



**Derby City
Healthy Schools
Adolescent Back Pain
Prevention Enhancement**

Currently, Adolescent Back Pain (ABP) is largely unrecognised but evidence suggests that this apparent modern day phenomenon is a worsening trend (Hakala et al 2002). This document explains:

1. Why adolescent back pain prevention is such an important topical issue and why it needs addressing
2. The key Government documents and initiatives addressed by this Enhancement
3. Actions to consider when addressing ABP Prevention:
 - i) Advice and practical solutions for use in schools, using appropriate language and core messages
 - ii) Information on the Airedale Back Care for Children health education programme. This acknowledges children need to know why and, importantly, how to look after their backs
 - iii) The close links between obesity and reduced physical activity and back pain, as well as the effect of emotional health and well-being
 - iv) Ways to ensure 'universal' prevention for all children through school activities
 - v) Ways to engage parents / carers
 - vi) Recommendations for an Adolescent Back Pain Prevention Action Group and Action Plan

1. Why adolescent back pain prevention is such an important topical issue and why it needs addressing

Research shows that alarmingly, as many as 50% of 14 year olds have now experienced back pain. It causes absence from school, low self esteem, difficulties partaking in sport, poor concentration and can affect future potential. Sufferers are four times more likely to experience back pain as adults. Arthritic spine changes have been seen in some 15 year olds. Problems can begin as early as primary school age as poor postures and habits develop.

Back pain costs the UK economy around £10 billion per year in lost productivity, disability and sickness benefits. Adults, by law, must receive training on manual handling / back care in the work place. However, children are not routinely offered this opportunity. The incidence of adolescent back pain is increasing. Growing spines are being affected by changing lifestyles. Reduced physical activity and increasing obesity are contributing to the problem in particular. If not addressed, significant negative consequences for individuals and the economy may result in the future. By having an appropriate 'whole school approach' on ABP Prevention, this increasing trend can be positively influenced. Support, information, training and resources are available from a Chartered and State Registered Paediatric Physiotherapist to help you deliver this Enhancement.



2. Key Government documents and initiatives addressed by this Enhancement

The Healthy Schools Enhancement for Adolescent Back Pain Prevention considers two key Government documents and is evidence based. The Children's National Service Framework (DOH 2004) advocates "promoting health and well-being, identifying needs and intervening early". Whilst parents have a significant influence over a child's lifestyle habits, schools have an important part to play by influencing healthy behaviour choice before a young person develops back problems and can ensure a child's work place is conducive to a 'back friendly' lifestyle.

"Every Child Matters" (DfES 2003) states that children should "be healthy, be safe, enjoy and achieve through learning, make a contribution to society and achieve economic well-being". The Derby City Healthy Schools Enhancement for Adolescent Back Pain Prevention addresses these objectives by offering school children the choice of a more 'back friendly' lifestyle by:

- Increasing individual awareness of body anatomy and biomechanics (i.e. what is spinal health and why it is so important)
- Educating children regarding posture awareness and back care (i.e. how to reduce the risk of acquiring back pain, safer lifting/load carrying principles, basic ergonomics)

- Promoting an active lifestyle and healthy eating (i.e. staying fit improves co-ordination, keeps joints flexible and supporting muscles strong, controls weight and boosts self-esteem. Healthy eating reduces spinal stress by keeping weight controlled and enables the body to repair itself)
- Encouraging students to act as 'ambassadors' for health promotion in the wider community

Healthy Schools Status should be the first step in back pain prevention. This Enhancement draws on two Healthy Schools themes you have already achieved: healthy eating and physical activity – both are key factors affecting a child's predisposition to ABP. However, it can be argued that PSHE and emotional health and well-being are also relevant and influence ABP, as improved self-esteem leads to confidence and body awareness. This increases the chances of standing tall and upright, helping to protect the back. It can therefore be demonstrated that all four themes are associated with this enhancement.



