

# SPINCONTROL

au cœur de la peau...

Clinical Trial Centers  
in France, Canada,  
Thailand, India & Indonesia

To substantiate the  
tolerance and efficacy  
of your cosmetics,  
food supplements  
and medical devices





News

Latest protocol for  
« healthy skin »

Welcome in  
Indonesia

Spin'Analysis  
A new service dedicated  
to data analysis



## Behind Spincontrol

## Fields of activities

## Techniques & Claims

- More than 25 years of innovation
- 5 locations around the world : France (headquarters), Thailand, Canada, India & Indonesia
- More than 30 000 volunteers around the world
- More than 100 people working for Spincontrol Group around the world
- Tailor-made protocols, from standard to innovative methods
- Top level Quality System, ISO 9001 certified in France, Thailand and India
- Regulatory monitoring

4 services dedicated to claims substantiation

### **Spin'Novation**

R&D protocols

### **Spin'Tech**

Standard protocols

### **Spin'Analysis**

Data analysis

### **Spin'Conso**

Consumer tests



## Behind Spincontrol

## Fields of activities

## Techniques & Claims

- An overall « thinking » dedicated to each consumer knowledge.



Headquarters of the Group, specialised in innovative and standard protocols, created in 1991

- \* The first service provider to apply original methods such as MRI and Fringe projection to the Cosmetic Industry
- \* More than 5,000 studies performed since the creation of Spincontrol France
- \* Development of exclusive protocols for customers
- \* More than 15,000 volunteers (Local panel: 10,000 people, national panel: 5,000 people)
- \* Knowledge of consumers: more than 10 years of experience in consumer tests (benchmark, blind tests (re-conditionning of the products in our premises according to the Good Manufacturing Practices requirements), sensorial analysis
- \* Expertise in the evaluation of positive emotions (impact of the use of perfumes or cosmetics on the well-being or the self-esteem)



## Behind Spincontrol



Expert in studies performed in harsh climate conditions, created in 2008.

- \* 500 studies performed since the creation of SPNA
- \* Availability of multicultural panels (African, Asian, Hispanic and Caucasian people) and relevant information about the perception of products on the American continent
- \* Strong expertise in studies performed under “high cold temperature”



More than 10 years of experience. Created in 2003

- \* 1,000 studies performed since the creation of Spincontrol Asia
- \* More than 20,000 volunteers with a wide range of Asian complexions (very light to dark complexion)
- \* Strong expertise in whitening products evaluations



Result of a partnership with the famous Indian company Mascot Universal, created in 2011

- \* Various studies for skin, hair, color cosmetics and tolerance performed since the creation of Mascot-Spincontrol India
- \* Expert in hair care products evaluations (in vitro hair care studies performed on Diastron)



Result of a partnership with the French CRO IDEA, created in 2015

- \* Offers an Indonesian panel, providing relevant information about the Indonesian cosmetic market with a focus on Halal cosmetics.
- \* Expertise in irritation and sensitization tests



Behind Spincontrol

Fields of activities

Techniques & Claims

## Our Strengths

- \*Accuracy in the selection of the volunteers (more than 300 information per panelists in our database, regular loyalty campaigns to develop their compliance in the test)
- \*Development of bench systems to get reproducible and repeatable measurements
- \*Stability and availability of the team
- \*Tailor-made protocols according to your marketing speech
- \*Quality control at each step of the study
- Studies conducted under the GCP/ICH6
- \* Recognized by the French Ministry as an innovative company

Cosmetics  
Food supplements  
Medical devices (I and IIa)





Behind Spincontrol

Fields of activities

Techniques & Claims

## Our clinical studies can be performed according to different protocols

### \* **Technical approach**

This approach is based on the use of instrumentations which allow quantitative and/or illustrative results (3D technologies (AEVA system (Eotech), image analysis, Infra-red camera, Dynaskin and all the other standard techniques (sebumeter, ballistometer, corneometer....)

### \* **Clinical approach (by dermatologists or ophthalmologists or general practitioners)**

This approach is performed under the supervision of a specialist who will evaluate the efficacy of the product.

### \* **Sensorial approach (by trained experts)**

This method is based on the senses (sight and touch). Three regularly trained experts will grade parameters such as firmness, wrinkles, dimples or softness...

### \* **Consumer approach**

Targeted consumers will be asked to evaluate the product at home and to fill out a questionnaire at the end of the study (more than 30,000 panelists around the world – multicultural panels and relevant information about the perception of products in the targeted countries). The products can be re-conditioned in our French premises according to the Good Manufacturing Practices requirements.

### \* **Emotional approach**

Emotions influence our behavior and perception of the product. We draw-up tailor-made protocols according to three components (subjective, behavior and visceral) which are then interpreted by a Neuropsychologist





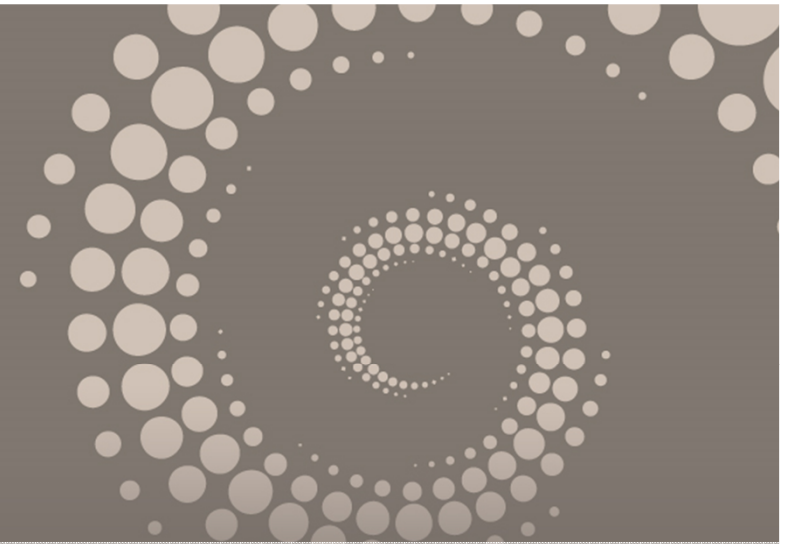
# *In vivo* tolerance assessments



# *In vivo* tolerance assessments

- Volunteers spontaneous comments on the tested product acceptability
- Clinical evaluation :
  - By a dermatologist (in-use test, non-comedogenicity test...)
  - By an ophthalmologist (in-use test)
- Specific studies on sensitive skin : stinging test, Capsaicin method...





# Efficacy Tests

Consumer  
Tests

Technical  
Tests

Clinical  
Tests

Sensorial  
Tests

Emotional  
Approach



# Consumer tests

- Spinconso: department of Spincontrol, dedicated to consumer tests.
- More than **20 years of experience**
- **Complete supervision of the studies:** up-front reflections, choice of the protocol, preparation and implementation on fieldwork, analysis of data and elaboration of recommendations
- Regular update of the database of panelists
- Follow-up on the panelists reliability
- 100% completed questionnaires returned
- Fast setting-up of studies and delivery of results



# Consumer tests

- Benchmark studies, blind or brand tests according to 2 options :
  - Questionnaires filling process under supervision and on Spincontrol premises
  - Questionnaires filling process by email

## **Cosmetovigilance follow-up for all our studies**

- Panel characteristics:
  - People from Tours and its suburbs: 10,000 panelists with more than 300 details
  - People from all over France (a developing panel since April 2013): 5,000 panelists with over 300 details (including cosmetic habits, purchasing sectors, purchased brands etc...)





# Technical methods & clinical evaluation



# Innovation dedicated to claims' substantiation

## Cosmetic studies



Face claims

Body claims

Well-being claims

Hair claims

Make-up claims

## Biomedical researches



Food supplements

Dermocosmetical products



# Face claims



Anti ageing

Anti dark-circles

Anti dark spots

Anti pollution

Anti sagging effect

Anti sebum effect

Anti under-eye bags

Anti wrinkle

Astringent

Cell renewal

Complexion homogeneity

Complexion radiance

Elasticity/firmness

Healthy skin

Mattifying

Moisturizing

Refreshing

Self tanning

Sun care products

Volume of the hollow cheeks



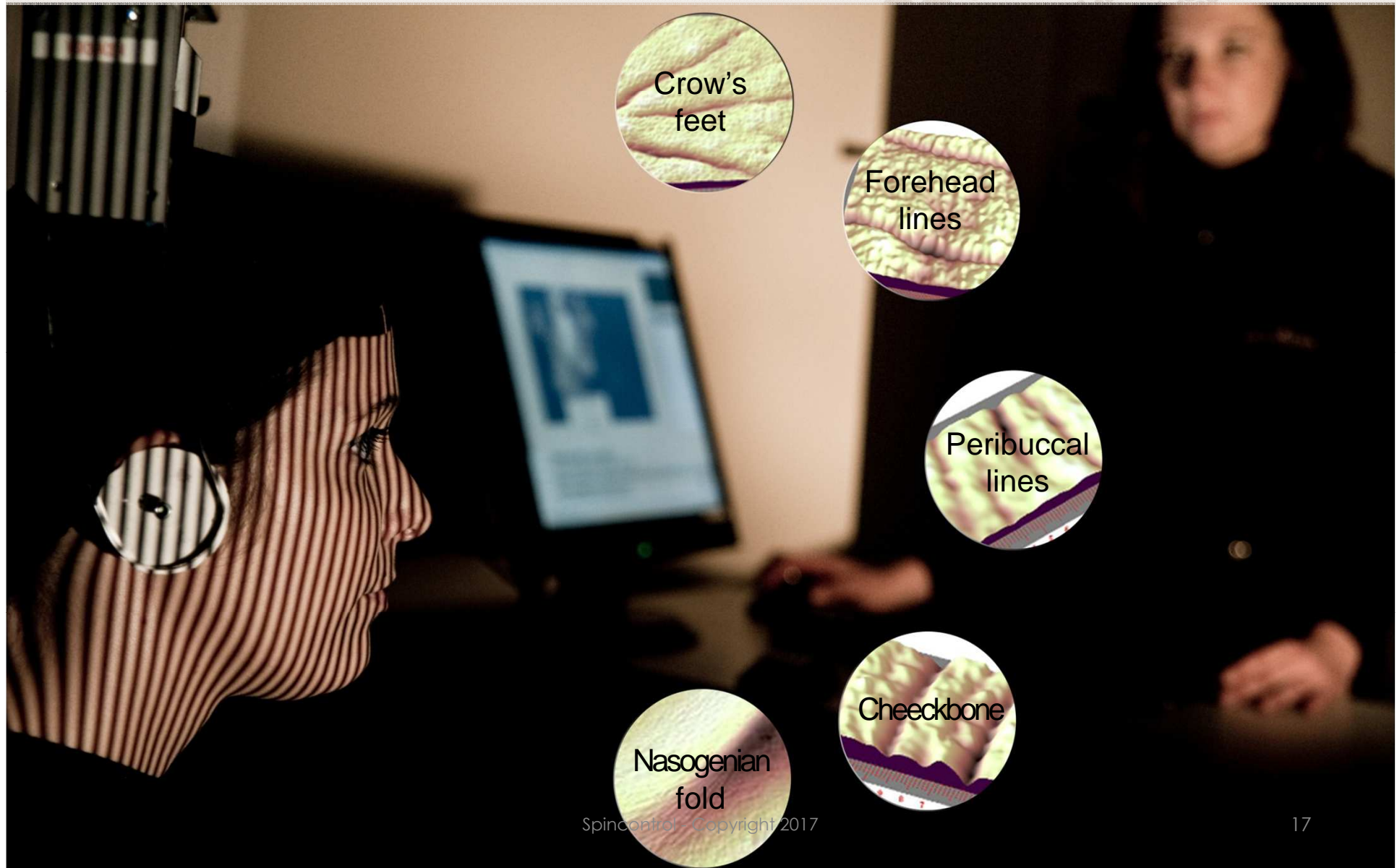


# Anti wrinkles



# Fringe projection – 3D topography : volume and area

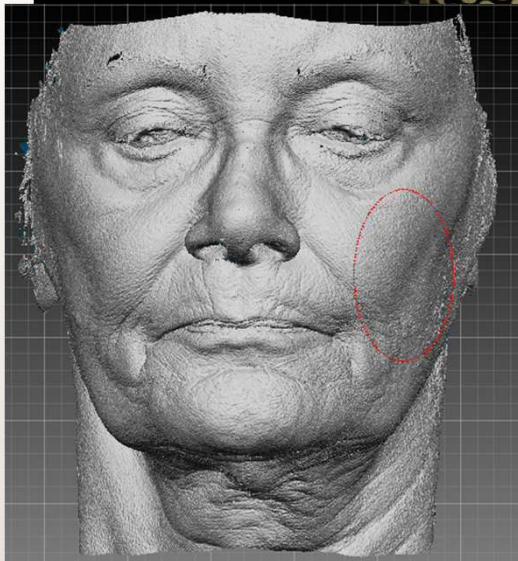
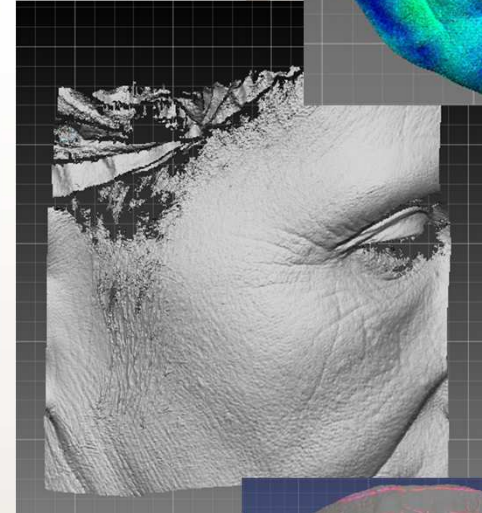
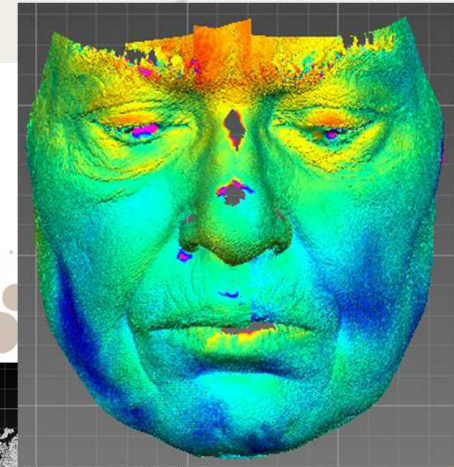
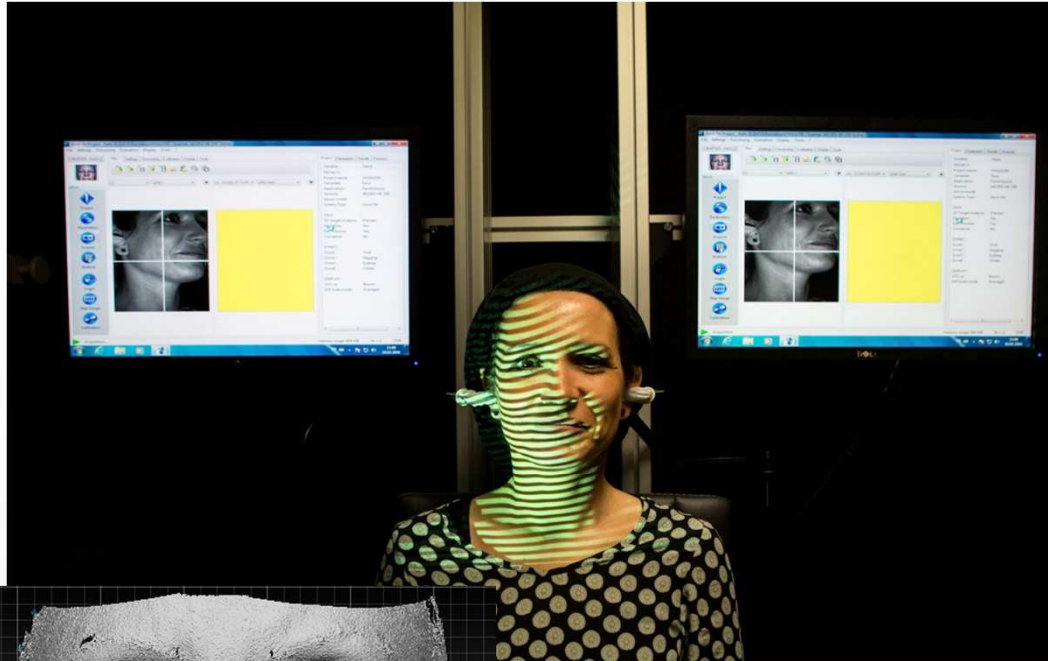
analysis performed *in vivo* or on replicas





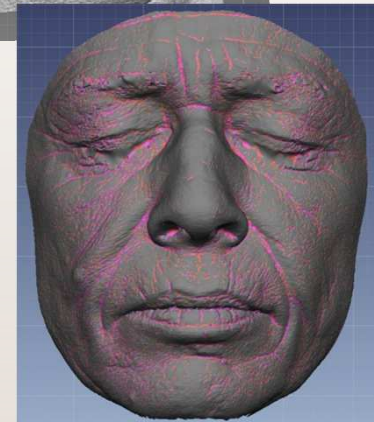
# Global 3D topography : AEVA-HE

NEW



**Retexturizing & plumping  
effect** (overall roughness of the  
face by “radius of curvature”  
approach

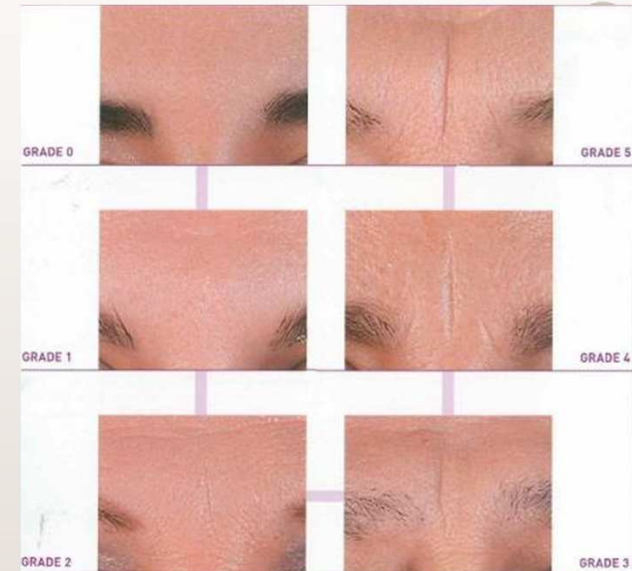
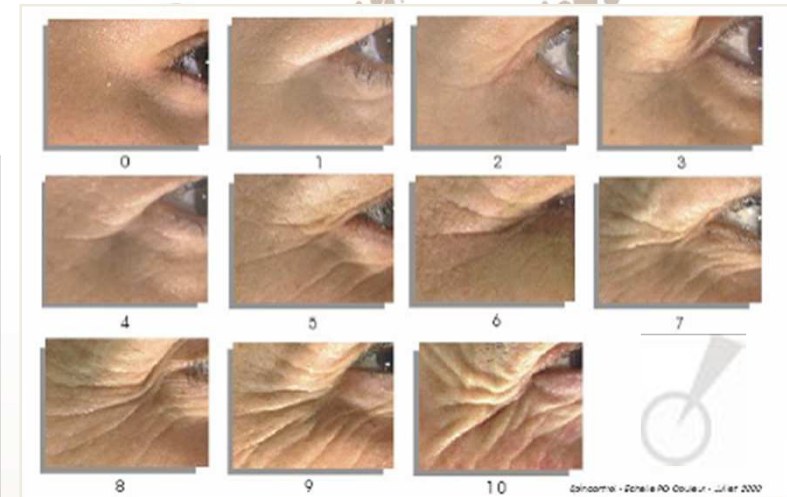
Spincontrol - Copyright 2017





# Clinical Assessment: grading by trained experts

*in vivo or on photos* Evaluation based on the « Skin aging Atlas – T1 : Caucasian type » written by R.BAZIN

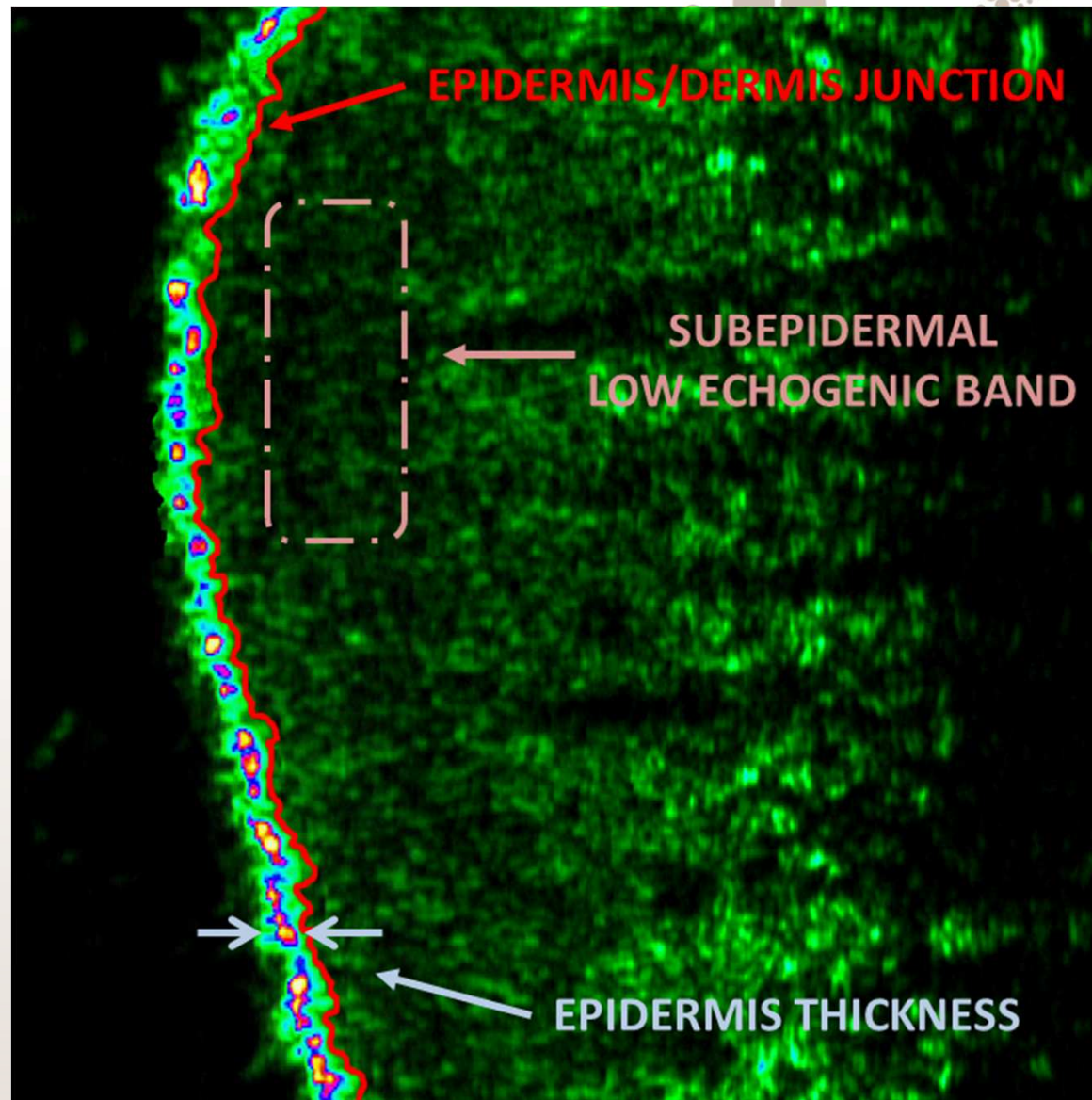




# Ultrasound imaging: skin thickness & homogeneity measurement

**NEW**

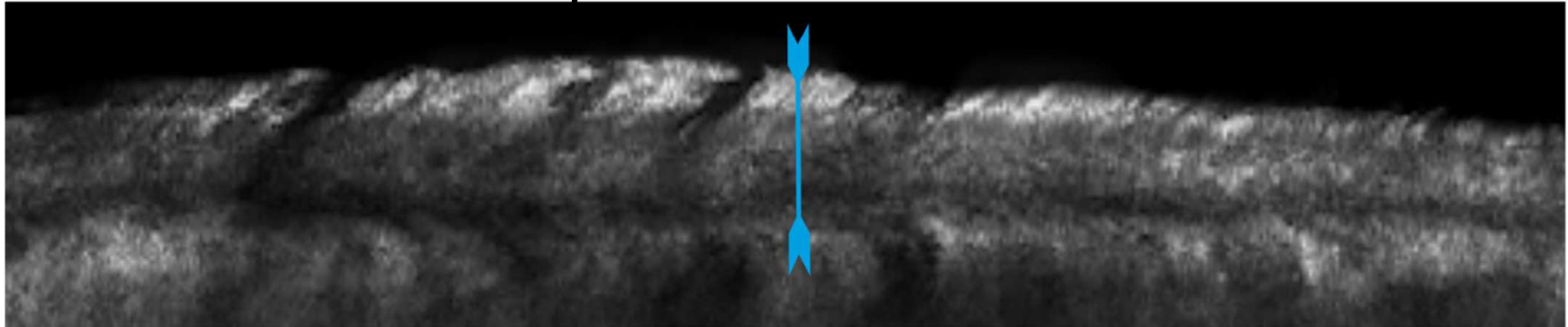
**75 MHz**





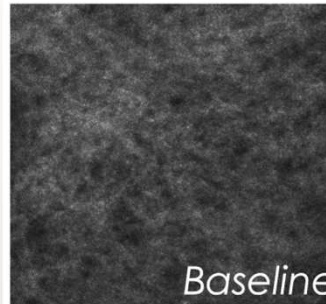
# Confocal microscopy

## Epidermis thickness

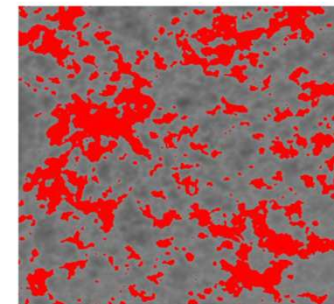


## Collagen network

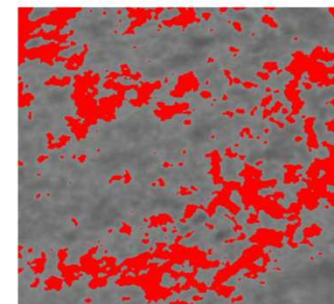
Acquired Image (ROI)



Processed Image (ROI)

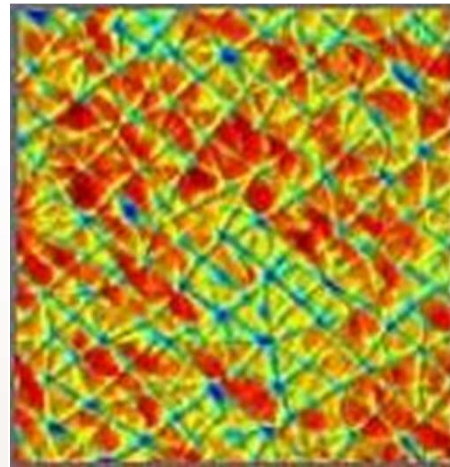
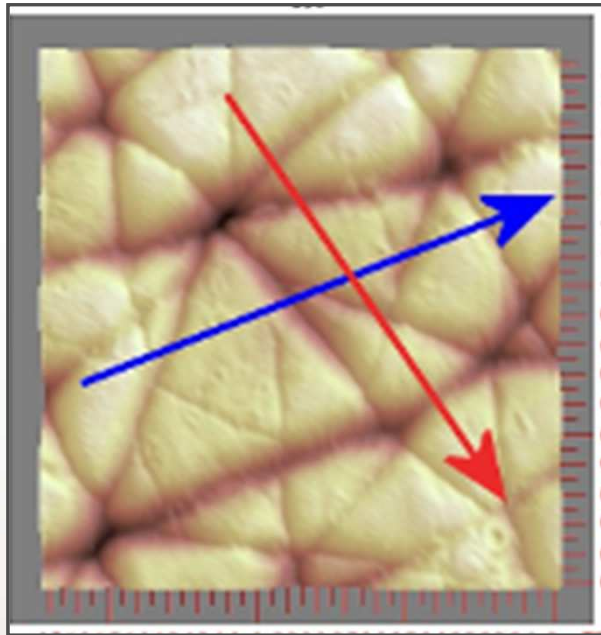


Spincontrol - Copyright 2011  
After  
(56 days)

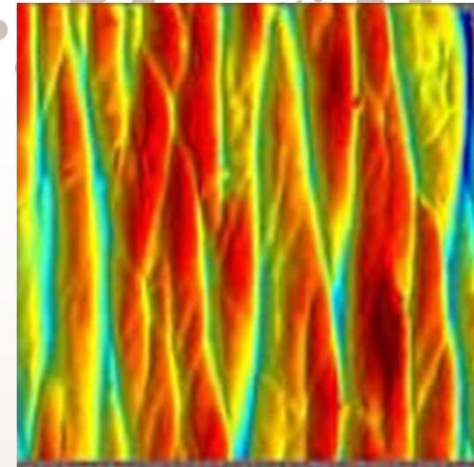




# Skin micro relief: 3D Microscopy



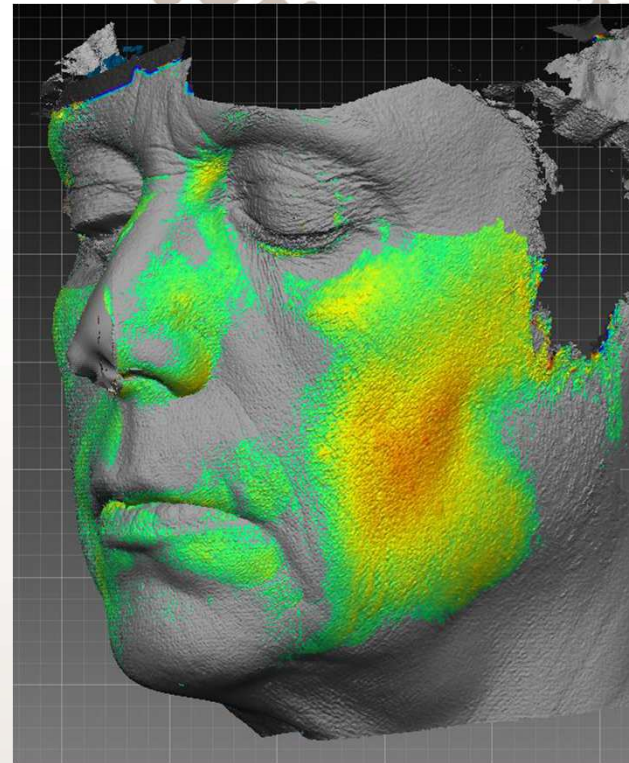
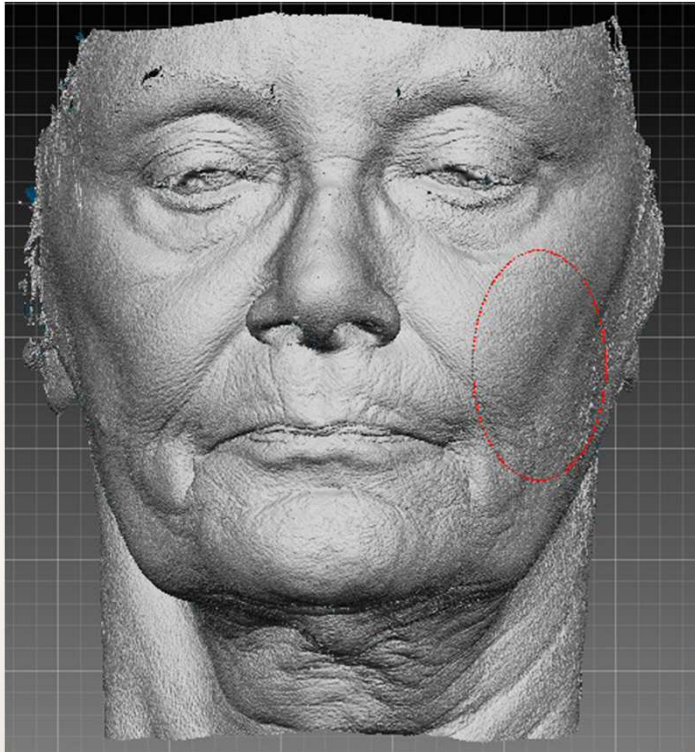
<30 years old



