



# ALMONDS AND SKIN HEALTH

Swati Kalgaonkar, *Almond Board of California*

Kerry Neville, *Porter Novelli*

Kimberly Haider, *Porter Novelli*

Raja Sivamani, *UC Davis*

Zhaoping Li, *UC Los Angeles*







# ALMONDS AND SKIN HEALTH

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The background of the slide features a warm, golden-brown color palette. On the right side, there is a close-up photograph of a glass jar filled with almonds. In the foreground, slightly to the left and out of focus, is a small, round glass dish containing a small amount of light-colored almond oil. The overall aesthetic is clean and natural, emphasizing the almond product.

## IS SKIN HEALTH JUST SKIN DEEP?

Swati Kalgaonkar, PhD  
Associate Director, Nutrition Research Program  
Almond Board of California

# Agenda

- **Introductions**
- **Presentations**
- **Q & A**



## Session Moderator



Swati Kalgaonkar, PhD  
Associate Director, Nutrition Research Program

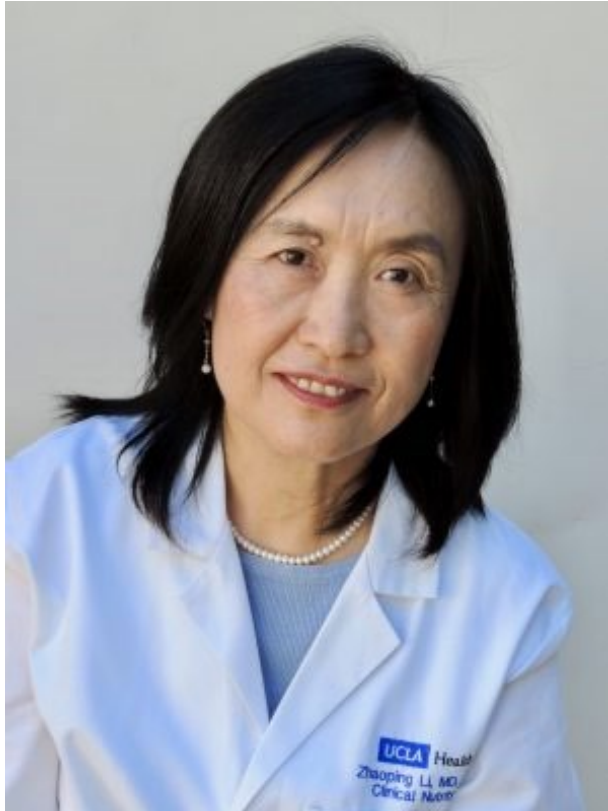
## Session Speaker



Raja Sivamani, M.D., M.S., C.A.T.  
Dermatology, University of California, Davis



## Session Speaker



Zhaoping Li, MD, PhD  
Professor of Medicine,  
Director, Center for Human Nutrition  
University of California Los Angeles

## Session Speaker



Kimberly Haider, RDN, RD  
Vice President,  
Porter Novelli



## Session Speaker



Kerry Neville  
Vice President,  
Porter Novelli



# ALMONDS AND SKIN HEALTH

Kimberly Haider, *Porter Novelli*







# ALMONDS AND SKIN HEALTH

Kerry Neville, *Porter Novelli*





## Skin Health and Consumer Interest

- **Kim Haider, RDN and Kerry Neville, MS, RDN**
- **Porter Novelli**



# Why Skin Health?

- Long-standing connection between almonds and beautiful skin
- Growing interest in eating healthy foods to enhance the skin's beauty and youthful appearance
- Beauty encompasses wrinkle reduction, blemish-free skin and more even tone
- Skin is a marker for healthy aging and an overall good health status



mbg mindbodygreen.com

## In Your 40s & 50s? A Derm Says Add This To Your Skin Care Routine

Several years ago, one major trend erupted in the beauty space: Topical probiotic skin care. At this point in the world of wellness, we were well ...



**B.** The Beet

## The Best Foods to Eat for Clear, Healthy, Younger Looking Skin

The 7 Best Foods to Help You Enjoy Clear Healthy, Younger Looking Skin ·  
1. Red or Yellow Bell Peppers, Which Are High in Vitamin C, to Boost ...




**G** Glamour

## 17 Best Anti-Wrinkle Creams and Serums to Keep Skin Smooth and Ageless

Olay Regenerist Retinol 24 Facial Moisturizer. Rating: 4.4 out of 5 stars.  
Key selling points: Looking for an effective anti-wrinkle cream you can ...



# The Skin-Friendly Nutrient Profile of Almonds



- PROTEIN** 6g  
Building block of the body; helps build and preserve muscle, bone, skin and nails.
- FIBRE** 4g • 13% DV  
Helps promote fullness and digestive health; helps maintain healthy blood sugar levels.
- MONOUNSATURATED FATS** 9.5g  
Heart-smart fats that help decrease LDL ("bad") cholesterol and increase HDL ("good") cholesterol.
- VITAMIN E** 7.7mg • 60% NRV  
Antioxidant that helps protect cells from damage.
- POTASSIUM** 220mg  
Regulates blood pressure; important for heart health and muscle contraction.
- CALCIUM** 81mg • 10% NRV  
Helps build and maintain strong bones and teeth.
- MAGNESIUM** 81mg • 22% NRV  
Helps regulate muscle and nerve function, blood sugar levels and blood pressure.
- RIBOFLAVIN** 0.3mg • 24% NRV  
B vitamin that helps convert food into fuel; important for red blood cell production.
- NIACIN** 1.1mg • 7% NRV  
B vitamin that supports energy production.
- PHOSPHOROUS** 144mg • 21% NRV  
Helps build and maintain strong bones and teeth; plays a role in how the body uses and stores energy.
- IRON** 1.1mg • 8% NRV  
Carries oxygen to all body cells; plays a role in energy production.

