

Abstract

Drug formulation innovations have become crucial in overcoming bioavailability barriers, especially in populations with unique physiological and pathological conditions such as pediatrics, geriatrics, and patients with chronic illnesses. Bioavailability challenges often stem from factors like poor solubility, limited permeability, and frst-pass metabolism, which can hinder the therapeutic ef cacy of many drugs. This review discusses recent advancements in drug delivery systems, including nanoparticle-based formulations, lipid carriers, and novel excipients that enhance drug absorption and distribution. Additionally, it explores patient-centric approaches such as personalized medicine, the use of advanced computational modeling, and alternative routes of administration, such as transdermal and intranasal delivery, to optimize therapeutic outcomes. By addressing these Â

Molecular Biology, Addis Ababa University, Ethiopia, E-mail: AshagireTF565@ gmail.com

Received: 02-Sep-2024, Manuscript No: cpb-24-149128, **Editor Assigned:** 04-Sep-2024, pre QC No cpb-24-149128 (PQ), **Reviewed:** 18-Sep-2024, QC No: cpb-24-149128, **Revised:** 23-Sep-2024, Manuscript No: cpb-24-149128 (R), **Published:** 30-Sep-2024, DOI: 10.4172/2167-065X.1000492

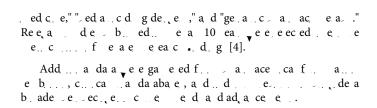
Citation: Ashagire T (2024) Drug Formulation Innovations: Overcoming Bioavailability Barriers in Challenging Populations Clin Pharmacol Biopharm, 13: 492.

Copyright: © 2024 Ashagire T. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

e ... e . f . e ... a . ed . ed c . e a a e ced d g f ... a a eg e . B a g d g de . e . . . e d .. d a

d

Citation: Ashagire T (2024) Drug Formulation Innovations: Overcoming Bioavailability Barriers in Challenging Populations. Clin Pharmacol Biopharm, 13: 492.



fe e d... ga de a c. g.a.e c...a ce.I a a a de.e ... e ec. ef d g a ge... g e ce a e... e , b.a... g e b... d-b a. ba ..e a d. e ... g a... e . fac....

Conclusion

D. g f ... a... a. a. a. a. a. a. a. e. f ... f ... e.c. ... g b. a. a. ab. ba ... e., ... c. a. e. g. g ... a... , ... , d. g. e_{ψ}