



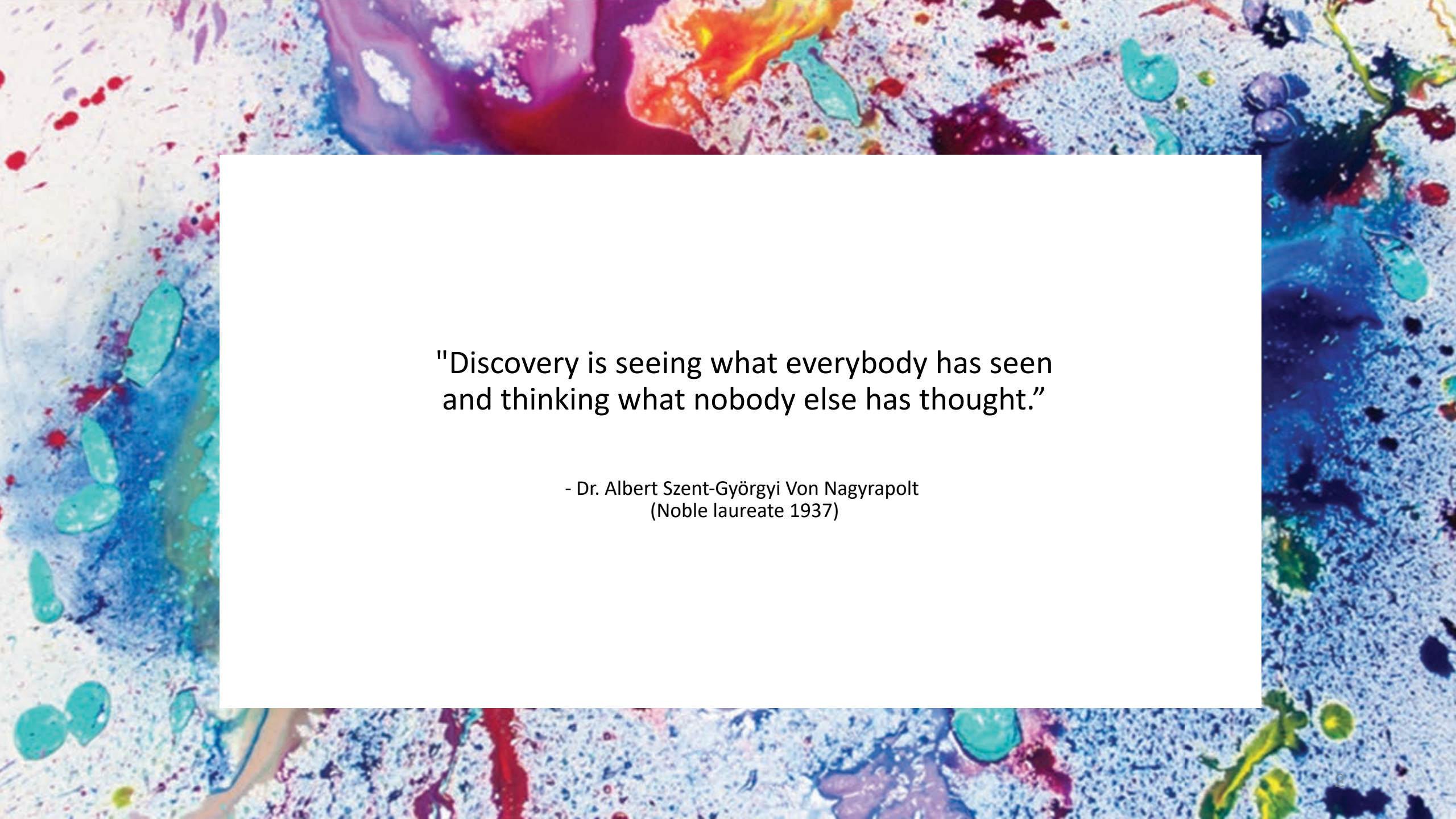
# Modern Wellness:

## Stress, Your Self, Your Skin

### Howard Murad, M.D., FAAD

Associate Clinical Professor of Medicine-Dermatology,  
David Geffen School of Medicine, UCLA  
Board Certified Dermatologist, Pharmacist, Researcher,  
Founder of Murad, LLC.





"Discovery is seeing what everybody has seen  
and thinking what nobody else has thought."

- Dr. Albert Szent-Györgyi Von Nagrapolt  
(Noble laureate 1937)



There are over 300 different theories of aging.

The final common pathway of aging, disease, wrinkles, wrinkles and more, is always the same.

Cellular water loss.



