# the Patch Tester

## Contact Dermatitis | Haptens | Patch Testing

Edition #10
March 2022

# THE TATTOO ISSUE

"The Patch Tester" is a quarterly e-magazine from Chemotechnique to the Patch Testers of the world.

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## PURPOSE

The Patch Tester is an e-mag developed by Chemotechnique to serve as an information resource for all Patch Testers and other Dermatologists around the world; not just in Sweden, or Europe, or America, but wherever the English language can be read and understood. This tenth issue comprises thirty-two pages with various different topics and features. Ultimately, we plan for The Patch Tester to become the forum for all of us to communicate and cooperate, in all directions.

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## ACKNOWLEDGEMENTS

Production Editors: David Niklasson & Steve Lee





# Aluminum - Allergen of the Year

*An aluminium Finn Chamber*

At the ACDS, the NACDG revealed aluminum to be the ”allergen of the year” for 2022.

Aluminum is widely used and contact with its elemental form or its salts is unavoidable. Aluminum as a metal is present in transport, construction, packaging, and electronic equipment. Aluminum salts are present in consumer products, food items and drinking water, vaccines, drugs, and antiperspirants.

Contact allergy to aluminum was once considered to be very rare but is today more common.

Aluminum chloride hexahydrate in petrolatum should be used for patch testing. A patch test reading should be performed 1 week after the application so as not to miss 15% to 20% of aluminum allergy. Aluminum should be included in any baseline patch test series for children and investigated for a possible inclusion in baseline series for adults. Aluminum test chambers (Finn Chambers) can interfere with the testing resulting in both false-negative and false-positive patch test reactions to non-aluminum contact sensitisers.

**Aluminium haptens from Chemotechnique**

| Art no | Name | Conc. | Veh |
|---|---|---|---|
| A-038 | Aluminum Hydroxide | 10.0% | pet |
| A-022 | Aluminium(III)chloride hexahydrate | 2.0% | pet |

# 4 What's new at Chemotechnique?

## Implant Series and division of Metals Series

The most prominent changes made to the Chemotechnique product line-up of 2022 include the introduction of the Implant Series and the division of the Metal Series (MET-1000).

Chemotechnique has revised its offering of Metal haptens by creating three new or highly modified series:

| | | | |
|---|---|---|---|
| 1. | Metal Series | (MET-1000) | 30 haptens |
| 2. | Metal Series Extended | (METE-1000) | 25 haptens |
| 3. | Implant Series | (IMP-1000) | 44 haptens |

These are now stated in the Chemotechnique website and in the 2022 printed Chemotechnique catalogue. This 2022 catalogue is available here for download.

The Implant Series was introduced by popular demand to cater for cases when patients are tested for contact allergy before surgery. The Implant Series contains chemicals and substances which are included in implants and is based on comprehensive scientific research and recommendations from various research groups. It consists of haptens found in metal implants, bone cement and antibiotics, which are all known to cause contact allergy.

The division of the Metal Series was done to reduce superflous testing and to enable metal testing alongside baseline testing. As the Metal Series prior to the change included several haptens that were markers for the same culprit chemical  a revision was done with the updated Metal Series now containing markers for all relevant culprit chemicals, but not in all concentrations or variants.

**The Metal Series**
The Metal Series comprises 30 haptens as an initial screening test.

**The Metal Series Extended**
The Metal Extended Series comprises 25 haptens that are additional markers to haptens present in the Metal Series.

**The Implant Series**
The Implant Series comprises no less than 44 haptens, including the metals which are included in metal-based implants, whether teeth implants or structural orthopaedic implants such as for knees and hips, etc.

The Metals of interest in the Implant Series include: Aluminium, Beryllium, Cadmium, Copper, Gallium, Gold, Indium, Iridium, Iron, Manganese, Mercury, Molybdenum, Nickel, Palladium, Platinum, Ruthenium, Rhodium, Silver, Tantalum, Tin, Titanium, Tungsten, Vanadium, Zinc, and Zirconium.

The practitioner should consider as possible causes of any suspected contact allergy not only the more obvious metals found in implants, but also the bone cements and antibiotics used in such implantation procedures.

The Bone Cements of interest in the Implant Series include the following haptens:
Ethyl acrylate, Methyl methacrylate, Niobium chloride, Sodium tungstate dihydrate and Zirconium dioxide

The Antibiotics and additional constituents of interest in the Implant Series include the following haptens: Bacitracin, Benzoyl peroxide, Chlorhexidene, Gentamycin, Hydroquinone, Neomycin, Tobramycin, and Vancomycin.

Dear Reader, if you have any particular article or book or website that you would like to have reviewed in a future issue of The Patch Tester, then please contact the Editor here.

**Introduction to Patch Test Chambers**

Patch Test Chambers are the most essential component of any patch test system. It is certainly possible to run a patch test without the commercially manufactured haptens, either in petrolatum or in liquid form, for example using the patient's own household materials or cosmetics or occupational chemicals and other items, but conversely it is simply not possible to set up a patch test without some form of standardised means of holding the test substance against the skin of the patient for a defined period of time.

Chemotechnique is one of only two global-scale and globally represented manufacturers of patch test chambers, though there are several other national manufacturers who may extend the sales of their patch test chambers into a few other countries.

Each manufacturer has their own design and construction and presentation of their commercial chamber strip products, and each type will have features & benefits, advantages & disadvantages compared to other chamber strips, including those from other manufacturers.

Very few clinical or technical research articles have in recent years been published that compare the relative characteristics and clinical performance of different patch test systems. There are several publications from over a decade ago on comparing different patch test systems but many of those systems are no longer in existence. One very recent publication comparing two patch test systems is reviewed in this 10th edition of The Patch Tester, on pages 27-28.

It is often a very subjective choice, by the Dermatologist or by the dermatology Nurse, of which manufacturers' chamber strip is used. The choice of patch test system in a clinic is often based on experience, clinic tradition, personal habit, and economy. The choice of which manufacturer and product to use for the chambers may be entirely different from the choice of the manufacturer of the patch test haptens / allergens.

**Standardisation**

More than 50 years ago, the International Contact Dermatitis Research Group (ICDRG) devised the first guidelines for:

1. The optimal concentrations of haptens for patch testing
2. A standardised system for reading and interpreting the patch test results.

The international Dermatologist community widely accepted these recommendations, thereby introducing a crucial degree of standardisation to patch testing. However, the apparent simplicity of patch testing is subject to many complex variables that may affect patch test results.

Before it is even possible to consider meaningful standardisation of the clinical readings, it is necessary to standardise on the materials used and on the actual test procedure.

It is well established that the dose of allergen per unit area in contact with the patient's skin is an important metric underlying both sensitisation and elicitation of responses in allergic contact dermatitis. To achieve a relevant dose/area unit, the chamber needs to have a feature that prevents leakage of the hapten preparation outside of the chamber by using an adhesive on top of the chamber rim. The chamber unit that has this feature is the IQ Ultra and IQ Ultimate.

Many clinicians assume that all patch test chambers deliver the same hapten dose. In fact, not only is there considerable variation across patch test systems but also the use of different systems also varies across both clinics and countries.



Patch testing is complicated by a myriad of variables:

<u>Hapten/vehicle differences:</u>

- Oxidation / degradation products of the hapten
- Percentage concentration in the excipient
- Storage conditions of the haptens
- Volume dispensed
- Molecular weight
- Viscosity
- Petrolatum or Liquid vehicle
- Exact formulation
- Age of the hapten
- Etc.

<u>Patient factors:</u>

- Skin type
- Skin sensitivity
- Ongoing suppressive treatments
- Etc.

<u>Clinician/Nurse-related factors:</u>

- Reading times
- Scoring
- Interpretation
- Reporting
- Etc.


