

DREAMS: Particle Deposition Computational Model for ChildREn Airways with Mucus Surface

Description

The prevalence of inflammatory upper airways diseases affects an estimated 20% of the worldwide population. These pathologies damage the life quality of approximate 1000 millions of people suffering with these diseases and implies a huge economic cost.

Existing treatments do not offer enough efficacy to successfully fight these diseases. The immunological immaturity present in children, the target patients in this project, causes them to be more susceptible to suffering from infections that affect their health and that occur with greater frequency and longer duration. These infections represent the main reason for consultation. Like in many other fields of medicine, the search for solutions in other multidisciplinary areas based on mathematics, physics and computations knowledge is a growing trend.

The DREAMS project demonstrates how different knowledge areas can converge to increase society's life quality. The DREAMS project seeks to improve the efficacy of the intranasal drugs applied to inflammatory upper airways respiratory diseases, as well as improving the diagnoses of these diseases. This project not only has a high social impact due to the prevalence of these diseases, it also has an innovative and disruptive character.

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Source URL (retrieved on 8 Sep 2024 - 19:19): <https://www.bsc.es/es/research-and-development/projects/dreams-particle-deposition-computational-model-children-airways>