>70 years old



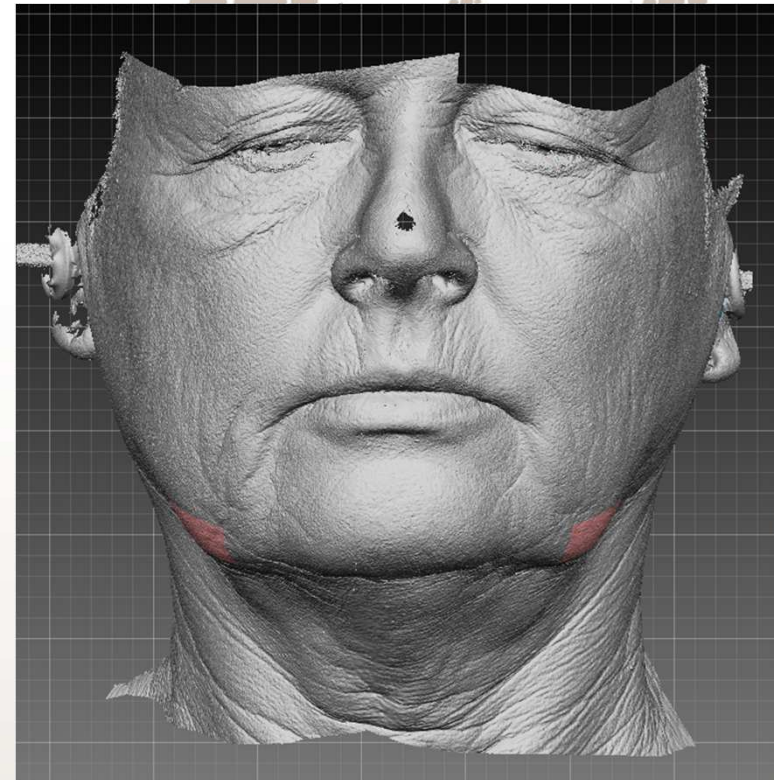
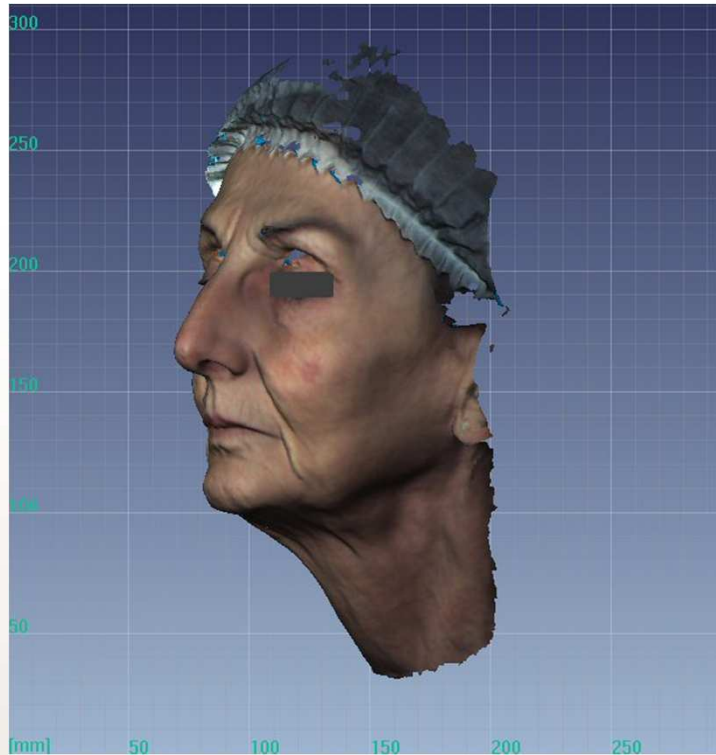
# Fringe projection: volume of the hollow cheeks



Modification of the volume



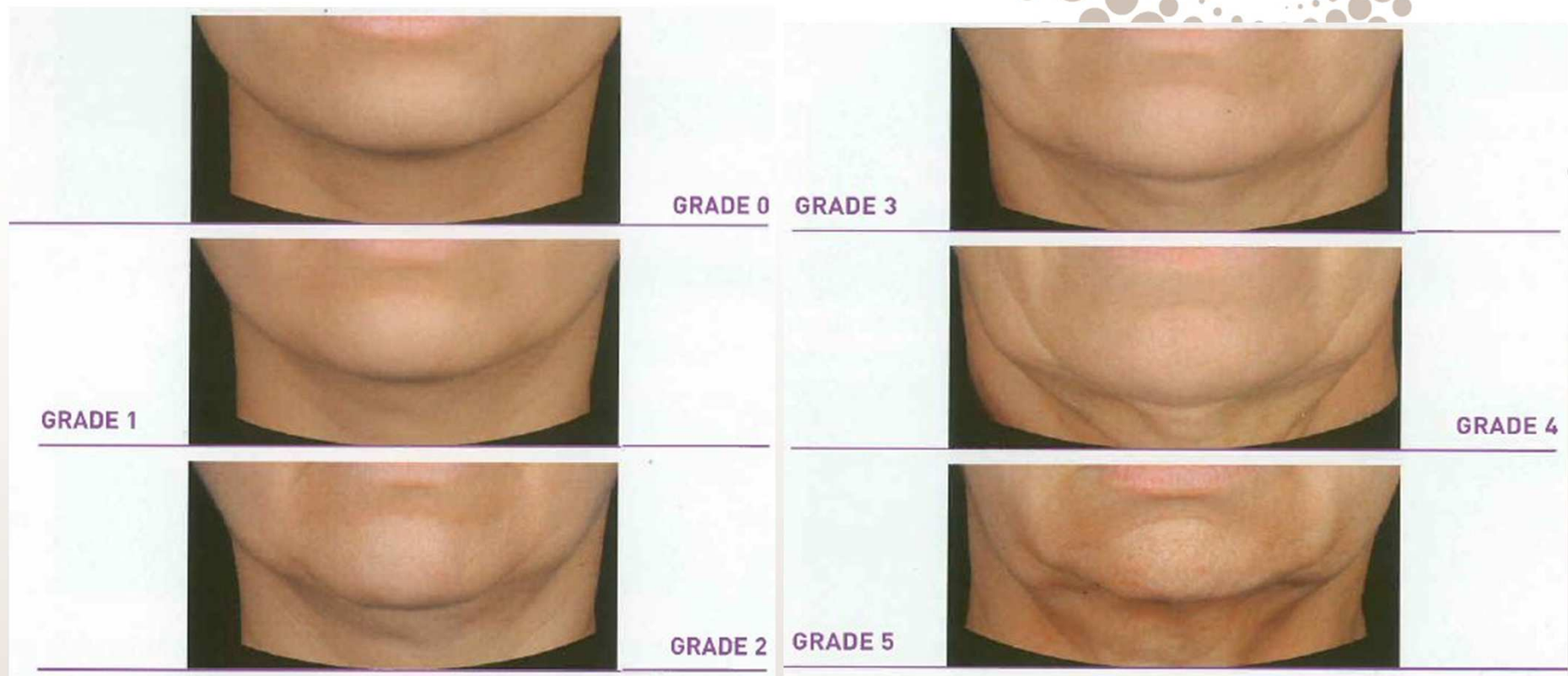
# Fringe projection: sagging effect



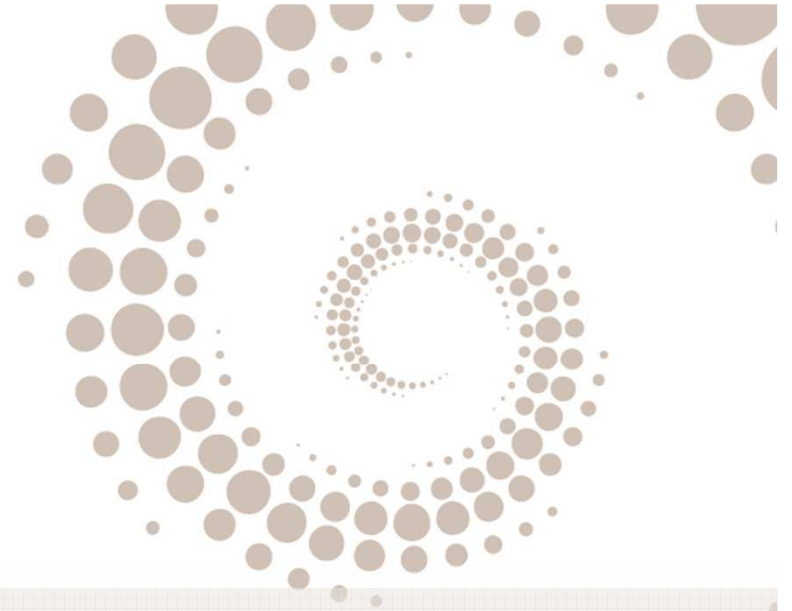
Analyzed parameter : jawlines relative volume expressed in  $\text{mm}^3$



# Clinical evaluation of the jaw line on photos







# Moisturizing



# Usual techniques

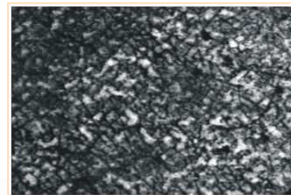
## CORNEOMETRY



## TEWL



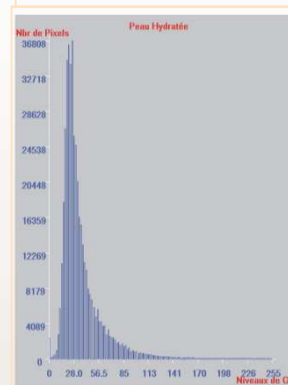
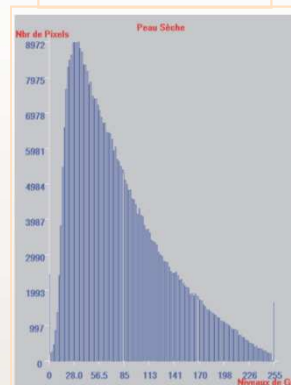
## MOISTUREMETER



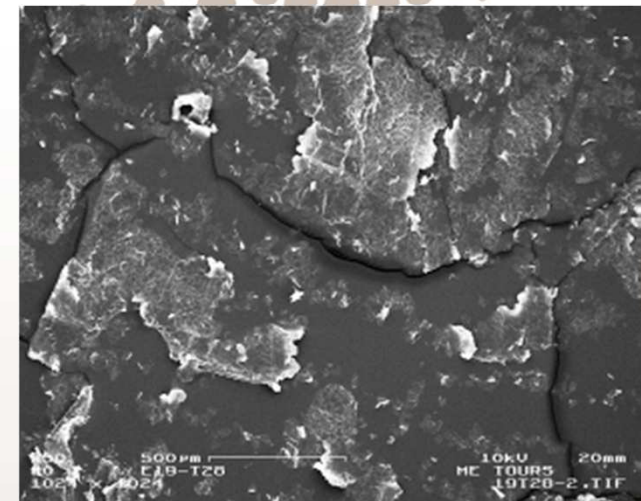
Dry skin



Hydrated skin



## D'SQUAME



## ELECTRONIC MICROSCOPY



## Other technique: softness of the skin

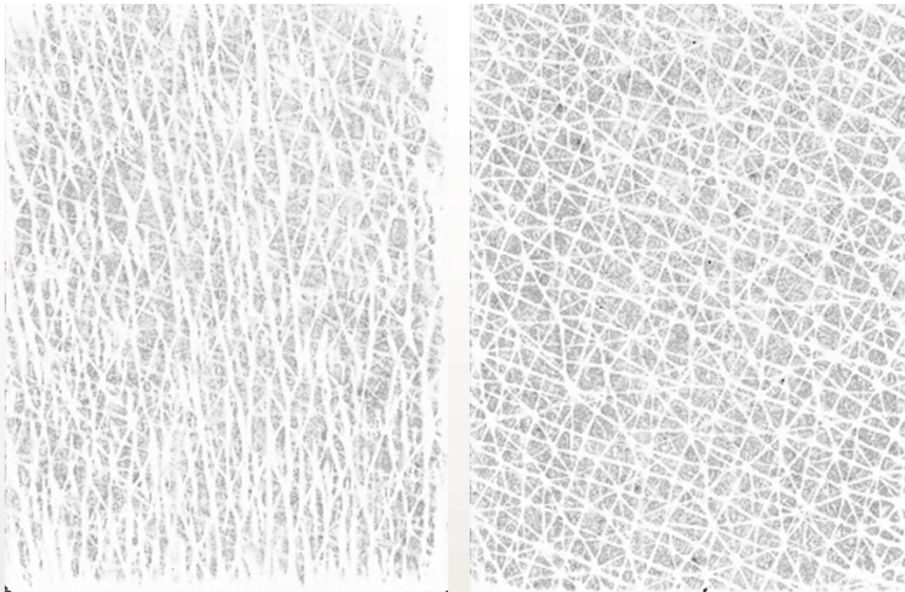




# New techniques

**NEW**

## MOISTUREMAP®



## DISCOMFORT SIGNS BY FACIAL EXPRESSIONS

AU 4 : Brow lowering

AU 43 : Closing eyes

AU 6 : Cheek raising

AU 12 : Pulling at corner lip



AU 7 : Tightening of eyelids

AU 9 : Wrinkling of nose

AU 10 : Raising of upper lip

AU 25 : Parting lips



Index of tightness feelings

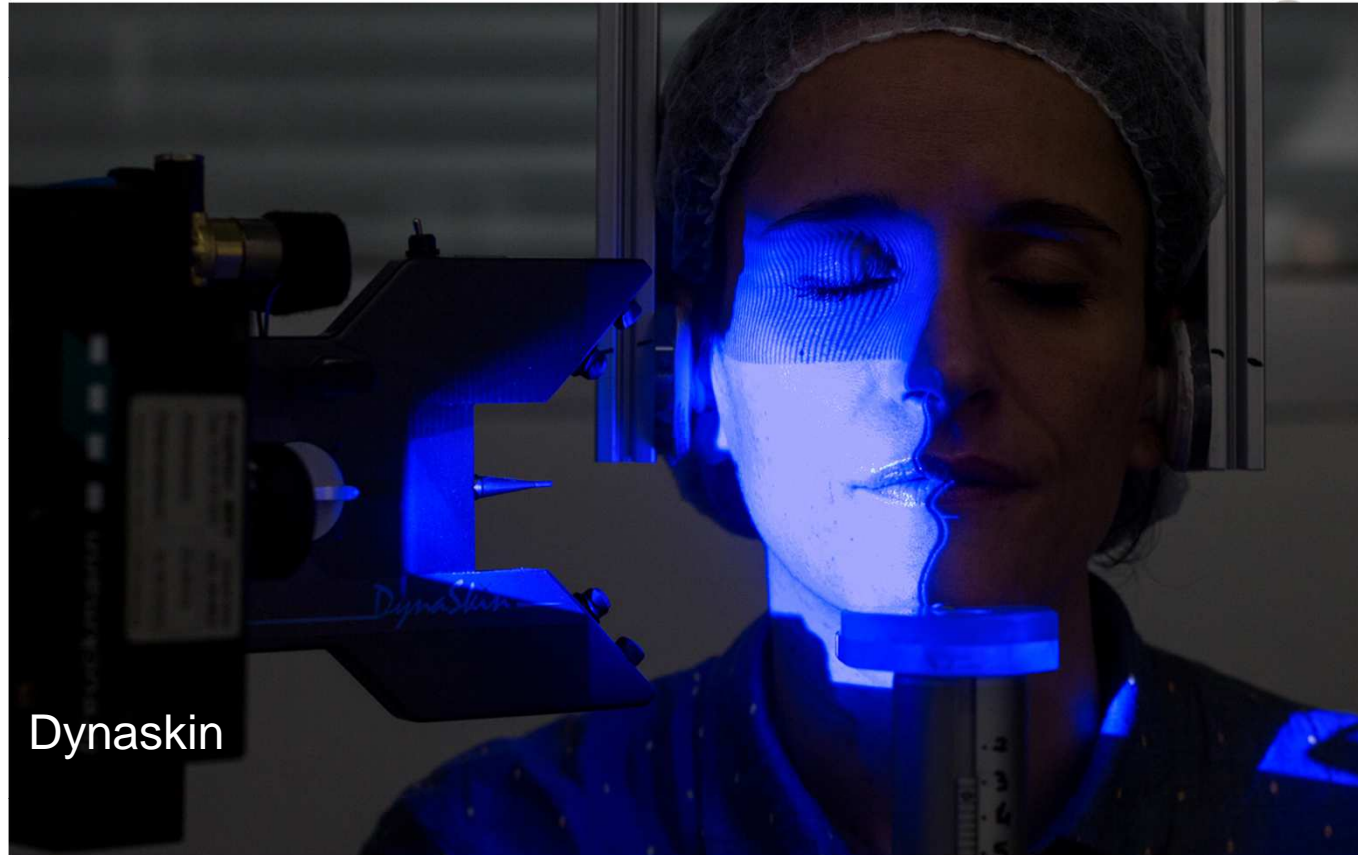




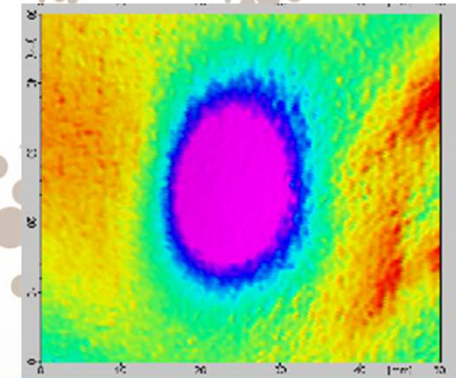
# Firmness - Elasticity



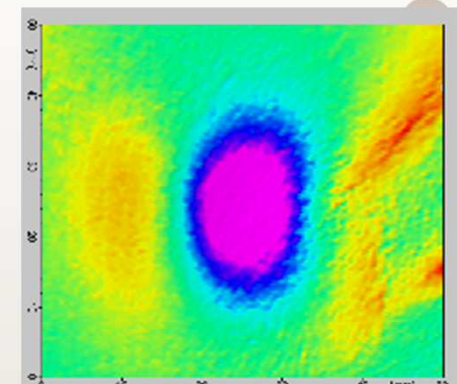
# Mechanical properties



Before

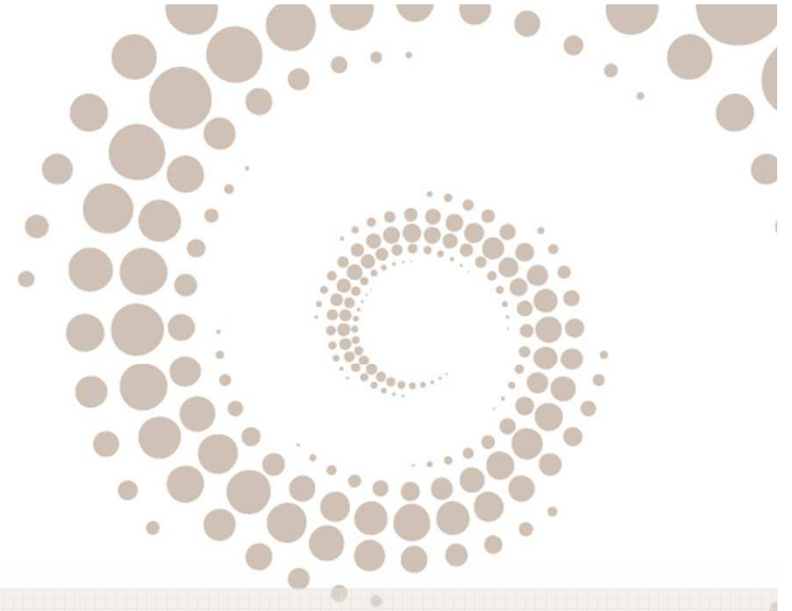


After



and also Ballistometer, Cutometer and Clinical evaluation





# « Healthy skin »



# MICROBIAL IDENTIFICATION

**NEW**



*Partnership: SYNELVIA*

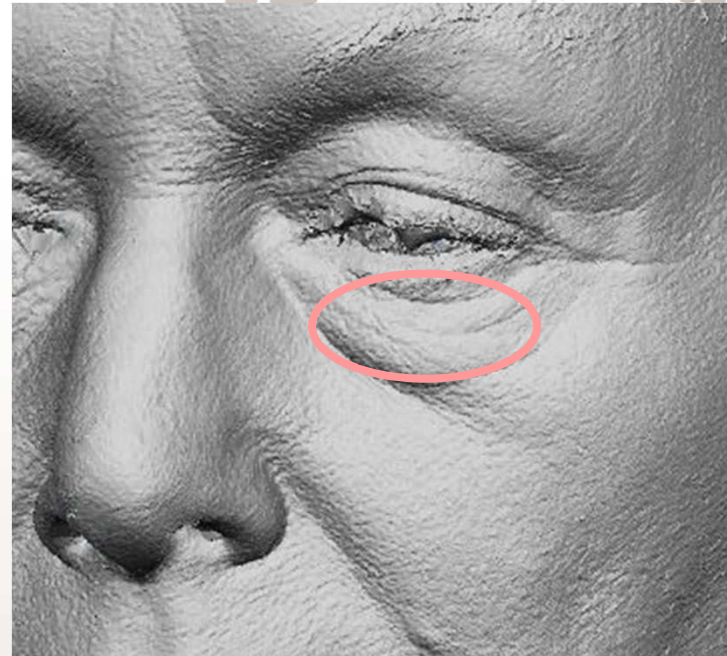
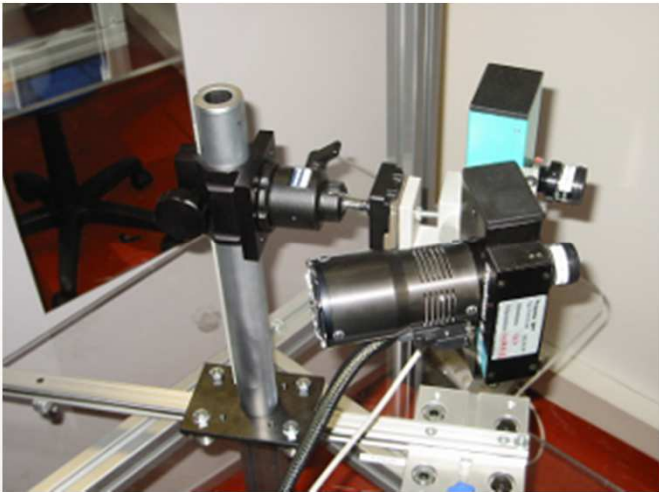




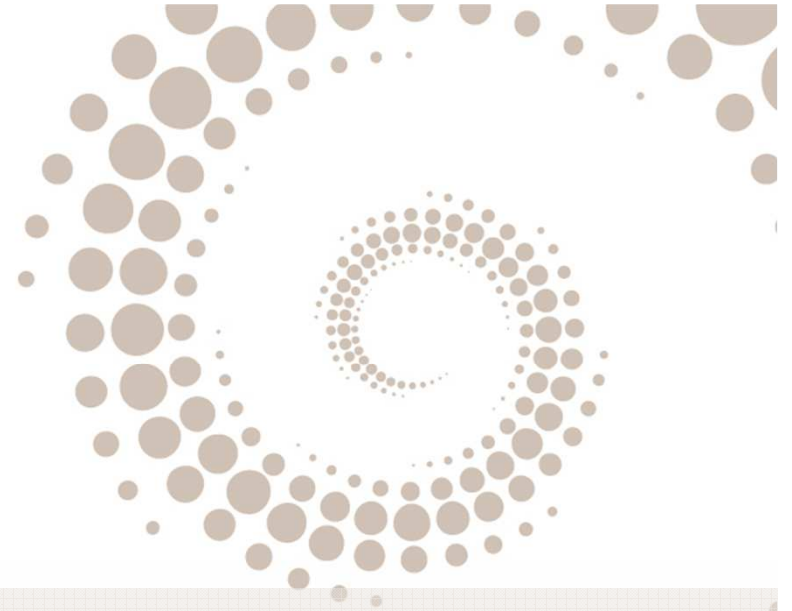
# Under-eye puffiness



# Fringe projection







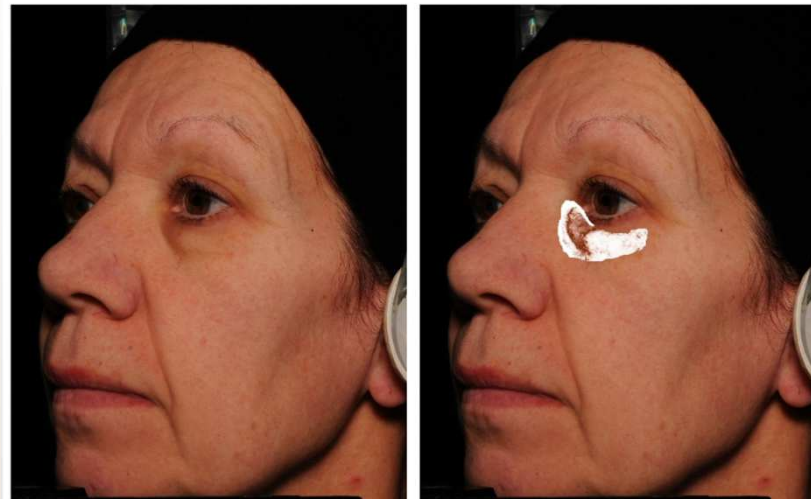
# Anti dark circles



# Image analysis: by Visioface® or Visia-CR®



Analysis of the color intensity (due to eye-bags) or vascular or melanin component.





# Clinical evaluation on photos

Scale of dark-circles (brown) on a Caucasian skin



Grade 0



Grade 3



Grade 6



Grade 1



Grade 4



Grade 7



Grade 2



Grade 5



# Clinical evaluation on photos

Scale of dark-circles (violet-red) on a Caucasian skin



Grade 0



Grade 3



Grade 6



Grade 1



Grade 4



Grade 7



Grade 2



Grade 5





# Whitening & Tanning effect



# Image analysis: By Visioface® or Visia-CR®

*On Caucasian skins for a tanning effect*



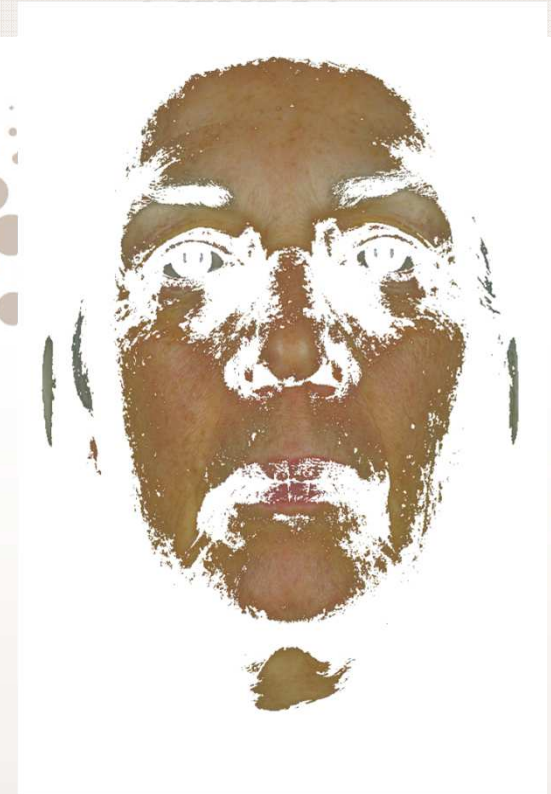
*On Asian skins for a whitening effect*





# Image analysis: By Visioface® or Visia-CR®

*Charasteristic color of skin tone*





# Chromameter & Mexameter



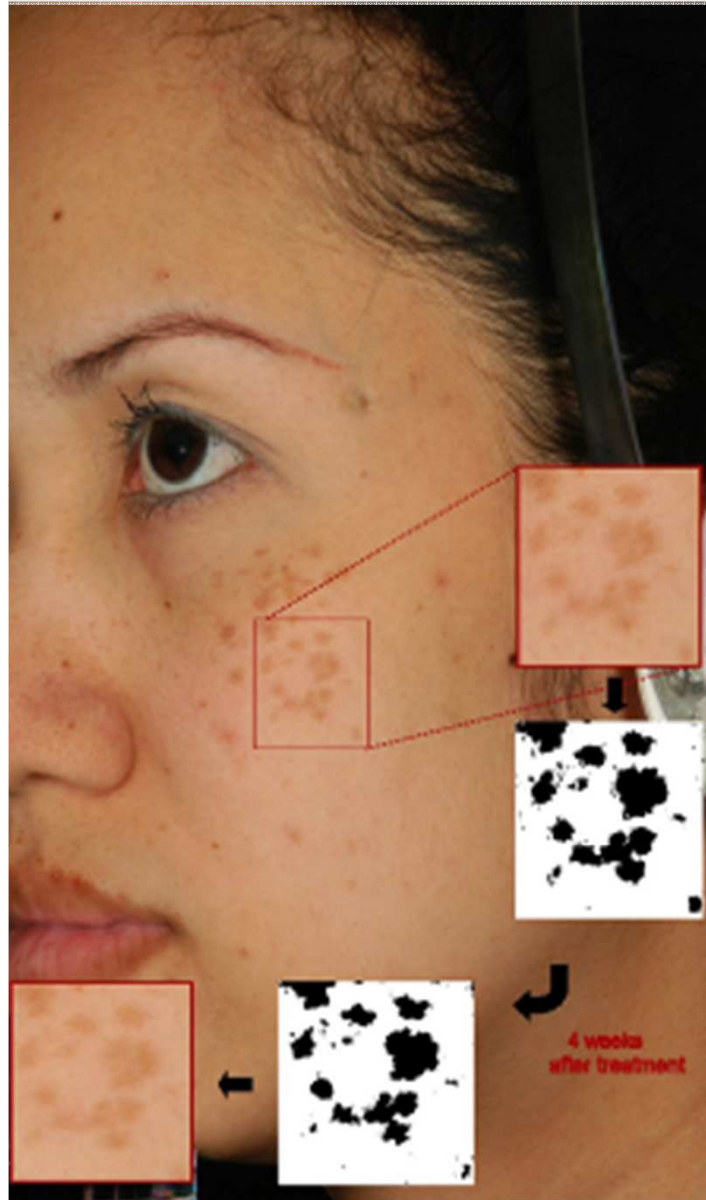




# Anti-dark spots



# Image analysis: By Visioface® or Visia-CR®



Calculated parameters  
:

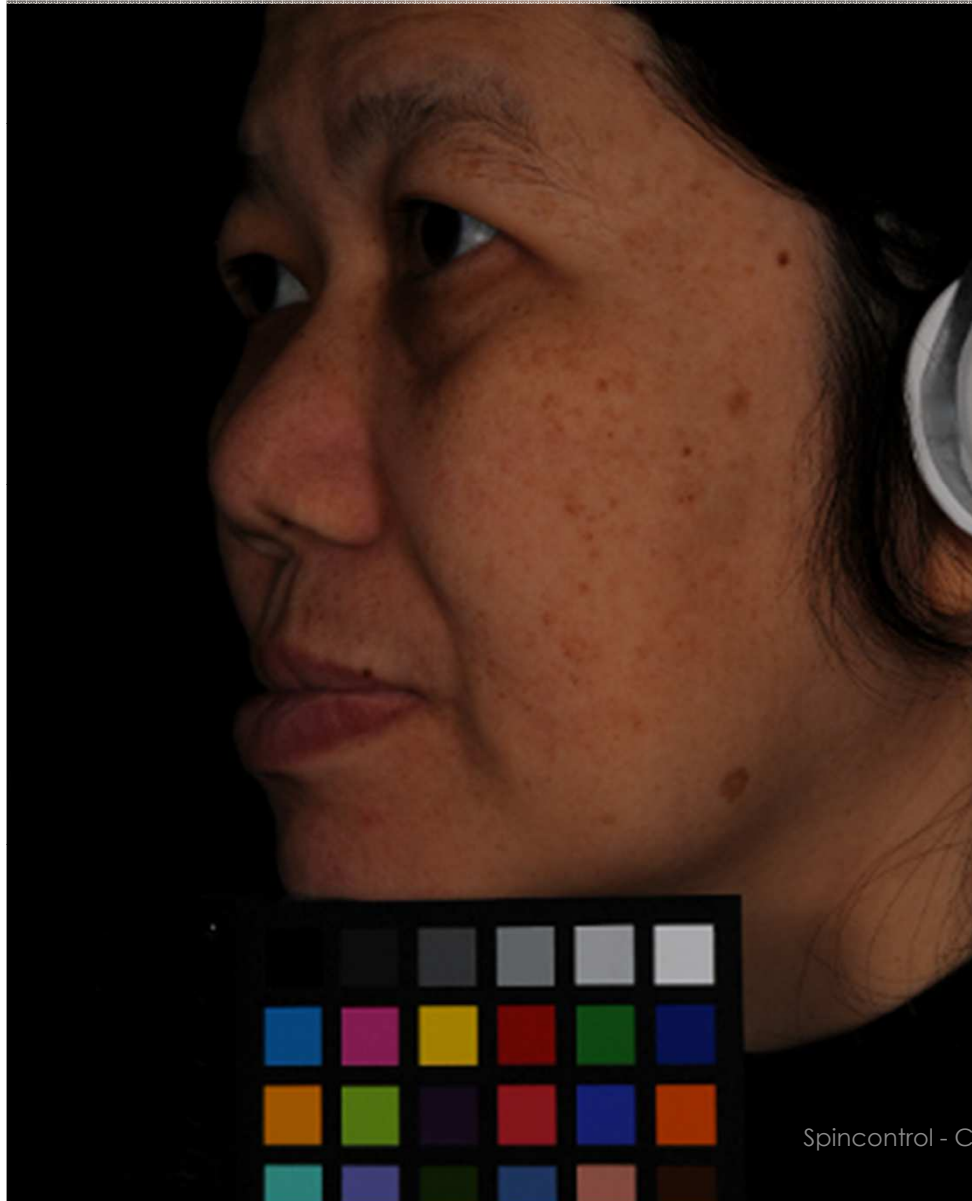
- Number of spots
- Colour of spots
- Colour of skin
- Sharpness of the contours
- Total area of the spots (mm<sup>2</sup>)





# Image analysis: By Visioface® or Visia-CR®

## Melanin component







# Focus on complex ion



# Complexion homogeneity by image analysis



**skin is more  
homogeneous /  
skin is much smoother**



**By color homogeneity**



# Complexion radiance by CLBT method

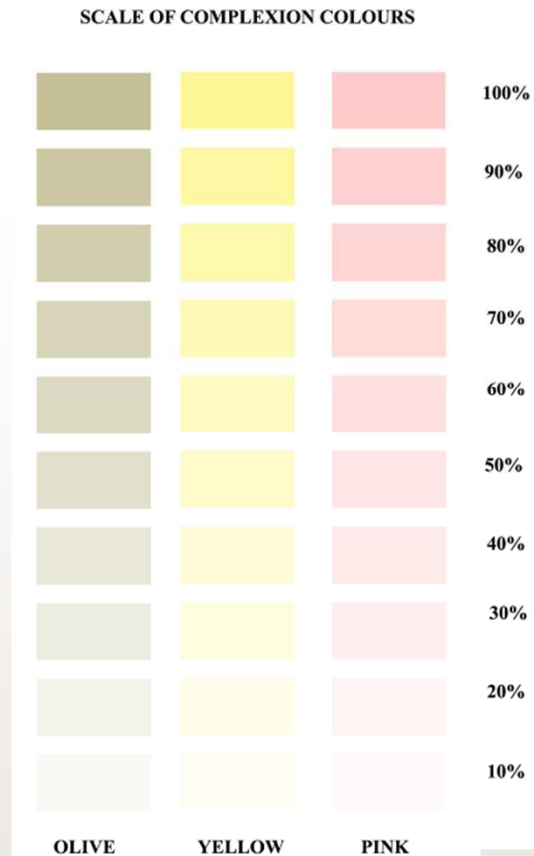


Calculation of a C.L.B.T index based on the colours, luminosity, brightness and transparency of the skin

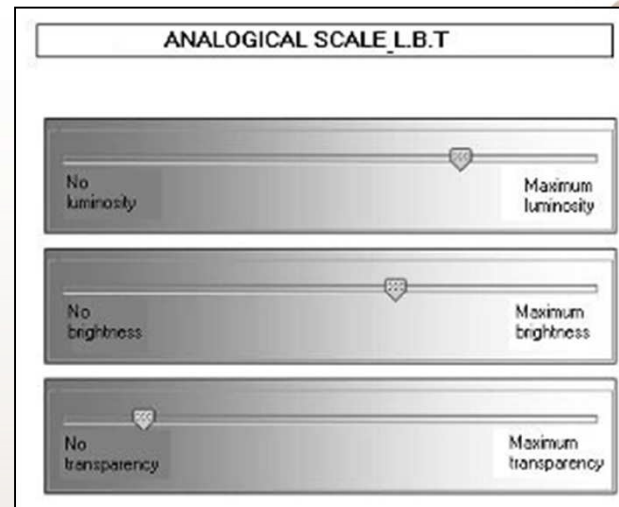
Spincontrol - Copyright 2017



# Complexion radiance by CLBT method



Structured scale of the complexion colours – Spincontrol Asia



Analogical scales for “luminosity”, “brightness” and “transparency” evaluation



# Complexion radiance by image analysis



*Photo under "Daylight" condition*



*Saturation mapping*

A mapping of the saturation allows us to extract the quantity of the surface scattering light correlated to the skin surface aspect (skin grain)



*Luminosity mapping*

A mapping of the luminosity allows to extract the quantity of the volume scattering light correlated to the transparency of the skin



*Radiance cumulative effect*

An increase in the saturation and in the luminosity leads to an improvement in the radiance of the complexion.



