

# DEFINITION AND DIAGNOSIS OF SENSITIVE SKINS

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Percorso di “Benessere, Make-up  
e Inestetismi da Terapia”

Dr. Enzo Berardesca



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## INTRODUCTION

- It doesn't exist in the scientific literature a definition of sensitive skin universally accepted
- The use of the term "sensitive skin" in the medical and scientific literature has a probably different meaning as compared to the one used by media and consumers .
- Several terms have been used in the medical literature to indicate this condition



## TERMS OF SENSITIVE SKIN:

- Sensory skin irritation
- Chemosensory irritability
- Cosmetic intolerance syndrome
- Status cosmeticus
- Subjective irritation
- Invisible irritation
- Non-immunologic adverse skin reaction
- Self-estimated enhanced skin sensitivity



## DEFINITION

- Sensitive skin can be described as a condition characterized by skin prone to develop more frequently flushing, blushing, stinging and itching after adverse environmental conditions or application of topical products

E. Berardesca 2002



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- *Sensitive skin (or reactive, hyper-reactive, intolerant or irritable skin) is defined by the onset of erythema and/or prickling, burning, or tingling sensations (possibly pain or pruritus), due to various factors, which may be physical (UV radiation, heat, cold, wind), chemical (cosmetics, soap, water, pollution), psychological (stress) or hormonal (menstrual cycle).*

L. Misery 2008



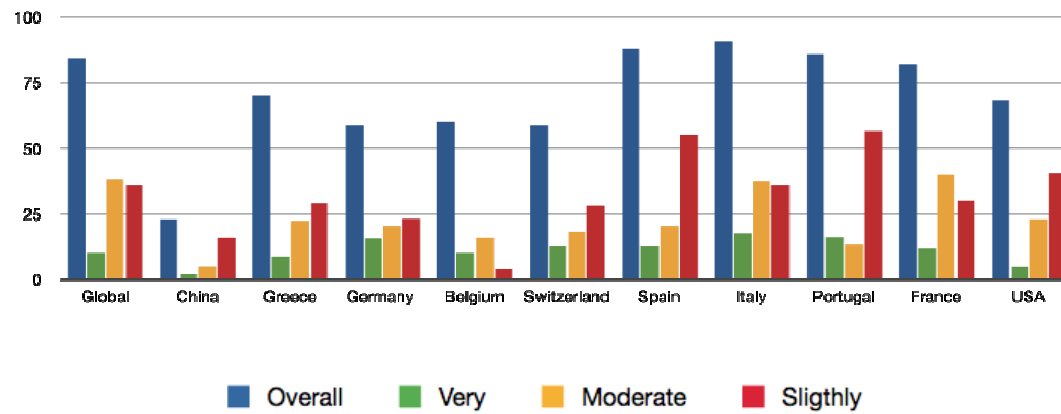
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# CHARACTERISTICS

- women 30-50 aa
- Stinging, itching, burning
- flushing and blushing
- Subjective condition difficult to visualize clinically
- Associated with:
  - Cosmetic intolerance
  - Fabric intolerance
- Worsened by adverse climatic factors