3. Actions to Consider in Addressing Adolescent Back Pain Prevention

i) Advice and practical solutions for use in schools, using appropriate language and core messages

It is important to ensure a school promotes a culture where pupils, staff, parents / carers are encouraged to help each other adopt a healthier 'back friendly' lifestyle. Schools are advised to stress the importance of a 'back friendly' lifestyle. Being 'back friendly' means that activities are carried out in such a way as to reduce the risk of damage to the spine. By approaching everyday tasks in a way that facilitates this healthy behaviour, our backs are more likely to stay pain free. Some suggestions are:

- **Reducing the load carried** – the recommended weight for a child to carry is 5% of their body weight, the maximum 10%.
- **Spreading the load** – sharing textbooks, keeping secondary work in A4 files which allows last term's work to stay at home
- **Timetabling** – try to avoid more than one lesson per day that requires heavy, bulky equipment (e.g. sports kit, cooking ingredients, violin), encourage movement between lessons into different classrooms or play areas
- **Safe storage areas / lockers / pegs** – encourage their use wherever possible. Younger and smaller children are most at risk so consider this on allocation. Consider a 'buddy system' of locker sharing. Allocate a cupboard for Home Economics ingredients and PE kit etc.
- **Good Posture** – this is not just a case of "sit up straight", but a combination of correct spine alignment and environmental influences. These enable us to perform our everyday tasks more efficiently whilst minimising the risk of injury to the spine. Furniture needs to accommodate children of different heights. Feet should touch the floor with the three natural spinal curves maintained. Non-perfect existing furniture can be easily adapted with a block under the feet, a foam seat wedge and sloping desk wedge. Height adjustable furniture available (as in most of Europe) would be the optimum solution, with ergonomically designed stools for certain subjects. In 2006, BSEN1729, the European standard for classroom furniture, was certified in the UK. Advice on all aspects can be sought

from a chartered paediatric physiotherapist. Movement – the spine does not like prolonged positions, especially sitting. Follow the 30:30 rule and allow a 30 second "stand and wriggle" every 30mins. Limit floor sitting for primary aged children to a maximum of 10 minutes at one time, consider floor-sitting wedges / cushions. Encourage physical activity during breaks. Ergonomics – consider the position of each pupil's workstation to minimise twisting / slouching of the spine;

Some examples of poor posture which cause spinal stress – these can be related to all members of your School community and are preventable



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- **Safer Carrying** – Bags are an important issue. A well fitted rucksack, packed with heaviest items first, worn with straps on each shoulder is preferable. A ‘mono strap’ bag is a good alternative if worn correctly across the body. Consider an ergonomically designed school bag. Advice is available from a chartered and state registered physiotherapist. During preparatory visits to secondary schools or when Y6 pupils are visiting, mention these points to pupils and parents / carers, i.e. before they buy their school bag over the Summer break. For younger children, a light bag held in each hand (e.g. book and lunch bags) is an acceptable option.
- **Safer Lifting** – Lifting should be discouraged in smaller younger children. Be aware when asking pupils to assist with moving furniture or equipment (e.g. TV, video, chairs), mention to parents / carers if pupils often carry / pick up their younger siblings. Follow safer lifting principles when lifting and carrying ALL items (Get close to the object. Keep feet apart. Bend at the hips and NOT the back. Get a good grip. Avoid twisting. Remember to take the same care when putting object down).

ii) Information on the Airedale Back Care for Children Health Education Programme

Acknowledge that children need to know how and why to look after their backs. Lockers, bags and chairs are all important issues but understanding how the spine works and how to avoid injury are vital factors in reducing the risk of back pain. The Airedale Back Care (ABC) for Children Programme is a timely, effective and memorable campaign developed as a response to this need. It aims to:

- “Provide children with the information and skills required to facilitate the adoption of positive lifestyle behaviours that can reduce the risk of developing an unhealthy spine”
- “Facilitate a back friendly school environment”

The ABC Programme consists of four fun, interactive workshops for children in Years 2, 5, 6 and 7. Active discussion, hands-on learning and group problem solving are encouraged. Posture, safer lifting and carrying school bags are just some of the subjects discussed. Pupils also have the opportunity to touch and move a model spine. Older children are shown a computer animated video “Watch Your Back” about Skelly the Skeleton and his Granddad, whilst younger children enjoy Skelly’s circle time story.

