DIFFERENCES IN REACTION TIME
AND ANTICIPATION BETWEEN ELITE
AND SUB-ELITE BADMINTON
PLAYERS.

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All racquet sports require athletes to process information and make decisions in a short period of time by means of reaction or anticipation.

(Williams et al., 2011).
RESEARCH

Reaction time is the time required to respond to a visual stimuli.

Anticipation occurs when the reaction has started before the stimulus is available.

(Bhahbor et al., 2013).
AIMS

• To investigate reaction times of badminton players of different expertise levels.

• To investigate the relative contribution of contextual information on reaction time and anticipation.
HYPOTHESES

Elite players would display the fastest reaction times compared to other groups as they have the ability to extract useful information earlier (Abernethy & Zawi, 2007; Abernethy & Zawi & Jackson, 2008; Abernethy et al., 2000).

All groups would have faster and more accurate reactions when presented with both kinematic and contextual information.

Triolet et al. (2013)
PARTICIPANTS

5 Elites

10 Sub-elites

11 Recreational

6 Novices
EXPERIMENTAL DESIGN

200 ms before shuttle/racquet contact

100 ms before shuttle/racquet contact

On the moment of shuttle/racquet contact

200 ms after shuttle/racquet contact

100 ms after shuttle/racquet contact
REACTION TIME & ACCURACY
RESULTS

Reaction times of novices tended to be slightly faster than the recreational (p = 0.095) and sub-elite (p = 0.083)

Novices have a similar search pattern compared to elites but are not able to extract the same useful information due to an underdeveloped ability to recognize and recall specific movement patterns. (Abernethy & Russell, 1987; Goulet et al., 1989)

Novices have to guess more where the shuttle is being played. Their insufficient knowledge tends to result in an ‘all or nothing’ action characterized by an early start.
ACCURACY

It is presumed that players are more likely to anticipate when they perceive that if they wait any longer, they would not physically be able to properly return the opponent’s stroke.

(Triolet et al., 2013).
These fast and risky decisions lead to a ‘speed-accuracy’ tradeoff that novices have the lowest accuracy rate and thus make the poorest decisions.
LIMITATIONS AND FUTURE

• Low number of available elites and sub-elites.

• Non-badminton specific reaction time exercises.

• Inclusion of a psychological component.
CONCLUSION

• Coaches can find this information very useful for their training programmes.

• It is also of significant importance to place emphasis on where one places their *visual attention* when reacting as opposed to solely that of movement execution.
thank you