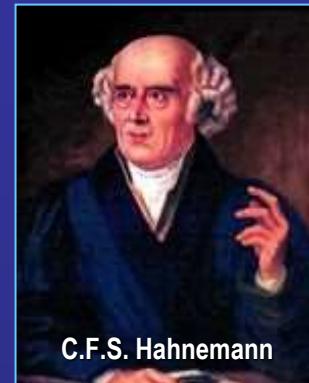


# Le Basi Fisiopatologiche delle Omeo-Terapie



C.F.S. Hahnemann

Corso in tre parti

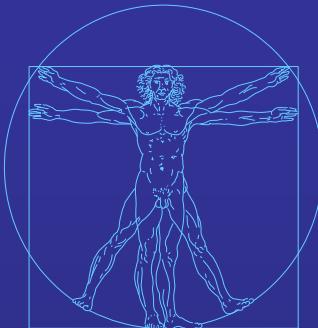
Scuola di Medicina Omeopatica  
di Verona

-

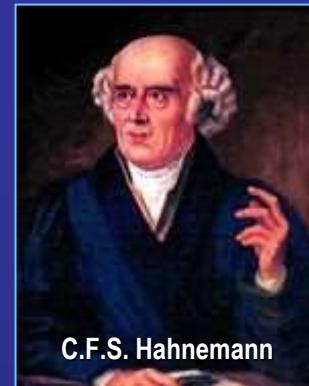
Prof. Paolo Bellavite

## INDICE GENERALE

- A. OMEO-DINAMICA
- B. OMEO-PATOLOGIA
- C. OMEO-TERAPIA



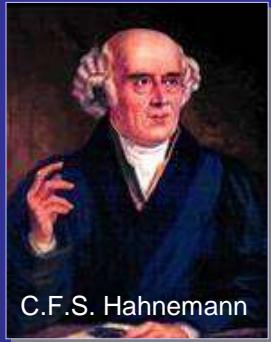
# Le Basi Fisiopatologiche delle Omeo-Terapie



**«Omeo-dinamica»:** *Energia vitale, la «physis» dell'essere vivente, complessità, sistemi dinamici, integrazione*

**«Omeo-patologia»:** *Patologia dei sistemi dinamici, quando e come la forza vitale non funziona, il valore dei sintomi*

**«Omeo-terapia»:** *La terapia più rispettosa dell'omeodinamica e più coerente con l'omeo-patologia*

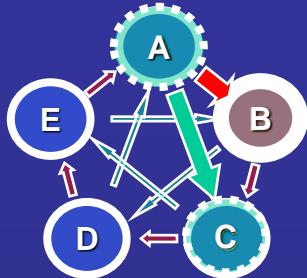


C.F.S. Hahnemann

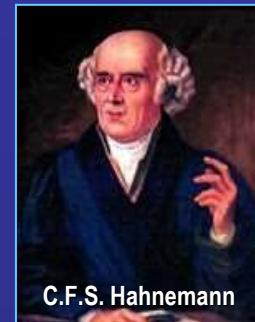
## INVALIDITÀ DELLA ENERGIA VITALE NELLE MALATTIE CRONICHE E «NECESSITA» DELL'OMEOPATIA

(CFS. Hahnemann: Die Chronischen Krankheiten, 2nd Ed., iv, 1838 )

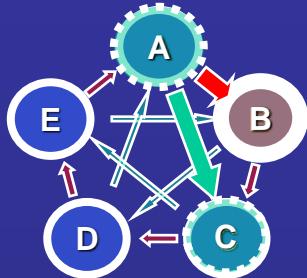
*“Nelle malattie croniche la vera salute non può essere riportata dalla sola energia vitale. Tuttavia, è altrettanto certo che se tale forza è resa più valida dalla vera arte della guarigione (quella omeopatica), guidata dall’umana ragione, essa può sopraffare e superare (quindi curare) non solo le malattie rapide e transitorie, ma anche quelle croniche (...).*



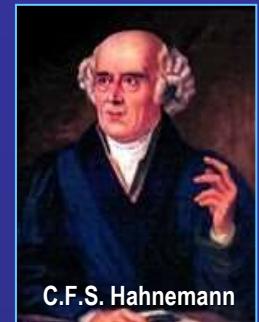
# «OMEO-TERAPIA»



L' OMEO-TERAPIA è la concezione di terapia coerente con la omeo-patologia, che è la visione della tradizionale «patologia generale» rivisitata secondo le moderne scienze della complessità e dei sistemi dinamici.



# «OMEO-TERAPIA»

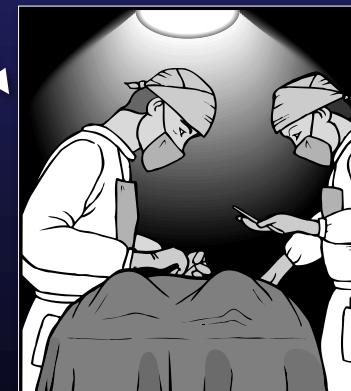
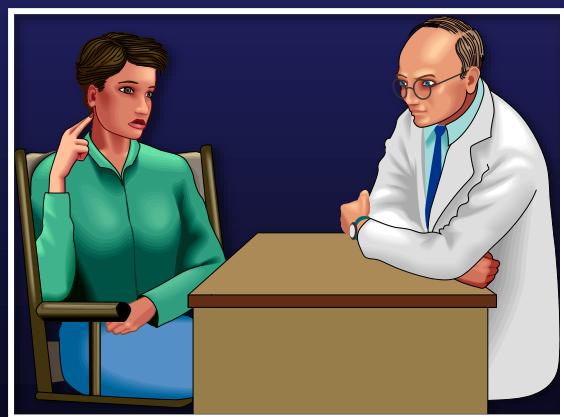
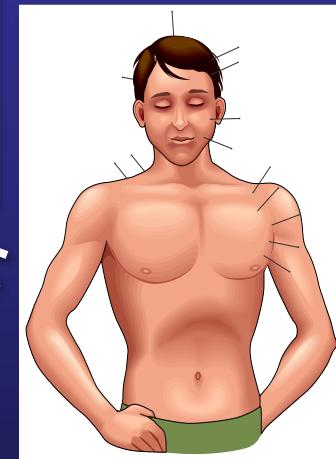
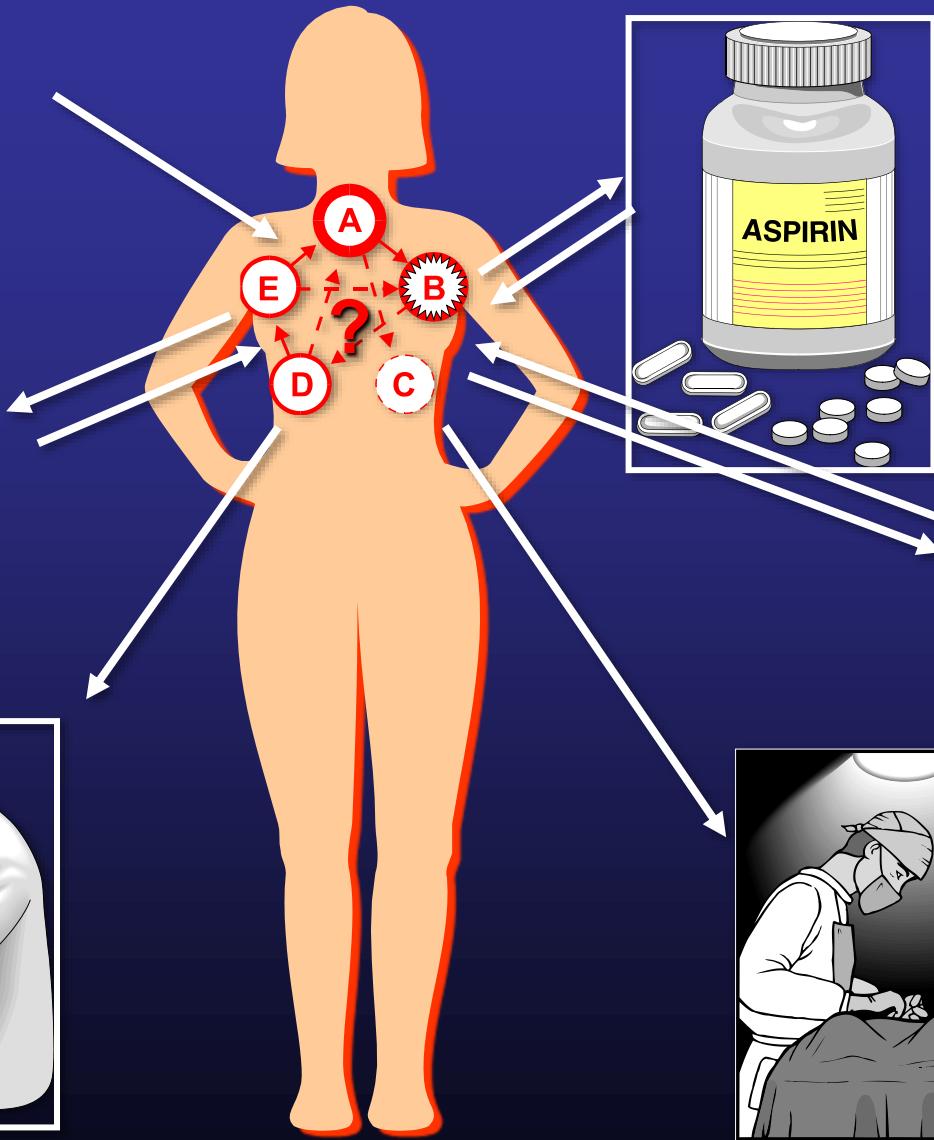
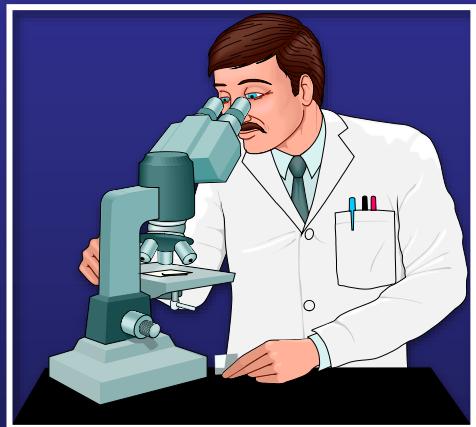


C.F.S. Hahnemann

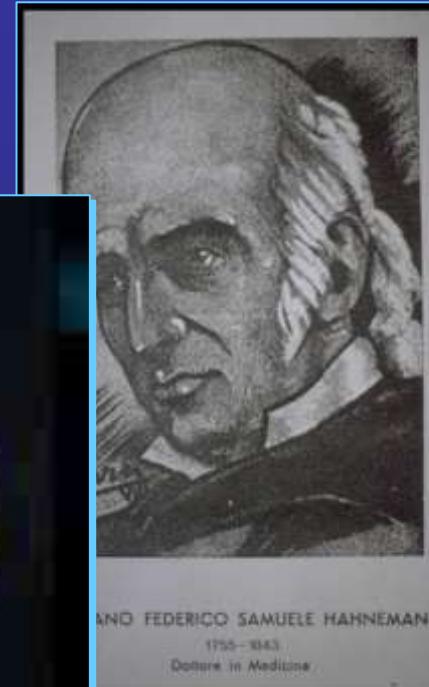
1. Premesse generali e storia
2. Alcune prove sperimentali
3. Modelli concettuali
  - Retroazione
  - Reti

