



GLOBAL ATOPIC
DERMATITIS ATLAS

Reflecting on the past to fuel the future

September 2024

Filling burden gaps worldwide



LEO FOUNDATION

The LEO Foundation is the
lead supporter of the Global
Atopic Dermatitis Atlas.

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The Global Atopic Dermatitis Atlas (GADA) was established under the auspices of the International League of Dermatological Societies (ILDS) in 2022. The aim being to bring all burden data on atopic dermatitis (AD) under one umbrella and to fill important gaps in our knowledge on how common AD is and how it affects patients.

The GADA mission is to be a global resource where data about AD is collected in a standardised way and freely accessible through one platform.

GADA has benefitted from generous pump prime funding support through the International League of Dermatological Societies (ILDS), which facilitated the compilation of the inaugural global report on atopic dermatitis, which was instrumental to get substantial funding from the LEO Foundation in late 2023.



Global atopic dermatitis report launch ISAD 2022, Montreal

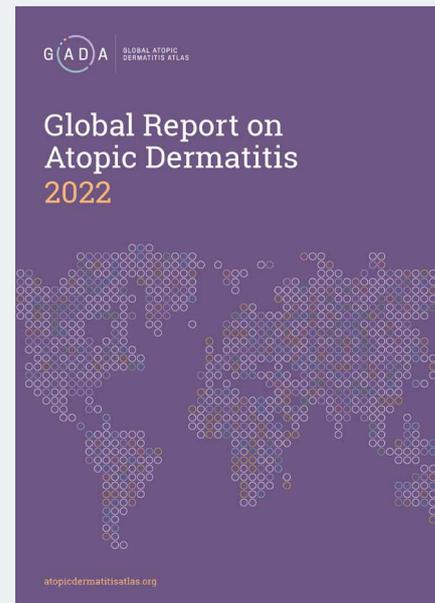
In October 2022, the ILDS published the first global report on AD, that included a summary of disease burden, geographical gaps in prevalence data, currently available treatments, and the impact on patients' and their families' lives.

This report was made possible by the close collaboration with the International Society of Atopic Dermatitis (ISAD), the International Eczema Council

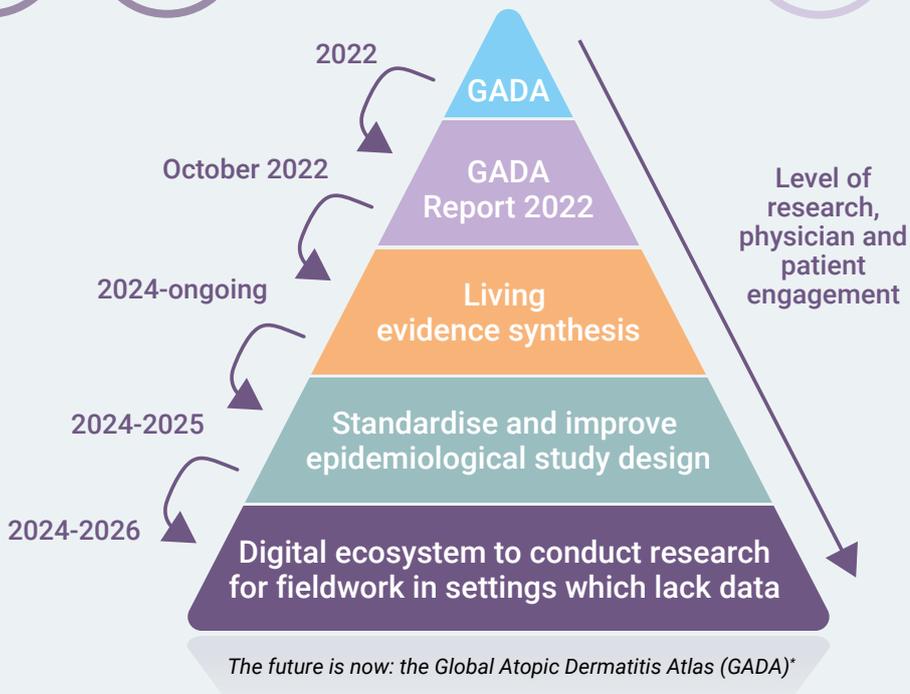
(IEC), the European Task Force for Atopic Dermatitis (ETFAD), and the International Alliance of Dermatology Patient Organizations (IADPO/ GlobalSkin). In April 2024, the GADA inaugural report was also featured on the WHO NCD Knowledge Action Portal (KAP) website. Additionally, the report established the core objectives and validated the plan for the following 3 to 4 years (described in the diagram on page 5).



