



L7 BULLETIN

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CLINICAL

Cosmeceuticals in Aesthetic
Medicine: An Advanced
Clinical Perspective

ACADEMIC

SAQ question run through

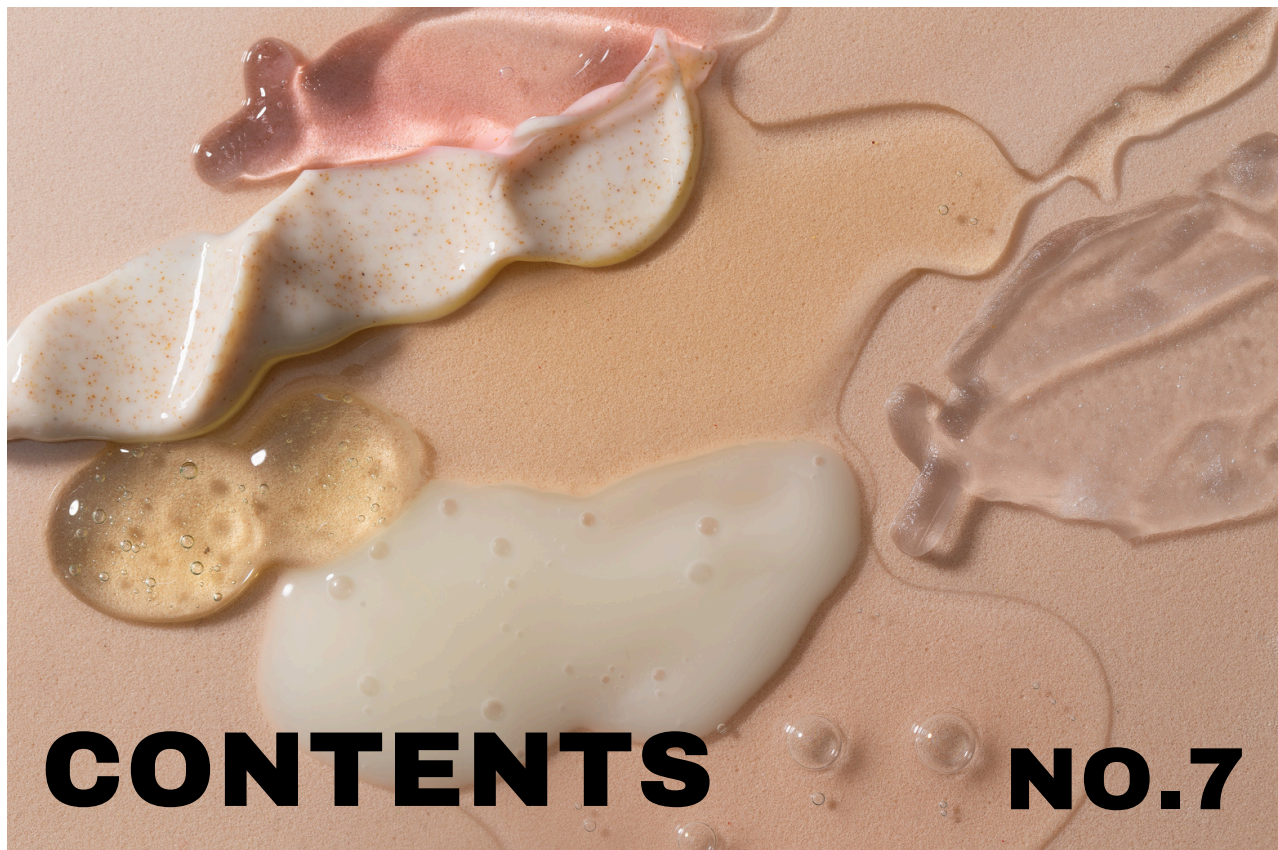
JOURNAL CLUB

"The Innovative and Evolving
Landscape of Topical Exosome
and Peptide Therapies: A
Systematic Review of the
Available Literature"

EVENTS

Upcoming Events from
Level 7





PAGE 3

Clinical

[Cosmeceuticals in Aesthetic Medicine: An Advanced Clinical Perspective]

PAGE 5

Academic

SAQ question run through

PAGE 6

Journal Club

"The Innovative and Evolving Landscape of Topical Exosome and Peptide Therapies: A Systematic Review of the Available Literature"