# COMPLESSITA' DEL CONCETTO DI "MALATTIA" IN MEDICINA

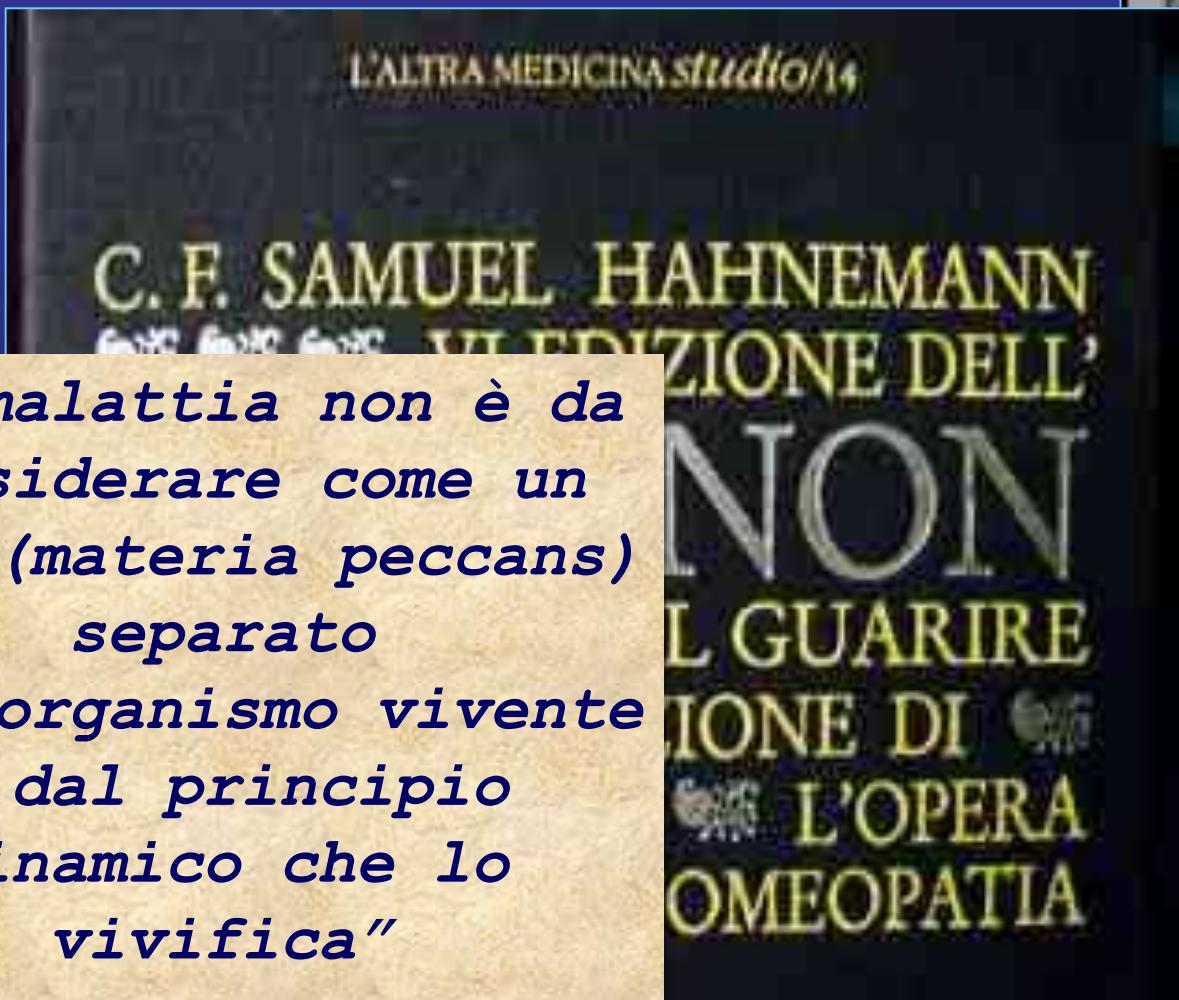
## CONCETTO DI "MALATTIA"



# Le “fonti”



*"La malattia non è da considerare come un quid (materia peccans) separato dall'organismo vivente e dal principio dinamico che lo vivifica"*  
*(par. 13)*



# MULTIFATTORIALITA' E INDIVIDUALITA'

*“Molti dei disturbi comuni che costituiscono una parte importante del bilancio sanitario nel mondo occidentale non sono causati da difetti nei singoli geni”*

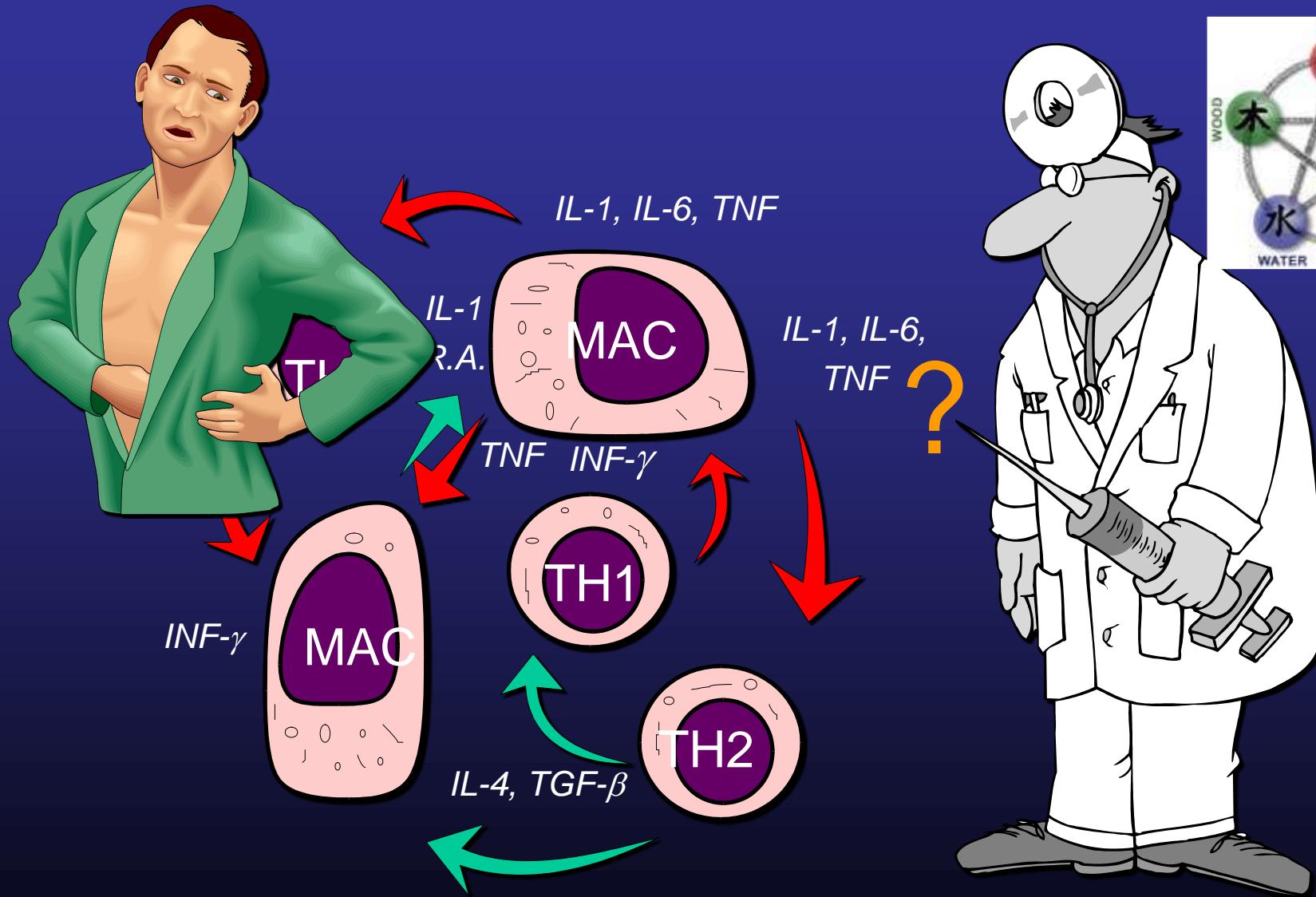
*“Si è evoluta l'ipotesi che variazioni in un certo numero di loci genici differenti causino cambiamenti sottili o minori nel livello di espressione o funzione genica, possono predisporre un individuo allo sviluppo di malattie”*

*“Queste variazioni genetiche possono quindi interagire con fattori ambientali per determinare il rischio complessivo di un individuo di sviluppare malattie”*

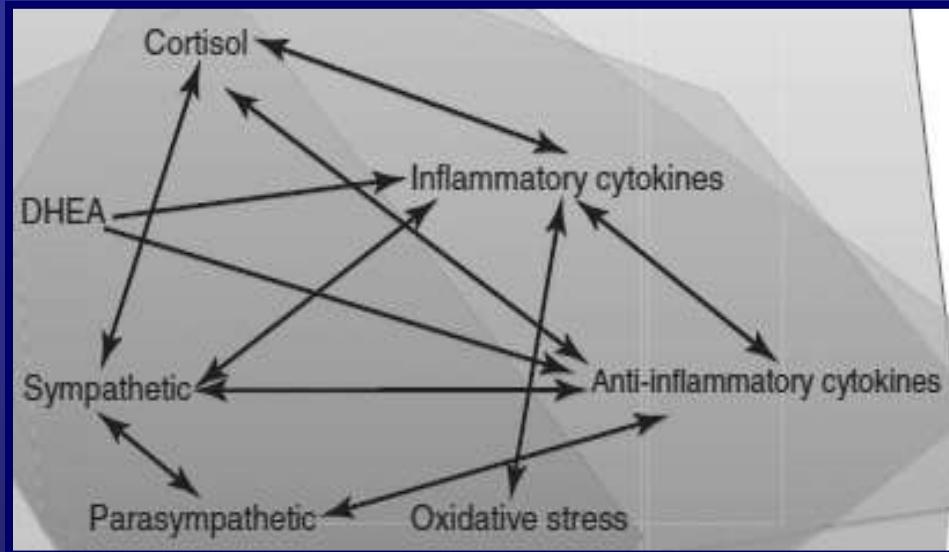


Talmud and Humphries, in Oxford Textbook of Pathology, 1992

# L'AUTO-ORGANIZZAZIONE DELLE RETI DINAMICHE COSTITUISCE UN LIMITE ALLA PRETESA DI REGOLAZIONE FARMACOLOGICA



# Malattia come *dinamica disfunzionale* in una rete



Dr. Iris Bell

A Model for Homeopathic Remedy Effects:  
Low Dose Nanoparticles, Allostatic Cross-  
Adaptation, and Time-Dependent  
Sensitization in a Complex Adaptive System  
Iris R. Bell and Mary Koithan – BMC Compl.  
Altern. Med 2012

«La malattia è un risultato emergente quando il carico di stress cumulativo travolge la capacità di adattamento del sistema e le interazioni diventano persistentemente disregolate»

«Una regolazione mirata e programmata delle dinamiche disfunzionali della malattia offre al sistema l'opportunità di ripristinare le normali relazioni e interazioni normative attraverso la rete biologica.

Il presente modello postula che il **corretto rimedio omeopatico** fornisca una tale interruzione per avviare cambiamenti adattativi.»

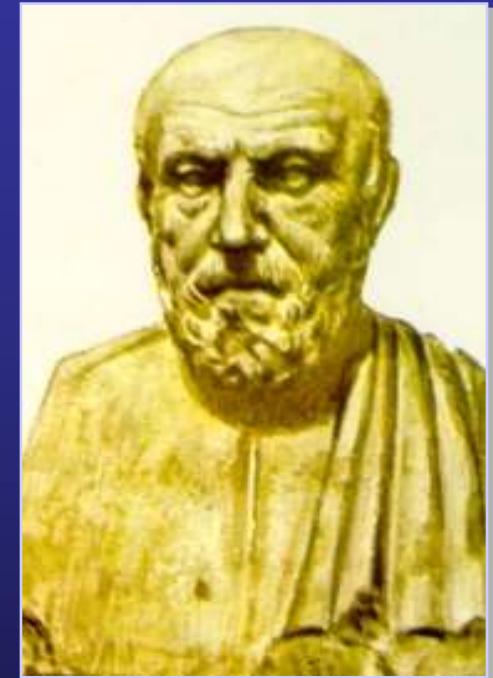
# “SIMILI” E “CONTRARI” SECONDO IPPOCRATE

*“I dolori saranno rimossi mediante il loro opposto,  
ciascuno secondo le proprie caratteristiche.*

*Così il calore serve alla costituzione calorosa che  
è stata resa malata dal freddo, e così via per le  
altre.*

*Un altro modo per rimuovere il dolore è il  
seguente: attraverso il simile la malattia si  
sviluppa ed attraverso l'uso del simile la malattia  
si guarisce. (...)*

*Se questo principio fosse valido in ogni caso, la  
cosa sarebbe facile e si potrebbe intervenire ora  
seguendo i contrari ora seguendo i simili, a  
seconda della natura e dell'origine della  
malattia.”*



Ippocrate  
(460-377 a.C.)

Littre's Oeuvres Complètes d'Hippocrates, Paris  
1839, VI, 334, par. 42.



# Omnia venenum sunt

«*Omnia venenum sunt: nec sine veneno quicquam existit. Dosis sola facit, ut venenum non fit.*»

«Tutto è veleno, nulla esiste che non sia veleno. Solo la dose fa che il veleno abbia effetto»

(Paracelso,  
*Responsio ad quasdam accusationes & calumnias suorum aemulorum et obtrectatorum. Defensio III. Descriptionis & designationis nouorum Receptorum.*)

Mitridate, re del Ponto  
(132-63 a.c.)