Scan to
download
the Report



Global Report on Atopic Dermatitis, 2022



The main objectives of the GADA project include:

- Initiate a sustainable living systematic review that will provide regular updates on current epidemiological data on the global burden of atopic dermatitis;
- Conduct an international consensus exercise to improve and standardise epidemiological study designs;
- Develop the digital ecosystem and research (e-)tools for more efficient fieldwork; and
- Conduct epidemiological surveys in those geographical areas where data is insufficient and ensure the data generation is produced through a standardised methodology and a unified data capture platform.

*Br J Dermatol. 2023 Nov 16;189(6):761-763. doi: 10.1093/bjd/ljad286

GADA core team



GADA is directed by **Professor Carsten Flohr**, Chair in Dermatology and Population Health Science at King's College London. The GADA team has successfully been expanded both internally and externally after receiving funding from the LEO Foundation in October 2023.

Dr Suzanne Keddle, the Research Fellow/ Study Co-Ordinator for the GADA project has a background in statistical epidemiology and working in large international consortia to address global health challenges. She will be supporting all of the GADA projects with specific emphasis on setting up and assisting with the running of the International Consensus exercise.

Dr Piers Allen, the Research Associate/ PostDoc Software Engineer, has a background of computer science and

biomedical engineering. Dr Allen leads the development of the Digital Ecosystem in tandem with the King's College London Digital Health team and Swiss4ward. In addition, he has been co-leading the collaborative work with our Lebanese colleagues on the LeBRAD project to build a registry platform. Lastly, he is developing AI/machine learning tools for GADA, such as an AI screening assistant to reduce the workload in the evidence synthesis project.

Chih-Ya Chang, the Operations Assistant, has a background in pharmaceutical medicine development and nursing. Chih-Ya maintains good communication between stakeholders and keeps GADA information updated. Additionally, her research is focused on Evidence Synthesis, which is the driving force behind the living systematic review on the global burden of AD. In Evidence

Synthesis, Chih-Ya facilitates international collaboration with teams in Singapore, Taiwan, and Australia. In the future, she will be supporting the International Consensus exercise as well.

Kaitlyn Chan, a visiting public health researcher from Brown University, joined GADA in early 2024, working on Evidence Synthesis and providing scientific writing support.

With the GADA Coordinating Centre team now in post, we are very much looking forward to working with the wider GADA consortium and colleagues around the world to fill the important gaps in our knowledge about the burden of AD worldwide, especially in middle and low income settings.

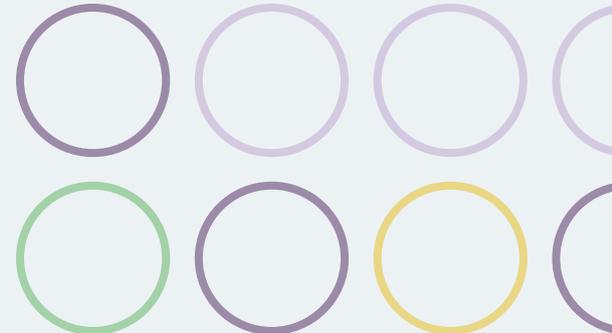


Collaborators

In the meantime, the GADA consortium has been continuously broadening its international presence. One after another, researchers across the world are coming on board.

