



How Digital Health is Enhancing Immuno-Dermatology Patient Experiences

People with dermatological conditions such as psoriasis or atopic dermatitis (AD) can benefit from three types of treatment: oral, topical, or subcutaneous. Even if treatment efficacy and safety are improving, **patients continue to have unmet needs leading to drug discontinuation and limited access to the best standard of care**. To better understand the patient experience of living with these conditions, **Aptar Digital Health interviewed 17 people** with moderate-to-severe psoriasis and/or AD, who shared meaningful insights:

- **Difficulties on how to deal and manage symptoms** when they arise (e.g., itching, dryness, pain) as well as the consequences (e.g., lack of sleep, loss of productivity, inward-looking attitudes, anxiety)
- **Identifying and detecting triggers** responsible for disease flare ups
- Desire to **know more about** the disease itself and the appropriate treatments: How to apply lotions correctly? How and where to properly self-inject?
- Receiving **reminders** on when to take the medication.

Psoriasis and AD symptoms can have a significant impact on the daily activities of patients such as sporting activities, socializing, finding the right skincare products, food intolerances, as well as managing mental health conditions such as anxiety and stress. Psoriasis patients may also suffer from co-morbidities such as inflammatory bowel disease, metabolic syndrome, or even psoriatic arthritis. More than half of the panel of patients interviewed reported that they had to change their behavior and lifestyle due to their conditions. Patients with moderate to severe psoriasis commonly experienced a greater negative impact on their quality of life.

4 patient insights on treatment adherence and how to improve it

Improving patient engagement alongside treatment is crucial to ensure adherence and minimize the risk of flare-ups. A study on psoriasis by Carroll C et al. demonstrated that **the evolution of disease severity is linked to medication adherence**: a 10% decrease in medication adherence was associated with a 1-point increase in disease severity on a 9-point scale¹.

To help patients achieve better control of their disease and an improved quality of life, digital interventions can be a solution for self-management and higher engagement in their care journey. Another study conducted by Gudmundsdóttir S et al. in 2022² showed that twenty patients with AD who benefited from a digital solution for 6 weeks showed **significant improvements in treatment adherence and related clinical outcomes**, with a decrease of two points in disease severity.

From the people interviewed, we learned that they are looking for 4 key components in a digital companion:

- **Ability to see the evolution of their disease and symptoms** with photos comparing the condition of their skin over a period of time
- **Dedicated training** for subcutaneous or topical treatments until the technique is sufficiently understood, which could lead to more confidence and less anxiety
- **Tracking of disease history to recall past events and understand the causes** of their current situation, i.e. an overview of trends in symptom evolution, treatment intakes and triggers over a period of time
- **Reassurance from clinically validated and personalized recommendations** on what to do when symptoms arise, without always having to call on a healthcare professional.

These 4 components can bring high value to patients, as they will be **better supported in self-management**. They can assess their disease evolution with the overall goals **to reduce the number of visits to their doctor** and **enhance communication and collaboration with their care team**.

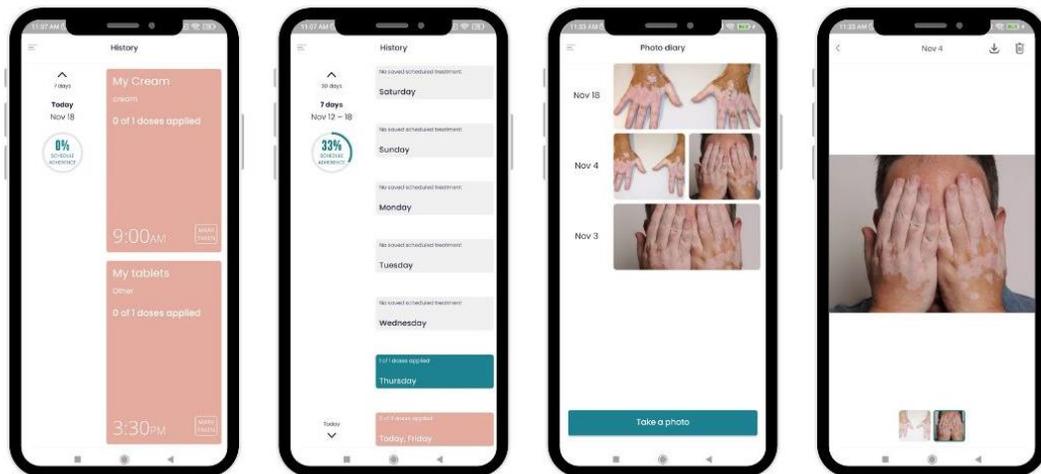
¹ Carroll CL, Feldman SR, Camacho FT, Balkrishnan R. Better medication adherence results in greater improvement in severity of psoriasis. Br J Dermatol. 2004 Oct;151(4):895-7. doi: 10.1111/j.1365-2133.2004.06174.x. PMID: 15491434.