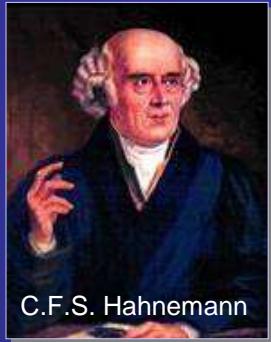


## Anton von Stoerck (1731 –1803)

Libellus quo demonstratur Stramonium,  
Hyoscyamus, Aconitum. Vindebonae, 1762

*“Se lo stramonio rende malato colui che è sano di  
mente inducendo una confusione mentale, perché uno  
non dovrebbe cercar di stabilire se esso può dare  
salute mentale a chi è confuso o ha i sensi alterati  
dalla malattia?*

*Se poi esso dà la salute a chi è affetto da spasmi,  
perché uno non dovrebbe provare se esso provoca gli  
spasmi?”*



C.F.S. Hahnemann

## IL “SIMILE” di Hahnemann

Versuch über ein neues Princip zur Auffindung der Heilkrafte der Arzneisubstanzen –  
*Hufeland's Journal* 2, 381, 1796.

*“Uno imita la natura, che talvolta guarisce le malattie croniche aggiungendo un'altra malattia, e quindi impiega nella malattia (preferibilmente cronica) quel farmaco che si trova nella posizione di poter eccitare un'altra malattia artificiale più simile possibile a quella naturale, che sarà guarita: similia similibus”*



## Esponenti dell'omeopatia “scientifica”: Hufeland

Cit. in L.J. Boyd, *A Study of the Simile in Medicine*, Boericke & Tafel, Philadelphia 1936, *Il Simile in Medicina*, Ed. Libreria Cortina, Verona 2001 (Cap. 20)

*C.W. Hufeland (1762-1836)*

*“L’omeopatia è valida come campo di osservazione e non deve essere ripudiata, quanto piuttosto usata come uno speciale metodo di guarigione, subordinata ai più alti concetti della medicina razionale.*

*Sono convinto per le mie osservazioni personali che essa può rendere un servizio non raramente, anzi talvolta in modo molto eclatante, soprattutto dopo che si sono tentati inutilmente altri metodi di cura”*

# La prima idea



CELL BIOCHEMISTRY AND FUNCTION VOL. 11: 231–239 (1993)

## Dual Effects of Formylpeptides on the Adhesion of Endotoxin-Primed Human Neutrophils

P. BELLAVITE, S. CHIRUMBOLO, G. LIPPI, G. ANDRIOLI, L. BONAZZI AND I. FERRO†

*Istituto di Chimica e Microscopia Clinica, University of Verona, and †Servizio Immunotrasfusionale, Ospedale Policlinico, Verona, Italy*

Neutrophils, treated with sequential additions of bacterial products such as endotoxin (*E. Coli* lipopolysaccharide, LPS) and the chemotactic peptide *N*-formyl-methionyl-leucyl-phenylalanine (fMLP), undergo metabolic activation and express membrane-anchoring proteins that promote adhesion to serum-coated culture wells. By investigating the dose-response relationships of these phenomena, we have found that: (a) resting neutrophils do not produce a significant amount of superoxide ( $O_2^-$ ) and show only minimal adhesion to serum-coated plastic surfaces; (b) fully activatory doses ( $> 5 \times 10^{-8} M$ ) of fMLP induce the release of  $O_2^-$  and a significant increase of the cell adhesion; (c) pretreatment of the cells for 1 h with LPS augments cell adhesion to serum-coated culture wells in the absence of further stimulation and primes the neutrophils to enhanced fMLP-dependent  $O_2^-$  release; (d) addition of low, substimulatory doses of fMLP (from  $10^{-10} M$  to  $5 \times 10^{-9} M$ ) inhibits and reverses the adhesion of LPS-treated cells; (e) high fMLP doses ( $> 10^{-7} M$ ) are additive to LPS in promoting adhesion. Phorbol-myristate acetate ( $> 10^{-9} M$ ) increased adhesion in both normal and LPS-treated neutrophils, but low doses of this stimulant did not inhibit adhesion. Low doses ( $10^{-9} M$ ) of fMLP increased intracellular cyclic AMP in both normal and LPS-treated neutrophils, suggesting that stimulus-induced rises in cAMP may be the negative signal responsible for down-modulation of adhesion. Low ( $5 \times 10^{-9} M$ ) and high ( $5 \times 10^{-7} M$ ) fMLP doses induced the same increase of expression of CD11/CD18 integrins, indicating that the inhibition of adhesion caused by low doses is not due to quantitative down-regulation of integrins. These findings may provide an *in vitro* model of the complex biological events involved in the regulation of neutrophil adhesion.

# La prima idea

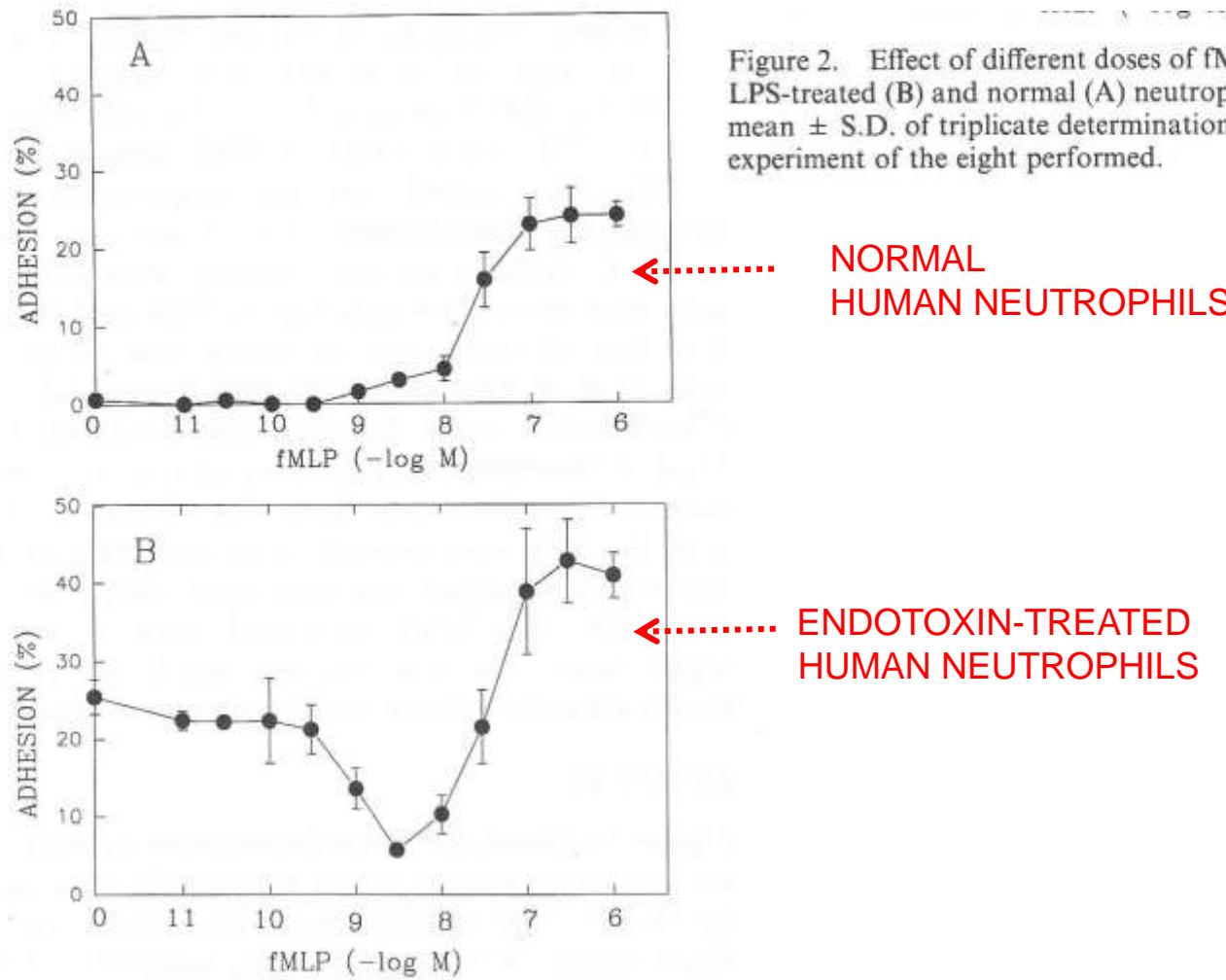


Figure 2. Effect of different doses of fMLP on the adhesion of LPS-treated (B) and normal (A) neutrophils. The values are the mean  $\pm$  S.D. of triplicate determinations from a representative experiment of the eight performed.

# RELAZIONI TRA ALCUNI PRINCIPI ATTIVI DI RIMEDI OMEOPATICI E POSSIBILE EFFETTO

(Bellavite-Signorini 1993)

Farmaco	Alcune indicazioni omeopatiche	Principio attivo	Alcuni effetti biologici
Apis	Edemi Ponfi Prurito	Melittina	Attiva mastociti
Phytolacca	Linfoadeniti Faringiti	Pokeweed mitogeno	Attiva linfociti
Nux vomica	Spasmi Iperestesia	Stricnina	Blocca inibizione postsinaptica
Ipeca	Nausea Vomito	Emetina	Attiva chemorecettori midollari
Silica	Flogosi croniche	Silice	Attiva macrofagi
Opium	Sonnolenza Euforia Stipsi	Morfina	Mima endorfine encefaline
Belladonna	Midriasi Secchezza fauci Agitazione	Atropina	Blocca recettori muscarinici colinergici
Iodum	Tachicardia Ansia Vampate	Iodio(tramite orm. tiroidei?)	Attiva metabolismo
Coffea	Insonnia Ipersensibilità Simpaticotonica	Caffeina	Aumento cAMP Antagonizza adenosina

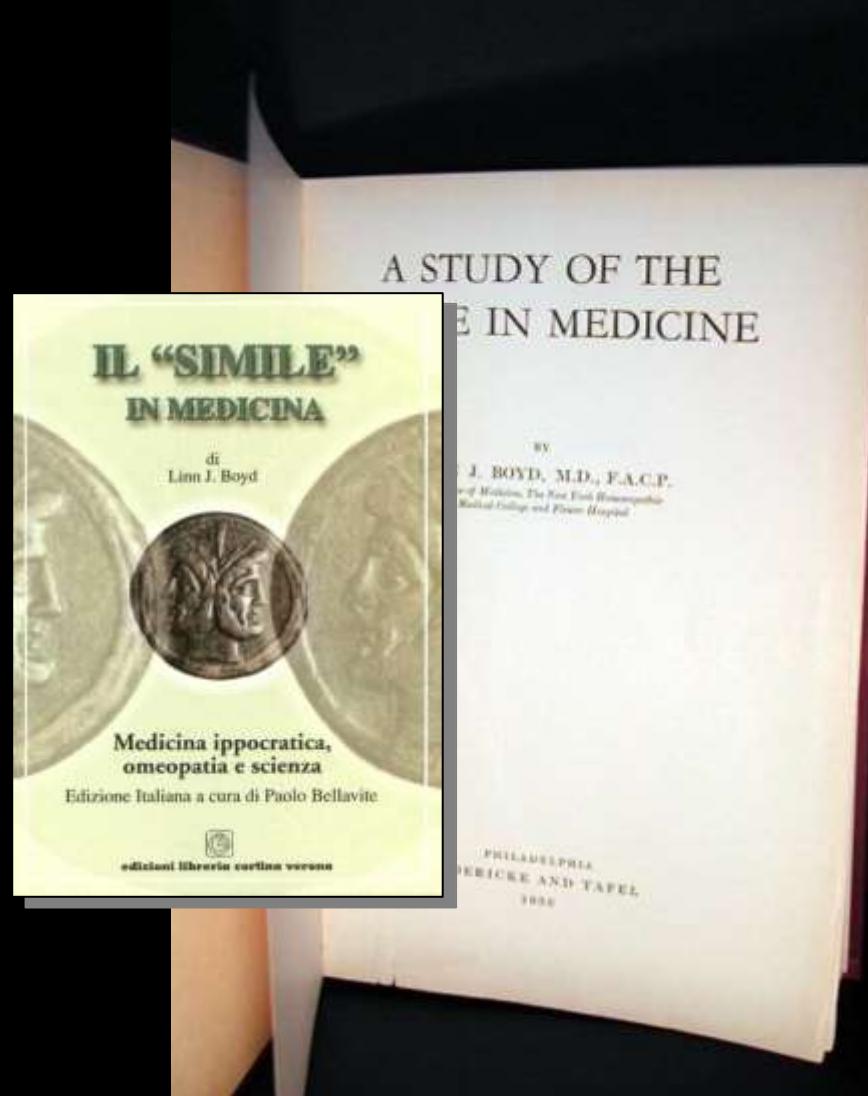


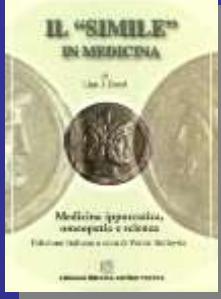
# A STUDY OF THE SIMILE IN MEDICINE

Boericke & Tafel, Philadelphia 1936



Linn John Boyd  
(1895-1975)  
Professor of Medicine





## EFFETTI DI UNA SERIE DI SOSTANZE SULL'INTESTINO ISOLATO E PERFUSO DI RATTO (L.J. BOYD , 1936) (D=depressione, S= stimolazione)