Top to bottom, left to right:

Christian Vestergaard, Ching-Chi Chi, Yik Weng Yew, Jennifer Koplin, Vahid Djamei, Daniel Leightley, Iain Marshall, Christian Apfelbacher, David Prieto-Merino, Bernd Arents, Peter Schmid Grendelmeier, Ncoza Dlova, Fahafahantsoa R. Rabenja, Valeria Aoki, Marco Morelli, Sandipan Dhar and Katrina Abuabara.



Field trips

The first ever joint GPA-GADA fieldtrip to East Greenland

May 2022

Back in May 2022, Prof Flohr (middle) joined a field survey in Tasiilaq, East Greenland which was organised by colleagues from Copenhagen (Jacob Thyssen, Tove Agner, Claus Anderson), together with the Global Psoriasis Atlas (GPA) in the evidence synthesis project Team (Chris Griffiths, Rebekah Swan, Julia-Tatjana Maul, Su Lwin and Jing Xujuan). Tasiilaq is the largest town on the east coast with a population of 1,931. The trip's aim was to understand the prevalence and clinical manifestations of skin diseases in the Greenlandic population. The team also explored how environmental and genetic factors may influence the frequency of skin diseases.

The team examined 295 individuals aged 18-78 years old and found that 69% had visible signs of current skin disease and among these, the most common skin diseases were hand eczema (22.4%), lichen simplex (9.5%), discoid eczema (7.1%), psoriasis and atopic dermatitis.



Fieldtrip to South Africa- Eastern Cape in Mtyholo Dlova and Mdoloba

December 2023

The field trip to the Eastern Cape in December 2023 was hosted by our GADA collaborator Professor Ncoza Dlova, who took us to the area in the Eastern Cape she grew up in. The second joint GPA-GADA fieldwork assessed the prevalence of skin diseases in the towns of Mtyholo Dlova and Mdolomba. The team visited residents door-to-door to identify cases, and those that potentially presented with psoriasis or atopic dermatitis were invited to the village community hall to undergo comprehensive reviews and physical examinations. The team received a warm welcome from locals through enthusiastic dance performance.

A total of 715 participants were recruited for the study, 218 from Mtyholo Dlova and 497 from Mdolomba. Participants requiring treatment were referred to local hospitals. This fieldwork contributed to data generation in countries with a data gap and afforded a more comprehensive view of skin diseases around the globe.



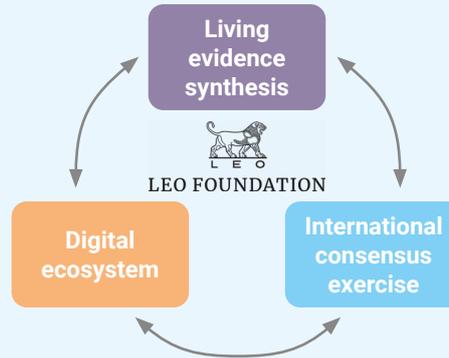
GADA planning workshop and workstreams

In June, GADA held a planning workshop with all of its international collaborators marking the start of the established workstreams and, through small group discussions, each workstream's research goals were individually discussed.

Forty-seven collaborators from around the world attended the workshop, contributing to a fruitful discussion around GADA goals and future plans. It resulted in several great ideas for funding and international research collaborations. We will hopefully see the results of these discussions over the coming months.

The workshop provided strategic planning and direction for all of the workstreams and the direction we are taking these projects in is explained in the following sections.

How GADA is directing its focus



Living evidence synthesis

Atopic dermatitis is ranked 15th among non-fatal diseases and 1st among all skin diseases globally measured by the disability-adjusted life-years (DALYs). Evidence has shown an increasing trend of AD in adolescents and children. Currently, there is no sustainable resource providing long-term data on the prevalence and incidence of atopic dermatitis. This living systematic review aims to provide robust epidemiological data regularly updating the AD burden maps on the GADA website.