# Healthy glow effect by sensorial metrology



Setting of the sensory metrology room



Structured scale of the Good complexion  
colours – Spincontrol



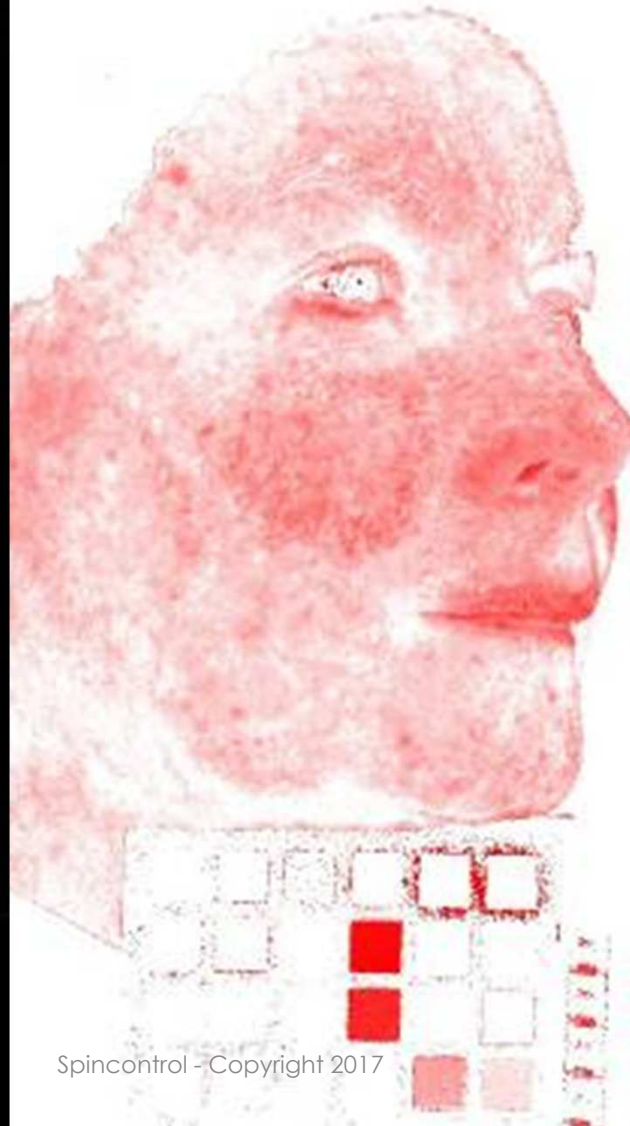
Analogical scales for “luminosity”,  
“homogeneity” and “strain” evaluation

## Measured parameters

**Colours of the skin:** Pink-red, olive, tan (beige, apricot-coloured, blond colour and brown colour)  
**Physical characteristics :** luminosity, homogeneity of the skin and strain on the skin

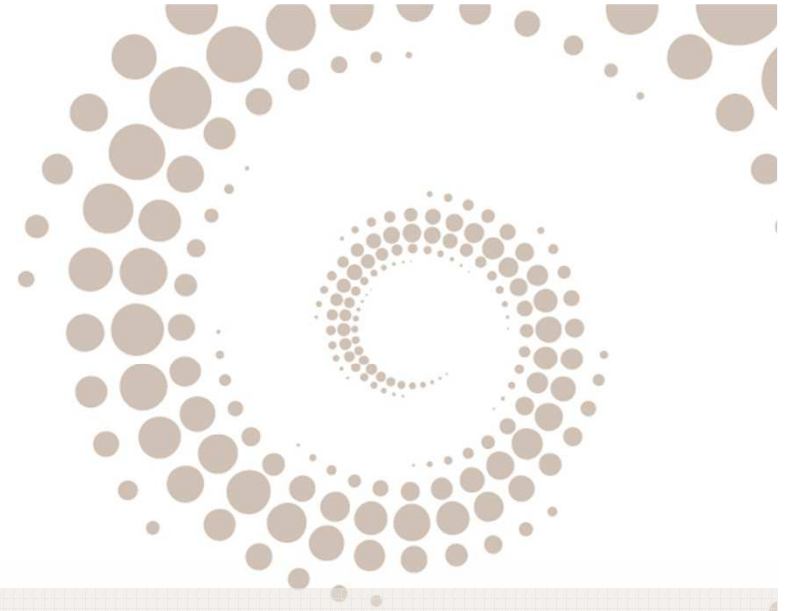


# Anti rosacea by image analysis (By Visioface® or Visia-CR®) and also SIAscope & mexameter



**Analysis of the red component**

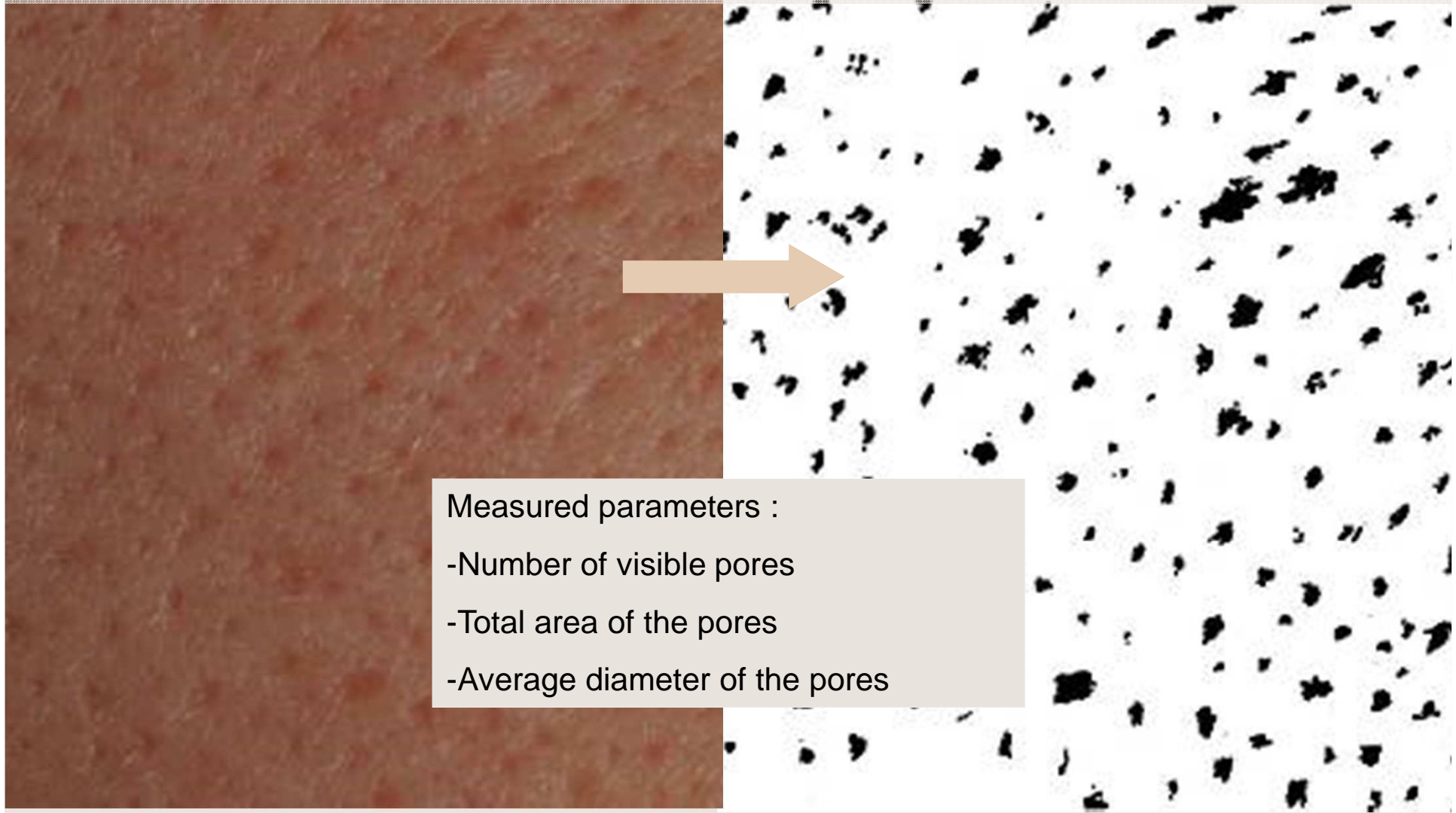




# Anti-oily skin effect

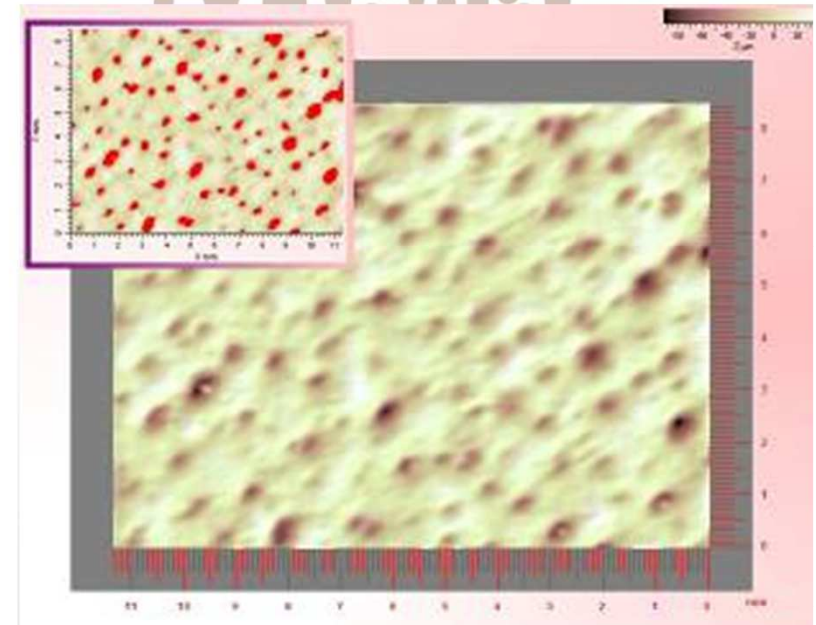
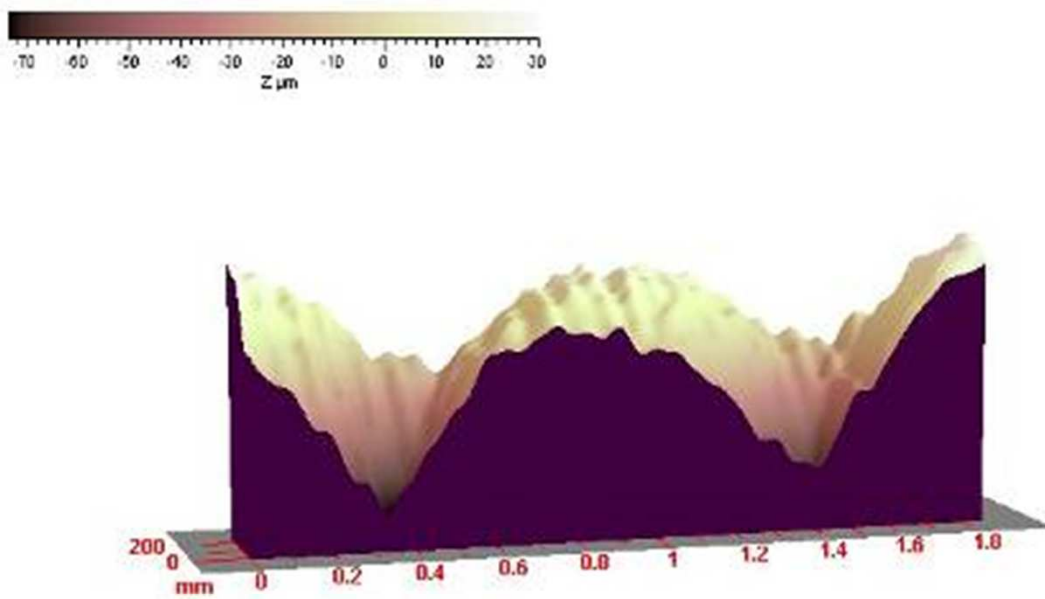


# Image analysis





# Fringe projection : diameter of the pores on replicas

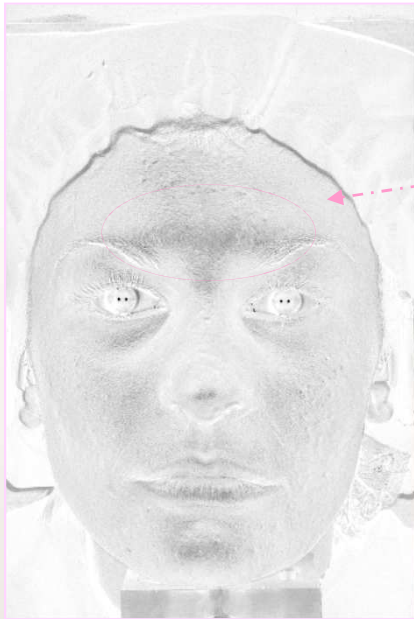




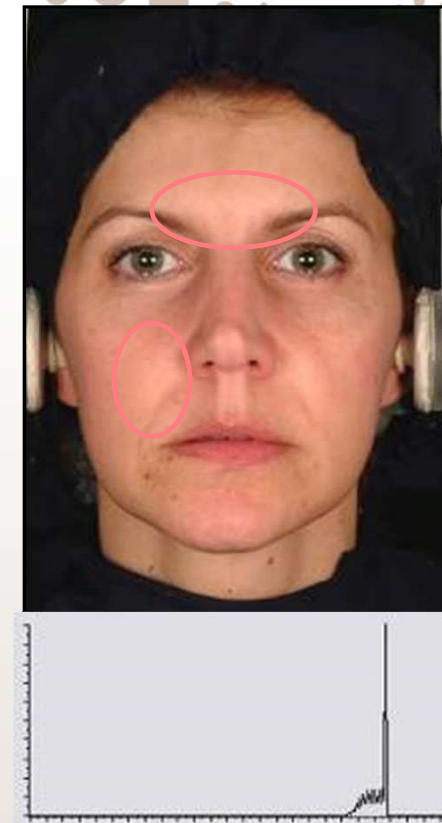
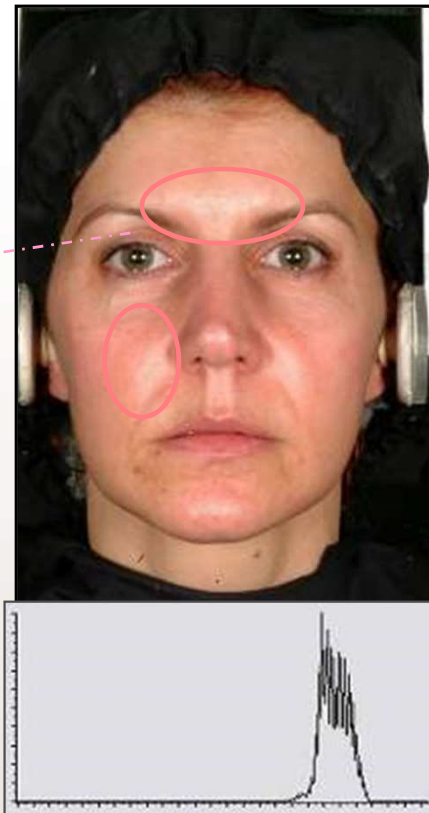
# Matifying effect by Image analysis

Before

After



Intensity of grey  
level in pixels

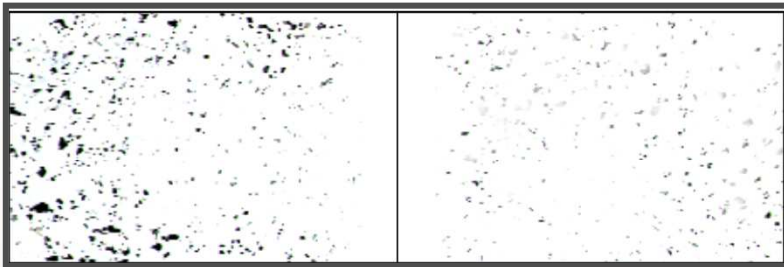




# Anti-sebum effect

## BY SEBUTAPE

Before treatment



After treatment

Intensity of sebum in grey level

## BY SEBUMETER

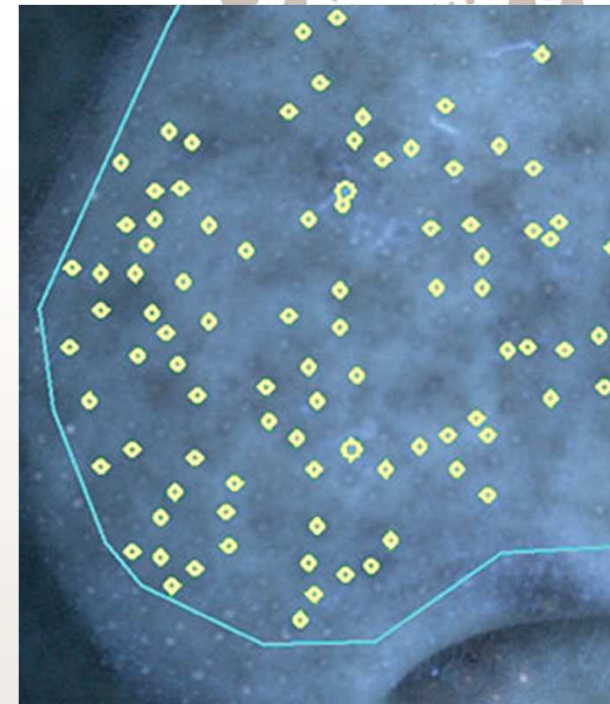


immediate rate of grease  
measurement



# Anti-sebum effect by Image analysis

Focused on porphyrins by Visia-CR® (images : Canfield copyrights)







# Anti-pollution



# Biochemical dosages

**NEW**

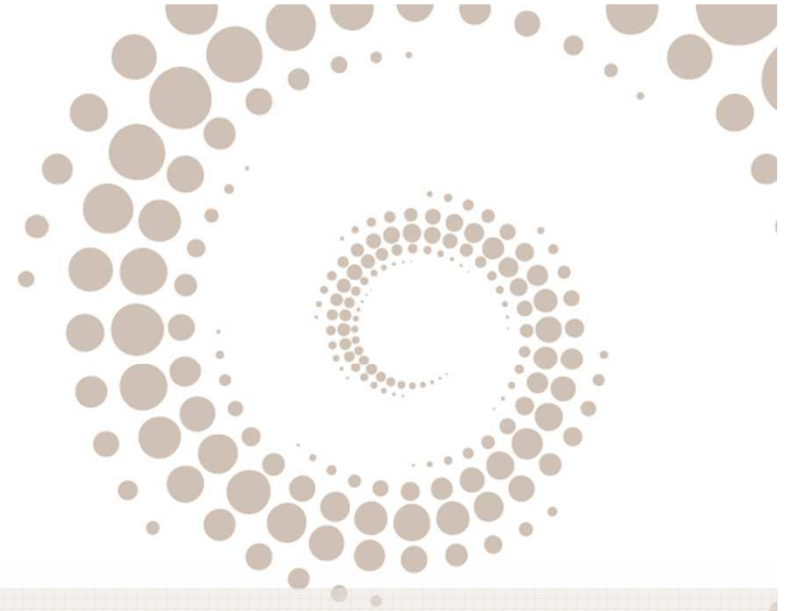
\* Skin surface samples in polluted cities (**Mumbai, Bangkok or Jakarta**).

\*2 possible dosages :

- levels of elements as heavy metals : V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Pb, As, Si et Ti
- Lipids alteration assessment

*Partnership: SYNELVIA*





# Cell renewal



# Chromameter after applying DHA patch





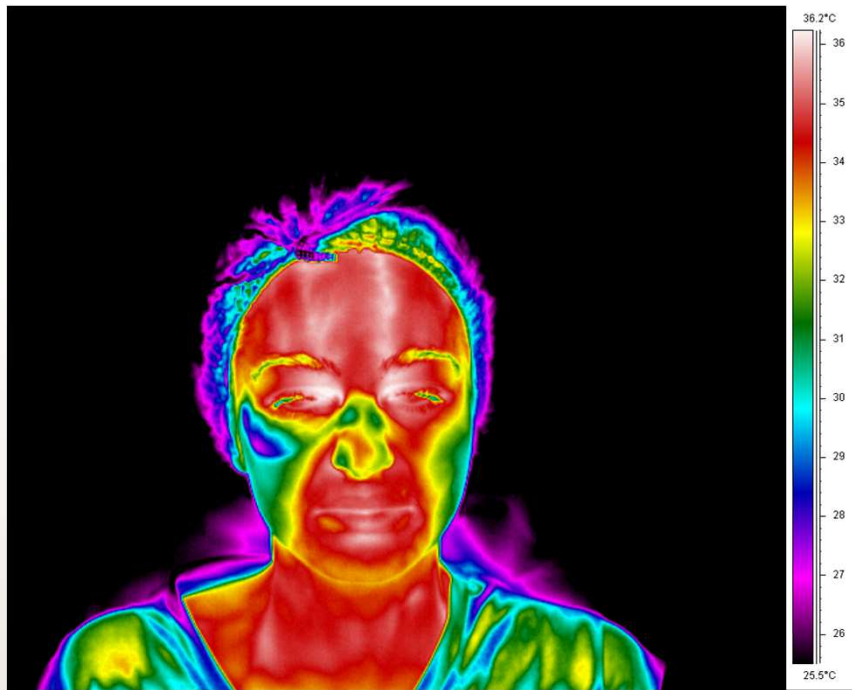


# Refreshing effect



# Thermal camera

Split-face study, application of a roll-on  
with a refreshing effect



Split-face study, application of a refreshing  
after-shave product





# Body claims



Anti-stretch marks

Anti-dimples

Anti-heavy legs

Elasticity

Exfoliating

Firmness

Hair removing effect

Heating effect

Slimming

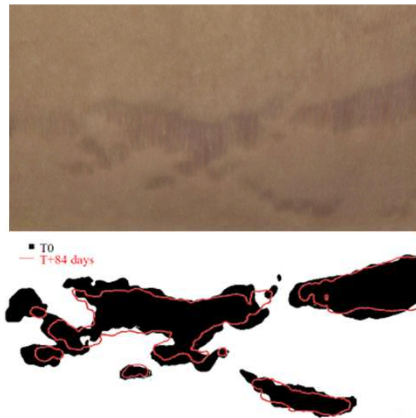




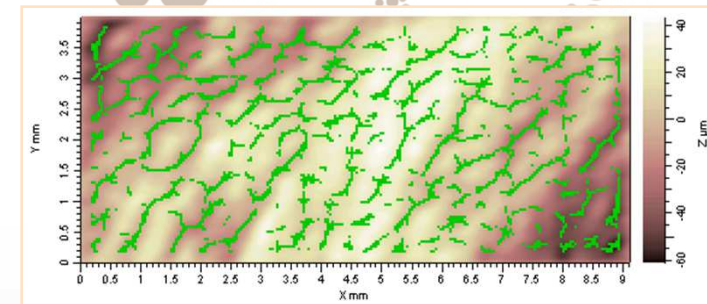
# Anti-stretch marks



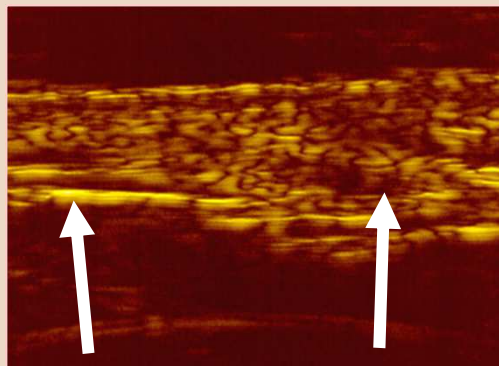
## Image analysis



## 3D topography

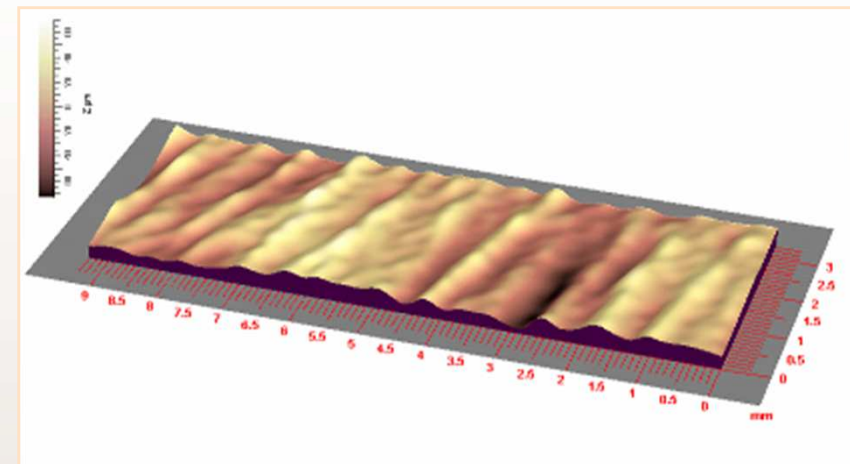


## Ultrasound



Stretch  
mark

Healthy  
tissue



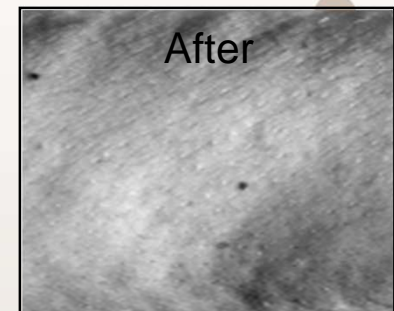
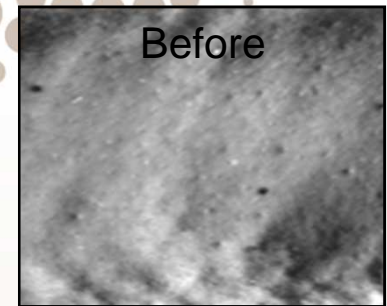




# Anti-dimples



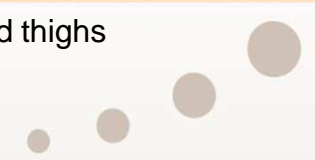
# Profilometry 2D : roughness of the dimples



**Ra and Rz roughness parameters frequently used to describe the cutaneous relief are determined with the variations of grey levels on the image.**