Although patch testing is considered an important tool for diagnosing allergic contact dermatitis, rigorous standardisation is lacking.This lack of standardisation is not a purely academic concern. It hinders meaningful comparison of results across clinics and across national and international clinical trials. Improvements in standardisation of the controllable aspects of the patch testing process would minimise methodological errors and promote reproducibility of results. This would be of clear benefit for patients seeking relief from their often debilitating but preventable ACD.

*("A Contemporary Fischer-Maibach Investigation – Variations in Patch Test Delivery Systems and Implications for Standardization", by Dathan Hamann, et al, in Dermatitis, Nov/Dec 2013, Volume 24, issue 6, pp 302-312. See https://journals.lww.com/dermatitis/toc/2013/11000).*

**Similarities & Differences**

All patch test chambers are formed into chamber strips of 10 chambers, or test sites, in 2 rows of 5 chambers / sites. TRUE TEst is an exception with 12 test sites per chamber strip.

However, the individual patch test systems differ greatly from manufacturer to manufacturer and product to product in so many parameters:

- Their physical dimensions, notably surface area in contact with the skin, and volume of the chamber reservoir
- The means of retention of liquid haptens (filter paper; either self-contained or to be manually added

- The material from which chambers or patches are constructed; for example, aluminium, polypropylene, polyethylene, cotton, etc.
- The presence or absence of coatings; for example… to aluminium rings or cups
- The material of the tape panel; for example… non-woven adhesive, polyurethane, etc.
- The adhesive used and its potential to sensitise or cause an ACD reaction in an already sensitised patient.
- The tape used and its potential to sensitise or cause an ACD reaction in an already sensitised patient.
- Adhesive properties.
- Occlusive properties.

Depending on the patch test system, chambers are loaded manually by clinicians or nurses at the testing site (or in the case of TRUE Test, are pre-loaded in exact dosages by the manufacturer).

Manual loading introduces variability in dose delivery because of differences in how the hapten / allergen is dispensed (e.g., by pipette, syringe, or dropper) and in the amount dispensed.

*Ad hoc* testing shows that there is enormous variation especially from operator to operator but even to a lesser degree by the same operator on different occasions or even over the course of a single patients patch testing.

The greatest variation is however around the intended 20-25 mg of petrolatum to be dispensed, with values of 15 or 40 mg being common, even with experienced operators.

Such operator variability can greatly undermine the research to establish the optimal concentration of a hapten in the petrolatum or solution.

Is 40mg of a 2% concentration in petrolatum in a patch test chamber equivalent or even comparable to 25mg of a 5% concentration?? The answer is no, but that leads to the next question of how important is that difference in real life situation of identifying the haptens / allergens to which a patient is sensitised.

**Early Beginnings**

The original commercially manufactured patch test system was developed in Finland by Epitest, and was known as Finn Chambers. The Finn Chamber system consists of 10 aluminium chambers mounted on a panel made from non-occlusive surgical tape with a hypo-allergenic acrylic-based adhesive. Aluminium discs in a slight convex shape could also be used along with the adhesive tape. For liquid allergens then a small disc of filter paper could be manually punched and manually added to the ring or cup on the tape. Whilst Finn Chambers were the forerunner, the process was also extremely laborious, slow, and open to much operator variation. Another disadvantage with this system is that the test personnel often must perform additional taping on top and around the test panels to ensure that the test panels adhere well to the skin and do not move.

With aluminium-based Finn Chambers there is also the recognised risk of sensitivity by some patients to the aluminium metal. Not only that but also false-positive reactions to sodium tetrachloropalladate, Myrolon pereirae, Caine mix II and palladium chloride. This phenomenon has been ably described in the article Patch Testing with aluminium Finn Chambers could give false-positive reactions in patients with contact allergy to aluminium by Lisbeth Rosholm Comstedt, et al, in Contact Dermatitis, April 2021 and accessible at https://doi.org/10.1111/cod.13870.

Nevertheless, Finn Chambers continue to have its loyal supporters even in the face of more modern and more functional alternative patch test systems.



**Current Patch Test Systems**

| Brand Name | Manufacturer |
|---|---|
| IQ Ultra™ | Chemotechnique MB Diagnostics AB |
| IQ Ultimate™ | Chemotechnique MB Diagnostics AB |
| AllergEAZE® | SmartPractice (originally produced by HAL Allergy BV) |
| AllergEAZE® Clear | SmartPractice |
| Finn Chambers® | SmartPractice (originally produced by Epitest Ltd Oy) |
| Finn Chambers® AQUA | SmartPractice |
| TRUE® Test | SmartPractice (originally produced by Pharmacia) |
| Van der Bend™ | Van der Bend |
| Curatest® | Lohman & Rauscher |

**TRUE® Test**

It should be noted that TRUE Test is very different from the other patch test chamber types in that it comprises a fixed panel of 35 allergens / haptens that are already dispensed onto three adhesive tapes. It was originally based on the European Standard Panel, but as that has been revised and updated over the years, then TRUE Test has now diverged by approximately 50% from the current European Baseline Series.

TRUE Test is nowadays a very modest screening panel of just 35 haptens / allergens and so does not include numerous very important or significant haptens / allergens that are found in more modern and more comprehensive screening series. Missing haptens / allergens include FM II, MI, hydroperoxides of linalool, hydroperoxides of limonene, formaldehyde, propolis, BIT, DMAPA, IPBC, Cinnamal, 2-HEMA, etc. In addition there are a number of haptens included in TRUE Test which are no longer considered to be significant, including parthenolide and bacitracin.

**Extra Tapes**

Although each chamber strip has an adhesive backing, the Dermatologist or Nurse may choose to more firmly secure the chamber strips to the patients backs by overlaying them with medical tape. However, this increased taping further restricts patient mobility and is often experienced by the patient as a major discomfort.

**Adhesives**

The adhesives and other ingredients in medical tape are neither standardised and vary from manufacturer to manufacturer and product to product. The exact adhesive(s) used are seldom reported on an ingredient list. Historically, most cases of true tape allergy stemmed from the use of colophony and latex or rubber accelerators, rather than with the acrylate-based adhesives that are now used. Most but not all reactions to tape that patients experience nowadays are from the occlusion and skin irritation, rather than true ACD to the adhesive or the tape or the chamber materials. Nevertheless such reactions do occur and the Dermatologist must be on the lookout for such complications.

As an alternative to standard surgical tape, Tegaderm transparent film (3M, St Paul, MN) is a standard dressing that is commonly used to cover and protect peripheral and central catheters as well as closed surgical wounds. It is a waterproof dressing that has proven to be more resistant to sweat

than regular adhesive tapes and seems to adhere better to the surface of an oily or hairy skin. The transparent surface permits the visualisation of the patch test systems and the irritant reactions that may appear underneath. (Transparent Film Dressings for Patch Testing leads to Better Adhesion and Patient Comfort, by Enrique Rodriguez-Lomba et al, in Dermatitis Sept/Oct 2018, Volume 29, Issue 5, p289.).

See https://journals.lww.com/dermatitis/toc/2018/09000

**New Generation**

A more recent development by Chemotechnique and other manufacturers has been the introduction of chamber strips with transparent tape, which are better suited to tropical / humid climes, and which also allow gentle showering and gentle exercise. These are also better suited to oily or hairy skin, and for children who are active and so likely to dislodge any poorly adhesive tape system.

For Chemotechnique this latest generation patch test system is the “IQ Ultimate” chamber product.



