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## Swing bowling not due to humidity, research suggests

**By Jason Palmer**

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**The phenomenon of swing bowling, in which a cricket ball veers sideways during flight, is not influenced by humidity, researchers say.**

Cricketers and sport scientists alike have long hypothesised that high humidity may increase the swing effect.

But precise 3-D studies of cricket balls under varying humidity showed no effect on the balls' shapes.

A [report due in Procedia Engineering](#) instead suggests that cloud cover increases swing by stilling the air.

Much like the path of a "curve ball" in baseball or a looping corner kick in football, the swing effect comes from setting up different kinds of air flow on opposite sides of the ball - smooth or "laminar" flow on one side and chaotic "turbulent" flow on the other.

But why the effect is more noticeable during some matches, and even some days in the same match, has had researchers and players stumped.

"Lots of scientists have always tried to discuss this idea around cricket ball swing and the effect of atmospheric conditions, and people talk about humid days being really important," said study co-author David James of Sheffield Hallam University's Centre for Sport Engineering Research.

"The leading hypothesis as to why cricket balls swing was around the fact that the seam on the cricket ball will swell on a humid day, becoming more pronounced, and that might lead to more swing," he told BBC News.

Dr James and his colleagues John Hart at Sheffield and Danielle MacDonald at AUT University in New Zealand made use of the centre's "climate chamber", in which atmospheric conditions can be tightly controlled.

They used a 3-D laser scanner to monitor differently conditioned balls reacted under varying humidity, but found humidity had no detectable effect on the ball's geometry.

Instead, they have pitched in another idea: that bright sunshine - or the lack of it - is to blame for variation in swing.

"When the ground heats, it makes convection currents which make the air rise off the cricket pitch - that creates turbulence in the air on a sunny day," Dr James explained.

"On a cloudy day you get stiller air, because you don't get these convection currents coming off the ground."

Stiller air does less to affect the imbalance of smooth and chaotic flow on either side of the ball that leads to swing, so cloud cover could indirectly be the culprit.

Dr James concedes that the team's hypothesis must now be put to a test under controlled conditions, but they are convinced that humidity is not the variable that should put batters on the back foot.

"We fairly rigorously went through every possible thing around humidity and debunked it," he said.

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