

Shock waves for efficient drug delivery

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A method of drug delivery that has been potentially successful is the use of shock waves for efficient drug delivery.

Dr G Jagdeesh, associate professor at the department of aerospace engineering, Indian Institute of Science, Bangalore, has developed a novel needleless vaccine delivery system using micro-shock waves.

Shock waves are one of the most efficient mechanisms of energy dissipation observed in nature. Utilizing the instantaneous mechanical impulse generated behind the micro-shock wave during controlled explosion, a novel non-intrusive needleless vaccine delivery system has been developed.

"The penetration depth of less than 100 μm in the skin can elicit higher immune response without any pain. The needleless vaccine delivery using shock waves has been successfully tested in murine salmonellosis vaccine. We anticipate that our novel method can be utilized for effective, cheap and safe vaccinations in the near future," says Dr Jagdeesh.

With a lot of research focused on new delivery technologies and drug formulation, it won't be too long before smarter delivery technologies see the light of the day.