sport has a positive impact on character-building in an individual is highly dependent on the context of the programme and the values promoted and developed.

In this respect, physical education teachers, coaches, trainers or community leaders have a determining influence on a young person's sporting experience and on the degree of 'character-building' that can arise. Some research also indicates that 'physical activity outside of competitive sport' may be more effective in promoting mutual understanding and empathy among young people.

## 6. CREATING A BETTER BALANCE BETWEEN INTELLECTUAL AND PHYSICAL ACTIVITY IN SCHOOL LIFE



It is a widespread assumption that taking part in sport and other physical activity results in better academic achievement. The presumed (although unproven) mechanisms underpinning this relationship vary and include:

- › increased energy derived from fitness;
- › productive diversion resulting from time away from classroom;
- › reduced disruptive behaviour;
- › improved cognitive functioning as a result of increased cerebral blood flow or improvement of brain neurotransmitters; and
- › a relationship between motor and mental skills and increased self-esteem.

(Etnier et al, 1997; Lindner, 1999)

There are also some suggestive findings in relation to the benefits of sport and physical activity on cognitive functioning:

- › Thomas et al (1994) conclude that the benefits of regular exercise on cognitive functioning are small but reliable for reaction time, sharpness and maths;
- › Etnier et al (1997) found that both short-term and sustained exercise programmes resulted in small positive gains in cognitive performance (such as reaction time, perception, memory, reasoning);
- › Inspections of specialist Sports Colleges in England have shown early signs that examination results in physical education and other subjects are improving since physical education and sport have become central elements of the college's (Ofsted and the Youth Sport Trust, 2000).

A study carried out by Sport Wales called 'A vision for Wales' found that sport can help provide a context for acquiring life skills such as: the ability to perform under pressure; the ability to solve problems; the ability to set and achieve goals; and dedication and self-motivation. The salience of sports for many young people enables them to have indirect impacts on cognitive and emotional development, which may contribute to better academic performance. Sport provides employment, both directly and as a stepping stone. It can also provide participants with transferable skills, helping to enhance their employment prospects.

According to some research, intensive exercise improves the academic performance of teenagers. A study by the universities of Strathclyde and Dundee looked at 5,000 children, and found links between exercise and exam success in English, maths and science. It found an increase in performance for every extra 17 minutes boys exercised, and 12 minutes for girls. They found that physical activity particularly benefited girls' performance at science.

## 7. USE POTENTIAL OF SPORT FOR SOCIAL INCLUSION, INTEGRATION AND EQUAL OPPORTUNITIES

Department for Education figures published in August 2012 revealed that 968,000 16 to 24 year olds were NEET (not in employment, education or training) in quarter two of 2012—that's 16% of all young people in the age group. The characteristics of young people who are categorised as NEET are diverse, although those with few or no qualifications and/or with a health problem or disability are more likely to fall into the category.

There are many projects in the UK that target NEETs with the aim of getting them back into employment, education or training through sport participation. Many of these projects are lottery funded or funded by the government and have proven to be a success. In 2012, funding worth up to £126 million was made available to organisations across England, who were paid for getting 16- and 17-year-olds back into education or training.

The Peterborough Youth Offending Service successfully introduced a boxing project to give youth offenders a positive boxing experience that they can then continue with in the long term. All of the young people involved were defined as NEET, and in the words of the facilitator “had a lot of time on their hands”. In the past, the youth offending service had always tried to keep group activities to a minimum as they had often led to problems. The project was challenging as the young people had previously displayed challenging behaviour. Initially, attendance was poor but organisers persevered realising that changing the young people's minds about sport was likely to be difficult. The project broke new ground and brought together young people from different backgrounds to cooperate with each other. Motivation levels grew with each session and with that came mutual respect within the group. A total of 15 people were engaged of which 8 were retained and 3 are continuing to participate at a local partner club.

