



What's in the journals

(Latest studies and trends you may have missed)

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Dr See is a dermatologist in private practice in Sydney. She lectures internationally on the topic of acne and skin care. She is a member of the International Global Alliance to Improve Outcomes in Acne. Dr See has curated a list of some of the most interesting or notable research recently published internationally on acne.



Hormonal-acne prone skin among different ethnicities

Acne is often associated with hormonal fluctuations in women as well as an individual's microbial profile. Hormonal changes correlate with several physiological changes in the skin including changes in transepidermal water loss, sebum, pH, and microbial count.

While *Cutibacterium acnes* has historically been attributed as an important pathogenic cause, further research into its role is warranted. Not all bacteria is bad and some types of *Cutibacterium acnes* help maintain skin pH and block other acne contributing pathogens.

A team of Swedish researchers in cosmetics, medical epidemiology, biostatistics, cellular and molecular biology have investigated hormonal fluctuations and their effect on acne-prone skin in people from different populations. They looked at potential differences between Caucasian and Asian skin.

Previous research found that age and ethnicity impacted underarm microbiome bacterial count and composition, and palm skin microbiomes differed between Chinese and Western populations.

The Swedish study was conducted over 3 visits during different phases of the menstrual cycle, involving 18 people from different populations but living in Stockholm (9 with Caucasian ethnicity and 9 with Chinese ethnicity). It involved evaluation of skin features such as microbial profiling through sequencing facial skin microbiota and reviewing these during the various phases of the menstrual cycle.

Researchers found that Chinese and Caucasian women showed skin differences during the various hormonal phases. Hrapovic et al in the Journal of Cosmetic Dermatology noted changes occurred in the "transepidermal water loss, sebum level, hydration level, and pore volume".

They found that, "11 bacterial metabolic pathways were downregulated in Chinese compared to Caucasian skin during the follicular or first half phase of the menstruation cycle phase". This phase

involves increased estrogen. The majority of the bacterial metabolic pathways were associated with skin redox balance. This may indicate a weaker oxidative stress response in Chinese compared to Caucasian skin during this time. The Chinese skin microbiome showed increased *Novosphingobium taxa*—evidence suggests this protects skin from pollution-mediated oxidative stress.

The researchers acknowledge that "a skin barrier is one of the most important clinical parameters for skin health" with impediments to skin integrity increasing the "susceptibility to skin inflammation, infection, wounding, and disease". Skin barriers can be affected by factors including hormonal fluctuations, in particular estrogen, with acne most likely peaking during the luteal phase of the menstruation cycle.

Specific results found:

Chinese	Caucasian
Skin barrier improved in follicular phase compared to luteal phase	No difference in skin barrier between follicular and luteal phases
Skin hydration unchanged between phases	Skin hydration reduced in follicular phase compared to luteal phase
Better hydrated skin than Caucasian women	Not as hydrated skin compared to Chinese women
Skin oiliness (sebum level) reduced in menstrual phase compared to luteal phase	No difference in sebum levels between menstrual and luteal phases
Pore volume less pronounced in all phases compared to Caucasian women	Pore volume increased in menstrual phase compared to luteal phase
No difference in skin shininess between luteal and follicular phases	Skin shininess highest in the luteal phase compared to the follicular phase
Microbial diversity— <i>Peptoniphilus</i> and <i>Novosphingobium</i> increased compared to Caucasian women	Fewer <i>Peptoniphilus</i> and <i>Novosphingobium</i> than Chinese women

The study indicates further research into tailored, personalised skincare regimes considering hormonal fluctuations in different populations could help in treating acne. The researchers identify that "the main prevention mechanism during the L [luteal] phase could be sebum control, which would inhibit *C. [Cutibacterium] acnes* growth". What this could mean for medical practitioners is more consideration of a woman's ethnicity when treating acne vulgaris and the important role skin microbiota plays in skin inflammation and its impact on acne-prone skin.

Endnote reference 1



Treatment review—Calcipotriol and Adapalene – equally effective?