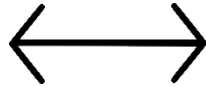
# Consumer Trends Driving the Interest in Skin Health

**Pre-juvenation**

**Concerns about Acne**

**Food as Skin Medicine**

**Healthy Appearance**



**Healthy Aging**





# Why do Registered Dietitians and Nutritionists Care?

- Because consumers do! RDNs are consumers too and majority are women
- HPs are the arbiters of information
- A lot of info abounds online, but our HPs make sense of it
- We deliver the evidence to them to help recommend almonds





# ALMONDS AND SKIN HEALTH

Raja Sivamani, *UC Davis*



# Influence of Almond Ingestion on the Skin

**Raja Sivamani, MD MS AP**

Zen Dermatology

Pacific Skin Institute

University of California Davis, Department of Dermatology

California State University – Sacramento, Department of Biological Science

California Northstate University, College of Medicine

# Why Almonds?



Based on a one-ounce portion	ALMOND
Calories	163
Protein (g)	<b>6.0</b>
Total Fat (g)	14.0
Saturated Fat (g)	1.1
Polyunsaturated Fat (g)	3.4
Monounsaturated Fat (g)	8.8
Carbohydrates (g)	6.1
Dietary Fiber (g)	<b>3.5</b>
Potassium (mg)	200
Magnesium (mg)	76
Zinc (mg)	0.9
Copper (mg)	0.3
Vitamin B6 (mg)	0
Folate (mgc)	14
Riboflavin (mg)	<b>0.3</b>
Niacin (mg)	<b>1.0</b>
alpha-tocopherol (mg)	<b>7.4</b>
Calcium (mg)	<b>75</b>
Iron (mg)	1.1

# Pilot Study

RESEARCH ARTICLE

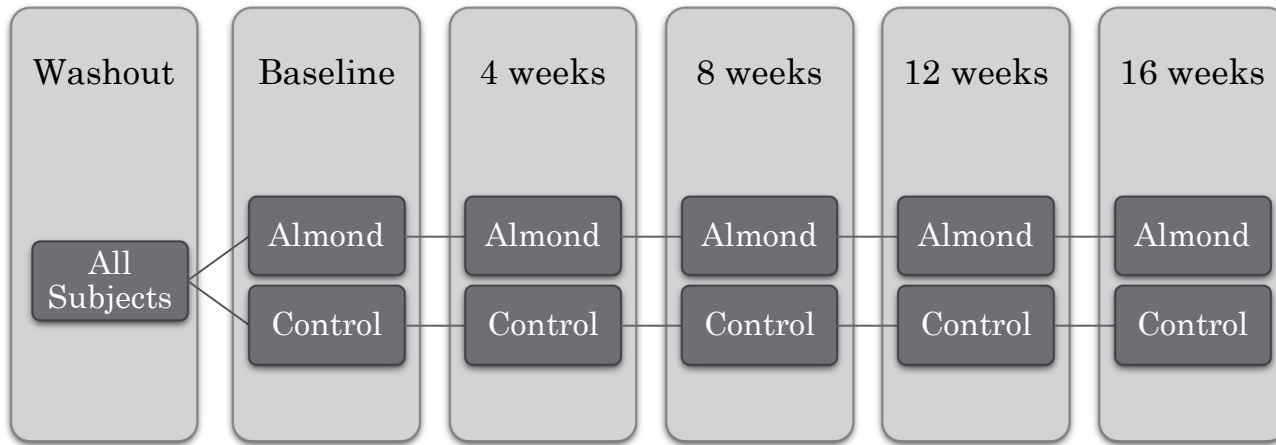
WILEY

## Prospective randomized controlled pilot study on the effects of almond consumption on skin lipids and wrinkles

Negar Foolad<sup>1</sup> | Alexandra R. Vaughn<sup>2,3</sup>  | Iryna Rybak<sup>2</sup> | Waqas A. Burney<sup>2</sup> |

Gwen M. Chodur<sup>4</sup>  | John W. Newman<sup>4,5</sup> | Francene M. Steinberg<sup>4</sup> | Raja K. Sivamani<sup>2,6,7</sup> 





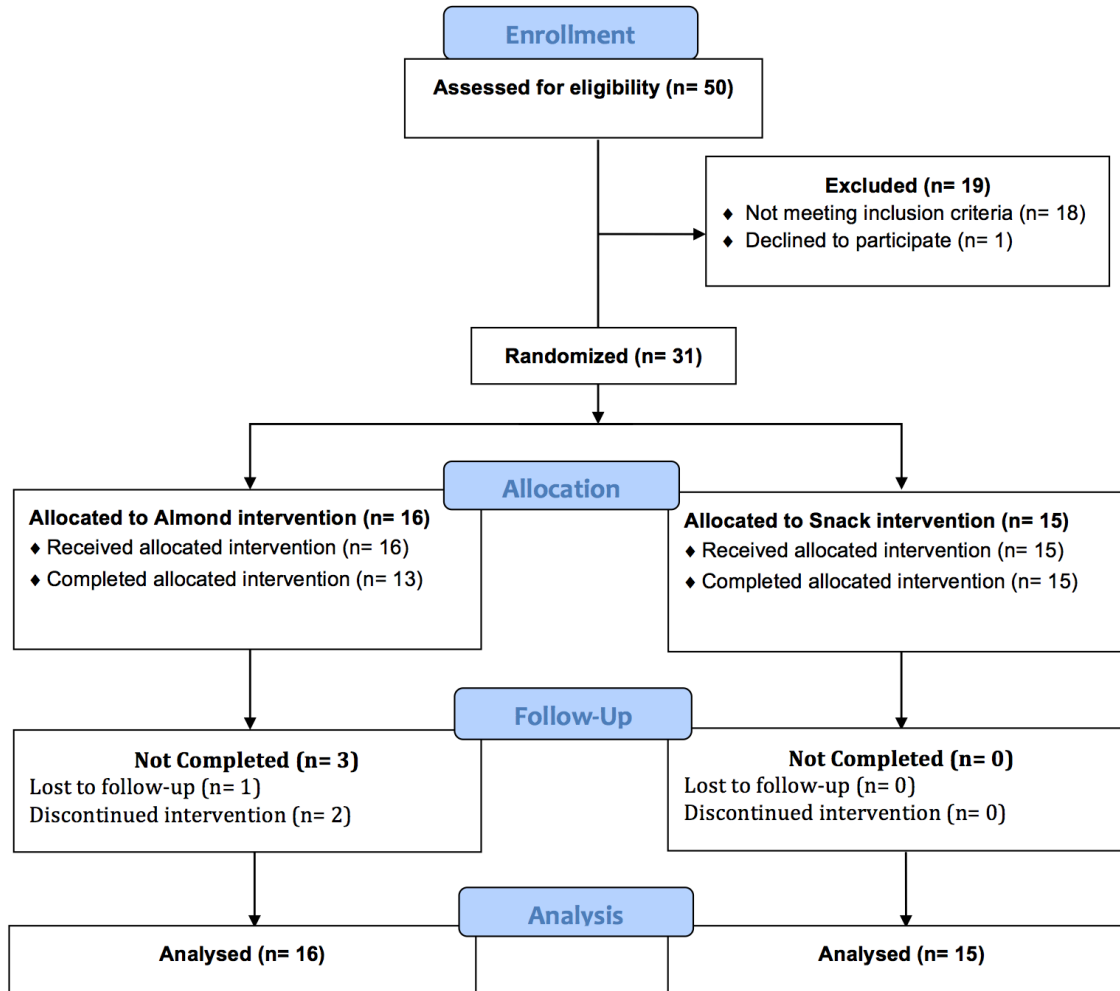
### **Almond Group**

Raw almonds supplying 20% of total daily energy  
(~handful of almonds)