Leicestershire and Rutland Sport funded the Blaby Positive Activities referral scheme to prevent anti social behaviour in the area. A number of local agencies, such as the community safety team, probation service, Connexions, integrated youth service, youth offending team and Leicestershire Constabulary were seeking positive activities that would engage young people that were at risk of causing anti-social behaviour, typically those young people defined as NEET. As a result an 8 week Sportivate football project was delivered on Friday evenings that engaged with 22 young people and retained 9 (exceeding the original target). The local police were able to establish a positive relationship with the young people in a new environment. The project faced some challenges as local police officers decided to travel around the area to speak individually with the young people, and although this proved to be very time consuming it was also highly valuable.

Doncaster Rovers, with the support of South Yorkshire Sport, ran a Sportivate project as part of the Job Centre Plus pilot that aimed to increase participation in sport, develop personal skills and provide attendees with an insight into coaching. It was aimed at NEETs with a view for them to also learn skills which would help them to move towards training and/or employment. The project enabled the Doncaster Rovers development team to interact with the

participants in a relaxed and fun environment where the participants could develop their interest and skills. The course engaged 12 people of which 8 have expressed an interest in attending the Doncaster Rovers FC Level 2 Coaching Academy. This gives students the chance to develop their coaching skills and knowledge through a curriculum comprising vocational qualifications at level 1 and level 2 which helps to develop an understanding of the different employment opportunities available within football and the wider sports industry.

Previous evidence shows that sporting opportunities benefit NEETs, reduces youth crime and integrates school leavers and young offenders back into the community. Young people classified as NEET will feel a sense of belonging and learn new transferable skills through sport that will benefit them going back into education, employment or training. The aims of this “Kit” (pgs 5 & 6) will also enable them to do this.

## 8. LEARN HOW AND WHY TO EAT HEALTHY

Nutrition is key to providing energy for everyday activities, maintaining and developing a healthy body and mind, ensuring growth and development of muscles and bones (Geissler and Powers (2005). McArdle, Katch and Katch (1999) discuss the importance of nutrition, to set the foundations for physical performance, the fuel for biologic work and the chemicals for extracting and using food's potential energy.

A suitable diet is made up of Macro and Micro nutrients. Macro nutrients consist of carbohydrates which provide energy and fibre, lipids which provide energy and protein to build, repair and maintain the body. Micro nutrients are vitamins, consisting of important vitamins such as A,D,E,K,B's, Folic Acid, Niacin, Biotin, and minerals, consisting of Calcium, Potassium, Sodium, Iron etc. Micro nutrients facilitate energy transfer and tissue synthesis. To ensure dietary nutrition is adequate, there needs to be sufficient supplies of macro and micro nutrients in the correct proportion. There needs to be moderate food consumption of a variety of foods throughout the day. It's also important to ensure that wise choices take place (Geissler and Powers (2005). These include the choice of fats that aren't trans fats or saturated, good carbohydrates, reduction of salt and alcohol and portions of the recommended measure. A suitable diet also needs to have the correct calorific value for energy expenditure to ensure an energy balance occurs. Jeukendrup and Gleeson (1999) highlight that energy expenditure is the energy expended per unit of time, to produce power in Kilojoules (KJ) or Kilocalories (Kcal). Lastly, Water helps to diffuse gases, transport nutrients and gases, help waste products leave the body, lubricate joints, protect vital moving organs and control body temperature. Without it we would die, Jeukendrup and Gleeson (2004).

Energy expenditure is dependent on the following. Resting metabolic rate 60-75%, thermogenic influence of food consumed 10% and energy expended during physical activity 15-30% (Jeukendrup and Gleeson (1999).

When the energy intake exceeds the energy expenditure a weight gain can occur (3500Kcal = 1lb fat), if the energy intake is less, a loss of weight can occur, a negative effect, burn 3500Kcal – 1lb fat (Jeukendrup and Gleeson (1999). Looking at the calories expended from exercise, averaging 2070Kcal. This diet shows a good energy balance.

