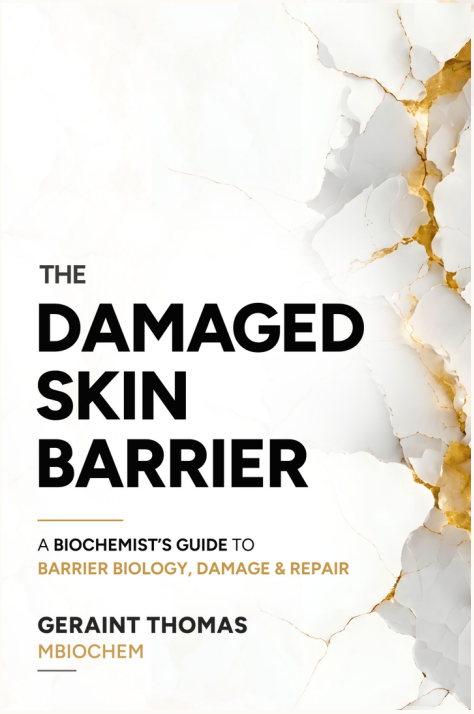
# THE DAMAGED SKIN BARRIER

## A Biochemist's Guide to Barrier Biology, Damage and Repair




**The skincare book that doesn't tell you what to buy.**

A mechanism-first book about how the skin barrier is built, regulated, pressured and repaired, written for scientifically curious readers and grounded in primary literature.

> NO PRODUCT RECOMMENDATIONS.
> NO AFFILIATE REVENUE. NO BRAND PARTNERSHIPS.

GERAINT THOMAS, MBIOCHEM | LUCIDUM PRESS | 22 OCTOBER 2026

> **Products are easy to sell.**
> **Mechanisms are harder.**
> **I chose mechanisms.**

MEDIA CONTACT
media@geraintthomasbio.com

PRESS PAGE
geraintthomasbio.com/press

THE BOOK

# Product-led advice stops at the symptom. This book reads the system.

The Damaged Skin Barrier takes a system-level approach to skin that is usually discussed through products and symptoms. Across eleven chapters, it follows the barrier through structure, regulation and pressure: how it is built, how it is controlled, what pushes it out of range, how recovery proceeds, and how newer interventions can be assessed against the biology they claim to affect.

The book focuses primarily on cosmetically induced barrier disruption in otherwise healthy skin, while drawing on clinical and experimental research where it helps explain the underlying biology.

Written for scientifically curious readers, it draws on primary literature across dermatology, cell biology, biochemistry and biophysics. Its aim is not to tell readers which brand to trust. It is to give them enough biology to ask better questions.

## One framework, three interacting systems

### Structure

The physical architecture of the stratum corneum: corneocytes, organised lipids and the adhesive structures that hold them together. What gets in, what stays out and how the surface tolerates mechanical stress are determined here.

### Regulation

The biochemical systems that keep structure functional: acidity, enzyme activity, ionic gradients, lipid processing and microbial ecology. When regulation shifts, intact-looking structure can begin to behave differently.

### Pressure

The cumulative biochemical, environmental and systemic load placed on the first two: cleansing, actives, UV, hard water, humidity, stress signalling, sleep disruption and other repeated inputs.

## What changes in this book

| MOST SKINCARE | THE DAMAGED SKIN BARRIER |
|---|---|
| Organises by product category. | Organises by biological system: structure, regulation, pressure and repair. |
| Cites ingredients in broad consumer terms. | Links claims back to primary research and the evidence level behind them. |
| Ends with another routine. | Ends with a framework for reading changing skin and changing context. |
| Shaped by commercial relationships. | No product relationships, affiliate revenue or brand partnerships. |

WHY IT EXISTS

# The purge that became a book

Thomas did not begin with a publishing plan. He began with a skincare routine that became progressively more complex while his skin became progressively harder to interpret. Tightness, oiliness, breakouts and stinging were treated as separate problems. Each new symptom invited another intervention.

The pattern finally broke during a retinoid "purge" that continued for months beyond the explanations he was finding. Six months in, he stopped adding products and started reading primary papers. The question changed from "what should I add?" to "what is this system responding to?"

That change in question became the architecture of the book. Products are treated as inputs. Barrier state determines capacity. Recovery is treated as active biology with its own timescales, rather than a surface change that can be read from comfort alone.

> **"I wasn't being reckless. I was being thorough in the way we're taught to be thorough."**
>
> CHAPTER 5, BIOCHEMICAL PRESSURE

The argument is anti-hype without being anti-skincare. Retinoids, acids, cleansers, ceramides and newer technologies all have biology behind them. The book asks what that biology requires, what the finished product can actually deliver, and whether the skin receiving it has the capacity to respond as intended.

### The broader question

Skincare has become very good at naming surface states: dry, oily, sensitive, combination, damaged, dehydrated. The book asks whether these labels turn temporary states into fixed identities. A changing barrier can produce apparently contradictory symptoms without the person's underlying biology having become a new "type".