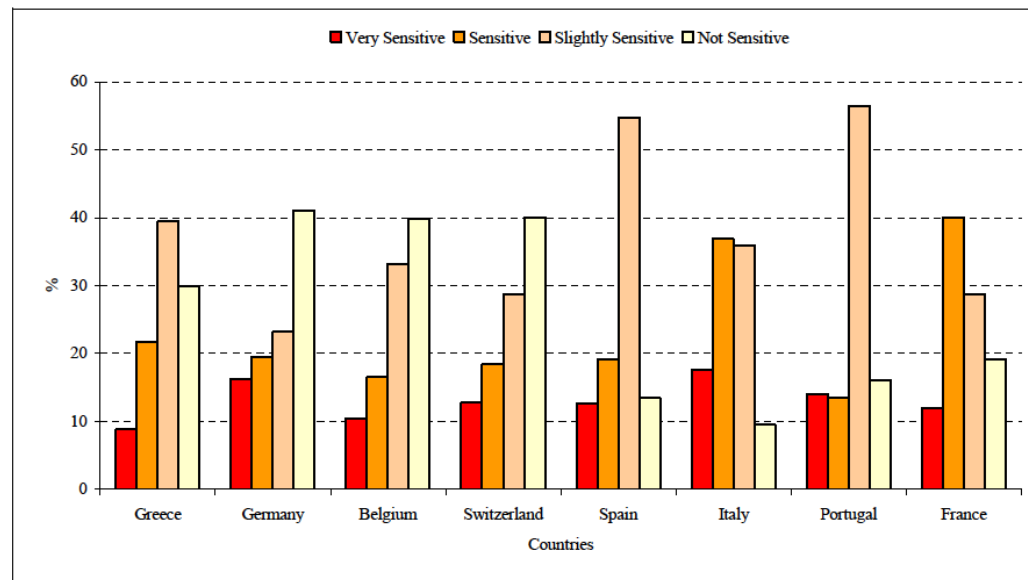


## Percentage of Overall Skin Sensitivity Across the World



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## Sensitive skin in Europe



Misery L, JEADV 2009



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# PATHOGENESIS

- Unknown
- Associated with:
  - atopy, contact dermatitis, photoreactions
  - Flushing and blushing
- Can develop into couperose e rosacea
- Experimentally associated with:
  - barrier function and transcutaneous penetration problems
  - Alterations in TRPV1 receptors response



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- Increased percutaneous absorption (Berardesca et al.)
  - Altered stratum corneum chemical properties (Pierard et al.)
  - Increased TEWL compared to normal subjects (Morizot et al.)
  - Increased skin perfusion after nicotinate application (Issacher et al.)



# Ceramides and sensitive skin

**Table 3.** Comparison of the quantity of ceramides between sensitive and non-sensitive skin groups at six different sites

Sites	Group	No.	Values
Face*	SS	20	$3.70 \times 10^8 \pm 1.57 \times 10^8$
	NS	30	$4.95 \times 10^8 \pm 2.54 \times 10^8$
Forearm	SS	20	$3.65 \times 10^8 \pm 1.67 \times 10^8$
	NS	30	$4.26 \times 10^8 \pm 2.26 \times 10^8$
Thigh	SS	20	$3.80 \times 10^8 \pm 1.79 \times 10^8$
	NS	30	$4.67 \times 10^8 \pm 2.36 \times 10^8$
Leg	SS	20	$3.96 \times 10^8 \pm 1.58 \times 10^8$
	NS	30	$4.53 \times 10^8 \pm 2.58 \times 10^8$
Back	SS	20	$3.98 \times 10^8 \pm 1.97 \times 10^8$
	NS	30	$4.31 \times 10^8 \pm 1.93 \times 10^8$
Palm	SS	20	$4.16 \times 10^8 \pm 1.92 \times 10^8$
	NS	30	$4.62 \times 10^8 \pm 2.36 \times 10^8$

