

## Crossject advantages

- **Easy to use** device that allows self injection.
- **Easy to fill:** the pharmaceutical sub-assembly can be filled on standard filling lines.
- **Eliminates needle stick injury contamination risks.**
- **Ensure accuracy of delivery:** dosage and location.
- Improve patient compliance **by avoiding needle phobia.**
- **Device proven** in various successful bioequivalence and feasibility clinical and pre-clinical studies, animal and human health, sub-cutaneous, intradermal and intramuscular.
- **IP** protected by 26 families of patents, over 300 granted patents in 70 countries and extensive internal and exclusive partner know-how.
- **Manufacture and supply assured through a recognized pool of expert industrial partners:**  
 SCHOTT/FORMA VITRUM: glass and polymer tube.  
 HIRTENBERGER: actuator.  
 CATALENT: aseptic operations.
- **Technology that has proven itself** in the most extreme environments : automotive safety and space.
- **Established strong and supportive shareholder base** including financial industrial and commercial partners (Rothschild, SNPE, GSK).
- **User-friendly, attractive, innovative, award-winning design.**



# No need for needles



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*Innovative needle-free injection systems*

## Zeneo® by Crossject. A new solution for today's therapeutic challenges

Zeneo®, a needle-free, pre-filled, single use device for intradermal, subcutaneous and intramuscular injections.

- Eliminates contamination risk by avoiding injuries (800 000 injuries reported in the US every year).
- Brings simplicity to patient care while providing safety (self injection and emergency situations).
- Ensures accuracy of delivery - dosage and location.
- Improves patient compliance by avoiding needle phobia.



## Crossject injection systems are adaptable to customer needs

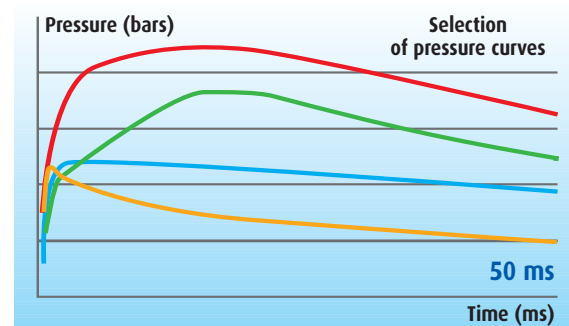
Using a single technological platform, Crossject customises its injection devices to the specific characteristics of its partner companies' drugs.

- **Injection depth:** Intradermal, Subcutaneous or Intramuscular.

- **Injection volume:** from 0.1 to 0.6 ml.
- **Product characteristics:** viscosity.
- **Molecule size:** Zeneo® can also be used with large molecules: peptides, proteins and DNA.

## Unique innovative injection technology

The stored chemical energy in a miniscule blend of energetic materials is released to generate controlled pressure and activate a piston, similar to those in traditional syringes, which generates a high speed jet of liquid. This liquid penetrates the skin, the subcutaneous layers and tissues up to the desired depth.

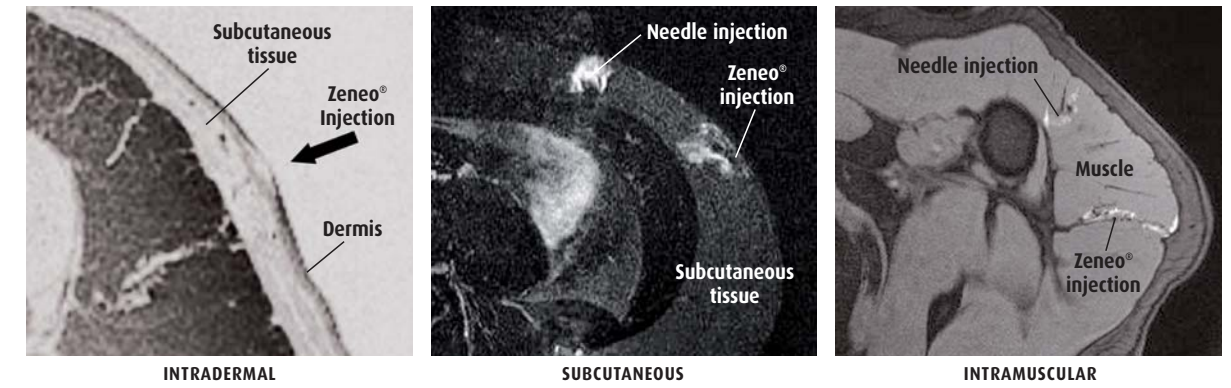


Typical pressure profiles obtained by Crossject's pressure control technology for different injection depths.

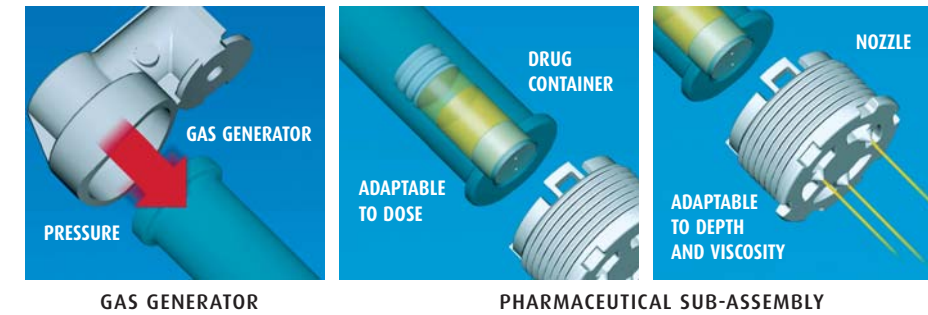
## Rigorous clinical validation

Zeneo's injection quality was validated through a clinical program which included MRI assessment of the

intradermal, subcutaneous and intramuscular routes compared with needle injection.



## A leading-edge technology consisting of 2 sub-assemblies



The pharmaceutical sub-assembly includes the drug container (glass or polymer), stoppers of materials identical to conventional syringes and the nozzle. It can be filled on standard filling lines.

## ZENE0®, an adaptable range of needle-free injectors