### **Control**

Nut free calorie matched snacks  
(a cereal bar, a small granola bar, and pretzels)

ClinicalTrials.gov: NCT02954315

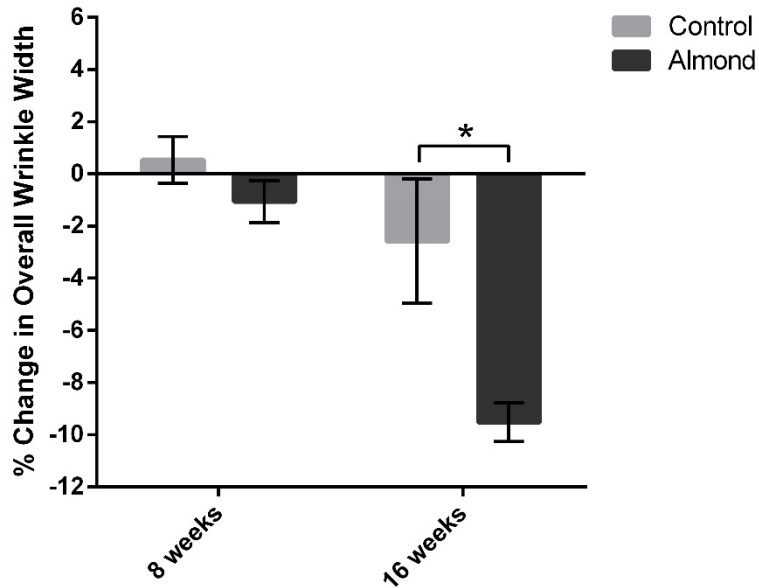
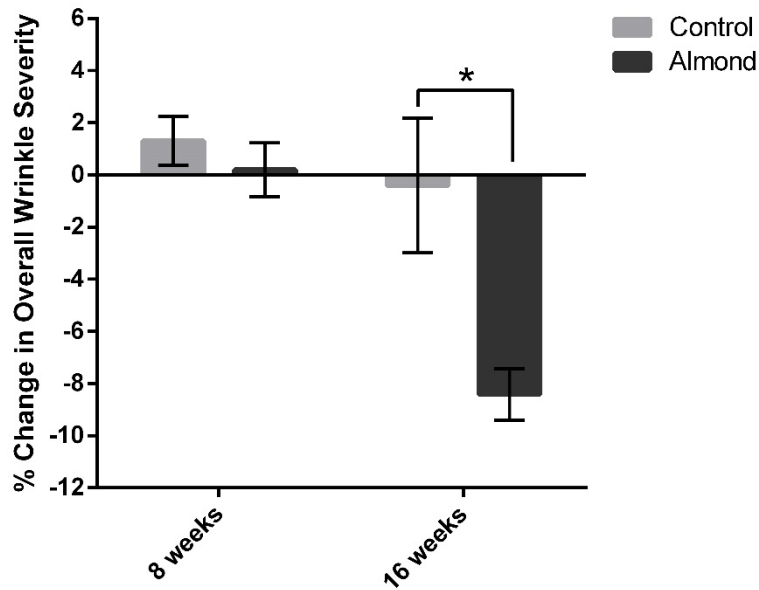




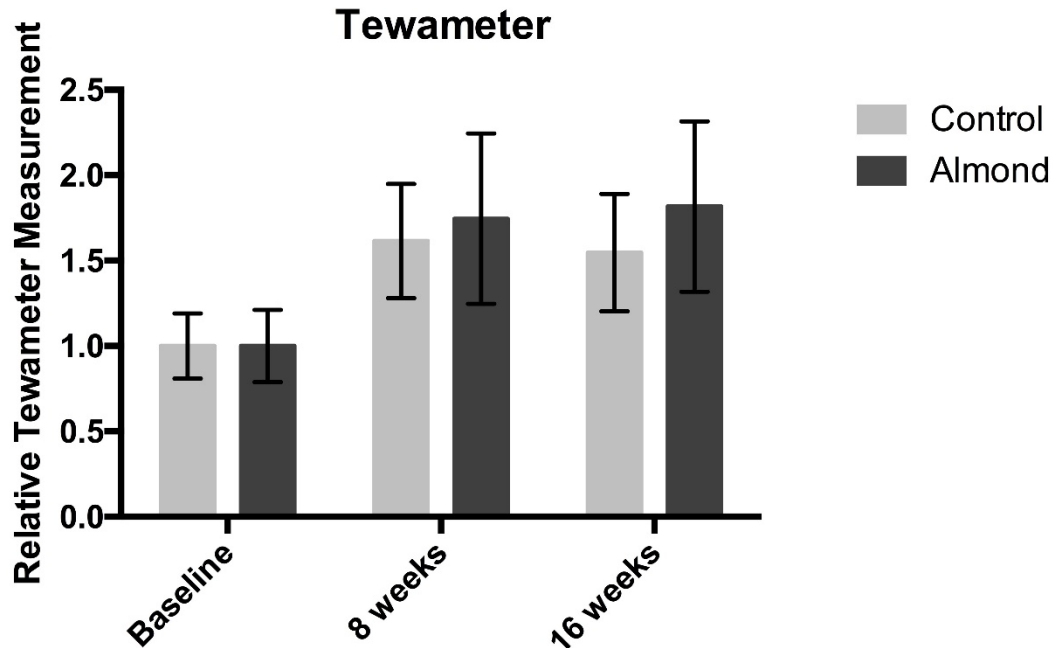
# Demographics

Demographic Factor	Almond group (n=16)	Control Group (n=15)
Age, mean±SD	63.63 ± 7.09	58.93 ± 6.10
Sex, Female	16	15
Body Mass Index (kg/m <sup>2</sup> ), mean±SD	30.7 ± 7.31	29.7 ± 7.66

