

# Oral Drug Delivery Market - Controlled and Sustained Release to be Major Revenue Generators

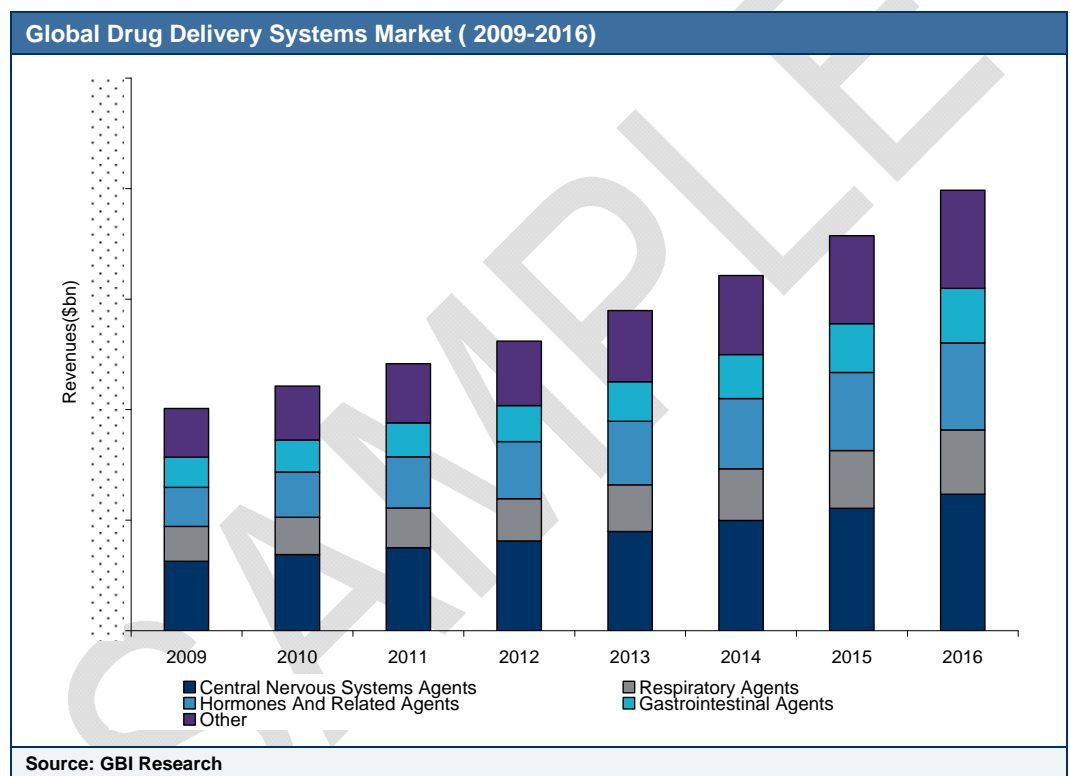
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*The global drug delivery market is forecast to grow from \$XX billion in 2009 to \$199 billion in 2016, at a Compound Annual Growth Rate (CAGR) of XX%.*

## Pharmaceutical Companies Looking at Innovative Drug Delivery Systems to Enhance Their Products

Over the last few years, the pharmaceutical industry has seen patent expirations on major blockbuster drugs, which has resulted in losses worth billions of dollars. More blockbuster drugs are set to lose patents in the coming years, and given this situation, pharmaceutical companies are increasingly adopting various new drug delivery systems to enhance their product efficacy, patient compliance and extend patent lives through innovative repositioning and reformulations of existing drugs. This has resulted in significant growth of the drug delivery market over the last few years. According to GBI Research, the global drug delivery market is forecast to grow from \$XX billion in 2009 to \$XX billion in 2016, at a Compound Annual Growth Rate (CAGR) of XX%.



Central Nervous Systems (CNS, hormone-related agents and gastrointestinal agents are among the key therapeutic areas witnessing the use of innovative drug delivery, methods and this trend is expected to grow in the coming years.