The British nutrition foundation state that in the UK, over 60% of adults are overweight or obese and there is concern about the number of children who are overweight. Being overweight increases the risk of developing diabetes, heart disease and some cancers in adulthood, and so maintaining a healthy weight is important for health. They recommend the eatwell plate which shows how foods can be classified into five groups shown as wedges of different size. These illustrate the proportions in which we should eat foods from these groups to provide a healthy diet that supplies all the nutrients our bodies need to work efficiently. You will notice that the foods in the two largest groups are all derived from plants.

From working off these recommendations and those of Fit Pal, an online fitness and diet tracker, this kit will give the students the knowledge to work out their energy expenditure and become able to produce diet plans to ensure the correct nutrients are consumed in the correct quantity.

## How do we make healthy choices?

This kit will also allow students to learn about the new labeling scheme ([www.nutrition.org.uk/attachments/article/805/food%20labelling%20resource\\_Dec%202014.pdf](http://www.nutrition.org.uk/attachments/article/805/food%20labelling%20resource_Dec%202014.pdf)) - which the UK have adopted called the traffic light system. The British Nutrition foundation state that the aim of food labels is to inform and guide you in the food choices you make. They will also look at the nutrition plate and reflect on their own diets.

## 9. ACTIVITIES IN THE KIT

### What is warm up?

A warm-up is usually performed before participating in technical sports or exercising. A warm-up generally consists of a gradual increase in intensity in physical activity (pulse raiser), a joint mobility exercise, stretching and a sport related activity.

#### Parts of Warm up:

The general warm-up.

##### Joint rotations:

fingers and knuckles, wrists, elbows, shoulders, neck, trunk/waist, hips, legs, knees, ankles and toes.

##### Aerobic activity

running, jogging, games, etc.

#### Warm-up stretching.

##### Static stretching:

back, sides (external obliques), neck, forearms and wrists, triceps, chest, buttocks, groin (adductors), thighs (quadriceps and abductors), calves, shins, hamstrings and instep.

##### Dynamic stretching:

involves a controlled, soft bounce or swinging motion

The sports specific warm-up.

The same movements that will be used during the athletic event but at a reduced intensity. Such sport-specific activity is beneficial because it improves coordination, balance, strength, and response time, and may reduce the risk of injury.

### Why is important to warm up?

- › Prepare the body and mind before exercise.
- › Increase the body's muscle temperature to make the muscles loose, supple and pliable.
- › Prepare the muscles, tendons and joints for more strenuous activity.
- › Reduce the risk of injury.
- › Increased speed of contraction and relaxation of warmed muscles.
- › Dynamic exercises reduce muscle stiffness.
- › Greater economy of movement because of lowered viscous resistance within warmed muscles.
- › Facilitated oxygen utilisation.
- › Facilitated nerve transmission and muscle metabolism at higher temperatures.
- › Increased blood flow through active tissues as local vascular beds dilate, increasing metabolism and muscle temperatures.

## What is cool down?

Cool-down is an easy exercise that will allow the body to gradually transition from a post-work-out state to a resting or near-resting state.

### Parts of Cool-down:

Gentle exercise: jogging or walking.

Stretching: Static stretching and PNF stretching is usually best.

Re-fuel: Both fluid and food are important.

## Why is important to cool down?

- › Promote recovery and return the body to a pre exercise, or pre work out level.
- › Help with the post exercise muscle soreness that is usually experienced the day after a tough work out.
- › Assist your body in its repair process.
- › Helps all this by keeping the blood circulating.
- › Prevent blood pooling and also removes waste products from the muscles.
- › Aid in the dissipation of waste products - including lactic acid.
- › Reduce the potential for Delayed onset muscle soreness (DOMS).
- › Reduce the chances of dizziness or fainting caused by the pooling of venous blood at the extremities.
- › Reduce the level of adrenaline in the blood.
- › Allows the heart rate to return to its resting rate.

The Body and Soul kit focuses on a number activities which will help strengthen the body and soul. Listed below are the activities and reasons for them.