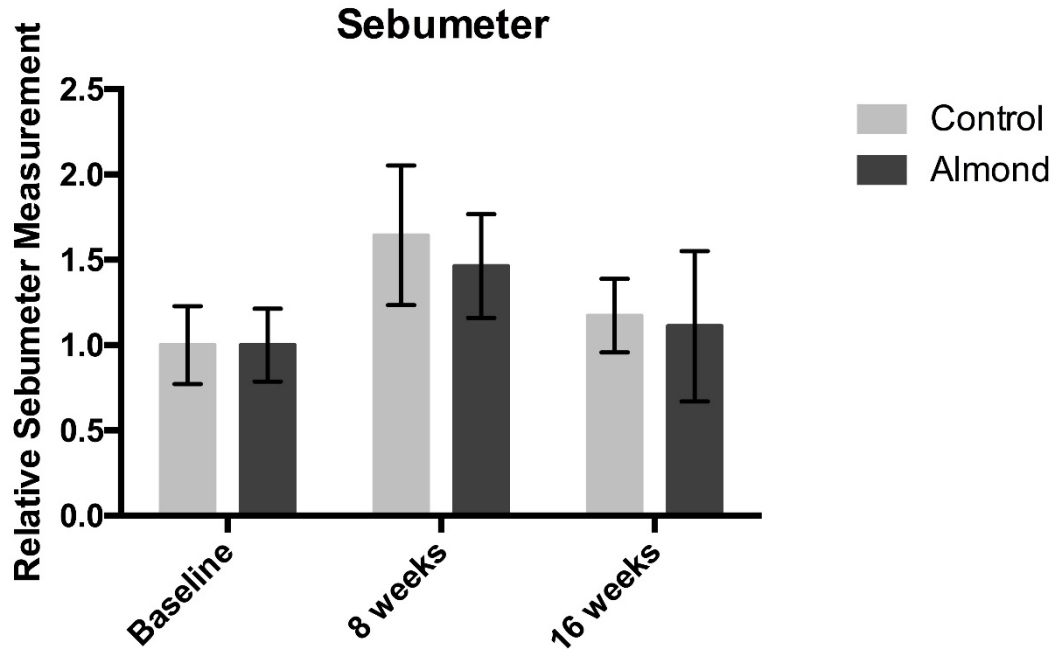
# Results: Wrinkles



# Results: Skin Barrier – Transepidermal Water Loss



# Results: Sebum Excretion Rate







**Baseline**



**16 weeks**

No Side Effects

# Overall Results

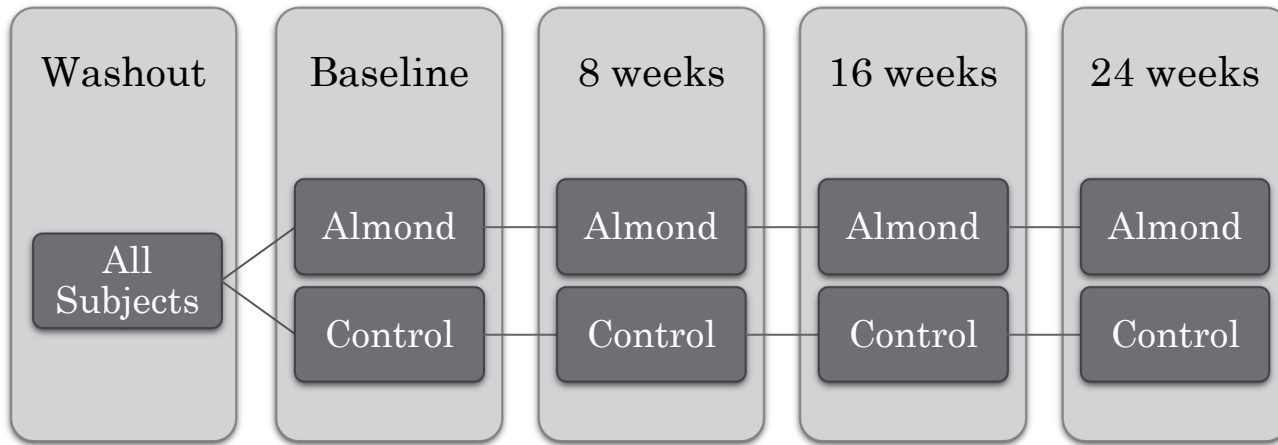
- Wrinkles were improved in the almond supplementation group
- Not due to change in sebum production or change in skin barrier function

# Follow Up Expanded Study



- Expanded study population
- Longer duration for study





**Almond Group (n=27)**

Raw almonds supplying 20% of total daily energy  
(~handful of almonds)