> **By the end of this book, you'll stop asking 'What is wrong with my skin?' and start asking 'What is my skin responding to?'**
>
> CHAPTER 1, WHEN SKIN STOPS MAKING SENSE

FOR JOURNALISTS

# A different kind of story

### What if skin type is the wrong question?

Oily, dry, sensitive and combination describe what skin looks or feels like, but not necessarily why. Thomas argues that temporary barrier states are often mistaken for fixed identities, encouraging people to treat each new symptom instead of asking what their skin is responding to.

### The skincare book that doesn't tell you what to buy

An evidence-led outlier in a product-led industry. Zero affiliate links, zero sponsored content, zero product recommendations, in a category built almost entirely around them.

### The skin is the active party

Skincare is usually sold as the star of the show. Thomas argues that the strongest interventions reveal the reverse: products and treatments alter conditions, remove obstacles or reduce pressure. The biological rebuilding is carried out by the skin itself. The skin is the active party.

### The purge that became a book

Thomas spent months treating worsening skin as a retinoid "purge", while adding more products to manage each new symptom. Eventually he stopped adding products and started reading the primary literature. The book began as an attempt to understand why his own routine had failed.

## Additional story angles

### What is coming out of your tap?

Consumers scrutinise cleanser ingredients while rarely questioning the water used to rinse them away. In hard water, calcium and magnesium can alter surfactant behaviour and promote deposition at the skin surface. Thomas asks why an exposure repeated hundreds of times a year receives so little attention.

### When the product outruns the evidence

A biological mechanism can be true without proving that a consumer product reproduces it. The book traces the gap between cell studies, delivery through intact skin and finished products, using peptides, light devices, microbiome products and extracellular vesicles as case studies.

### From cancer research to skin barrier biology

Thomas's research background was in death-receptor signalling, apoptosis resistance and cell-survival pathways in breast cancer stem-like cells. His first book applies a related question to a very different system: how biology responds to pressure, and why relatively small regulatory changes can produce much larger downstream effects.

### Serious science, without the textbook voice

The book moves between dense biochemistry, personal observation and dry wit rather than flattening the science into simplified advice. Thomas uses humour sparingly, often just as the mechanism gets heavy, then returns to the evidence. The result is technical science written by someone who came to the subject through the same confusion the book sets out to resolve.

FURTHER QUESTIONS FROM THE BOOK

# Four arguments worth pulling out

**Feeling better can arrive before structural recovery:** Sensory improvement can return before lipid organisation and new corneocyte formation have caught up.

**Why "gentle" is not a biological endpoint:** Cleansing can alter lipids and surface chemistry without immediate sting or visible irritation.

**The microbiome follows the environment:** Acidity, lipids, hydration and permeability help select the community living on the skin surface.

**Barrier repair is an assembly problem:** Ceramide presence alone does not describe whether lipids have been processed and organised into an effective barrier.

## Topics Thomas can speak to

Beyond its central framework, the book examines a wider set of questions across skin biology, environmental exposure, systemic regulation and emerging interventions.

### The acid mantle as an operating environment

Why epidermal acidity is actively maintained, how NHE1 contributes to local acidification, and why pH-dependent enzymes are involved in lipid processing and controlled shedding.

### What TEWL tells us, and what it does not

Transepidermal water loss is a measurement of water movement through the barrier. It can reveal altered function without identifying the cause.

### Ceramides and barrier assembly

Why barrier repair depends on lipid class, composition, processing and organisation rather than the appearance of "ceramide" on an ingredient list.

### Hard water and surfactant chemistry

What is established about mineral-surfactant interactions and deposition, what remains uncertain, and why tap-water chemistry deserves more attention.

### Microbiome ecology

Why the skin microbiome can reflect the conditions of its habitat, and why changing that habitat may be more biologically coherent than treating the community as a feature to "top up".

### Cumulative biochemical load

Why skin experiences a routine as overlapping chemistry rather than isolated steps, and why disruption and repair operate on different timescales.

### Recovery speed limits

Why comfort can improve before structural resilience, why cells formed under better conditions still need time to reach the surface, and why restarting pressure too early can prolong instability.

### Circadian and systemic inputs

How sleep, cortisol dynamics, substrate availability and hormonal state can change the conditions under which topical care operates.

### Peptides, light and extracellular vesicles

How to separate a plausible mechanism from delivery, dose, formulation, clinical translation and finished-product evidence.

### How to read evidence

Why cultured cells, excised skin, animal models and living human trials answer different questions, and why the language of a claim should reflect how far the evidence can travel.

QUOTABLE

# The book in different registers

POSITIONING

### “Product-led advice stops at the symptom. This book reads the system.”

“A book that bridges the gap between primary research and consumer skincare advice, explaining the biology of barrier damage and repair without flattening it into product-led claims.”

MECHANISM FIRST

### “Products are inputs, and inputs create load.”

“An independent biochemist’s mechanism-first guide to skin barrier biology, built from primary literature. No product recommendations. No commercial ties. Written for scientifically curious readers, but built to hold up under clinical and formulator scrutiny.”

