

**EFFECT OF ORAL GOLD TRI-
E SUPPLEMENTATION ON
BIOPHYSICAL SKIN
PARAMETERS**

FOR

**SIME DARBY RESEARCH SDN BHD
BY TOMMY JULIANTO**

INTRODUCTION

- Biophysical skin parameters are indicators of age related structural and functional changes in skin tissues.
- They are usually use to describe the efficiency of skin care products either it has taken by oral or topically applied.
- In this study, a single blind placebo controlled study on healthy adults volunteer was conducted to evaluate the effect of tocotrienols (Tri.E) by oral supplementation on human biophysical skin parameters.



OBJECTIVES:

- To determine the effect of individual oral Tri.E supplementation on biophysical skin parameters



MATERIALS AND METHODS

- 36 healthy non-pregnant females between 18-55 years of age were participated as volunteers for this study.
- All volunteers were thoroughly informed of the purpose and the course of study and they could withdraw at any time without give any reason.
- Criteria for eligibility were :> 18 years old, clinically healthy, self-assessed dry, rough skin and not under any medication of skin disorder.



MATERIALS AND METHODS

- The subjects were randomly allocated to either treatment group A or treatment B (20 females volunteers for each group).
- Measurement were taken before treatment (day 0) and after treatment day at 30, 60 and 90. Before the measurements were taken, the subjects were adapted for 30 minute to a room temperature of 25⁰C. The treatment comprised 300 mg capsules totaling for active group 50mg of Tocotrienols.
- The subjects were instructed to take 1 capsule for twice daily in the morning and evening during meals.
- Volunteers diet guideline provided for each volunteers before the study



PRODUCTS STUDIED

- Soft gelatin capsules size of 300 mg containing palm vitamin E extract equivalent to 50mg of tocotrienols (Tri.E) and soy bean oil in soft gelatin capsules were used for treatment and placebo groups, respectively.



MATERIALS AND METHODS

- The following skin parameters were measured:
 - roughness, smoothness; wrinkle,
 - humidity,
 - Trans epidermal water loss (TEWL),
 - firmness, elasticity and fatigue resistance.

