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SURAT PENCATATAN CIPTAAN

Dalam rangka pelindungan ciptaan di bidang ilmu pengetahuan, seni dan sastra berdasarkan Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta, dengan ini menerangkan:

Nomor dan tanggal permohonan	:	EC002025029485, 10 Maret 2025
Pencipta		
Nama	:	**Sukmawati Tansil Tan, Yohanes Firmansyah dkk**
Alamat	:	Jl. Letjen S. Parman No.1, RT.3/RW.8, Tomang, Kec. Grogol petamburan, Kota Jakarta Barat, Daerah Khusus Ibukota Jakarta 11440, Grogol Petamburan, Kota Adm. Jakarta Barat, DKI Jakarta, 11440
Kewarganegaraan	:	Indonesia
Pemegang Hak Cipta		
Nama	:	**Sukmawati Tansil Tan, Yohanes Firmansyah dkk**
Alamat	:	Jl. Letjen S. Parman No.1, RT.3/RW.8, Tomang, Kec. Grogol petamburan, Kota Jakarta Barat, Daerah Khusus Ibukota Jakarta 11440, Grogol Petamburan, Kota Adm. Jakarta Barat, DKI Jakarta, 11440
Kewarganegaraan	:	Indonesia
Jenis Ciptaan	:	**Poster**
Judul Ciptaan	:	**Poster Penelitian - The Dermatological Effects of Vitamin D: Addressing Pore Size and Skin Roughness**
Tanggal dan tempat diumumkan untuk pertama kali di wilayah Indonesia atau di luar wilayah Indonesia	:	10 Maret 2025, di Kota Adm. Jakarta Barat
Jangka waktu pelindungan	:	Berlaku selama hidup Pencipta dan terus berlangsung selama 70 (tujuh puluh) tahun setelah Pencipta meninggal dunia, terhitung mulai tanggal 1 Januari tahun berikutnya.
Nomor Pencatatan	:	000869746

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Surat Pencatatan Hak Cipta atau produk Hak terkait ini sesuai dengan Pasal 72 Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta.

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LAMPIRAN PENCIPTA

No	Nama	Alamat
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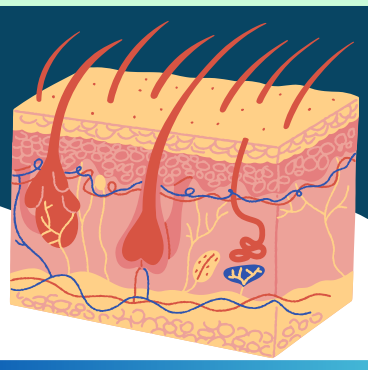
THE DERMATOLOGICAL EFFECTS OF VITAMIN D:

Addressing Pore Size and Skin Roughness

Sukmawati Tansil Tan [1], Yohanes Firmansyah [2], Ayleen Nathalie Jap [3]



INTRODUCTION

Vitamin D, or calciferol, is a fat-soluble vitamin produced endogenously when ultraviolet (UV) light from the sun triggers its synthesis in the skin. It can also be obtained from food and supplements. Vitamin D exists in two primary forms: D2 (ergocalciferol) and D3 (cholecalciferol). Both forms bind to blood proteins and convert into the active form, calcitriol, in the liver and kidneys. While D2 and D3 are equally effective, D3 is superior in raising blood levels and promoting better health outcomes. Vitamin D plays a crucial role in bone health and regulates numerous cellular functions in the body.

Beyond its role in bone metabolism, vitamin D possesses anti-inflammatory, antioxidant, and neuroprotective properties that support the immune system. Its anti-inflammatory effects reduce skin irritation, promote an even texture, and help manage acne and eczema by regulating oil production and maintaining skin cell balance. Calcitriol supports skin cell turnover, preventing clogged pores and inflammation while keeping the skin smooth and healthy.

This study aims to determine the relationship between vitamin D levels and pores and roughness to maintain skin health, especially in the geriatric population.

