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Design of robust oral extended release formulations to meet the patient's quality expectation

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In recent years, the scope of drug delivery technologies has significantly expanded. The drug delivery systems have become complex and readily available, irrespective of route of administration. This is due to our deeper understanding of the disease conditions as well as science governing the pharmaceutical materials and dosage forms. As pharmaceutical formulators, our objective is to provide a therapeutically effective amount of drug to an appropriate site of the body on time and over the duration of the treatment. In many cases we have been successful in doing so, especially in developed industries / countries. In parallel, with free access to internet and education, the expectation of patients have also increased, but pharmaceutical products are highly regulated and given to patients with high level of confidence in formulators and suppliers. Therefore, here the focus of this presentation will be to understand the possible risks to patients and approaches to manage them when developing oral extended – release (ER) dosage forms. The design, development and manufacture of commonly used ER systems such as hydrophilic matrices, multiparticulate systems and osmotic technology will be reviewed and discussed.