**Who are you?**

My name is Helena Friman, Legal Counsel at Chemotechnique MB Diagnostics AB

**How did you first come into contact with patch testing?**

Growing up in a family with a father who was very much committed to patch testing, Bo Niklasson CEO of Chemotechnique, the world of contact allergy and patch testing has been a natural part of my childhood. Having the privilege to attend international contact dermatitis congresses from an early age has given me a good understanding of contact dermatitis and the importance of patch testing, the gold standard for the diagnosis of contact allergy.

**When did you join the company?**

Although I spent summers in my youth earning extra money working within the Chemotechnique order department, it wasn’t until 2015, that I rejoined the team at Chemotechnique, after working as legal counsel at a large security company for 8 years.

**Regulation – where do you see the future of patch testing?**

With my background in law, the regulatory status of haptens is of great interest. The heterogeneous classification and regulatory pathway for haptens entails great challenges. I am concerned that future regulatory requirements will restrict the development and availability of patch test haptens.

There is a growing concern at both European and global level about skin sensitisation of the general population. Annual incidence rates (new cases) of ACD in the general population (all causes) are between 0.17 % and 0.7 % per year.[1] The societal impact of Allergic Contact Dermatitis is significant, with an estimated prevalence of 20% in the general population.[2] ACD can have a significant negative physical and emotional impact on patients’ quality of life. The Estimated annual cost per case of ACD in Europe is between € 3 700 and € 13 800 (ECHA Annex XV Restriction report, skin sensitizing substances, 2019).

There are over 14 000 substances on the EU market with some indication of a skin sensitising concern.[3] Notably, only around 500 (0.036%) of these substances are commercially available for standardised patch testing

As a strong advocate for the advancement of patch testing, I believe it is imperative that regulations will not restrict the availability of patch test haptens, nor the development of new commercial patch test haptens.

It is my hope that regulators combine the need for safety and efficiency with the need for a pragmatic approach to the requirements of manufacturing commercial patch test haptens. The support of national and international contact dermatitis research groups is key in the joint mission to secure the availability of a broad range of commercial patch test haptens also in the future. Without the support, I fear that with increased imposed requirements, the broad range will be restricted and the development of new haptens will decrease.

*[1] ECHA Annex XV Restriction report, skin sensitizing substances, 2019*
*[2] Alinaghi et al. Prevalence of contact allergy in the general population: A systematic review and meta-analysis, Contact Dermatitis. 2019;80:77–85.*
*[3] https://echa.europa.eu/sv/hot-topics/skin-sensitising-chemicals*

# The Role of Providers of Patch Test Products

**Chapter: The Role of Providers of Patch Test Products**
**By Bo Niklasson, founder and CEO of Chemotechnique MB Diagnostics AB**

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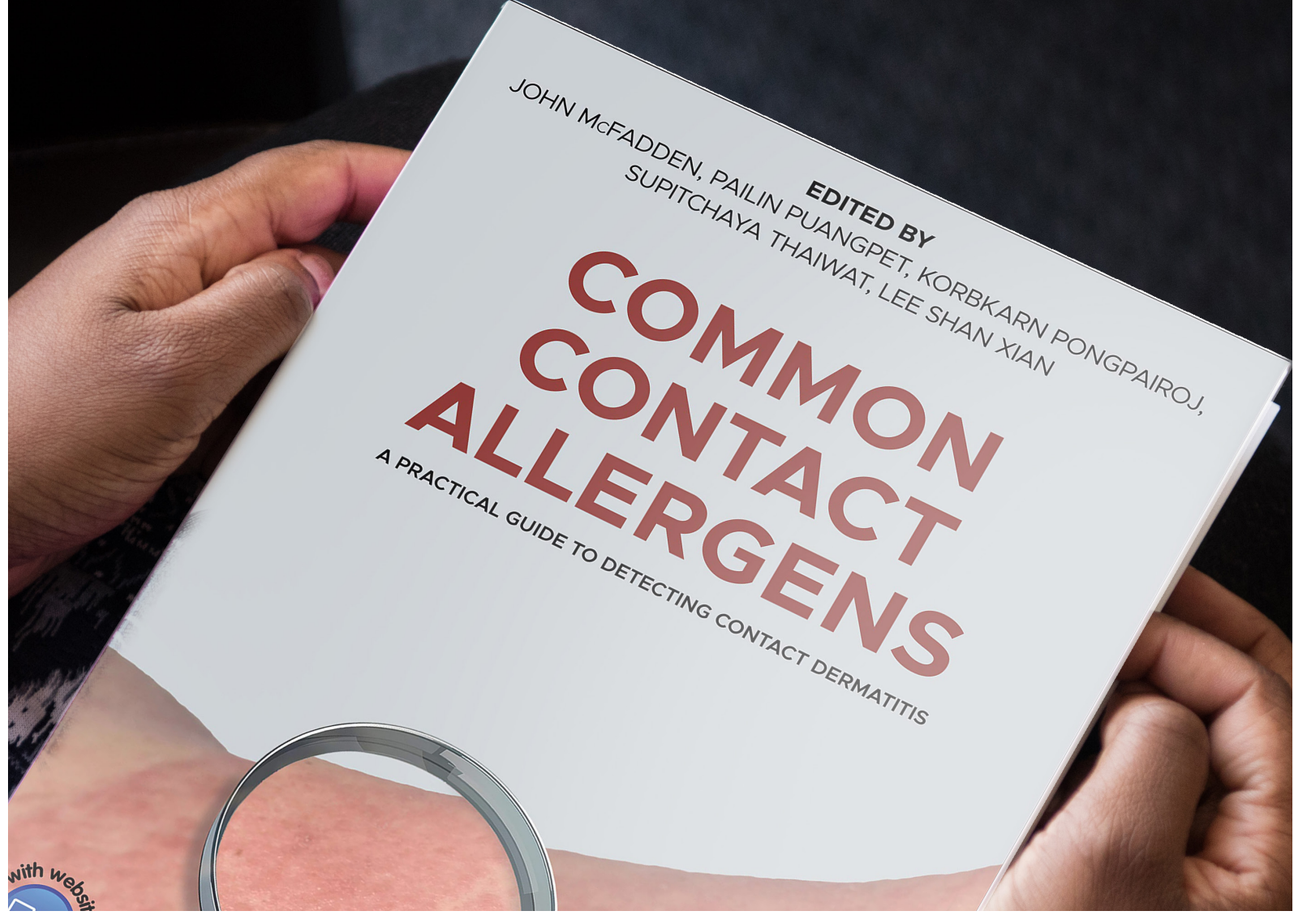


## HOW TO DIAGNOSE ALLERGIC CONTACT DERMATITIS, PERFORM AND INTERPRET PATCH TESTS, AND SELECT THE BEST TREATMENT OPTIONS

Common Contact Allergens has been written for a broad range of dermatologic professionals, and is therefore a straightforward and useful guide that bridges the gap between detailed reference texts and basic handbooks on contact allergy.

The first section of the book leads practitioners through the steps necessary to effectively and accurately perform patch testing. This covers basic immunological knowledge, various ways in which contact allergy can present, patch test techniques, and how to diagnose allergic contact dermatitis. Giving attention to all standard allergens, the second section offers an overview of the current literature on each, with detailed guidance on determining the clinical relevance of a positive patch test reaction.

This convenient companion:

- Offers universally applicable guidance on when and how to perform patch testing, as well as how to interpret test reactions and arrive at accurate diagnoses
- Characterises allergens from the Standard 'Baseline' Series, the International Series, and the TRUE Test Series
- Profiles allergens such as metals, fragrances, medicaments, rubber chemicals, plant chemicals, hair and clothing dyes, excipients, and resins
- Contains case reports, clinical images, patch test tips, and more
- Features colour-coded exposure templates for easy consultation
- Provides key pointers on how to take patient histories and handle challenging cases
- Introduces new concepts such as 'microhistory' and 'microexamination'
- Allows access to online supplementary material featuring CAS numbers, toxicology, immunology, prevalence rates, chemical structures, additional case reports, and more.