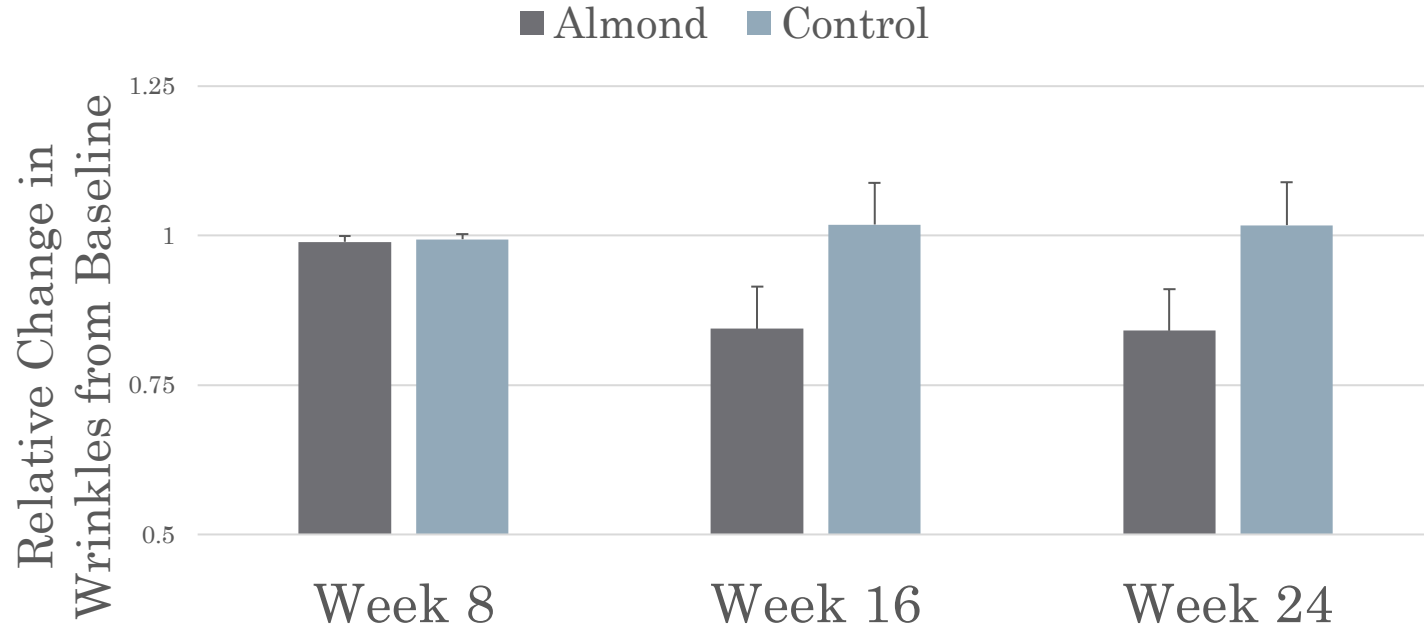
**Control (n=29)**

Nut free calorie matched snacks

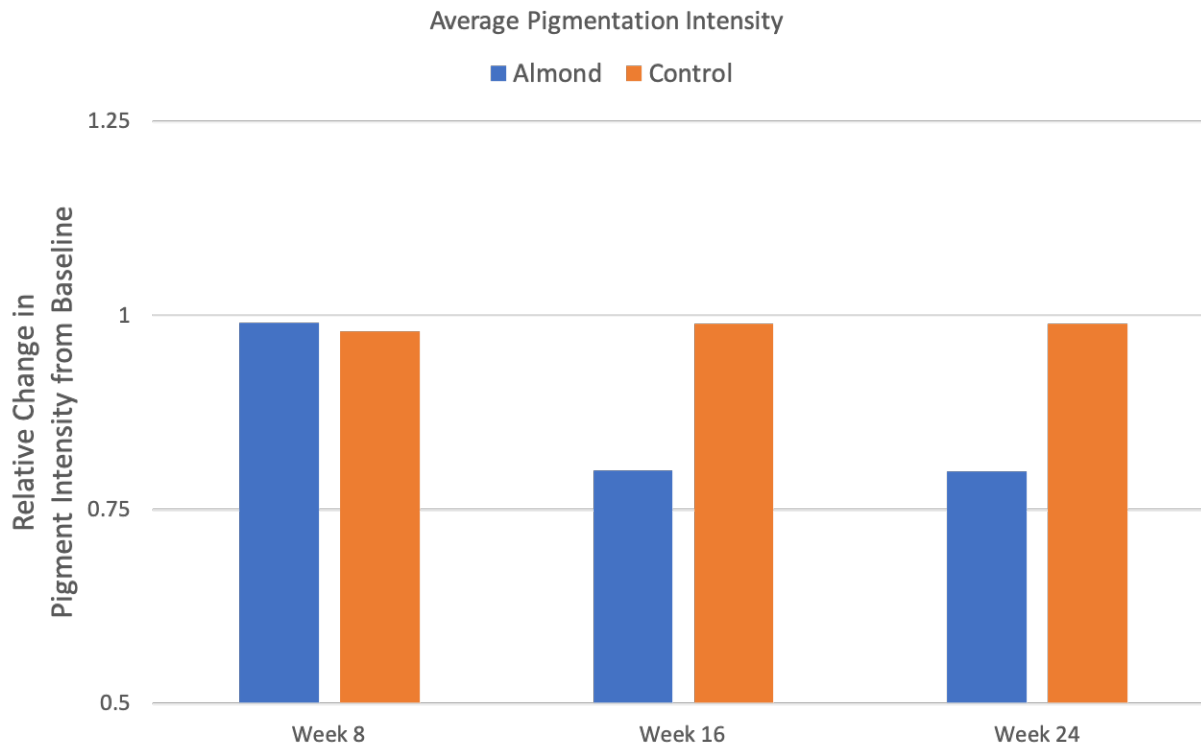
ClinicalTrials.gov: NCT03729700

# Wrinkles

## Average Wrinkle Severity

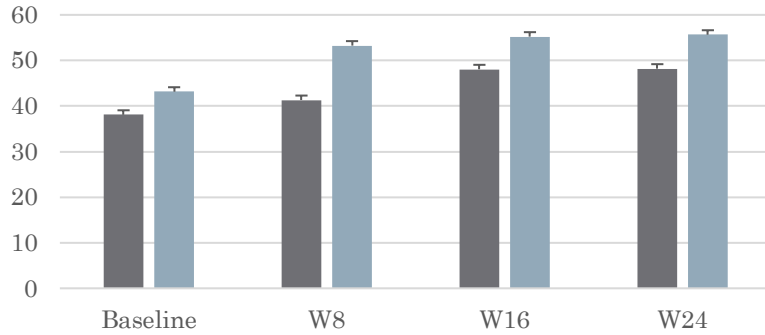


# Pigment

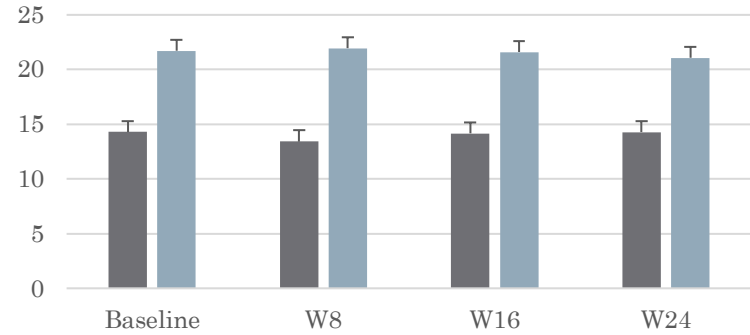


# Skin Hydration

Hydration and Almond  
Supplementation



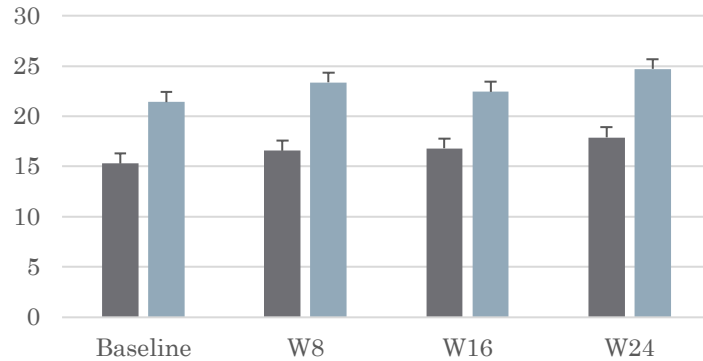
Hydration and Control  
Supplementation



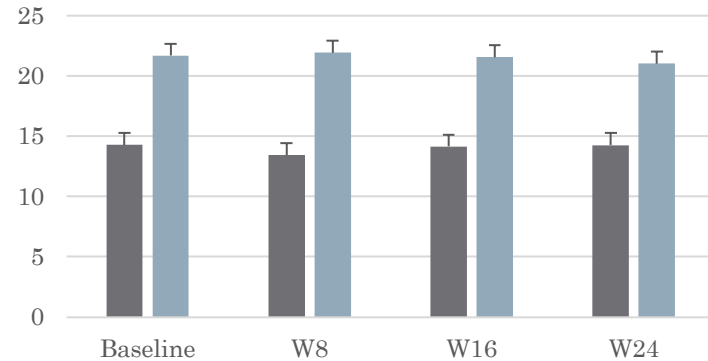


# Transepidermal Water Loss

TEWL and Almond  
Supplementation

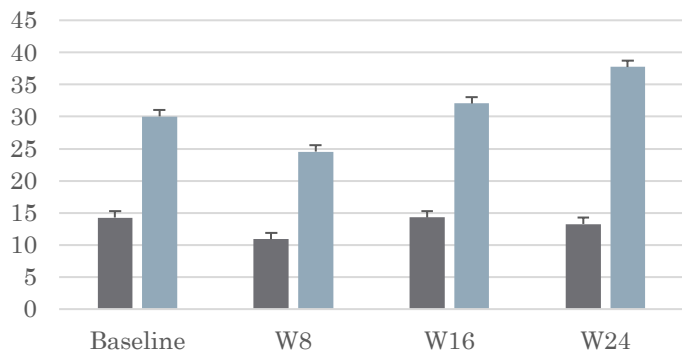


TEWL and Control  
Supplementation

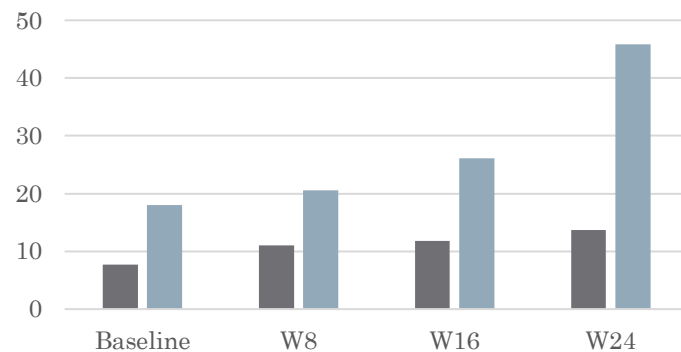


# Sebumeter

## Sebum Excretion and Almond Supplementation



## Sebum Excretion and Control Supplementation



# Overall Conclusions: Follow-Up Study

- Almond supplementation **significantly reduce** the appearance of wrinkle severity
- Almond supplementation **significantly reduced** the appearance of pigment intensity
- Control supplementation increased sebum excretion rate on the forehead but this was not noted in the almond supplementation group

# Remaining Work

- Gut microbiome and plasma studies are pending and should be back by late November/early December

# Future Studies

- Almond oil and wrinkles and pigmentation
- Acne



# Almonds and Glycemic Index

- Almonds may reduce glucose spikes



Fig. 1. Two-hour blood glucose response curves with SE bars on each time point for the 3 almond meals and the control meal. The control meal had the highest glucose response, followed by the 30-g, the 60-g, and then the 90-g almond meals.

