

Effects of cosmetics on the skin microbiome of faces with different hydration levels

Submission date 07/08/2017	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
Registration date 09/08/2017	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 02/04/2019	Condition category Skin and Connective Tissue Diseases	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

Skin hydration is one of the most important factors affecting the properties and functions of the skin, and an adequate level of skin hydration is critical for maintaining healthy skin. The aim of this study is to find out whether using basic cosmetics on dry skin might restore skin hydration and change the bacteria present on the skin.

Who can participate?

Healthy Korean female volunteers, aged 26–53

What does the study involve?

Participants are divided into two groups according to the hydration levels of their cheek skin: either the high hydration group or the low hydration group. Participants also apply a set of basic cosmetics twice a day (morning and evening) onto their faces for 4 weeks after facial washing with a cleanser. The types of bacteria living on the skin, skin hydration, water loss, and roughness are compared between the two groups.

What are the possible benefits and risks of participating?

Not provided at time of registration

Where is the study run from?

Chung-Ang University (South Korea)

When is the study starting and how long is it expected to run for?

June 2015 to July 2015

Who is funding the study?

Coway Cosmetics R&D Center (South Korea)

Who is the main contact?

Dr Hyo Jung Lee

Contact information

Type(s)

Scientific

Contact name

Dr Hyo Jung Lee

Contact details

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Additional identifiers**Protocol serial number**

1-220777-A-N-02-DICN15101

Study information**Scientific Title**

Effects of cosmetics on facial skin microbiome

Study objectives

The use of basic cosmetics on dry skin might restore skin biophysical parameters, including hydration level, as well as change microbial communities in dry skin to resemble those in normal skin.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Dermapro Ltd. Institutional Review Board, 19/06/2015, ref: 1-220777-A-N-02-DICN15101

Study design

Non-randomised study

Primary study design

Interventional

Study type(s)

Quality of life

Health condition(s) or problem(s) studied

Facial skin microbiome

Interventions

Participants were divided into two groups, high hydration group (HHG; n = 16, ≥ 50 A.U., arbitrary units) and low hydration group (LHG; n = 14, < 50 A.U.), according to the hydration levels in their

facial cheek skin. Bacterial communities of facial skin were compared between the two groups, together with measurements of skin biophysical parameters (skin hydration, transepidermal water loss [TEWL], and roughness).

In addition, the effects of basic cosmetics on skin biophysical parameters and the facial skin microbiome were investigated in the two groups. A set of basic cosmetics, consisting of skin softener (solubilized type), lotion (oil-in-water (O/W) emulsion type), essence (solubilized type), and cream (O/W emulsion type) containing moisturizing compounds was prepared and sequentially applied twice a day (morning and evening) for four weeks on their faces after facial washing with a cleanser.

Intervention Type

Other

Primary outcome(s)

Measurements of skin biophysical parameters and swab sampling of facial cheek skin performed just before the use of the cosmetics and at two and four weeks after use of the cosmetics:

1. Skin hydration values measured using a Corneometer CM825 instrument (Courage + Khazaka Electronic GmbH, Germany)
2. Skin transepidermal water loss (TEWL) measured with open-chamber Tewameter TM300 (Courage + Khazaka Electronic GmbH, Germany), according to the manufacturer's instructions
3. Facial skin roughness analyzed using the three-dimensional (3D) skin imaging system PRIMOS® premium (GF Messtechnik GmbH, Germany)
4. Bacterial communities analyzed using pyrosequencing using a 454 GS FLX Titanium Sequencing System (Roche, Germany) at Chunlab (Korea)

Key secondary outcome(s)

No secondary outcome measures

Completion date

31/07/2015

Eligibility

Key inclusion criteria

Healthy Korean female volunteers (age from 26–53 years)

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Sex

Female

Key exclusion criteria

1. Pregnant or lactating
2. Performed a similar study within three months
3. Sensitive and hypersensitive skin
4. Moles, acne, telangiectasia, etc at the skin under study
5. Used similar cosmetics or took antibiotics within three months
6. Chronic diseases (asthma, diabetes mellitus, hypertension, etc)
7. Atopic dermatitis

Date of first enrolment

02/06/2015

Date of final enrolment

15/06/2015

Locations

Countries of recruitment

Korea, South

Study participating centre

Chung-Ang University

Seoul

Korea, South

06974

Sponsor information

Organisation

Coway

Funder(s)

Funder type

Industry

Funder Name

Coway Cosmetics R&D Center

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Hyo Jung Lee.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Protocol file		08/08/2017	02/04/2019	No	No