

# INTRODUCTION TO SPORT SCIENCE

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# AIMS

- Define sport science
- Explain how sport science can help athletes and coaches

# SPORT SCIENCE

What is sport science?

- Scientific study of sport
- Application of scientific principles to help improve sports performance

# SPORT SCIENCE

3 main areas:

- Biomechanics
- Physiology
- Psychology



# BIOMECHANICS

- Analysis of human movement
- Examines interaction between athlete, equipment and environment



# PHYSIOLOGY

- Analysis of human body
- Examines how an athlete's body responds and adapts to exercise and training



# PSYCHOLOGY

- Analysis of human mind
- Examines how thoughts and emotions can influence an athlete's behaviour in sport



# NUTRITION

- Additional area of sport science
- Analysis of athlete's diet
- Examines carbohydrate, protein, fat and fluid intake

# HOW CAN SPORT SCIENCE HELP?

- In-depth discussion with athlete and coach
- Considers the individual needs of the athlete
- Examines areas of performance which are most important to athlete





# HOW CAN SPORT SCIENCE HELP?

- Uses scientific assessments i.e. valid, reliable etc.
- Information from regular assessments can be compared with previous results and with elite athletes



# BENEFITS OF SPORT SCIENCE SUPPORT

- Evaluates an athlete's strengths and weaknesses
- Assesses the effectiveness of a training programme



# BENEFITS OF SPORT SCIENCE SUPPORT

- Provides short term goals
- Enables athletes to perform more consistently
- Assists athletes in identifying the best technique for enhancing sports performance



# BENEFITS OF SPORT SCIENCE SUPPORT

- Evaluates an athlete's health status
- Identifies an athlete's readiness to resume training or competition



# CONCLUSION

- Sport science involves applying ‘science’ and its principles to ‘sport’
- Sport science can help athletes to improve their sports performance in a variety of ways – physically, mentally and technically

# RECOMMENDED READING

- <http://www.bases.org.uk>
- Winter, E. M., Jones, A. M., Davison, R. C. R., Bromley, P. D., & Mercer, T. H. (Eds) (2007) Sport & Exercise Physiology Testing Guidelines. The British Association of Sport & Exercise Sciences Guide. Volume I: Sport Testing. London: Routledge