# g of the dimples



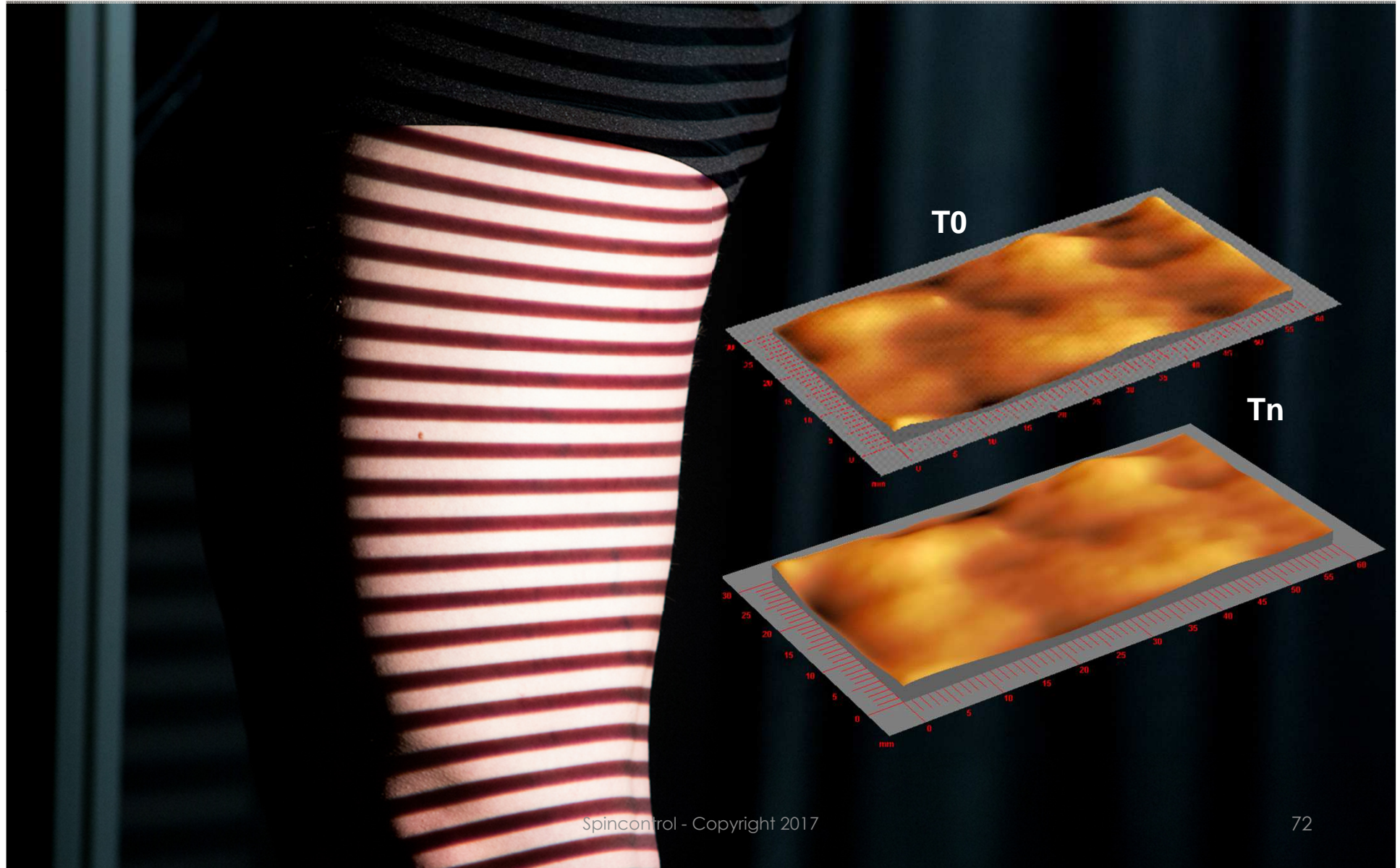
d thighs



valuation of pinched thumb

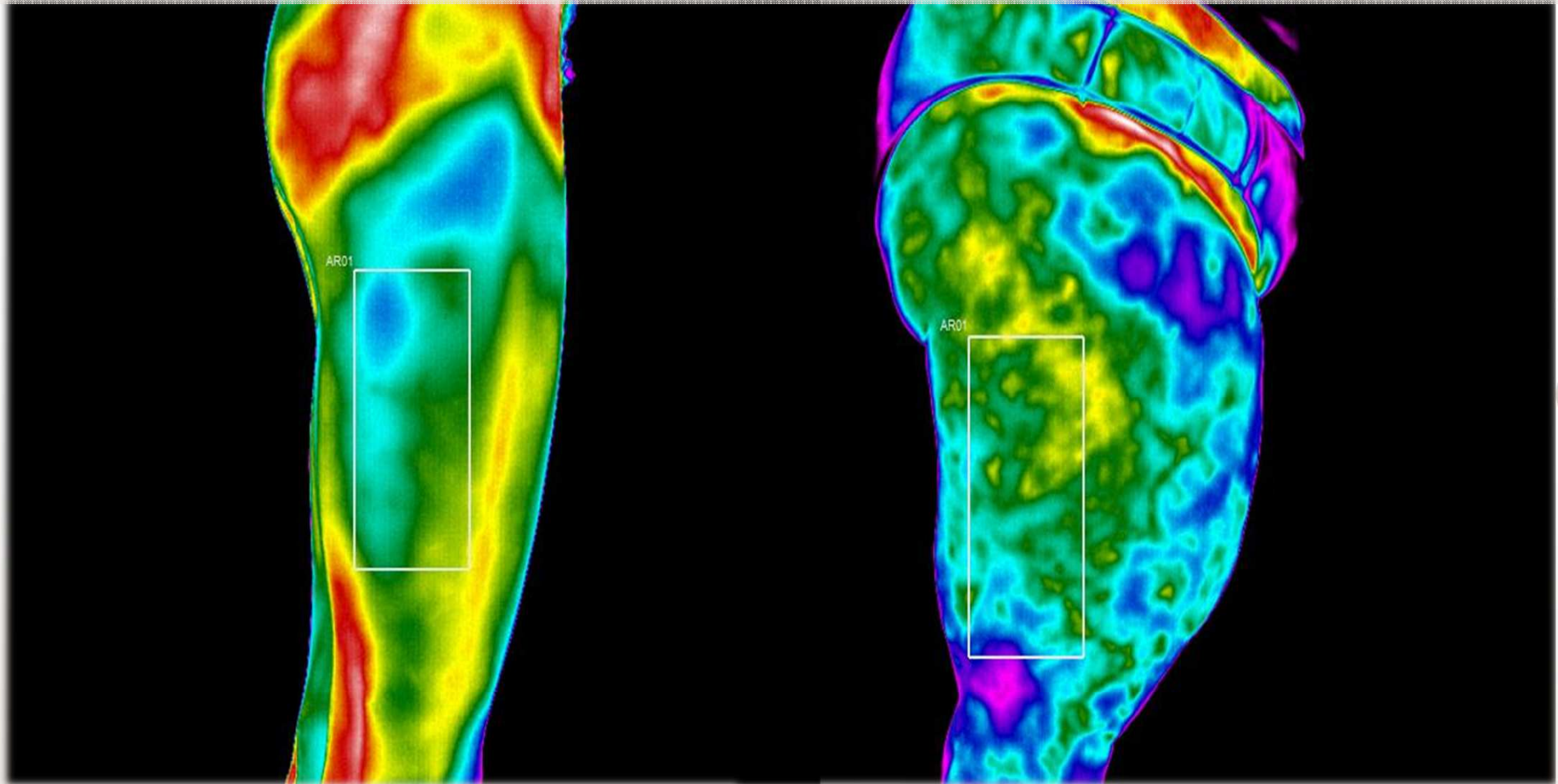


# Fringe projection : roughness of the dimples





# Thermal camera



Uniformity of  
temperature

Heterogeneity of  
temperature



# Clinical evaluation: *in vivo* with & without pinching



With pinching



GRADE 0

GRADE 1

GRADE 2

GRADE 3

GRADE 4



GRADE 5

GRADE 6

GRADE 7

GRADE 8

GRADE 9

Without pinching



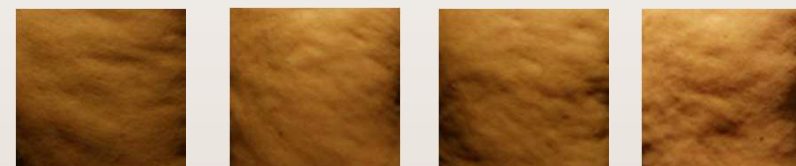
GRADE 0

GRADE 1

GRADE 2

GRADE 3

GRADE 4



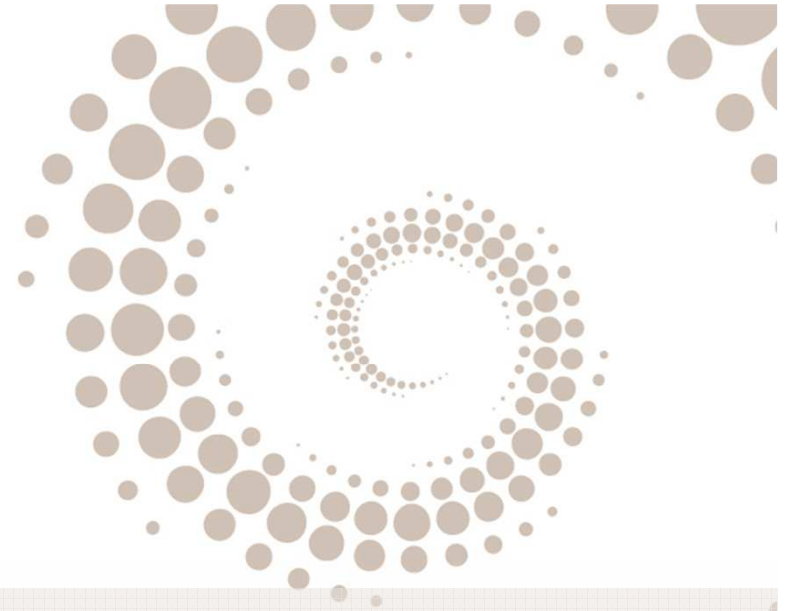
GRADE 5

GRADE 6

GRADE 7

GRADE 8

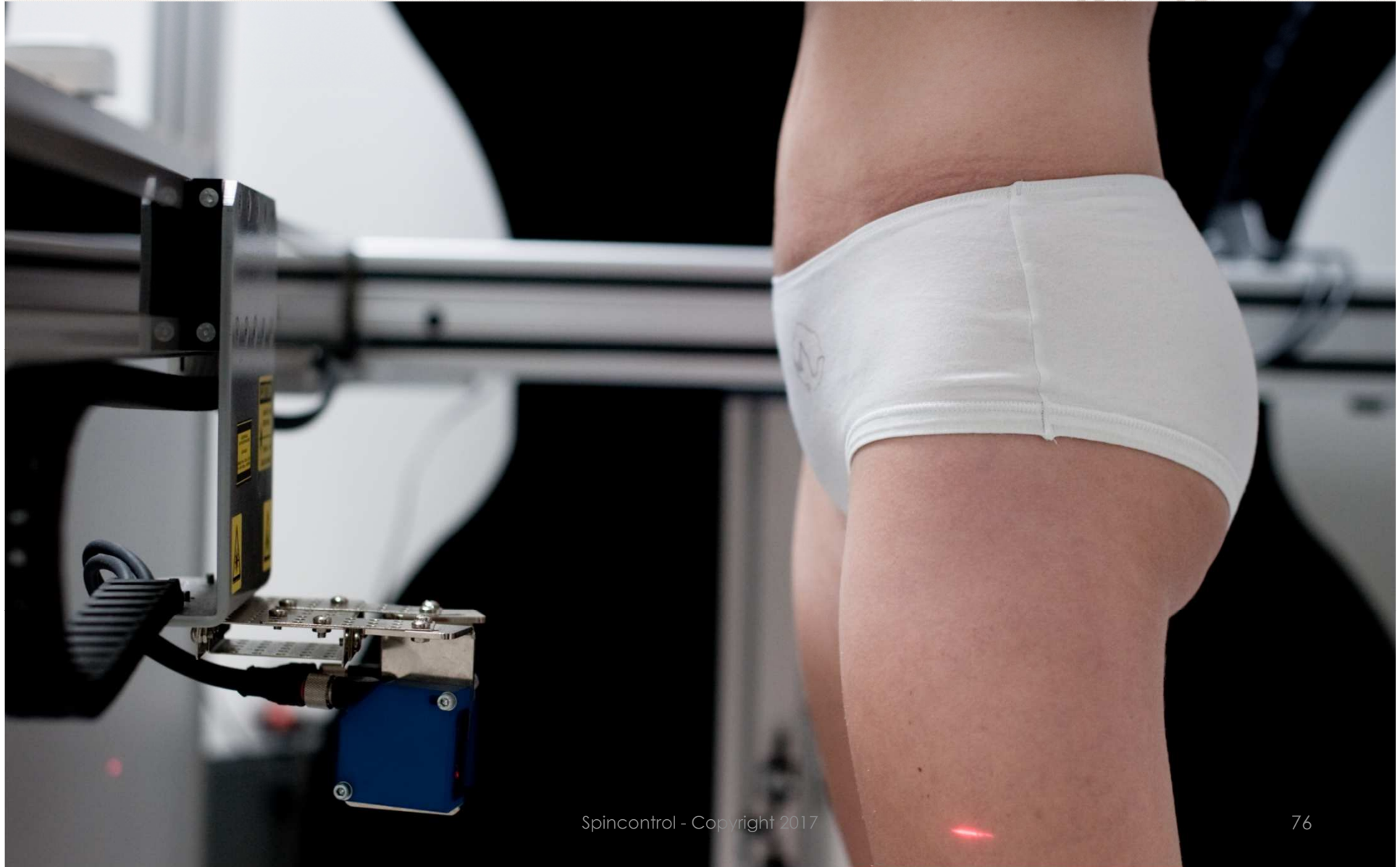




# Slimming

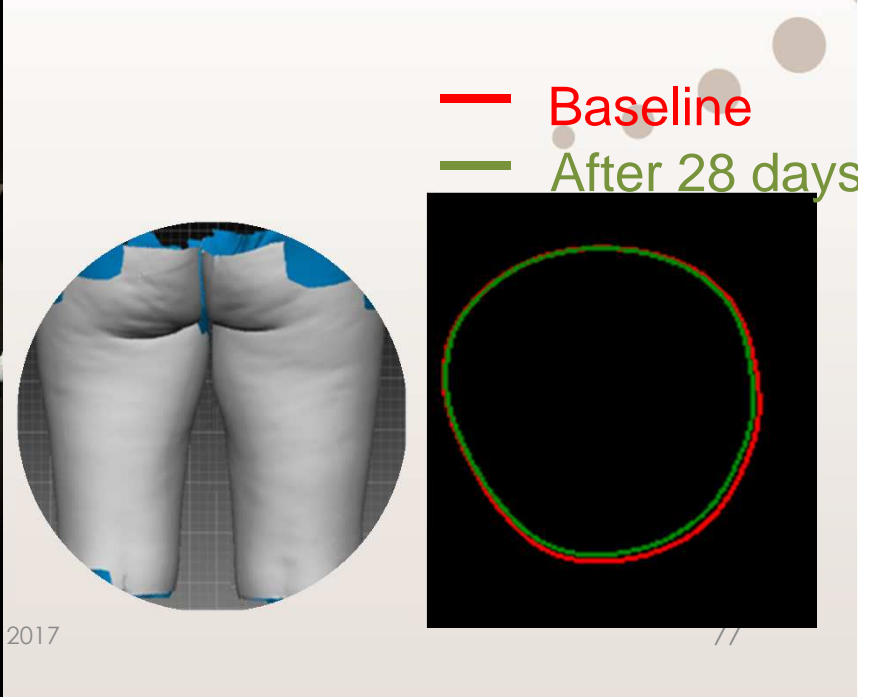
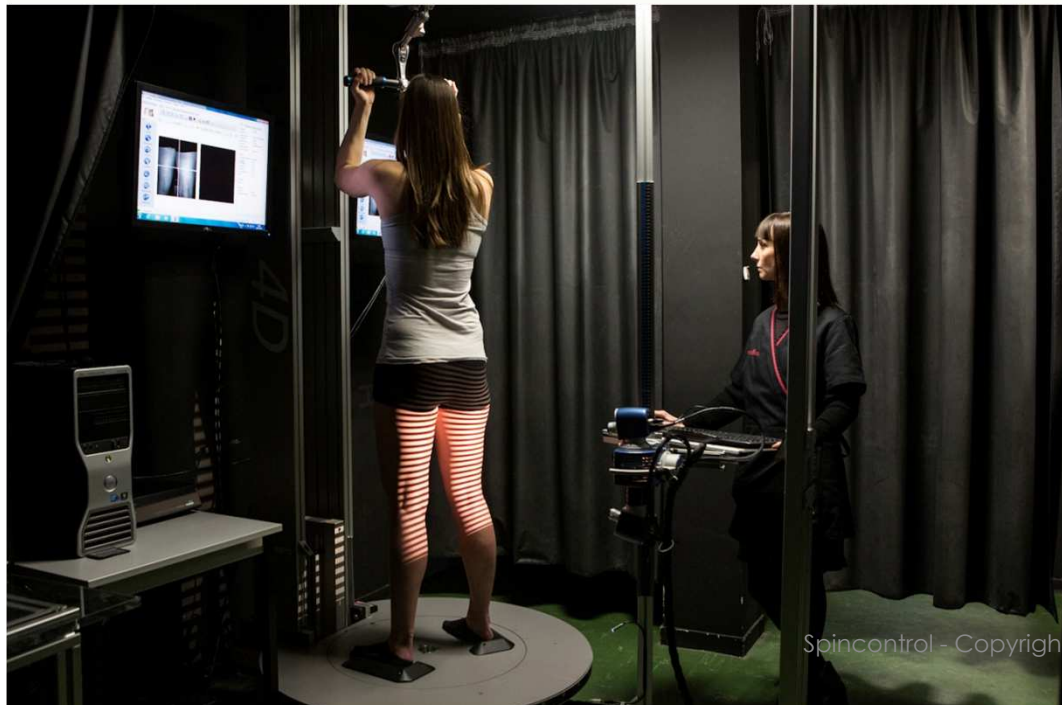
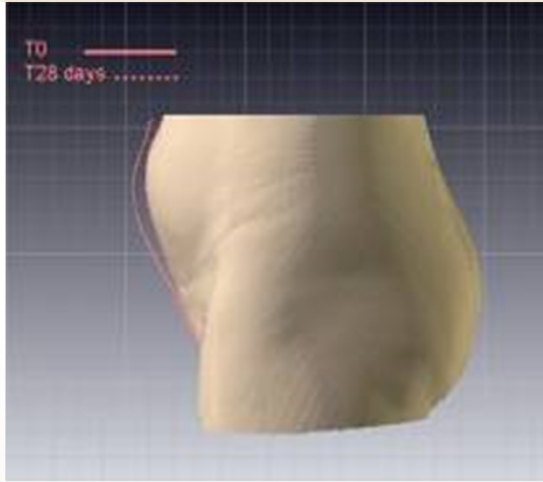


# Laser centimetry *without contact*



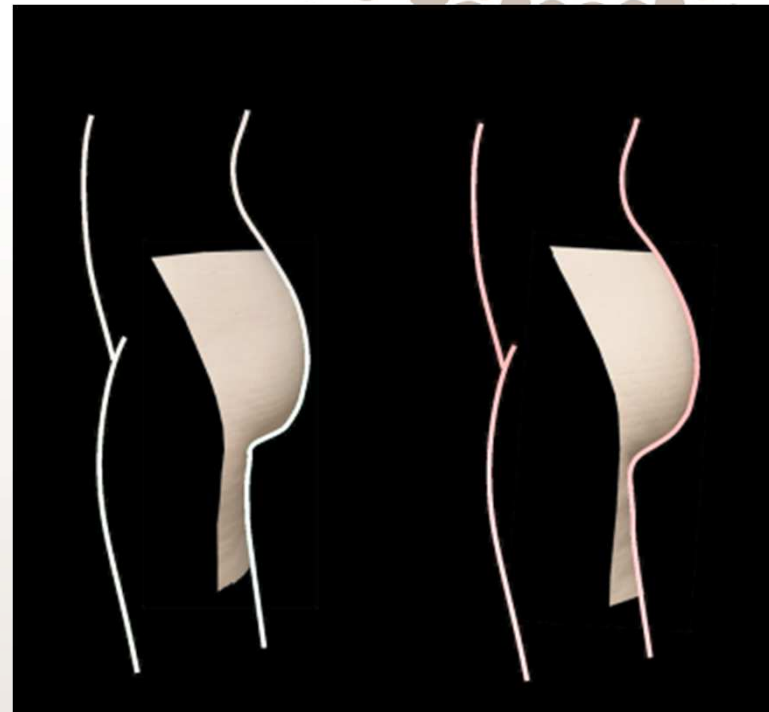
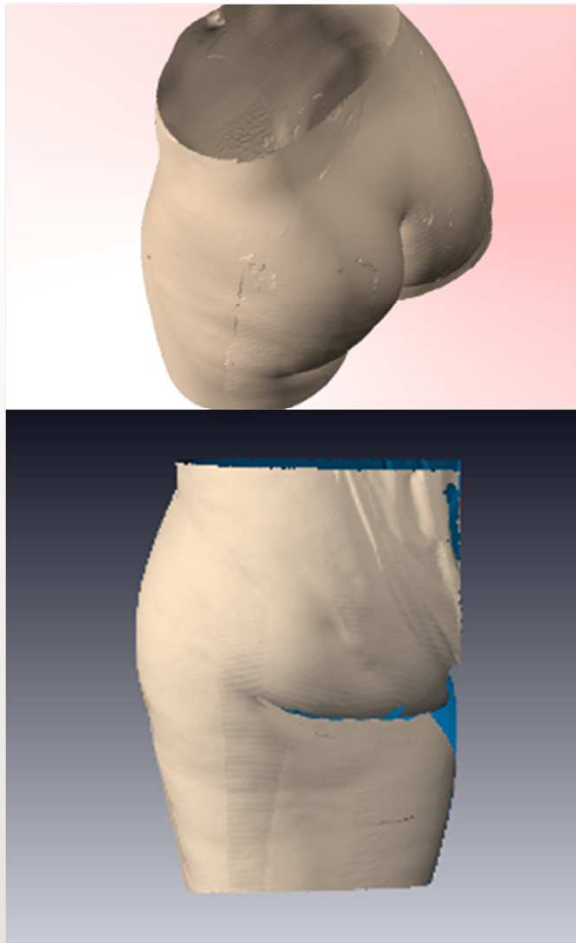


# Fringe projection : abdominal slimming , « love handles » and thighs





# Volume of buttocks & saddlebags



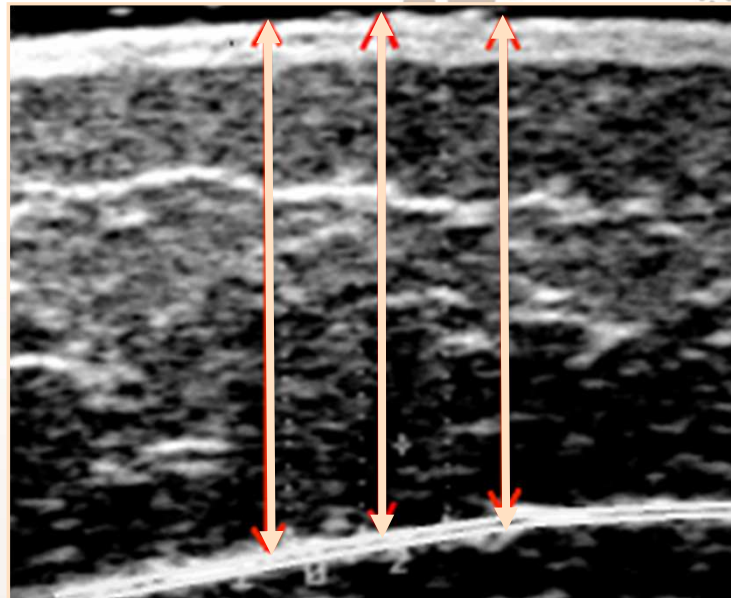


# Image analysis : area of thighs, arms & lower abdomen





# Ultrasound Imaging : measurement of the adipose tissue thickness (on the thighs or the abdomen)



Reference: PERIN et al. Methodological aspects of the ultrasonic measurement of subcutaneous adipose-tissue thickness for the evaluation of the efficacy of slimming treatments. Journal d'Echographie et de Médecine par Ultrasons, vol 20, n° 5(6) : 318-325, 1999.



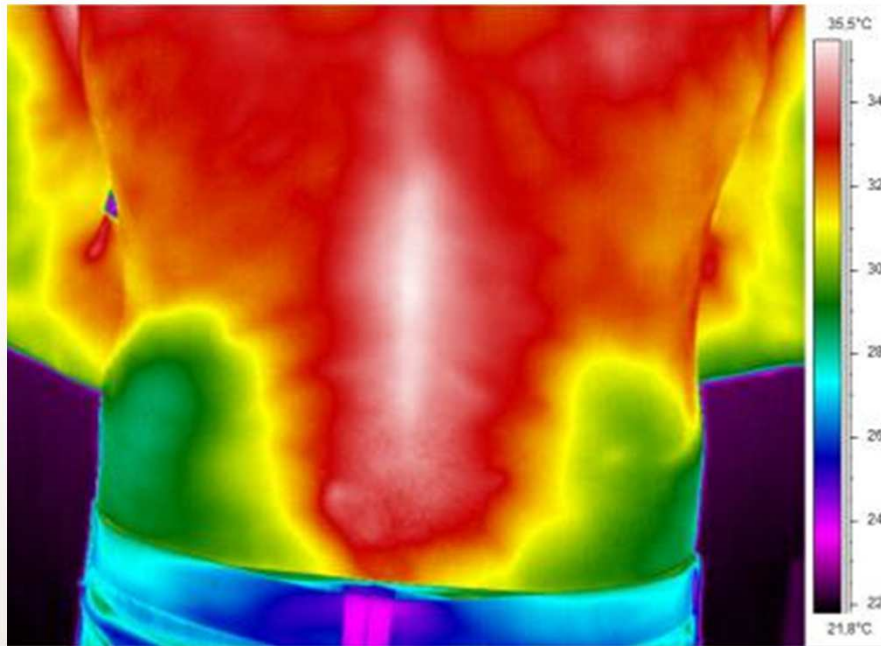


# Heating & refreshing effect

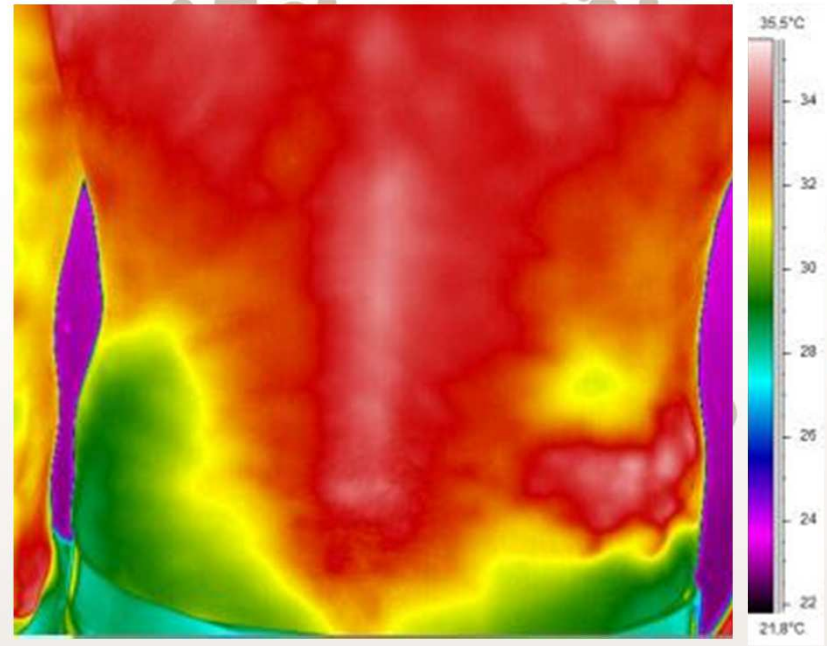


# Thermal camera : heating effect

Before

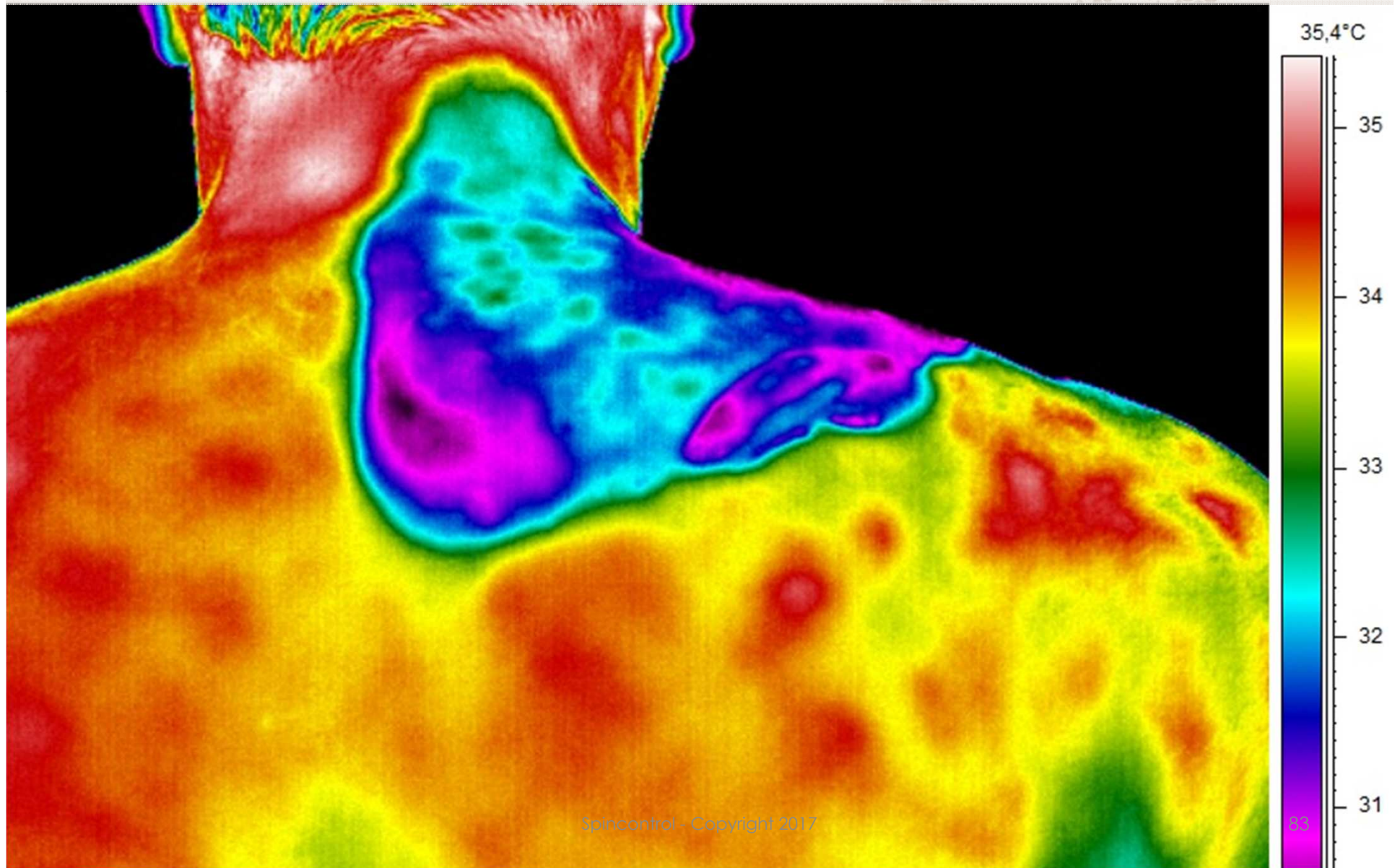


After

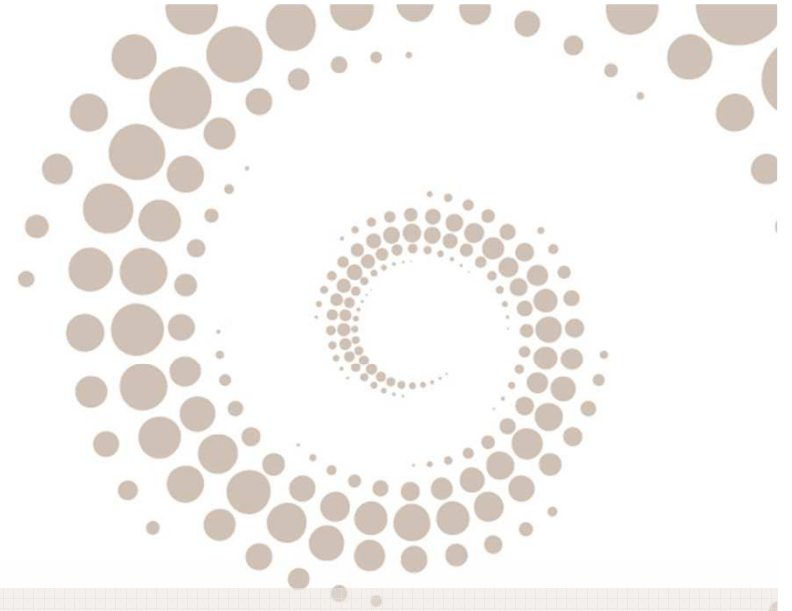




# Thermal camera : refreshing effect







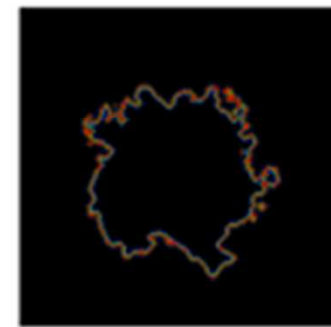
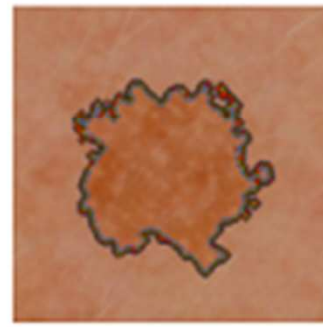
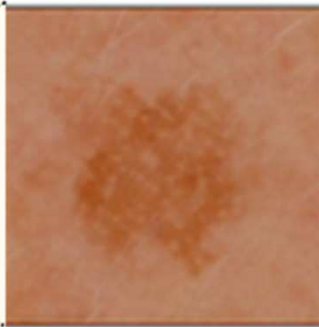
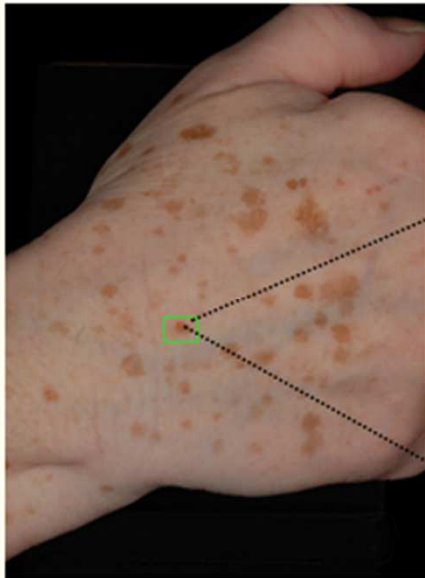
# Anti-dark spots



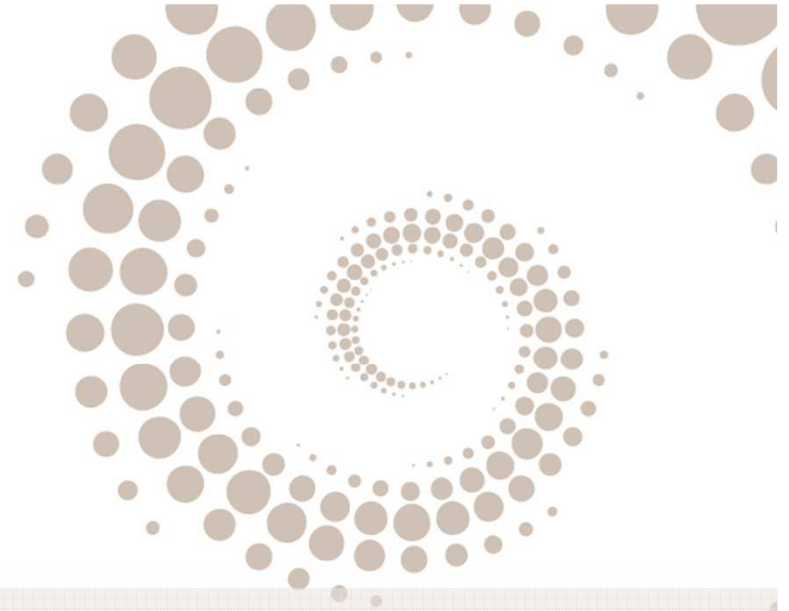
# Image analysis: By Visioface®

## Calculated parameters :

- Number of spots
- Colour of spots
- Colour of skin
- Sharpness of the contours
- Total area of the spots (mm<sup>2</sup>)







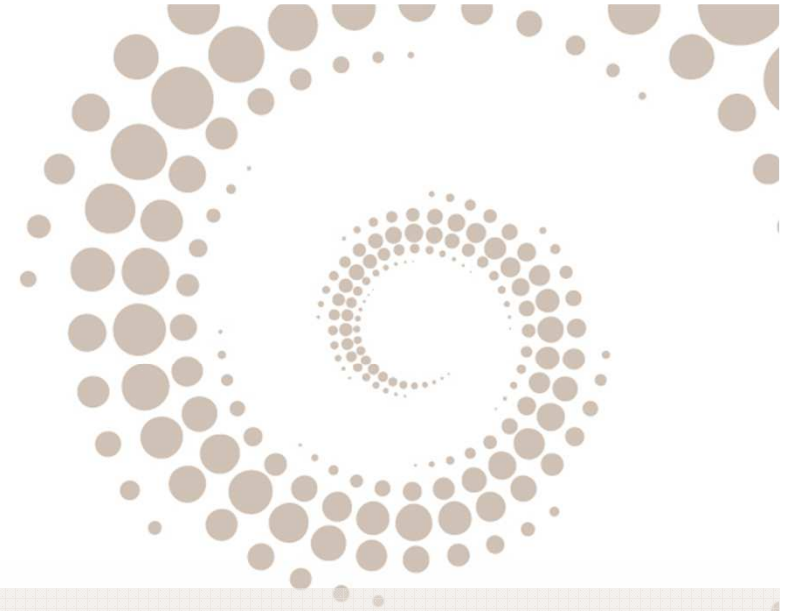
# Firmness & elasticity



# Torquemeter, Cutometer, Ballistometer or Dynaskin, Clinical assessment







# Hairs removal effect



# Image analysis: length & density measurements





# Sensorial metrology: softness of the skin







# Moisturizing



# Usual techniques

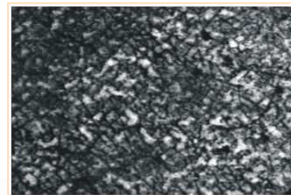
## CORNEOMETRY



## TEWL



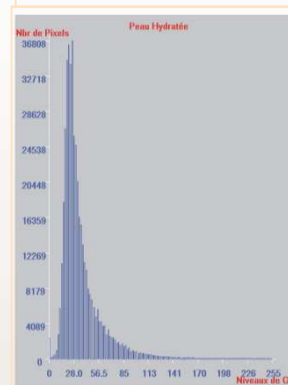
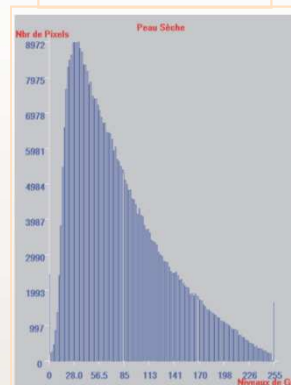
## MOISTUREMETER



