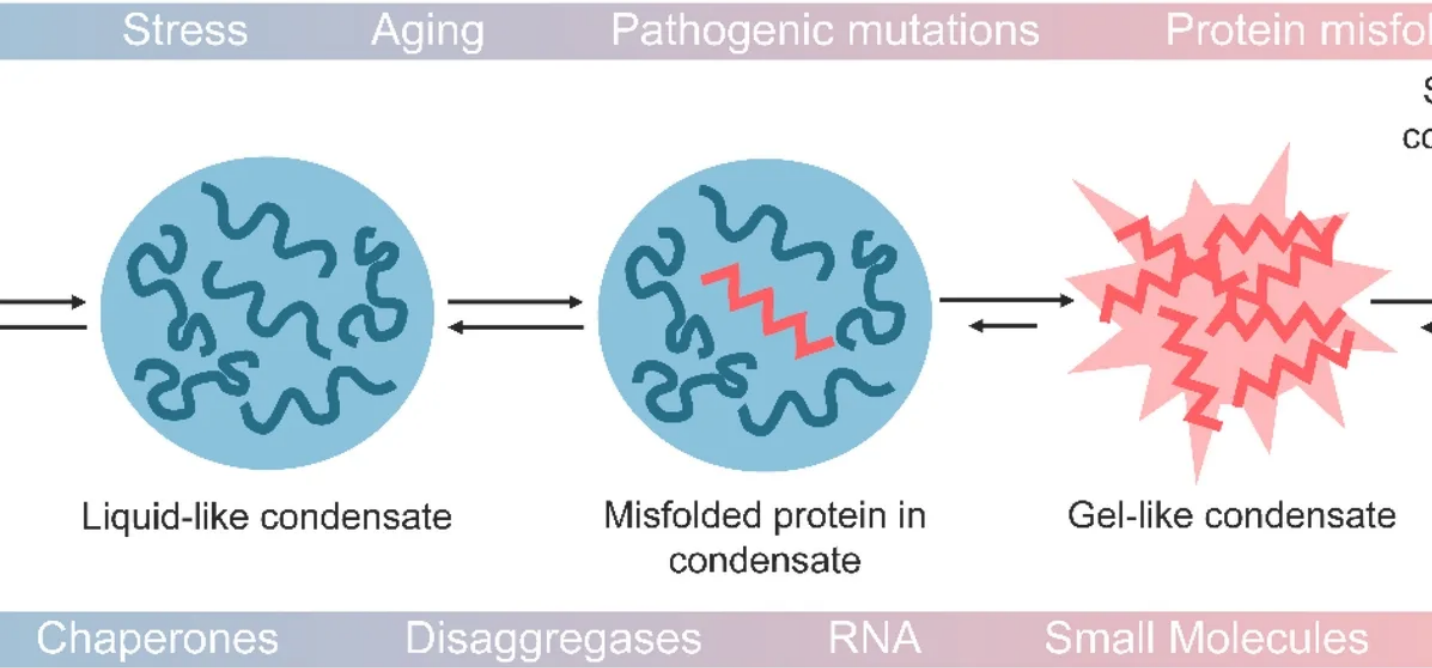


HEALTH

# Indian Scientists Unearth Insights into Protein Phase Transitions Linked to Neurological Diseases



By: Dil Bar Irshad Published: January 2, 2024 at 8:32 am EST



In a groundbreaking study at the Indian Institute of Science Education and Research (IISER) Mohali, researchers have unearthed pivotal insights into the molecular mechanism behind protein phase transitions, a phenomenon critical to both routine cellular functions and the genesis of fatal neurological diseases. This research, concentrating on the Fused in Sarcoma (FUS) protein — associated with Amyotrophic Lateral Sclerosis (ALS), has been published in Nature Communications.

## Groundbreaking Technique for Unveiling Protein Secrets

The team of scientists adopted the single-molecule FRET technique to examine the intricate processes of protein phase separation. This innovative method facilitated the exploration of transient and specific intermolecular interactions within disordered proteins, a task challenging to accomplish with traditional bulk experiments.

## Decoding the Dual Role of FUS Protein

Findings from the research indicate that structural alterations in the FUS protein stimulate the formation of biomolecular condensates vital for cellular functionality. Paradoxically, these same transformations can trigger pathological aggregates associated with neurodegenerative diseases such as ALS and Alzheimer's.

## A Mutation that Accelerates Pathological Aggregation

Adding another layer to this complex narrative, the research team identified a disease-related mutation in the FUS protein that potentially increases the inclination of these proteins to transition from a liquid to a solid state, thereby

speeding up pathological aggregation.

The revelations from this study provide significant insights into the molecular events of protein phase separation, paving the way for the creation of therapeutic agents designed to prevent pathological phase transitions contributing to neurodegenerative diseases. This research was supported by the SUPRA program of the Science, Engineering and Research Board (SERB), under the Department of Science and Technology (DST).

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Dil Bar Irshad, esteemed affiliate of the All India Media Association, has carved a niche in global journalism. As an international correspondent for BNN, Dil Bar has showcased versatility across various news segments, notably shining in eco-journalism. His zeal for crafting compelling narratives and delivering deep insights cements his pivotal role within the BNN ensemble. With unparalleled dedication and a distinctive viewpoint, he enriches the global discourse, deepening the audience's grasp on pressing events.

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# HEALTH

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## Simon Cowell's Heartwarming Reunion With Teen Dancer Whose Surgery He Funded

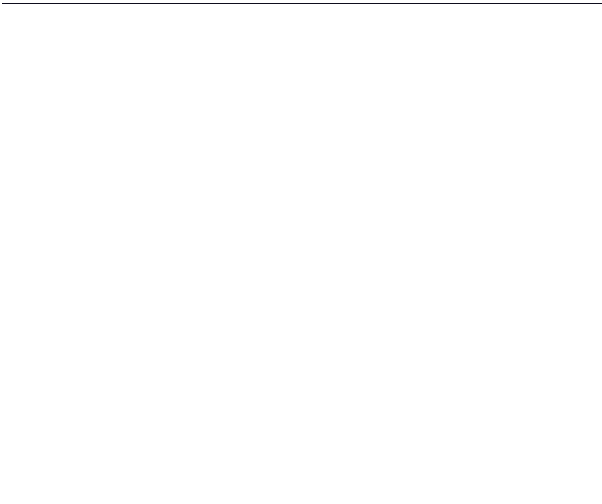
Amid the glitz and glamour of the talent stage, a heartwarming reunion unfolded that transcended the typical narratives of stardom and fame. Simon Cowell, the renowned judge from ‘America’s Got Talent’ (AGT), met once again with a teenager whose life he had profoundly affected. His influence, however, wasn’t in the form of guidance or endorsement,

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