# The Science of Cellular Hydration



Healthy young cell,  
holding cellular water



Age, disease, free-radicals, stress and  
inflammation attack the cell membrane



When the membrane is  
compromised, water leaks out  
and the cell starts to die

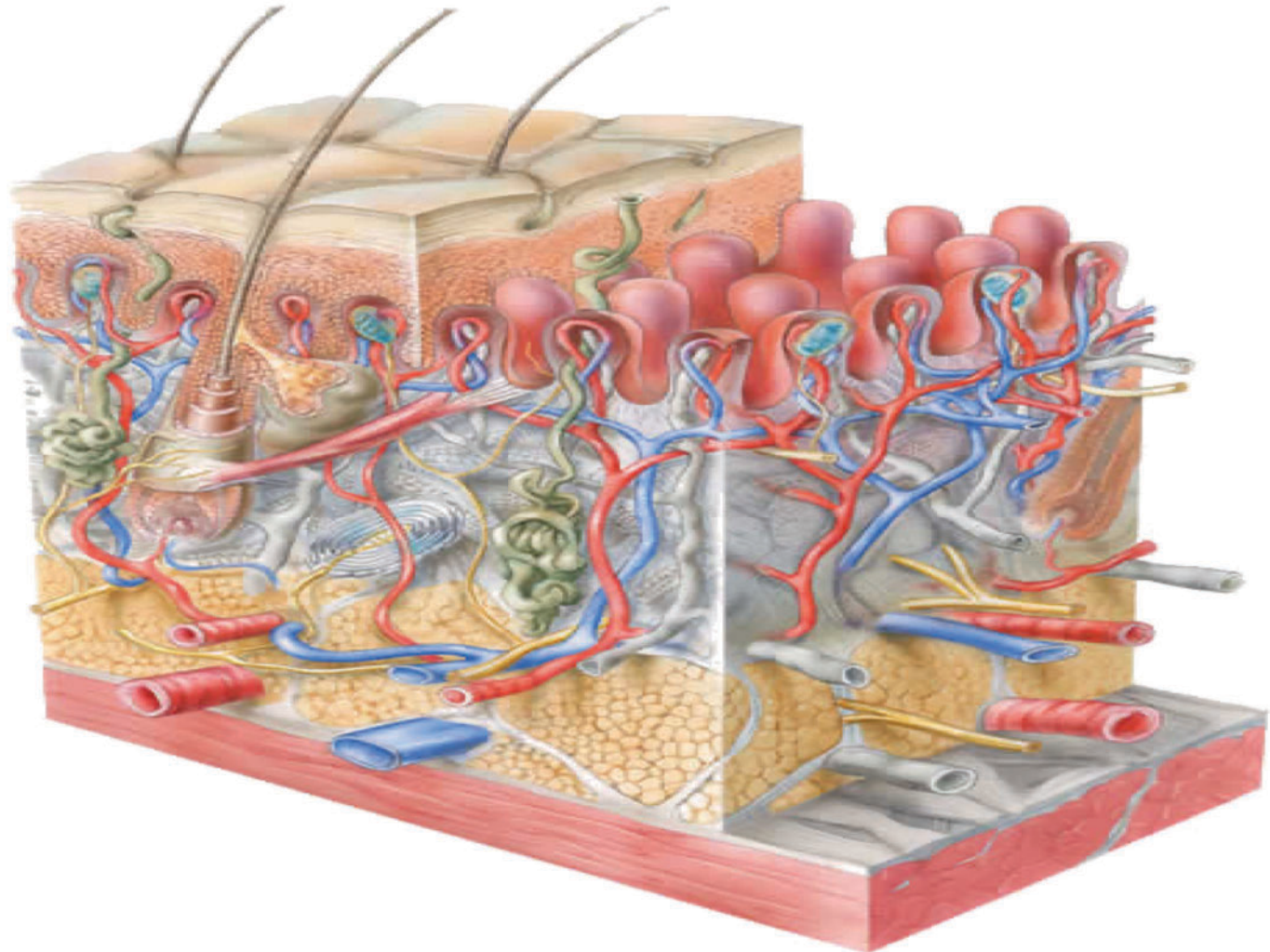


A Connected Beauty system creates  
the ideal environment for strong cell  
membranes retaining cellular water



# The Skin & The Body Are Connected

- CARDIOVASCULAR
- DIGESTIVE
- ENDOCRINE
- LYMPHATIC
- MUSCULAR
- NERVOUS SYSTEM
- REPRODUCTIVE
- SKELETAL
- URINARY
- INTEGUMENTARY
- IMMUNE



# The Pitcher of Wellness

## Nutrition

80% in the healthy zone  
20% comfort foods for an emotional lift



Comfort Foods

The Pitcher of Health



# Dedicating 30 Years to Stress & Skin

WHY?

58% of Americans say  
work is a significant  
source of stress.

SOURCE: American Psychological  
Association - Stress in America survey.  
2017

1 in 5 Americans say  
technology is a major  
source of stress.

SOURCE: American Psychological  
Association - Stress in America survey.  
2017

48% of Americans feel  
their stress has increased  
over the last 5 years.

SOURCE: Statistic Brain Research  
Institute, American Institute of Stress,  
NY July 19, 2016



One in 4 millennials claim  
they are 'stressed out'  
every day.

SOURCE: Mintel 2018





## The Silent Killer:

“Over the last decade, a new stress has come to our earth. I call it Cultural Stress. It's the stress of modern living. It's the rules and regulations, it's a digital dependency which is wreaking havoc on every cell in your body because the stress that's caused is pervasive and goes unabated.”