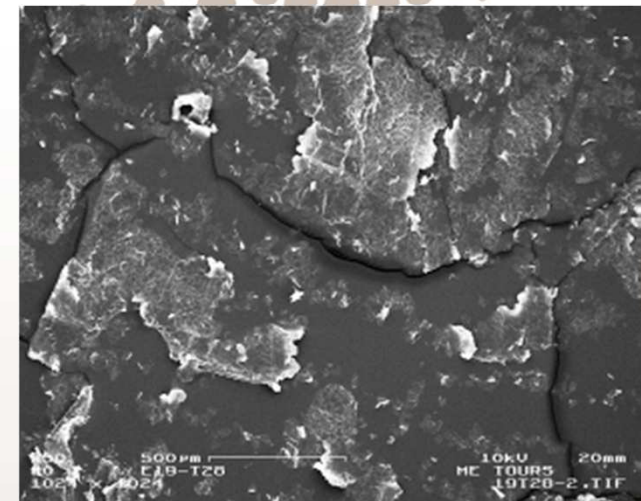
Dry skin



Hydrated skin



D'SQUAME



ELECTRONIC  
MICROSCOPY



# Sensorial metrology : softness of the skin



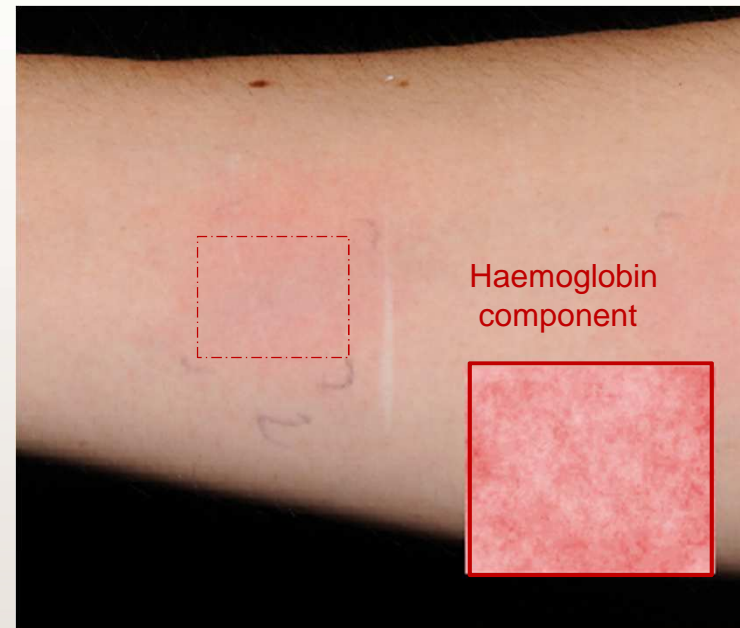
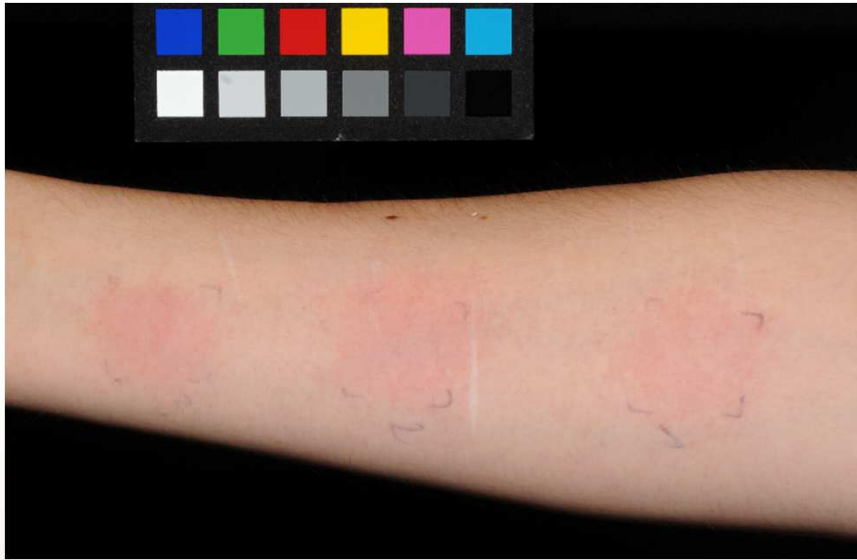




# Soothing effect



# Image analysis: haemoglobin component analysis







# Sun claims




# Protocols for sun care products

**NEW**

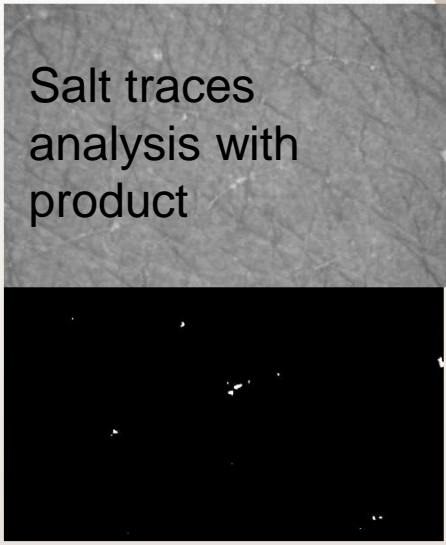


Thermal camera  
on the area of  
irradiation

- SPF (partnership IDEA)
- Infra-red protection
- Anti-sticky sand
- Anti-sun cream traces
- Anti-salt traces

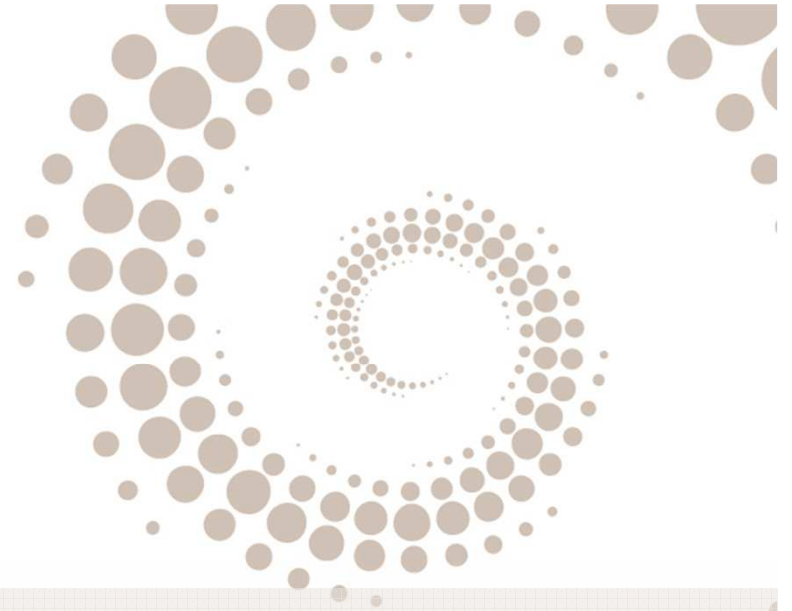


Salt traces  
analysis without  
product



Salt traces  
analysis with  
product

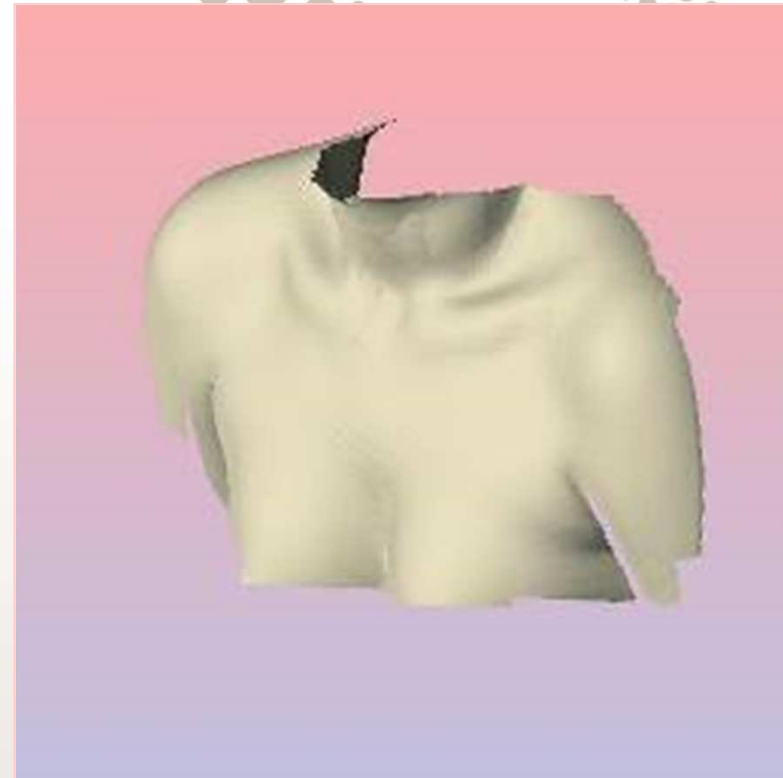
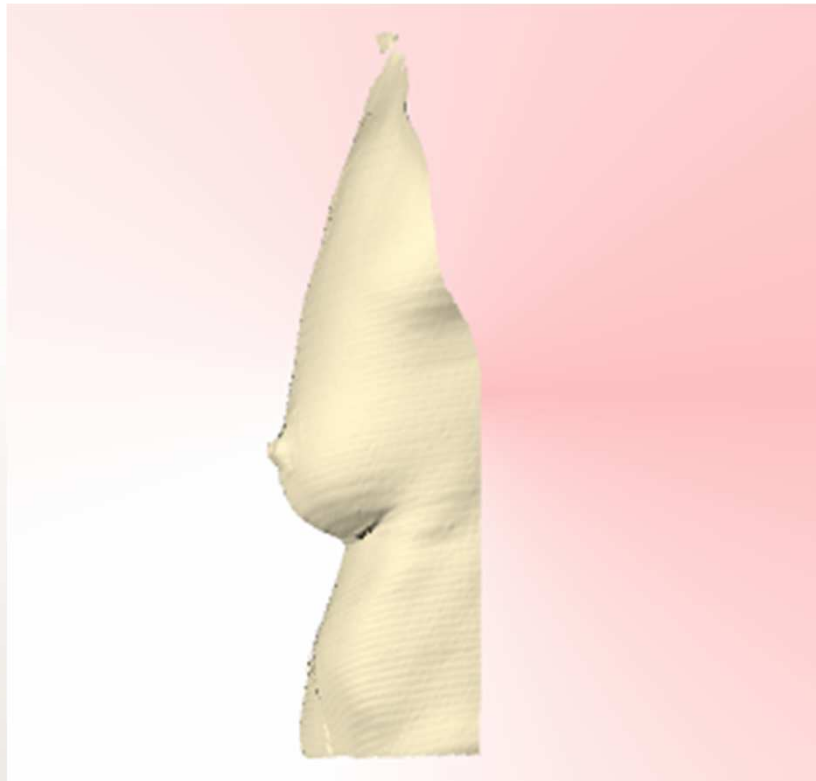




# Tensing & Uplifting effect of the bust

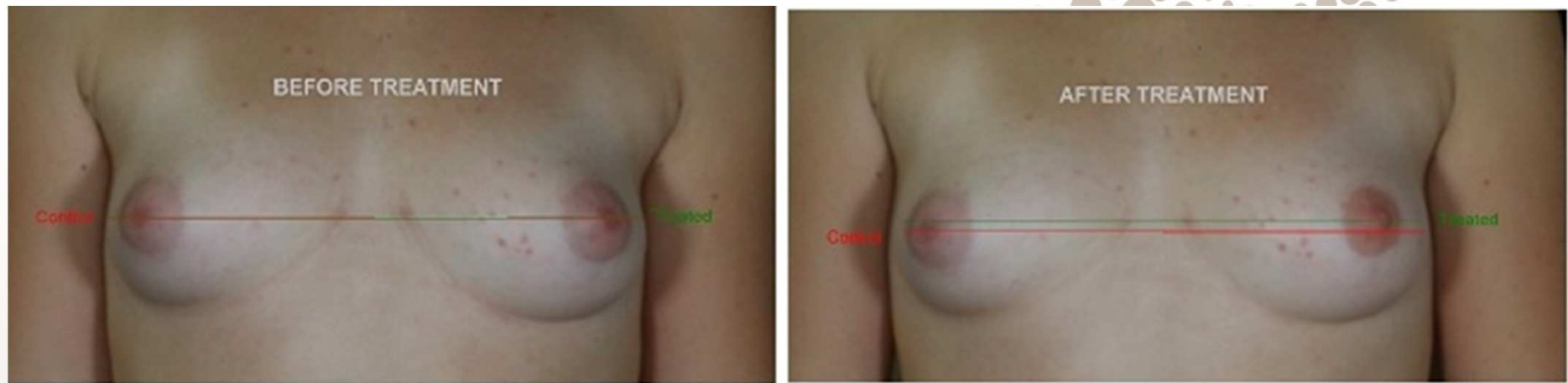


# Fringe projection : volumizing & uplifting effect





# Image analysis : uplifting effect







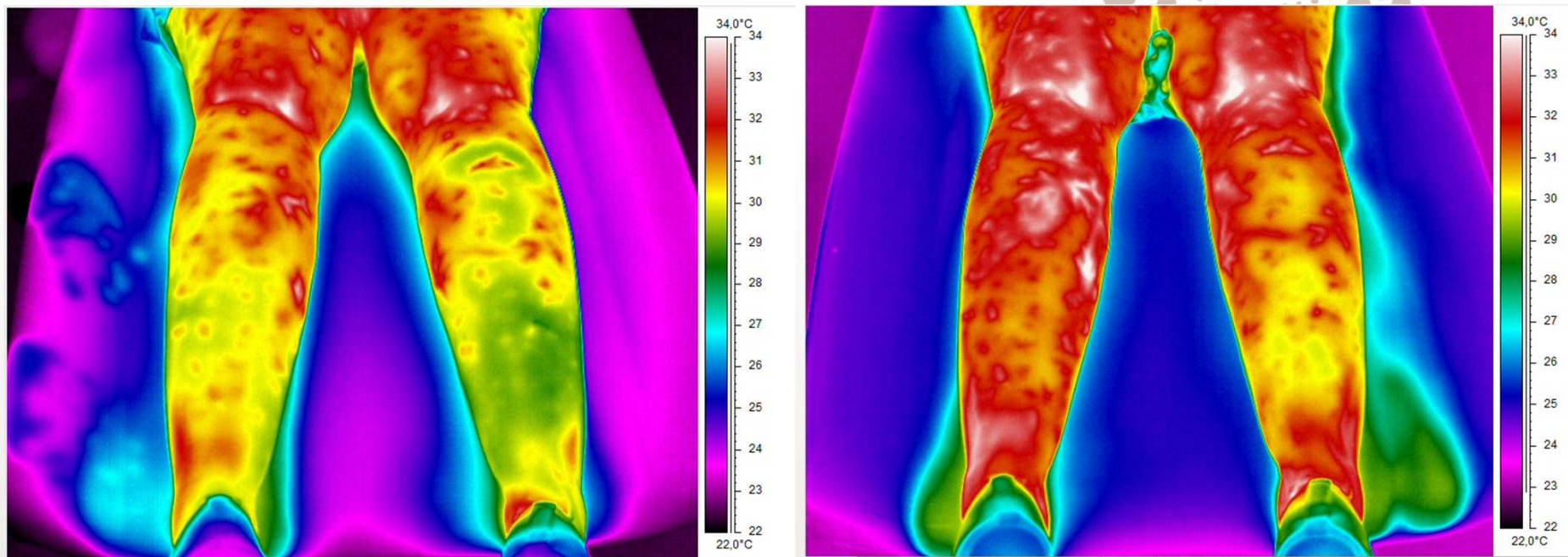
# Tired legs



# Thermal camera


T0

T + 28 days





# Hair care



Hair softness  
Anti-sebum effect  
Coloration stability  
Hair sheen  
Smoothing effect  
Growth  
Straightening effect  
Volumizing effect  
Heat protective effect  
Mechanical properties



# Hair claims

Damage – split ends

Straightening - smoothing effect

Hair softness

Frizz

Hair sheen

Smoothing effect



Color protection

Anti hair  
loss

Dryness -Moisturizing

Volumizing - Thinning  
effect

Anti-sebum effect

Heat protective effect



# Hair damage

## Hair ageing



Loss of density, hair becomes drier, and the texture seems coarser and more brittle than before

## External factors



Ultraviolet light, friction from brushing, heat from blow dryers, curling irons, and straighteners, and possible chemical exposure through coloring, perming or straightening



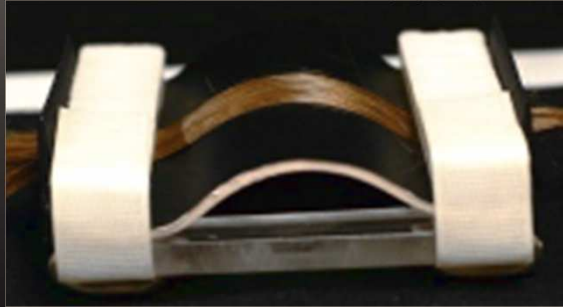
# Hair sheen





# Hair sheen

*Ex vivo*



*In vivo*

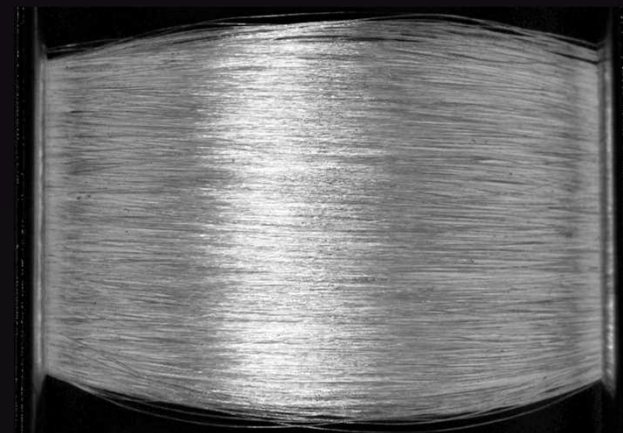




# Hair sheen

## By image analysis

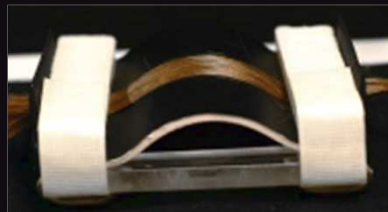
The parallel polarised photographs are transformed into cartographies of saturation (axis "S" in the colorimetric space HSL), which enables to emphasize the contrast of the photographs in term of shininess





# Hair sheen

## By experts grading



No sheen



Maximum sheen



# Growth speed





# Growth speed By centimeter measurement



T0



Tn

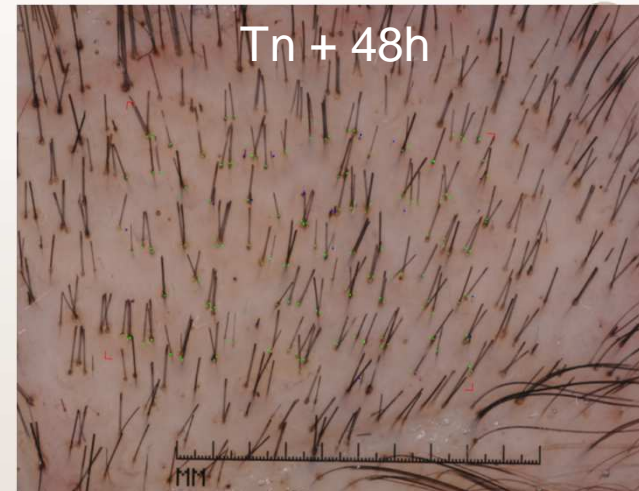


# Anti hair loss





# Phototrichogram



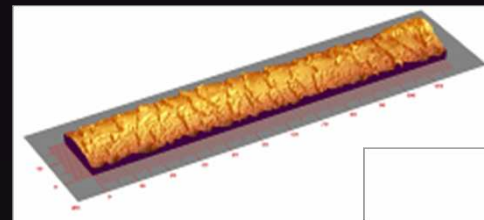
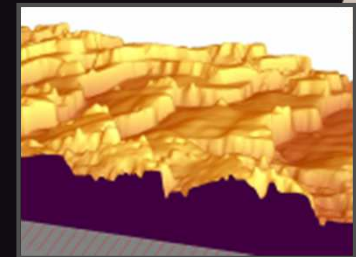
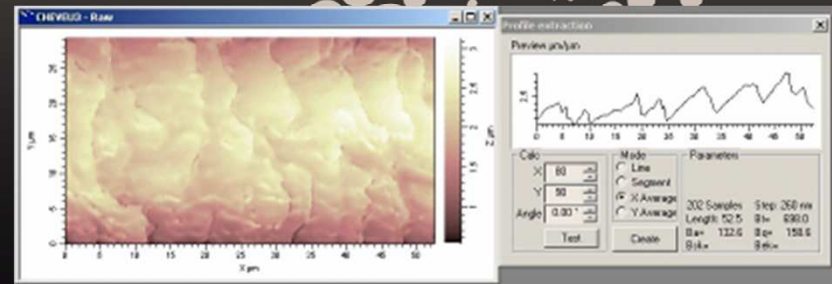
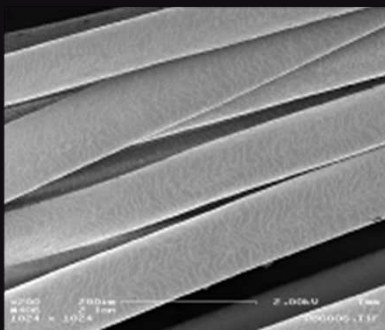
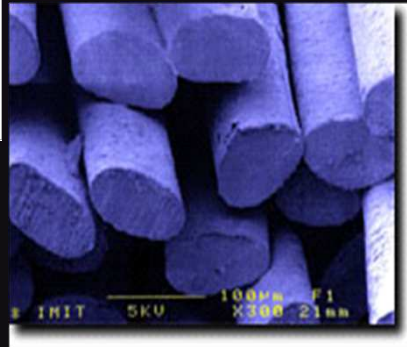
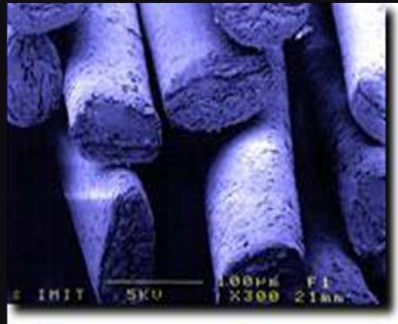
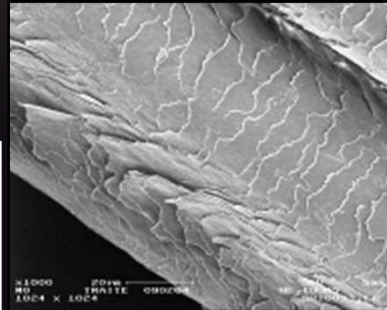
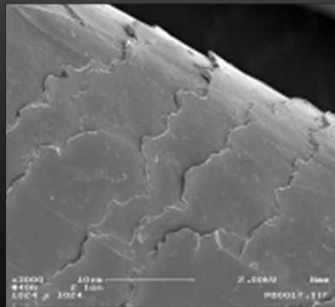


# Anti damaged effect

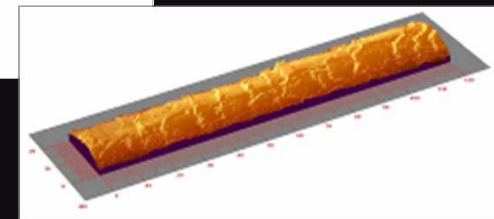




# Smoothing effect By electronic & interferometric microscopy



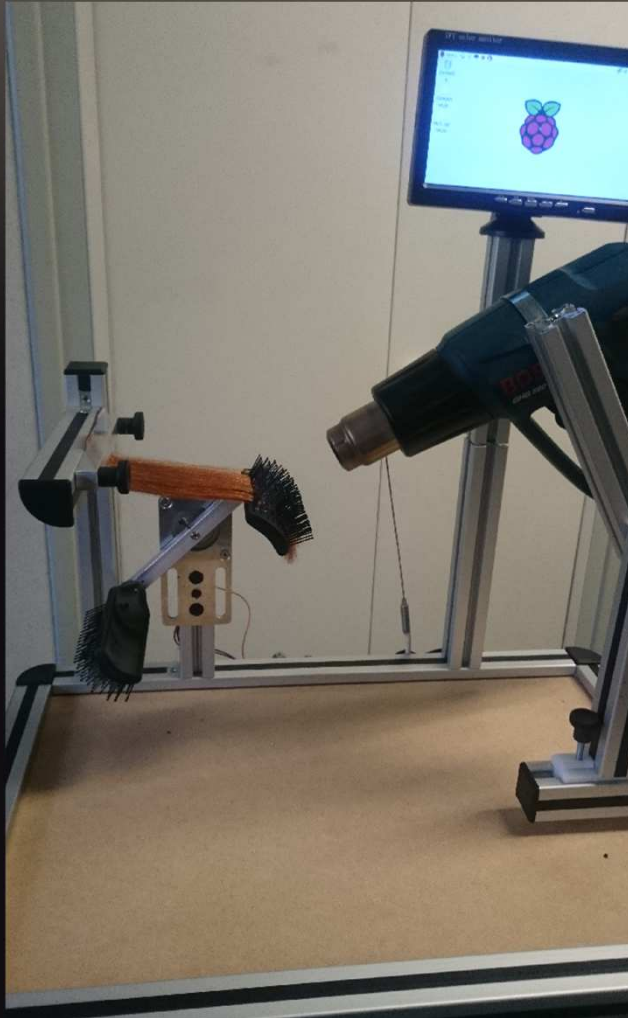
Before treatment





# Anti-breakage and split ends

*Ex vivo*



The results are expressed in % and proportion (x times) of reduction of hair fall or split ends for the treated hair locks in comparison with the non treated hair locks (neutral shampoo only).



# Dryness

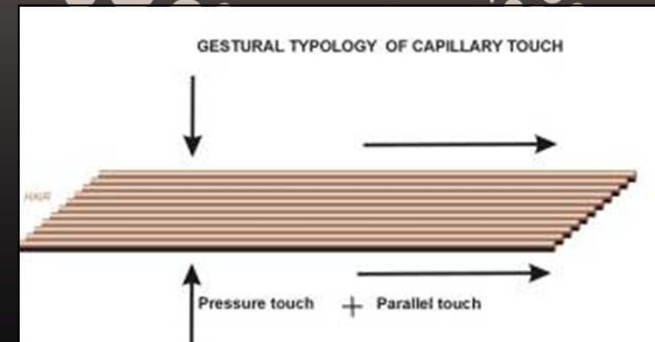




# By sensorial metrology



Expert panels



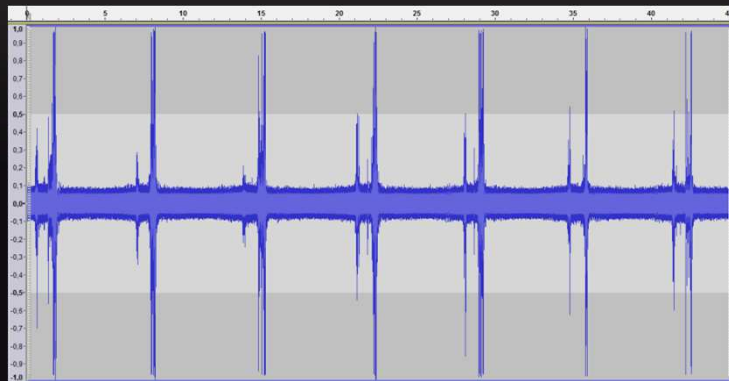
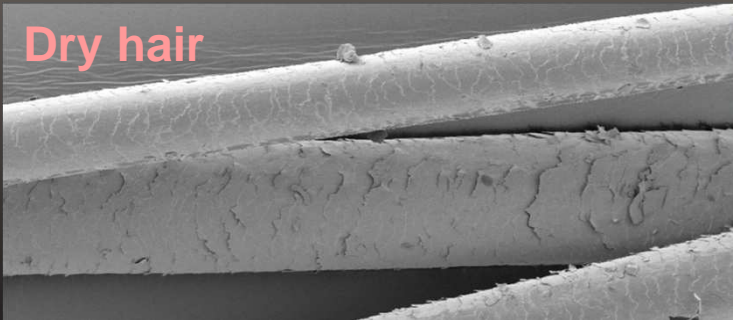
Hair surface evaluation



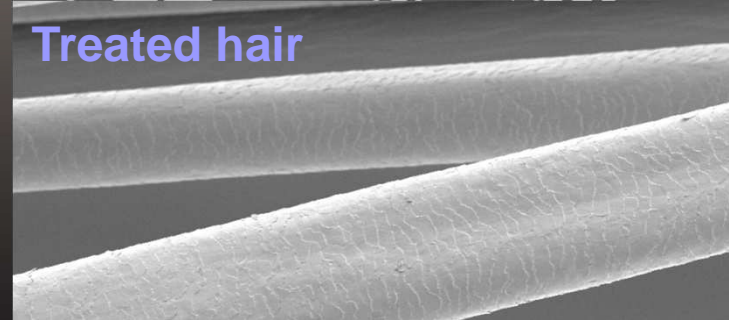
# « Hair Tune » protocol: the sound of hair

**NEW**

**Dry hair**

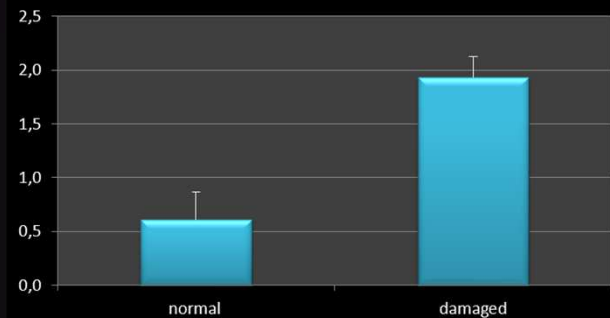


**Treated hair**

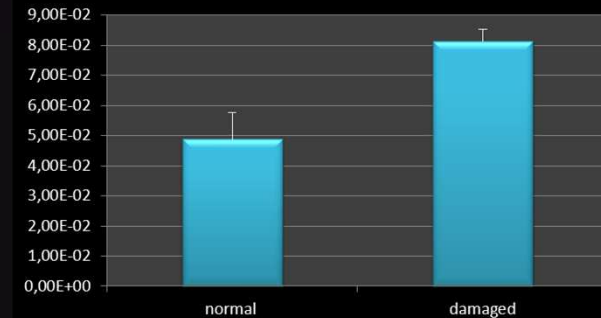


Sound  
parameters

**Duration**



**Amplitude**



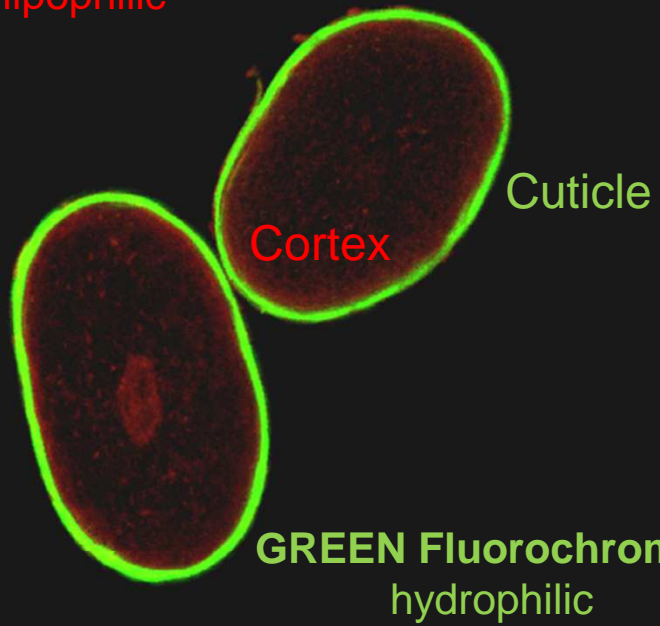


# Permeability





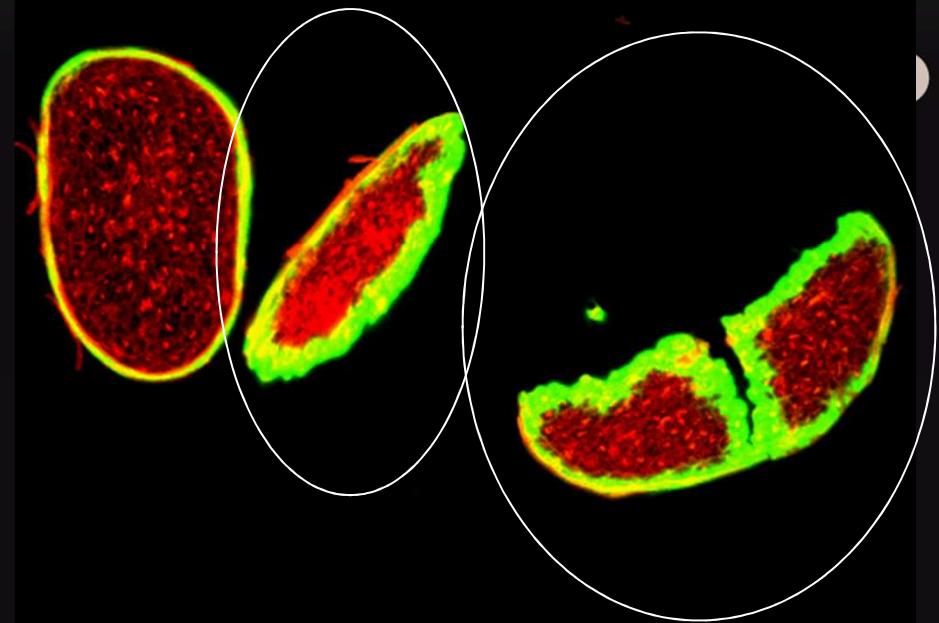
**RED Fluorochrome**  
lipophilic



**GREEN Fluorochrome**  
hydrophilic

By confocal  
microscopy

Damaged hair



Partnership Transderma system - France



# Pollution





# Biochemical dosages

**NEW**

\* Hair or scalp samples in polluted cities  
(**Mumbai, Bangkok or Jakarta**).

