

BARANOVA  
MONACO

"HAUTE COUTURE" PREVENTION  
PERSONALIZED HEALTH SYSTEMS

## Genomics – the art of wellbeing. New trends and applications

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### Major points

- DNA WORLD today
- From genetics to genOMICS and OMICS technologies
- Preventive genomics - international strategies
- Preventive genomics - the art of wellbeing. Health impact

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### DNA art

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### DNA art

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### DNA toys

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### DNA GAMES

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### Public Health Genomics: Major prevention source

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### MAIN DEFINITIONS

GENETICS - reflects gene peculiarities, polymorphic effects and our different susceptibility to environmental factors (UV, pollution, antioxidants)  
**HOW THE GENES REACT ON ENVIRONMENT**

GENOMICS - reflects interactions between active cosmetic ingredients and genome  
**HOW ENVIRONMENT REACTS ON GENES**

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### Omics technologies

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**Gene testing Settings: from science to practice**

ACCE / analytical, clinical validity, clinical utility & ethics - evaluation process for genetic testing (after CDC - Centres for Disease Control & Prevention)

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**Successes of Genome Wide Association Studies**

- Celiac disease
- Atrial fibrillation
- Colorectal cancer
- Breast cancer
- Prostate cancer
- Diabetes
- Gallstones
- Asthma
- Multiple sclerosis
- Rheumatoid arthritis
- Crohn disease
- Age-related macular degeneration

2007  
**BREAKTHROUGH OF THE YEAR**  
**Human Genetic Variation**

After CDC National Office of Public Health Genomics

**European Commission**

Public Health genomics EU Network  
(April 2009 - March 2012)

**Main International Projects for multifactorial disorders in process:**

- Human Variome Project (HVP)  
<http://www.humanvariomeproject.org/>
- ECNIS - environment-gene interactions (Europe)
- Environmental Genome Project (USA)

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**CREDIBILITY OF TESTING AND RECOMMENDATIONS**

**EGAPP** - Evaluation of Genomic Applications in Practice and Prevention (US government - since 2005)

Recent achievements (pharmacogenetics):

- CYP450 testing & depression treatment
- Tumor gene expression & BC treatment
- Cytostatic usage for colorectal cancer

**NUGO** - Nutritional Genome Organisation

Less < 9% of ALL gene services provide personalized reliable reports  
*(annual 2009 report)*

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**2011 - THE YEAR OF CARDIOGENOMICS IN EUROPE**  
FP7 EU Government program

STROKE  
DIABETES TYPE II & METABOLIC SYNDROME  
WEIGHT REGULATION  
LONGEVITY

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Prevention is good.

Know WHAT to prevent is much better

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**Personalized Prevention Health Impact**

**USA:** 100 billion a year - Ineffective treatment  
*"Nature biotechnology", Nov 1997; vol 15, p.1249*

Adverse drug reactions - 2 216 000 cases in hospitalised patients per year  
100,000 avoidable deaths, *ICHG, Vienna, May 2001*  
3 million medical errors  
2.2 million avoidable injuries per year  
*1999 study - the U.S. Institute of Medicine*

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**Current trends**

- Science & research:** Genome Wide Association Studies, Testing of total genome, transcriptomics, proteomics
- Public internet commercial DNA testing:** Misleading, Misunderstanding
- Expected by client (patient):** Precise HEALTH effective recommendations
- Reliable practice:** Approved genetic markers, Expertises based on interactions (gene-gene, environment-gene), Specific recommendations, Gene regulation principles, NEW SERVICES

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**ALL OUR LIFE IS THE STORY OF GENE EXPRESSION**

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**LIFE FORMULA**

**DNA - WHAT WE HAVE**  
genetics/genomics

**RNA - WHAT WE COULD BE**  
transcriptomics

**PROTEIN - WHAT WE ARE**  
proteomics

ENVIRONMENT-GENE INTERACTIONS

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**Please, do NOT separate the genes from the body!**

The same genotype can have completely different consequences in 25 y.o. man and 55 y.o. smoking woman...