Each structured 50 minute workshop, accompanied by comprehensive supporting material, addresses each of the five core ABC concepts (philosophy, anatomy and physiology, ergonomics, good practice and exercise) in an age appropriate way. Sessions increase each child’s understanding of back care and importantly, the skills required to reduce the risk of acquiring back pain are taught. Although not currently evaluated as part of the ABC Programme, back care education workshops can be tailored and are available to benefit pupils in each school year, from Reception to Year 11.



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Resources provided with each ABC Workshop

A School Resource Pack is provided. This includes a summary of the workshops, glossary of terminology used, an overview of relevant anatomy, physiology and ergonomics, along with follow-up work for each year group (challenges, quizzes and problem solving activities) - this information can be used by staff in other subjects (science, PSHE lessons), awareness weeks, end of term or holiday club activities etc.

An Information Sheet on better ‘back friendly practice’ in schools is also provided, along with a certificate demonstrating each school’s commitment to its pupils and the Airedale Back Care for Children Programme. A staff ‘pigeon-hole’ letter explaining the ABC Programme in each school and to raise awareness is also given to distribute amongst staff members.

Each pupil receives a colourful Skelly postcard summarising five key points to remember and a Parents’ Information Leaflet to take home. In addition, each child is also given an ABC health promoting pen or pencil, thanking them for listening and being involved.

iii) Links between physical activity, obesity, emotional health and well-being and back pain

It is important that schools facilitate both a healthy diet and increased physical activity as obesity and reduced physical activity increase the risk of acquiring ABP. In addition, these two aspects need to be supported by an environment that promotes positive emotional health and well-being. You may want to consider facilitating a "Back Care Awareness" project in school, this could be run during "National Back Care Awareness Week" during October each year or over a Half Term using published available material, or as part of a Healthy Living Week.

Children / young people, staff and parents / carers should feel enabled to make positive changes and adopt a healthy back friendly lifestyle e.g. carrying bags and sitting correctly.

Always stress the positive – "happy back", "enjoy being active", "feel good and tall" and allay common fears – mild, intermittent backache is a normal part of life. However, all complaints of back pain should be reported home and back pain in children lasting longer than 2 weeks should always be referred to a GP.



iv) Ways to ensure 'universal' prevention

All children are at risk of acquiring back pain, although some are more predisposed to the condition than others. There are a number of ways that schools can ensure their preventative work is 'universal' to encompass all children, for example:

- Keep your School Physical Activity and School Food Policies up-to-date and relevant to school activities. Formulate a School Back Care Policy and continue to update it
- Before lessons begin – Advise all pupils to sit back on a supportive chair with feet on the floor or footrest. Encourage short breaks (30:30 rule) so the body can loosen up and prevent stiffness. When using a laptop or PC, ensure each pupil's screen is at a suitable level and place the key board / mouse within easy reach)
- Consider the possibility of running lunchtime or after school Pilates / Yoga classes, or a class for children and families.
- Encourage all children and young people to take part in a healthy back friendly challenge. For example: rewards/stickers given and received by pupils for correct wearing of school bags, permission to correct teachers' lifting technique (i.e. when moving TV, bin, picking up bag etc), spot checks on body weight: weight carried ratio, sponsored correct bag carrying to benefit school funds, challenge teachers – bag carrying and to sit on pupils' chairs for the week, with comments about their back feedback.
- Follow the ABC Pledge: "Actively promote good back care. Be a back friendly school. Complaints of back pain reported home".

v) Ways to engage parents / carers

Parents are the main influence on their children's lifestyles. A key aspect of the whole school approach is engaging parents and carers. In order to be effective at reducing ABP, parents / carers need to be aware of available strategies which can help at home, for example:

- Engage children / young people and parents / carers in the changes being made to the school environment and highlight benefits (improved health, concentration, less potential absence from school, improved body awareness and self esteem, reduced risk of pain now and in the future). Help families understand that time at school is only a fraction of their child's time and encourage them to make simple changes at home which can make a considerable difference (e.g. less time sitting at a computer in a poor posture, planning after school activities etc so heavy items can be dropped off the night before and not carried by child, repacking bags each night so only carry what is needed each day, encourage good school bag and shoe choice and ensure that complaints of back care are reported etc.;
- Help families understand that weight control, ensuring a good level of fitness and safer load carrying / lifting are relevant to all members of the family and will have a beneficial effect on reducing the risk of acquiring back pain. Supply families with free published information leaflets available from the Chartered Society of Physiotherapy and "the charity for healthier backs", BackCare.
- Get parents involved in the development of their school's back care and active travel plans
- Arrange activities for children and young people and families to do together, such as back care awareness afternoons, displays at school, competitions designing ergonomic furniture, bags, car seats, gardening tools, shopping trolleys etc based on principles learnt, question and answer sessions chaired by school staff and a chartered and state registered physiotherapist
- Organise competitions, family and sponsored events to celebrate positive back friendly changes made etc, perhaps with appropriate rewards donated by back care companies to recognise involvement e.g. ergonomic stool for home or perhaps a bicycle to encourage physical activity etc

vi) Adolescent Back Pain Prevention Action Group and Action Plan

In order to provide evidence and to achieve Enhanced Healthy School Status in Adolescent Back Pain Prevention, it is recommended an ABP Prevention Action Group be set up within your school, to formulate and implement an ABP Prevention Action Plan, using the above actions to guide you. Support and advice will be provided by a Chartered and State Registered Paediatric Physiotherapist, Full Professional Member of BackCare and ABC trained healthcare professional.

a) Adolescent Back Pain Prevention Action Group

- Identify the key people in your school that are central to addressing the back pain issue and arrange a meeting. Consider:
 - Are there organisations or external individuals that could help you? E.g. BackCare, Chartered Society of Physiotherapy, Children First Physiotherapy – local ABC trained health care professional, Pilates / Yoga teachers?
 - What internal individuals could you involve? (e.g. PSHE coordinators, PE / Physical activity coordinator, teaching assistants, school nurse, school sports coordinator, catering supervisors, PTFA, children, parents / carers)
 - Are there other key people able to make decisions about resources and funding that need to be engaged? (e.g. senior PCT / LA staff, governors, resources from "Building Schools for the Future" to improve each child's work place).



- Consider national back pain statistics and local physical activity and obesity data, in particular, Derby Primary Care Trust weighing and measuring data. Discuss how it could be used effectively to focus activity.
- Other matters for consideration: determine how you will focus activity. Consider the above recommended actions. What resources do you have available from wider partnerships? What time do you have available? What skills do you have available? What skills can be obtained locally e.g. through the Healthy School Programme, local ABC trained healthcare professional, or chartered and state registered physiotherapist?

To achieve this Enhancement, the Action Group must meet regularly to review progress (at least 6 times over an academic year) and show evidence of progress. This Enhancement may take 12-18 months to complete.

b) Adolescent Back Pain Prevention Action Plan

- Agree steps to take, by whom and within what time frame;
- It is a requirement that a Chartered and State Registered Paediatric Physiotherapist, in conjunction with your Healthy Schools Supporter, signs off the initial Action Plan.
- Assessment and achievement of this Enhancement will be through the agreed and regularly reviewed Action Plan. This will ensure evidence is provided and the essential minimum actions, stated below, have been addressed. Further evaluation of success can be through pupil and staff questionnaires to determine back care awareness, before and after completion of the Enhancement.

The Action Plan should focus on the needs of the whole school community, and therefore each plan will be different. However, **to ensure some degree of consistency and quality across the City, the following minimum actions must be addressed within the Action Plan to achieve this Enhancement:**

- Up-to-date School Food Policy. Evidence of food education and healthy eating taught to pupils throughout the school.
- Up-to-date Physical Activity Policy. Evidence of ways to encourage pupils to obtain the recommended one hour of physical activity each day.