## UC Davis Dermatology

- Iryna Rybak
- Aunna Pourang, MD
- Waqas Burney, MBBS

## Sacramento State

- Robert Crawford, PhD

## UC Davis Nutrition

- Francene Steinberg, RD PhD
- John Newman, PhD

**[raja.sivamani.md@gmail.com](mailto:raja.sivamani.md@gmail.com)**





# ALMONDS AND SKIN HEALTH

Zhaoping Li, *UC Los Angeles*



Health Benefits of Almond:  
**From Research to  
Consumes**

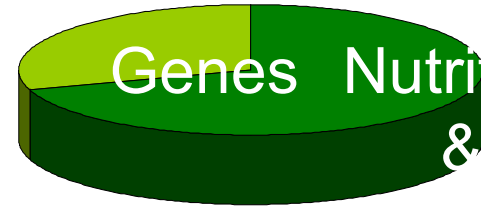
**Zhaoping Li, M.D., Ph.D.**  
**Professor of Medicine**



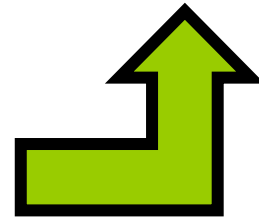
**UCLA** Center for  
Human Nutrition

# You Control Your Health and Aging

Only 30% of how you age is determined by your genes



**The other 70% is in your hands**





# Aging and the Skin

## **Photodamage**

- appearance of wrinkles
- pigmented lesions
- actinic keratoses
- patchy loss of color



# Stochastic theory

## Environmental factors

- UV radiation
- smoking
- Pollution
- Harsh weather
- Stress
- Diet



Stress? What stress?

# Health Skin Aging

- Vitamins A,C,D,E
- Antioxidants



# Health Skin Aging

- Healthy Lifestyle
- High quality, diverse diet
- Vitamins A,C,D,E
- Antioxidants



## **Almond on the Resistance to UVB-induced Damage**

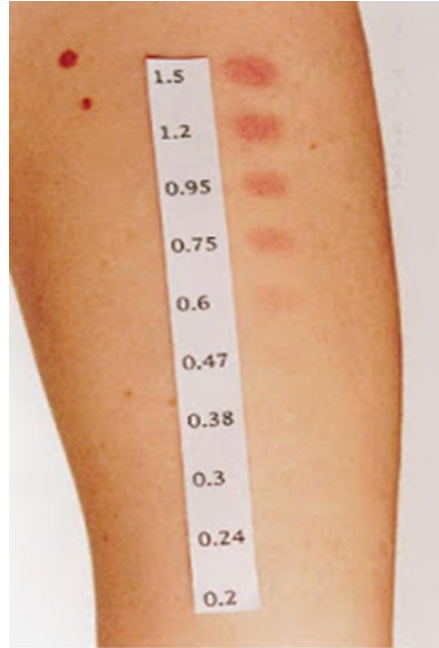
- Design: randomized, placebo controlled
- Study population:
  - Asian women
  - 18-45 years old
  - Fitzpatrick skin type II-IV
- 1.5 oz of almonds or 1.8 oz of pretzels
- Duration: 12 weeks