METHOD

Study Design and Location

- Conducted a cross-sectional, analytic observational study at Santa Anna Elderly Home in 2024

Participant Selection

- Recruited 26 elderly participants aged over 50 using total sampling.
- Inclusion Criteria
  - Participants underwent skin examinations.
  - Provided blood samples for vitamin D analysis.
- Exclusion Criteria
  - Individuals with skin disorders or vitamin D metabolism disorders.
  - Those taking high doses of vitamin D supplements or medications affecting vitamin D levels.

Measurements and Procedures

- Measured vitamin D levels (25(OH)D) from venous blood samples using the ELISA method under standard laboratory protocols.
- Assessed skin pore size and roughness using high-resolution dermatological imaging tools.
  - Quantified RGB Pore and RGB Roughness values across multiple facial areas.

Ethical Approval

The study received ethical approval from the Human Research Ethics Committee of Tarumanagara University.

RESULT & DISCUSSIONS

Vitamin D is essential for skin health, regulating calcium balance, supporting the immune system, and maintaining the skin barrier. It controls sebum production, preventing clogged pores and acne, while promoting keratinocyte growth and differentiation for healthy skin structure. Its anti-inflammatory properties reduce acne-related inflammation by suppressing pro-inflammatory cytokines and modulating immune cells. Vitamin D also combats sun-induced ageing by preserving collagen and elastin, reducing pore enlargement and wrinkles. Additionally, it enhances skin hydration and smoothness by boosting lipid production, preventing dryness and roughness.

Table 1. Respondents Characteristics

Parameter	N (%)	Mean (SD)	Med (Min-Max)
Age	26 (100)	73.53 (1.79)	73.50 (52-88)
Gender			
Male	8 (30.8)		
Female	18 (69.2)		
Vitamin D		20.15 (1.32)	20 (12-42)
Pore		22.19 (1.43)	21.50 (5-46)
Roughness		19.50 (0.63)	19 (16-31)

However, as skin ages, its impact diminishes. Ageing leads to thinner skin, reduced collagen, and weaker barrier function, making pores more visible and skin texture rougher. While vitamin D helps regulate sebum and keratinocyte activity, its effects are overshadowed by age-related changes. In older adults, the correlation between vitamin D and skin smoothness weakens, highlighting ageing as the primary factor influencing skin texture.

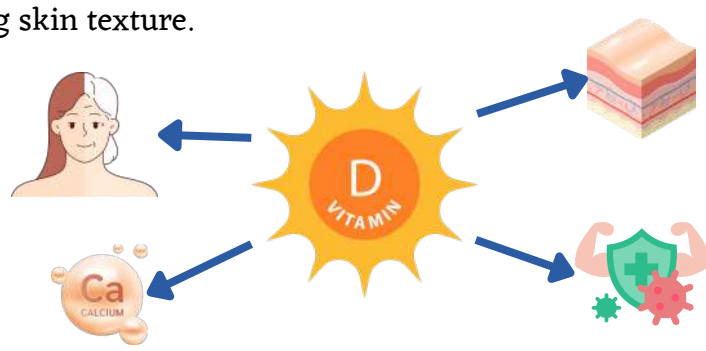


Table 2. Correlation between Vitamin D, Pore, and Roughness

	Parameter		Vitamin D	Pore	Roughness
Spearman's rho	**Vitamin D**	Correlation Coefficient	1.00	0.46	0.46
		Sig. (2-tailed)	.	0.02	0.02
	Pore	Correlation Coefficient	0.46	1.00	0.99
		Sig. (2-tailed)	0.02	.	<0.01
	Roughness	Correlation Coefficient	0.46	0.99	1.00
		Sig. (2-tailed)	0.02	<0.01	.

Data Analysis

- Used Spearman correlation to evaluate the relationship between vitamin D levels, pore size, and skin roughness (due to expected non-normal data distribution).
- Performed partial correlation analysis, controlling for age, to determine the independent effect of vitamin D levels on skin texture.

CONCLUSION

Vitamin D supports skin health by influencing pore size and texture. Regular monitoring of vitamin D levels helps identify those at risk of rough skin and enlarged pores, enabling early intervention to improve skin appearance and prevent complications.

REFERENCES