	Bassa dose	Alta dose		Bassa dose	Alta dose
<i>Abies canadensis</i>	D	D	<i>Arum canadensis</i>	S	D
<i>Acetic acid</i>	S	D	<i>Arum drac.</i>	D	S
<i>Actaea spicata</i>	S	D	<i>Arum mac.</i>	S	D
<i>Allium sativa</i>	D	D	<i>Arum tri.</i>	S	D
<i>Allium cepa</i>	D	S	<i>Asafoetida</i>	D	D
<i>Alnus rubra</i>	D	D	<i>Asparagus off.</i>	S	S
<i>Aloes</i>	S	D	<i>Avena sat.</i>	D	D
<i>Althaea</i>	S	D	<i>Bellis per.</i>	D	D
<i>Amelopsis quin</i>	S	D	<i>Benzoic acid</i>	S	S
<i>Anacardium</i>	?	D	<i>Berberis aqui.</i>	D	D
<i>Angustura cor</i>	S	D	<i>Calendula off.</i>	D	D
<i>Apis mel</i>	S	S	<i>Calotropis</i>	S	S
<i>Apocynum can</i>	S	D	<i>Caltha pal.</i>	S	D
<i>Aristolochia mihi</i>	D	S	<i>Cantharis</i>	D	D
<i>Aristolochia serp</i>	S	D	<i>Carduus mar.</i>	D	D



# “SIMILI” E “CONTRARII”

L.J. Boyd, *A Study of the Simile in Medicine*, Boericke & Tafel, Philadelphia 1936, (Cap. 1)  
(*Il Simile in Medicina*, Ed. Libreria Cortina, Verona 2001)

*“Non si può non vedere che molti medici, consciamente o inconsciamente, procedono come se in medicina la regola dei “contrarii” fosse l'unica e corretta dottrina.*

*Molti altri pensano che un medico debba seguire solo “il simile”...*

*E' precisamente tale posizione “o questo o quello”, assolutamente impossibile da giustificare scientificamente, che costituisce il più grosso ostacolo all'integrazione delle applicazioni del simile nella medicina.”*



## Il «simile» immunologico

**Immunological mechanisms of  
sublingual immunotherapy**

**Allam JP<sup>1</sup>, Novak N. Curr Opin Allergy Clin Immunol. 2014 Dec;14(6):564-9.**

<http://stamfordallergy.com/Sublingual-Immunotherapy.php>

*“Local intraoral allergen (e.g. APIS mellifera) application to sublingual mucosa has been proven to be safe and effective. To date, sublingual immunotherapy is widely accepted by most allergists, especially in Europe as an **alternative** to subcutaneous immunotherapy. “*

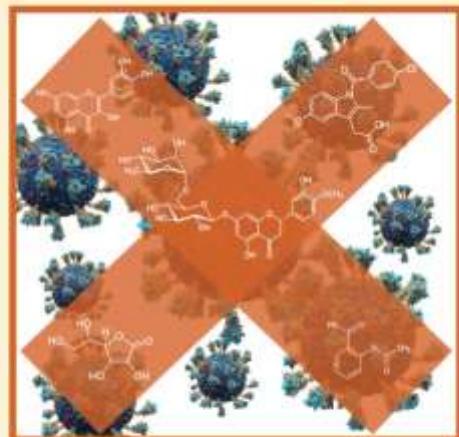
- La stessa sostanza che rende allergico un soggetto sano (e sensibile), può curare una persona con allergia
- Simila similibus curentur !! (dosi molto basse, "isoterapia")

# MEDICINA «INTEGRATIVA»

PAOLO BELLAVITE - SERAFINO FAZIO

## TERAPIA PRECOCE SINERGICA DELLA COVID-19

Basi farmacologiche  
e osservazioni cliniche



edizioni libreria cortina verona

Il sistema sanitario si è trovato, all'inizio, impreparato ad affrontare la terapia della nuova malattia da coronavirus, soprattutto per ciò che concerne l'assistenza domiciliare. In assenza di studi clinici controllati, molti medici hanno tentato vie nuove di cura, utilizzando vari tipi di farmaci antiinfiammatori, antibiotici, epatina, vitamine ed integratori. Il libro riferisce l'origine e gli sviluppi di un approccio terapeutico alla COVID-19 in fase precoce, adottato a partire dall'autunno del 2020 dal gruppo del Prof. Serafino Fazio, coordinato da quello del Prof. Paolo Bellavite. Si tratta di un'impresa medico-scientifica originale e straordinaria, qui descritta con le sue basi farmacologiche e i primi risultati clinici. Il razionale terapeutico parte da una trattazione sintetica ma precisa, dell'interazione tra il virus SARS-CoV-2 e l'organismo umano, per arrivare alla proposta di utilizzare simultaneamente sostanze ad azione antiinfiammatoria, antivirale e antiossidante. Ibuprofene, aspirina in piccole dosi, experidina, quercetina, vitamina C e omeprazolo costituiscono il "nucleo fondamentale" di una terapia combinata e sinergica, già descritta dagli Autori in studi osservazionali rigorosi, pubblicati su riviste internazionali e confrontati con la letteratura scientifica corrente.



Paolo Bellavite è laureato in Medicina e Chirurgia, specializzato in Ematologia Clinica e di Laboratorio. Professore Associato di Patologia Generale dal 1984 al 2017 presso l'Università degli Studi di Verona, attualmente è ricercatore indipendente e svolge attività di docenza libera post-universitaria. Ha volto ricerche sugli aspetti molecolari e cellulari dell'infiammazione e ha messo a punto di specifici metodi di laboratorio utilizzati in clinica, si è occupato anche di medicine complementari, nutraceutica, storia della medicina ed epistemologia.



Serafino Fazio è laureato in Medicina e Chirurgia, specializzato in Cardiologia e in Medicina Interna. Ha lavorato presso l'Università Federico II di Napoli dal 1975 al 2012, prima come ricercatore e poi come Professore Associato di Medicina Interna. Il suo lavoro di ricerca ha spaziato dallo studio dell'interazione tra ormoni e cuore alla terapia dell'insufficienza cardiaca e della sindrome metabolica, allo studio di alcune sostanze nutraceutiche, alla terapia dell'ipertensione arteriosa polmonare e, da ultimo, alla terapia della COVID-19.

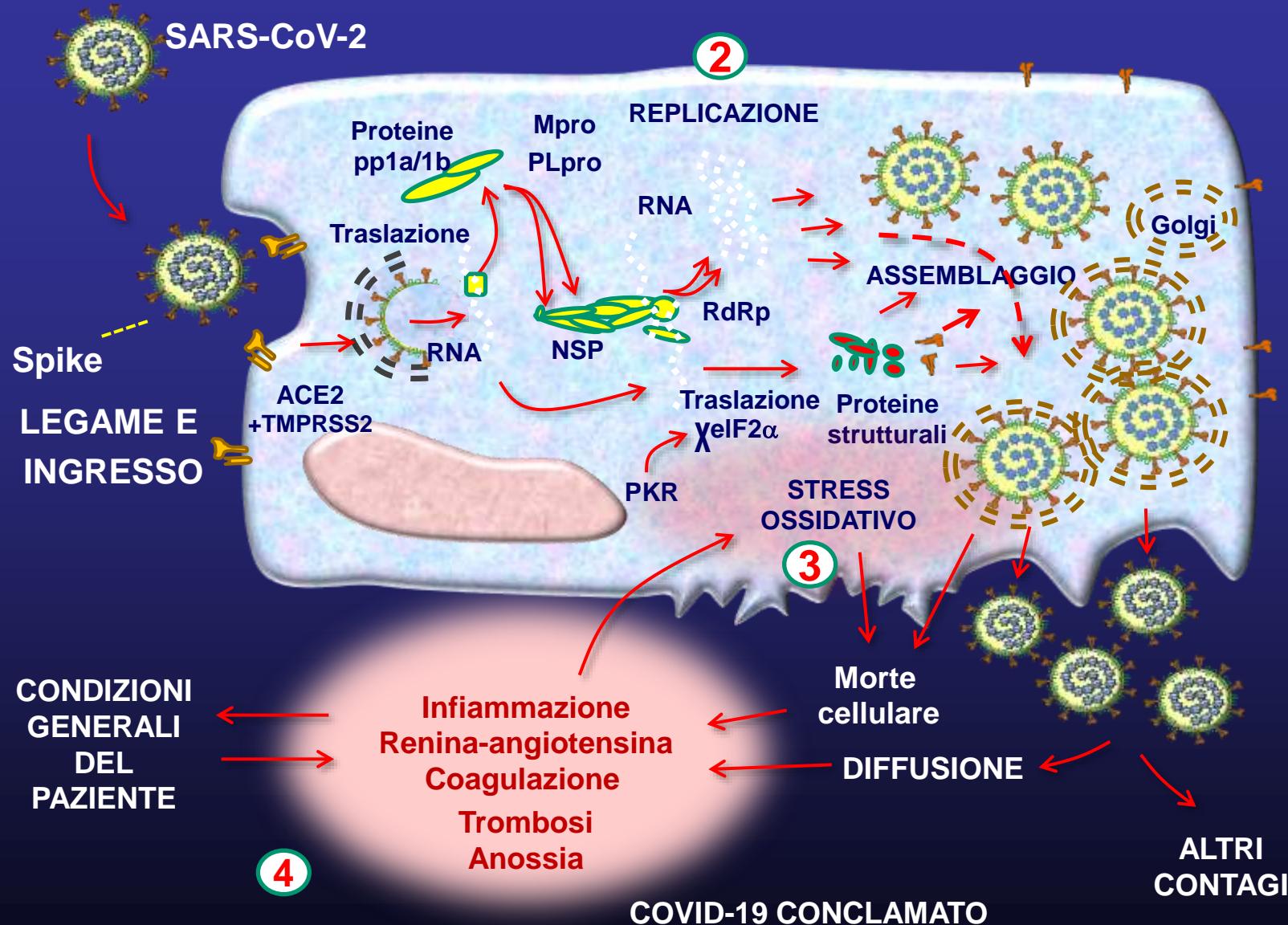
ISBN 978-88-7749-215-9



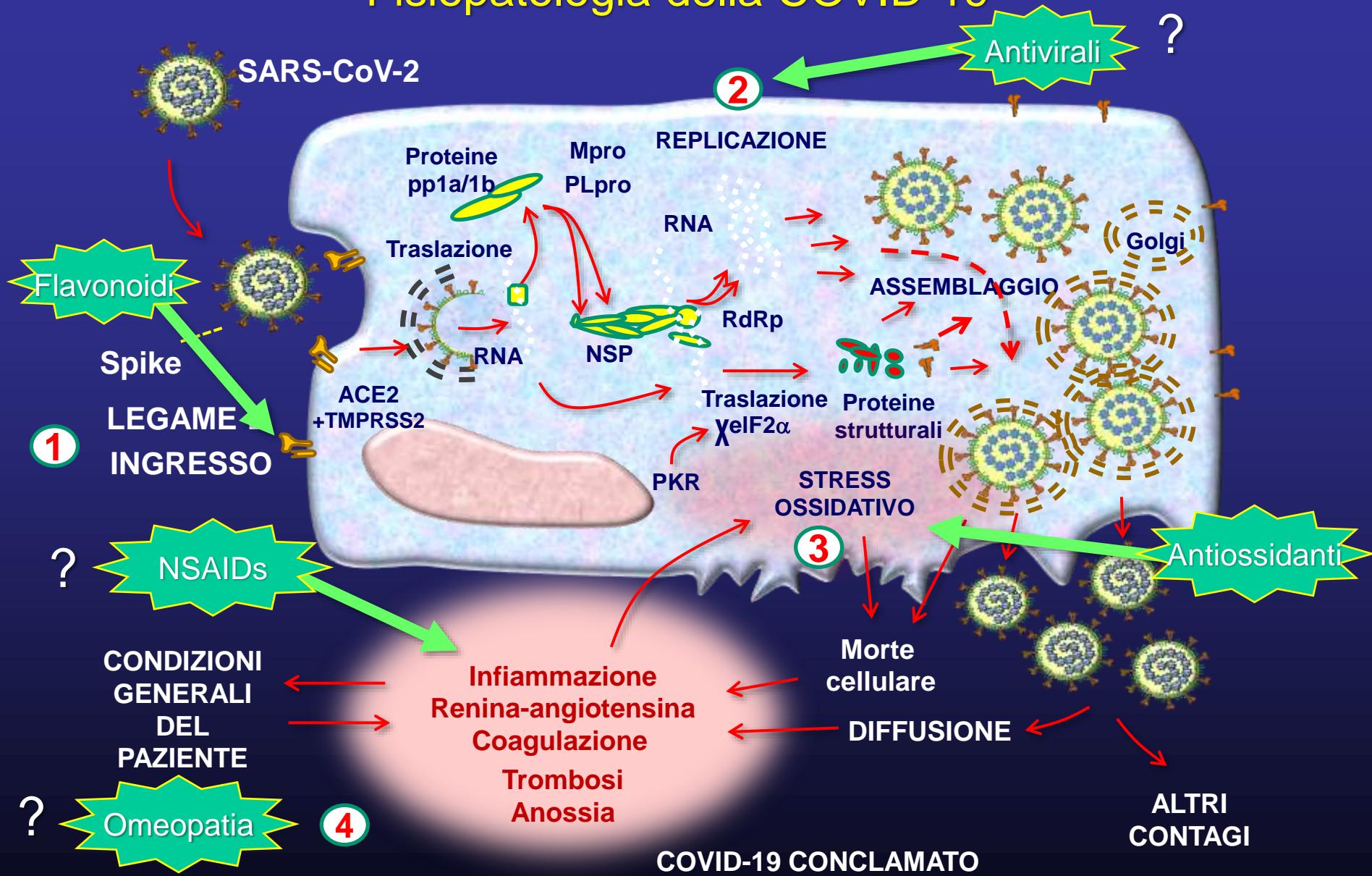
9 788877 492159 > € 22,00

In copertina: Virus SARS-CoV-2 con molecole descritte nel testo che ne consumano gli effetti patogeni.

