



**BRITISH  
WEIGHT  
LIFTING**

# **British Weight Lifting Position Statement: Youth Weightlifting**

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**British Weight Lifting Position Statement: Youth Weightlifting****Authors****Rich J. Kite; BSc, BWL Coach,**

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## Preamble

The sport of Olympic Weightlifting (known as Weightlifting throughout) has become increasingly popular for all ages. The involvement of youth in Weightlifting is frequently questioned in regards to its safety. As the National Governing Body for the sport of Weightlifting in Britain, British Weight Lifting fully endorses youth Weightlifting and affirms that the sport is suitable and appropriate when delivered and supervised by qualified professionals as part of a well-rounded training regime. This standpoint is fully supported by numerous scientific and medical research papers that have previously attempted to highlight the many benefits Weightlifting offers to youth, and to dispel the misconceptions associated with this form of training.

## Operational definitions

- The term “*youth*” represents both children and adolescents. Children are further defined as girls and boys from birth up to the approximate ages of 11-13 (Tanner stages 1 and 2). Adolescents are further defined as up to the approximate age of 18 (Tanner stages 3 and 4) following childhood.
- “*Resistance training*” is a mode of exercise where a variety of resistive loads must be overcome, to enhance health, fitness and physical performance. This includes the use of free weights, resistance machinery of varying forms, resistance bands and chains, medicine balls, bodyweight resistance and manual resistance exercises (this list is not exhaustive).
- “*Weightlifting*” is defined as the sport of Olympic Weightlifting that involves the performance of the snatch, clean and jerk and associated exercises.
- The term “*qualified professional*” represents an individual who (i) has attained a recognised qualification relevant to the field of youth Weightlifting (e.g British Weight Lifting coaching qualification; (ii) has the underpinning knowledge of paediatric exercise science to programme and deliver sessions appropriate to the developmental needs of the participants, including when to progress or modify sessions; and (iii) has an appreciation of the different styles of communication and delivery required to safely and effectively teach youth of all ages and abilities.

## **Supporting Evidence**

Despite previous misconceptions, it is now recognised by global health authorities and leading strength and conditioning and sport science associations that Weightlifting as a form of resistance training, is beneficial to youth when delivered, programmed and monitored by a qualified professional<sup>2,4,9,15,16,17</sup>. The National Strength and Conditioning Association (NSCA) position statement on youth resistance training concluded that youth resistance training, when led by suitably qualified professionals, is beneficial for both health and physical performance and is effective in reducing the risk of injury<sup>9</sup>. More recently, the UK Strength & Conditioning Association (UKSCA), published a position statement on youth resistance training, which reinforces the potential benefits of Weightlifting and its associated movements for youth<sup>16</sup>. Additionally, the British Association of Sport and Exercise Sciences (BASES), the professional body for sports and exercise sciences in the UK, recently produced an expert statement on youth trainability, stating that resistance training is safe and effective if delivered by qualified professionals<sup>1</sup>. Public Health England has also released a document outlining the benefits of strength training and its appropriateness within youth development<sup>5</sup>. However, perhaps the most significant document within the paediatric literature is the recent International consensus statement on youth resistance training, which supported the use of Weightlifting in youth populations<sup>18</sup>. This position statement was supported by 10 of the world-leading authorities from the fields of sport and exercise science, strength and conditioning and sport and exercise medicine.

## **Injury risk of youth Weightlifting**

Significant amounts of recent research demonstrate the benefits of youth resistance training, with a growing interest in the specific merits of youth Weightlifting<sup>18</sup>. The dangers that have been identified with resistance training (inclusive of Weightlifting)

**Table 1. Risk and modifications for youth resistance training (Faigenbaum, 2011).**

<b>Risk Factor</b>	<b>Modification by Qualified Professional</b>
<i>Unsafe exercise environment</i>	Adequate training space and proper equipment layout
<i>Improper equipment storage</i>	Secure storage of exercise equipment
<i>Unsafe use of equipment</i>	Instruction on safety rules in the training area
<i>Excessive load &amp; volume</i>	Prescription and progression of training program driven by technical performance of prescribed exercise movement
<i>Poor exercise technique</i>	Clear instruction and feedback on exercise movements
<i>Poor trunk control</i>	Targeted neuromuscular training
<i>Muscle imbalances</i>	Training program includes agonist and antagonist exercises
<i>Previous injury</i>	Communicate with treating clinician and modify program
<i>Sex-specific growth</i>	Targeted training to address deficits
<i>Inadequate recuperation</i>	Incorporate active rest and consider lifestyle factors such as proper nutrition and adequate sleep

typically arise when using inappropriate equipment within an unsafe environment, excessive loadings and/or volumes of training with insufficient rest periods, or a lack of supervision from appropriately qualified professionals<sup>7,10</sup>. Faigenbaum<sup>12</sup> outlines the potential risks for youth using resistance training and how these can be minimised, which are displayed in table 1.

One of the key dangers that has been directly associated with Weightlifting has been that of injury to the open epiphyseal growth plates of a developing child's bone structure<sup>15,20</sup>. These previous misconceptions led to a number of organisations concluding that the activity was an unnecessary risk for children. However, more recent research has challenged these findings, concluding that the activity is safe

and relevant for youth, when developmentally appropriate training is delivered by a qualified professional<sup>13,18,20</sup>. Chaouachi et al.<sup>6</sup> researched the use of Weightlifting within conventional youth resistance training, concluding its use to be both beneficial and appropriate. The 2014 International Consensus on youth resistance training<sup>18</sup> has detailed the vast benefits associated with youth resistance training and its safety when delivered by a qualified professional. The position statement also highlights when appropriately prescribed and coached, the mechanical stress from resistance training may actually be beneficial for bone formation and growth. Other organisations have detailed similar conclusions in their position statements, such as the Canadian Society for Exercise Physiology<sup>2</sup>, the NSCA<sup>9</sup> and the UKSCA<sup>16</sup>.