PAGE 13

Upcoming Events

What's Coming Up in Acquisition's Level 7 Family

Coursework sessions & upcoming courses

CLINICAL

COSMECEUTICALS IN AESTHETIC MEDICINE: AN ADVANCED CLINICAL PERSPECTIVE

Cosmeceuticals, a unique hybrid category that bridges cosmetics and pharmaceuticals, have emerged as a pivotal element in aesthetic medicine. These products not only enhance appearance but also deliver therapeutic benefits. This article delves into the distinctive role of cosmeceuticals in clinical practice, focusing on their efficacy, safety, and integration into advanced aesthetic practices, particularly in combination with neurotoxin and dermal filler treatments.

Understanding Cosmeceuticals

Cosmeceuticals are topical formulations that contain bioactive ingredients purporting to have medical or drug-like benefits. Unlike traditional cosmetics, which are primarily designed to enhance appearance, cosmeceuticals aim to improve skin health at a cellular level. Common ingredients include peptides, antioxidants, retinoids, and growth factors.

ACTIVE	QUALITIES	REFERENCE
Peptides	Peptides are short chains of amino acids that serve as building blocks of proteins such as collagen and elastin. Clinical studies have demonstrated that peptides like Matrixyl and Argireline can stimulate collagen production, reduce wrinkles, and improve skin texture	Wu & Goldman, 2017
Antioxidants	Ingredients such as Vitamin C, Vitamin E, and ferulic acid help neutralise free radicals, reduce oxidative stress, and prevent photodamage. A study highlighted the efficacy of antioxidant serums in improving skin tone and reducing hyperpigmentation	Mohammadi et al., 2020
Retinoids	Retinoids, including retinol and tretinoin, are derivatives of Vitamin A that promote cell turnover and collagen synthesis. Their use in treating acne, photoaging, and hyperpigmentation is well-documented. A systematic review emphasised their role in reducing fine lines and enhancing skin firmness	Draelos et al., 2016)
Growth Factors	Derived from human or plant sources, growth factors like TGF- β and EGF play a crucial role in cell regeneration and repair. Clinical application of growth factor-enriched formulations has significantly improved wound healing and overall skin rejuvenation_	Nguyen et al., 2021

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Combining Cosmeceuticals with Neurotoxin and Dermal Filler Treatments

Safety and Efficacy

Combining neurotoxins like botulinum toxin with dermal fillers and cosmeceuticals has shown enhanced safety and efficacy in facial rejuvenation. Studies indicate that such combination treatments can produce superior aesthetic outcomes compared to treatments alone. For example, a combination of BoNT-A and a hyaluronic acid (HA) gel filler showed more significant improvement in the lower face than either treatment alone (Carruthers et al., 2010).

Practical Applications

- **Pre- and Post-Procedure Care:**

Using antioxidant-rich serums before procedures like laser therapy or chemical peels not only mitigates oxidative stress but also accelerates recovery. Post-procedure, products containing peptides and growth factors can aid in healing and reduce inflammation, further enhancing the recovery process.

- **Combination Therapies:**

Combining cosmeceuticals with injectables such as botulinum toxin or dermal fillers can optimise results. For instance, combining BoNT-A and various HA fillers has shown significant aesthetic improvements in patients.

- **Personalised Skincare Regimens:** Developing customised skincare plans based on individual skin types and concerns can maximise the benefits of cosmeceuticals. Regular assessment and adjustment of the regimen ensure continued efficacy and client satisfaction.

Conclusion

Cosmeceuticals represent a significant advancement in aesthetic medicine, offering both cosmetic and therapeutic benefits. Their integration into clinical practice, especially in combination with neurotoxin and dermal filler treatments, underscores the need for a comprehensive understanding of their mechanisms, efficacy, and safety profiles. By harnessing the potential of cosmeceuticals, aesthetic practitioners can elevate treatment outcomes and provide comprehensive skincare solutions.

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Cosmeceutical SAQ questions

Unit 1 Question 2.1

Discuss factors to be considered when undertaking a skin health assessment for cosmeceuticals

- Consider the clients age.
- Utilise assessment scales.
- Consider skin texture, lines, wrinkles and redness.
- Is there any UV damage?