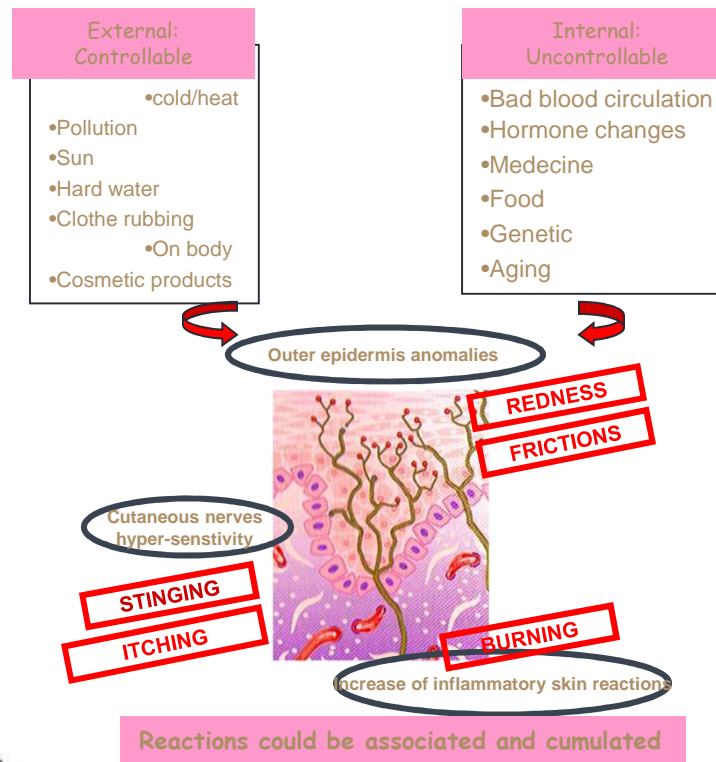
Quantity of stratum corneum ceramides in facial skin was significantly lower in the SS group compared to the NS group (\* $P < 0.05$ ). Values represent mean  $\pm$  standard deviation. NS, non-sensitive skin group; SS, sensitive skin group.