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## 2 Oral Drug Delivery Market – Introduction

### 2.1 GBI Research Report Guidance

The report focuses on the current state of sales force effectiveness in the pharmaceutical industry. It provides various models that are currently followed in the industry. The report also has an analysis of various case studies to identify the best practices in the industry.

- The report opens with an executive summary that captures the key takeaways from the report.
- Chapter 3 provides an overall picture about the global drug delivery market and focuses on the various roles played by drug delivery systems in managing the lifecycle of pharmaceutical products and increasing patient compliance towards their drugs.
- Chapter 4 provides a comparative analysis of oral drug delivery with other drug delivery systems. It emphasizes the advantages related to market exclusivity and patent life extension which can be generated through various oral drug delivery methods. The chapter also focuses on the key therapeutic areas targeted by pharmaceutical companies through various oral drug delivery technologies.
- Chapter 5 provides an in-depth analysis of the technology landscape in the oral drug delivery market. This chapter examines the technologies adopted for developing oral forms of injectible drugs. The various technologies are explained through various case studies of marketed and pipeline products.
- Chapter 6 provides an in-depth analysis of nanotechnology-enabled oral drug delivery technologies. This chapter also highlights some of the most successful nanotechnology-enabled oral drug delivery systems developed by various companies.
- Chapter 7 analyzes the advancements made in oral prodrug delivery methods. It takes into consideration insights from various research studies and analyzes the characteristics of various pipeline products across various therapeutic areas.
- Chapter 8 provides a detailed understanding of controlled release oral drug delivery methods. It examines the various controlled release oral drug forms and technologies presently being used by various companies.
- Chapter 9 assesses the therapeutic landscape and the different applications of oral drug delivery systems in developing effective drugs for various indications across various therapeutic areas.
- Chapter 10 takes a look at some of the innovative drug delivery companies working on various technologies related to oral drug delivery.
- Chapter 11 details the strategic scenario of the oral drug delivery market, and takes a look at the different licensing, partnership deals and investments taking place from a global perspective.

## 4 Market Overview - Introduction To The Oral Drug Delivery Market

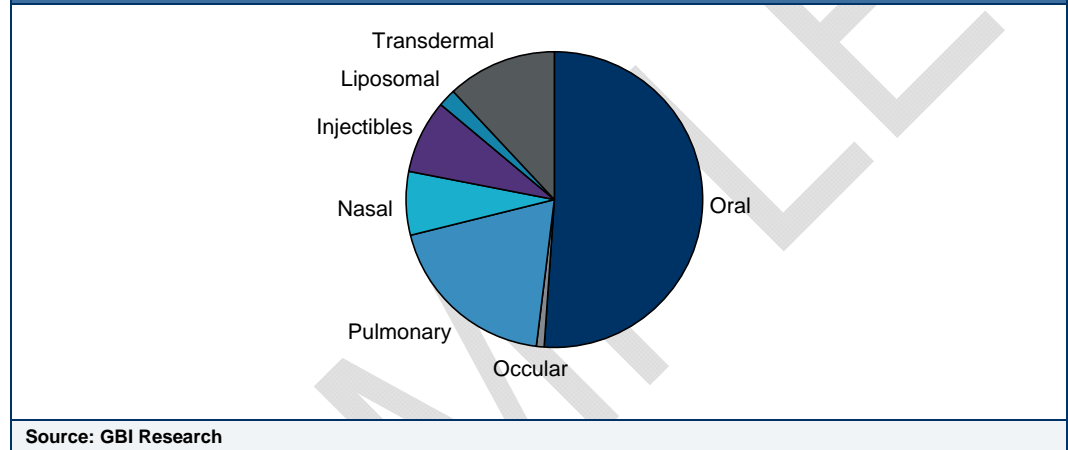
### 4.1 Comparative Analysis of Oral Drug Delivery with Other Drug Delivery Forms

Over the last few years, the drug delivery market has become a dominant and necessary part of the pharmaceutical industry. The pharmaceutical drugs market has become extremely consumer-driven, and factors related to non-compliance of medications due to things like painful administration methods, frequency of dosage, side effects and the cost of the therapy have urged pharmaceutical companies to look at creating easier, safer, efficient and more affordable delivery methods for drugs.