Researchers have found no significant difference between patients using topical calcipotriol and those using adapalene gel to treat acne. The study, published in *Dermatologic Therapy*, found that both forms of treatment were equally as effective in treating acne lesions 2 months after starting. Forty patients participated in the study and each treated one side of their face with calcipotriol cream (0.005%) and the other half of their face with adapalene gel (0.1%). The research focused specifically on acne vulgaris—commonly affecting adolescents. Both treatments were found to be effective for acne vulgaris in both males and females; however, 67.5% of patients experienced irritation, redness (erythema) and a burning sensation when using adapalene gel compared to only 17.5% when using calcipotriol cream. The calcipotriol treatment caused only redness in 12.5% of the patients, whereas the adapalene gel treatment caused it exclusively in 32.5% of patients. Generally, it was found that calcipotriol was tolerated better than adapalene gel. This is something that may be worth considering.

Endnote reference 2

Delving into why adults with acne don't seek treatment

Only around a quarter of adults with acne (22-25%) seek treatment, according to the latest research published in the *Journal of Dermatological Treatment*.

Reasons why fewer adults seek acne treatment compared to 12–25-year-olds where 61.4% seek treatment was the focus of this American research conducted through an online survey of more than 1,000 adults with acne. Researchers found that the number one reason adults don't seek treatment is that they could not be bothered enough (53.7%) citing their belief that their acne would eventually resolve on its own being the second most common answer (45.1%). Other reasons for not seeking treatment included being concerned with treatment cost (35.2%) and being satisfied with over-the-counter (OTC) treatment options (33.5%). When questioned about OTC treatments, the most cited was topical salicylic acid-containing products (59.4% of survey respondents that use OTC treatments). Second to this was topical benzoyl peroxide at 41% and topical retinoids at 28.7%.



Researchers noted differences in the responses depending on how the candidate perceived their acne. Those with moderate / severe acne were less likely to answer that they could not be bothered or that they thought the acne would clear without intervention, meaning that cost considerations or a poor previous experience with acne treatment providers stopped adults with acne pursuing medical treatment.

This research could help healthcare providers know how to assist adults with acne with the researchers suggesting that "all healthcare providers initiate a dialogue in patients that they visually observe to have acne, even if the patients do not bring it up as a concern."

Endnote reference 3



Treating transgender and gender diverse youth

Recent studies from the Department of Pediatrics, University of Washington School of Medicine and Seattle Children's Hospital in the USA look at the considerations healthcare providers need to take when treating acne in transgender and gender diverse youth (TGD).

Use of gender affirming hormones (GAH) as well as puberty blockers can impact acne. A side effect of puberty blockers, such as GnRH agonists, is reduced acne. This is because GnRH agonists suppress androgen production and androgen increases acne for males and females. There is little research in using GnRH agonists to treat acne and this could be because GnRH agonists are costly and have significant side effects including bone loss and menopausal symptoms.

Transmasculine individuals (assigned female at birth but identifying as male or nonbinary) are more likely to experience moderate / severe acne with 6.3% of the 988 studied reporting moderate / severe acne before testosterone use and 31.1% reporting it afterwards. Acne is most severe in the 6 months following hormone treatment, meaning early access to acne treatment is needed for TGD. Other risk factors for developing acne include the age of the person when they start treatment (the younger the person, the more likelihood of having acne), if the person smoked, if they consumed whey protein, and if they used a chest binder (with 33.8% of 1,800 persons citing binding with acne development). The chest binding risk factor contradicts research of 90 individuals who did not identify chest binding with acne development—further research needs to be focused on this relationship.

Topical acne treatments for transfeminine individuals (assigned male at birth but identifying as female or nonbinary) could cause unpleasant side effects such as stinging, dryness, redness and peeling. This is because of hormonal treatment with estrogen and antiandrogens. These side effects can be reduced by lowering the strength of the creams and gels or by using moisturiser twice daily.

We need to consider acne treatment in these patients and be aware of the skin changes that may occur with hormonal therapy.

Endnote reference 4 & 5

WHO DO I USE ACNATAC (0.025% tretinoin with 1% clindamycin) ON?