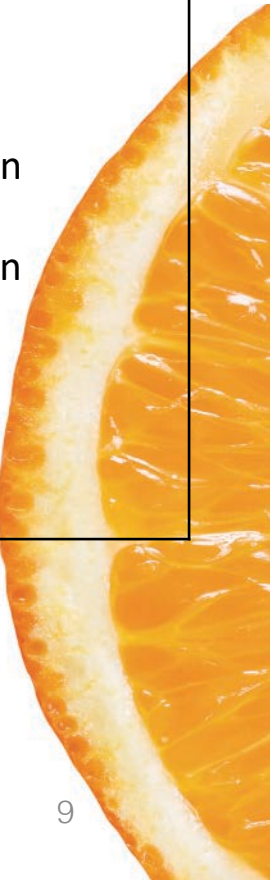
*Howard Murad MD*



# So what is Cultural Stress:

What is Traditional Stress?	What Stress is Cultural Stress? (TODAY)	What Stress is Cultural Stress? (THE NEXT LEVEL)
<ul style="list-style-type: none"><li>✓ A broken arm</li><li>✓ A death in the family</li><li>✓ Divorce or heartbreak</li><li>✓ Job loss</li><li>✓ An accident</li><li>✓ Burglary</li><li>✓ Storms &amp; natural disasters</li></ul>	<ul style="list-style-type: none"><li>✓ Techno Stress</li><li>✓ Poor sleep</li><li>✓ Bullying/online trolls</li><li>✓ Increasing traffic &amp; commutes</li><li>✓ Work/life balance</li><li>✓ Media pressure</li><li>✓ Perfectionism &amp; increased Expectation</li><li>✓ Money</li></ul>	<ul style="list-style-type: none"><li>✓ Loneliness / social isolation</li><li>✓ Sedentary lifestyle</li><li>✓ A lack of human interaction</li><li>✓ Robot replacement</li></ul>