Unit 1 Question 2.2

Examine the role and potential use of a minimum of two cosmeceuticals in relation to skin health assessment.

- Include a minimum of 2 cosmeceuticals in your answer. They require critical appraisal with reference to appropriate evidence.
- Discuss the effects of the cosmeceuticals.
- Consider medical grade cosmetic products i.e. sun protection factor (SPF), 'anti-ageing' products.
- Discuss the appropriate use of these cosmeceuticals.



Special Topic

The Innovative and Evolving Landscape of Topical Exosome and Peptide Therapies: A Systematic Review of the Available Literature

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Summary

Ash et al (2024) conducted a systematic review of topical exosomes and peptides for skin rejuvenation. The authors found that topical exosomes increased collagen deposition, accelerated wound healing, and improved overall cosmesis. Topical peptides were found to improve the appearance of fine lines and wrinkles, elasticity and viscoelasticity, skin texture, skin thickness, and the potential for accelerated wound healing.

Although neither exosomes nor peptides are currently FDA-approved, the authors conclude that the future of these topical products for skin rejuvenation appears promising.

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The authors begin by emphasising that in the United States the population is ageing, leading to increased interest in anti-ageing skin products. Topical products are preferred for their ease of use and accessibility, but they face challenges in penetrating the skin barrier.

Exosomes and peptides have shown promise in early trials for skin rejuvenation, but neither is FDA-approved. The authors aim to review the current landscape of topical exosomes and peptides for skin rejuvenation, including their effectiveness and future outlook.



Methods

The authors conducted a literature search on PubMed using relevant keywords. The search was limited to articles published since 2010 in English. Primary endpoints included mechanisms of action and clinical data supporting the use of exosomes or peptides for skin rejuvenation or wound healing. Secondary endpoints were safety, side effects, and efficacy. Articles were collected and sorted using Covidence software.

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Results

Exosome Outcomes. The primary outcomes of the included studies were wound healing, re-epithelialisation, collagen deposition, inflammatory markers, facial ageing, and photoageing. Exosomes were derived from various cell lines and administered topically. The studies found that exosome-treated wounds showed accelerated healing, increased collagen deposition, and improved cosmesis. However, some studies also noted transient increases in inflammation.

Exosome Product Availability and Safety. The reviewed studies did not include any commercially available exosome products. None of the exosome therapies were FDA-approved or undergoing FDA-approved clinical trials at the time of the review.



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Peptide Outcomes. The primary outcomes of the peptide studies were wound healing, skin rejuvenation, and resolution of photoageing. Peptides were derived from sources like rice proteins and marine collagen. The studies found that topical peptide interventions improved the appearance of fine lines and wrinkles, elasticity, skin texture, and wound healing. No negative side effects were observed.

Peptide Products and Safety. One study investigated a commercially available peptide product. Other formulations varied, including peptides added to moisturisers or water-based solutions. There are no FDA-approved topical peptide products, but several patents have been filed since 2017.



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Discussion

The authors state that exosomes have many potential mechanisms of action, depending on their origin, target, and content. The challenge for topical treatments is permeating the skin barrier. Exosomes, derived from cell membrane budding, are hypothesised to merge with skin cell membranes, delivering their contents. Topical exosomes may affect skin rejuvenation by modulating transforming growth factor beta (TGF- β), mitogen-activated protein kinase, and extracellular signal-regulated kinase, influencing cell differentiation, proliferation, and apoptosis. This modulation can lead to changes in the extracellular matrix, collagen production, and inflammatory response, resulting in improved wound healing, skin plumpness, and elasticity. The authors conclude that exosomes may also have potential in treating dermatological conditions like dermatitis and psoriasis.



The authors note that there are hundreds of ongoing exosome-related clinical trials, indicating growing interest. However, the FDA has issued warnings about stem cell-derived therapies and exosome products due to false claims and lack of regulation. The authors highlight challenges in exosome production, including isolation, purification, and quality control, which can affect mass production for commercial use. Dosing considerations for biologics like exosomes are complex, involving cellular uptake, biodistribution, and half-life. The future of exosome-based treatments is promising, but FDA approval requires addressing purification, reliability, production optimisation, dosing standardisation, and long-term safety.

