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## **Now, painless nanoneedles to deliver drugs to cell organelles directly**

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WASHINGTON: Always dreaded those moments when the doctor got that syringe ready to painfully jab it into your arm? Well, not anymore, for scientists have now designed gold-plated nanoneedles that can deliver the medicine right into the tiny organs of cells and that too without causing any pain.

Thinner than a human hair, the new nanoneedle distributes molecules directly to the right organelles, doing away with the problem of the cell organelles' failure to collect and use drugs released into the bloodstream.

"What we have here, is a powerful tool for delivering a very tiny amount of drugs into cells that have initially been removed from the body and can-after being injected by the nanoneedle-be placed back into the body for tracking, diagnosing, and treatment of illness," National Geographic News quoted study co-author Min-Feng Yu, a University of Illinois molecular biologist, as saying.

However, the idea of a nanoneedle isn't as new as it seems, for scientists have long been trying to use tiny syringes to inject cells.

But needles, developed earlier, have been relatively clumsy, damaging cells as they poked them.

Thus, to avoid building a squirting tube, the researchers designed a solid needle that didn't need to be hollow and was cell-friendly 50 nanometres wide.

Tiny particles are attached to the nanoneedle's thin outer layer of gold via "linker" particles. After entering an organelle, the nanoneedle releases the particles.

The researchers have said that designing nanoneedles that can be programmed to target multiple cells and automatically deliver drugs into those cells at the same time, could mean that there may be a day when nanoneedles needn't be rocket science.

The findings have been published online by the journal Nano Letters.

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