**The pressure of reducing stress:** You must do yoga. You must wear Lululemon yoga clothes. You *must* relax.



## Looking Ahead – Then & Now

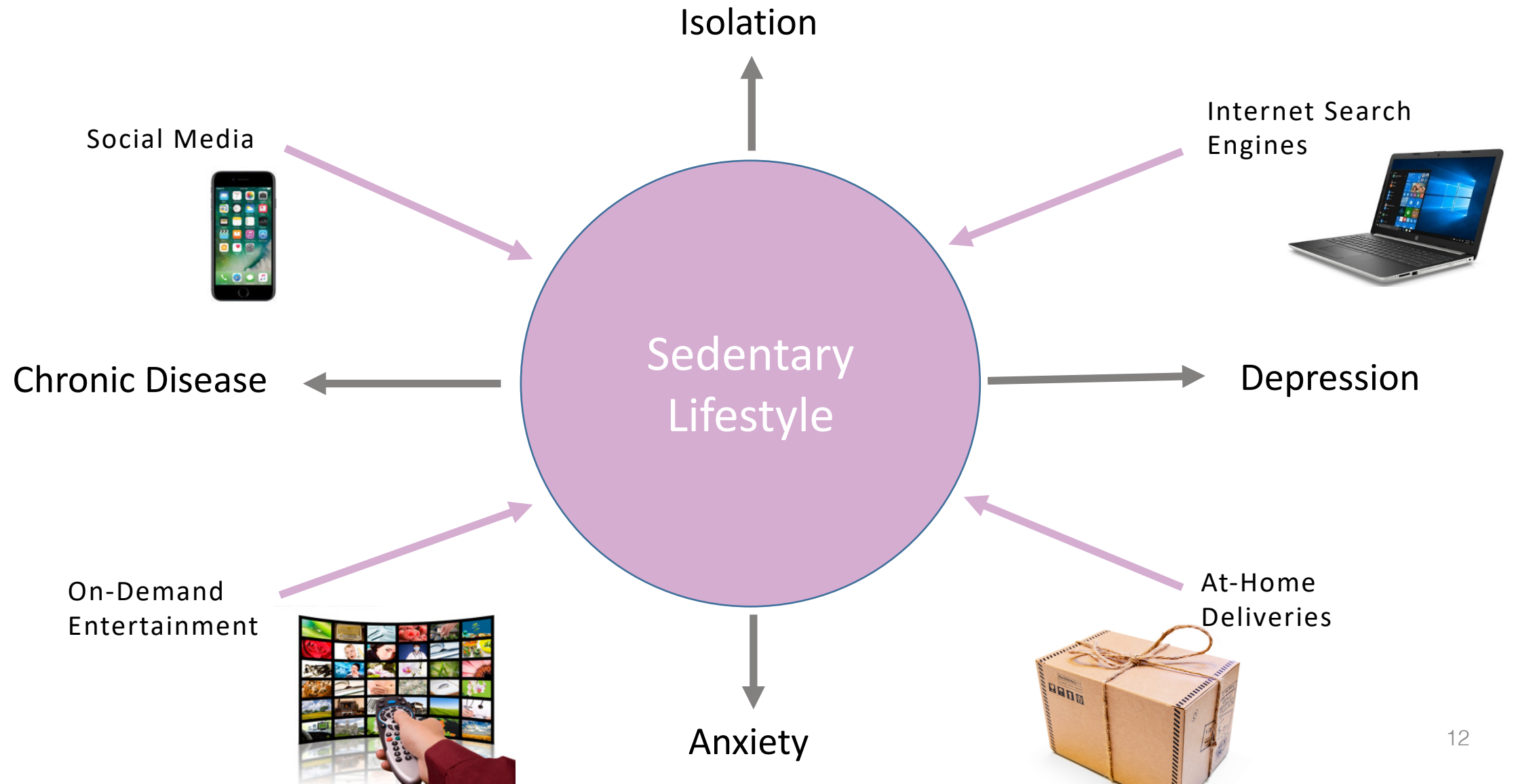


# The Sharing Economy



# The Result of Cultural Stress



# Effects of Stress on Skin

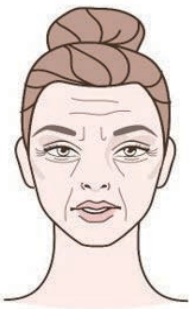


Breakouts  
& Inflammation

Dark circles &  
Puffiness



Expression lines  
& Crows feet



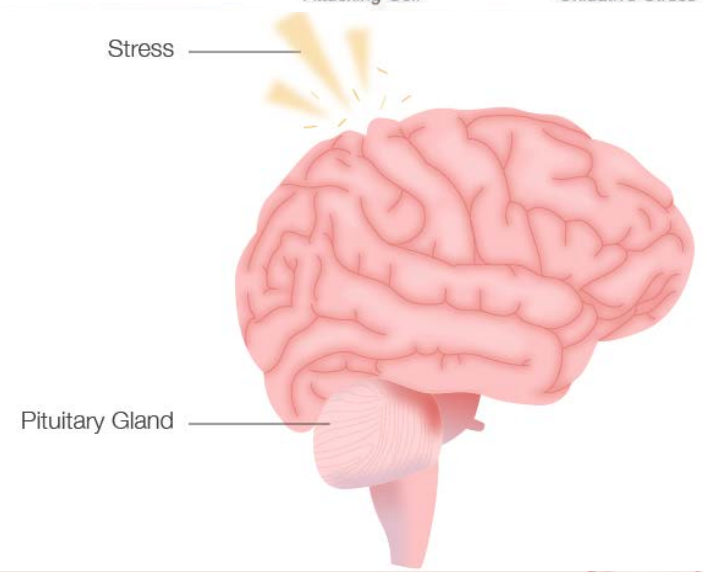
