

Scientists study how sperm get into an egg

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Scientists from Howard Hughes Medical Institute in Maryland say they've identified a key component of the mechanism spermatozoa use to enter an egg.

The researchers wanted to know how sperm abruptly convert their tail motion from a steady swimming undulation to the whip-cracking snap that thrusts them into an egg. The finding might help scientists both recognize new forms of male infertility, as well as design new contraceptives to thwart sperm entry into the egg.

Investigator David Clapham and colleagues said it has long been known a spermatozoa's arrival in the alkaline environment of the female reproductive tract triggers its tail's whip like motion, called hyperactivation. Now the researchers have identified the major component of the calcium ion channel responsible for alkaline-activated hyperactivation and male fertility.

Clapham said the research represents the beginning of an important new research pathway.

"No one had ever seen inside sperm cells to measure all the currents that control their activity," he said. "We are already measuring many of these currents and beginning to answer questions about what they are and what they do."

The study appears in the current issue of the journal Nature.

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