

# That goes under your skin

Auto-injectors are a simple and safe way of self-medication, and have long since surpassed the classic syringe.

Since 2005, Orfeo Niedermann, Business Development Director at Ypsomed AG, has been working with partners from the pharmaceutical and biotechnology industry on the development of innovative injection systems for self-medication. In an interview with HARRO, he talks about the trends in this field.

**Mr. Niedermann, could you please describe the usage and operation of an auto-injector?**

Auto-injectors are injection devices with a built-in inner syringe. By triggering a pre-loaded spring, the contents of the syringe are administered within a few seconds. Our YpsoMate® auto-injector can be operated in two simple steps. The patient removes the protective cap and presses the injector onto the skin. A click signals the beginning of the almost painless injection process via a short, thin needle into the subcutaneous fat layer. The second click indicates the end of the injection. Before, during and after

medicating, the auto-injector's needle is shielded in order to protect the user and third parties from unintentional injuries.

**Which medication can be administered?**

Typically, auto-injectors are used to administer modern, biotechnologically produced drugs – for example against in-

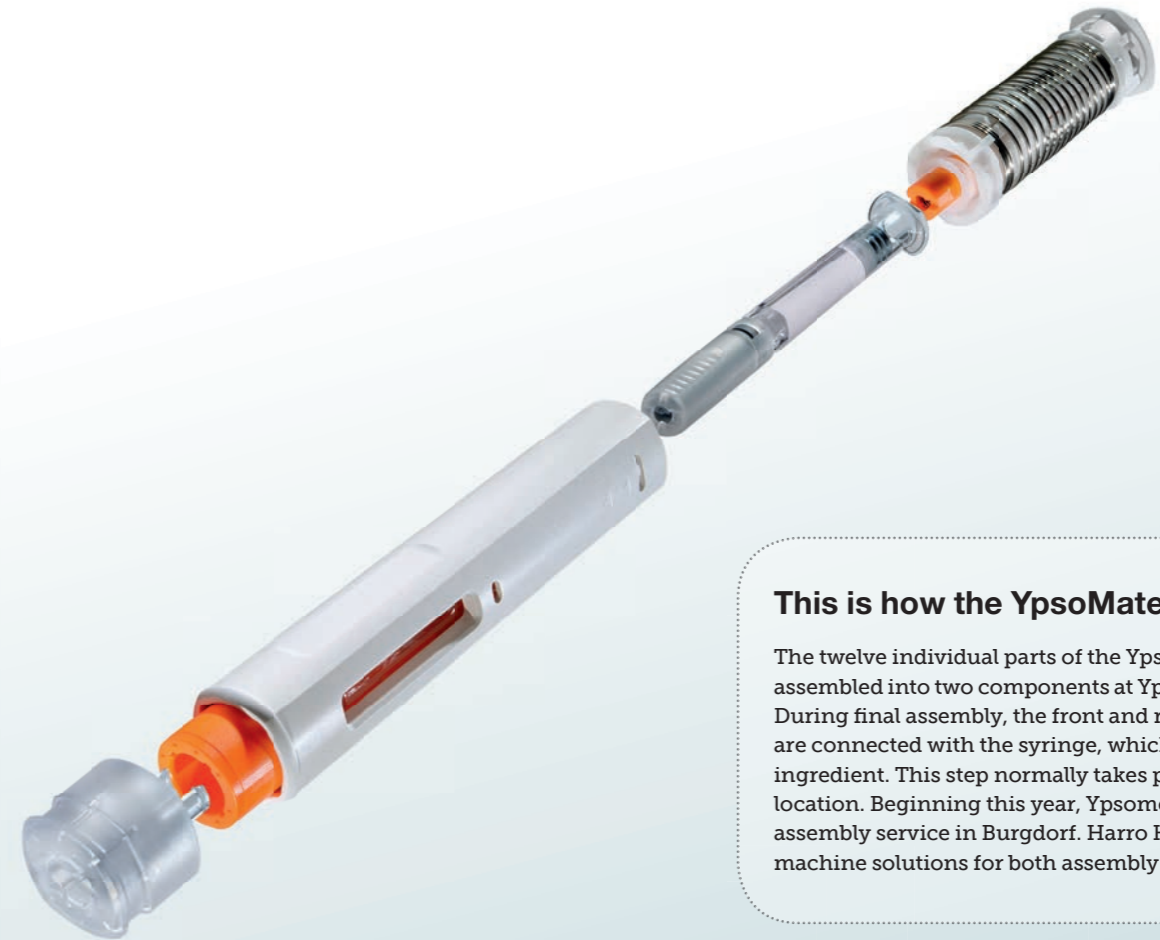
flammatory diseases such as rheumatoid arthritis, multiple sclerosis or asthma. The most common self-injecting drug is insulin for diabetes. Here, mostly pen injectors with an adjustable dose are used. The active ingredient is stored in a cartridge instead of a syringe, and can be used several times until the cartridge is emptied completely.

*“To equate needle-free with pain-free is a fallacy.”*

Orfeo Niedermann,  
Business Development Director,  
Ypsomed AG



Pictures: Ypsomed AG, Helmar Lünig



**This is how the YpsoMate® is made**

The twelve individual parts of the YpsoMate® are pre-assembled into two components at Ypsomed in Switzerland. During final assembly, the front and rear injector units are connected with the syringe, which contains the active ingredient. This step normally takes place at the customer's location. Beginning this year, Ypsomed offers a final assembly service in Burgdorf. Harro Höfliger offers suitable machine solutions for both assembly stages.

**Could the needle be replaced sooner or later?**

Needle-free application systems were already developed 20 years ago. When patients are asked if they prefer drug administration with or without a needle, they will decide against the needle. At least until they have tried the needleless injection for the first time. “Needle-free” means that the liquid jet of the drug, that is administered with high-pressure, penetrates the skin and hits more nerve endings than a thin sharp needle. To equate needle-free with pain-free is therefore a fallacy. For this reason, I do not see needle-based injection systems in jeopardy – on the contrary, the demand is growing steadily. Further development trends appear to be directed towards smart injection devices.

**What does smart injection device mean in concrete terms?**

Smart injectors are digitally networked. For example, they are capable of detecting whether they are correctly used by

the patient. They can record treatment-relevant data, such as administered dose and injection time, and make the information accessible to a physician through a connected smartphone. The Ypsomed SmartPilot is an example of a smart injection device. This reusable add-on for the YpsoMate® transforms the autoinjector into a device connected to the Internet, which offers numerous possibilities for further optimization of the therapy. ■

**Detailed interview**



A detailed interview with four additional questions about production and market situation can be found online at:

[www.harro-magazine.com](http://www.harro-magazine.com)

**About Ypsomed**

Ypsomed AG with headquarters in Burgdorf (Switzerland) is the leading, independent developer and manufacturer of user-friendly injection systems for self-medication. With innovative Swiss-made products such as pens, auto-injectors and large-volume patch injectors, Ypsomed meets all the demands that pharmaceutical enterprises make for self-injection.