

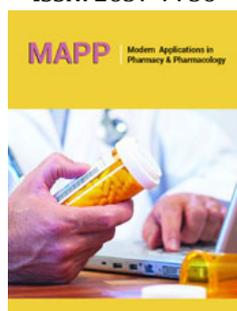
Opinion: Mini-Tablets are the Future of Pediatric Oral Formulations

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Introduction

Young children and their caregiver(s) deserve better oral formulations that are compatible with the child's/infant's small physiology and easier to handle and accurately count by their caregiver(s). Minitablets are a convenient oral formulation for both the child/infant to consume and for the caregiver to administer.

Mini-tablets are a downsized version of conventional round tablets. Mini-tablets are as small 2-4mm in diameter and a height of 2mm (Figure 1) with a mass as low as approximately 5mg and are manufactured with multi-tip tooling (Figure 2) with up to 20 tablets per compression in a tablet presses. As of this writing, "mini-tablets are not administered individually but are packaged and administered with 20 mini-tablets in sachet" [1] or in capsules.



Figure 1: Mini-tablets of 2mm diameter on:(a) United States 1 cent penny, (b) Euro 1 cent [1,2].



Figure 2: Multi-tip 2mm diameter tooling for manufacture of mini-tablets [1].

Opinions of the authors that mini-tablets are the future of pediatric oral formulations: It is the opinion of the authors that:

- a) The present trend will continue, and that increasingly “mini-tablets will be the future of pediatric oral formulations” [1].
- b) The technology of accurate counting of mini-tablets at the time of administration will continue to increase with either or both manual and/or electronic devices of counting of mini-tablets.
- c) The quality control of the manufacture of mini-tablets will increase such that the mass of each mini-tablet will be able to be monitored in real time.
- d) The durability of multi-tip tooling may increase with the fabrication and manufacture of more reliable multi-tip tooling for high-speed tablet presses.
- e) Rapidly dissolving mini-tablets will be increasingly developed with either amorphous spray-dried formulations or formulations with high amounts of a disintegrant(s).

- f) A continuation of the trend that “strong encouragement for preservative-free pediatric formulations has resulted in fewer multiuse solutions or suspensions in favor of single-use solid oral dosage forms” [2].
- g) As few as only one mini-tablet will be administered instead of the current approximately 20-200 mini-tablets and “The use of mini-tablets will likely increase and may include moving toward uncoated 2mm mini-tablets administered individually to children as young as 2 days of age” [1].

References

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2. Klingmann V, Linderskamp H, Meissner T, Ertan M, Andreas M, et al. (2018) Acceptability of multiple uncoated mini-tablets in infants and toddlers: A randomized controlled trial. *J Pediatr* 201: 202-207.

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