Patients usually prefer the oral route of administration of drugs over others, due to factors like convenient and painless administration, cheap and affordable formulations, stable and portable packaging, dosing accuracy, and variety in the form of capsules, tablets and varied release profiles.

Though the oral drug delivery market continues to dominate the industry, the advent of biologics, most of which can only be delivered through an invasive route (injections), is expected to decrease the dominance of oral drug delivery.

**Figure 9: Comparative Study of Oral Drug Delivery Market, by Mode of Administration 2009**



The chart above illustrates the segmentation of the drug delivery market by the mode of administration. It is evident from the chart that Oral Drug Delivery holds the largest share in the drug delivery market, with a total share of about XX%, followed by Pulmonary at XX%, Transdermal at XX%, Injectibles at XX%, Nasal at XX%, Liposomal at XX% and Ocular and Buccal at XX%.

The oral drug delivery market was valued at \$XX billion in 2009 and is forecast to reach \$XX billion by 2016, at a Compound Annual Growth Rate (CAGR) of XX%.

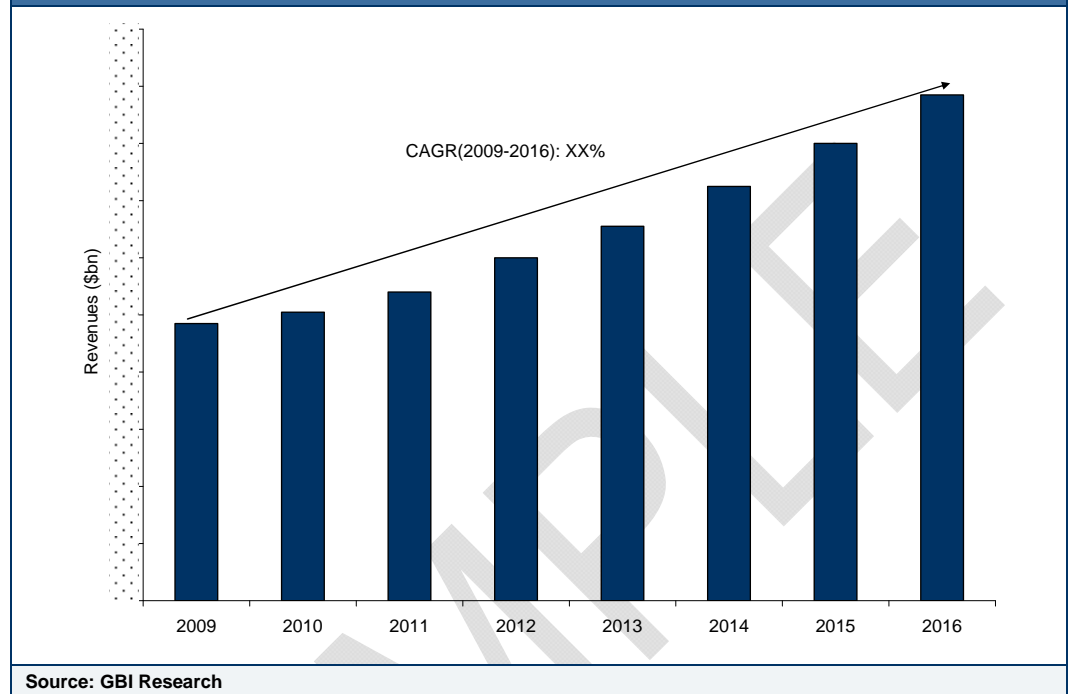
## 9.1 Musculoskeletal Disorders

### 9.1.1 Analysis of Global Osteoporosis Therapeutics Market and Application of Oral Drug Delivery Systems

#### 9.1.1.1 Present market overview

The global osteoporosis therapeutics market was valued at \$XX billion in 2009. It is expected to grow to \$XX billion by 2017 at a CAGR of XX%.