Common Contact Allergens is a valuable reference tool for trainee and practicing general dermatologists, dermatology nurses, occupational health physicians, allergists, and other medical professionals with an interest in dermatology.

The author describes in his chapter on The Role of Providers of Patch Test Products, many interesting insights into the practical needs, requirements and considerations for the providers of patch test products to coordinate closely with the medical authorities to research, develop, standardise, and manufacture new hapten tests.
He states that the role of the provider is not just to produce but to be an active partner to the clinical experts who are on the front line of patients with suspected Allergic Contact Dermatitis.

**"Hapten" or "Allergen"**
The author raises a very interesting point when he describes the patch test substances as "haptens" rather than the previously used term "allergens". The term "allergen" has been previously, (and continues to be) used in the patch testing professional community when referring to these test substances, as they have previously been incorrectly grouped together with the allergens used in skin prick testing (SPT).

SPT allergen solutions are used, usually by Allergy Specialists, to identify usually naturally occurring biological substances such as pollens, mites, mould spores, animal danders, etc., that classically cause respiratory conditions such as Allergic Rhinitis and Allergic Asthma, due to the involvement of allergen-specific IgE in a Type I allergic reaction (Gell & Coombs).

In contrast, haptens are immunologically incompetent, the author argues, low molecular weight (<500 Da) compounds, usually, chemical not biological, that are not antigenic by themselves but require binding to a skin-located protein in order to become an antigen that is recognised by the persons immunological system, in a Type IV allergic reaction (Gell & Coombs).

**Regulatory**
The author also raises a very interesting, and contentious topic of legislation and regulation of patch test products. The regulatory aspects of patch test substances and their chambers ("Patch Test Units") is an intensely fraught situation, with ever-increasing regulatory restrictions that may be noble in their intentions but are in effect acting to slow or prevent the development or introduction of products and tests.

The author states "To date there has been no international legislative or regulatory uniformity associated with the practice of the topical diagnostic procedure of patch testing and the haptens used to indicate if an individual patient has an allergic reaction to a particular tested substance". However, this book was written and published in early 2020 and times are changing - the new directives in 2021 and 2022 from the EU have now moved the goalposts by creating new requirement and restrictions on many diagnostic tests including patch test substances. These EU regulations apply of course to the manufacture of such products, so even though you as a Dermatologist may be practicing outside the EU, Chemotechnique as a Sweden-based manufacturer must comply with all these EU regulations.

PTU's that are not sold pre-filled with haptens are generally classed as Medical Device Class 1, which may or may not require registration with the medical regulatory authorities in any given country. This includes the Chemotechnique IQ Ultra and IQ Ultimate Patch Test Units.
Not only has a manufacturer been affected by new regulations but also the regulations in many individual countries have increased their administration on the importation and clinical use of patch test haptens.

Classically the TRUE Test product has always been described by its manufacturer (originally Pharmacia of Sweden in the early 1990's) as a pharmaceutical product and thereby requiring full assessment and authorisation by the medical regulatory authorities of not only Sweden (where it was manufactured – though nowadays in Denmark) but also in the country of use, whether it be USA or New Zealand or anywhere in between. However, the open-choice patch test systems such as Chemotechnique's, where the Dermatologist chooses the individual haptens to be used for each patient (whether a formal Baseline Series or a 100% customised selection of haptens) have until fairly recently escaped such regulation in the country of the practitioner. This is because they are deemed to be "Named Patient Products", which are customised for the individual patients; so the patch test haptens are deemed to be unregistered pharmaceuticals. However, again, the situation is changing in many countries and requirement and restrictions are being imposed.

This increased regulation means greatly increased costs for the manufacturers, and that factor coupled with the general trend for national health authorities to remove or reduce reimbursement funding for patch testing, is certainly painting a grim picture for the future of patch testing as we know it today.

As pointed out by many expert clinicians, comprehensive patch testing is key to a professional investigation of contact allergy in patients suffering from contact dermatitis. Therefore it is of the greatest importance that manufacturers, together with the support from Dermatology/Allergy associations and contact dermatitis groups, explain to the legislative authorities the importance of facilitating regulatory procedures that will protect the future availability of haptens for patch testing.



## Navigating Tattoo-related Allergic Dermatitis: Beyond Pigments

By S A Kullberg, et al
**In Dermatitis, Vol 31, Issue 6, Nov/Dec 2020, pp 59-60**

The most common adverse effect after tattooing is infection, but that is followed by ACD reactions.

Tattoo inks are classified as cosmetics and are therefore not regulated, for example in USA by FDA. Nevertheless, they are a significant healthcare problem.

Whilst tattoo allergy has historically been attributed primarily to metallic pigments it is now acknowledged that this is nowadays rare, and the organic dyes are the more usual culprits. Although ACD to tattoos is well known for the pigments used in tattoos, there are several other ingredients that may also be causing the ACD; for example, octylisothiazolinone and nickel.
The nickel component is most usually found as a contaminant in the dyes (particularly titanium dioxide), though may also be present in the tattoo equipment used. Reactions can be delayed not just the usual few hours after tattooing, but as long as years after the procedure, and lasting from a few hours to life-long.

Once diagnosis assisted by patch testing has defined or at least indicated the problem haptens, then treatment with avoidance and local steroid creams under occlusion are the best options.

# Henna

Henna is a naturally occurring brown dye made from the leaves of the tree *Lawsonia inermis*. The active ingredient of henna is lawsone (2-hydroxy-1, 4-naphthoquinone).

It is traditionally used in Islamic and Hindu cultures where it has a religious and social significance, and as a hair colouring and as a dye for decorating the nails or making temporary skin tattoos. In ancient times, henna was recommended as a remedy. The plant was used as a medicine for jaundice, leprosy, smallpox, and various skin complaints including mycotic infections and pruritus. The use of temporary henna tattoos has increased dramatically in recent years, especially in children and adolescents.

Despite its increased use, because of its low allergenicity, contact dermatitis to henna has a very low allergic potential and henna reactivity seems to be rare in individuals without occupational exposure. The majority of cases of allergic contact dermatitis to henna are associated with the application of the henna together with naturally occurring substances or chemical substances to produce more intense coloration as well as to reduce fixation time. Natural substances such as lemon oil, vinegar, and eucalyptus oil are added to obtain different shades of the colour; for example, vinegar can be used to enhance the effect of henna. These additives can include chemical agents such as various diaminotoluenes and diaminobenzenes. Para-phenylenediamine (PPD), which is sometimes added to obtain a dark, blackish henna, causes the majority of contact dermatitis reported related with tattoos. This is also known as TBHT (Temporary Black Henna Tattoo).

This enhancement of the colour can also be accompanied by more intensive symptoms of dermatitis in reaction to the henna and additive mix, whereby the additive may have caused a chemical change in the henna to make it more allergenic. Because of its molecular characteristics, PPD can induce skin sensitisation that may cause various clinical manifestations with successive exposures, amongst which the most common is allergic contact dermatitis (ACD).

Henna sensitivity causing localised skin reaction is usually identified by a patch test to 1% PPD. Once sensitisation has occurred, patients may experience severe clinical symptoms which can present with a persistent hypopigmentation when they are re-exposed to substances that contain or cross-react with PPD. These include common household products such as organic dyes in clothing and hair dyes. Therefore, future avoidance of such PPD-containing items may be a major problem.