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Topical exosome products could be used for short- and long-term skin rejuvenation, scar improvement, and hyperpigmentation treatment. They offer a less invasive alternative to procedures like PRP injections. Current studies focus on short-term skin outcomes, and future research should investigate long-term effects and compare topical exosomes to other treatments. FDA-approved topical exosome products could be a valuable addition to aesthetic practices, providing less invasive options and maintenance treatments between procedures.



The authors describe three main types of peptides used in cosmeceuticals: signal peptides, neurotransmitter-affecting peptides, and carrier peptides. Signal peptides can increase collagen production or decrease collagen breakdown, reducing fine lines and wrinkles. Neurotransmitter-affecting peptides, like botulinum toxin, inhibit muscle contraction. Carrier peptides deliver trace elements like copper, which supports wound healing and collagen production. The theory behind topical peptide application is that they can penetrate the skin barrier with a lipophilic carrier and then modulate the dermis to improve skin appearance.

Peptides are considered safe due to their easy degradation and short half-life.

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Randomised controlled trials are limited, and current topical peptide products are designed for frequent use with shorter effect times. Longer-lasting effects would likely require slow-release formulations that effectively penetrate the skin barrier. The authors suggest that the lack of evidence for topical peptide efficacy might be due to the ability of cosmeceuticals to bypass FDA approval.

Introducing topical peptide products into plastic surgery practices could enhance patient experience and prolong cosmetic outcomes. They could be used alongside procedures like Botox to extend its lifespan and improve skin quality. The advent of topical peptides as FDA-approved therapies would mainly impact dermatology, aesthetics, and plastic surgery. However, the current high-frequency use required for most topical peptides might lead people to choose longer-lasting interventions like laser therapy or fat grafting.

Conclusions

The authors detail the FDA approval pathway, emphasising the challenges in investigating skin rejuvenation products due to the variability of primary outcomes and the subjectivity of endpoints. There are currently no FDA-approved topical peptide or exosome products. Exosome manufacturers face unique concerns regarding production, quality control, dosing, and potential stem cell-related considerations. Topical peptide formulations, already used in cosmeceuticals, might have a quicker path to FDA approval if proven effective in randomized controlled trials. FDA approval of topical products would offer new options for patients seeking skin rejuvenation who are opposed to or have contraindications to current therapies.

EVENT RUNDOWN

COURSEWORK SESSIONS

We have now launched our much anticipated coursework sessions. Please check your emails for the the full schedule and links to register, register via your Dashboard or download the guide [here](#).

No.	Date	Time	Session
1	Monday 3rd June	7pm - 8pm	Welcome, Housekeeping, Accountability & Skin Part 1
2	Monday 17th June	7pm - 8pm	Skin/Anatomy
3	Monday 1st July	7pm - 8pm	Ethics/Professionalism
4	Monday 15th July	7pm - 8pm	Patient Assessment
5	Monday 29th July	7pm - 8pm	Critical Appraisal
6	Monday 5th August	7pm - 8pm	Complications
7	Tuesday 20th August	7pm - 8pm	Case Studies
8	Monday 2nd September	7pm - 8pm	Submission & Q&A



EVENT RUNDOWN

UPCOMING COURSES

Don't miss our exciting lineup of courses this summer! Enhance your skills and stay ahead in the field with our specialised training sessions. Here's what's coming up:

- Saturday 6th July 2024 - Foundation - London
- Saturday 6th July 2024 - Mentoring - London
- Sunday 7th July 2024 - Advanced - London
- Saturday 20th July 2024 - Foundation - Glasgow
- Sunday 21st July 2024 - Advanced - Glasgow
- Saturday 27th July 2024 - Foundation - Manchester
- Saturday 27th July 2024 - PRP - London*
- Sunday 28th July 2024 - Lip - Manchester
- Sunday 4th August 2024 - PRP - Newcastle*
- Saturday 10th August 2024 - Foundation - Newcastle
- Saturday 10th August 2024 - Foundation - London
- Saturday 10th August 2024 - Mentoring - London
- Sunday 11th August 2024 - Advanced - Newcastle
- Sunday 11th August 2024 - Advanced - London
- Saturday 7th September 2024 - Lip - London
- Saturday 14th September 2024 - Polynucleotides - London*
- Thursday 19th September 2024 - Mentoring - London

*Contact our course experts to find out more information - contact@acquisitionaesthetics.co.uk