

# Fast Dissolving Tablets: A Comfortable Dosage Form for Geriatrics, Pediatrics, Bed Ridden Patients

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## EDITORIAL

The Fast Dissolving Tablets (FDTs) came into existence with a desire to provide the patients a comfort, ease of administration. As many of the patients have swallowing problems, these dosage forms will be helpful for them. In geriatrics, generally swallowing issues are seen and in people with multiple medications these fast dissolving tablets would be a helpful and promising dosage form. Even the pediatrics have phobia in taking medication, thereby these fast dissolving tablets help them to take. The Fast Dissolving Tablets (FDTs) are the dosage forms that provide the rapid drug release within few seconds with no use of water once placed on tongue. These are similar to that of the conventional dosage forms but these FDTs have the incorporation of the superdisintegrants. The role of superdisintegrants plays the crucial role. The superdisintegrants are similar to that of the disintegrants, which are advanced form of the disintegrants that tend to release the drug within few minutes according to the FDA. These include the mechanisms such as swelling, wicking, chemical reaction etc. Swelling is the widely accepted mechanism of tablet disintegration is by swelling, the high porosity shows poor disintegration because of lack of swelling force and low porosity is observed with sufficient swelling force. Therefore, high packing fraction leads to less fluid penetration into tablet, followed by slow disintegration. By capillary action, the tablet is placed on a suitable aqueous medium, the medium penetrates into the tablet by replacing the air absorbed on particles, further the intermolecular bonds starts weakening and breaking of tablet into fine particles takes place. The uptake of water depends on hydrophilicity of drug or excipient and conditions during tableting and with the porous structure, low interfacial tension, around the drug particles hydrophilic network takes place and aids disintegration. The heat during wetting (air expansion), allows disintegrants with exothermic properties to get wet, localizes stress to generate capillary air expansion, which helps in disintegration

of tablet. By enzymatic reaction, enzymes that are present in body act as disintegrants. The binding action was stopped by these enzymes further promotes disintegration. When swelling takes place, the pressure exerted in radial direction, results in the tablet to burst or allows absorbing the water leading to increase the volume of granules to promote disintegration. Due to release of gases during wetting, interaction takes place between bicarbonate and carbonate with citric acid or tartaric acid, releasing carbon dioxide. This release of gas results pressure within the tablet and disintegrate. Due to deformation, the disintegrated particles are deformed and obtain their normal structure when they get into contact with aqueous media. The swelling property depends on the granules that deform during compression and increase in deformed particles size leads to break up of tablet.

The fast dissolving tablets (FDTs) are meant for the patients who cannot swallow, who have fear and feeling of choking while taking the tablets. Mostly, the patient who are bed ridden and those are on long period chemotherapy, these FDTs can be used as an alternative, rather missing their doses or unwilling dosage forms. Efficacy factors such as the prime allegiance for these formulations is its onset of action and escalated bioavailability, The first pass metabolism was avoided due to pre-gastric metabolism which leads to widen safety profiles for the drugs that produce serious amounts of toxic metabolites, Manufacturing and the Marketing factors such as, By the end of the drug's patent life, the manufacturer should develop a new and improved dosage form by allowing to extend marketing extensively, value added product line implementation and extend patent production while offering the population a convenient dosage form. Generally, the drugs with poor solubility are chosen for formulating FDTs. Some of the drugs which are suitable for FDTs are analgesic and anti-inflammatory agents, , anti-bacterial agents, anti-fungal agents, anti-gout agents, anti-hypertensive agents, anti-malarial agents, anti-migraine agents, immunosuppressants, anxiolytics ,sedatives,

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corticosteroids, diuretics, anti-parkinsonism, gastrointestinal agents, lipid regulating agents, local anaesthetics.

Therefore, the fast dissolving tablets are the patient friendly irrespective of the age, gender and the state of lifestyle. These are

now available over the counter and many studies are still under the progress, for manufacturing them with less efficient and make them available for the drugs that still needed for few common diseases.