Dehydration &  
Dullness



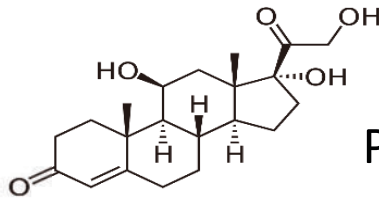
Normal Cell

Free Radicals  
Attacking Cell

Cell with  
Oxidative Stress



# Stress and Skin Aging



People with a high baseline cortisol look on the average  
3.5years older<sup>1</sup>



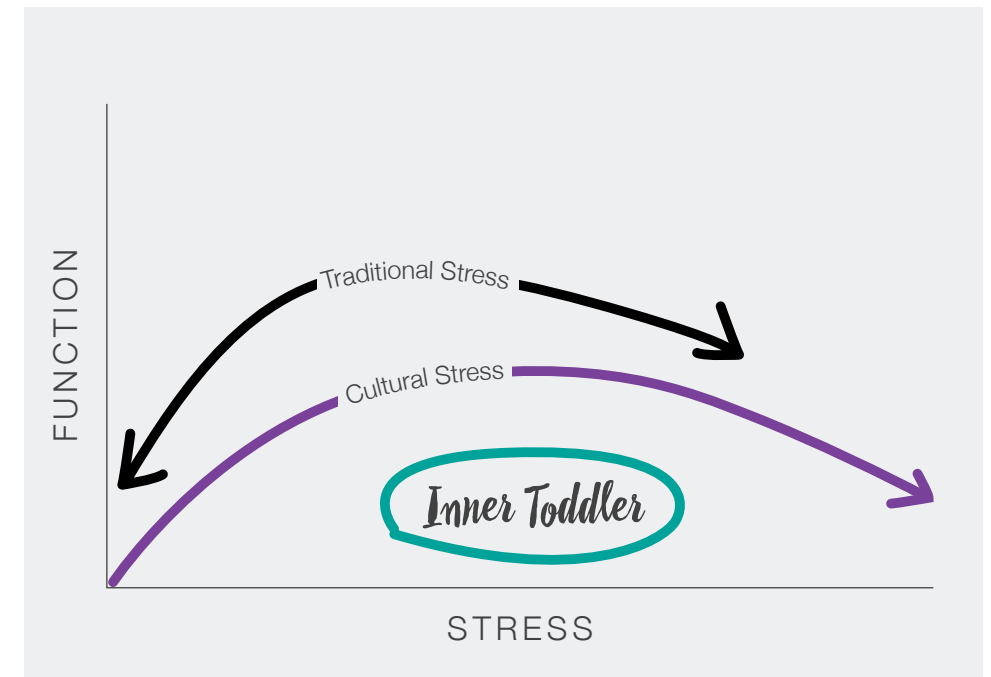
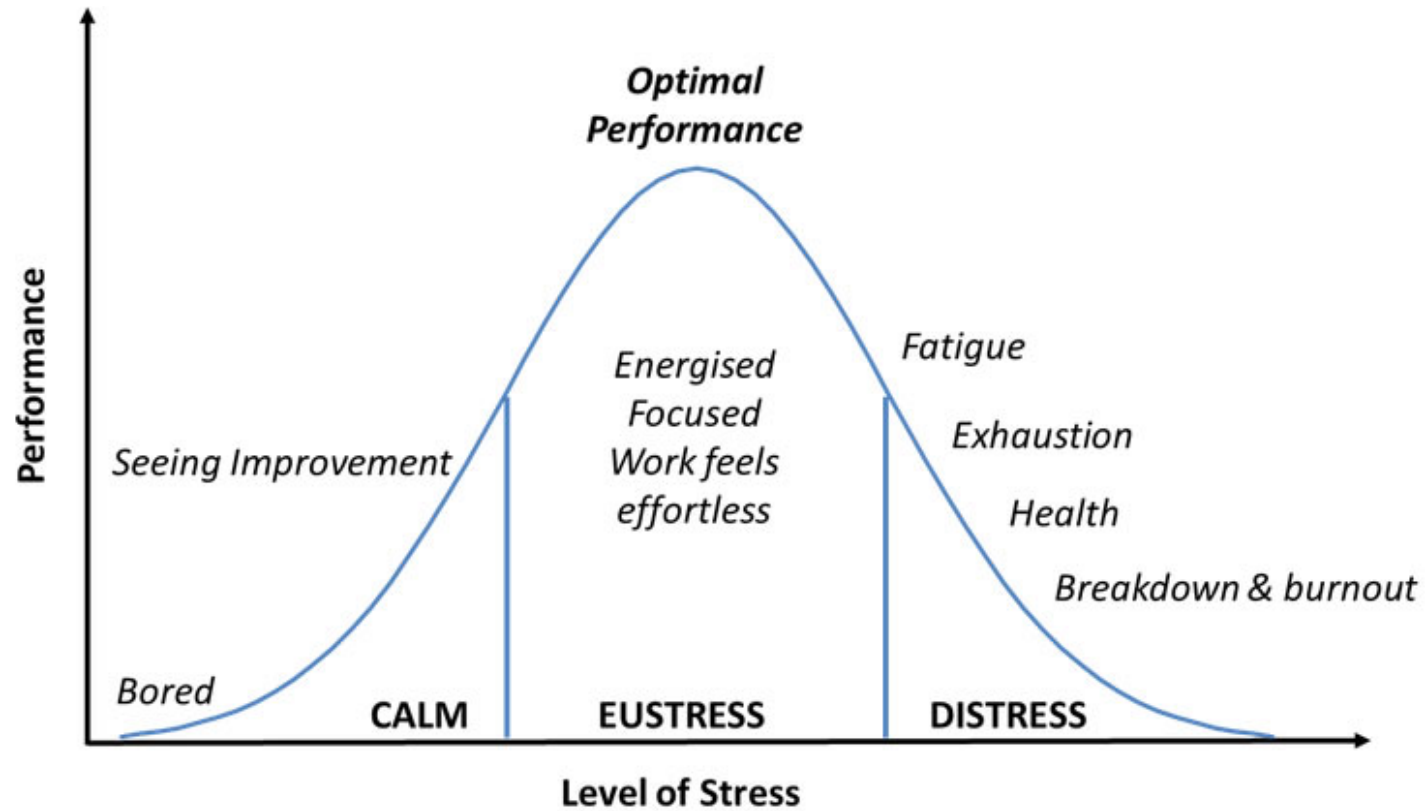
High cortisol correlates with reduced facial attractiveness in  
young women (early 20's)<sup>2</sup>