## Activities

1. Basketball: 7 sessions
2. Core stability and body balance: 5 sessions
3. Dodgeball: 3 sessions
4. Pilates and Circuit: 3 sessions
5. Quick Picks: 4 sessions

The activities are designed to enable the trainer to pick an activity card and deliver it to a group of individuals with minimal equipment and in small areas. Remember to include a general introduction on Nutrition (2 sessions), you will find in this Supporting Manual as Annex 1.

## Pilates/stretching/movement

Three very simple stretching and movement sessions have been designed for individuals to carry out with a group of students. Each session can be adapted for the skills and needs of the individual.

Pilates is an exercise which helps develop the inner core muscles and helps to focus on mind and soul. These are the main areas in which this kit is trying to develop. From carrying out the sessions students posture, inner strength and mindfulness will grow.

## Dodgeball

Within the kit you will find 3 dodgeball sessions with different sessions plans for each one. Dodgeball is a team sport and has been included in the kit to help develop confidence, teamwork, decision making and concentration, as well as the physical conditioning it offers.

## Circuit training

Three weeks of circuit training classes.

Session one is a circuit which has been planned and can be delivered as on the activity card. Session two and three is a circuit which the students have designed themselves and can take lead on.

The kit session plans are designed to encourage fundamental movement patterns which are needed for everyday life and help improve good posture. The exercises will help with everyday movement skills, squatting, lifting, stretching, carrying and will help with body imbalances. Poor posture is due to an imbalance of muscles and can lead to abnormal weight being placed on our joints and stresses our muscles and tendons. Poor posture can lead to dysfunctional movement patterns and disease.

## Nutrition

The session plans within the kit will enable the students to learn how and why to make the correct food choices and design their own diet plan, according to their own energy expenditure.

Session 1 and 2 will look at educating the students about the importance of nutrition and its benefits, calorific value, food groups and making the correct choices from the food plate.

## 10. EVALUATION



At the beginning and end of the kit we would like each participants to undergo an evaluation. This will be given as a form of questionnaire and can be found in the kits appendices. Their will be a healthy eating questionnaire and lifestyle questionnaire.

The information obtained will be used to evaluate the kit and to see how effective the kit was in reaching its main goals outlined at the start of this manual. All information will be kept confidential.

## 11. LÉGENDA



### 11.1 Introduction

Inside each kit you will see for each session different colours. In fact, we decided to create a common legenda for all the 3 kits divided per colours, red, yellow and green.

Here below you can find the specific division created for the Kit Body&Sport, in order to show the approachability for the students of each session proposed.

### 11.2 Explanation of the different colors

#### RED

The proposed activities do not have inherently high learning difficulties, with the exception of Pilates which requires a thorough knowledge of the subject specification beyond the ability to evaluate the different levels of learning for students in order to propose the most suitable exercises.

Besides being a very specific one-run method is required to be able to engage students.

#### YELLOW

The average level is represented by both the difficulty of the exercises run by both the need to have trained staff on average (knowledge of the physiology of the movement).

#### GREEN

The simplest level is the one that offers a low degree of difficulty in performing exercises and activities can also be carried out by unskilled personnel.

## 11.3 Approachability of the developed units



### Unit 1 BASKETBALL

This unit can be really interesting for the students, male or female, in fact due to the easy level of the sessions and their attractiveness it will be easy to use with all kind of students. Some theoretical sessions can be difficult to teach, but in a main overview this unit is adaptable to all situations.



### Unit 2 CORE STABILITY

The importance of function of the central core of the body for stabilisation and force generation in all sports activities is being increasingly recognised. In this Unit you can find different sessions of medium and easy level, really adaptable to all kind of classrooms.



### Unit 3 DODGEBALL

The game and its rules are easy to learn and can be run with each class group both male and female. On the stretching session it remains valid the concept of the knowledge of the correct execution techniques and instructor training.



### Unit 4 PILATES

The difficulty of the sessions are represented by the high specialization of the activities that require highly qualified personnel. Also it will require a high capacity for involvement mainly to include in male teens generally reluctant to this type of activity.



