ANALYSIS OF BASKETBALL ENGLAND'S

HOME-BASED 8-WEEK ATHLETIC DEVELOPMENT PROGRAMME

DURING THE 2020 NATIONWIDE LOCKDOWN

MARK WILLIAMS[1, 2]

ZACHARY CHURN[1]

GRACE GUNN[1]

ANDY HOWSE[2]

1. WRITTLE UNIVERSITY COLLEGE, ESSEX, ENGLAND
2. BASKETBALL ENGLAND

INTRODUCTION

Youth athletic development related research suggests that non-sports specific movement skills should be developed during childhood and across all stages of maturation. Developing movement skills provides foundations that can be continually built upon as young individuals grow and mature.

In 2020, following the announcement of a nationwide lockdown in response to the COVID-19 global pandemic, the Basketball England Sports Science and Medicine Team devised an 8-week athletic development training programme for youth basketball players to develop foundational movement skills and physical fitness qualities. In addition, the programme aimed to reduce risk factors for injury in basketball by targeting balance, stability, and non-basketball specific movement skills.

Alongside publication of the programme, a research element provided the opportunity for players across the basketball community to submit home-administered test results to be used for data analysis. This research would be used to inform the England Development Plan (EDP) relating to the Physically Robust Pillar.

SUMMARY OF FINDINGS

The findings of this research project provide important information to shape the youth athletic development practices of youth basketball players in the UK. The main findings include:

- Mature players display greater control in the single leg squat that less mature players. Similarly, mature players displayed better jumping ability than less mature players.

- In the overhead squat movement pattern, stage of maturation was not found to be a factor differentiating performance. Across all stages of maturation, youth basketball players displayed difficulty in maintaining the overhead arm position, and in attaining full flexion of the hip, knee, and ankle joints.

- The 8-week athletic development programme showed some improvement in movement control in the single leg squat and hamstring bridge test for strength endurance. There were significant improvements found for single leg squat performance on the left leg in response to the training programme.

- The programme was found to be successful, overall. Individual case studies showed substantial improvements in test scores in response to the 8-week training period.

- Results from the post-programme survey suggested that goal setting may have improved player motivation levels and increased the effectiveness of the programme.

- Future projects should consider how best to engage players, parents, and coaches to increase levels of motivation and programme compliance.

The findings of this project have implications for the content and implementation strategy of Basketball England's neuromuscular training-based warm-up that is currently being developed. In addition, these findings provide strong justification for the development of movement control in youth players, not only to reduce risk factors for injury, but to develop movement skills and prepare them for more advanced strength and conditioning-based training.

INDIVIDUAL CASE STUDY EXAMPLES

1. "Josh" was an under 14s player at the time of participation in the research and was part of the Aspire talent programme. Following completion of the programme, feedback was sent to his mother:

   "both by eye and through measurement, is Josh's vast improvement in his counter-movement jump heights. He attained 16.46 cm on average before the programme, and an average of 20.7 cm after. This is an incredible improvement! He looked so much more powerful in the retest videos, which was great to see".

   "Importantly, Josh looks as though he is approaching his period of accelerated growth – the adolescent growth spurt. Over the coming months, he will likely increase in stature and in this time, it is extremely important that he continues to work on the movement patterns and exercises from the 8-week programme. These will help him improve his coordination as his limbs increase in length."

   In the hamstring bridge test, Josh was able to hold the position for 10-seconds on his left leg, and 15-seconds on his right. Following the programme, Josh could hold the position for 40- and 38-seconds, respectively.

2. *"Isla"* was an under 18s player at the time of her participation in the research and is a Wales under 18s representative. As expected, she was calculated to be post-PHV. Following completion of the programme, Isla improved in her hip control in the overhead squat and showed substantial improvement in her movement control in the single leg squat, reducing her score (for error) from 10 out of 20 down to 3 from 20. In addition, Isla improved her vertical jump by a marginal level, 26.8 cm to 27.21 cm, which is not unexpected given she had already achieved full maturation. In the hamstring bridge, Isla scored 60- and 62-seconds for the left and right limbs, respectively. In the post-programme testing, she scored 122- and 124-seconds for the left and right limbs, respectively.

OTHER EXAMPLES OF IMPROVEMENTS:

Joe, a preadolescent player who was estimated to be approximately one year away from his adolescent growth spurt, improved his single leg squat total score from 7 to 4, and his jump score from 26.86 cm to 28.15 cm across the 8-week period.

Alice, an under 14 Aspire player, improved her average countermovement jump score from 23.02 cm to 26.6 cm.

A COACH'S PERSPECTIVE:

"The Basketball England Player Development Framework stresses the importance of our players being physically robust and this is a key factor when in assessment when we select players with potential talent.

The 8-week athletic development programme provided support for young basketball players to become more robust and increase their athleticism. Ultimately, this will have contributed to making the players more impactful on the basketball court".

Matthew Harber, Regional Talent Manager (South of England)

ACKNOWLEDGEMENTS

I would like to thank everyone who contributed time and energy to this project, including all the participating players and their parents. I would like to express my special gratitude and thanks for the important contributions to this project from the following individuals:

Mike Carolan, Basketball England & University of Salford

Arran Parmer, Basketball England & Leicester Riders Basketball Club

Charlie Ford, Former Interim Chief Operating Officer & Talent Programme and Pathway Manager Basketball England

Meehra Gorasia, Talent Programme Officer, Basketball England

Georgia Jones, Marketing Executive, Basketball England

Nick Ibberson, North West Regional Talent Manager

Matt Harber, East Region Talent Manager

James Long, East Region Aspire Boys Coordinator

Sarah Wagstaff, Director of Basketball, Cardiff Metropolitan University

Ashley Hart, BSc Student, Writtle University College, Essex