

Using digital and drug delivery innovations to improve adherence in asthma

Background

Poor adherence and improper inhaler technique may:



Increase risk of severe exacerbations³



Affect mortality³



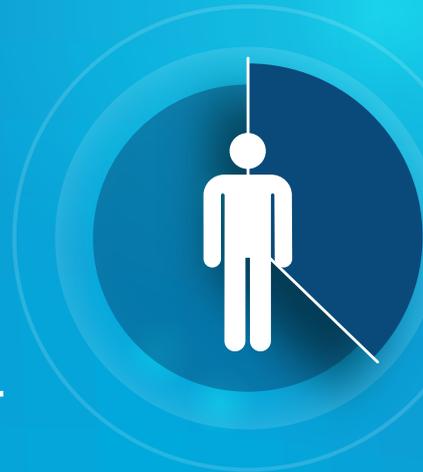
Decrease symptom control³



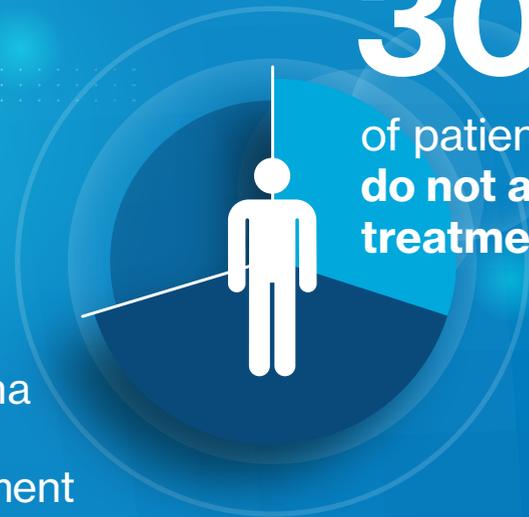
Impact quality of life³



Increase direct and indirect costs of care³



of patients with asthma remain uncontrolled despite current treatment with inhaled therapies¹



of patients with asthma do not adhere to their treatment²

Reasons for poor adherence vary



Unintentional non-adherence examples⁴:

- **Misunderstanding** about instructions
- Forgetfulness, cognitive impairment or presence of psychological problems
- No **daily routine**

Intentional non-adherence examples⁴:

- Concern about **side effects**
- Treatment viewed as **unnecessary**
- Resent **impact on daily life**

Medication/regimen factors examples:

- Incorrect inhaler use
 - **50% of patients are unable to use their inhaler correctly** even with training⁵
- Burdensome, complex or costly treatment regimens

Patient concerns and beliefs should be discussed in order to understand their medication-taking behaviour⁴

Adequate follow-up is essential to optimise adherence among patients with asthma

Evidence-based interventions to increase adherence⁴ include technical, behavioural and educational interventions



Simplified dosing regimens (technical)

Once-daily rather than twice-daily dosing



Inhalation reminders (technical/behavioural)

Remind patients of upcoming doses or alert them to missed doses



Shared decision making (behavioural)

Between patient and doctor, taking into account the patient's preferred medication and dosing



Patient training (educational)

Inhaler skills training and follow up checks on technique



Home visits (behavioural/educational)

By trained asthma nurses

Digital and drug delivery innovations

Inhaler devices that address patient needs

- Should be consistent and simple to use⁶

Telemedicine

- Improves patient **awareness**¹¹
- Facilitates shared decision-making, shown to improve adherence
- Encourages **self-management**¹¹

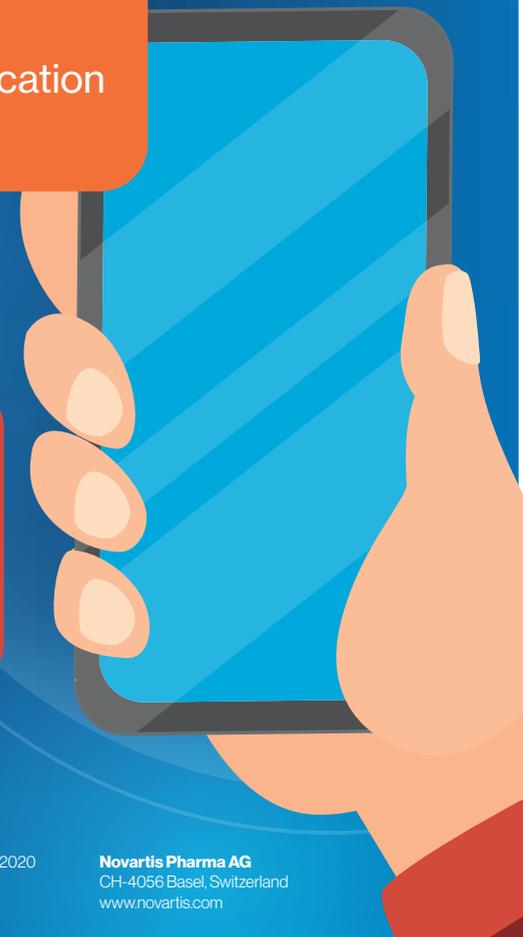


Inhaler tracking sensors used with mobile Health (mHealth) apps provides patients with⁷⁻⁹

- Inhalation confirmation
- Medication reminders
- Access to real data
- Such technologies may lead to significant improvements in medication adherence and asthma control¹⁰

mHealth applications

- Enable disease understanding and self management⁵
- Improve asthma control and treatment adherence^{2,12,13}



References

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GLRESP/QVM149/0094
May 2020

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