# Article information:

Inhalable nanoparticulate powders for respiratory delivery - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S1549963415000313?via%3Dihub=>

# Article summary:

1. Inhalable powders consisting of nanoparticles are gaining interest in respiratory research and clinical therapy due to their advantages over other routes of administration.

2. Particle engineering technique is a key factor in developing inhalable formulations that can successfully deliver drugs with improved therapeutic effect and enhanced targeting.

3. Nanoparticles can be used for targeted delivery, sustained delivery, and deep lung delivery of drugs and therapeutics, making them an exciting area of research in pulmonary drug delivery.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article titled "Inhalable nanoparticulate powders for respiratory delivery" provides a comprehensive review of the use of nanoparticles in drug delivery through inhalation. The article highlights the advantages of pulmonary drug delivery, including high bioavailability, rapid onset of action, improved patient compliance, and non-invasive nature. The article also discusses the challenges associated with pulmonary drug delivery, such as physical and physiological obstructions.

One potential bias in the article is its focus on the benefits of nanoparticle-based inhalable powders without discussing their potential risks. While the article briefly mentions that particles reaching the deep lung alveolar region may be susceptible to clearance by alveolar macrophages depending on their surface chemistry, it does not provide a thorough discussion of potential adverse effects associated with nanoparticle exposure.

Another limitation of the article is its one-sided reporting on the use of nanoparticles in respiratory research and clinical therapy. While the article briefly mentions recent research on nasal delivery of inhalable nanoparticulate powders for vaccine applications, systemic drug delivery in pain treatment, and non-invasive brain targeting, it does not provide a comprehensive overview of these emerging areas of research.

The article also lacks evidence to support some claims made. For example, while it states that particle engineering technique is a key factor to develop inhalable formulations that can successfully deliver drugs with improved therapeutic effect and enhanced targeting, it does not provide specific examples or evidence to support this claim.

Furthermore, unexplored counterarguments are missing from this review. For instance, there are concerns about long-term safety issues related to nanoparticles' accumulation in organs such as liver or spleen after repeated exposure. These concerns should have been addressed in this review.

Overall, while this review provides valuable insights into the use of nanoparticles in pulmonary drug delivery through inhalation, it has some limitations regarding potential biases and unsupported claims. Therefore readers should approach this information with caution and seek additional sources before making any decisions based on its content.

# Topics for further research:

* Long-term safety concerns of nanoparticle accumulation in organs
* Emerging research on nasal delivery of inhalable nanoparticulate powders for vaccines
* Systemic drug delivery using inhalable nanoparticulate powders for pain treatment
* Non-invasive brain targeting using inhalable nanoparticulate powders
* Potential adverse effects of nanoparticle exposure in respiratory therapy
* Examples of particle engineering techniques for developing inhalable formulations with improved therapeutic effect and enhanced targeting.

# Report location:

<https://www.fullpicture.app/item/8ee3aa744a22429b1bbe98a00e6298a9>