CONSUMER FACING

### “The skincare book that doesn’t tell you what to buy.”

“Most skincare advice tells you what to use. This book explains what’s really happening underneath, why the barrier breaks down in the first place, and what restores true resilience. It turns skincare from a series of hopeful experiments into a process you can reason through. Geraint Thomas is a biochemist, not a brand, so there’s no product range attached, nothing to sell beyond the book itself.”

PUNCHY

“Your skin barrier is broken by biochemical overload, not a round of bad luck. Most advice prioritises the symptoms, not the mechanism. The Damaged Skin Barrier explains the biology: structure, regulation, pressure. 252 references. Zero product recommendations.”

### How the evidence is handled

The book does not treat evidence as one category. Established human mechanisms, clinical findings, cell and tissue models, animal work and mechanistic inference are kept separate where the evidence requires it. Where a claim is early, model-dependent or inferred, the language is calibrated accordingly.

QUOTABLE

# Pull quotes with chapter titles

**Skin that doesn't make sense is usually answering a question you haven't asked yet.**

CHAPTER 1, WHEN SKIN STOPS MAKING SENSE

**Your skin has already made up its mind by the time you get involved.**

CHAPTER 2, THE INFRASTRUCTURE

**If the structural components of the barrier are the hardware, the acid mantle is the operating system. The hardware exists. The acid mantle determines whether it runs.**

CHAPTER 3, THE ACID MANTLE AND ENZYMATIC CONTROL

**There is no moral compass to this. No good bacteria being overwhelmed by bad ones.**

CHAPTER 4, THE MICROBIOME AND BARRIER ECOLOGY

**'Turnover' is one of the most abused words in skincare.**

CHAPTER 5, BIOCHEMICAL PRESSURE

**Comfort is the first surface signal to mislead you. It is not the last.**

CHAPTER 6, THE RESET

**Having ceramide is not the same as having barrier. The label may be technically accurate. The claim it enables is another matter.**

CHAPTER 7, BIOMIMETIC REPAIR

**The things we repeat most often are the last things we think to examine.**

CHAPTER 8, THE HARD WATER VARIABLE

**You can read an ingredient label. You cannot read the air. So the label gets interrogated and the air does not, even when the air is doing most of the work.**

CHAPTER 9, THE ATMOSPHERIC VARIABLE

**'Drink more water' is the skincare equivalent of 'have you tried turning it off and on again?' It gets offered for everything, explains nothing, and is technically not wrong in the same way that most unhelpful advice is technically not wrong.**

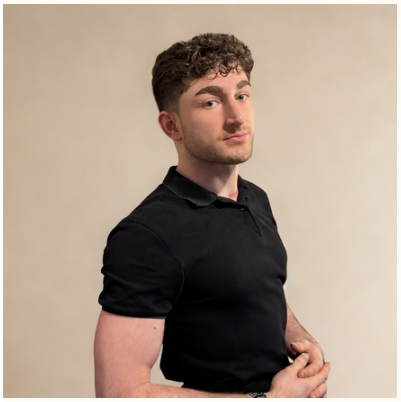
CHAPTER 10, SYSTEMIC SIGNALS

**The mechanism doesn't need the marketing. The marketing needs the mechanism.**

CHAPTER 11, EMERGING THERAPIES AND INNOVATION

THE AUTHOR

# A biochemist working in the space between research and explanation.



## Geraint Thomas

BIOCHEMIST, SCIENCE COMMUNICATOR AND AUTHOR

Geraint Thomas holds a first-class integrated Master's degree in Biochemistry from Cardiff University.

His research examined how cells under biological pressure survive, resist or are pushed toward death, including work on TNF-family signalling and apoptotic resistance in breast cancer stem-like cells.

After years working outside the field, he returned to scientific writing through skin barrier biology. The Damaged Skin Barrier applies the same interest in systems under pressure to a very different tissue, drawing on research across dermatology, cell biology, biochemistry and biophysics.

He founded Lucidum Press and geraintthomasbio.com to build an independent platform for mechanism-first skin science.

### Background at a glance

**EDUCATION**

MBiochem, First Class, Cardiff University

**RESEARCH**

European Cancer Stem Cell Research Institute, 2017–2018. TNF-family signalling, apoptotic (cell suicide) regulation and cancer stem cell biology.

**PLATFORM**

Founder, Geraint Thomas Bio; founder, Lucidum Press.

**INDEPENDENCE**

No product partnerships, no affiliate revenue, no brand relationships.

AT A GLANCE

# Publication details

| | |
|---|---|
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## Review copies, images and editorial material

Review copies are available for journalists, editors, broadcasters, podcast producers and other relevant media. Digital review material can be supplied where appropriate; physical copies are available in limited numbers.

High-resolution cover artwork | author images | book photography | selected figures | press release | media sheet | review copy / selected chapters

## Contact

| | |
|---|---|
| MEDIA ENQUIRIES | media@geraintthomasbio.com |
| PRESS PAGE | geraintthomasbio.com/press |
| BOOK PAGE | geraintthomasbio.com/the-damaged-skin-barrier |
| ARTICLES | geraintthomasbio.com/articles |

> **The biology doesn't change. Your understanding of it has.**
>
> CHAPTER 11, EMERGING THERAPIES AND INNOVATION