# Fisiopatologia della COVID-19



# Fisiopatologia della COVID-19



Somoeopatkie

Engel ~ Apothekie

Allopathie



Ravensburg (Germania)

Samuel Hahnemann



VPN  
USER ID:=MAIL  
PW: Venti787

AREA PBVnita  
259149  
e AIDR

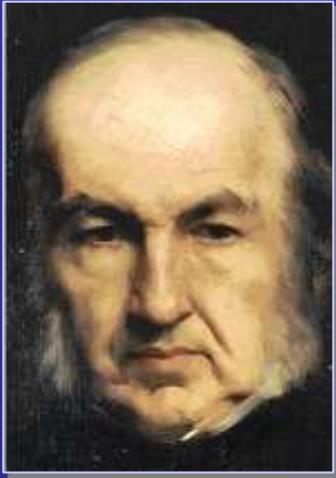
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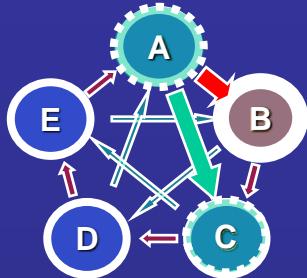


# Orientamento storico-epistemologico

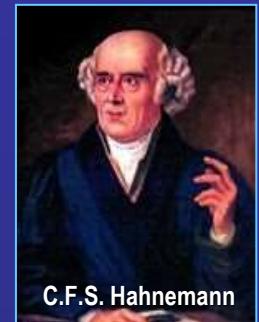
Claude Bernard (1813-1878)

*"Introduzione allo studio della medicina sperimentale"*

- “*Secondo il metodo sperimentale della scienza l'esperienza si acquista in virtù di un preciso ragionamento fondato su un'idea che l'osservazione ha fatto nascere e che l'esperienza ha controllato.*”
- “*Solo bisogna conservare la propria libertà di pensiero e credere che in Natura l'ASSURDO secondo le nostre teorie non è sempre impossibile*”.



# «OMEO-TERAPIA»



1. Premesse generali e storia
2. Alcune prove sperimentali
3. Modelli concettuali
  - Retroazione
  - Reti



# Le prove del “Simile”

Bellavite P. et al., (1997) *Medical Hypotheses* 49: 203-212.

Bellavite P. (2005) *Il Medico Omeopata* IX (27): 41-56

Bellavite et al.(2007) eCAM Journal doi: 10.1093/ecam/nel117

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Bellavite et al (2013-14) *Homeopathy* 2 reviews

- **EFFETTI INVERSI SECONDO LA DOSE** (“ormesi”, reg. di Arndt-Schultz”): sostanze o stimoli di varia natura possono causare effetti opposti al variare della dose
- **RUOLO DEL VALORE INIZIALE** (reg. di Wilder): l’effetto di un certo trattamento dipende dallo stato fisiologico del sistema ricevente, se a riposo o già stressato, se sano o malato, se in presenza di altri fattori concomitanti
- **EFFETTI PARADOSSALI DEI FARMACI** (“paradoxical pharmacology”, “rebound”): spesso i farmaci provocano effetto opposti nei trattamenti acuti e cronici
- **VIA DI INTRODUZIONE**: effetti diversi e persino opposti secondo la via di somministrazione, es. orale vs. parenterale (modelli immunologici)
- **METODO DI PREPARAZIONE**: l’effetto dipende dalla preparazione che determina la natura fisico-chimica del segnale, la sua biodisponibilità e l’interazione col bersaglio

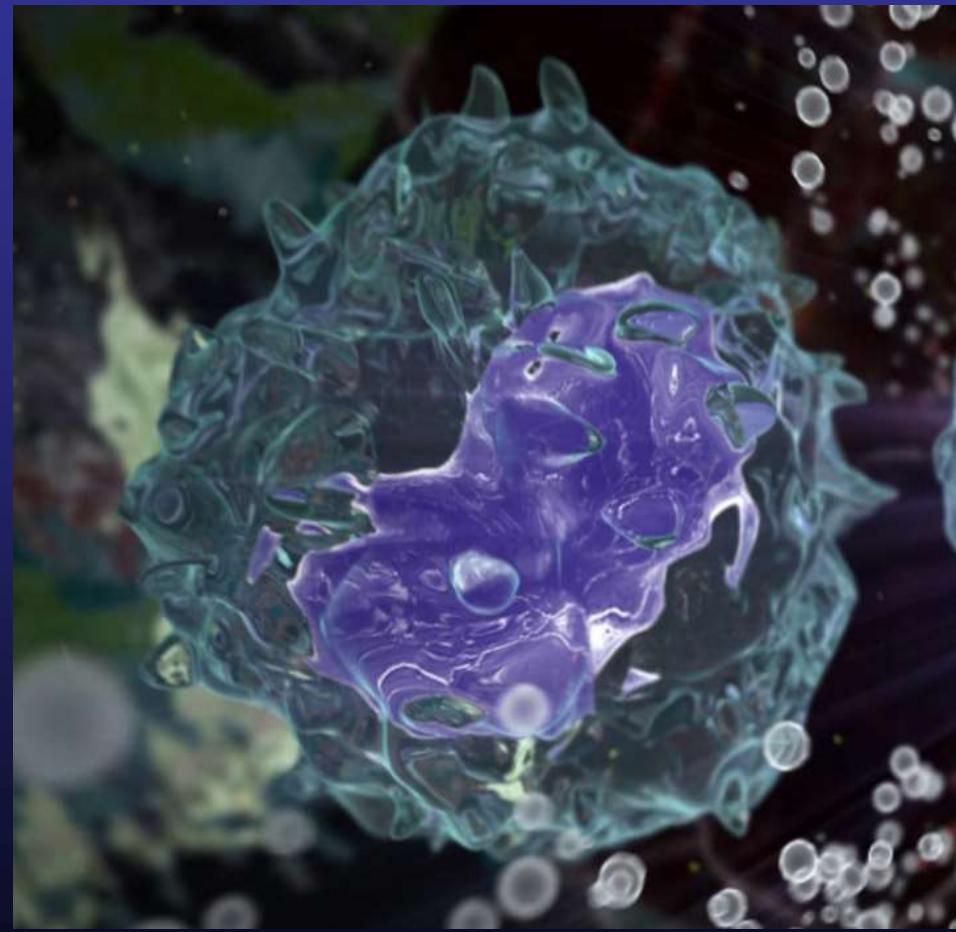
# Alcuni studi sperimentali in omeopatia del gruppo di Paolo Bellavite (Università di Verona) (n. 1-8)

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# *Arnica montana*



# Rassegna di prove di laboratorio del «simile» (2013)

Homeopathy (2014) 103, 22–43  
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<http://dx.doi.org/10.1016/j.homp.2013.08.002>, available online at <http://www.sciencedirect.com>

## REVIEW

### High-dilution effects revisited. 2. Pharmacodynamic mechanisms

Paolo Bellavite<sup>1,\*</sup>, Marta Marzotto<sup>1</sup>, Debora Olioso<sup>1</sup>, Elisabetta Moratti<sup>1</sup> and Anita Conforti<sup>2</sup>

**Table 2 Examples of inverse effects in laboratory systems**

System	Agent	First effect	Inverse effect
Yeast <sup>163</sup>	Heavy metals	Block growth	Low doses increase growth
Leukocytes <sup>164</sup>	Cytostatic agents	Cytotoxicity	Low doses stimulate growth and phagocytosis
Fibroblasts <sup>165–167</sup>	Arsenite	Cell toxicity	Low doses protect from toxicity or stimulate DNA synthesis
Neurons <sup>168,169</sup>	Naloxone	Antagonizes morphine	Low doses enhance the effect of morphine
Epithelial cells	Oxidants	Short-term/high doses decrease viability	Long-term/low doses increase viability
Tumor cells <sup>170</sup>			
Platelets <sup>148,171</sup>	Diclofenac	High doses stimulate adhesion	Low doses inhibit adhesion
Leukocytes <sup>146,172</sup>	Bacterial peptides	Stimulate adherence	Low doses inhibit adherence
Leukocytes <sup>173</sup>	Podophyllotoxin	Cell toxicity	Low doses enhance oxidative metabolism
Wheat germ <sup>174–176</sup>	Arsenite	Cell toxicity	HDs protect from toxicity
Lymphocytes <sup>177,178</sup>	Cadmium	Cell toxicity	HDs protect from cadmium toxicity
Neurons <sup>179,180</sup>	Glutamate, cycloheximide	Neurotoxicity	Extremely low doses and HDs protect from neurotoxicity
Basophils <sup>14</sup>	Histamine	Inflammation	HDs inhibit basophil activation
Basophils <sup>181</sup>	Quercetin	Inhibit cell activation	Low doses enhance formyl-peptide-induced activation

# Rassegna di prove di laboratorio del «simile» (2013)

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<http://dx.doi.org/10.1016/j.homp.2013.08.002>, available online at <http://www.sciencedirect.com>

**Table 3 Examples of inverse effects in animal models**

System	Agent	First effect	Inverse effect
Tadpoles (frogs) <sup>20,21,182,183</sup>	Thyroxine	Stimulates metamorphosis	HDs inhibit metamorphosis
Rat blood <sup>184–186</sup>	Acetylsalicylic acid	Inhibit platelet aggregation and haemostasis	Very low doses have thrombogenic activity
Dog heart <sup>187</sup>	Ischemia	Causes infarction	Ischemic preconditioning protects from infarction
Mice kidney <sup>188</sup>	Free radicals	Toxicity	Pre-treatment with low doses protect from toxicity
Mouse prostate <sup>189</sup>	Estrogens	Inhibit growth	Low doses promote growth
Mouse and rat immune system <sup>190,191</sup>	Protein antigens	Induce allergy autoimmune disease	Oral administration protects and cures autoimmunity
Mice <sup>192</sup>	Morphine	Antinociceptive effects	Extremely low doses enhance pain sensitivity
Rat arthritis <sup>193</sup>	Naloxone	Hyperalgesia	Low doses have antinociceptive effects
Mice <sup>194,195</sup>	Naloxone	Antagonizes morphine	Analgesic effects in ULDs
Rat, guinea pig <sup>196–201</sup>	Histamine and/or bee venom	Inflammation, oedema	Low doses and HDs reduce inflammation
Rat liver <sup>202,203</sup>	Carbon tetrachloride	Toxicity	Low doses protect from liver toxicity
Rat immune system <sup>204–206</sup>	Mycobacteria in adjuvant	Induce arthritis when injected intra-paw	Intraperitoneal low doses cure arthritis
Mice, guinea pig, rats <sup>207–211</sup>	Arsenic	Liver toxicity, genotoxicity	Protection by ULDs of arsenic and increase of arsenic elimination
Rat <sup>212,213</sup>	Carcinogens (acetaminofluorene, phenobarbital)	Induce cancer	Low doses protect from cancer
Rat <sup>214</sup>	<i>Bacillus antracis</i>	Severe inflammation and death	Low doses of bacillus extract protect from toxicity
Mice <sup>215</sup>	<i>Gelsemium sempervirens</i>	Causes severe weakness, dizziness, convulsions	HDs are anxiolytic and increase exploration movement

# Alcuni studi clinici in omeopatia del gruppo di Paolo Bellavite (Università di Verona) con gli omeopati

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# I rimedi della COVID-19 usati dagli omeopati con un criterio «evidence-based»

## Test of a Homeopathic Algorithm for COVID-19: the Importance of a Broad Perspective

Original Research Article

Anjali Miglani<sup>1</sup> Raj Kumar Manchanda<sup>1</sup> Amrit Kalsi<sup>1</sup> Prabhjeet Kaur<sup>1</sup> B  
Cheshta Nagrath<sup>1</sup> Jithesh Thavarayil Kannoth<sup>1</sup> Ram Kumar Kudiyarasu<sup>1</sup> R  
Smita Brahmachari<sup>1</sup> Ankit Gupta<sup>1</sup> Shelly Arora<sup>1</sup> Shirin Balan<sup>1</sup> Kavita Shar  
Anu Chawla<sup>1</sup> Manjula Ghuliani<sup>1</sup> Anurag Pandey<sup>1</sup> Philippa Fibert<sup>2</sup> Lex Ru

<sup>1</sup> Directorate of AYUSH, Health and Family Welfare Department,  
Government of NCT of Delhi, New Delhi, India

<sup>2</sup> Department of Psychology and Pedagogic Science, St. Mary's  
University, London, UK

Aard 10, 4813NN Breda, The Netherlands

Homeopathy

Homeopathy

2022 Aug 21. doi: 10.1055/s-0042-1746196.

**Background/Objective** Most of the symptoms of coronavirus disease 2019 (COVID-19) are covered by large repertory rubrics and hence many remedies have been proposed as "genus epidemicus". The aim of this study was to combine the information from various data collections to prepare a COVID-19 Bayesian mini-repertory/an algorithm-based application (app) and test it.