\* Possible dosages :

- Hair: levels of elements as heavy metals
- Hair: Lipids peroxydation (MDA)
- Hair: cysteine oxydation
- Scalp: squalene peroxydation

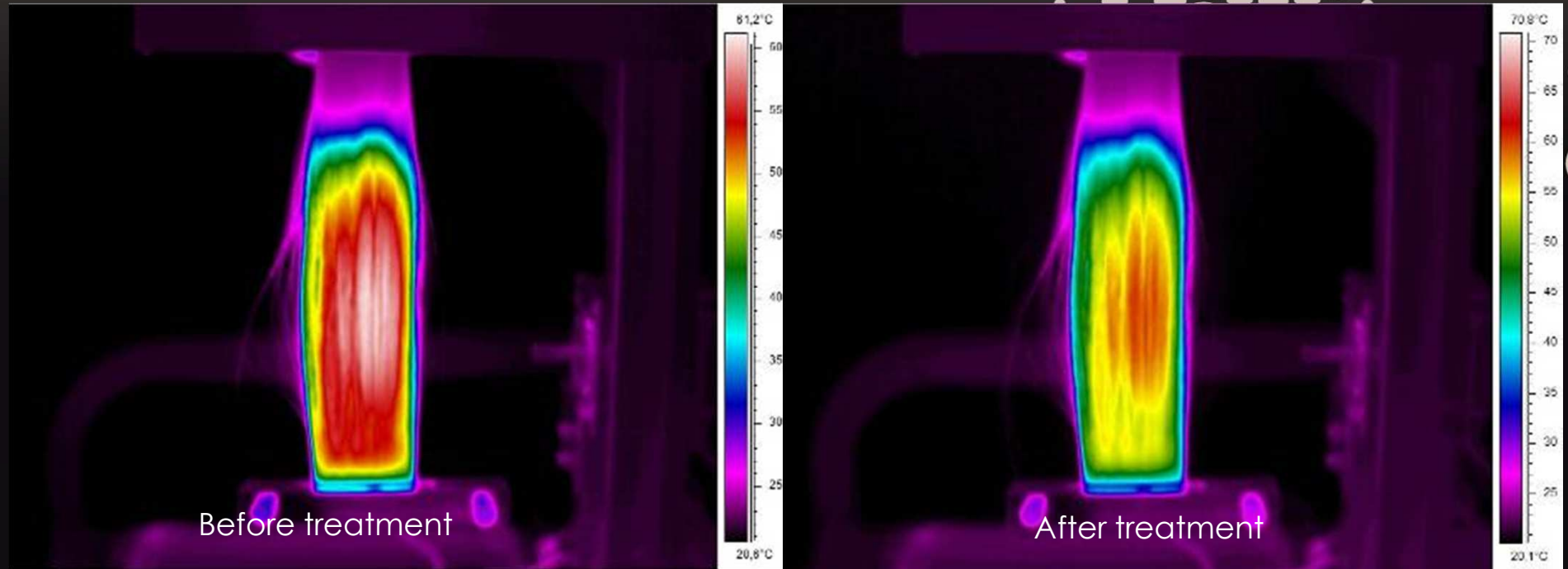
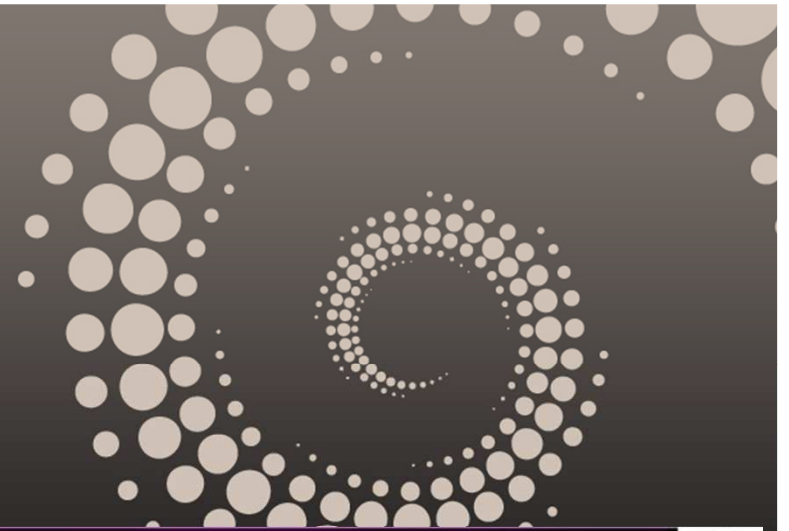


# Heat protection effect





# Heat protection effect By thermal camera





# Anti pollution





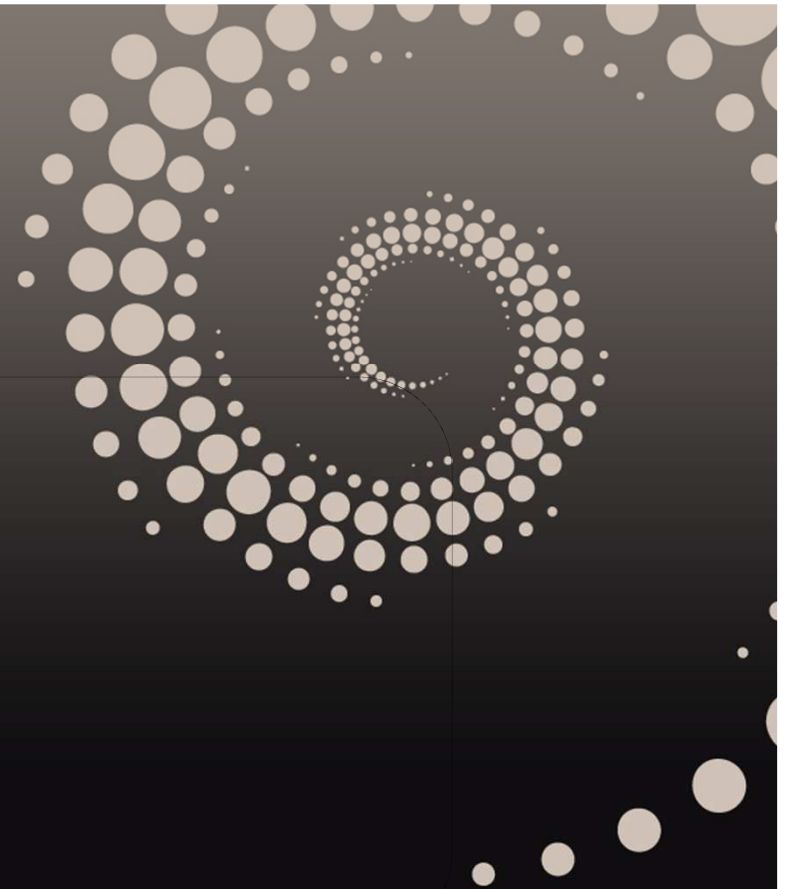
# Biochemical dosages

- \* Hair samples in polluted cities (**Mumbai, Bangkok or Jakarta**).

- \* possible dosage :  
levels of elements as heavy metals : V, Cr, Mn, Fe, Co, Ni, Cu, Zn,  
Pb, As, Si et Ti



# Anti grey hair

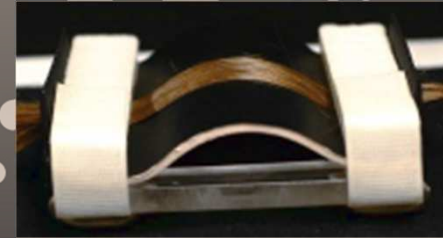




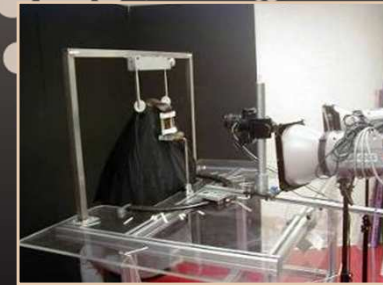


Grey hair

*Ex vivo*



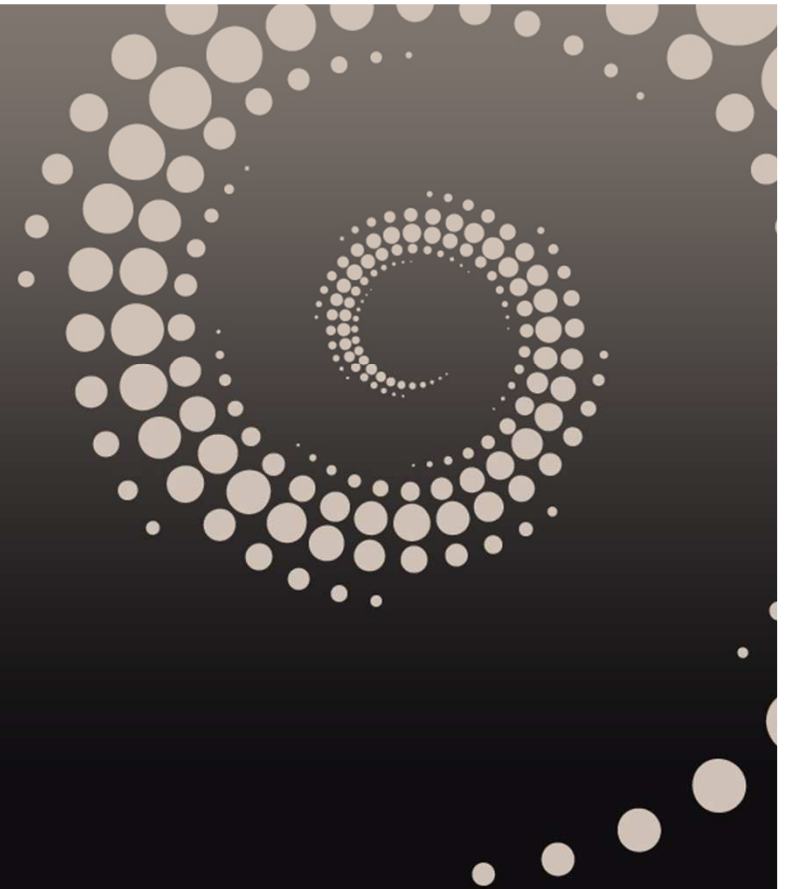
*In vivo*



By image analysis



# Scalp





# Anti-sebum Anti-dandruff



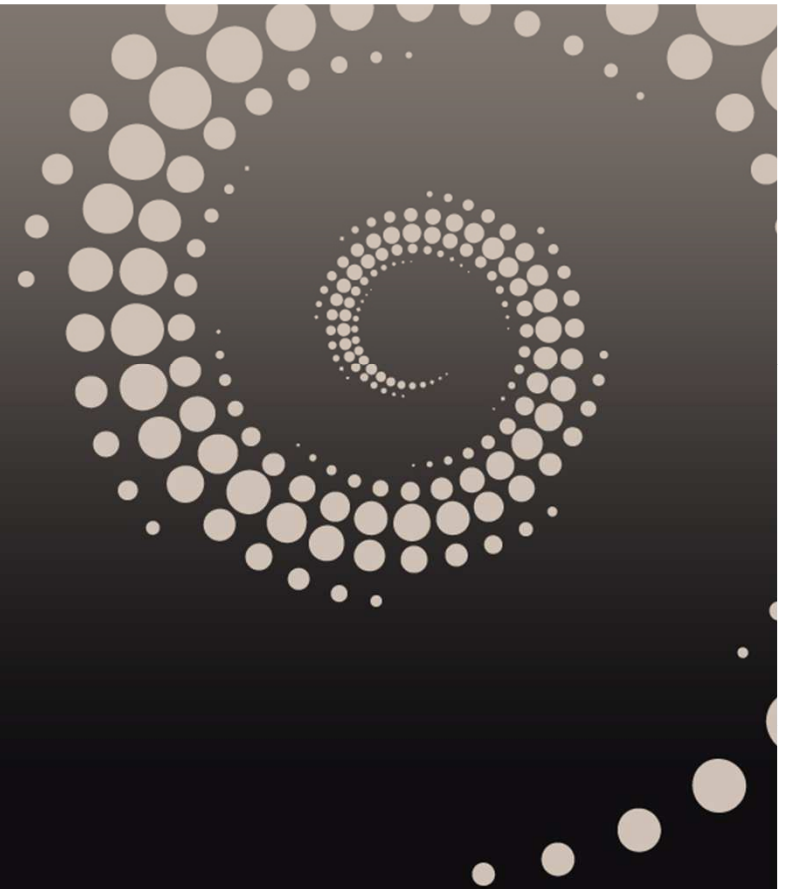


Anti-sebum effect

By Sebumeter

Anti-dandruff effect

By Expert/dermatological  
evaluation



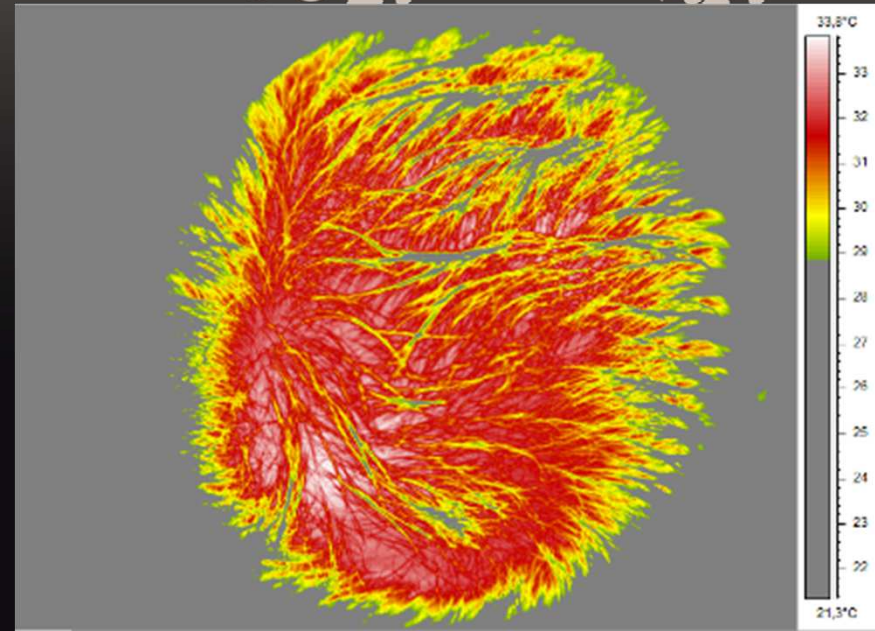
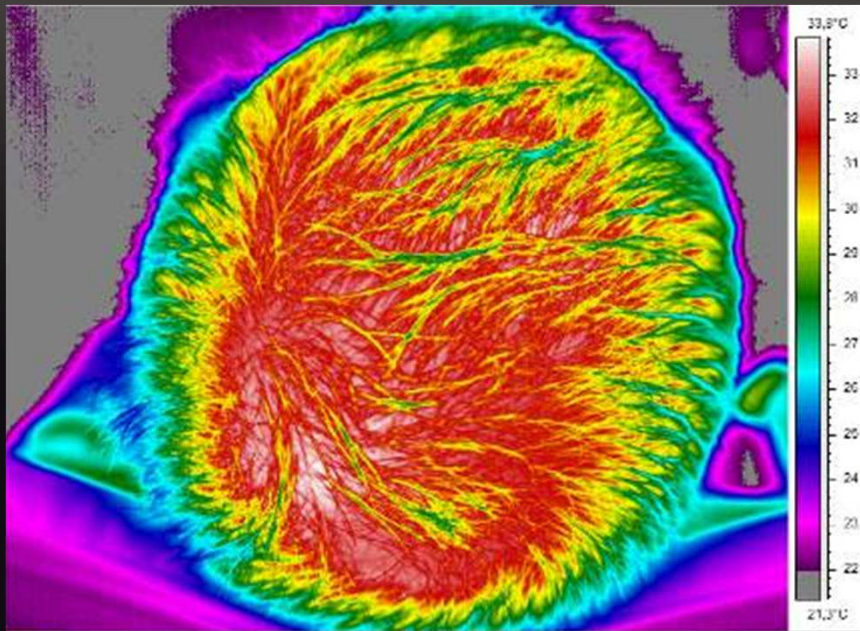


Refreshing  
or Soothing effect





# Refreshing or Soothing effect By thermal camera



AND

- Self Perception questionnaire
- Dermatological evaluation



# Styling





# Combing effect



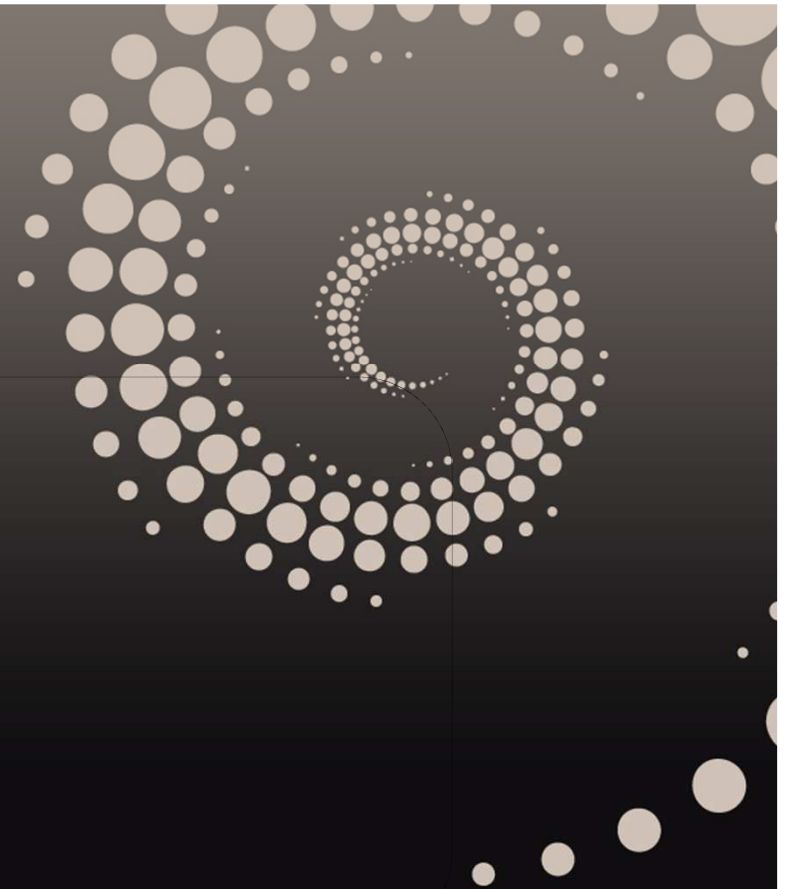


# Combing properties By Dia-stron MTT175



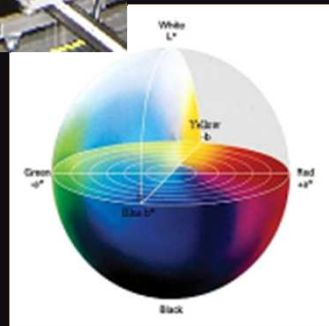
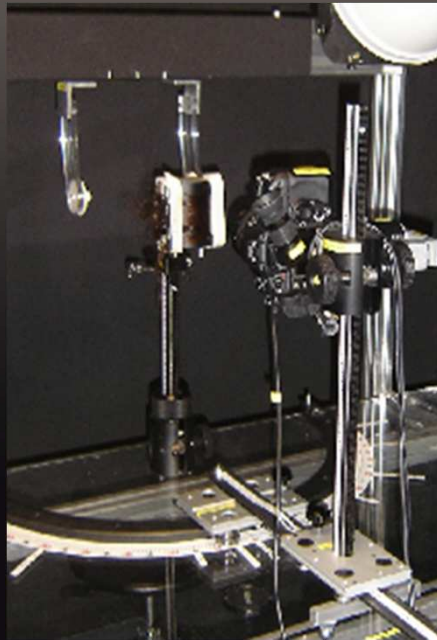


# Color protection



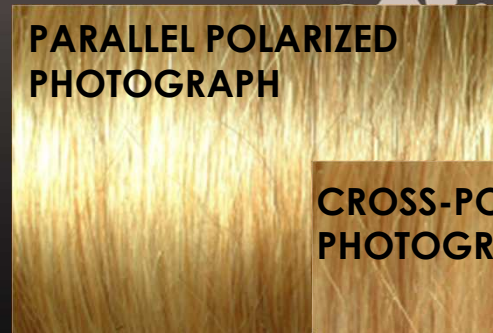


# Color protection By image analysis



$$E\Delta$$

PARALLEL POLARIZED  
PHOTOGRAPH

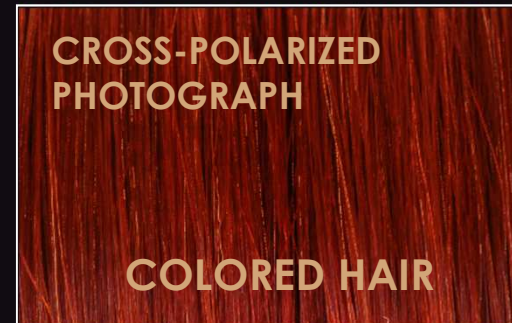


CROSS-POLARIZED  
PHOTOGRAPH



CROSS-POLARIZED  
PHOTOGRAPH

COLORED HAIR





# Straightening effect

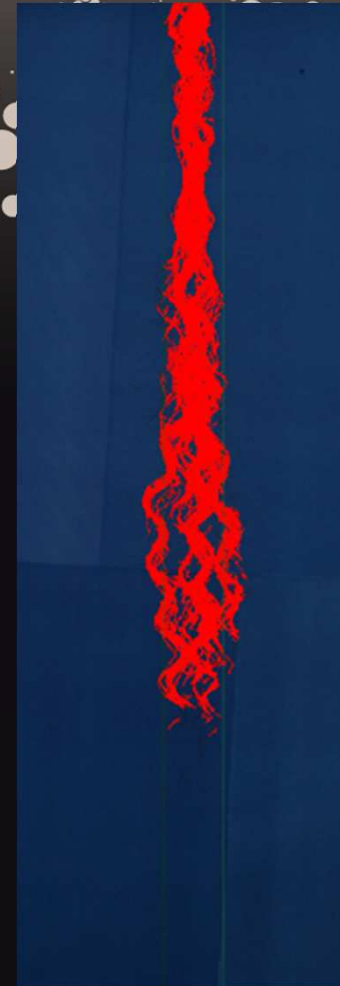
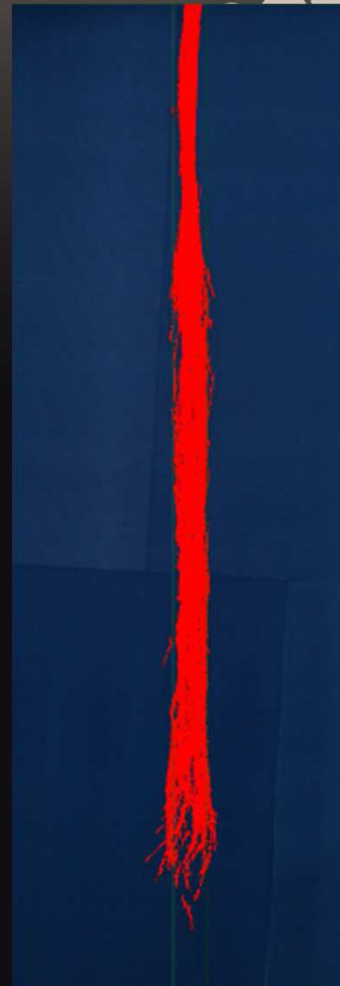
## Curling effect





# Straightening – Curling effect

## By image analysis





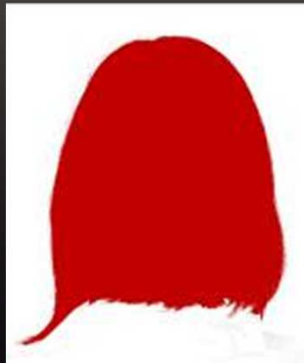
# Volumizing effect



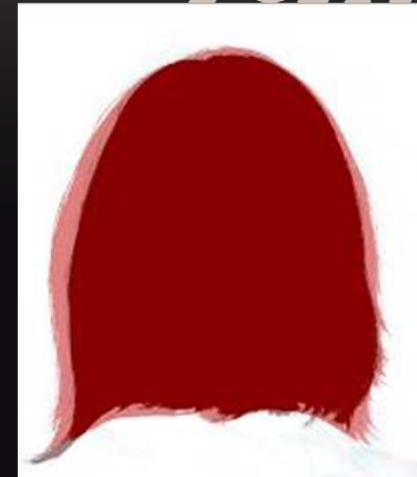
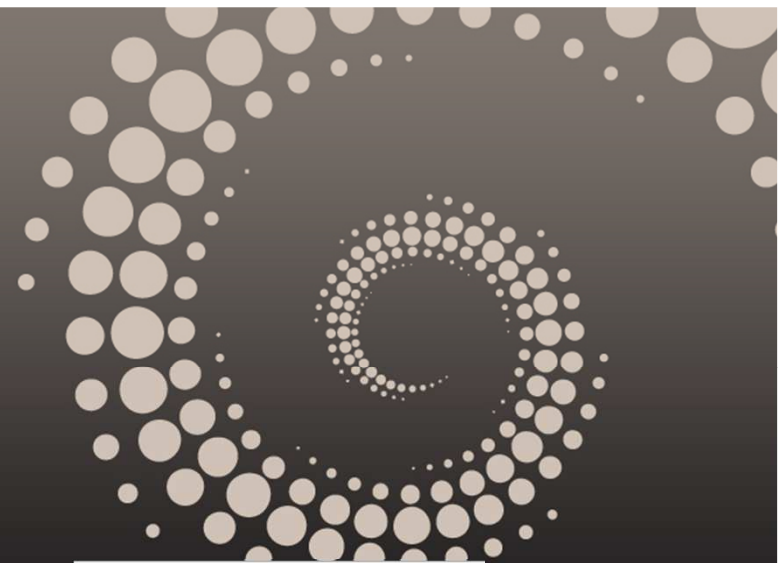
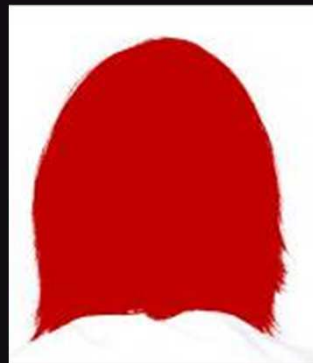