### Unit 5 QUICK PICK

Some pills are a high difficulty in view of knowledge of cardio respiratory physiology and of 'training methodology: the teacher must be able to evaluate and customize the task according to the individual abilities of each student.

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**Health** - A state of complete physical, mental and social well being and not merely the absence of disease and infirmity (The World Health Organisation).

**Lifestyle** - Refers to the way a person lives and reflects an individual's attitudes, values and behaviours.

| 1<br>Physical activity                               | 2<br>Stress                                                       | 3<br>Diet                                                                           |
|------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Recommendations, guidelines and associated benefits. | Health risks of excessive stress levels and how to reduce stress. | Benefits of a healthy diet, health risks of poor nutrition, recommended guidelines. |

## 1.2 The importance of exercise

### Physical activity (lesson 1)

- › As well as reducing stress physical exercise can also increase a person's basal metabolic rate by around 10 percent meaning the food will digest quicker and you will hold it for a less period of time making you feel better on the inside.
- › By doing exercise you are also reducing unnecessary weight that you may carry helping you to lose weight.
- › The harder the intensity the exercise is the more calories you will burn. More importantly, it will lower your risk of developing serious illnesses.

[www.youtube.com/watch?v=RQupiauyZYE](http://www.youtube.com/watch?v=RQupiauyZYE)

(Tony Horton talk)

### Recommendations

- › At least 30 minutes of moderate-intensity physical activity on five or more days a week is all that you need to start reaping the health benefits.
- › Children and young people need to be active for at least an hour every day, for example, through active play, sport or walking to and from school.
- › Limited or no physical activity can have serious health consequences.

"If exercise were a pill, it would be one of the most cost-effective drugs ever invented"

Dr Nick Cavill

## Benefits of exercise

- › Better health
- › More energy
- › \*Reduced stress and better self esteem\*
- › Stronger bones and muscles
- › Better balance, strength, suppleness and mobility
- › Improved sleep
- › Improved body shape
- › Reaching and maintaining a healthy weight
- › More social opportunities
- › A sense of achievement
- › More independence in later life

[www.nhs.uk/Livewell/fitness/Pages/Whybeactive.aspx](http://www.nhs.uk/Livewell/fitness/Pages/Whybeactive.aspx)

(NHS)

Naperville  
Central High  
School

- › Neil Duncan, Phil Lawler – mandatory P.E in Illinois, one of the most obese states in USA.
- › ‘PE4life’ – teaches how to look after yourself.
- › Found that **exercising increased academic results.**
- › It improves: **brain function, attention span, self esteem and social skills. It also decreases anxiety.**
- › Fitness, more than sports, gives pupils something to personally aim for.
- › ‘We create the brain cells the other teachers fill them’.

## Why Exercise?

- › Why are people not exercising?
- › What is the solution?

[www.youtube.com/watch?v=0DJ6KV0kJww](http://www.youtube.com/watch?v=0DJ6KV0kJww)

[www.youtube.com/watch?v=Qi8BJDndMgs](http://www.youtube.com/watch?v=Qi8BJDndMgs)

(Tony Horton talks)

[www.youtube.com/watch?v=YktAmH5hn8c](http://www.youtube.com/watch?v=YktAmH5hn8c)

## Stress (lesson 2)

Constant stress raises adrenaline level, cholesterol levels and can lead to coronary heart disease and weight gain. It is very important to try and reduce our stress levels and one of the most effective ways this can be done is through regular exercise.

The health risks associated with stress are:

- › Hypertension (high blood pressure)
- › Heart attack
- › Angina

- › Stroke
- › Ulcers
- › Exhaustion
- › Illness- immune system suppressed
- › Depression
- › Colitis (inflammation of the large intestine)

Open the following link to see the proven psychological benefits of regular exercise:

<http://greatist.com/fitness/13-awesome-mental-health-benefits-exercise>

## 2.2

## The importance of a healthy diet

### Diet and healthy eating (lesson3)

A healthy diet will ensure a balance between the nutrient value that you consume and the energy that you use for muscular activity.