- Marketing of positive health-promoting, 'back friendly' messages within school.
- Encourage all children and young people / classes to take part in a 'back friendly' challenge with support from parents / carers (e.g. identify the positive change they will make, such as limiting what they carry in their school bag, 30:30 stretch and wriggle when on the computer at home, sponsored school bag worn and packed correctly, walking all / part of the way to school three times a week, healthy packed lunch three times a week). Feedback in a whole school assembly. Organise family events to celebrate these challenges
- Encourage all staff to take part in a 'back-friendly' challenge (e.g. awareness of posture and safer lifting for a week, after a lunchtime interactive training session with a chartered and state registered physiotherapist or not using the TV remote control for a week). Feedback to staff and pupils
- Involve parents / carers at parents' evenings, lunchtime or after-school sessions to raise awareness of 'back friendly' lifestyle choices. Consider a teaching session to explain the growing incidence of ABP and strategies to reduce it, run family back care education and exercise classes. Also, raise awareness of links between adolescent back pain and reduced physical activity and obesity
- Involve children in ABC and back care education workshops. Follow up with 'back friendly' lifestyle projects at school. (e.g. poster competition, back care exercises in class each morning or in P.E., nominating 'back friendly' monitors to comment on good and bad postures and bag carrying)
- Involve children, staff and parents / carers by looking at ergonomics within school and encourage feedback (e.g. how to sit correctly at a computer, how to position pupils so that prolonged and recurrent twisting to view the board / teacher are reduced, consider floor sitting for very young pupils and posturally correct furniture to benefit each individual child – considering the new European standard for school furniture BSEN 1729). Arrange a trial of furniture and products currently available to primary and secondary aged pupils that encourage natural and healthy spinal alignment

- Involve children, staff and parents / carers by looking at school bags and encourage feedback (e.g. design, carrying, packing and safe loading limit). Arrange a trial of different school bag options now available
- Look at ways to allocate lockers, safe storage areas and pegs for children in most need
- Formulate a School Back Care Policy
- Work with the community to ensure that 'back friendly' health promoting messages for children and young people are raised in the wider community (e.g. pupils feeding back information to external groups to which they belong – Rainbows, Beavers, Brownies, Cubs, Scouts, sports clubs, youth groups; possible media interest promoting your School community's achievements, contacting your local MP with information gathered)

References

- Airedale Physiotherapy Clinic (2007) – “The Airedale Back Care for Children Programme Manual”
- Airedale Physiotherapy Clinic (2007) – “ The Airedale Back Care for Children Programme - What, When and How!” – Manual update
- Chartered Society of Physiotherapy (2006) - “Backs for the Future” Leaflet
- Chartered Society of Physiotherapy (15/10/06) – “Teenage lifestyles causing back pain, warn physios”
- BackCare (2007) - “ A Guide to Protecting Young Backs” Leaflet
- BackCare (2006) – “Back Pain in Children and Young People - an evidence-based review of current thinking on causation, prevention and management” booklet
- BackCare (2005) – “Your back in the Future” booklet
- Department of Education and Skills (2003) – “Every Child Matters”
- Department of Health (2004) – “The Children's National Service Framework”
- Hakala P. et al (2002) – “Back, neck and shoulder pain in Finnish adolescents” BMJ.325

Useful websites for Information / support

- Airedale Physiotherapy Clinic – ABC Programme information (www.airedalephysioclinic.co.uk)
- BackCare – The Charity for Healthier Backs (www.backcare.org.uk, Tel: 0845 130 2704)
- Chartered Society of Physiotherapy (www.csp.org.uk)
- Children First Physiotherapy (www.childrenfirstphysio.co.uk)
- Ergonomic School Bags- latest research provided (www.ergonomicschoolbags.co.uk)
- Q-Learn - ergonomically designed school furniture (www.qlearn.co.uk)
- Watch Your Back - an animated spinal workout for girls and boys (www.w-y-b.info)