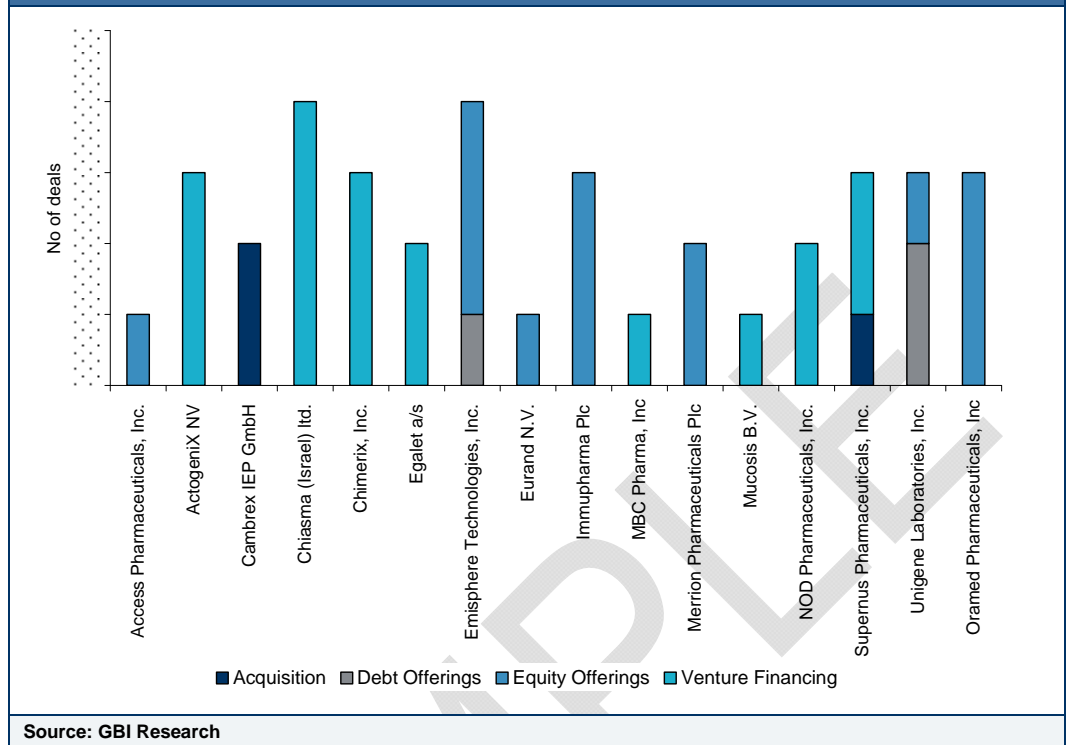
**Figure 22: Global Osteoporosis Therapeutics Market Forecast 2009-2016**



The significant growth visible in the forecast for the global osteoporosis market is primarily attributed to the strong current treatment options available, as well as the market's strong pipeline candidates. An increase in the prevalence of osteoporosis among the female population is the principal driver of the osteoporosis market, and will continue to be in the future. The significant reason for the increase in prevalence is due to the decline in the use of Hormone Replacement Therapy (HRT) in healthy postmenopausal women. HRT has been used to help prevent the bone loss that leads to osteoporosis. However, recent negative study results showing an increased risk of heart attacks, stroke, breast cancer and blood clots have led to a decline in HRT usage. Therefore, a decline in the use of HRT and an increase in the diseased population will combine to contribute to the increased levels of osteoporosis.

## 11.2 Investments, Funding, Mergers and Acquisition Deals in the Oral Drug Delivery Sector

**Figure 33: Investments, Funding and M&A Deals in the Oral Drug Delivery Sector (2006-2010)**



The graph presented above represents the various forms of funding techniques adopted by various drug delivery companies over the last five years to maintain growth and strengthen their product portfolios and offerings.

## 12 Oral Drug Delivery Market – Appendix

### 12.1 Market Definitions

- The global pharmaceutical industry comprises of organizations which are involved in discovering, developing, and manufacturing of drugs and medications.
- **Therapeutic:** Part of medicine concerned with the treatment of disease.
- **Indication:** It is a condition which makes a particular treatment or procedure advisable.
- **Pipeline:** A drug pipeline consists of drugs which are under development by a pharmaceutical company.
- **Biologics:** It is any therapeutic serum, toxin, antitoxin, vaccine, virus, blood, blood component or derivative, allergenic product, or analogous product, or derivatives applicable to the prevention, treatment, or cure of injuries or disease of man.