**Methods** In July 2021, 1,161 COVID-19 cases from 100 practitioners globally were combined. These data were used to calculate "condition-confined" likelihood ratios (LRs) for 59 symptoms of COVID-19. Out of these, 35 symptoms of the 11 medicines that had at least 20 cases each were considered. The information was entered in a spreadsheet (algorithm) to calculate combined LRs of specific combinations of symptoms. The algorithm contained the medicines *Arsenicum album*, *Belladonna*, *Bryonia alba*, *Camphora*, *Gelsemium sempervirens*, *Hepar sulphuris*, *Mercurius solubilis*, *Nux vomica*, *Phosphorus*, *Pulsatilla* and *Rhus toxicodendron*. To test concordance, the doctors were then invited to re-enter the symptoms of their cases into this algorithm.

**Results** The algorithm was re-tested on 358 cases, and concordance was seen in 288 cases. On analysis of the data, bias was noticed in the *Merc* group, which was therefore excluded from the algorithm. The remaining 10 medicines, representing 81.8% of all cases, were included in the preparation of the next version of the homeopathic mini-repertory and app.

**Conclusion** The Bayesian mini-repertory and app is based on qualitative clinical experiences of various doctors in COVID-19 and gives indications for specific medicines for common COVID-19 symptoms. It is freely available [English: <https://hpra.co.uk/>; Spanish: <https://hpra.co.uk/es>] for further testing and utilization by the profession.

<https://hpra.co.uk/>

# LIKELIHOOD RATIO



- LR = rapporto tra la frequenza di un sintomo/più sintomi in un rimedio e la frequenza in tutto il resto della popolazione
- => INDICAZIONE DI “QUANTO FORTE/INDICATIVO SIA UN DETERMINATO SINTOMO O GRUPPO DI SINTOMI PER LA PRESCRIZIONE/EFFICACIA DI UN DETERMINATO RIMEDIO



# “MINI-REPERTORIO” bayesiano dei sintomi COVID-19

NB: solo per medici!

Sintomi che consentono di differenziare cinque rimedi omeopatici (Arsenicum album, Bryonia alba, Gelsemium sempervirens, Phosphorus and Pulsatilla) che sono stati usati in 416 casi di COVID-19 trattati «con successo» **fino al 4 agosto 2020** da un gruppo di omeopati esperti afferenti alla LMHI

(comunicazione del dr. Lex Rutten)

<https://hpra.co.uk/>

Symptoms	LRars	LRbry	LRgels	LRphos	LRpuls
<b>fatigue</b>	1.20	0.82	1.84	1.11	0.30
<b>dry cough</b>	0.73	1.70	0.82	1.20	0.49
<b>productive cough</b>	0.96	0.57	0.70	2.76	2.61
<b>dyspnoea</b>	0.49	1.15	0.81	2.24	0.22
<b>headache</b>	0.67	1.44	1.54	0.81	0.93
<b>fever</b>	0.94	0.93	1.42	1.50	1.12
<b>chill</b>	0.59	0.65	4.14	0.76	0.97
<b>perspiration</b>	0.70	1.16	2.15	1.84	1.74
<b>diarrhoea</b>	1.42	0.82	1.04	2.33	0.34
<b>throat pain</b>	1.13	1.29	0.76	0.33	0.80
<b>muscle/bone pain</b>	1.09	1.30	1.08	0.47	0.44
<b>anxiety/fear</b>	2.44	0.40	1.10	1.58	0.97
<b>loss of taste and/or smell</b>	0.66	0.96	0.27	1.44	2.58
<b>thirst</b>	1.61	2.38	0.21	0.88	0.41
<b>thirstless</b>	0.30	0.54	4.13	1.75	2.90
<b>nausea</b>	1.83	0.76	1.06	0.74	1.44
<b>back pain</b>	0.20	3.20	0.38	2.46	1.00
<b>abdominal pain</b>	0.89	1.19	1.02	1.47	2.98
<b>chest pain &lt; cough</b>	0.21	2.91	2.56	2.60	1.00
<b>&gt; open air</b>	0.30	1.45	0.55	1.00	1.61
<b>restless</b>	5.00	0.65	1.00	1.00	1.00
<b>desire cold drinks</b>	1.00	1.64	0.60	6.63	1.00

LR: Likelihood Ratio (prevalenza del sintomo nei casi trattati con quel rimedio rispetto alla prevalenza nella popolazione totale dei malati)

# La “individualizzazione” omeopatica nella COVID-19

<https://hpra.co.uk/>

Sintomi che consentono di differenziare cinque rimedi omeopatici (Arsenicum album, Bryonia alba, Gelsemium sempervirens, Phosphorus and Pulsatilla) che sono stati usati in 416 casi di COVID-19 trattati «con successo» fino al 4 agosto 2020 da un gruppo di omeopati esperti afferenti alla LMHI

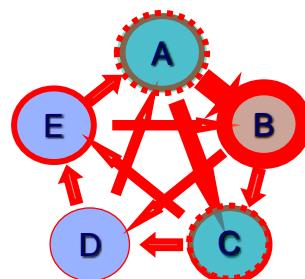
(comunicazione del dr. Lex Rutten)

(1 of 22)	<input type="checkbox"/> Fatigue	(1 of 22)	The patient looks and feels tired/exhausted
(2 of 22)	<input type="checkbox"/> Dry cough	(2 of 22)	The cough sounds dry and there is no sputum production
(3 of 22)	<input type="checkbox"/> Productive cough	(3 of 22)	The patient produces mucus or sputum when coughing
(4 of 22)	<input type="checkbox"/> Dyspnoea	(4 of 22)	Shortness of breath
(5 of 22)	<input type="checkbox"/> Headache	(5 of 22)	Any kind of headache since onset of the disease
(6 of 22)	<input type="checkbox"/> Fever	(6 of 22)	Body temperature above 38.0° Celsius or 100.4° Fahrenheit
(7 of 22)	<input type="checkbox"/> Chill	(7 of 22)	Coldness in (parts of) the body and/or shivering
(8 of 22)	<input type="checkbox"/> Increased perspiration	(8 of 22)	Patient perspires more than expected from room temperature
(9 of 22)	<input type="checkbox"/> Diarrhoea	(9 of 22)	Stool is more loose/fluid and more frequent than normal
(10 of 22)	<input type="checkbox"/> Sore throat	(10 of 22)	Any kind of pain felt in the throat
(11 of 22)	<input type="checkbox"/> Muscle or bone pain	(11 of 22)	Generalised or specific pains or aches in the muscles or bones
(12 of 22)	<input type="checkbox"/> Anxiety	(12 of 22)	Feeling anxious/fearful, about health, development of illness
(13 of 22)	<input type="checkbox"/> Loss of taste and/or smell	(13 of 22)	Loss or reduction in these senses since onset of the disease
(14 of 22)	<input type="checkbox"/> Thirsty	(14 of 22)	More thirsty than usual
(15 of 22)	<input type="checkbox"/> Thirstless	(15 of 22)	Less thirsty than usual
(16 of 22)	<input type="checkbox"/> Nausea	(16 of 22)	Feeling as if wanting to vomit
(17 of 22)	<input type="checkbox"/> Back pain	(17 of 22)	Any kind of pain in (parts of) the back
(18 of 22)	<input type="checkbox"/> Abdominal pain	(18 of 22)	Any kind of pain in (parts of) the abdomen
(19 of 22)	<input type="checkbox"/> Cough worsens chest pain	(19 of 22)	Pain in chest or chest walls that is worse when coughing
(20 of 22)	<input type="checkbox"/> Better in open air	(20 of 22)	Feeling generally better when in open air
(21 of 22)	<input type="checkbox"/> Restlessness	(21 of 22)	Patient has difficulty keeping still
(22 of 22)	<input type="checkbox"/> Desire for cold drinks	(22 of 22)	Thirst for all kinds of cold fluids

# La “individualizzazione” omeopatica nella COVID-19

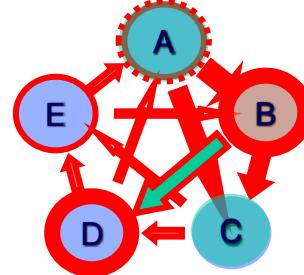
<https://hpra.co.uk/>

<input checked="" type="checkbox"/> Fatigue
<input checked="" type="checkbox"/> Dry cough
<input type="checkbox"/> Productive cough
<input type="checkbox"/> Dyspnoea
<input type="checkbox"/> Headache
<input type="checkbox"/> Fever
<input checked="" type="checkbox"/> Chill
<input type="checkbox"/> Increased perspiration
<input type="checkbox"/> Diarrhoea
<input type="checkbox"/> Sore throat
<input type="checkbox"/> Muscle or bone pain
<input checked="" type="checkbox"/> Anxiety
<input type="checkbox"/> Loss of taste and/or smell
<input type="checkbox"/> Thirsty
<input checked="" type="checkbox"/> Thirstless
<input type="checkbox"/> Nausea
<input type="checkbox"/> Back pain
<input type="checkbox"/> Abdominal pain



*Phosphorus*

*Gelsemium  
semperflorens*



<input checked="" type="checkbox"/> Fatigue
<input type="checkbox"/> Dry cough
<input checked="" type="checkbox"/> Productive cough
<input checked="" type="checkbox"/> Dyspnoea
<input type="checkbox"/> Headache
<input type="checkbox"/> Fever
<input checked="" type="checkbox"/> Chill
<input type="checkbox"/> Increased perspiration
<input type="checkbox"/> Diarrhoea
<input type="checkbox"/> Sore throat
<input type="checkbox"/> Muscle or bone pain
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<input checked="" type="checkbox"/> Loss of taste and/or smell
<input type="checkbox"/> Thirsty
<input type="checkbox"/> Thirstless
<input type="checkbox"/> Nausea
<input type="checkbox"/> Back pain
<input type="checkbox"/> Abdominal pain

# Conferme del «mini-Repertorio»

Original Research Article

## Test of a Homeopathic Algorithm for COVID-19: the Importance of a Broad Perspective

Anjali Miglani<sup>1</sup> Raj Kumar Manchanda<sup>1</sup> Amrit Kalsi<sup>1</sup> Prabhjeet Kaur<sup>1</sup> Beenu Saini<sup>1</sup> Amit Arora<sup>1</sup>  
Cheshta Nagrath<sup>1</sup> Jithesh Thavarayil Kannoth<sup>1</sup> Ram Kumar Kudiyarasu<sup>1</sup> Rahul Vardaan<sup>1</sup>  
Smita Brahmachari<sup>1</sup> Ankit Gupta<sup>1</sup> Shelly Arora<sup>1</sup> Shirin Balan<sup>1</sup> Kavita Sharma<sup>1</sup> Malaya Kumar Ray<sup>1</sup>  
Anu Chawla<sup>1</sup> Manjula Ghuliani<sup>1</sup> Anurag Pandey<sup>1</sup> Philippa Fibert<sup>2</sup> Lex Rutten<sup>3</sup>

<sup>1</sup> Directorate of AYUSH, Health and Family Welfare Department,  
Government of NCT of Delhi, New Delhi, India

<sup>2</sup> Department of Psychology and Pedagogic Science, St Mary's  
University, London, UK

<sup>3</sup> Aard 10, 4813NN Breda, The Netherlands

Address for correspondence: Raj Kumar Manchanda, BHMS, MD, MBA,  
Directorate of AYUSH, Health and Family Welfare Department,  
Government of NCT of Delhi, CSC-II, First Floor, B-Block, Preet Vihar,  
Delhi 110092; Liga Medicorum Homoeopathica Internationalis; India  
(e-mail: rkmanchanda@gmail.com).