This is broken down into key research goals:

- To develop and maintain a 'living' global atlas of the burden of atopic dermatitis;
- To fill gaps in the currently available epidemiological data; and
- To provide recommendations for governments, policy-makers, health professionals and patient organisations based on best evidence.

International consensus exercise

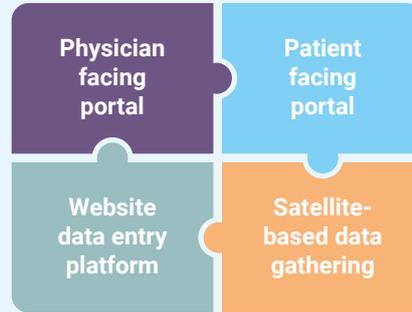
Currently, there are many differences used to describe AD burden in epidemiological studies. For instance, population-based versus hospital-based populations, varying study sizes from hundreds to hundreds of thousands of patients, diagnostic criteria, availability of meta-data, measures of severity and quality of life (QoL) outcomes. Additionally, trend and longitudinal data are rarely found. Therefore, the GADA international consensus exercise aims to align research methodology for epidemiological studies. We plan to form consensus on

the core criteria for the design of future epidemiological studies of AD that focus on disease burden, and to develop guidelines for the conduct of such studies.

The key criteria that will be addressed are:

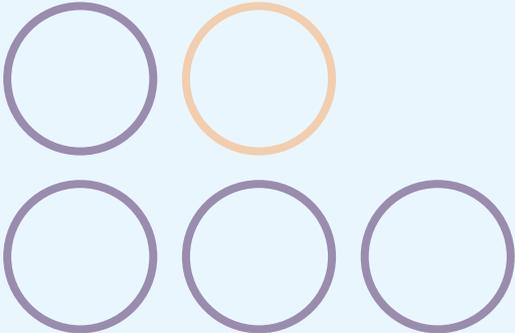
- Case definition (self-report via questionnaire, dermatologist diagnosis);
- Prevalence measure (point, period, lifetime prevalence);
- Ethnicity; and
- Disease severity as well as the QoL assessed by patients/physicians, and determination of co-morbidities in a validated and standardised way.

Digital ecosystem



It is challenging to collect useful data without a data entry tool and standardisation, especially for studies conducted in mid- and low-resource countries. To facilitate AD registers and epidemiological fieldwork, a standardised data entry platform

(including image acquisition) is being developed for both web and mobile browser/app-based use. It aims to integrate physician and patient data entry alongside satellite-based (e.g. UV and pollution exposure) parameters to aid in our understanding of how ecological factors affect AD in real life. Moreover, with the aid of machine learning/AI in the patient-facing app, there is potential to use these exterior parameters to contribute to severity/flare prediction.



Collaboration with LebRAD

GADA has teamed up with the Lebanese registry for Atopic Dermatitis (LebRAD) project led by Dr. Jinane El Khoury Okais, Lebanese American University (LAU). LebRAD aims to link AD patient data among multiple public and university hospitals through the creation of a national registry and GADA is building the LebRAD data entry platform. The plan is to make the GADA register platform available to others who would like to run an AD patient register.

Please get in touch if you are interested in working with us in a similar way!

How to get involved?

- Web and App feedback once released;
- Assist in raising awareness of the tools, once they are released; and
- Recruitment of patients to be involved within your own clinics as well as consideration for use in any fieldwork studies being performed.



Core LebRAD team members

Top to bottom, left to right: Jinane El Khoury Okais, Rita Iskandar, Marwa Hallal*

*Academy of Medical Sciences Daniel Turnberg Travel Fellowship awardee.



In addition to the aforementioned workstreams, GADA has expanded into three other projects.

GADA-omics

Investigating host microbiome and metabolome interaction in AD and diverse populations.

GADA-omics

The skin microbiome is altered in AD and interacts with host immune pathways to mediate skin inflammation in the disease. However, the underlying mechanisms of microbiome–host interactions in AD remain poorly understood.