² Gudmundsdóttir SL, Ballarini T, Ámundadóttir ML, Mészáros J, Eysteinsdóttir JH, Thorleifsdóttir RH, Hrafnkelsdóttir SK, Bragadóttir HB, Oddsson S, Silverberg JI. Clinical Efficacy of a Digital Intervention for Patients with Atopic Dermatitis: a Prospective Single-Center Study. Dermatol Ther (Heidelb). 2022 Nov;12(11):2601-2611. doi: 10.1007/s13555-022-00821-y. Epub 2022 Oct 14. PMID: 36239906; PMCID: PMC9588147.

End-to-end solutions designed to meet patients' needs

To ensure engagement, the digital solution must be based on the personal data entered by the patient and provide valuable feedback on the progress of the disease. Aptar Digital Health has developed a mobile app to meet patient needs, including:

- **Dosing calendar & administration support:** Supports the patient's treatment plan with push notifications, reminders and records - connected to a drug delivery medical device (for topical and subcutaneous therapies).
- **Symptom management:** Tracks symptoms and offers advice on how to manage them in real time
- **Flare-up identification:** Analyzes trends from patient inputs (repeating patterns, seasonality, etc.) and sends the right information and meaningful advice on flare-ups
- **Quality of life and disease progression:** Measures the quality of life based on specific indicators such as stress scale, mood and sleep quality and the [Dermatology Life Quality Index \(DLQI\)](#). Measures the disease progression by enabling patients to monitor skin appearance by taking pictures, to visualize the body surface area (BSA), and to communicate to a healthcare professional about disease progression, while also providing educational material as to what constitutes a successful long-term therapy.

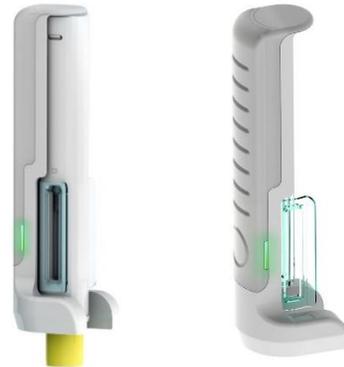


In addition to a complete digital solution that meets patient expectations, **Aptar Digital Health can also support patients undergoing self-injected drugs**. Patients may experience anxiety, stress, and lack of confidence when they need to self-inject at home. For this reason, Aptar Digital Health developed [AdhereIT®](#), a connected medical device

that precisely **detects an injection event and provides real-time visual and audio feedback about whether the injection was performed correctly**. AdhereIT® allows patients to start right and stay connected throughout the course of their therapy. The injection process is also broken down and displayed on the smartphone app, showing progress and where improvements can be made.

Echoing the voice of the patient, Aptar Digital Health is building solutions to **enhance their treatment experience**, and provide healthcare stakeholders with meaningful and actionable insights on treatment adherence:

- Measurement and tracking of **treatment adherence, quality of life** and **disease progression**.
- Training, education and support for patients to **ease onboarding** and **on-going adherence**.
- Reinforcement of Patient Support Programs with **valuable information on dosing, symptoms** and **flare-ups** to assist patients to stay on their prescribed therapy.
- Collection of **real-world data** to publish post-marketing studies.



About Aptar Digital Health



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We will be attending the European Academy of Dermatology & Venereology from October 11th to 14th in Berlin. [Schedule a meeting to continue the conversation.](#)

[Aptar Digital Health](#) is a leader in integrated health solutions and services with a mission to elevate patient experiences at every stage of their treatment journey. Our suite of end-to-end, patient-centric digital solutions leverages our unmatched expertise and diverse, industry-leading product portfolio to deliver differentiating experiences and more positive outcomes.

Aptar Digital Health is a division of Aptar Pharma, which is part of AptarGroup, Inc., a leading provider of the design and manufacturing of a broad range of drug delivery, consumer product dispensing and active material science solutions and services.