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Homeopathy

**Methods** In July 2021, 1,161 COVID-19 cases from 100 practitioners globally were combined. These data were used to calculate "condition-confined" likelihood ratios (LRs) for 59 symptoms of COVID-19. Out of these, 35 symptoms of the 11 medicines that had at least 20 cases each were considered. The information was entered in a spreadsheet (algorithm) to calculate combined LRs of specific combinations of symptoms. The algorithm contained the medicines *Arsenicum album*, *Belladonna*, *Bryonia alba*, *Camphora*, *Gelsemium sempervirens*, *Hepar sulphuris*, *Mercurius solubilis*, *Nux vomica*, *Phosphorus*, *Pulsatilla* and *Rhus toxicodendron*. To test concordance, the doctors were then invited to re-enter the symptoms of their cases into this algorithm.

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53 results        Page  of 6

RESULTS BY YEAR

**Homoeopathic Medicine Arsenicum album 30 C for Covid-19 in 2020: A Retrospective Analysis from Mass-level Data.**  
1 Chaudhary A, Nayak D, Pandey S, R R, Khurana A, Study Group C.  
Altern Ther Health Med. 2022 Sep 9:AT7132. Online ahead of print.  
PMID: 36074959  
BACKGROUND AND OBJECTIVE: Homoeopathy has played a notable role in managing epidemics in the past. The Ministry of Ayush, Government of India, declared **Arsenicum album** 30 C as a prophylactic for Covid-19, which was followed by the distribution of the medicine across ...

## Anti-oxidant Effect of High Dilutions of *Arnica montana*, *Arsenicum Album*, and *Lachesis Mutus* in Microglial Cells in Vitro

Dose-Response:  
An International Journal  
April-June 2022:1-7  
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DOI: 10.1177/15593258211103698  
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Anne Paumier<sup>1,†</sup>, Justine Verre<sup>1,†</sup>, Sandra Tribolo<sup>1</sup> , and Naoual Boujedaini<sup>1</sup> 

Microglial cells, on exposure to lipopolysaccharide (LPS), have induced production of ROS compared with resting cells.

*Arnica m.* 1C, 3C, 5C, 7C, 9C, and 30C dilutions had a range of ROS reduction between 15 and 42.1%;

*Arsenicum a.* 3C, 5C, 7C, 15C, and 30C dilutions had a range of ROS reduction between 17.6 and 35.3%; and

*Lachesis m.* 3C, 5C, 7C, 9C, 15C, and 30C dilutions had a range of ROS reduction between 25 and 41.7%.

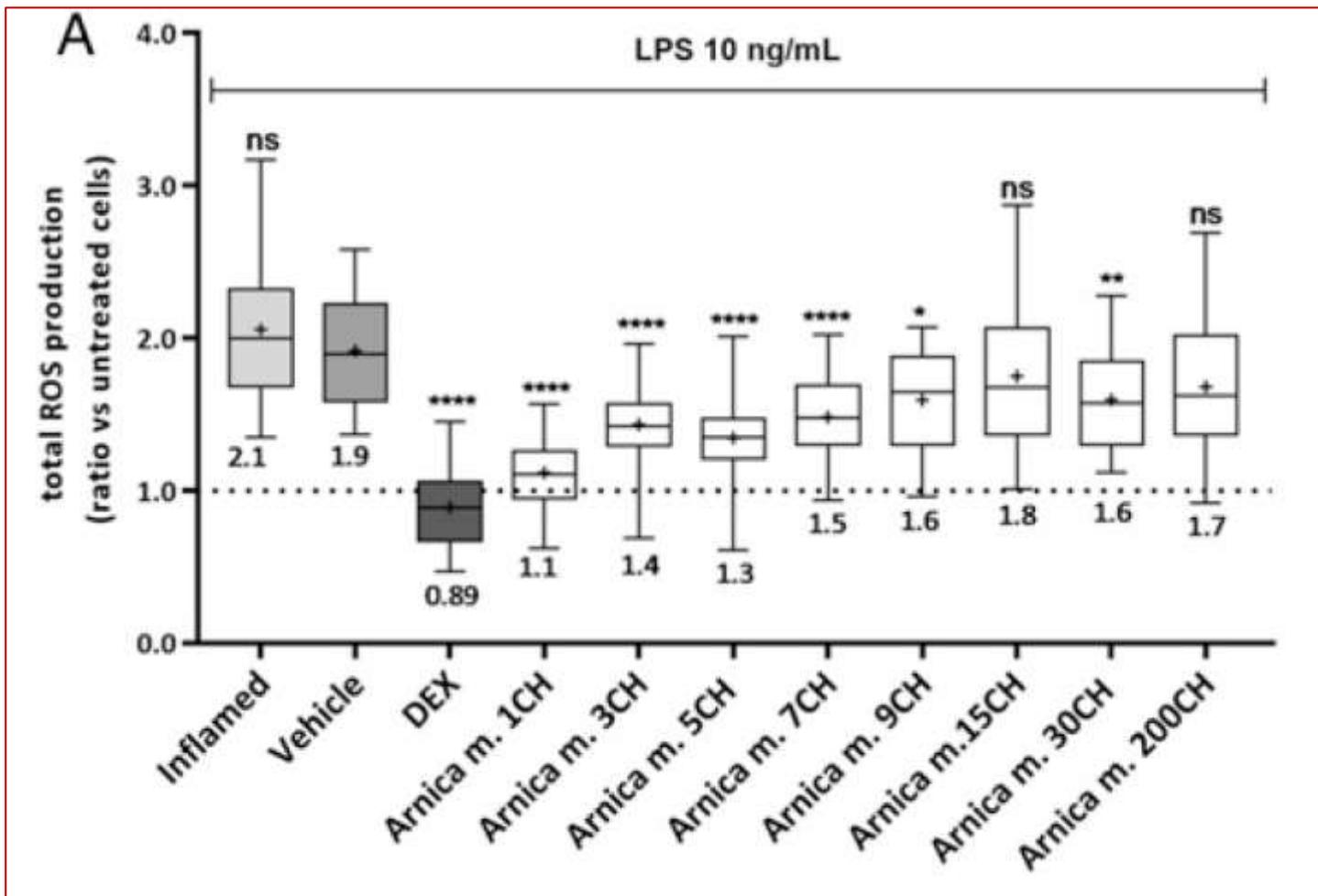
To summarize, the dilutions with the greatest effect were *Arnica m.* 1C (42.1%), *Arsenicum a.* 30C (35.3%), and *Lachesis m.* 7C (41.7%).

# Anti-oxidant Effect of High Dilutions of Arnica montana, Arsenicum Album, and Lachesis Mutus in Microglial Cells in Vitro

Dose-Response:  
An International Journal  
April-June 2022:1–7  
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Anne Paumier<sup>1,†</sup>, Justine Verre<sup>1,†</sup>, Sandra Tribolo<sup>1,‡</sup>, and Naoual Boujedaini<sup>1</sup>

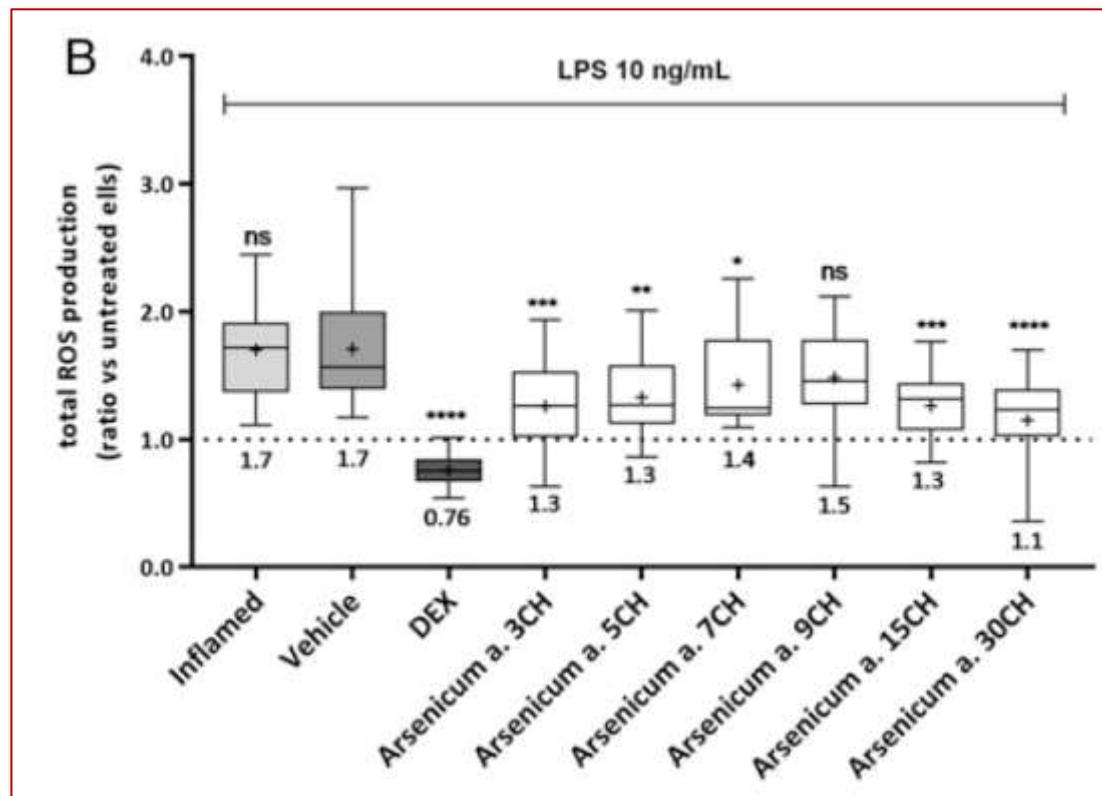


# Anti-oxidant Effect of High Dilutions of Arnica montana, Arsenicum Album, and Lachesis Mutus in Microglial Cells in Vitro

Dose-Response:  
An International Journal  
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Anne Paumier<sup>1,†</sup>, Justine Verre<sup>1,‡</sup>, Sandra Tribolo<sup>1,§</sup>, and Naoual Boujedaini<sup>1,§</sup>



# Recente lavoro clinico omeopatico nella COVID-19

➤ Homeopathy, 2022 Nov 28. doi: 10.1055/s-0042-1755365. Online ahead of print.

## Homoeopathy as an Adjuvant to Standard Care in Moderate and Severe Cases of COVID-19: A Single-Blind, Randomized, Placebo-Controlled Study

Harleen Kaur <sup>1</sup>, Subhash Kaushik <sup>2</sup>, Gurpreet Singh <sup>2</sup>, Arvind Kumar <sup>2</sup>, Shweta Singh <sup>2</sup>,  
Tania Chatterjee <sup>2</sup>, Syed Ali <sup>2</sup>, Khushbu Gautam <sup>2</sup>, Maneet Parewa <sup>2</sup>, Naval Kumar Verma <sup>3</sup>,  
Sushma Bhatnagar <sup>4</sup>, Suraj Pal Singh <sup>5</sup>, Varun Shekhar <sup>5</sup>, Anil Khurana <sup>2</sup>

**Objectives:** In total, 150 patients were recruited and then randomly divided into two groups to receive either individualized homeopathic medicines or placebos in addition to standard treatment (non-invasive supplemental oxygen, antibiotics, vasopressor support, dexamethasone and multi-vitamins, as per the institutional management protocol).

**Results:** In total, 72 participants of the add-on homeopathy (AoH) group showed conversion of RT-PCR status to negative, in an average time of  $7.53 \pm 4.76$  days (mean  $\pm$  SD), as compared with  $11.65 \pm 9.54$  days in the add-on placebo (AoP) group ( $p = 0.001$ ).

The mortality rate for the AoH group was 9.7% compared with 17.3% in the AoP group.

The MYMOP2 scores between the two groups differed significantly ( $p = 0.001$ ), in favor of AoH. Inter-group differences in the pre- and post- mean values of C-reactive protein, fibrinogen, total leukocyte count, platelet count and alkaline phosphatase were each found to be statistically significant ( $p < 0.05$ ), favoring AoH.

**Conclusion:** Homeopathy may be an effective adjunct to standard care for treating moderate and severe COVID-19 patients.

# Recente lavoro clinico omeopatico nella COVID-19

➤ *Homeopathy*. 2022 Nov 28. doi: 10.1055/s-0042-1755365. Online ahead of print.