Associate Professor Kurt Gebauer

Case 1: Prepubertal, Peri-puberal Acne

More and more I am seeing young adolescents with acne. Many of these are primarily comedonal and as they evolve, they start to develop small micro-pustules. Acnatac (0.025% tretinoin with 1% clindamycin) gel is my go-to medication in this instance. It is approved for use in patients 12 years or older, is easy to apply, comes in small (30 g) or large (60 g) tubes and in addition, may be covered on private health. It is applied once daily at night-time. Therapy should be continued for up to 12 weeks at which point patients should be re-evaluated.

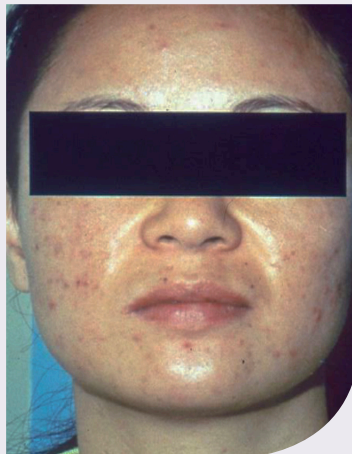


Acnatac does not contain benzoyl peroxide (BPO) which can cause skin irritation and bleaching of the hair, clothes, towels, pillows etc. In my experience, the underlying irritative contact dermatitis to BPO is not rare.

One of the reasons Acnatac is well tolerated is because it is BPO-free. Skin dryness, irritation or application site dermatitis are seen in less than 1 in 100 patients.¹ It responds as quickly as all of the other topicals and would usually buy us 6 to 18 months before systemic therapy may be indicated.

Case 2: I use a lot of Acnatac in the adult acne female / hormonal acne

There is an argument about the concept of hormonal acne, however for a number of women out there who have had one or two courses of isotretinoin, with a suboptimal long-term response, the fashionable use of low-dose isotretinoin is leading to a group of people with suboptimal response who have had minimal disease which is ongoing and frustrating, especially the women who utilise cosmetics and, may I say, overuse cosmetic processes, chemical peels, lasers, Botox, fillers, etc. I find Acnatac is a very useful adjunct in their treatment regime. Applied at night. As above, it is well tolerated, and photosensitivity is no real issue (occurring in less than 1/100 patients).¹ Not too much co-morbidity with all of the other things that they want to do.



Case 3: Where oral antibiotics or hormonal therapies are not appropriate

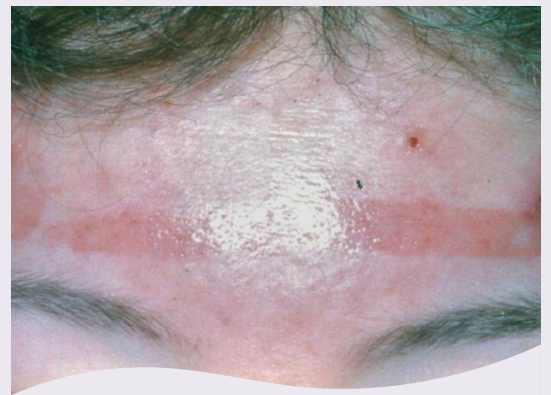
There are a group of female patients who really are intolerant of oral antibiotics that contract Thrush etc. There are many patients, including males, who do not want to take oral antibiotics long-term. In the female group, a number are intolerant of any hormonal therapy.

A number of females are not suitable for hormonal therapies: clotting issues, breast cancer in the family etc. I find Acnatac is also very helpful in this patient profile. There is a genuine need for an effective topical therapy that does not cause too much localised irritation.



Case 4: Post oral treatment with isotretinoin

This image is of a young female who had a facial peel for cosmetic reasons, namely concerns regarding Acne and was using a standard strength topical retinoid. She is a patient of mine, however, has a different presentation profile to the group in Case 3. Post having had isotretinoin, highly concerned regarding her acne coming back, highly concerned about the potential for scars, overly uses cosmetic cleansers, toners, salicylic acids etc and anything she gets her hands on. She jumps from topical therapy to topical therapy on the recommendation of an ocean of influencers and friends.