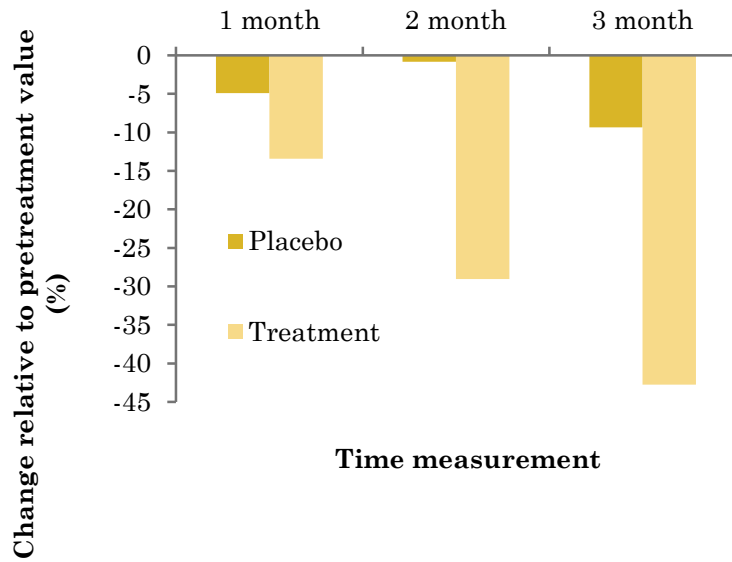
Non-invasive in vivo skin tests



RESULT

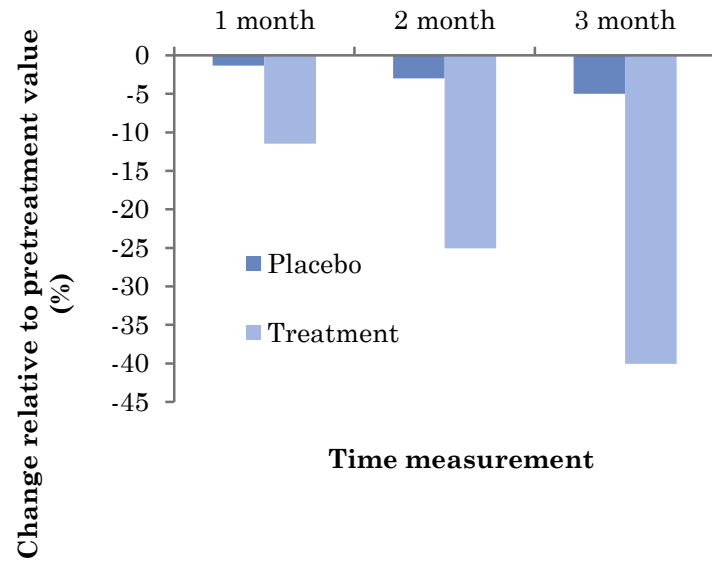
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Roughness



Left

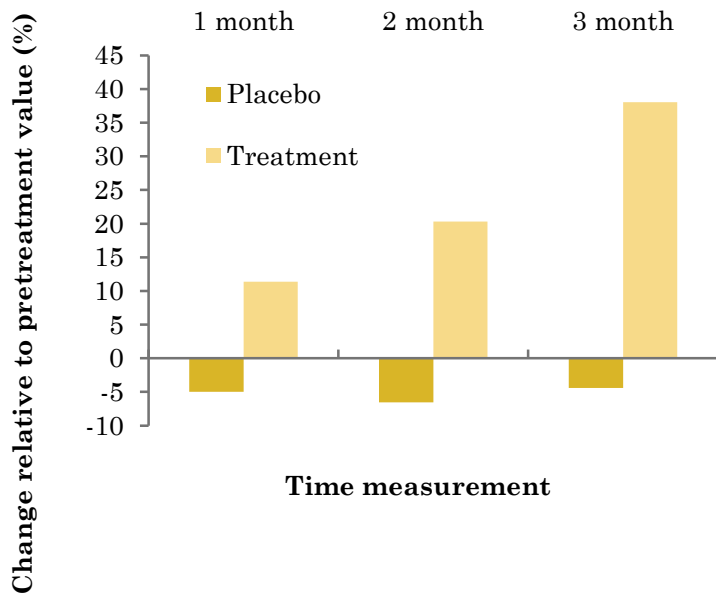
Roughness



RESULT

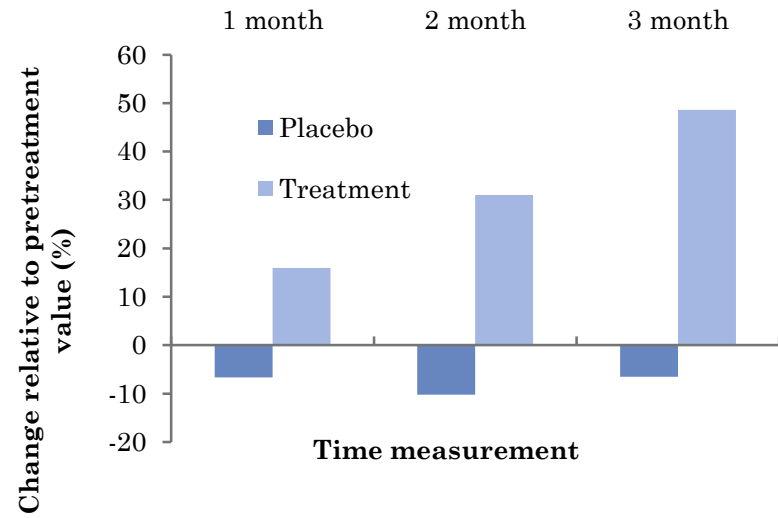
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Smoothness