Given the widespread use of PPD, TBHT could adversely affect the daily life of paediatric patients; thus, for this reason, this practice as a fashion accessory must be discouraged. In addition, it is extremely important to provide scientific information on the risks of TBHT to consumers, especially to adolescents and to the parents of younger children to prevent PPD sensitisation.
For further reading:

1. https://dermnetnz.org/topics/black-henna-tattoo-reaction - information for patients
2. https://pubmed.ncbi.nlm.nih.gov/23782354/ - review article from 2013 by A de Groot

# Hot Topic

## REACH Legislation on Tattoo Inks

New EU regulations affecting tattoo inks came into force on January 5, 2022.

To protect European citizens, thousands of hazardous chemicals found in tattoo inks and permanent makeup are restricted in the EU under the REACH Regulation (REACH = Registration, Evaluation, Authorisation, and Restriction of Chemicals).

According to the ECHA (European Chemicals Agency), tattoo inks contain hazardous substances that cause skin reactions (contact dermatitis, and other adverse effects) and other more serious health effects such as genetic mutations and cancer. Colour pigments can also enter various organs such as lymph nodes and the liver through the skin.

As a result of the new regulation, many substances contained in tattoo inks, such as binding agents and preservatives, may only be used in very low concentrations. This means that most of the inks currently in use may no longer be used from 5/1/22. According to suppliers, this affects the entire range of inks, except for a few black and white shades. According to them, there are hardly any EU-compliant alternatives currently available.

Tattoo colours can contain up to 100 substances in addition to the dye. They make the colour persist for a longer period of time or they ensure a good consistency to the ink. Among these substances are heavy metals such as nickel or cobalt, or substances that are considered carcinogenic.

Regulation of the ingredients is, therefore, useful for the protection of consumers, especially since it is clear that the tattoo colours remain in the body, even if the tattoo has been removed.

Hitherto, there has been relatively little research into how the colours and substances used behave in the body, both short-term and especially long-term.

The industry takes a critical view of the new regulations, especially concerning the problems of their implementation and the expected economic consequences for the industry. However, the legislation has been years in the making, so the industry has had fair warning of the coming restrictions. Accordingly, the first manufacturers have already announced REACH-compliant tattoo colours for 2022. However, the colours will be somewhat different than before, as different pigments and formulations will be used.

From 2023, there will also be a planned ban on the two pigments Green7 and Blue15. At the moment, there is no adequate replacement for the blue pigment in particular.

With the new restrictions, the EU aim to ensure that EU citizens are equally protected, irrespective of the country where they get tattooed and whether the ink is manufactured in the EU or not. The Commission works hard on ensuring the safety of chemicals used in everyday products and is today restricting the use of dangerous substances in inks used for tattooing. Some EU Member States have already done that, but with this restriction they aim to harmonise these measures at EU level and to improve citizens' protection. This restriction is the result of a good cooperation between the Commission, the European Chemicals Agency and the Member States with the involvement of the industry and NGOs.

The new rules include maximum concentration limits established either for groups of substances or for individual substances such as certain azo-dyes and carcinogenic aromatic amines, polycyclic aromatic hydrocarbons (PAHs), metals and methanol.

So far, EU Member States have different national rules on restriction of chemicals in tattoo inks. With this new EU-wide legislation, there will be harmonised rules across the EU. Tattoo inks and permanent make-up that contain the substances listed in quantities exceeding the specified limits may no longer be placed on the market and used in the EU.

The European Chemicals Agency (ECHA) states on their website at https://echa.europa.eu/hot-topics/tattoo-inks "The health risks of using dirty needles to inject the inks have been under scrutiny for a long time. Now, their chemical-related concerns have also been analysed and their risks have been regulated at EU level. To protect European citizens, thousands of hazardous chemicals found in tattoo inks and permanent make-up are restricted in the EU under the REACH Regulation from January 2022".

For UK, there is a corresponding REACH UK organisation, which has mirrored the REACH EU legislation on these substances.

An interesting presentation on tattoo inks and their chemistry is available here; from www.chemistryviews.org on the topic of tattooing from a chemical point of view.

# Side-effects of Henna and semi-permanent ‘black henna” tattoos: a full review

by A C de Groot.
**in Contact Dermatitis, Volume 69, June 2013, pp 1-25**

The review article by DeGroot provides a full review of the side-effects of topical application of red and black henna, both cutaneous (allergic and non-allergic) and systemic. Although now almost 20 years old, the article is still the default reference article on the topic; after all not that much has changed in the 4,000-year history of henna tattoos.

Henna, the dried and powdered leaf of *Lawsonia inermis*, is widely used as a dye for the skin, hair, and nails, and as an expression of body art, especially in Islamic and Hindu cultures. As it stains the skin reddish-brown, it is also called red henna.

Black henna is the combination of red henna with p-phenylenediamine (PPD). It is used for temporary henna tattoos. Red henna appears to be generally safe, with rare instances of contact allergy and type I hypersensitivity reactions. In children with glucose-6-phosphate dehydrogenase deficiency, topical application of henna may cause life-threatening haemolysis. Black henna tattoos will induce contact allergy to its ingredient PPD at an estimated frequency of 2.5%. Once sensitised, the patients may experience allergic contact dermatitis from the use of hair dyes containing PPD. There are often cross-reactions to other hair dyes, dyes used in textiles, local anaesthetics, and rubber chemicals. The sensitisation of children to PPD may have important consequences for health and later career prospects. Systemic toxicity of black henna has been reported in certain African countries.

Henna is the dried and powdered leaf of the dwarf evergreen shrub *Lawsonia inermis*, a member of the family Lythraceae. The henna plant thrives in arid climates. Saudi Arabia, Iran, Sri Lanka, India, Egypt and the Sudan are its major producers. When applied to the skin, hair, or nails, the pigment lawsone (2-hydroxy-1,4-naphthoquinone; CI 75480; Natural Orange 6), which is present at a concentration of < 2% in henna leaves and natural henna preparations, interacts with the keratin therein to give them a reddish-brown (‘rust-red’) colour; hence the expression ‘red henna’.

To create the henna tattoo, a paste is made by adding water or oil to henna powder or to ground fresh henna leaves. Essential oils [e.g. citrus limon peel oil (lemon oil), *Eucalyptus globulus* leaf oil (eucalyptus oil), *Eugenia caryophyllus* bud oil (clove oil), or ‘Mahalabiya oil’, a mixture of various acidic oils], dried powder of indigo plant leaves, mustard oil, lemon juice, beet root juice, nut shell, sugar, tannin concentrates obtained from brewing tea leaves, instant coffee powder, charcoal powder, turpentine, p-phenylenediamine (PPD) (especially in African countries) and even animal urine or other (often secret) ingredients may be added to enhance the darkening effect. This paste is applied to the skin and allowed to remain there for a minimum of 30 min to 2–6 hrs as the plant’s dye penetrates the skin; the longer the exposure, the darker the colour will be. The dried paste is then removed to reveal an orange stain, which will darken over the next 2–4 days.



A temporary henna tattoo should last for approximately 2–6 weeks, until the outer layer of the skin exfoliates, depending on skin type, the area of application, sun exposure, and other factors such as bathing and activity level.

Henna has been used as a dye for the skin, hair and nails for over 4,000 years, and as an expression of body art, especially in Islamic and Hindu cultures in the Arab, African and Indian world.

For full information, please read the original article in ”Contact Dermatitis” journal.