# Demographics of study participants

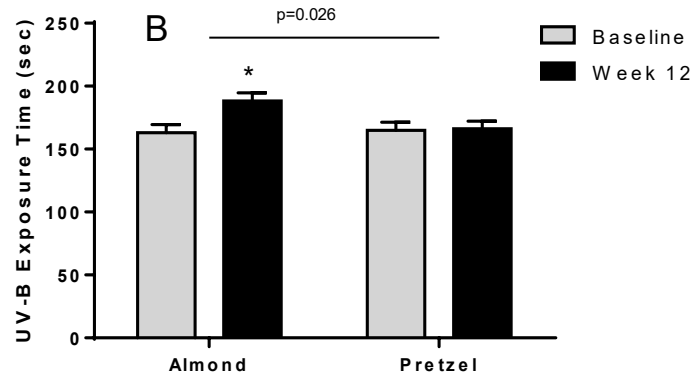
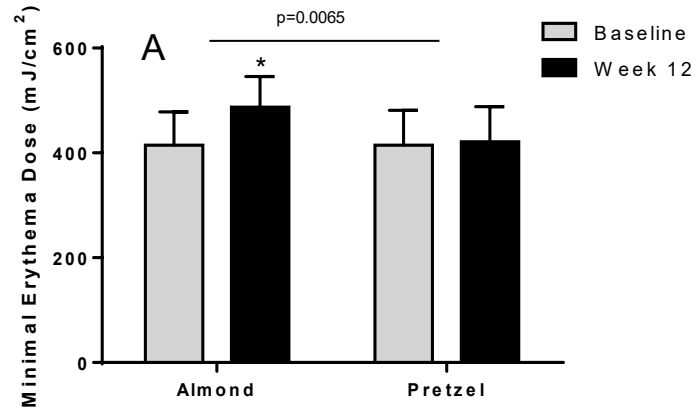
	Almond (n=13)	Control (n=16)
Age (years)	27.5 $\pm$ 6.3	28.4 $\pm$ 8.7
Height (inches)	63.2 $\pm$ 2.5	63.1 $\pm$ 2.0
Weight (lbs)	130.2 $\pm$ 16.5	125.5 $\pm$ 16.5
BMI	22.9 $\pm$ 2.4	22.1 $\pm$ 2.42
Ethnicity		
Cambodian	2 (15)	0 (0)
Chinese	4 (31)	6 (38)
Filipino	2 (15)	1 (6)
Korean	2 (15)	5 (31)
Taiwanese	0 (0)	1 (6)
Vietnamese	1 (8)	1(6)
Bi-racial	2 (15)	2 (13)
Skin Type		
III	4 (31)	8 (50)
IV	9 (69)	8 (50)

# UV-induced erythema

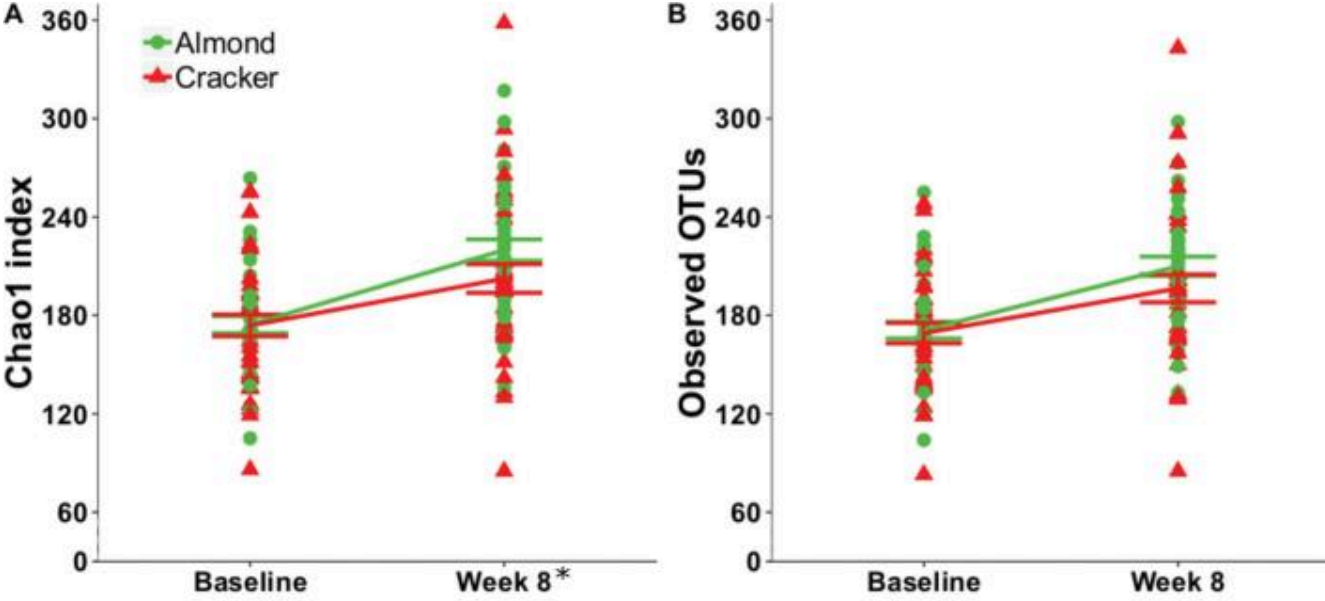


Ref:

# Almond on the Resistance to UVB-induced Erythema



# Almond Increases Microbiome Alpha-Diversity in College Students



Curr Dev Nutr. 2019 Aug; 3(8): nzz079.  
Published online 2019 Jul 3. doi: 10.1093/cdn/nzz079

# Summary

- Almond consumption significantly increased the skin resistance to UV irritation
- Almond consumption may lead to enhanced protection from UV photodamage

# Take Home Message

- Skin health is part of healthy aging
- Never too early to take care of your skin and your health
- It is the best to prevent damage than repair damage



# Getting the Word Out

- Global synchronized launch
- Press release with unique mailer
- Outreach: tell the story
- Media Tours with Keri Gans, RDN and Celebrity Facialist Angela Caliguila
- Diet and Skin Health webinar for US and EU HPs
- US consumer advertising
- Early splash and the slow burn – both important for changing people’s minds



# Our Results

## EU

## USA

## MEXICO

## INDIA

**Beauty Food des Monats: Mandeln**

Mandeln sind die herrlichen Almonds, sorgen für einen Beauty-Bonus für Haut und Haar – und haben uns über den Winter abgeholt!

**HAAR**  
Almonds sind reich an Vitamin E, Omega-3, Omega-6 und Vitamin D, die die Haarstruktur stärken und das Haarwachstum fördern. Sie helfen bei der Produktion von Kollagen und stärken so das Haarwachstum.

**HAUT**  
Almonds sind reich an Vitamin E, Omega-3, Omega-6 und Vitamin D, die die Hautstruktur stärken und das Haarwachstum fördern. Sie helfen bei der Produktion von Kollagen und stärken so das Haarwachstum.