High stress lifestyle is associated with accelerated telomere  
shortening, equivalent to 9-17years of aging<sup>3</sup>



# Scale of Cultural Stress



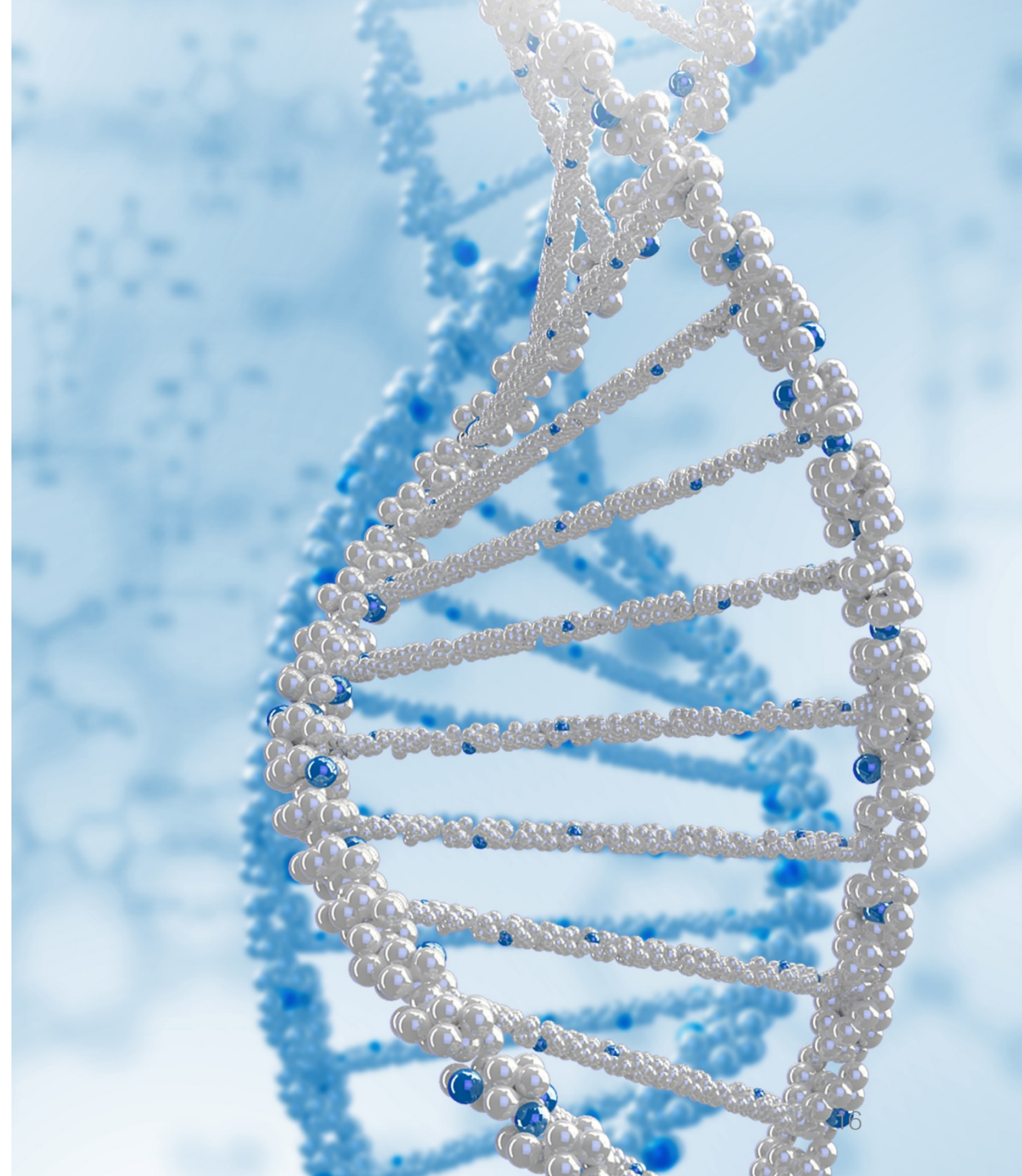
# A Pilot Study on Cultural Stress: The Gene Study