# Impact of Nickel Oral Hyposensitisation on Quality of Life in systemic Nickel Allergy Syndrome

by A Rizzi et al.
**in International Journal of Immunopathology & Pharmacology, Vol 34, May 2020, pp 1–11.**
https://doi.org/10.1177%2F2058738420934629

Nickel is widely distributed in the environment, and it may be nutritionally essential. It is one of the most common causes of allergic contact dermatitis, affecting nearly 15%–20% of the general population. Ni-hypersensitivity can induce less frequently respiratory allergies. In approximately 20% of Ni-systemic contact dermatitis patients, the metal causes a more complex condition called systemic nickel allergy syndrome (SNAS). SNAS is characterised by a combination of cutaneous symptoms, in regions of the skin without direct nickel contact, and extra-cutaneous gastrointestinal symptoms, after the ingestion of Ni-rich foods, especially vegetables. A low-Ni diet following positive patch tests represents an effective diagnostic and therapeutic tool controlling the systemic manifestation of the syndrome, and thereby providing significant clinical improvements.

However, low-Ni diet can be a difficult treatment choice for several reasons.

1. The Mediterranean diet contains considerable amounts of Ni, representing a nutritional problem, especially for vegetarians and vegans.
2. A low-Ni diet is relatively fibre poor, increasing constipation risks.
3. Moderate to severe stress has been reported in patients regarding the calculation of exact, daily oral-Ni-intake, due to the fact that the content of this metal varies greatly in soil and water, and consequently also in vegetables grown in different soils.
4. This restrictive, unbalanced diet is difficult to follow over long periods and is potentially social discriminating.

All those facts negatively impact social, physical, and emotional well-being of SNAS patients.

The absolute removal of nickel from the diet is impractical because of its ubiquitous presence in almost all foods.

Nickel oral hyposensitisation treatment (NiOHT) is acknowledged by many in the field to be an effective nickel allergy management approach, especially in a subset of SNAS patients, where there is induction of immunological and clinical tolerance to the metal at the normal diet intake dose.

**Editorial:** *Allergen immunotherapy is classically almost exclusively for the hyposensitisation of patients with demonstrated (by in vitro s-IgE tests or in vivo Skin Prick Tests) IgE-mediated hypersensitivity to various inhalant allergens such as pollens, mould spores, animal danders and house dust mites, manifesting as various respiratory or dermatological conditions as Allergic Rhinitis, Allergic Asthma, Allergic Eczema, Allergic Urticaria, etc. Such Allergen Immunotherapy has classically been via the use of Sub-Cutaneous Immunotherapy, or more recently Sub-Lingual Immunotherapy with either drops or lyophilised tablets of the appropriate allergen or allergens.*



*Might immunotherapy be a viable option for patients with systematic contact allergies?*

*More recently there has been the commercial availability of immunotherapy to particular foods, with peanut leading the way. This immunotherapy may be via the use of increasing carefully controlled doses of the culprit food by digestion, or by patches, or by injection. Commercially available products are available in various countries for each of these treatment modalities.*

*Immunotherapy against a metal is however unique for nickel, with the commercial availability of a product manufactured by an Italian company Lofarma, that is based on the oral administration of gelatine capsules containing carefully controlled increasing doses of nickel sulphate.*

In this study, Nickel oral hypo-sensitisation (NiOH) was performed with hard gelatine capsules containing nickel sulphate (NiSO4) at different dosages (0.1 ng, 1 ng, 10 ng, 0.1 µg, and 0.5 µg) and microcrystalline cellulose as excipient (TIO Nickel, Lofarma SpA, Milan, Italy).

Treatment was given three times a week increasing progressively the dose from 0.1 ng to 3 µg in 10 weeks, with a maintenance phase of 1.5 µg a week over a period of 12 months.

The exact dosage regime was defined as follows. After 6 months of treatment with maintenance dose, patients were instructed to gradually re-introduce food with maximum 100 µg/kg nickel content during the seventh month. Foods with maximum 200 µg/kg nickel content were re-introduced during the eighth month of treatment. In the following 2 months ($9^{th}$ and $10^{th}$ months), foods with maximum 500 µg/kg nickel content were introduced into the diet. Finally, all other Ni-rich foods were introduced from the 11th month. During all before-mentioned phases, patients were educated to re-insert one food at a time and in small quantities and fill a clinical diary in order to support their treatment compliance. In the last month ($12^{th}$), Ni dose was progressively reduced by 0.5 µg per week until discontinuation. Throughout the treatment period, information on side effects, more severe adverse reactions and anti-allergic drug needs (corticosteroids and antihistamine drugs) were collected.

In summary, all 53 patients enrolled in the study reached the maintenance dose and were able to re-introduce the highest category of nickel-rich foods without adverse reactions.

The study authors concluded that OIT is a treatment milestone for food allergy in “personalised medicine” with systemic effects, able to not only allow Ni-rich food re-introduction but also to improve SNAS patients QoL.

## Effects of TIO Nickel in Patients with ACD and SNAS: Experience on 700 Patients in Italy

by A.Tammaro et al.
**in Journal of the European Academy of Dermatology and Venerology, Vol 31, Issue 4, April 2017. pp 189-191.**
DOI: 10.1111/jdv.13916

Italy is the source of several publications over the years about Systemic Nickel Allergy Syndrome (SNAS). It is no coincidence that the only commercially available Nickel Immunotherapy treatment product is commercially available from a Milan-based company, Lofarma.
For further information see https://www.lofarma.it/cosa-e-allergia-al-nichel/

The practice of nickel immunotherapy is however very limited outside Italy, and many and perhaps most Allergy Specialists around the world are simply in denial that it can be clinically effective, because it is so very different from the usual mode of allergen immunotherapy.

Recently, the advent of oral immunotherapy for the treatment of allergy to peanut employs the same principle of increasing doses of the culprit “allergen” by careful oral administration of increasing doses over a lengthy period.

In 2016 Tammaro and colleagues of the Dermatology Unit of Sant Andrea Hospital in Rome wrote a letter to the editor of the Journal of the European Academy of Dermatology & Venerology on their experience of 700 patients over 6 years with ACD and SNAS.

Interestingly, the authors wished to confirm the involvement of the gastro-intestinal tract (GIT) in the systemic condition, and so performed biopsies of the small intestine from ten randomly selected patients. These biopsies showed a marked inflammatory infiltrate, especially lympho-plasma-cellular, intestinal villi’s deformation and deepening of crypts – an observation very similar to coeliac disease but without a positive antibody profile. If those patients followed a nickel-restricted diet, then symptoms improved but the diet could not be prolonged practically due to the ubiquitous nature of nickel in the Mediterranean diet of vegetable foods, further associating the symptoms with nickel ingestion via food.

The 700 patients over 6 years had all undergone oral hyposensitisation therapy with TIO Nickel manufactured by Lofarma of Milan.
This hyposensitisation therapy consists of the use of capsules containing nickel sulphate (NiSo4) administered in increasing doses.
During the initial “Updosing Phase”, which lasted 6 weeks, the patients received:

1. A 10 ng capsule three times per week for the first and second week,
2. A 100 ng capsule three times per week in the third and fourth week,
3. A 500 ng capsule three times per week in the fifth and sixth week.

Note that this dosage regime is not in exact concordance with the manufacturers currently recommended posology (as shown in the Summary of Product Characteristics (SPC) document



from the manufacturer). However, as always with immunotherapy treatment programs, there is no 100% correct dosage regime that is superior to others, so there is variation allowed by the manufacturer for the treating clinician to modify the recommended posology in accordance with their experience.

During this treatment period, the patient was required to observe a nickel-restricted diet, since nickel was assumed already with oral therapy.

After the fulfilment of the “Initial Phase” after 6 weeks, “the Maintenance Phase” is started, with a 500 ng tablet three times per week for 3 years, and with an unrestricted diet.

Patients underwent clinical evaluations at 1, 3 and 6 months and at the end of maintenance therapy (3 years).