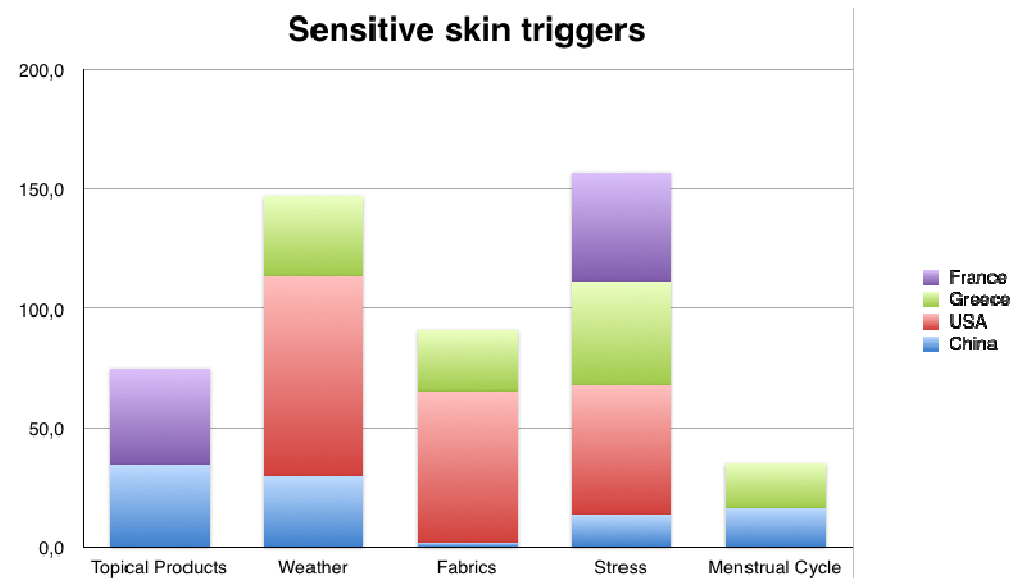
*Hee Jin Cho et al, J Dermatol 2011*



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# CAUSES AND CONSEQUENCES OF SENSITIVE SKIN

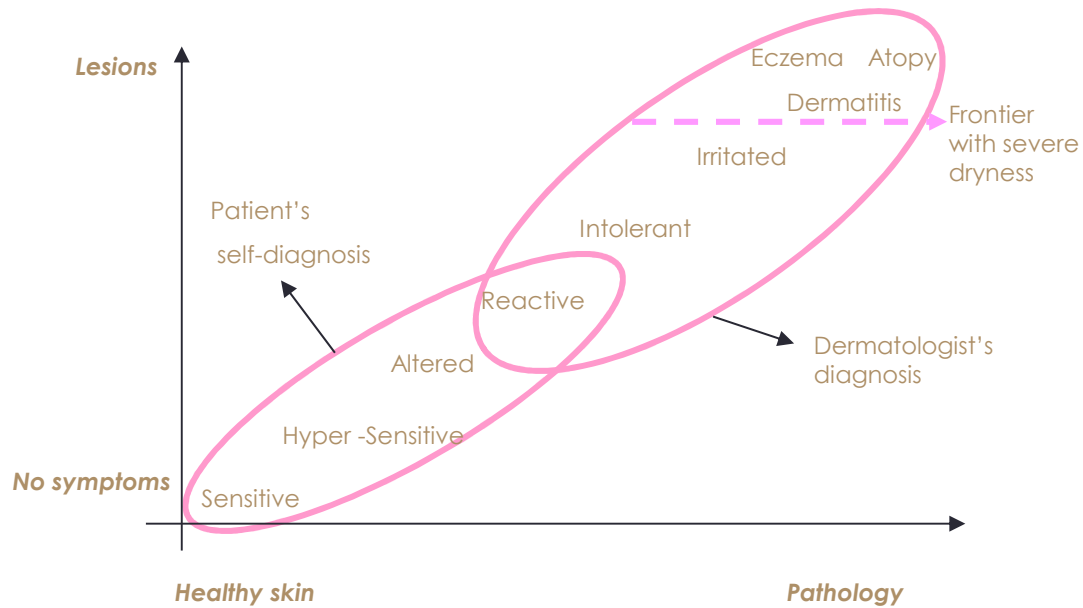




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# DIFFERENT LEVELS OF SENSITIVITY:

Stinging, tightness, itchiness, burning, discomfort, soreness, pain



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# PREDISPOSING FACTORS

- Sex
- Age
- Anatomical site
- Ethnicity
- Season
- Stress
- Dermatological Diseases



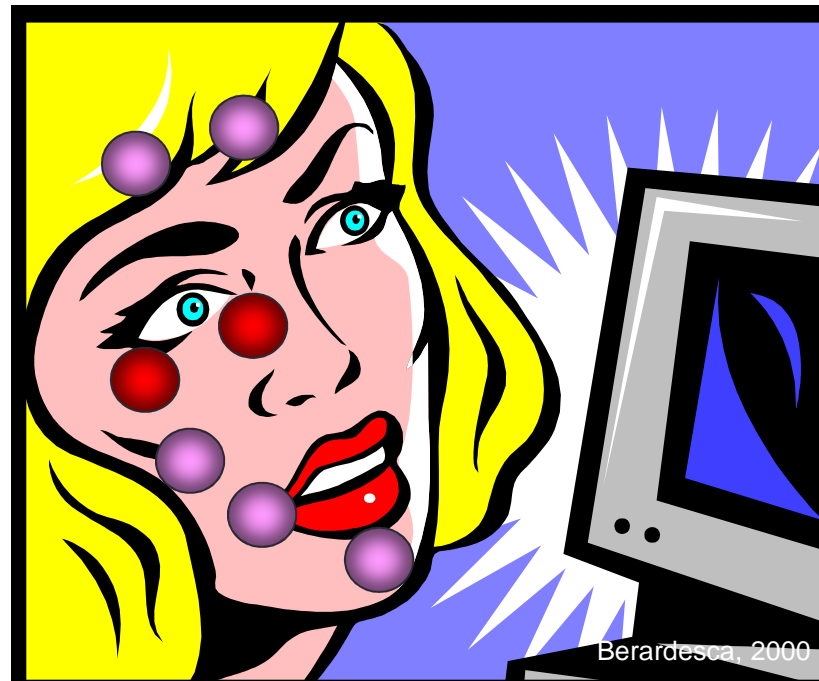
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# SENSITIVE VS NON SENSITIVE