## **OBJECTIVE**

The purpose of this pilot study is to explore the effectiveness of a Murad's Inclusive Health method to treat Cultural Stress (CS).

## **OVERVIEW**

- Six subjects recruited into the Murad Inclusive Health Program (IHP)
- Total Program length: 24 weeks
- Blood and skin biopsy samples collected at baseline (time 0), 12 weeks, and 24 weeks
- General health parameters were collected throughout the study by Dr. Murad's personnel (Including self-assessments completed by the subjects throughout the course of the study)



# The Gene Study Program

## STUDY ACTIONS

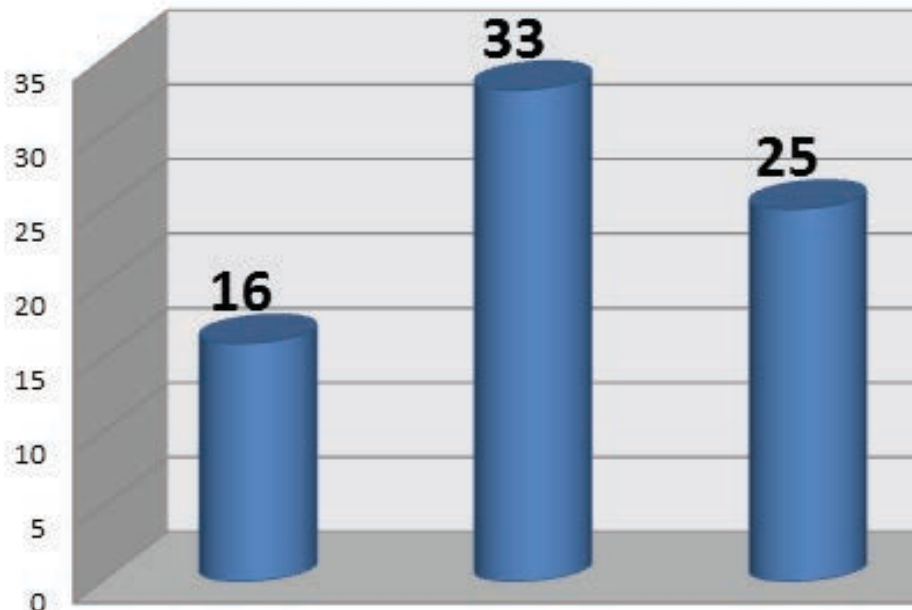
Measurements taken at week 1, 12 and 24

Every 2 weeks face to face meeting  
& journal review

Every 2 weeks /facial or massage



First Stage Positive Depression Screening: % at risk



## STUDY ACTIONS

Workout group sessions 2-3  
times per week

Art therapy class every 12 weeks

Cooking class every 12 weeks

Hike every 12 weeks



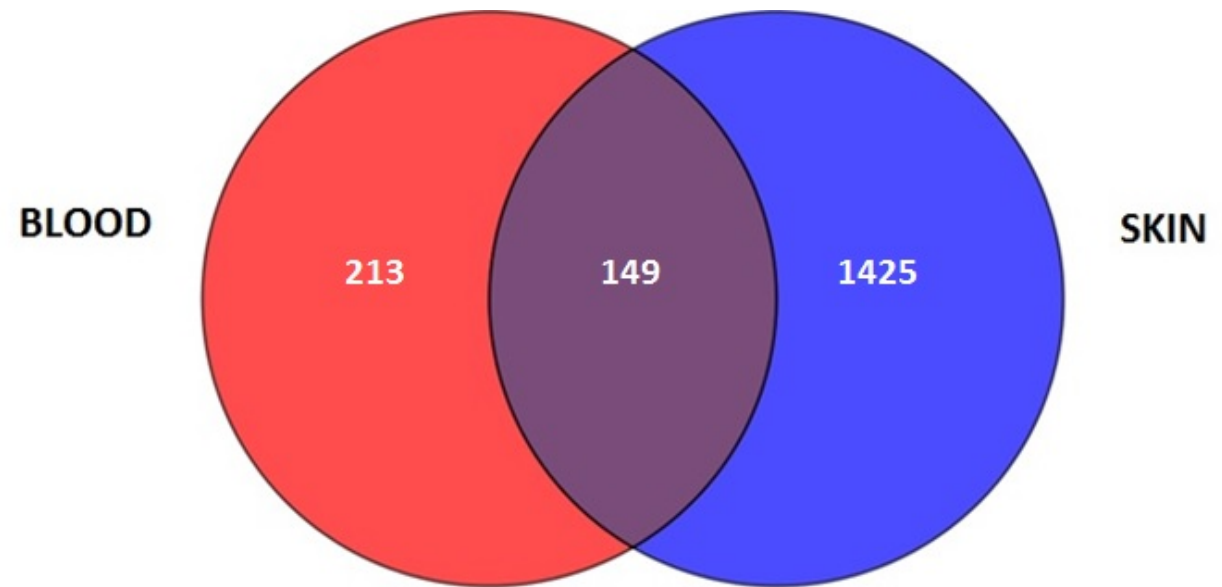
# Gene Expression

## FINDINGS

Global gene expression analysis was carried out using Affymetrix microarrays to identify gene expression changes correlated with improved health outcomes as a result of the program.

Affymetrix microarrays contain approximately 45,000 transcripts representing the ~23,000 human genes and are an ideal method for screening the entire genome.

## Comparison of the Genes in the Blood and Skin Datasets



*As expected, the blood and skin datasets have little in common. Based on the small overlap in specific genes, each tissue was further analyzed independently.*

GENE EXPRESSION

## The Results



### qPCR Validation

qPCR analysis confirmed decreased gene expression in skin samples at 12 weeks (compared to baseline) for the following genes:

- ESSRG [ Estrogen- related receptor gamma]
- LIPE [ Hormone- Sensitive Lipase]
- ITGB6 [ Integrin beta 6 ]
- GPC6 [Glypican 6]

### ITGB6- Integrin Beta 6

ITGB6 inhibits keratinocyte proliferation

- Keratinocytes proliferation is required for cell renewal and turnover
- Decrease in an inhibitor may produce an increase in bioactivity
- **Decreasing** it is an important growth factor in the skin, and a variety of extracellular matrix molecules 1

### ESSRG- Estrogen Receptor Gamma

- Decreased gene expression in the skin in 5 out of 6 subjects
- The decrease in ESSRG would increase estrogen bioactivity



## Conclusions

Further research to investigate changes in expression of genes related to health and aging, as well as levels of transcription factor that regulate expression of genes regulating cellular hydration is indicated.

Further research directions

Long term studies on how lifestyle modification can effect gene expression

### **Further Reading:**

Murad H (2017) A Pilot Study on Cultural Stress Anxiety Syndrome, Its Implications on Aging, Gene Expression and Treatment Strategies. J Gerontol Geriatr Med 3:





ADDITIONAL STUDIES

### **White Paper**

Effectiveness of positive insights for emotional well-being and stress reduction:  
A four- week intervention in participants experiencing Cultural Stress

# Insight Study

Effectiveness of positive insights in emotional wellbeing and stress reduction



## Insight Study

What these insight cards encourage

# Results

Measured Vitals	Baseline (SD)	Week 4 (SD)
PSS Total Score	19.75 (4.75)	17.64 (3.15)*
Heart Rate	75.15 (13.04)	72 (13.44)*
Systolic Blood Pressure	122.15 (17.33)	120.63 (15.69)
Diastolic Blood Pressure	78.48 (11.76)	77.35 (9.93)
ICW	26.35 (3.96)	26.58 (4.03)

### Stress Intervention Insight Cards

In a clinical study titled "Effectiveness of Positive Insights for Emotional Wellbeing and Stress Reduction" by Murad Medical Group, in partnership with Unilever R&D, results showed that simply reading Dr. Murad's positive insight cards twice daily and journaling every day for four weeks actually reduced stress and improved overall wellness.

Yes, you read that right: Just reading these cards led to less stress for the study participants. Try it for yourself!

#### THE DATA

	BEFORE	AFTER 4 WEEKS OF READING CARDS
Perceived stress	19.75	17.64
Heart rate	75.15	72
Systolic blood pressure	122.15	120.63
Diastolic blood pressure	78.48	77.35
Cellular water (hydration)	26.25	26.5

“

*Be thrilled with who you are.*

HOWARD MURAD, M.D.





# The Future of Skincare & Beyond

“Modern life calls for Modern Wellness. Skin is the body’s window to Wellness.”

*Howard Murad MD*

The future is not in medicine or technology (although these will all play their role) –the future is in **modern wellness**, an inclusive approach which addresses all the usual factors, but also addresses the pressure of cultural stress & its negative impact. Murad refers to these solutions as our 4 pillars of wellness.