She attends numerous cosmetic clinics, goes once or twice and then switches to another clinic. This is someone who managed to strip her face off with a combination of all of the above.

I find the use of Acnatac in this group is also very helpful. It gets whatever minimal acne they may have, down. It is not too irritating and, in my experience, does not clash significantly with their cosmetic procedures.

I do use Acnatac in many other different circumstances. I find, as a combination, it is one of my favourites for reasons listed above. I repeat them: BPO-Free resulting in no bleaching, minimal irritation, minimal photosensitivity. Acnatac is suitable for those with sensitive skin disposition who often will not tolerate other full-strength topical retinoids and other BPO containing treatments.

Endnote reference 1.

This article was written by All About Acne and sponsored by Viatris. Clinical images have been supplied by All About Acne's Co-Chair, Associate Professor Kurt Gebauer, Fremantle Dermatology.

References (WHO DO I USE ACNATAC (0.025% TRETINOIN WITH 1% clindamycin ON?) above:

1. Viatris Australian Product Information: ACNATAC. Clindamycin (as Phosphate) 1% w/w and tretinoin 0.025% w/w. Viatris Pty Ltd. Available from: <https://www.ebs.tga.gov.au/ebs/picmi/picmirepository.nsf/pdf?OpenAgent&id=CP-2016-PI-01550-1&d=20230208172310101> [Accessed 12 December 2022]. Pharmaceutical Benefits Scheme Information: Acnatac is not listed on the PBS



Video is best

Acne education has been found to be more effective when including a video according to a Taiwanese study. The researchers reviewed the effectiveness of video in increasing the health literacy of 50 patients. The study reviewed the use of a video compared to an educational pamphlet and the effectiveness of these tools in patients understanding oral isotretinoin treatment and possible side-effects. Use of this medication in the USA (by the American Food and Drug Administration (FDA)) and in Taiwan (by the Ministry of Health) requires patients to enrol in a risk management program (USA) or read and sign an informed consent declaration (Taiwan) hence the need for patients to have a comprehensive understanding of the medication and side-effects.

Doctors using 'shared decision-making (SDM)' where patients work with doctors on their acne treatment plans have struggled with the limited consultation time constraining effective SDM application. By taking advantage of waiting room times and using those to show an 8-minute educational video (that could then be emailed to the patient following consultation), doctors found that the patient already had a foundational understanding before their consultation started. Other benefits included a decrease in patient anxiety.

Most patients (82%) preferred video over pamphlet as an acne treatment educational tool.

Endnote reference 6

References

1. Hrpovic N, Licentiate TR, Messaraa C et al. Clinical and metagenomic profiling of hormonal acne-prone skin in different populations. *Journal of Cosmetic Dermatology*. 2022, July, 7; 1-10.
2. Abdel-Wahab HM, Ali AK, Ragaie MH. Calcipotriol: A novel tool in treatment of acne vulgaris. *Dermatologic Therapy*. 2022, July, 3; 1-6.
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4. Boos MD, Hollinshead N, Hodax JK. Management of acne in transgender and gender diverse youth part 1: Gender affirming care and risk factors for the development of acne. *Pediatric Dermatology*. 2022, July, 31; 866-869.
5. Boos MD, Hollinshead N, Hodax JK. Management of acne in transgender and gender diverse youth part 2: Unique considerations and strategies in medical treatment. *Pediatric Dermatology*. 2022, July, 31; 870-875.
6. Hung C-T, Chen Y-H, Hung T-L et al. Clinician-created educational video for shared decision-making in the outpatient management of acne. *Plos One*. 2022, July, 8; 1-10.

Meet the team

Spot On is a quarterly news and research publication produced by All About Acne for healthcare professionals interested in the latest research in the treatment and management of acne.

Our team curates what we consider to be some of the more interesting or notable research papers published globally on acne. Some of this new research is also published in the gated HCP section of our website (www.acne.org.au).



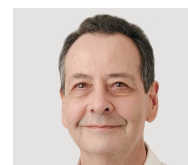
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