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**NEW STUDY MORNING**  
**NEW STUDY SHOWS ALMONDS DECREASE WRINKLES**

**SKIN REGIMEN**

## Tips for Minimizing Wrinkles

By Dr. Oz and Michael Roizen, M.D.  
Monday, 18 November 2019 12:08 PM  
Current | Bio | Archive

**ConsumerLab.com**  
AMMONDS AND WRINKLES

**Question:** Can eating almonds reduce wrinkles?

The amount of almonds consumed. See full answer >>>

## Does eating almonds prevent wrinkles?

WE KNOW almonds are good for us, but new research by the University of California, Davis, suggests eating them can reduce wrinkles.

calories from either almonds or nut-free snacks. Wrinkles were reduced in width (by 10 per cent) and severity (9 per cent) among the almond eaters.

lonist Rhianon Lambert believes almonds contain zinc, niacin, boron, all nutrients that sustain our skin.

**LO SPUNTINO DELLA BELLEZZA**

Aggiungere la mandorle alla propria dieta può aiutare a ridurre le rughe. Gli interessanti risultati di una ricerca post-menopausa

**Herald**

**ating almonds daily can reduce wrinkles: Study**

...in latest studies, you are still obtaining your personal benefits by eating almonds. Almonds are a rich source of antioxidant essential fatty acids and polyphenols. They also have a lot of vitamins and minerals. The intervention group ate 1 ounce of almonds a day. The control group ate nut-free snacks. Using scientific equipment, facial wrinkles were measured for depth and severity. The almonds turned out to be significant. After 16 weeks, wrinkles were reduced by 10% and severity by 9%. The study was funded by the almond diversity of almonds research network. Almonds are a rich source of antioxidants. Even if these results are not exactly dig-

**THE HAPPENING**

**El consumo de almendras te ayudará a eliminar arrugas faciales**

...beneficio de las almendras. El estudio muestra que el consumo de almendras reduce el número de arrugas faciales. Esto se debe a que las almendras son ricas en antioxidantes y ácidos grasos saludables.

**Almonds help keep wrinkles & skin issues at bay: Study**

...study shows that eating almonds can help reduce the number of wrinkles and skin issues. This is because almonds are rich in antioxidants and healthy fats.

**Almonds help keep wrinkles & skin issues at bay: Study**

**THE TIMES OF INDIA**

...study shows that eating almonds can help reduce the number of wrinkles and skin issues. This is because almonds are rich in antioxidants and healthy fats.

**KENA #MujeresEnAcción**

**ALMONDAS PARA LAS ARRUGAS: INGREDIENTE QUE NO PUEDE FALTAR EN TU BOLSA**

...study shows that eating almonds can help reduce the number of wrinkles and skin issues. This is because almonds are rich in antioxidants and healthy fats.

## Almonds can reduce wrinkles?

**HEALTHY SNACK**

**NEW YORK:** Daily consumption of almonds may help reduce the severity of facial wrinkles in post-menopausal women, claims a first-of-its-kind study to examine the effects of the nuts on skin health.

**The New Indian Express**

just be the solution wrinkles at bay



Almonds may help reduce the severity of facial wrinkles in post-menopausal women, claims a first-of-its-kind study to examine the effects of the nuts on skin health.

# Appetite for Skin Health Research in Asia

## CHINA

时尚新视野 护肤·美妆·医美

### 革新研究表明：加州巴旦木可改善成熟女性面部皱纹和严重程度

2018年10月12日 护肤·美妆·医美

肌肤随着年龄增长，会出现皱纹和松弛。定期使用护肤产品，也可以在一定程度上延缓衰老“脚步”。但不定期使用护肤品，却可能在不知不觉中——加速衰老脚步。



### 革新研究表明：加州巴旦木可改善成熟女性面部皱纹程度和严重程度

来源：美人志

肌肤随着年龄增长，会出现皱纹和松弛。定期使用护肤产品，也可以在一定程度上延缓衰老“脚步”。但不定期使用护肤品，却可能在不知不觉中——加速衰老脚步。

Sharon博士表示：“随着越来越多的人采用非侵入性的护肤产品，他们越来越重视食物护肤的重要性。食物护肤的核心理念，是吃一些有益于皮肤健康的食物。加州巴旦木含有天然维生素E，也是重要的抗氧化剂。日本研究显示，将加州巴旦木加入日常饮食，可能是一种可以延缓衰老的简单方法。这一研究为高脂饮食提供了支持。”



### 革新研究表明：加州巴旦木可改善成熟女性面部皱纹程度和严重程度

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Sharon博士表示：“随着越来越多的人采用非侵入性的护肤产品，他们越来越重视食物护肤的重要性。食物护肤的核心理念，是吃一些有益于皮肤健康的食物。加州巴旦木含有天然维生素E，也是重要的抗氧化剂。日本研究显示，将加州巴旦木加入日常饮食，可能是一种可以延缓衰老的简单方法。这一研究为高脂饮食提供了支持。”

## JAPAN

### 肌ケアに良い可能性

カリフォルニアアーモンド協会

#### アーモンド摂取効果検証

「アーモンドは、肌の健康に良い影響を与えることが、最新の研究で明らかになりました。アーモンドに含まれるビタミンEは、肌の老化を防ぐのに役立ちます。また、アーモンドには、肌の保湿効果も期待されています。」

## 日本食糧新聞

The Japan Food Journal

心臓病、美肌、老化防止に、アーモンドをおやつにするといい「いいこと」



アーモンドのとり方 - 25粒 - 30g目安



## SOUTH KOREA

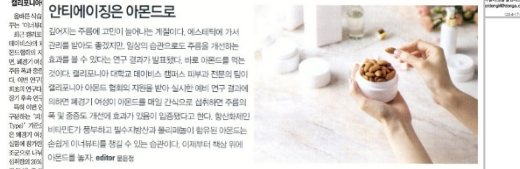
### Beauty Food Info

미국 UC 데이비스 피부과 전문의 팀 연구 결과  
"아몬드 간식으로 챙겨 먹으면 주름 개선에 효과적"

심혈관 질환을 예방하는 데 도움이 되는 것으로 밝혀진 아몬드. 최근 연구에 따르면 아몬드 섭취가 피부 건강에 긍정적인 영향을 미친다는 사실이 밝혀졌다.

### "A study by the UC Davis dermatologists research team suggests 'daily snack of almonds are effective for reducing skin wrinkles'" / Donga Ilbo

안티에이징은 아몬드로  
심혈관 질환을 예방하는 데 도움이 되는 것으로 밝혀진 아몬드. 최근 연구에 따르면 아몬드 섭취가 피부 건강에 긍정적인 영향을 미친다는 사실이 밝혀졌다.



아몬드 섭취는 피부 건강에 긍정적인 영향을 미친다는 연구 결과가 나왔다. 아몬드에는 피부 건강에 좋은 영양소가 풍부하게 함유되어 있다.



Stay tuned



Thank  
You!