Fruit and vegetables are part of a balanced diet and can help us stay healthy. That's why it so important that we get enough of them. This is because different fruits and vegetables contain different combinations of fibre, vitamins, minerals and other nutrients that help the body.

Salt intake, saturated fats and fluid intake are also very important to consider as part of a healthy diet.

FOOD SUPPORTS THE FITNESS AND VISA VERSA – THEY ARE ONE NOT SEPARATE

[www.ted.com/talks/jamie\\_oliver.html](http://www.ted.com/talks/jamie_oliver.html)

(Jamie Oliver talk)

### Benefits of a healthy diet

- › Higher energy levels
- › Improved sleep and concentration
- › More stamina
- › Improved skin tone and texture
- › Longer lifespan
- › Decreased occurrence of illness
- › Shorter duration of illness when it does take place
- › Weight loss
- › Better hair
- › Stronger heart
- › Improved digestion
- › Less acne
- › Possible prevention of diabetes
- › Regular bowel movements
- › Decreased risk of heart disease
- › Decreased risk of cancer

Image from: [www.nhsdirect.wales.nhs.uk/lifestylewellbeing/Theeatwellplate](http://www.nhsdirect.wales.nhs.uk/lifestylewellbeing/Theeatwellplate)

## Effects of poor nutrition

Poor nutrition is harmful to physical and emotional well-being. Many chronic diseases can result from a poor diet. One of these is **obesity**.

An increasing problem in the UK, obesity is defined as having a body mass index (BMI) of 25 or more. Being overweight puts people at risk for developing a host of disorders and conditions, some of them life-threatening.

A diet poor in nutrition jeopardizes your health. It increases your risk of conditions such as *Type 2 diabetes, heart disease, high cholesterol, obesity, high blood pressure, osteoporosis and cancer and gout.*

Poor nutrition also affects your thinking processes and the way that your body functions generally. It can result in *increased body fat, slower mental problem solving, lower core strength, slower muscle response time and decreased alertness.*

## Depression, eating disorders, stress and fatigue.

Read more: The Effects of Poor Nutrition on Your Health | eHow.com

[www.ehow.com/facts\\_5566106\\_effects-poor-nutrition-health.html#ixzz1XB96Lj8J](http://www.ehow.com/facts_5566106_effects-poor-nutrition-health.html#ixzz1XB96Lj8J)

## Strategies for healthy eating

- › Choose the correct foods from the 'eat-well plate' or 'food guide pyramid'
- › % of fat, carbs and protein for a healthy diet
- › Recommended Kcal for men and women
- › Timing of food intake
- › Number of meals – small and often
- › Tips for eating out
- › How it is eaten
- › Food preparation
- › Supplements
- › Help videos on YouTube
- › What is BMI and how can it be used as a predictor for weight management?

Keep track of your energy intake and expenditure by using 'myfitnesspal' and receiving diet tips based on your current diet.

[www.myfitnesspal.com/](http://www.myfitnesspal.com/)

# QUIZ RELAY RACE QUESTIONS

## Healthy nutrition and correct life styles

How would you rate yourself on how healthy you are in the following

①  
Diet

|            |   |   |           |   |
|------------|---|---|-----------|---|
| 1          | 2 | 3 | 4         | 5 |
| being good |   |   | being bad |   |

②  
Fitness

|            |   |   |           |   |
|------------|---|---|-----------|---|
| 1          | 2 | 3 | 4         | 5 |
| being good |   |   | being bad |   |

How many portions of fruit and vegetables do you eat each day?

---

Do you pick the healthy choice when buying snacks from a shop?

Si ☐ No ☐

How many portions of fruit and vegetables do you eat each day?

---

What would you like to change about your diet/nutrition?

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If you would like to express any other areas in your lifestyle you hope these sessions could help with, please state below.

Thank you for filling out this lifestyle questionnaire.





# BODY & SPORT



Special Sport for Special People



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AltéO



GRAD PULA  
CITTÀ DI POLA