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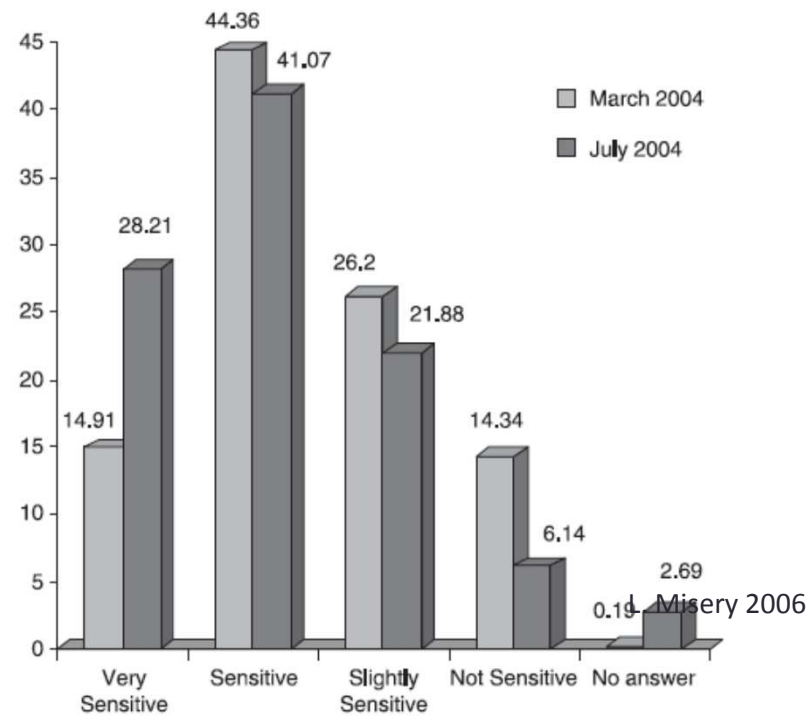


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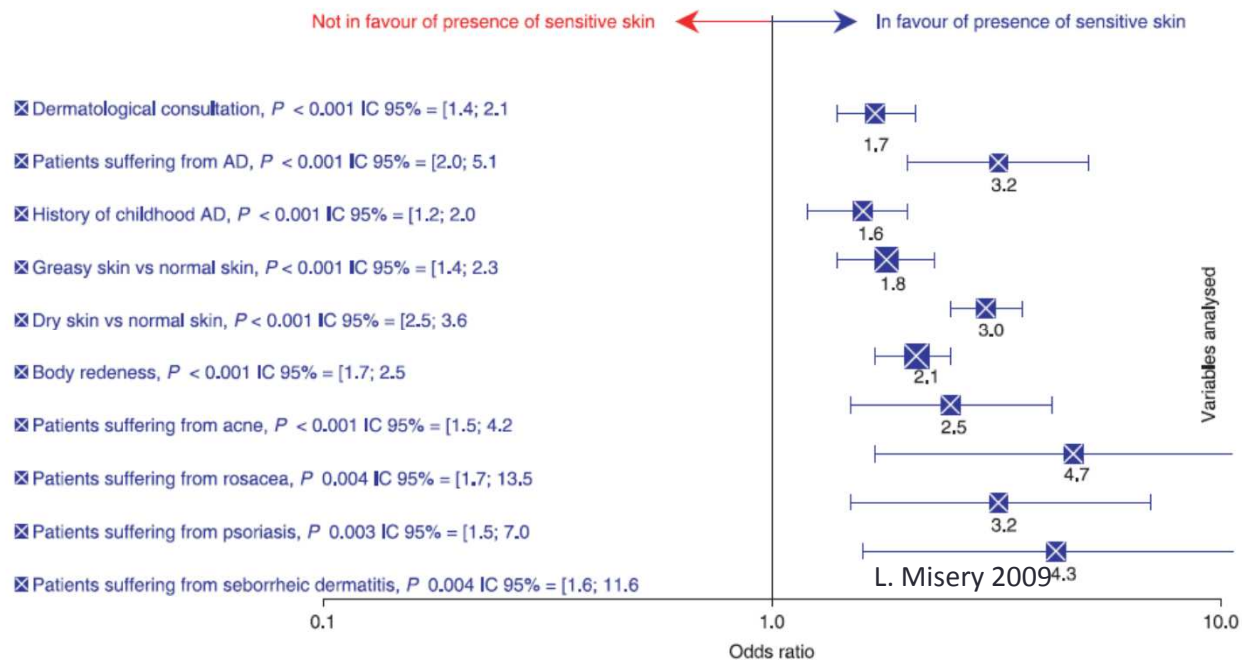


