

# Proteins, like people, act differently when crowded together

December 2 2010

---

People in a jetliner act and feel one way when crammed together like sardines in a can. But they have quite a different mindset when the middle seat is empty and they have more personal space. Scientists are pursuing a remarkable parallel that exists among the proteins involved in health and disease inside living cells. The cover story in the current issue of Chemical & Engineering News (C&EN), ACS' weekly newsmagazine, focuses on how the study of proteins crowded together inside cells is opening new doors to the prevention, diagnosis, and treatment of disease.

C&EN Senior Editor Celia Henry Arnaud notes that much of the scientific knowledge about proteins comes from research done in watered-down solutions, as if they had much of an airplane or cell to themselves. But [cells](#) are packed with proteins, which fill about 30 percent of a cell's volume. In order to understand proteins' actual role, scientists must study proteins under these jam-packed conditions.

The article describes how scientists are forging ahead with research that mimics the real-world conditions under which proteins function in cells. One discovery, for example, indicates that under crowded conditions, a [protein](#) involved in Lyme disease changes shape in a way that reveals a potential new target for diagnosing and treating the disease.

**More information:** "Close Quarters" This story is available at [pubs.acs.org/cen/coverstory/88/8848cover.html](http://pubs.acs.org/cen/coverstory/88/8848cover.html)

Provided by American Chemical Society

Citation: Proteins, like people, act differently when crowded together (2010, December 2)  
retrieved 3 May 2024 from

<https://phys.org/news/2010-12-proteins-people-differently-crowded.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--