

# Biomechanics

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# Analysis of Human Movement

Kinematics =

study of motion

pattern of motion

time related motion (ie velocity)

Kinetics =

study of forces causing motion

# Body mass

Too much can affect performance

Too little can affect performance

Inertia (related to mass)

> mass = > inertia

good for rugby, bad for squash

mass relationships with

velocity / speed

acceleration / deceleration



# Roles of Biomechanical Analysis

- Safety ~ protection from injury
- Effectiveness ~ maximization of output
- Efficiency ~ economy of energy expenditure



# Facilities & Expertise...

## Biomechanics:

Technical assessment

Force plate analysis

3-D motion analysis

Muscle activity (EMG)

Gait analysis

Injury assessment

Injury rehabilitation

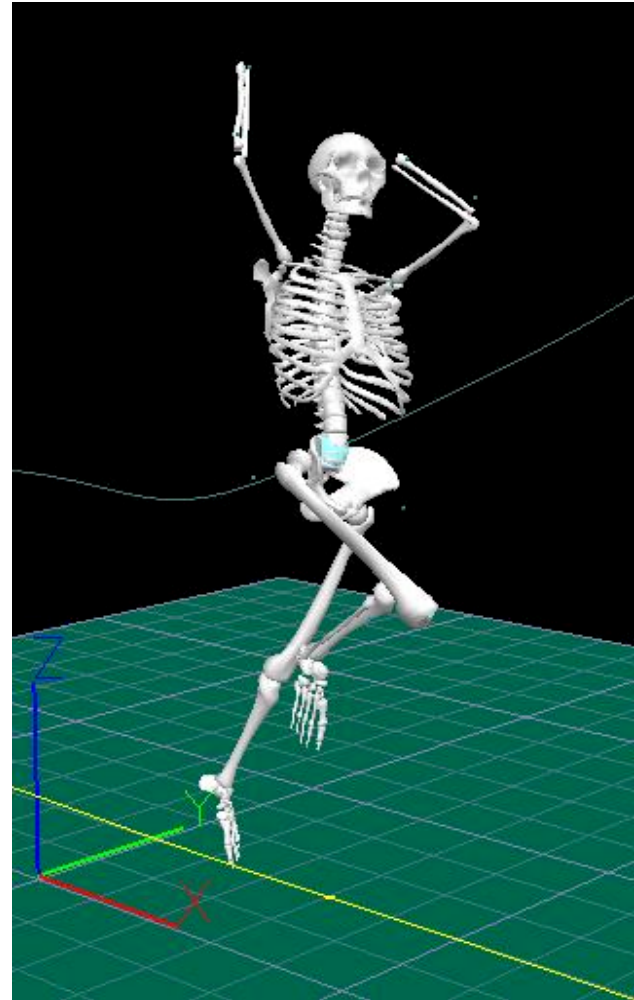
Torque analysis (cycling)



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