



Pharmaceutical Packaging

Challenges & Innovations

From past to present

The package
was used as:
Preservation
Tool

The package
was used as:
Marketing &
Patient
compliance Tool

Material used:
Glass, Metal...

Material used:
Plastic polymers,
devices...



1970's

1990's

2008



Challenges

- **Regulations.**
 - Too much laws and restrictions.
 - Vary from one country to another.
- **Shelf Presence.**
 - Especially for OTC products.
 - Maintain the competitive edge



Challenges

- **Environmental concerns.**
 - Some drugs should be packed in a heat, humidity and light resistant packages.
- **Chemical interaction with the contents.**
 - Some drugs may interact with packaging material, such as glass or plastic.



Challenges

- **Age concerns.**
 - Senior friendly packages (easy to open and use).
 - Child resistant packages (Should not be opened easily).
- **Patient compliance.**



Challenges

- **Fit huge amount of data into small spaces.**

- Some data should be available in every drug package:

- Keep out of reach of children.
- Some icons should be available.
- Dose.
- Warnings.



- **Drug Counterfeit.**





Innovations

- Despite all the challenges that may face the pharmaceutical packaging industry, certain innovative packaging techniques appeared to:
 - Make the product more user-friendly
 - Increase patient compliance.
 - Maintain dosing accuracy.
 - Make the product more tamper resistant.
 - Preserve the quality of the drug.