The injury rates of Weightlifting amongst school age pupils (11-18yrs) have been researched and shown to be markedly lower than a number of other school sports<sup>13</sup>. A study by Pierce, Byrd and Stone<sup>22</sup> followed 70 male and female Weightlifting athletes over the course of a year and noted that no training days were lost due to injuries. A similar, but more detailed study of 3 females and 8 males concluded that no participants suffered injuries that resulted in any training days lost nor the requirement for medical attention during a year of competitive Weightlifting<sup>3</sup>. Both studies emphasised the need for appropriately qualified supervision to correctly programme and monitor exercise progression in a manner commensurate with the developmental needs of youth. Myer et al.<sup>20</sup> looked into injuries from resistance training, comparing adult and youth populations and observed that a majority of injuries logged were caused to hands and feet, notably when replacing the weight on the floor, which may have been preventable with increased supervision. The research concluded that youth have a lower risk of resistance training related injuries to skeletal, muscular and connective tissues when compared to adults. A literature review carried out by Faigenbaum & Myer<sup>11</sup> evaluated the safety and efficacy of youth resistance training. The paper reviews a number of the studies cited within this position statement. The authors conclude that resistance training, including Weightlifting, does not appear to have any greater injury risk than most other regularly participated sports by youth. They also emphasise the use of supervision. An adapted table has been produced from the literature review (table 2).

**Table 2.** *Risk of incidence within Weightlifting (adapted from Faigenbaum 2010b)*

Study	Exercise Mode	Injury Incidence
Hamill (1994)	Weightlifting	0.0017 per 100hrs
	Resistance Training	0.0035 per 100hrs
	Rugby	0.8000 per 100hrs
	Soccer/Rugby	0.1400 per 100hrs
Pierce (1999)	Weightlifting	0.000

### Performance benefits of youth Weightlifting

As outlined above, the benefits of resistance training for youth are vast and can positively influence both physiological and psychological qualities. Research has identified that this training mode is effective in reducing the risk of injury, increasing muscular strength and power, improving body composition, improving motor control, and increasing bone mineral density<sup>4,9,10,13,14,15,20</sup>. Psychological benefits from resistance training interventions have been examined, with research showing potential long-term health benefits, improved cognitive brain function, improved health and behaviour outcomes and beneficial social and psychological effects<sup>8,24,25</sup>.

Pierce et al.<sup>21</sup> carried out a literature review on resistance training and weightlifting, stating a majority of the benefits of weightlifting listed above with an emphasis on the potential to reduce injury likeliness in youth. Hedrick & Wada<sup>14</sup> stated similar findings in their article outlining the vast benefits of weightlifting on athletic performance as did Stone, Pierce, Sands & Stone<sup>23</sup> in their weightlifting overview. Chaouachi et al.<sup>6</sup> carried out a study on sixty-three boys aged between 10-12 years currently involved in sport, comparing traditional resistance training, plyometric training and Weightlifting, for performance enhancements. Weightlifting was reported as being far superior to traditional resistance training in developing physical qualities of young



athletes, and was highly recommended as a part of a well-rounded youth programme alongside traditional resistance training and plyometrics. Byrd et al.<sup>3</sup> reported significant developments in Weightlifting performance over long-term (22 months) research looking at 11 mixed gender subjects from ages 9-15 years. These studies may suggest good evidence for the inclusion of Weightlifting within a development model for youth, to enhance physical qualities and performance.

### **Rule modifications for youth**

As with other sports there are modified rules for youth, and British Weight Lifting emphasises skill mastery and technique development rather than just weight lifted up until the age of 13 years. This approach focuses on the concomitant development of fundamental movement skill competency and other important physical qualities like balance, co-ordination, basic muscle strength and posture. This strategy is commensurate with the directives of recent long-term youth physical development literature<sup>19</sup>. Weightlifting is also accessible to children with medical conditions that may contra-indicate participation in other sports, like poor eyesight, hearing disabilities, asthma etc. As a weight category sport, people of all body shapes and sizes can safely and effectively participate in Weightlifting.

### **Summary**

To conclude, the above information, based on well-informed academic research, makes a very strong case for the use of Weightlifting by youth. The following points summarise the position of British Weight Lifting on youth Weightlifting;

- Weightlifting is a safe and effective training mode within a well-rounded conditioning programme for youths, when prescribed and coached by qualified professionals.
- Training should be presented in a progressive manner with a large emphasis on fundamental movement ability, working towards technical mastery of the competition lifts. Loading of the individual is of low priority until a good and consistent technical competency can be displayed. British Weight Lifting host competitions to athletes under 13 years old judged and scored on technical





execution. This is to emphasise developing technical competency as a primary focus before considering any form of loading.

- British Weight Lifting fully endorses the use of Weightlifting to build strength, speed and power in youth, as well as developing fundamental movement skills and improving posture.
- Youth should be encouraged and motivated to partake in Weightlifting confident in the knowledge of its safety and benefits for physical and psychological developments when designed and led by suitably qualified professionals.
- Physical Education departments should look to actively engage with the sport of Weightlifting during extra-curricular and curricular time in order to further develop its associated benefits, and provide a better quality of life to youths overall.

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