Biography

Associate Professor Tim Doyle is a biomechanics and physical performance researcher. He also holds an adjunct Associate Professor with the Centre for Musculoskeletal Research at Griffith University. He was previously employed as a human performance scientist by the Australian Department of Defence, with published research covering military performance, injury screening, and employment standards. He is an accredited Professional Strength and Conditioning Coach with the Australian Strength and Conditioning Association, a Certified Strength and Conditioning Specialist with the National Strength and Conditioning Association, and an accredited level 2 Sport Scientist, and Exercise Scientist with Exercise and Sport Science Australia. His professional and academic collaborations extend both locally and internationally, including professional sports (Rugby Union and League), and Military and Law Enforcement agencies. He completed his PhD in Biomechanics through Edith Cowan University and before this he completed his Master of Science at Ball State University, and his undergraduate studies at the University of Queensland, Bachelor of Science (Human Movement Studies) - Honours. In addition grant funding he has been awarded an Endeavour Executive Fellowship which provided the opportunity to spend time at The Mayo Clinic and Stanford University. His research involves neuromuscular biomechanics, injury prevention, and physical preparation in athletes and tactical populations.

Qualifications

Biomechanics, Doctor of Philosophy, Edith Cowan University
Award Date: 1 Jul 2006

Biomechanics, Master of Science, Ball State University
Award Date: 1 Jul 2003

Human Movement Studies, Bachelor of Science (Honours), The University of Queensland
Award Date: 1 Dec 2000

Research outputs

**Neuromuscular performance and hormonal responses to military operational stress in men and women**

**Time of season and game segment is not related to likelihood of lower-limb injuries: a meta-analysis**

**The effect of gait retraining on vertical loading rates in distance runners: a systematic review and meta-analysis**

**Physiological responses of female load carriage improves after 10 weeks of training**

**Measurement of lower-limb asymmetry in professional rugby league: a technical note describing the use of inertial measurement units**

**Lower body peak force but not power is an important discriminator of elite senior rugby league players**

**Biomechanical responses during a standardised load carriage task are sex-specific**
Foot accelerations are larger than tibia accelerations during sprinting when measured with inertial measurement units

Ankle and knee moment and power adaptations are elicited through load carriage conditioning in males

Load-carriage conditioning elicits task-specific physical and psychophysical improvements in males

CBP marine interdiction agent Occupational Safety and Health study

A new technique to quantify positional differences in external mechanical load during professional rugby league

Hip and knee joint moment and power adaptations are elicited through load-carriage conditioning in males

Hip joint contact forces increase in response to greater body-borne loads and faster walking speeds

Male and female lower-limb kinematic responses during a standardised load carriage task are sex-specific

Male and female muscular and physical adaptations to load carriage conditioning are sex specific

The demands of professional rugby league match-play: a meta-analysis

Primarily hip-borne load carriage does not alter biomechanical risk factors for overuse injuries in soldiers

Lower-limb joint work and power are modulated during load carriage based on load configuration and walking speed

Inter- and intra-day reliability of common injury screening measures in rugby league is variable

Lower limb impact accelerations vary with sensor placement
Time-course changes of lower limb kinematics during military load-carriage

Tibiofemoral joint contact forces increase with load magnitude and walking speed but remain almost unchanged with different types of carried load

Prolonged running increases knee moments in sidestepping and cutting manoeuvres in sport

Increasing performance on tactical aerobic endurance tasks

A targeted load-carriage training program elicits positive adaptations after 10-weeks

Integrating a hip belt with body armour reduces the magnitude and changes the location of shoulder pressure and perceived discomfort in soldiers

Meta-analysis: fatigue does not increase lower-limb injury risk

The demands of professional rugby league match-play: a meta-analysis

The symmetry angle identifies less clinically relevant inter-limb asymmetries than the symmetry index in healthy adults

Lower-limb joint work and power are modulated differently during load carriage based on speed and load configuration

The effects of load configuration, mass, and movement speed on biomechanical risk factors for musculoskeletal injuries

An alternative whole-body marker set to accurately and reliably quantify joint kinematics during load carriage

Jerry can carriage is an effective predictor of stretcher carry performance

Preventing Australian football injuries with a targeted neuromuscular control exercise programme: Comparative injury rates from a training intervention delivered in a clustered randomised controlled trial
A box lift and place assessment is related to performance of several military manual handling tasks

Changes in muscle activation following balance and technique training and a season of Australian football

Challenges when implementing an evidence-based exercise injury prevention training program in community-level sport: a case study

The reach and adoption of a coach-led exercise training programme in community football

What do community football players think about different exercise-training programmes? Implications for the delivery of lower limb injury prevention programmes

On the relationship between discrete and repetitive lifting performance in military tasks

Acceleration, change of direction speed and agility profile of adult community level Australian football players

A cross-sectional lower-body power profile of elite and subelite Australian football players

Changes in knee joint biomechanics following balance and technique training and a season of Australian football

An anterior cruciate ligament injury prevention framework: incorporating the recent evidence

Ground hardness and injury in community level Australian football

Towards a national sports safety strategy: Addressing facilitators and barriers towards safety guideline uptake

Level of agreement between field-based data collectors in a large scale injury prevention randomised controlled trial
Training affects knee kinematics and kinetics in cutting maneuvers in sport

The effect of different training programs on eccentric energy utilization in college-aged males

Reliability of measures obtained during single and repeated countermovement jumps

Increasing compliance to instructions in the squat jump

Eccentric utilization ratio: Effect of sport and phase of training

An evaluation of a new test of reactive agility and its relationship to sprint speed and change of direction speed

The authors respond [2]

Muscular fitness

Design of a controlled-release ergometer for the measurement of musculotendinous stiffness of the knee flexors

Reliability of traditional and fractal dimension measures of quiet stance center of pressure in young, healthy people

Physiological and anthropometric characteristics of starters and non-starters and playing positions in elite Australian Rules football: A case study

Determining the optimal load for jump squats: A review of methods and calculations

Neuromechanical strategies employed to increase jump height during the initiation of the squat jump
Discriminating between elderly and young using a fractal dimension analysis of centre of pressure

Further Evidence to Change the Medical Classification System of the National Wheelchair Basketball Association

The influence of vibration on muscle activation and rate of force development during maximal isometric contractions

Press/Media
Biomechanics in Defence
Tim Doyle
25/03/15
1 Media contribution

Here's how your kids can avoid injury this footy season
Tim Doyle
26/04/18
1 Media contribution

How far can we push the human body till it's reached its limit?
Tim Doyle
14/10/19
1 Media contribution

Is there a limit to human endurance?
Tim Doyle
12/04/18
1 Media contribution

Scientists agree Raiders' Josh Papali is a force of nature
Tim Doyle
5/10/19
1 Media contribution