

# **Hyderabad Firm Develops Oral Insulin Tablet Prototype**

## **Key Development**

A Hyderabad-based pharmaceutical startup has announced the successful development of a heat-stable oral insulin tablet prototype, potentially transforming diabetes care in India and globally.

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## **Scientific Basis**

- The formulation uses nanoparticle-based drug delivery technology to protect insulin from degradation in the stomach.
  - A specialized enteric coating ensures that insulin is absorbed in the small intestine, bypassing enzymatic destruction.
  - Early laboratory tests have shown sustained blood sugar control comparable to injectable insulin.
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## **Preclinical Results**

- Animal trials on diabetic rodents demonstrated effective glucose regulation.
  - Tablets maintained insulin stability at higher temperatures, making them suitable for Indian climatic conditions.
  - No significant adverse effects were reported during preclinical studies.
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## Clinical Trial Plans

- Phase 1 human trials are scheduled for early 2026, pending regulatory approval.
  - The first phase will focus on safety, dosage, and absorption in healthy volunteers.
  - If successful, Phase 2 will involve Type 2 diabetes patients across multiple Indian cities.
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## Public Health Impact

- India has over 77 million people living with diabetes, many of whom require daily insulin.
  - Oral insulin could:
    - Improve treatment compliance by avoiding painful injections.
    - Reduce risks of needle infections and disposal issues.
    - Make insulin more accessible in rural areas, where injection administration is often a barrier.
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