Exploiting the potential of user-friendly medicines with the right dosing technology

Not just for emergencies: proven technologies ensure precision and large production quantities

According to the Federal Statistical Office of Germany, approximately 25% of Germans regularly take medicines on a permanent basis. Some people even take three or more different types of medicine. Around 7.5 million people who are part of this group self-administer their medicines, for example in the form of insulin[[1]](#footnote-1).   
In recent years, medical research has made huge progress with regard to the application of the active ingredients: Today, affected individuals have access to treatments such as monoclonal antibodies[[2]](#footnote-2), corticoids or medical cannabis[[3]](#footnote-3),[[4]](#footnote-4),[[5]](#footnote-5) to give them a better quality of life, for example in the case of allergic asthma or palliative treatment. In such cases, it is particularly important to use a light dosage, e.g. with a single-use syringe. Modern painkillers can also be administered subcutaneously via an injection, though this should ideally still be done in an operating room. The wound solution combines a local anesthetic and an NSAID to provide pain relief through prolonged drug release. Such painkillers are indicated for somatic post-operative pain in small to medium-sized surgical wounds in adults.

These examples illustrate the enormous advances in drug research, which aims to improve compliance for patients and relieve the burden on medical staff.

It's an aspect that is particularly relevant in light of demographic changes and the increase in chronic diseases[[6]](#footnote-6).

It can be assumed that pharmaceutical companies and contract manufacturers will need to expand their production capacities in the long term or adapt processes in order to meet increasing demand. Although such capacity expansions have not taken place yet, experts assert that Germany will nevertheless need to follow suit to maintain or expand its position in relation to international competitors. Such conditions also necessitate the use of state-of-the-art manufacturing technologies.

For example, special dosing systems are required for pain reduction medicines or medical cannabis, since cannabinoids in the form of CBD or THC have completely different properties that need to be taken into account for dosing and bottling. While cannabidiol (CBD) takes the form of a viscous oil at room temperature and is easy to handle, tetrahydrocannabinol (THC) is solid at room temperature. THC must also be handled in a manner that does not expose it to oxygen.

These three current examples illustrate the importance of dosing systems when it comes to scaling up production from the laboratory to series manufacturing, and peristaltic or rotary piston pumps are not the first choice in terms of technology. The ViscoTec endless piston technology exhibits no loss of quality, even with large quantities of highly viscous liquids. Rather, it enables a precise, pulsation-free flow that preserves the product. With a flow rate of 0.2 to 700 ml per minute, the dispensers can be deployed flexibly: In addition to a Luer lock, slip syringes from 0.2 ml to 50 ml can also be filled with a filling accuracy of +/-1%. Depending on the medicine, the net dosing time may be less than one second per syringe. Controlled thread breakage ensures exact dosing quantities and therefore economical work even at high quantities – an aspect that will become increasingly important going into the future.

3 304 characters including spaces. Reprint free of charge. File copy requested.

Images:

Ein Bild, das medizinische Ausrüstung, Kabel, Lampe, Im Haus enthält.

Automatisch generierte Beschreibung

Gentle and highly precise syringe filling with the endless piston principle

ViscoTec – perfectly dosed!

ViscoTec Pumpen- u. Dosiertechnik GmbH is a manufacturer of systems that are required for the feeding, dosing, application, filling and removal of media with medium to high viscosity. The company is renowned as a technological market leader, and its headquarters are located in Germany, in the town of Töging am Inn (near Munich in the state of Bavaria). In addition, ViscoTec operates subsidiaries in the USA, China, Singapore, India, France and Hong Kong, and employs around 330 people worldwide. Its international sales and distribution network is rounded out by numerous dealers across the globe. As well as providing technically sophisticated solutions for even the most complex of tasks, ViscoTec offers all the components necessary for a complete application from a single source: In this way, all stages of the process are covered, from removal and material treatment through to dosing. This ensures that all components of a given system work together successfully. All media that have a viscosity of up to 7,000,000 mPas in individual cases are conveyed and dosed practically pulsation-free and with extremely low shear. Comprehensive advice is provided for every application – and, where necessary, extensive trials and tests can be carried out in close collaboration with the client. ViscoTec dosing pumps and dosing systems are optimally tailored to the respective application: no matter whether this concerns an application in the food industry, e-mobility, aerospace, medical technology, pharmaceuticals, electronics manufacturing, or one of many other sectors.

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1. https://www.aponet.de/artikel/selbst-spritzen-keine-angst-21869 [↑](#footnote-ref-1)
2. https://www.apotheke-adhoc.de/nachrichten/detail/pharmazie/xolair-patienten-duerfen-selbst-spritzen-omalizumab/ [↑](#footnote-ref-2)
3. https://www.faz.net/aktuell/rhein-main/wirtschaft/eurox-pharma-eine-spritze-voller-cannabis-17982888.html [↑](#footnote-ref-3)
4. https://www.presseportal.de/pm/161250/5167159 [↑](#footnote-ref-4)
5. https://sanitygroup.com/2022/08/10/pressemitteilung-vayamed-cannakits-ermoeglichen-neue-applikationsformen/ [↑](#footnote-ref-5)
6. https://www.stiftung-gesundheitswissen.de/presse/immer-mehr-menschen-mit-chronischen-erkrankungen-ueber-jahrzehnte-beeintraechtigt#:~:text=40%20Prozent%20der%20Bev%C3%B6lkerung%20in,und%20ihre%20individuellen%20Informationsbed%C3%BCrfnisse%20richtet. [↑](#footnote-ref-6)