Left

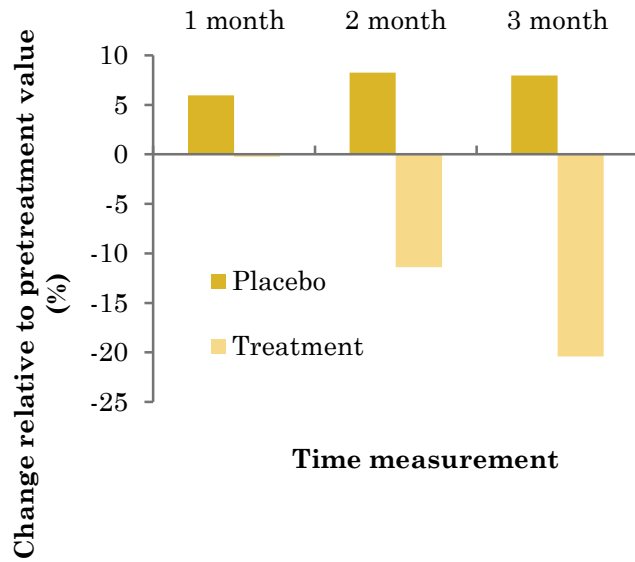
Smoothness



RESULT

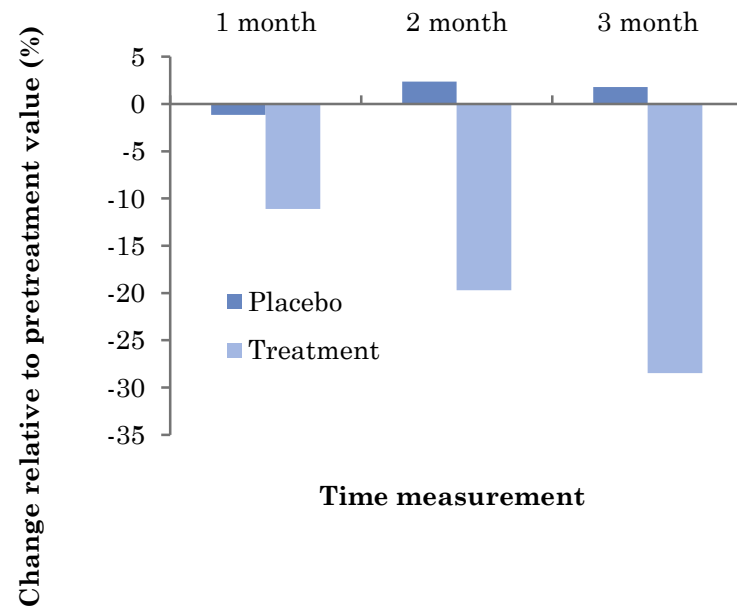
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Wrinkle



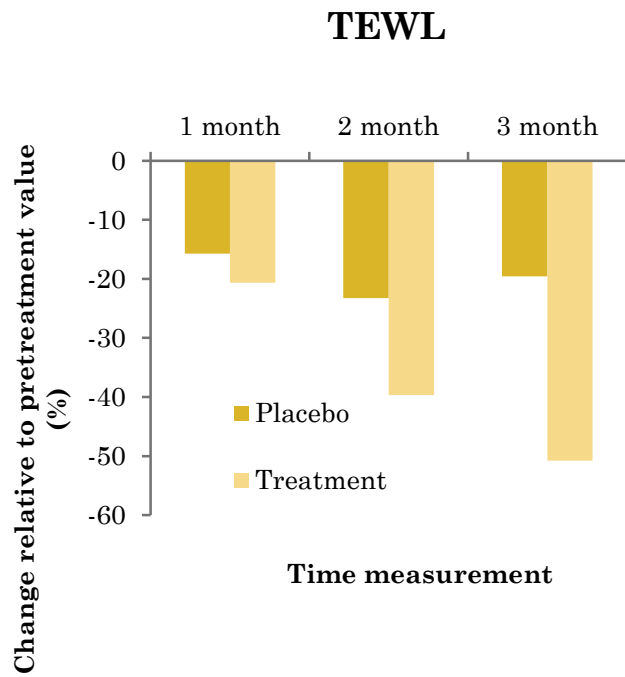
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Wrinkle