# Volumizing effect By image analysis

TO



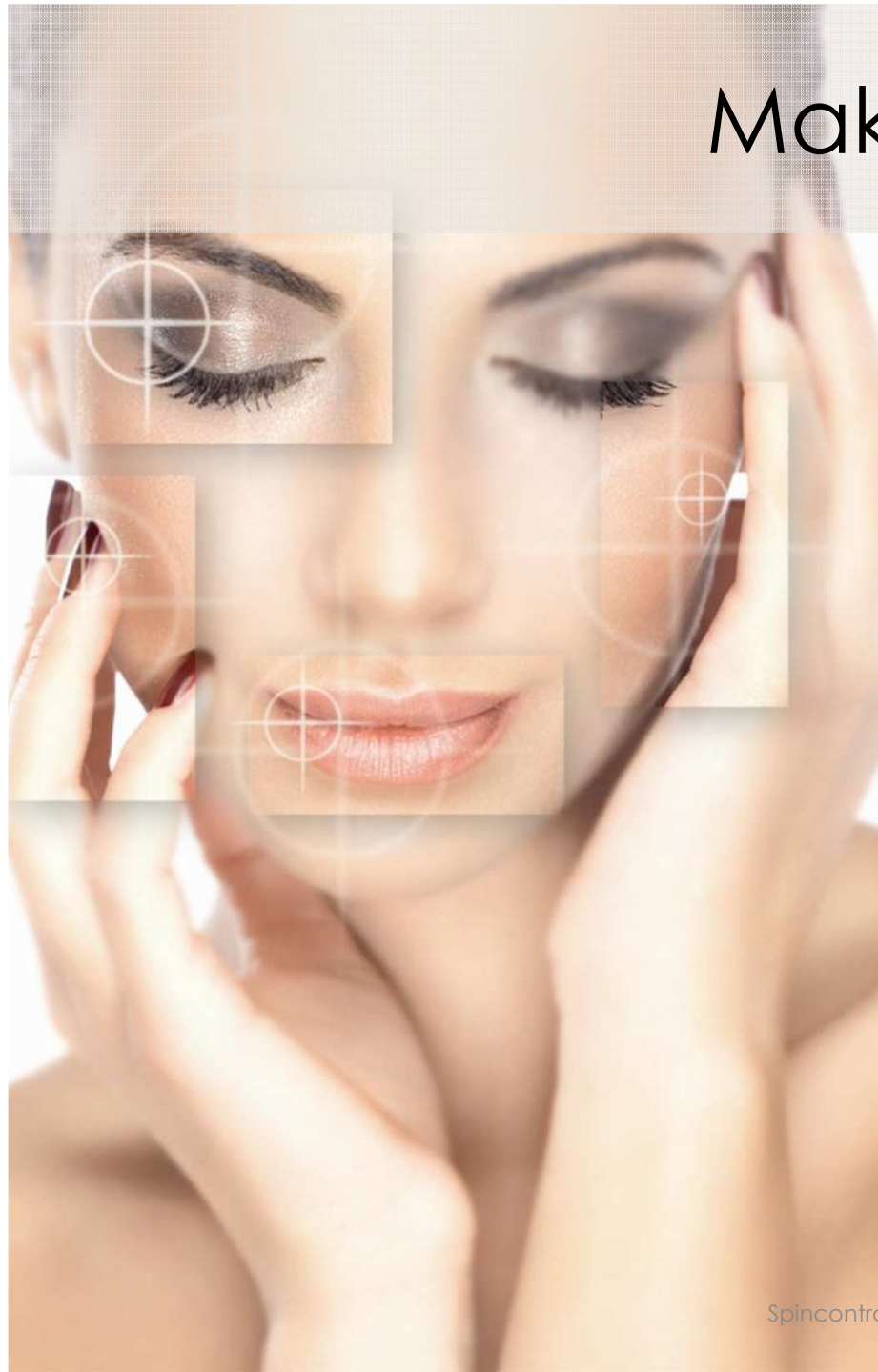
T after application of the product



Superposition of the  
Before/After effect



# Make-up



## Mascara

- Curling
- Lengthening
- Separation
- Volume
- Waterproof

## Foundation

- Complexion homogeneity
- Covering effect
- Matifying effect

## Nailpolish

- "streakfree " effect
- Lasting duration

## Lipstick

- Sheen
- No transfer
- Relief
- Lasting duration
- Moisturizing

And make-up removal

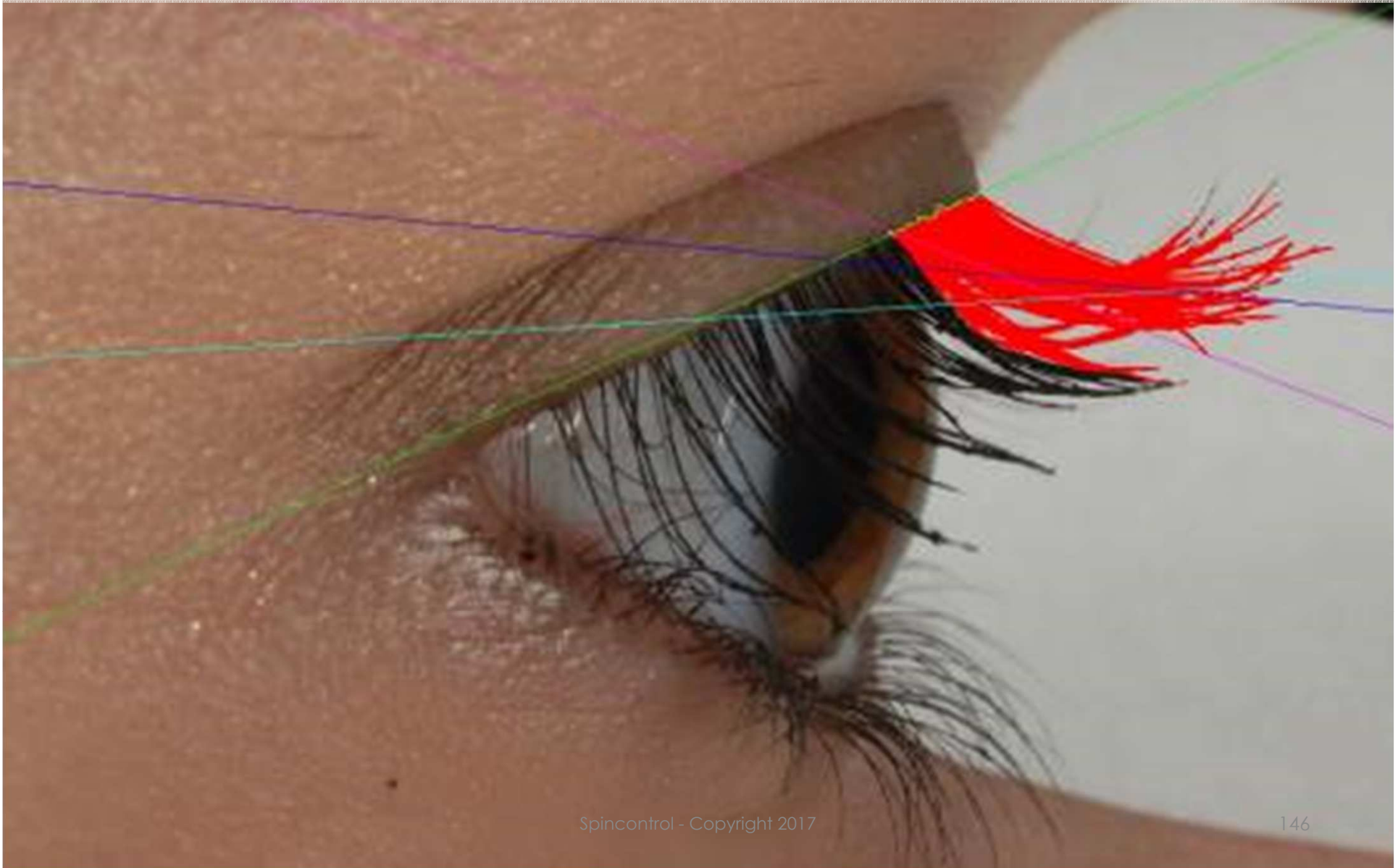




# Mascara

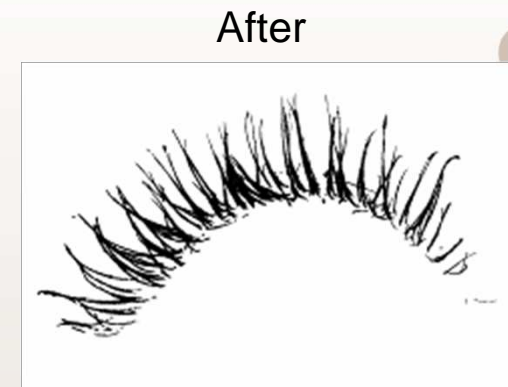


# Image analysis : curling measurement



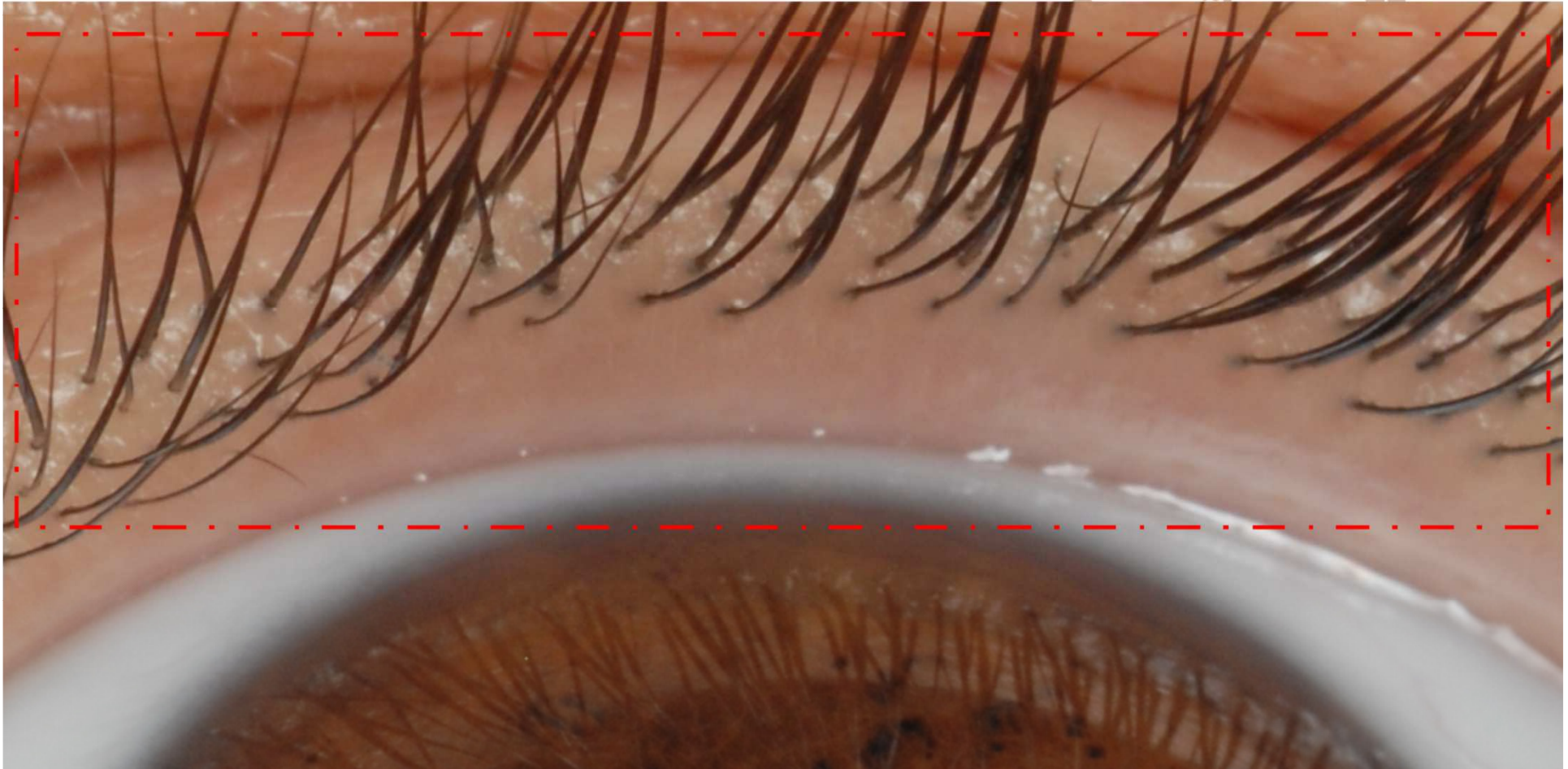


# Image analysis : Lengthening, volumizing and separation measurements





# Image analysis : lash density





# Clinical evaluation on photos

## Long lasting effect



**Before**

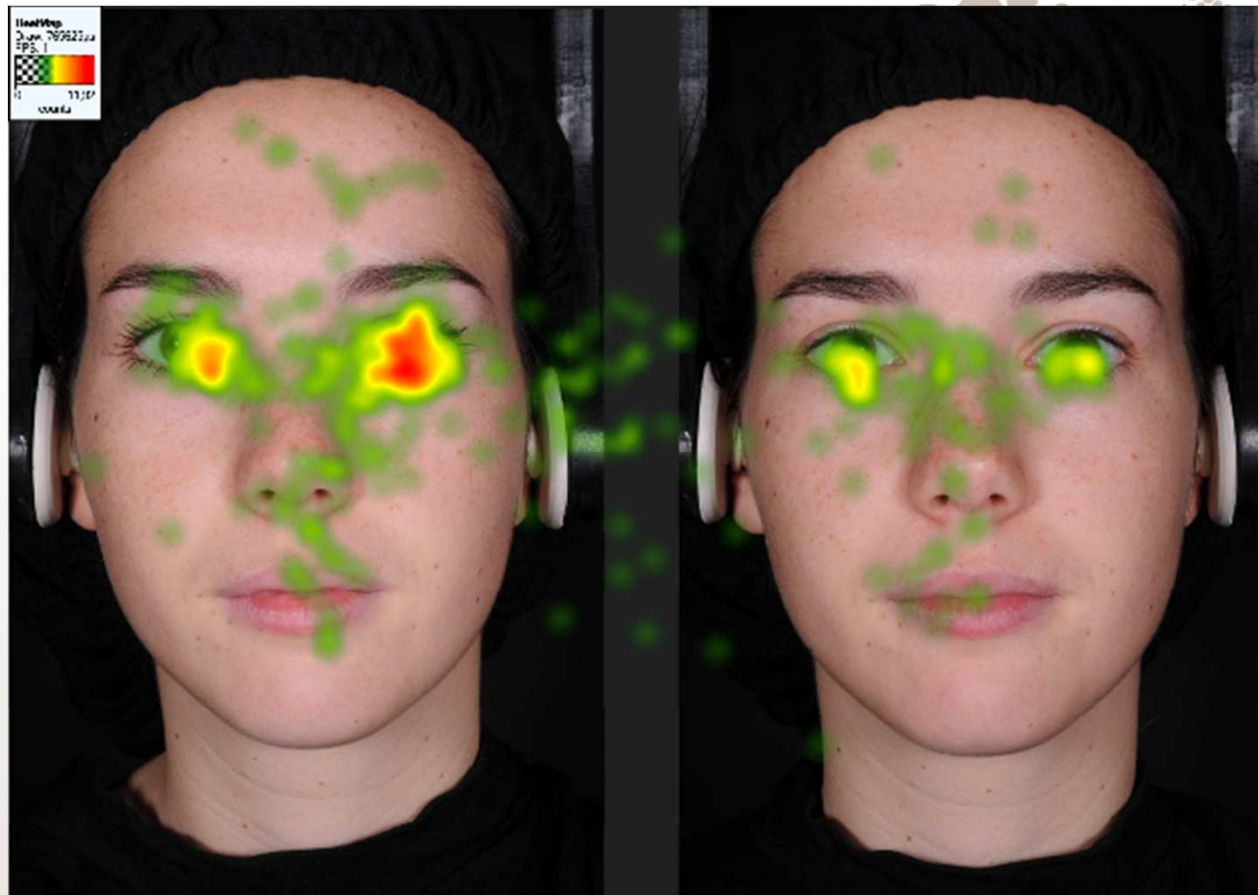
**After**

**n hours**



# Make-up Impact

## EYE-TRACKING



With make-up

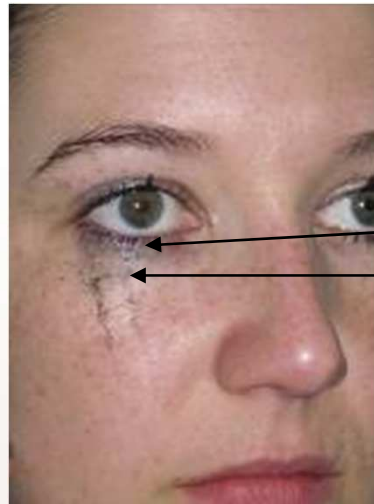
Without make-up



# Clinical evaluation

## Waterproof/water resistant effect

Position of the subject above the eye washes



### Evaluation of 3 descriptors :

- mascara flakes
- mascara smudges
- mascara transfer to a cotton and to the eyelid



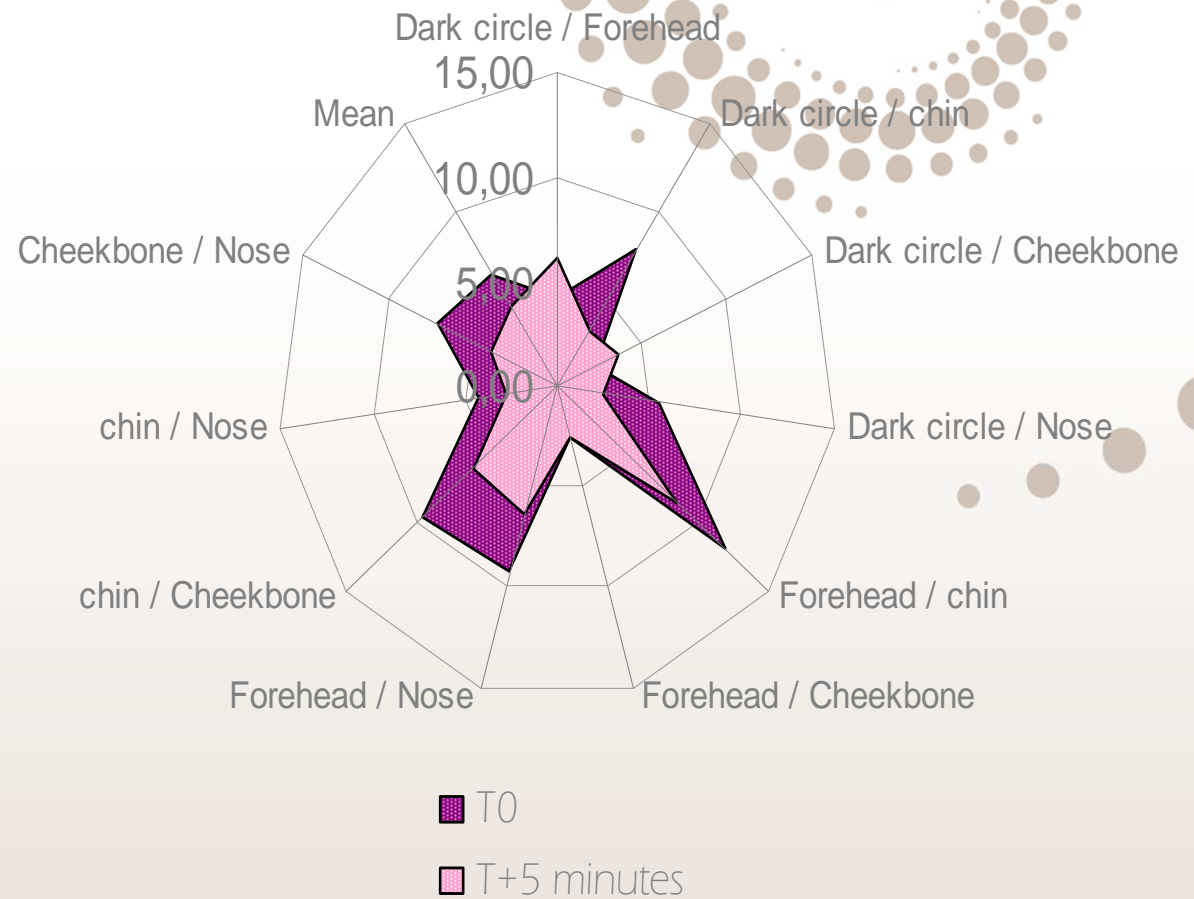
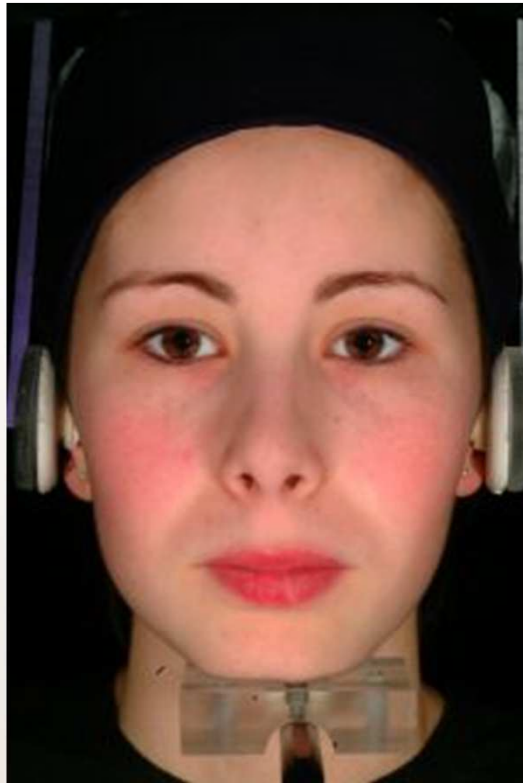




# Foundation



# Image analysis : complexion homogeneity (colour)





# Image analysis : complexion homogeneity (texture)



Before



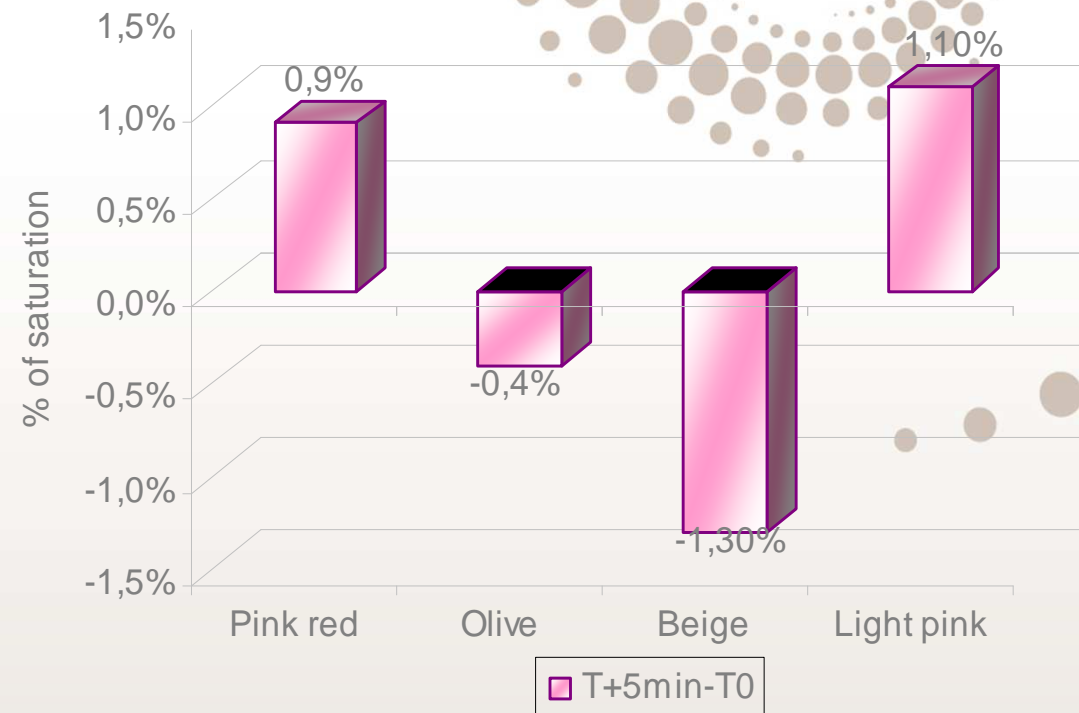
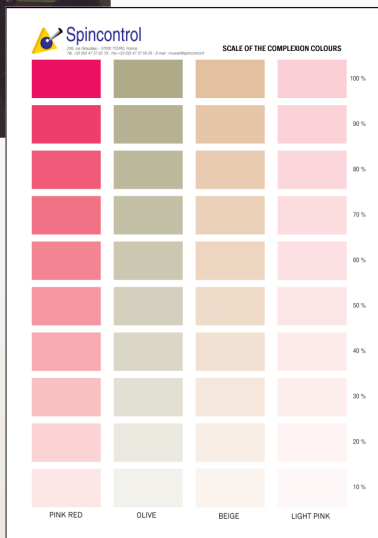
After

The parametric image analysis allows us to extract a parameter characterizing the homogeneity.

An increase in this parameter corresponds to an improvement of the facial skin homogeneity after the foundation application and later on allows an assessment of the covering effect of the foundation.



# CLBT method : complexion radiance





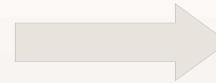
# Image analysis: matifying effect



Parallel polarized  
photograph



Cross-polarized  
photograph



Difference between grey level photographs  
= only the skin shininess (negative image)



# Clinical evaluation on photos

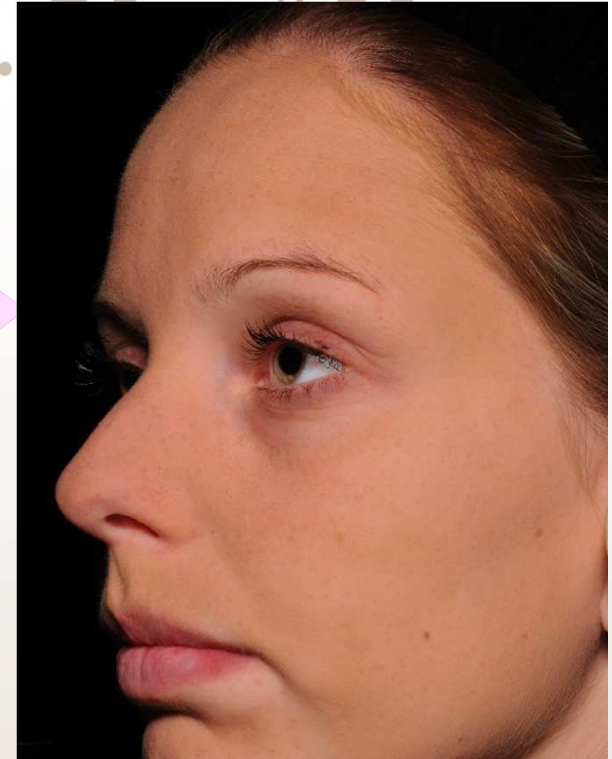
## Long lasting effect



Before



After



n hours

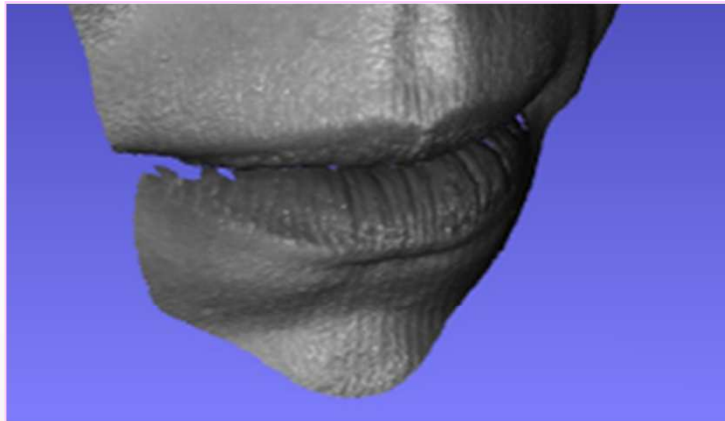




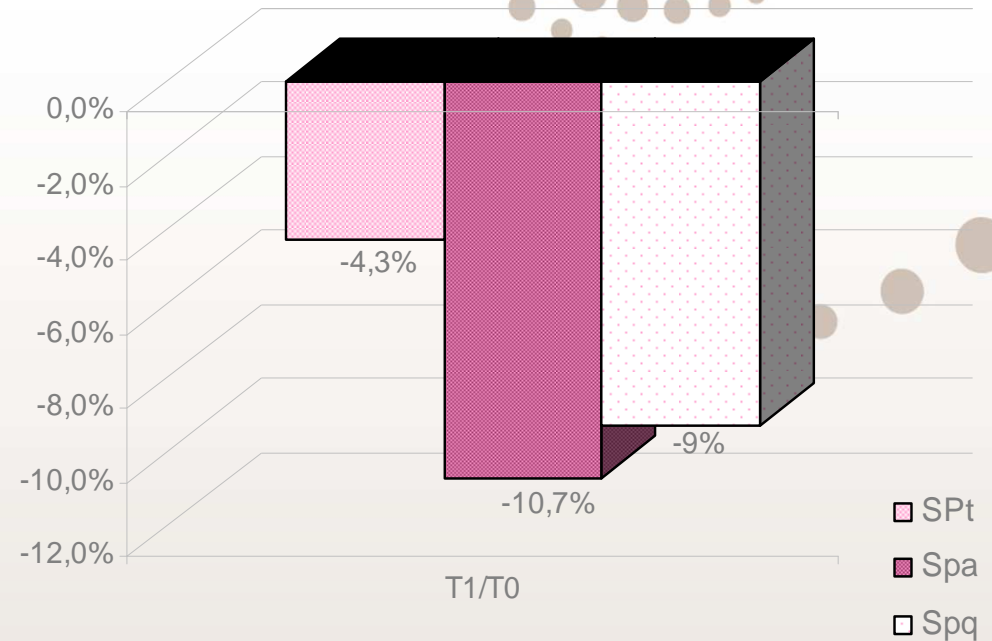
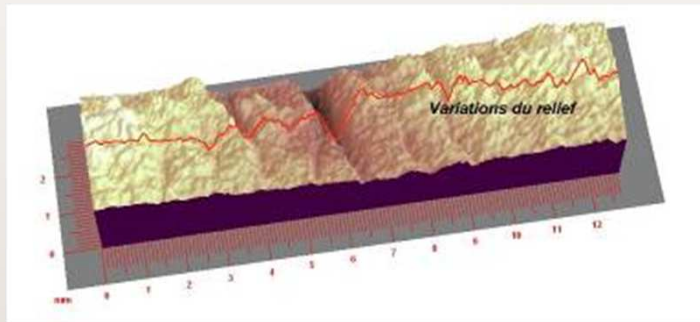
# Lipstick



# Fringe projection : lip relief analysis



*In vivo* lips acquisition, in 3 dimensions obtained with the Optocat software (Breuckmann, Germany- Eotech, France)



Results example : lip roughness N minutes after lipstick application.



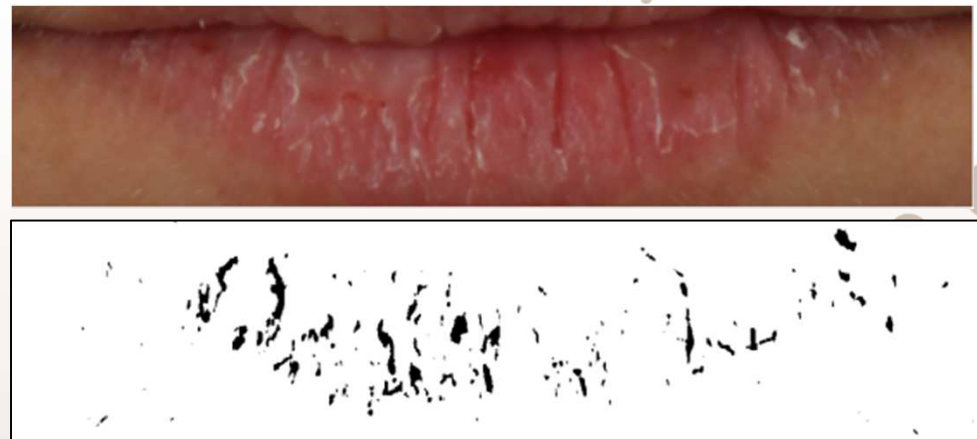
# Moisturizing effect

BY CORNEOMETER



Acquisition on lips

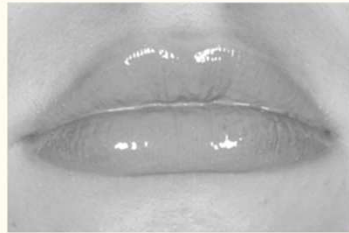
BY IMAGE ANALYSIS





# Clinical evaluation : long lasting effect (shininess)

Notation de l'effet miroir ou effet mouillé d'un rouge à lèvres. Il faut évaluer l'intensité de l'effet et non la quantité.



**GRADE 10**  
Effet miroir/mouillé maximum



**GRADE 8**  
L'effet miroir s'atténue légèrement



**GRADE 6**  
Reste un léger effet mouillé, la brillance se disperse



**GRADE 4**  
Disparition pratiquement totale de l'effet mouillé



**GRADE 2**  
Disparition de l'effet miroir/mouillé, reste une légère brillance diffuse



**GRADE 0**  
Absence totale de brillance

**SPINCONTROL®**  
au cœur de la peau...



# Clinical evaluation : long lasting effect (shininess)

## ECHELLE BRILLANCE : EFFET IRISE

Notation de la brillance d'un rouge à lèvres. Il faut évaluer l'intensité de l'effet et non la quantité.



GRADE 10

L'intensité de la brillance est au maximum



GRADE 8

Diminution de la brillance qui se diffuse



GRADE 6

Reste une légère brillance irisée



GRADE 4

La brillance se matifie



GRADE 2

Absence presque totale de l'effet irisé



GRADE 0

Absence totale de la brillance irisée



# Clinical evaluation : long lasting effect (colour homogeneity)

## ECHELLE DE L'HOMOGENEITE DE LA COULEUR

Notation de la perte non homogène de la couleur d'un rouge à lèvres.



**GRADE 10**  
Intensité maximum de la couleur



**GRADE 8**  
Légère perte non homogène de la couleur



**GRADE 6**  
Perte modérée de la couleur avec début d'apparition des lèvres naturelles



**GRADE 4**  
Perte importante non homogène de la couleur avec apparition sur certaines zones des lèvres naturelles



**GRADE 2**  
Les zones où les lèvres naturelles apparaissent sont plus importantes que les zones colorées par le rouge à lèvres



**GRADE 0**  
Absence totale de matière

**SPINCONTROL®**  
au cœur de la peau...



# Clinical evaluation : long lasting effect (migration)

## ECHELLE DE LA MIGRATION

Notation de la migration d'un rouge à lèvres



**GRADE 0**  
Contours de la bouche parfaitement dessinés



**GRADE 2**  
Léger effet filant



**GRADE 4**  
Effet filant modéré



**GRADE 6**  
Effet filant assez important



**GRADE 8**  
Effet filant très important



**GRADE 10**  
Effet filant très important sur l'ensemble des contours ainsi qu'un effet de matière qui se diffuse autour des lèvres

**SPINCONTROL®**  
*au cœur de la peau...*



# Clinical evaluation : long lasting effect (color)

## ÉCHELLE DE LA TENUE DE LA COULEUR

Notation de l'intensité de la couleur d'un rouge à lèvres.



GRADE 10

Intensité maximum de la couleur du rouge à lèvres



GRADE 8

Légère diminution de l'intensité de la couleur sur l'ensemble de la bouche



GRADE 6

Perte modérée de l'intensité de la couleur



GRADE 4

Perte importante de la couleur



GRADE 2

Matière pratiquement disparue, apparition de la couleur des lèvres



GRADE 0

Absence totale de couleur, lèvres naturelles

**SPINCONTROL®**  
au cœur de la peau...

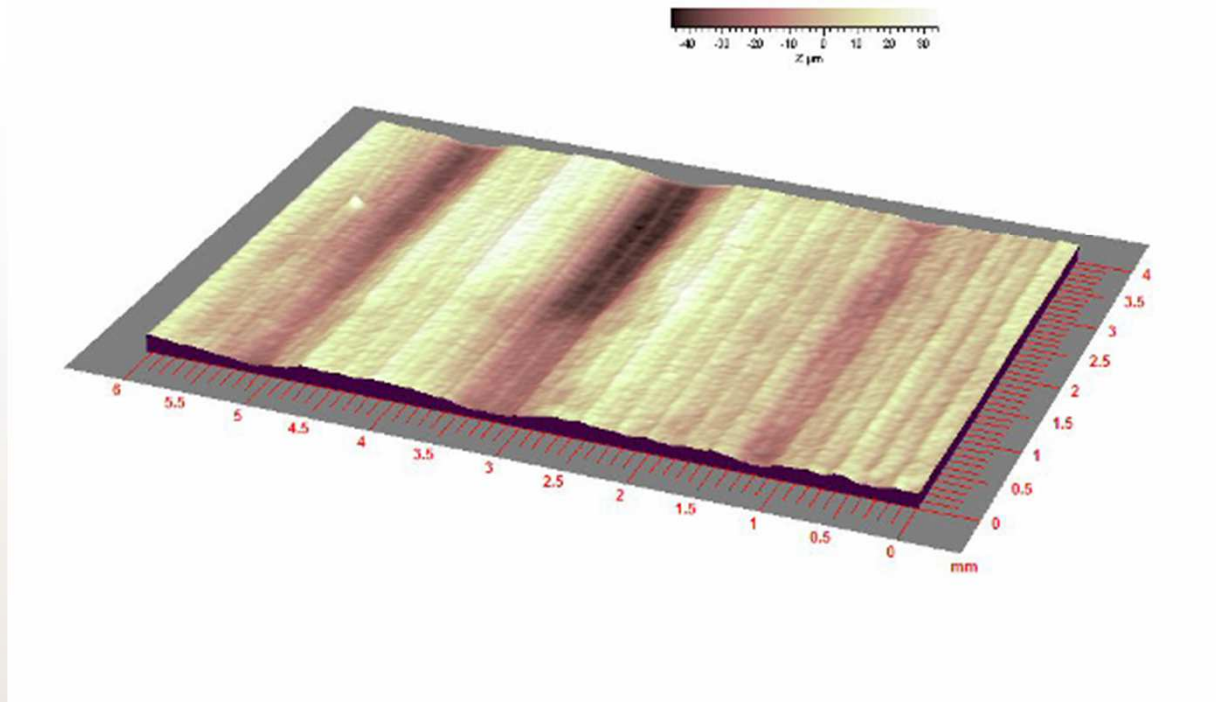




# Nailpolish

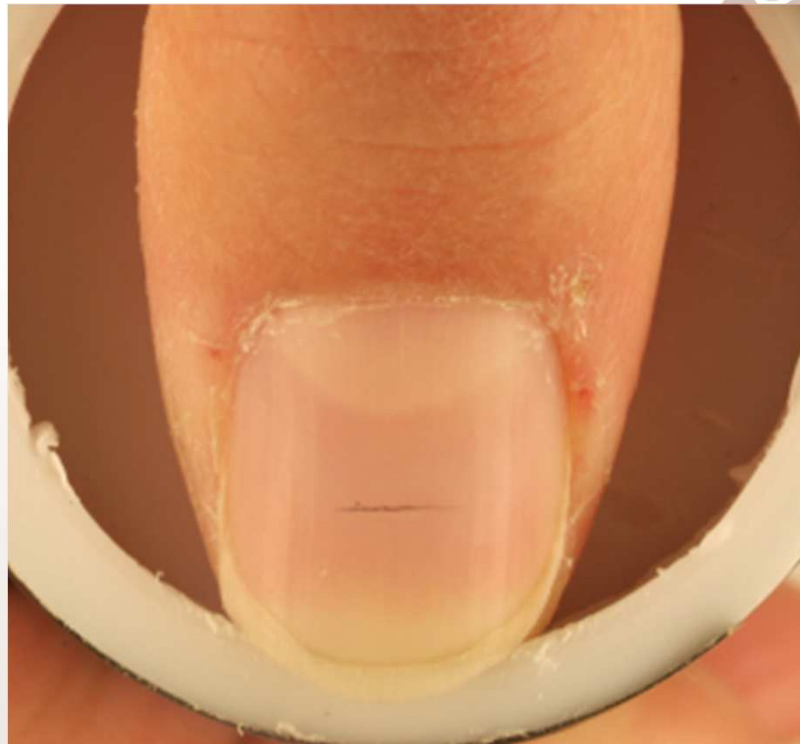


# Fringe projection : roughness evaluation (on replicas)





# Image analysis : growth measurements





# Clinical evaluation : wear & chipping measurements



0

Scale 0 to 8



Ex: wear 6  
Chipping 7





# Make-up removal



# Image analysis







# Biomedical studies



# Biomedical studies

-ANSM (the French Health Products Safety Agency) authorized Spincontrol to carry out clinical and biomedical studies for:

- Cosmetic products
- Nutritional supplements
- Medical devices (Class 1 and 2A)

- Studies are conducted according to the GCP/ICH E6
- Support in the writing of the « investigator's brochure »
- Assistance in submitting to the Independent Ethic Committee (CEI) and the ANSM.





