

# The World Market for Implantable and Needle-Free Drug Delivery Systems

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## Abstracts

This report, The World Market for Implantable and Needle-Free Drug Delivery details the types of drug delivery systems and technologies that are being used in 2012, as well as those that may become major market factors by the end of the forecast period. The report describes the industry, its relationship to various healthcare channels, and the trends for the future. The report's market analysis encompasses drug delivery technology and the revenues earned from licensing that technology. Secondly, it encompasses the pharmaceutical arena as well.

In this report, the market is segmented into two main categories:

Needle-free drug delivery

Implantable drug delivery including sustained release and targeted drug delivery

All segments of the drug delivery arena are experiencing rapid evolution. This is particularly evident within the implantable/injectable drug delivery sector. Meeting the challenges of drug delivery that are present today with biopharmaceuticals and emerging drugs requires innovation from drug delivery manufacturers. The expanding occurrence of emerging drugs combined with increased sensitivity to clinical outcomes and healthcare costs are driving the need for alternative drug delivery methods and devices. An aging population, high healthcare costs and healthcare reform initiatives are major forces driving growth.

Drug delivery technology has come into its own in the last 25 years. Initially seen as merely a medium for a drug substance, drug delivery technologies are now viewed as

tools for modifying the pharmacologic properties of drugs, improving methods of delivery, and targeting drugs to specific locations. Progress in the fields of microencapsulation, polymer technology and nanoparticles now allow scientists to prolong the effect of drugs with short half-lives. Companies are developing a new generation of sophisticated delivery systems. Targeted delivery has already advanced with new polymer-based chemotherapy implants. The geographic scope of the report is worldwide. Numbers provided in this report represent global market sizes and revenues with no regional breakout. In terms of products, the report includes data on needle-free injection delivery and implantable delivery, which includes sustained release delivery and targeted delivery systems.

As part of its extensive coverage, this report provide the following information:

Select Products in Development by Drug Delivery Companies

Implantable Drug Delivery Market Size and Forecast

Needle-free Drug Delivery Market Size and Forecast

Selected Needle-free/Auto-injector Systems and Manufacturers

Drug Delivery Systems by Pharmaceutical and Drug Delivery Component

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Cost per Million Injections by Injector Type

Seven Important Conclusions About the Market

Profiles of Injectable/Implantable and Needle-Free Drug Delivery Companies

Large pharmaceutical companies have realized that they can substantially extend the period of exclusivity (and the competitive edge) of their products that are about to lose patent protection by delivering them in a novel way. This leads to a competitive edge after patent expiration or patent extension. Patent issues are a major driver of the industry. This leads to the development of collaborations and acquisitions between Big Pharma companies and drug delivery companies. Pharmaceutical manufacturers are seeking alternatives to conventional delivery systems to introduce patients to innovative

platforms that promote compliance and reduce risks. This is putting pressure on the drug delivery companies to meet the demands and remain competitive in the implantable/injectable drug delivery. Within the implantable/injectable drug delivery market, there are a number of competitors. Competition in the segment has increased over the past 10 years, with top delivery technology companies such as ALZA, Pacira, Bioject, and Alkermes.

Needle-free jet injection devices can and should play a major role in solving the problems of needle-stick injuries and needle phobia in the United States. However, the needle-free jet injector industry is struggling to overcome significant obstacles in this country and abroad before these devices become widely accepted and used for administering drugs and especially vaccines. Most needle-free jet injectors use metal springs, compressed air, or CO<sub>2</sub> gas to power the injection. The device's nozzle is held against the patient's skin and once activated, the device injects a fine stream of the vaccine or drug at a high pressure into the skin. The most common orifice size is 0.127 mm, whereas that of a 25-gauge needle is 1 mm.

As the discovery and development of new drugs create the promise of relief and improved levels of care for a variety of chronic conditions, developers are increasingly aware of the need to pair these promising new therapies, more than half of which cannot be taken orally, with delivery methods that are patient-friendly and that encourage compliance. These combination products, in which the delivery device is an integral part of the approved drug therapy, must take into account the needs of a broad range of end users, including elderly patients and those with compromised dexterity, a rapidly-growing demographic segment of the population in developed countries. For many drug developers, the answer to this challenge will increasingly be needle-free injection. While the concept behind needle-free injection is uncomplicated, it has only been recently, with the convergence of synthetic materials and computerized design software that reliable and cost-effective devices have begun to appear. New designs currently being developed will create new opportunities for needle-free injection.

The technology continues to advance as needle-free company marketers are evolving, searching for a strategy that will achieve commercial success. Companies have invested in new device models that incorporate design enhancements and improved engineering. The new generation of devices are lighter, have a sleek profile, and employ warm colors.

The number of companies providing implantable/injectable drug delivery platforms continues to proliferate. The implantable/injectable drug delivery industry is comprised

of companies seeking to develop novel alternatives to existing delivery systems, enhancements to existing systems, commercially enabling delivery systems that provide viable alternatives for therapeutics that are not fully developed and marketed because there are limited practical means of administration. This report provides profiles of the following companies

Alkermes, Inc.

Alza Corp.

Antares Pharma, Inc.

Bioject Medical Technologies, Inc.

Crossject Sa

Cydex, Inc.

Evonik Industries Ag

Glide Pharmaceutical Technologies Ltd.

Mgi Pharma, Inc

Nektar Therapeutics

Pacira Pharmaceuticals, Inc.

Psivida

Qlt, Inc

Ypsomed Holding Ag

Zogenix, Inc.

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Bioject Medical Technologies, Inc.  
Crossject Sa  
Cydex, Inc.  
Evonik Industries Ag  
Glide Pharmaceutical Technologies Ltd.  
Mgi Pharma, Inc  
Nektar Therapeutics  
Pacira Pharmaceuticals, Inc.  
Psivida  
Qlt, Inc  
Ypsomed Holding Ag  
Zogenix, Inc.

## **APPENDIX: LIST OF COMPANIES**

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