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The truth behind 'Where's Waldo?'

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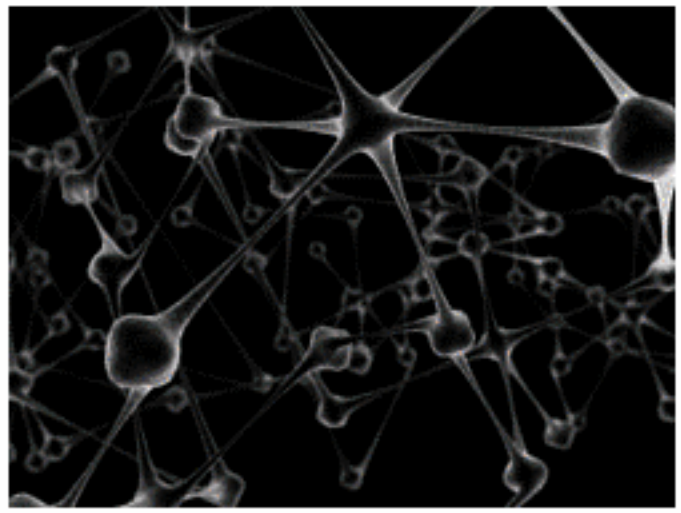
Tuesday, March 3, 2009

With assistance from the classic book character Where's Waldo?, researchers at Barrow Neurological Institute at St. Joseph's Hospital and Medical Center have recently made a major advance in understanding how the brain searches for objects of interest.



*(Image: **gerard79/STOCK.XCHNG**)*

Susana Martinez-Conde, PhD, and fellow researchers Jorge Otero-Millan, Xoana Troncoso, PhD, Stephen Macknik, PhD, and Ignacio Serrano-Pedraza, PhD, recently conducted a study asking participants to find Waldo. As participants searched, their eye movements were simultaneously recorded. Results showed that the rate of microsaccades – tiny, jerk-like fixational eye movements – dramatically increased when participants found Waldo.

"This discovery helps explain human searching behavior, which can assist us in finding keys on a cluttered desk or recognizing a child's face on a playground," says Dr. Martinez-Conde.

The central role of microsaccades in visual perception has been a highly debated, and vaguely understood, topic among researchers for decades. The results from the Martinez-Conde lab may help explain the correlation between microsaccades and search behavior, both in the normal brain, and in brains with visual or eye movement deficits.

"We now know there is a direct link between microsaccades and how we search for objects of interest," says Dr. Martinez-Conde. "This link can help with future advancements such as creating neural prosthetics for patients with brain damage or machines that can see as well as humans."

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St. Joseph's Hospital and Medical Center: **http://www.stjosephs-phx.org**

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