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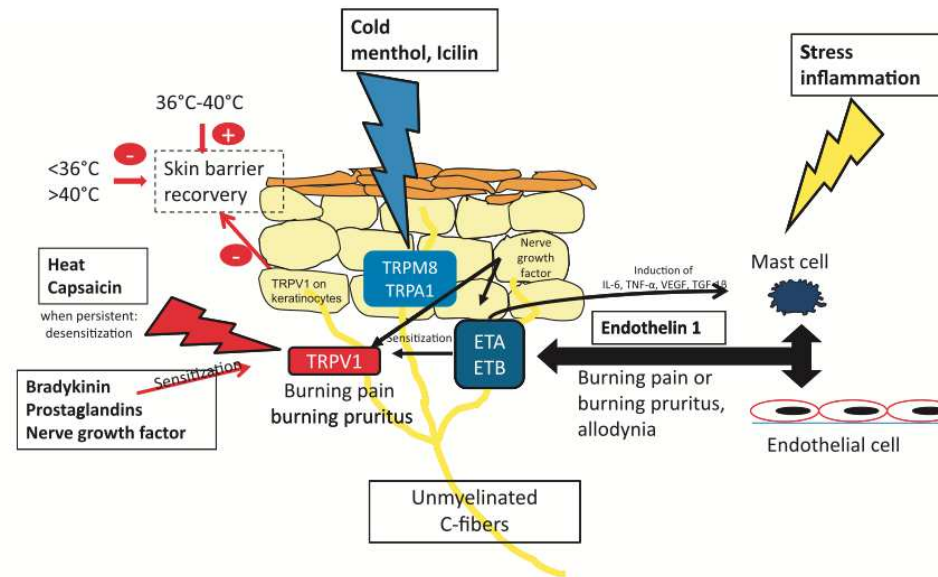
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# NEURONAL MECHANISM FOR SENSITIVE SKIN





Stander et al. Exp Dermatol 2009



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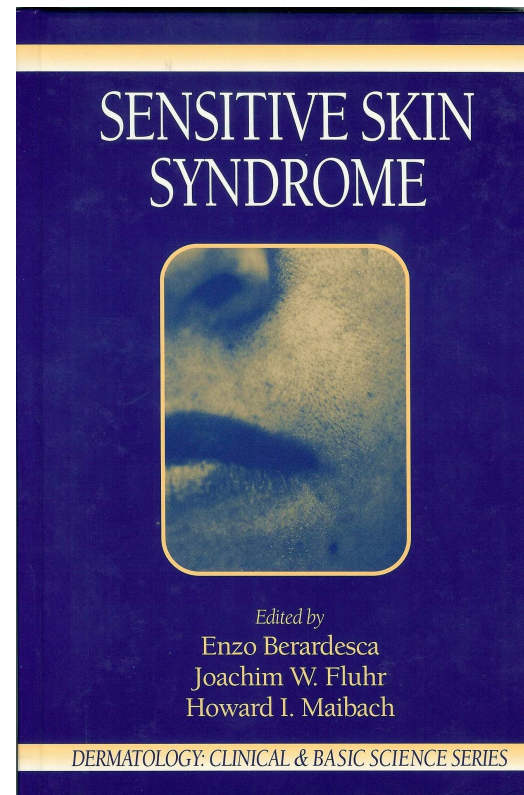


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- Decrease in skin tolerance threshold
  - Impaired skin barrier function
  - pH
  - Increased TEWL
  - Increased response to irritants
  - Vasodilatation
  - Involvement of the skin nervous system
  - Release of neurotransmitters (Substance P, calcitonin gene related peptide CGRP, vasoactive intestinal peptide –VIP - that induce vasodilatation and mastcell degranulation)
  - Non specific inflammation associated with release of IL1, IL8, PgE2, PgF2 e TNFa



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THANK YOU



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