GADA-omics aims to create a global map of the skin microbiome-metabolome and host immune profile in AD and healthy skin.

SkIN DP

Investigating the relationship between ancestry and presentation of common skin disease.

This project would be the first to profile the skin microbiome, metabolome, lipidome, and immune marker signatures associated with clinical AD phenotypes. The identified AD host-microbiome interactions will also be linked to different geographical regions and environmental exposures to explore the ways in which external factors impact the AD skin microbiome.

AD in pregnancy and lactation

Investigating how patients experience their AD during pregnancy and how physicians manage the condition.

Currently, we are actively seeking funding to cover staff resources and sample processing expenses. We believe that with your support, GADA-omics can make a meaningful difference in understanding immunometabolism interactions in AD skin.

Project leader:
Helen Alexander



SKIN DP

Patients of different ancestry often present to health services with different features of some of the most common skin diseases. Evidence has shown that most image examples are based on western European (fairer) skin types. This results in many patients feeling unsure about receiving the right diagnosis or being able to confidently describe their conditions.

The Skin Images and Nomenclature in Diverse Populations (SKIN DP) looks to address this challenge. The need for this project is supported by feedback from our patient representatives and studies investigating US dermatology residents' confidence in diagnosing skin conditions in darker skin types.

To address this health inequity, it is crucial to improve trainees' technical skills and patient health literacy. SKIN DP will investigate the relationship between ancestry and presentation of common skin disease. It will also look to understand how patients of different ancestry describe their skin condition.

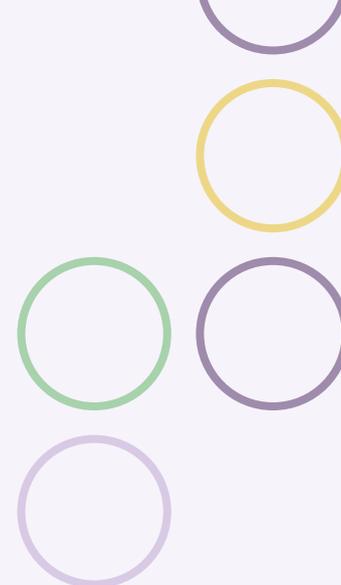
SKIN DP is supported by the Dowager Countess Eleanor Peel Trust and the NHS England Topol Digital Health Fellowship. A multi-site mixed method (qualitative and quantitative) study has been adopted which involves patient questionnaires and acquisition of real-world images of skin disease. To date, there have been 46 patients recruited.

Project Lead:

Chiedu Ufodiama

SKIN DP Team members:

Left to right: Elise Kley, Tamara Griffiths, Chiedu Ufodiama



AD in pregnancy and lactation

Evidence suggests AD may worsen during pregnancy; however, there are no large clinical studies exploring the therapeutic options for AD during conception or pregnancy, nor information on the effects of treatments on the unborn child and lactation. This produces great challenges for women of childbearing age with AD as clinicians may be overly restrictive for treatments due to the lack of scientific knowledge. These challenges translate into greater difficulty with shared decision making between the clinician and patient.

We are conducting a mixed methods study to explore patients' lived experiences and to understand the burden of AD in this particular population. We also aim to obtain some data for this patient population from the LeBRAD registry.

This project will be conducted in close collaboration with Global Skin and the International Eczema Council and their wider networks.

How to get involved?

- Patient recruitment: help recruit patients for semi-structured interviews; and
- Contribute to quantitative data collection (i.e. through online survey or link your study etc.).

Project Lead:

Ruchika Kumari



How to get involved in the GADA project

We are looking for collaborators to be involved in all the workstreams so please get in contact with the various workstream coordinators if you want to find out more information. The contact details for each are as follows:

Living Evidence Synthesis
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Digital Ecosystem
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International Consensus
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SKIN DP
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AD in pregnancy and lactation
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GADA is grateful for the continued support of our collaborating organisations.



We are grateful to Professor Hywel Williams for providing some of the imaging used in this report.

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