The patch test SIDAPA standard series continued to show a positive result to nickel sulphate but with reduced positivity compared to before the start of the oral therapy.
Similarly, there was a marked reduction in the levels of various pro-inflammatory cytokines at the end of the treatment period compared to before the treatment.
Clinically, after just the first 4 weeks of treatment, the patients already reported a decrease or absence of clinical symptoms, both cutaneous and gastrointestinal.
The patients also reported a complete remission of dermatological and gastro-intestinal symptoms at the end of therapy. Therefore, the oral hyposensitisation therapy could be seen to be a complete success.

## Aluminium Contact Allergy without vaccination granulomas: A systematic review and meta-analysis

by S K Hoffman et al.
**in Contact Dermatitis, Vol 85, Issue 2, April 2021, pp 129-135.**

Aluminium contact allergy is a delayed hypersensitivity reaction (Type IV allergy), as with other metal allergies.

Since the 1980s, vaccination granulomas following immunisation with aluminium-adsorbed vaccines or repeated subcutaneous injection of an allergen in allergic individuals with the purpose of desensitisation by subcutaneous immunotherapy (SCIT) have been a well-known presentation of aluminium contact allergy. Aluminium salts are the most common adjuvants in vaccines and SCIT.

However, contact allergy following epicutaneous exposure to aluminium may be overlooked. The authors evaluated 25 studies on a total of 73 clinical cases for their review. The prevalence of aluminium contact allergy was found in these studies to be 5.61% for children and 0.36% for adults. The studies described a variety of epicutaneous exposures, where metallic aluminium, topical medicaments, and deodorants were the main sources.

Allergy to metals usually develops after continuous or repeated epicutaneous exposure to the allergen in question, whereas aluminium contact allergy differs, as it is predominantly seen in children with vaccination granulomas following immunisation. It is estimated that up to 1% of all vaccinated children develop itching subcutaneous vaccination granulomas.

Aluminium sensitisation without a known exposure source was described in 10 of the 25 articles.

Aluminium is a common element in many alloys, including various types of stainless steel. For decades it has been used for making kitchen utensils, cans, foils, various beauty products, and has various applications in different industries.

Although we are widely exposed to aluminium in our everyday life, it is traditionally considered a weak allergen, and the majority of aluminium contact allergy is believed to be caused by vaccines.

Of particular interest for patch testers is the fact that the classic Finn Chambers used in patch testing are based on aluminium rings or discs, which are put in 48-hour direct contact with the skin of suspected ACD patients. A study from as far back as 1982 showed that such rare sensitisation could be reproduced and so is a real result not an aberration. Aluminium sensitisation was accidentally found due to severe reactions on half or more of the test sites in 9 of the 18 case reports and would have been missed and gone undiagnosed if the patch test chambers had been made of plastic, not aluminium.

In the 6 articles in which aluminium contact allergy followed metallic exposure, the patients were either working in the metal industry with daily skin exposure, or were wearing a watch with a metal band, or reacting to metal door handles and coins causing repeated or near-constant exposure to aluminium in solid metal form. Recent studies on nickel allergy showed that a similar short contact with nickel can create an accumulation of skin deposits and lead to clinically relevant contact dermatitis

Based on the findings of the four studies reviewed in this paper, the general recommendation is that children under the age of 7 to 8 should not be tested with a concentration stronger than 2%, whereas in older children and adults, 10% might be a better test concentration to avoid false-negative results.

The prevalence of aluminium contact allergy in the general public may be higher than expected and not solely related to vaccination granulomas. However, the clinical relevance is rare if not related to granulomas.

**Aluminium haptens from Chemotechnique**

| Art no | Name | Conc. | Veh |
|---|---|---|---|
| A-038 | Aluminum hydroxide | 10.0% | pet |
| A-022 | Aluminium(III)chloride hexahydrate | 2.0% | pet |



## Patch Testing: The Patient Experience

by R S Kimyn et al.
**in Dermatitis, Vol 32, Issue 5, Sept/Oct 2021, pp 333 - 338.**

Patch testing is an important tool in the evaluation of suspected ACD, which has no comparable *in vitro* alternative test. Although the procedure of patch testing is generally safe, there can be complications and even rare adverse events, such as persistent patch test reactions, renewal of old reactions, localised infections, allergen sensitisation, and dermatitis flares.

Historically there have been only a few investigations reported on the patient experience to patch testing.

In 2000, Inerot et al tested 401 patients who reported the following symptoms on Day 3:

- 21 (5.3%) patients reported “new itch,”
- 5 (3.7%) experienced dermatitis flares.
- 67% of the patients with “new itch” and 80% of the patients with “dermatitis flares” had at least 1 positive reaction.

There have been more extensive investigations on the TRUE Test patch test system in its clinical trials, though this is not exactly “extensive” testing with just 24 to 35 allergens in fixed panels that may not be entirely suitable for the clinical circumstances of the individual patients.

In adults (n = 1168), the most common adverse events included the following:

- Burning = 25.4%, reported at 48 hours
- Tape irritation = 15.8%, reported at 48 hours
- Persistent reactions = 6.8%, reported at Day 21
- Erythema = 5.7%, reported in follow-up period up to 80 days,
- Hyperpigmentation/hypopigmentation = 4.9%, reported in a follow-up period up to 80 days.

In children aged 6 to 17 years (n = 218), the most common adverse reactions were as follows:

- Burning = 10.5%, reported at 48 hours
- Tape irritation = 50.0%, reported at 48 hours
- Persistent reactions = 4.6%, reported at Day 21
- Itching = 61.2%, reported at 48 hours
- Ectopic flare of pre-existing dermatitis = 12.8%, timepoint not specified
- Skin infections = 1.8%, reported in a follow-up period up to 21 days
- Skin reactions near a particular test site = 1.4%, timepoint not specified.

These figures show that adverse reactions varying from mild to significant with TRUE Test are in fact common, and are much more so than reported for the use of investigator-loaded open-choice patch test systems.

This study by Kimyn et al involving 614 patients sought to investigate patients undergoing extensive patch testing (average number of patches was 217 with a range from 4 to 348 !!) to provide patient-centred data on various symptoms and parameters.

The brand of Patch Test chambers used in the tertiary referral clinic where the study was based, typically involved Finn Chambers (SmartPractice, Calgary, Canada) and Scanpor tape (Alpharma AS, Vennesla, Norway).

Positive Patch Test Reactions were assessed as follows:

- The average number of total positive reactions (+, ++, +++, +/−) was 7.4.
  Five hundred fifty-four (90.2%) had at least 1 reaction;
  within this group, the average number of reactions was 8.2.

- The average number of ++/+++ reactions was 1.1.
  Two hundred fifty-one (40.9%) had at least 1 ++/+++ reaction;
  within this group, the average number of ++/+++ reactions was 2.6.

Results were calculated according to different criteria:

1. Number of patches
2. Patch location
3. Number of total reactions
4. Number of strong reactions
5. Sleep difficulty
6. Medication need
7. Site itching
8. Worsening rash

The frequency of reported symptoms was extremely common:

| Symptom | Reading at 48 hours | | Final reading | |
|---|---|---|---|---|
| Pain | 144/547 | (26.3%) | 90/584 | (15.4%) |
| Sleep difficulty | 306/530 | (55.6%) | 129/584 | (22.1%) |
| Medication need | 233/548 | (42.5%) | 239/584 | (40.9%) |
| Site itching | 424/548 | (77.4%) | 447/584 | (76.5%) |
| Itch elsewhere | 291/547 | (53.2%) | 314/584 | (53.8%) |
| Worsening rash | 70/535 | (13.1%) | 161/580 | (27.8%) |

For further information, and discussion on the results for the various parameters, please consult the original article in “Dermatitis” journal.



