Science, Medicine & Engineering in British Sport

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1991 days to the Rio 2016 Summer Olympic Games
1994 days to the Rio 2016 Summer Paralympic Games
Introduction

- UK approach
- What concepts and why?
- A vision and legacy concept - ESPRIT
UK approach to R&I
Time motion of athlete’s life
Injury & illness in Great Britain Sport
Olympiad review August 2009
Academic Collaborations: Legacy
Science & engineering in sport
ESPRIT – Vision for the future
What is ESPRIT?

- A £8.5M (£2.5M from UKS) research programme funded by EPSRC (www.esprit-sport.org)
- The purpose of the programme is to develop the ‘tools’ that increase the probability of the right coaching decision at the right time in the athlete development timeline.
- High performance sport is the model being used to test and prototype the technologies with a view to cross transfer to health, wellness and aging populations.
- The philosophy and novelty behind the programme is to provide a systems based approach to performance science (measure – model – manipulate).
Biomechanical Data

Wireless Inertial Measurement Units (WIMUs)

Features:
- 3-axis Accelerometers
- 3-axis Gyroscopes
- 3-axis magnetometers
- ADC: analog-digital converter
- Microprocessor
- Serial Wireless Link

25mm
LIVE DATA TRANSMISSION

ISM RADIO LINK

USB RADIO RECEIVER

DATA LOGGING

Wear & record

USB DOCKING CRADLE

GRAPHIC DISPLAY

ECG
HEART RATE TRENDS

RESPIRATION
RESPIRATION RATE TRENDS

SKIN TEMPERATURE

POSTURE ACTIVITY

INSTANT HEART RATE

INSTANT RESPIRATION RATE

INSTANT SKIN TEMPERATURE

INSTANT POSTURE/ACTIVITY

one team. one mission.
best prepared for 2012
END