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**GENETIC RESULTS MUST BE INTERPRETED TOGETHER WITH INDIVIDUAL CLINICAL & LIFESTYLE DATA**

...and be adapted to your personal tastes

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**NEW GENERATION HEALTH SERVICES**

Anti-aging clinics & consultations    Medical SPAs    Cosmetic medicine centres

**HOLISTIC APPROACH**

**GENETICS/GENOMICS**

- Prevention on PREsymptomatic stage
- "sur mesure" highly personalized approach
- Specific genetically based recommendations

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**Practically...**

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**RECENT TRENDS**

- ↑↑ - increase of chronic fatigue (each 2d patient has related complains)
- ↑↑ - request in cosmetic medicine (> 10 times compared to 2000)
- ↑↑↑ - increase of genomics usage for prevention (make your genes work for you : nutrigenomics, cosmetogenomics, etc. Beautiomics)
- ↑↑↑ - increase of food supplements & cosmetics - BUT lack of specialists and personalized advice

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**GENE EXPRESSION**

This image is a winner of 2008 Image Award

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**PREVENTIVE EPIGENOMICS PROGRAMS**

holistic

- NUTRITIONAL EPIGENOMICS & MOLECULAR NUTRITION
- GENERAL EPIHEALTH
- ANTI-AGING
- WEIGHT CONTROL
- VIP - all included
- CHRONIC FATIGUE & "BRAIN FITNESS"
- COSMETOGENOMICS & COSMETONUTRITION

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**« HAUTE COUTURE » PREVENTION EXCLUSIVE HOLISTIC PROGRAMS**

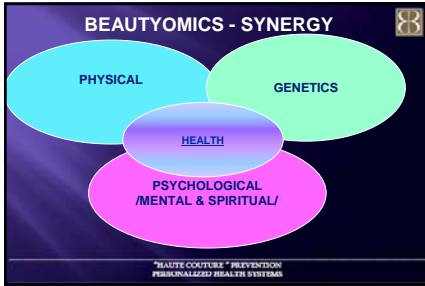
**FOR BEAUTYOMICS:**

**BASIC** - nutrigenomics + cosmetogenomics + breif therapy (optional)

**ADVANCED** - anti-aging genomics/ weight control genomics + cosmetogenomics + breif therapy

**COMPLETE** - VIP /all included/ genomic panel including cosmetogenomics + brain fitness + breif therapy

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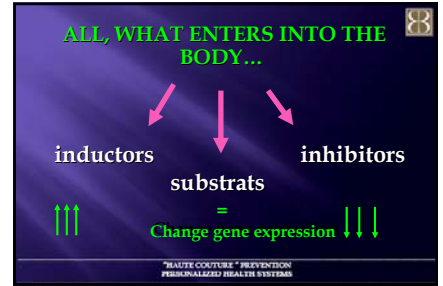


### EVOKE YOUR POTENTIAL

MAKE YOUR GENES WORK FOR YOU!

STIMULATE YOUR GENE EXPRESSION  
IN THE BEST PERSONALIZED WAY

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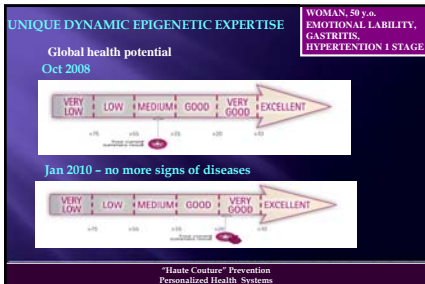
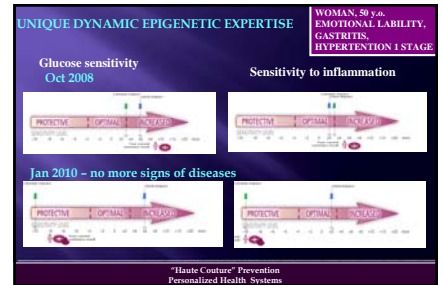
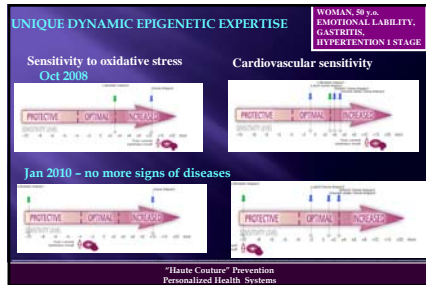


### GENETICALLY SPECIFIC RECOMMENDATIONS

#### MAIN principles:

- Regulation of gene expression
  - COMPENSATION  
Eg: homocysteine metabolism
  - INDUCTION/ INHIBITION  
(metabolic genes - P450s, GSTs, main anti-oxidative stress mechanism)  
Eg: lycopene main inductor of GSTs
- Protection of cellular membranes (omega 3, 6; other)
- DNA repair

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### aging & genomics

- the sequence of the changes associated with aging is predictable AND CAN BE MODIFIED THROUGH GENE EXPRESSION
- the rate of change varies from one individual to the next .
- The aging depends on genetic, anatomic, chronologic, and environmental factors
- AND YOUR MOTIVATION TO STAY YOUNG

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