“Eat Your  
Water”

01

“Be Kind to  
Your Mind”

02

“Awaken  
Your Body”

03

“Nourish  
Your Skin”

04



# Pillars to Total Skin Health

## "Eat Your Water"

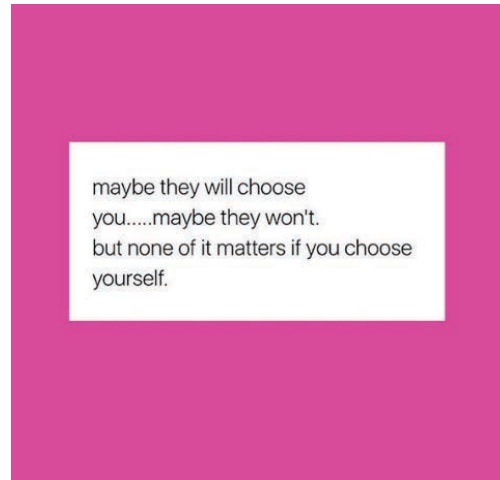
01



"By eating water-rich fruits and vegetables, nutrients are better absorbed for skin health."

## "Be Kind to Your Mind"

02



"By caring for your emotional self, you can reduce the cellular impact of stress which can lead to signs of unhealthy skin."

## "Awaken Your Body"

03



"By exercising, you'll help promote circulation – skin is the largest organ in the body. Increased blood flow carries oxygen to cells."

## "Nourish Your Skin"

04



"Skin is beautiful when it's healthy at the cellular level, so we create products with powerful, hydrating ingredients that support the skin's barrier function."

What do you see?





The background of the slide is an abstract artwork featuring a dense pattern of colorful splatters and blotches in shades of blue, green, yellow, and pink. A large, solid white rectangular box is centered on the slide, containing the text.

“A bear hug a day keeps the Doctor and  
Psychiatrist away.”

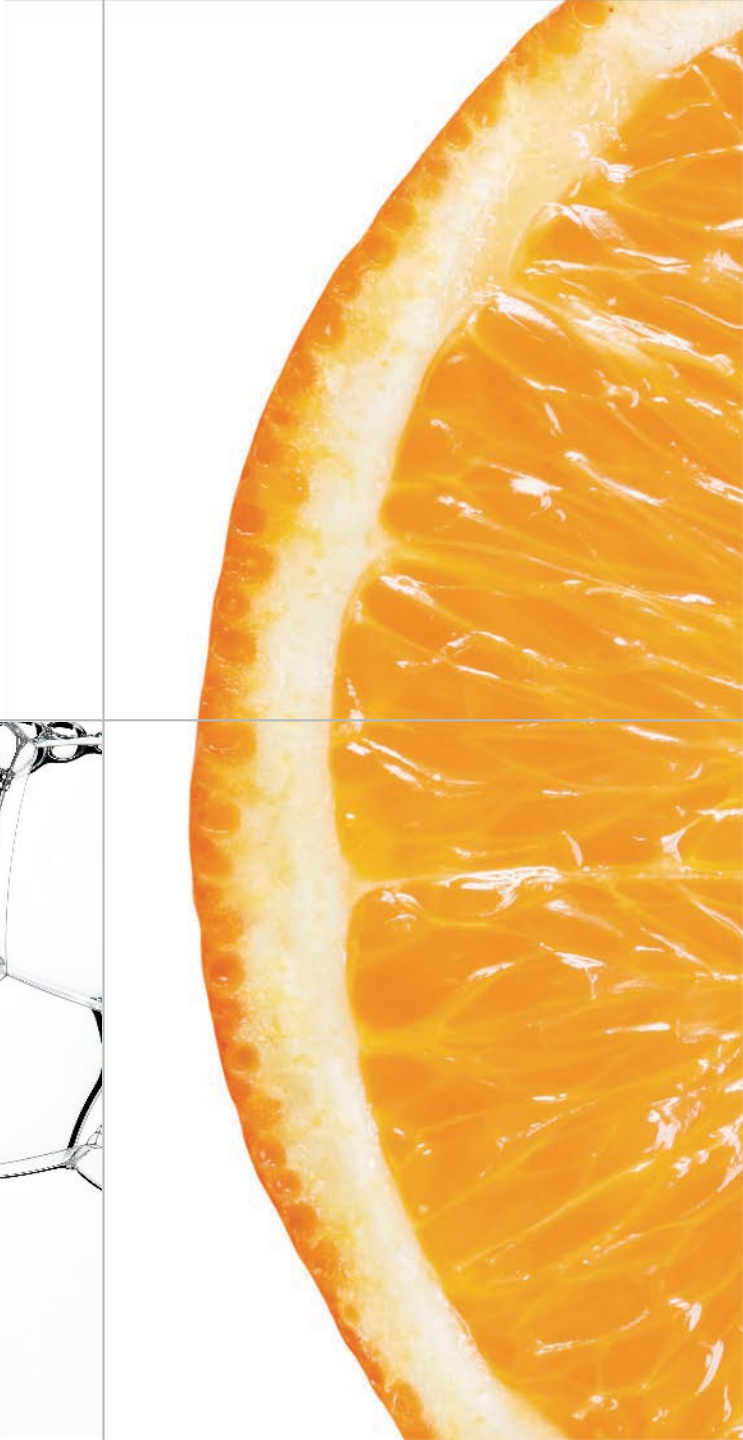
*Howard Mural MD*



# Q & A

With Dr. Howard Murad  
+  
Jason Choy, Director of Deacon Medical Sdn Bhd





Thank You!

QUESTIONS OR MORE INFORMATION?

PLEASE CONTACT:  
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