### 12.2 Abbreviations

<b>ACS:</b>	American Cancer Society
<b>NCE:</b>	- New Chemical Entity
<b>DDEP:</b>	- Drug Delivery Enabled Product
<b>ARB:</b>	- Angiotension Receptor Blocker
<b>kDa(Measurement)</b>	: Dalton
<b>ADHD:</b>	Attention Deficit Hyperactivity Disorder
<b>BMS:</b>	Bristol-Myers Squibb
<b>BPH:</b>	Benign Prostatic Hyperplasia
<b>CAGR:</b>	Compounded Annual Growth Rate
<b>CNS:</b>	Central Nervous System
<b>COPD:</b>	Chronic Obstructive Pulmonary Disease
<b>CRC:</b>	Colorectal Cancer
<b>CVS:</b>	Cardiovascular Disease
<b>EMA:</b>	European Medicines Agency
<b>FDA:</b>	Food and Drug Administration
<b>GSK:</b>	GlaxoSmithKline
<b>J&amp;J:</b>	Johnson and Johnson
<b>M&amp;A:</b>	Merger and Acquisition
<b>MHLW:</b>	Ministry of Health, Labour and Welfare
<b>NHL:</b>	Non-Hodgkin's lymphoma
<b>R&amp;D:</b>	Research and Development
<b>UI:</b>	Urinary Incontinence
<b>UTI:</b>	Urinary Tract Infections

### 12.3 Research Methodology

GBI Research dedicated research and analysis teams consist of experienced professionals with a pedigree in marketing, market research, consulting backgrounds in the medical devices industry and advanced statistical expertise.

GBI Research adheres to the codes of practice of the Market Research Society ([www.mrs.org.uk](http://www.mrs.org.uk)) and the Society of Competitive Intelligence Professionals ([www.scip.org](http://www.scip.org)).

All GBI Research databases are continuously updated and revised.

## 12.3.1 Coverage

The objective of updating GBI Research coverage is to ensure that it represents the most up to date vision of the industry possible.

Changes to the industry taxonomy are built on the basis of extensive research of company, association and competitor sources.

Company coverage is based on three key factors: leadership in the key therapeutic areas, leadership in the biotech industry, leadership in generic industry and pure biopharmaceutical players.

GBI Research aims to cover all major news events and deals in the pharmaceutical industry, updated on a daily basis.

The coverage is further streamlined and strengthened with additional inputs from GBI Research's expert panel (see below).

## 12.3.2 Secondary Research

Secondary research was carried out on internal and external sources to source qualitative and quantitative information in the report.

The secondary research sources that are referred in this report include, but are not limited to:

- Company websites, annual reports, financial reports, investor presentations and SEC filings for the twenty companies covered in this report.
- Industry trade journals, scientific journals and other technical literature.
- Relevant patent and regulatory databases.
- National government documents, statistical databases and market reports.
- News articles, press releases and web-casts specific to the companies operating in the market.

## 12.3.3 Primary Research

GBI Research conducts hundreds of primary interviews a year with industry participants and commentators in order to validate its data and analysis. A typical research interview fulfills the following functions:

- It provides first-hand information on the market size, market trends, growth trends, the competitive landscape and future outlook.
- Helps in validating and strengthening the secondary research findings.
- Further develops the analysis team's expertise and market understanding.

Primary research involves e-mail correspondence, telephone interviews and face-to-face interviews for each market, category, segment and sub-segment across geographies.

The participants who typically take part in such a process include, but are not limited to:

- Industry participants: CEOs, VPs, marketing/product managers, market intelligence managers and national sales managers;
- Hospital stores, laboratories, pharmacies, distributors and paramedics;
- Outside experts: investment bankers, valuation experts, research analysts specializing in specific medical equipment markets; and

Key Opinion Leaders (KOLs): physicians and surgeons specializing in different therapeutic areas corresponding to different kinds of pharmaceutical drugs.