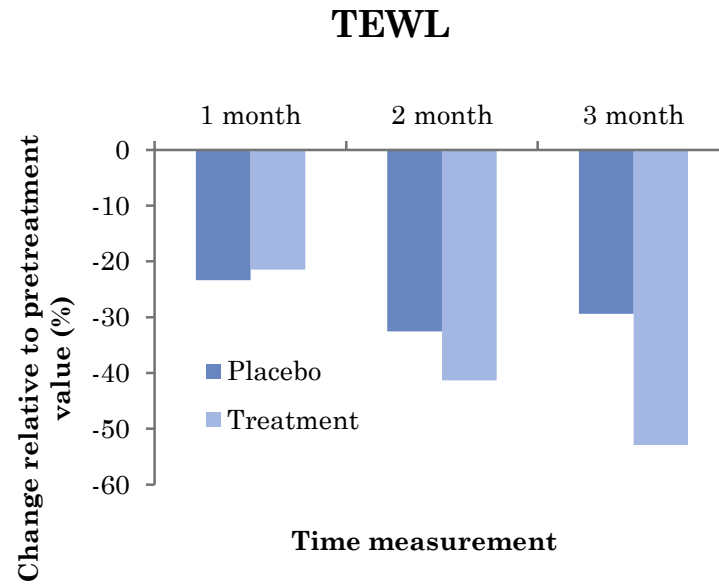


RESULT

Right



Left

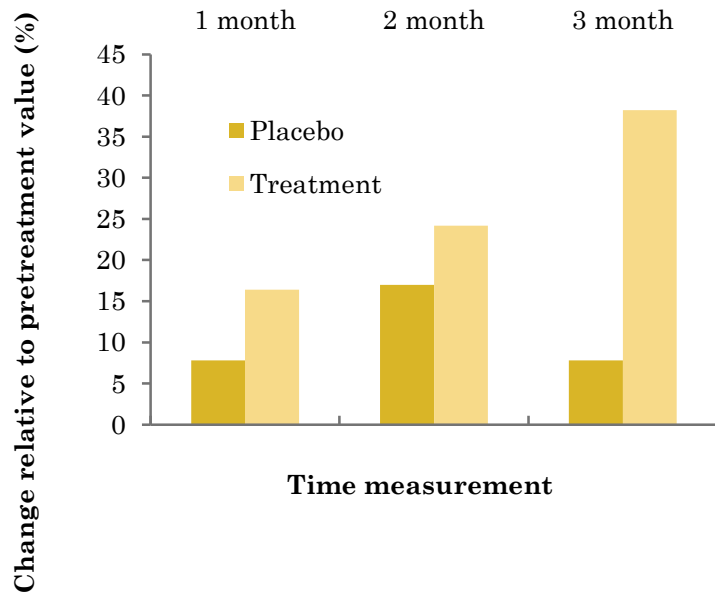


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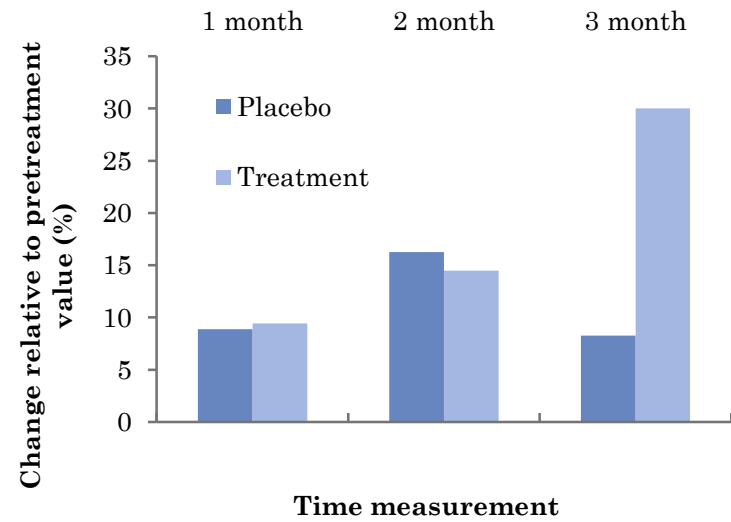
Right