*You are invited to notify us If there is a website you would like to have reviewed in a future issue of The Patch Tester or if there is a society or other website that you would like to have included in these lists.*

## Dermatology Society Websites

| | | |
|---|---|---|
| **ILDS:** | *International League of Dermatology Societies* | www.ilds.org |
| **ICDRG:** | *International Contact Dermatitis Research Group* | www.icdrg.org |
| **EADV:** | *European Academy of Dermatology & Venerology* | www.eadv.org |
| **ESCD:** | *European Society of Contact Dermatitis* | www.escd.org |
| **ACDS:** | *American Contact Dermatitis Society* | www.contactderm.org |
| **APEODS:** | *Asia-Pacific Envmntl & Occupational Dermatology Society* | www.apeods.org |
| **EAACI SAM:** | *European Academy of Allergy & Clinical Immunology* | www.eaaci.org |
| **BAD:** | *British Association of Dermatology* | www.badannualmeeting.co.uk |
| **AAD:** | *American Academy of Dermatology* | www.aad.org |
| **PDA:** | *Pacific Dermatololologic Association* | www.pacificderm.org |
| **APD:** | *Association of Dermatology Professors* | www.dermatologyprofessors.org |
| **NDA:** | *Nordic Dermatology Association* | www.nordicdermatology.com |
| **GDA:** | *German Dermatology Society* | www.derma.de |
| **FSA:** | *French Society of Dermatology* | www.sfdermato.org |
| **CDA:** | *Caribbean Dermatology Association* | www.caribbeanderm.org |
| **ACD:** | *Australian College of Dermatologists* | www.dermcoll.edu.au |
| **NZDS:** | *New Zealand Dermatology Society* | www.nzdsi.org |
| **DNA:** | *Dermatology Nurses Association* | www.dnanurse.org |
| **DermNET NZ:** | *Dermatology Infomation Resource for Patients* | www.dermnetnz.org |

### Dermatology Meeting Websites

**www.eadv.org**
**www.aad.org**
**www.dermatologymeeting.com**
**www.asiaderma.sg**
**www.dubaiderma.com**
**www.cairoderma.com**

## Chemotechnique distributors

This section of The Patch Tester has previously focussed on various categories of websites:

1. Dermatology professional societies, with information for professionals
2. Dermatology professional societies, with information for the public
3. Allergy professional societies, with information for professionals
4. Patient organisations, with information for the public

Here though, we present a different category of websites that will be of interest to Dermatologists; those of distributors of Chemotechnique products:

1. Ferrer-Pharma of Australia, for Australia (except WA) & New Zealand
2. AllerDerm Caribbean Ltd, of Jamaica, for the Caribbean region.

The reason why this category of website is included in this Websites Review feature is that the selected websites each contain useful and valuable information for Dermatologists on the Chemotechnique products.

**Ferrer-Pharma**
www.ferrerpharma.com.au

Ferrer-Pharma is focussed on not only Type IV allergy involved with Patch Testing but primarily with the Type I allergy that is mediated by IgE. So, besides the Chemotechnique patch test product line, they offer in vivo and in vitro diagnostic tests for allergy to identify various allergens, as well as allergen immunotherapy vaccines to treat those allergies. They also offer an innovative smart Peak Flow Meter for asthmatic patients to monitor their lung capacity and functionality.

In Australia there is an Australian Baseline Series (ABS) developed by Australian Dermatologists, of whom there are approximately 300 in clinical practice. This ABS comprises 60 haptens and was recently updated. The information on the Chemotechnique ABS-1000 is here, including access to the Patient Information Sheets and the Safety Data Sheets for each of the 60 haptens.
The Ferrer-Pharma website page lists each of the 60 happens with a little information on each of the haptens.

Until very recently, the ABS was also recommended for use by the approximately 50 Dermatologists in New Zealand. However, in 2021 a group of NZ-based Dermatologists developed their own specific New Zealand Baseline Series. Chemotechnique then responded with offering those haptens as a New Zealand Baseline Series (NZBS-1000) of 30 haptens and a New Zealand Baseline Series Extended (NZBSE-1000) of 60 haptens (which includes the 30 haptens of the NZ Baseline Series). The latter Series is therefore approximately comparable with the 60-test ABS, but there are some significant differences, reflecting local opinion, and the local experience of locally prevalent haptens.



**AllerDerm Caribbean Ltd**
www.allerderm-caribbean.com

The Caribbean is a heterogeneous collection of island countries and mainland-based countries that together comprise the region. Having a single distributor company to serve an entire region is very unusual if not unique, though in this case it is appropriate due to the small populations of the individual countries and of their corps of Dermatologists. The Caribbean Dermatology Association has approximately 100 members, though this has fluctuated greatly during COVID times as individual Dermatologists have suspended their practices out of necessity.

The medical regulatory environments of each country differ, from the lackadaisical to the bureaucratic, which only makes business life more complex. Customs regulations also vary from country to country and make business life more complicated. Nevertheless, there are over 100 actively practicing Dermatologists in the region, serving a population quantified as almost 44,000,000 according to the UN today, so there is a clinical need for patch testing.

This new corporate website of AllerDerm Caribbean Ltd has a section intended for the contact-allergic public, including recommendations for further reading from more dedicated online resources.

For the Dermatologist, there is much very practical and useful information on the website, on not only the Chemotechnique products but also much beneficial advice and recommendations on the optimal usage of those patch test products. For example, with information on Chemotechnique company, the order process, regulatory matters, prices, costs, payments, regulatory, Customs, quotations, transportation, storage conditions, shelf life hapten series, and a description of the various products including photographs, etc.

There is also a section for Dermatologists on The Patch Tester e-mag, including, uniquely, a summary of the contents of each issue. See here for more information

## Contact Dermatitis / Patch Testing

**8th to 10th June 2022**
**European Society for Contact Dermatitis**
Amsterdam, Netherlands
*www.escd2022.com*

## Dermatology - International

**25th to 29th March 2022**
**AAD 2022**
**American Academy of Dermatology Annual Meeting**
Boston, MA, USA
*https://www.dremed.com/medical-trade-shows/?--p=6182*

**15th to 16th April 2022**
**ICSDDT 2022**
**International Conference on Skin Disorders, Diagnosis and Treatment**
Cape Town, South Africa
*https://waset.org/skin-disorders-diagnosis-and-treatments-conference-in-april-2022-in-cape-town*

12th to 14th May 2022
**EADV Symposium**
European Academy of Dermatology and Venerology
Ljubljana, Slovenia
*https://eadv.org/calendar/show/335*

**8th - 10th June 2022.**
**ESCD 2022**
**European Society of Contact Dermatitis**
Amsterdam, Netherlands
*www.escd2022.com*

**5th to 7th July 2022**
**BAD 2022**
**British Association of Dermatologists**
Glasgow, Scotland
*conference@bad.org.uk*

**7th to 11th September 2022**
**EADV Congress**
**European Academy of Dermatology and Venerology**
Milano, Italy
*https://eadv.org/calendar/show/61*

**3rd to 8th July 2023**
**ILDS WCD-2023**
**World Congress of Dermatology**
Singapore
*https://www.wcd2023singapore.org*

The webpage at www.waset.org/dermatology-conferences-in-2022 is one potentially very useful source of information of Dermatology congresses in 2022.

WASWT is the World Academy of Science, Engineering and Technology. Their webpage states numerous dermatology-related congresses and conferences for 2022.

In this current era of ever-changing health and travel restrictions due to the ongoing COVID-19 pandemic, the organisation of conferences and congresses, including of course dermatology congresses, is in a state of evolution and flux. Always check with the official website for the latest information on any congress of interest.

A word of warning, as has been stated elsewhere in the dermatology world, we need to be aware of the possibility of wishful thinking, opportunism, obsolescent statements, and even misrepresentations or false advertising for congresses. See https://www.bad.org.uk/events/eventcalendar

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