# Article information:

Tailoring Formulations for Intranasal Nose-to-Brain Delivery: A Review on Architecture, Physico-Chemical Characteristics and Mucociliary Clearance of the Nasal Olfactory Mucosa - PMC
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6161189/>

# Article summary:

1. Nose-to-brain delivery is a minimally invasive drug administration pathway that bypasses the blood-brain barrier and delivers drugs from the nasal cavity to the brain.

2. The olfactory mucosa, located at the roof of the nasal cavity, plays an important role in nose-to-brain drug delivery and its architecture, structure, and physico-chemical characteristics are important criteria for designing suitable formulations.

3. Intranasal drug delivery is a promising strategy for targeting neurological diseases like Alzheimer's or Parkinson's disease, mental disorders, cancer, viral infections, and other CNS diseases with low CNS bioavailability.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article "Tailoring Formulations for Intranasal Nose-to-Brain Delivery: A Review on Architecture, Physico-Chemical Characteristics and Mucociliary Clearance of the Nasal Olfactory Mucosa" provides a comprehensive overview of the potential benefits and challenges associated with intranasal drug delivery to the central nervous system (CNS). The authors highlight the limitations of traditional drug delivery methods, such as intraparenchymal or intrathecal injections, due to their invasive nature and risk of infection. They argue that intranasal delivery offers a minimally invasive alternative that can bypass the blood-brain barrier and deliver drugs directly to the CNS.

The article provides a detailed description of the anatomy and physiology of the nasal cavity, including the different types of epithelia and mucosa involved in drug absorption. The authors emphasize the importance of understanding these characteristics in order to design effective formulations for intranasal delivery. They also discuss some clinical evidence supporting the applicability of intranasal delivery for various diseases, including Alzheimer's, Parkinson's, cancer, and viral infections.

Overall, the article appears to be well-researched and informative. However, there are some potential biases and limitations that should be considered. For example, while the authors acknowledge some potential risks associated with using transferrin for targeting receptors in the blood-brain barrier, they do not explore these risks in depth or consider alternative targeting strategies. Additionally, while they provide some evidence supporting the efficacy of intranasal insulin for treating hyperglycemia and cognitive impairment in Alzheimer's disease patients, they do not mention any potential side effects or limitations of this approach.

Another limitation is that while the authors discuss some potential advantages of intranasal delivery over traditional methods like injections or implants, they do not provide a balanced comparison between these approaches. For example, they do not consider factors like cost-effectiveness or long-term safety when comparing different drug delivery methods.

In terms of promotional content or partiality, there does not appear to be any overt bias towards specific products or companies in this article. However, it is worth noting that one author is affiliated with a pharmaceutical company (Bayer AG), which could potentially influence their perspective on drug development and delivery.

Overall, while this article provides a useful overview of intranasal drug delivery to the CNS and highlights important considerations for designing effective formulations, readers should be aware of its potential biases and limitations when interpreting its findings.

# Topics for further research:

* Risks associated with transferrin for targeting receptors in the blood-brain barrier
* Alternative targeting strategies for intranasal drug delivery to the CNS
* Potential side effects of intranasal insulin for treating hyperglycemia and cognitive impairment in Alzheimer's disease patients
* Limitations of intranasal drug delivery compared to traditional methods like injections or implants
* Cost-effectiveness of different drug delivery methods
* Long-term safety considerations for intranasal drug delivery to the CNS

# Report location:

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