Left

Firmness



Firmness

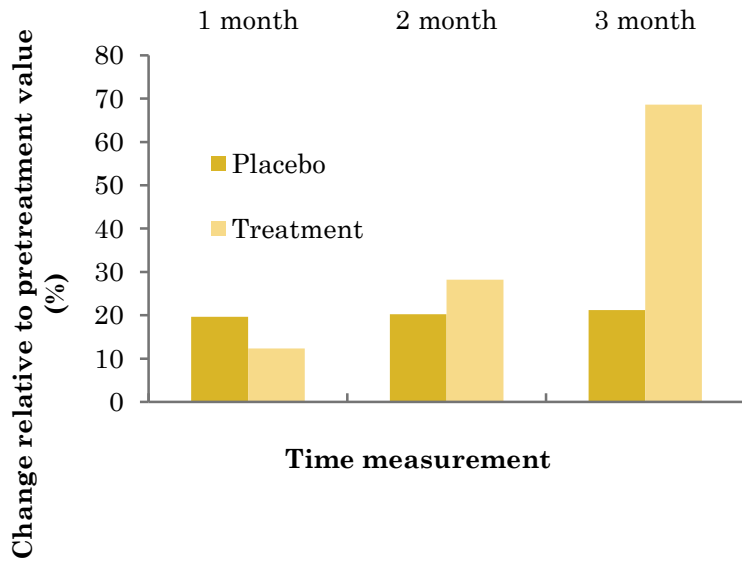


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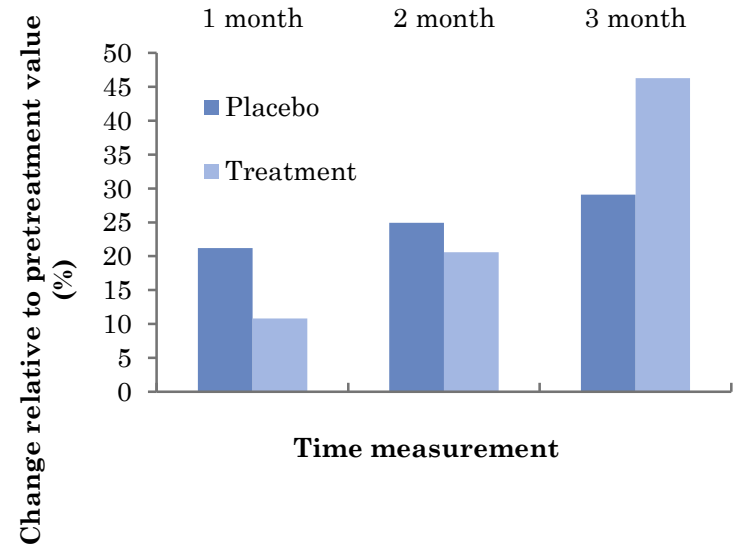
Right

Left

Elasticity



Elasticity



- **The results of the study revealed that volunteers have after 3 month oral supplement of Tri-E :**

Significant improvement of all skin biophysical parameters after three month study.

- ✓ **Right arm : roughness, 42.8%; smoothness, 38.0%; wrinkle, 20.4%; humidity, 59.0% TEWL, 50.7%; fatigue resistance, 26.1%, firmness: 38.2%; and elasticity 68.6%.**
- ✓ **Left arm : roughness, 40.1% ; smoothness, 48.6% ; wrinkle, 28.5% ; humidity, 59.6% ; TEWL, 52.9 % ; fatigue resistance, 25.1% ; firmness, 30.2% and elasticity 46.3%.**

VOLUNTEERS FEEDBACK AFTER THE COMPLETION OF STUDY

- 80% of the volunteers agreed that Tri.E oral supplement gives positive results and will continue their consumption of the product.
- Reduce rashes and itchiness.
- Normalize the periodic cycles.

SUGGESTION TO SIME DARBY RESEARCH SDN BHD

- Long term study such as 6-12 month is required to evaluate optimum effect of tocotrienols on the human skin
- Study on depigmentation effect and clearing of skin scars.
- Study on the effect of internal and external supplementation of tocotrienols on the ageing skin.
- Study on the maximum effect of tocotrienols combination with another bioactive on human skin



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