# Food supplements

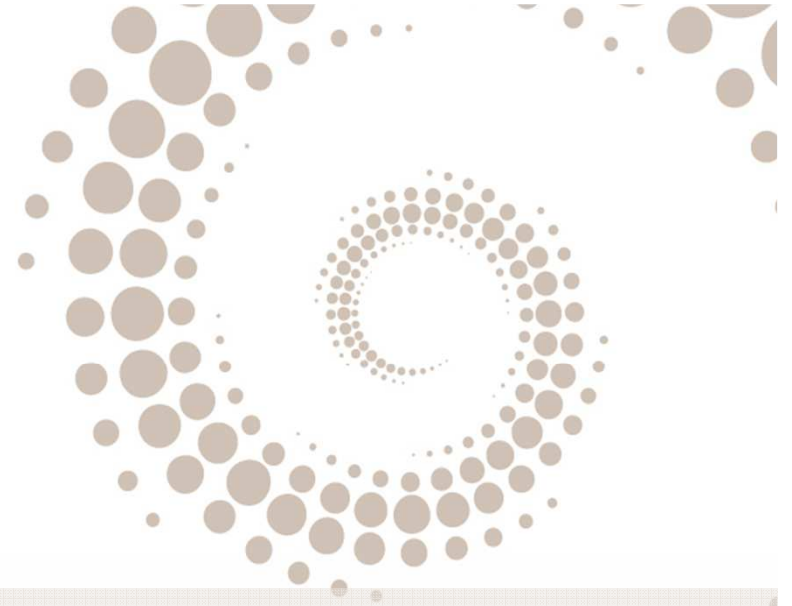


# Food supplements' allegations



- Slimness
- Beauty of the skin (anti-ageing, anti dark-circles, moisturizing, firming...)
- Against heavy legs
- Study of the hair & nails
- Satiety
- Anti-sleeping troubles
- Anti-stress & dynamising
- Painkiller





# Dermocosmetics' allegations



# Dermocosmetics' allegations

- Anti-irritant effect (SLS patches)
- Each claimed cosmetic product on a specific panel (sensitive skin, atopic skin...)

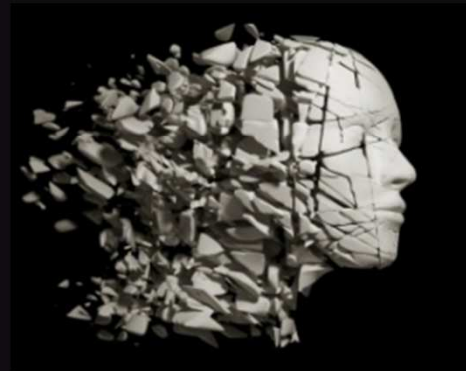


*“Our emotions often dictate our decisions”*

*“we make emotional decisions and justify them  
rationally”*

## Emotion claims

*In partnership with*  
Emospin





# Expertise and services

- Product efficiency - Claim validity
  - E.g. Objectivation of emotional responses
- Product design and development
  - E.g. Characterization of emotional signature of a specific product and/or its interaction with specific consumers
- Consumer insight
  - E.g. Objectivation of non-conscious behavioral and emotional processes
  - E.g. Typologies of consumers (interindividual differences)
  - E.g. Transcultural comparisons (intercultural variations)

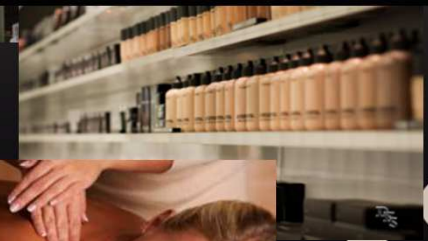




# Studying emotions : what for ?



EMOTION





# Examples of claims

Marketing efficiency: What is the contribution of packaging in the emotional experience associated with a product?

Consumers' behavior: Impulsive buying or reflexive thought ?

Pleasure and well-being: What is the form of hedonic response associated with the use of skincare products, make-up, perfumes : Relaxing, stimulating quality of life, self esteem .....

Does my product improve the sleepiness?

Etc....



# How to access emotions ?

Cognition



Psychometric  
measures

Physiological



Visceral  
component

Behaviour



Behavioral /  
ethological  
analyses





# Verbal methods

## Subjective component:

- Validated questionnaires
- Lickert-type scales
- Neurocognitive tests
- Implicit associations
- Structuration of free speech (text mining)

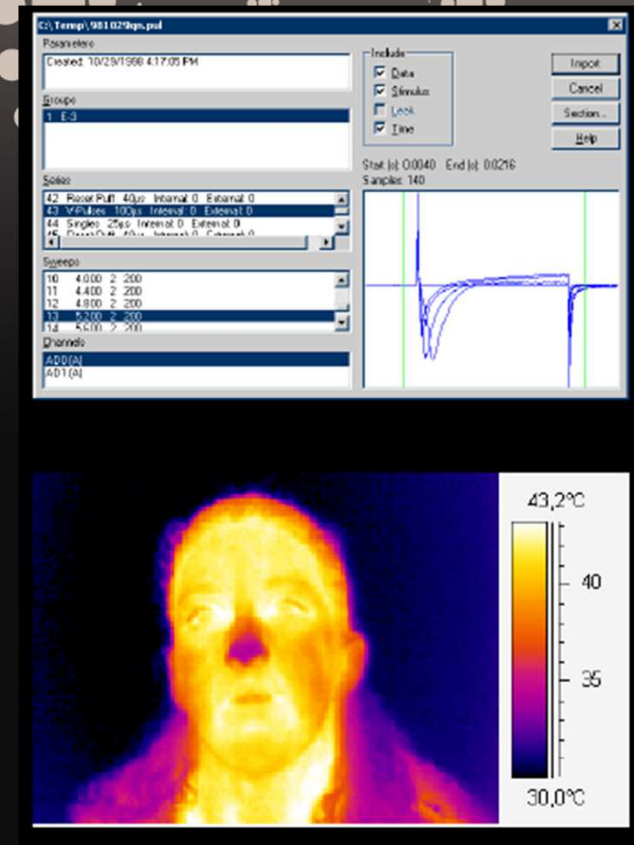




# Psychophysiological methods

## Visceral component:

- Electrodermal response (i.e. skin conductance)
- Skin temperature
- Cardiac activity (e.g. HR, HRV, BP,...)
- Respiratory rate
- Mydriasis
- Hormonal levels
- Electromyography
- Electroencephalography
- Brain imaging





# Behavioral methods

Gesture



Facial expressions



Eye tracking



Specific acts



Posture



Vocalizations



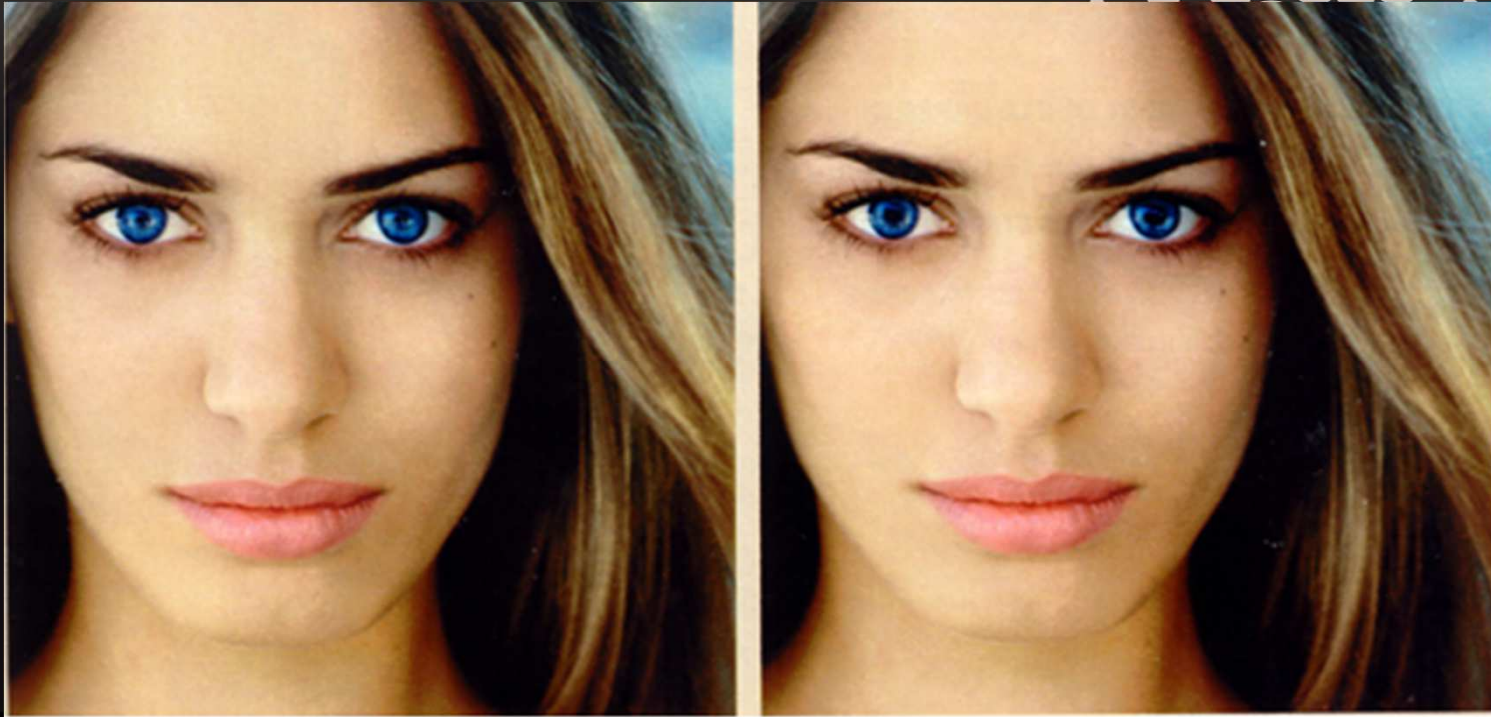
Behavioral analyses





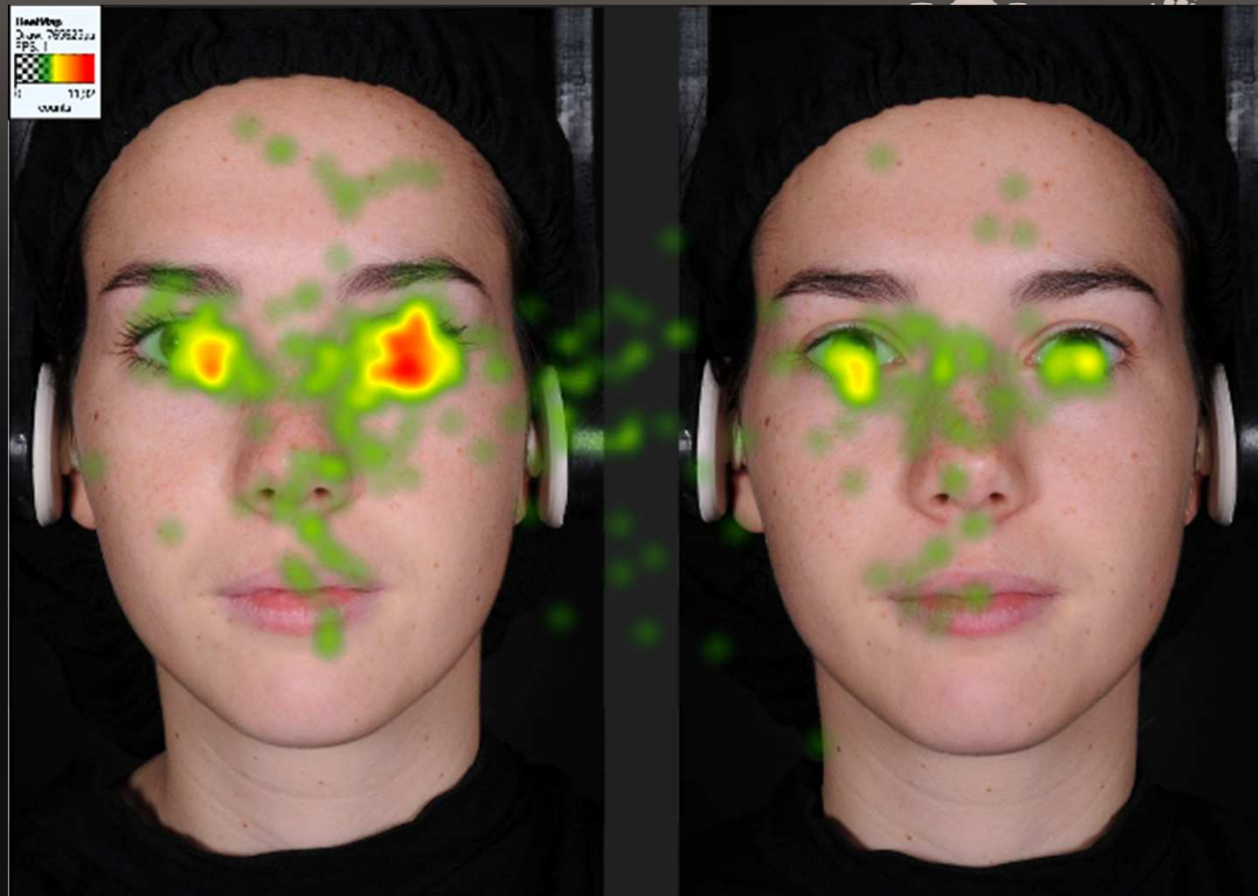
# Exemple : Mydriasis

Mydriasis can be considered a physiological marker of emotional arousal (increase in pupil diameter)





# Exemple : Eye-tracking

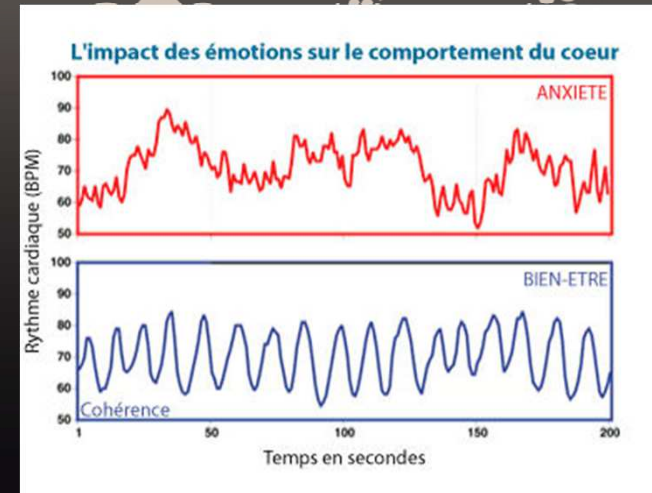


With make-up

Without make-up



# Example : Heart rate variation



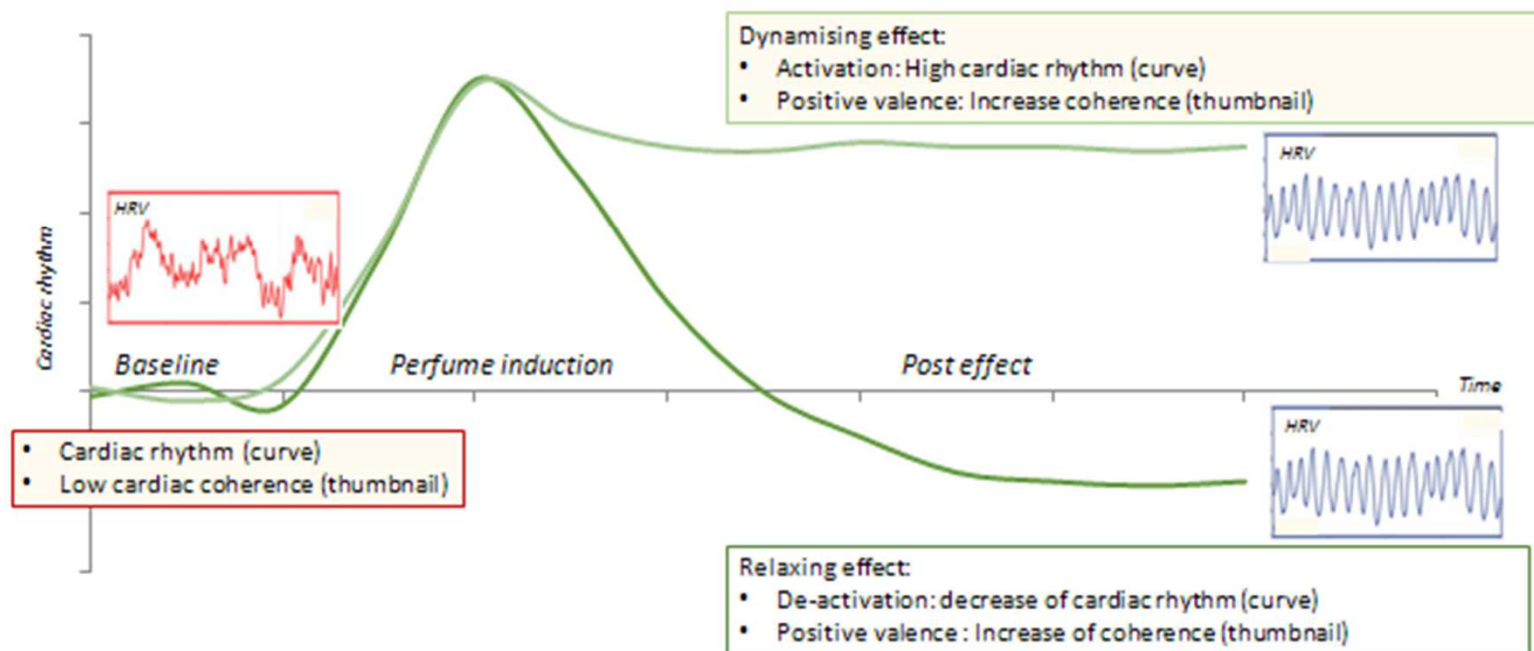
## Cardiac rhythm / HRV

- \* Heart rate variability reflects the inner emotional states and stress. Negative emotions lead to increased disorder in the heart's rhythms
- \* In contrast, positive emotions create increased harmony and coherence in heart rhythms

















































# Example

## Example of cardiac parameters evolution





# Example : Facial expressions analysis

AU1 Inner Brow Raiser		AU41 Lid Droop	
AU2 Outer Brow Raiser		AU42 Slit	
AU4 Brow Lowerer		AU43 Eyes Closed	
AU5 Upper Lid Raiser		AU44 Squint	
AU6 Cheek Raiser		AU45 Blink	
AU7 Lid Tighener		AU46 Wink	
AU9 Nose Wrinkler		AU51 Head Turn Left	
AU10 Upper Lip Raiser		AU52 Head Turn Right	
AU11 Nasolabial Fold I		AU53 Head Up	
AU12 Lip Corner Puller		AU54 Head Down	
AU13 Cheek Puffer		AU55 Head Tilt Left	
AU14 Dimpler		AU56 Head Tilt Right	
AU15 Lip Corner		AU57 Head Forward	
AU16 Lower Lip Depressor		AU58 Head Back	
AU17 Chin Raiser		AU61 Eyes Turn Left	
AU18 Lip Pucker		AU62 Eyes Turn right	
AU19 Tongue out		AU63 Eyes Up	
AU20 Lip Stretcher		AU64 Eyes Down	
AU21 Neck Tighener		AU65 Walleye	
AU22 Lip Funneler		AU66 Crossed eyes	
AU23 Lip Tighener			
AU24 Lip Pressor			
AU25 Lips Part			
AU26 Jaw Drop			
AU27 Mouth Stretch			
AU28 Lip Suck			



Facial expressions analysis with the Facial Action Coding System FACS  
(*Facial Action Coding System*, Ekman & Friesen, 1978; Ekman, Friesen & Hager, 2002).



# Facial expressions analysis

## Stress & relaxation evaluation



Before

- Cheek / cheekbone upward movement
- Eyelid movement
- Mouth movement
- Aperture of mouth

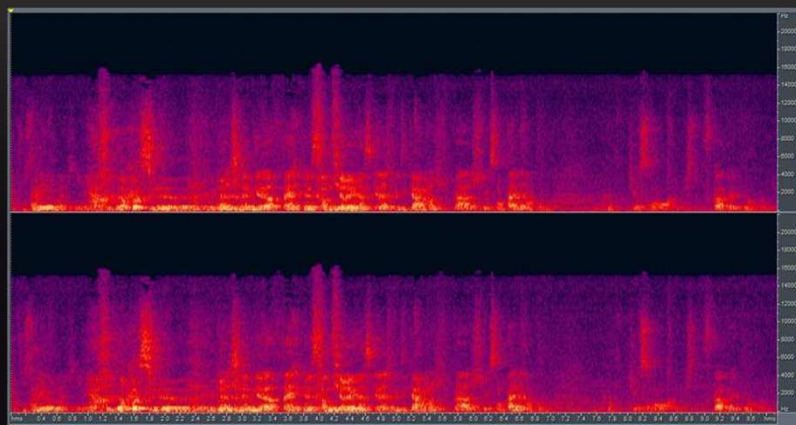


After



# Example : Prosody

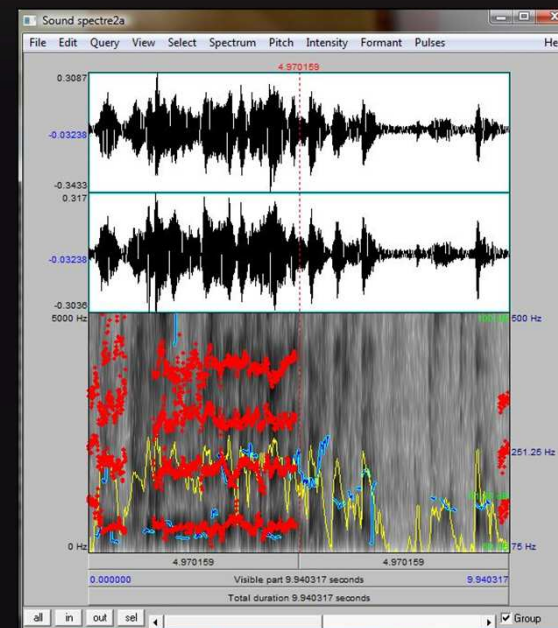
## Analysis of the acoustic signal of subject's voice



Spectral analysis of the voice



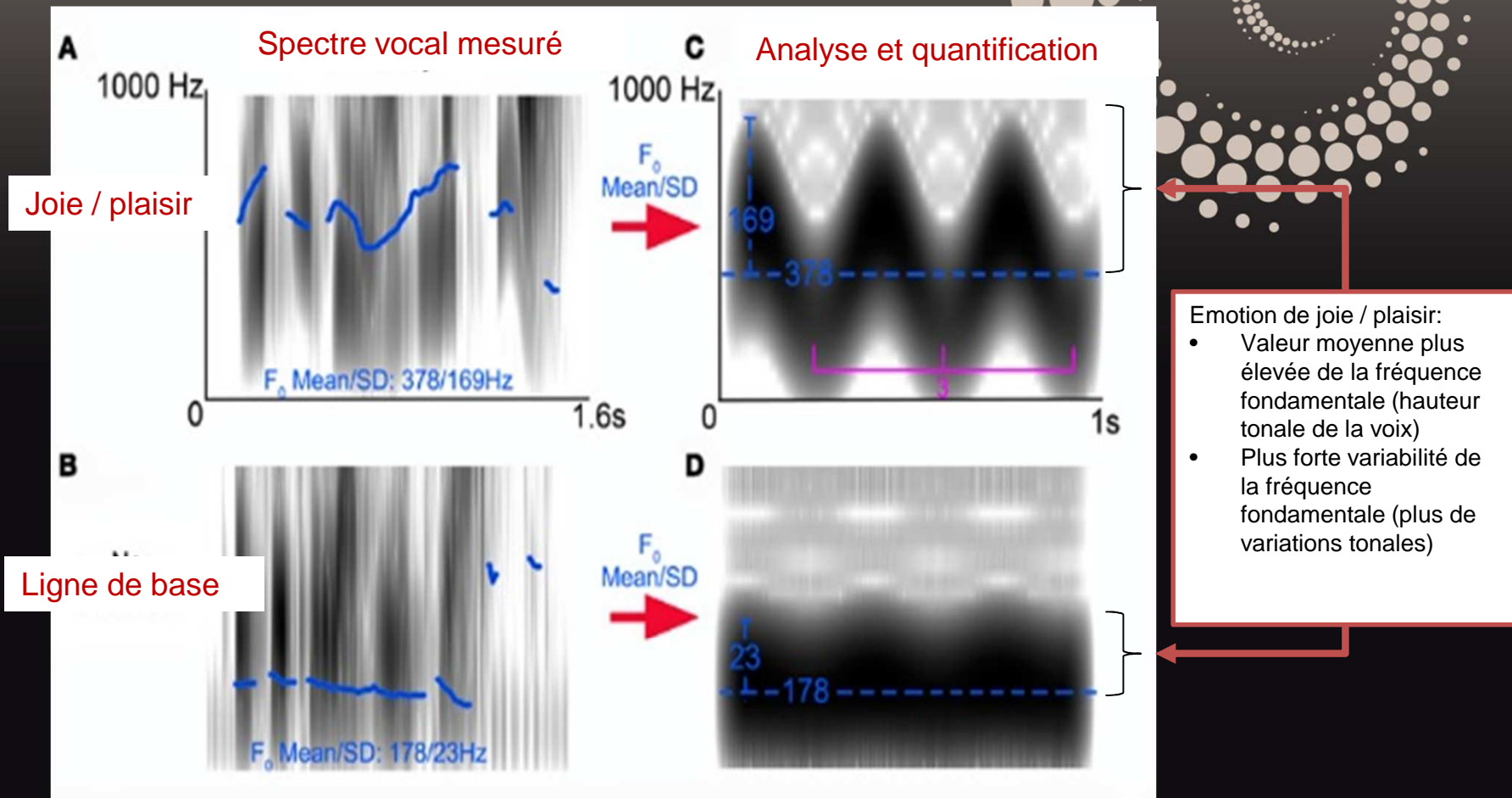
- fundamental frequency
- intensity





# Example : Prosody

## Analysis of the acoustic signal of subject's voice





# Example : Postural analysis

## Dynamising effect

Body posture in correlation with the vigilance level and the general arousal



- Analysis according to the common ethological methodology (Lehner, 1998)
- Measurement of the angular variation between the vertebral and shoulder axes



# Example : Vigilance & attentional processes

## Mental effect

### STROOP test (Stroop, 1935)

Stroop color word test <sup>(1)</sup>

1	2	3	4	1	2	3	4
Rouge	Jaune	Vert	Bleu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bleu	Vert	Rouge	Jaune	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jaune	Rouge	Vert	Bleu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vert	Bleu	Jaune	Rouge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bleu	Jaune	ouge	Vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rouge	Vert	Bleu	Jaune	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jaune	Bleu	Vert	Rouge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bleu	Jaune	Rouge	Vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vert	Rouge	Jaune	Bleu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bleu	Jaune	Vert	Rouge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jaune	Bleu	Rouge	Vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rouge	Vert	Jaune	Bleu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bleu	Jaune	Vert	Rouge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vert	Rouge	Bleu	Jaune	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rouge	Vert	Jaune	Bleu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rouge	Jaune	Bleu	Vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bleu	Vert	Rouge	Jaune	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rouge	Jaune	Bleu	Vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vert	Bleu	Jaune	Rouge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jaune	Rouge	Vert	Bleu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bleu	Jaune	Rouge	Vert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vert	Bleu	Jaune	Rouge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jaune	Vert	Rouge	Bleu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vert	Rouge	Bleu	Jaune	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jaune	Bleu	Vert	Rouge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(1) STROOP J. R. Studies of interference on serial verbal reaction. J. Exp. Physiol. 1935, 18 : 643-662

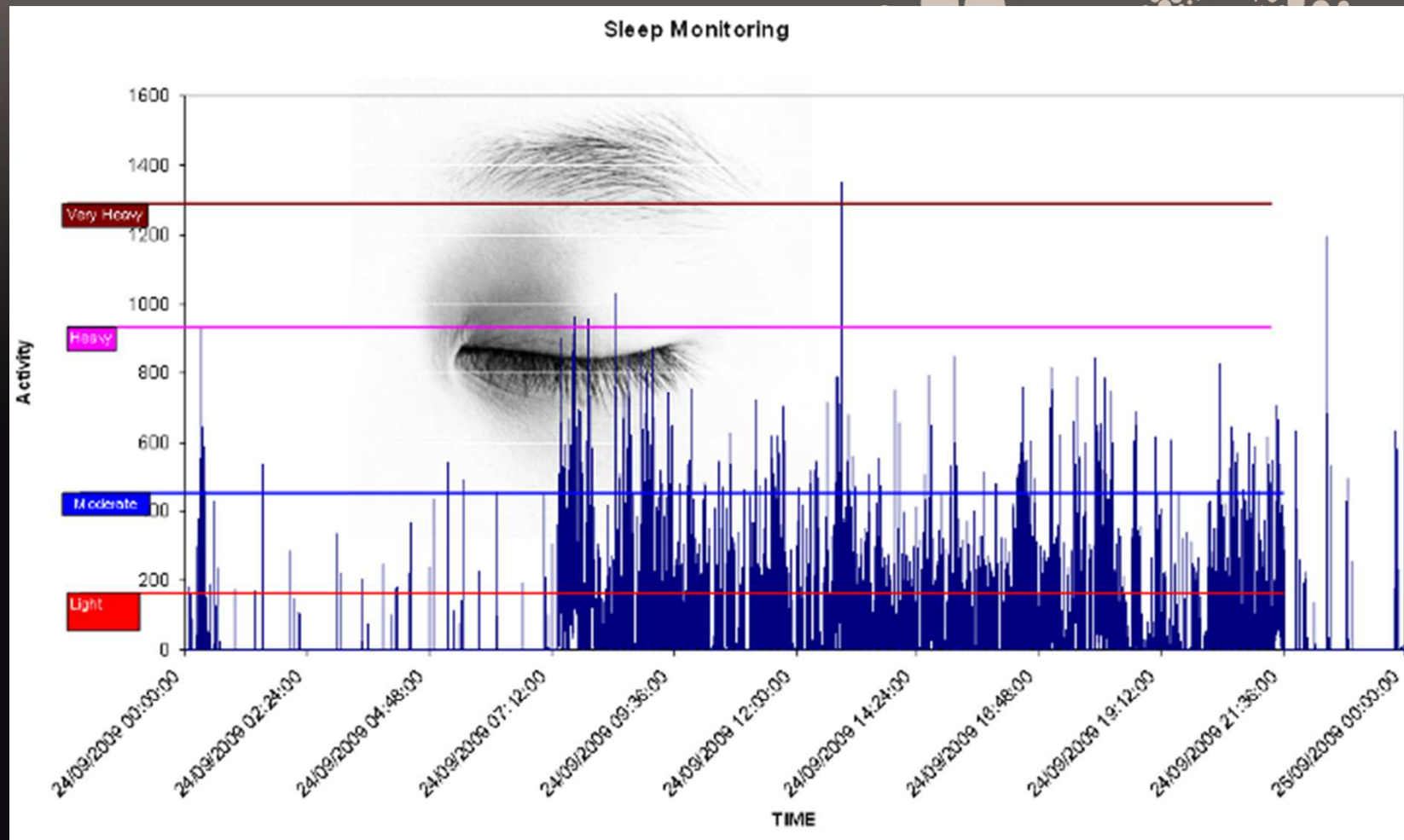
### Test of verbal fluence (Lezak, 2004)

To say as many words as possible  
from a category (commonly semantic)  
in a given time (usually 60 seconds).



# Physical activity measurement

## Sleep analysis





A woman with long dark hair is shown in profile, looking towards the left. On her left shoulder, there is a tattoo of a world map. Overlaid on the map are five colored dots: a green dot in North America, a purple dot in Europe, a yellow dot in Asia, a red dot in Australia, and a blue dot in South America. In the upper right corner of the image, there is a large, stylized spiral graphic composed of many small white dots of varying sizes, creating a sense of depth and movement. The background is a dark, gradient color.

[www.spincontrolgroup.com](http://www.spincontrolgroup.com)