**Table 6** Most frequently used medicines

No.	Name of medicine	No. of patients	Moderate	Severe
1.	<i>Veratrum viride</i>	22	13	9
2.	<i>Arsenicum album</i>	19	15	4
3.	<i>Bryonia alba</i>	14	9	5
4.	<i>China</i>	10	4	6
5.	<i>Gelsemium</i>	6	3	3
6.	<i>Kali carb.</i>	6	3	3
7.	<i>Carbo veg.</i>	5	3	2
8.	<i>Phosphorus</i>	5	2	3
9.	<i>Pyrogenium</i>	5	5	0
10.	<i>Lycopodium</i>	4	4	0
11.	<i>Sulphur</i>	4	3	1
12.	<i>Vanadium</i>	4	2	2
13.	<i>Merc. sol.</i>	4	1	3
14.	<i>Hepar sulph.</i>	3	3	0
15.	<i>Ipecacuanha</i>	3	2	1

15.	<i>Ipecacuanha</i>	3	2	1
16.	<i>Nux vomica</i>	3	2	1
17.	<i>Antimonium arsenicum</i>	2	2	0
18.	<i>Antimonium tart.</i>	2	0	2
19.	<i>Camphora</i>	2	1	1
20.	<i>Crotalus horridus</i>	2	2	0
21.	<i>Lachesis</i>	2	1	1
22.	<i>Rumex</i>	2	2	0
23.	<i>Senega</i>	2	1	1
24.	<i>Arnica montana</i>	2	0	2
25.	<i>Cuprum met.</i>	1	0	1
26.	<i>Mephitis</i>	1	1	0
27.	<i>Spongia tosta</i>	1	1	0
28.	<i>Pulsatilla</i>	1	0	1
29.	<i>Influenzinum</i>	1	1	0
30.	<i>Belladonna</i>	1	0	1
31.	<i>Sarcolactic acid</i>	1	1	0

# Quanto piccolo dev'essere la dose?

*“Quanto piccola, in altre parole, deve essere la dose di ogni singola medicina, omeopaticamente selezionata per un caso di malattia, per effettuare la migliore cura? ”*

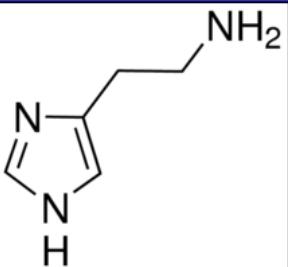
*“Non è, come si può facilmente immaginare, opera di speculazione teorica. (...) Solo il puro esperimento, l'attenta osservazione della sensibilità di ogni paziente e l'accurata esperienza possono determinarlo in ogni singolo caso”*



**C.F.S. Hahnemann** Organon, par. 278

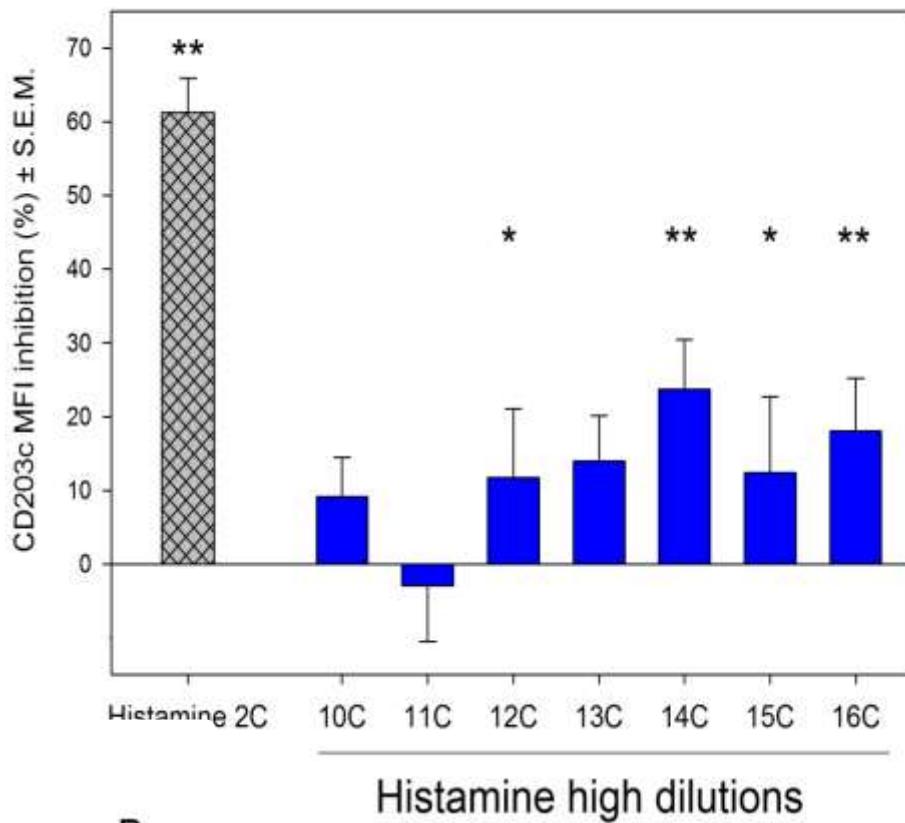
# EFFECTS OF HISTAMINE ON basophils activation by anti-IgE

Chirumbolo , Bellavite et al., Inflammation Research 2009

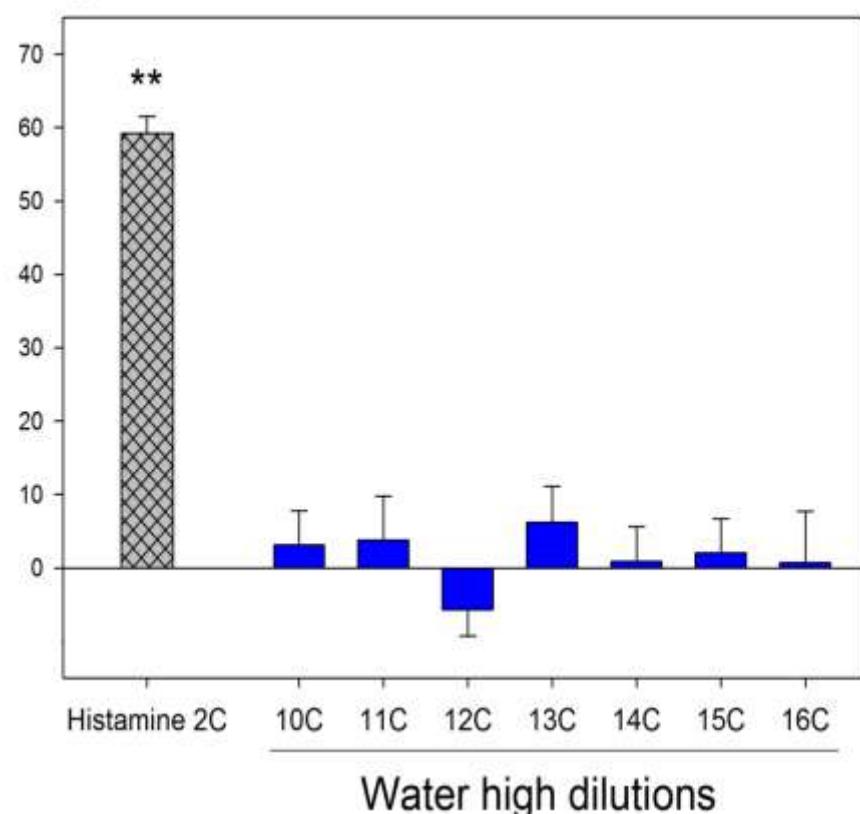


A

\* P<0.05, \*\*P<0.01

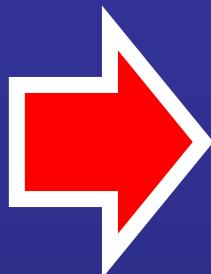


B



# HISTAMINE INVERSE EFFECTS -1

Allergy  
UV light  
Bacteria  
Bee  
venom



BASOPHILS



H2 receptors  
of basophils



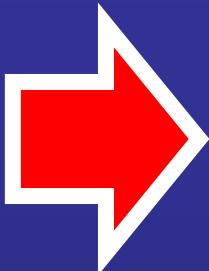
SYMPTOMS  
OF  
INFLAMMATION



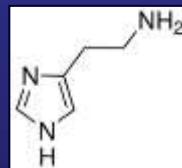
HISTAMINE  
homeopathic  
dilutions,  
Apis m., Histaminum

# HISTAMINE INVERSE EFFECTS - 2

Allergy  
UV light  
Bacteria  
Bee  
venom



BASOPHILS



LESS  
HISTAMINE



H2 receptors  
of basophils



LESS SYMPTOMS  
OF  
INFLAMMATION



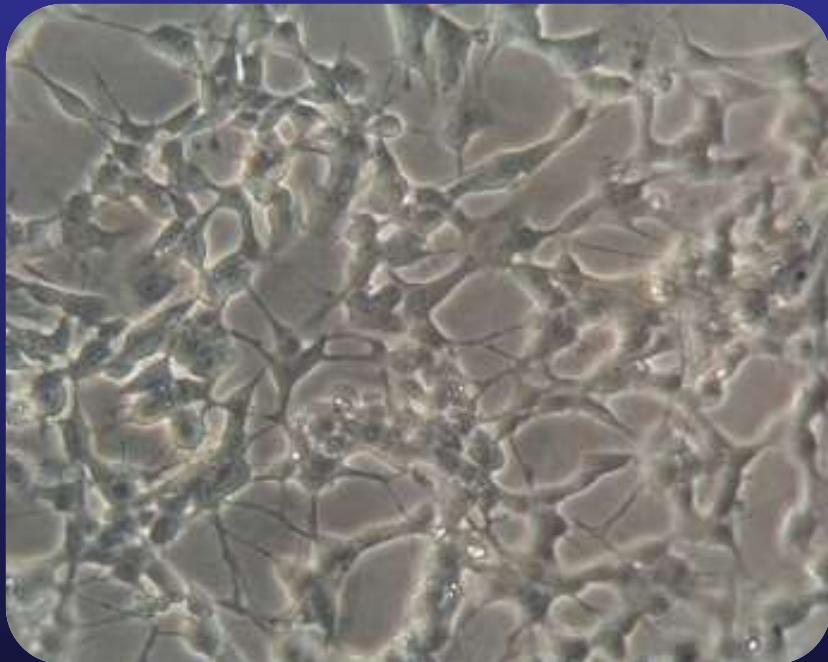
HISTAMINE  
homeopathic  
dilutions,  
Apis m., Histaminum

Apis m., Histaminum

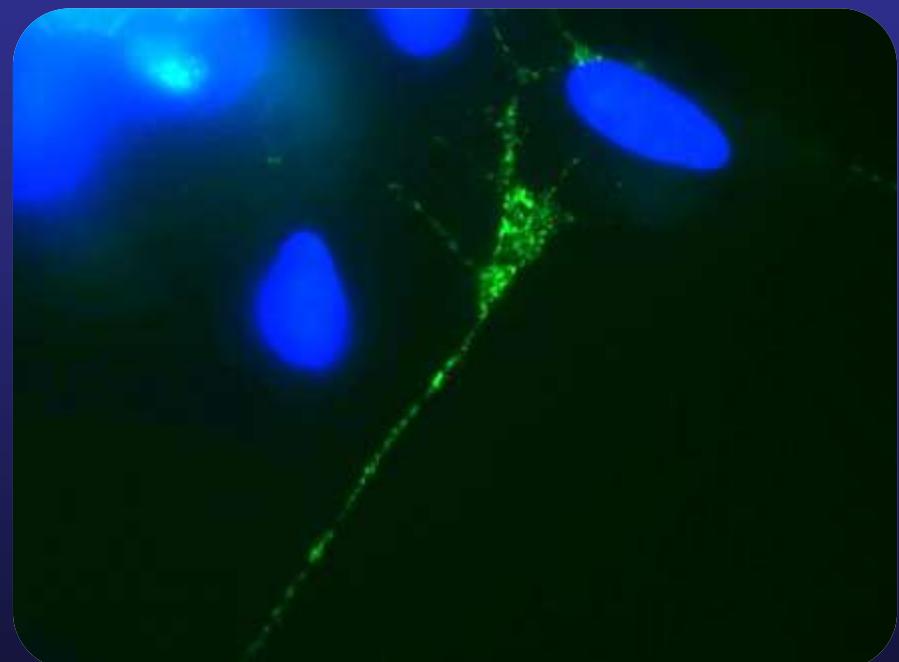
# Effetti di Gelsemium sempervirens sulla espressione genica delle cellule neuronali



SHSY5Y neurocytes-human neuroblastoma cells



Inverted microscope image



Confocal immunofluorescent image

# *Gelsemium sempervirens*

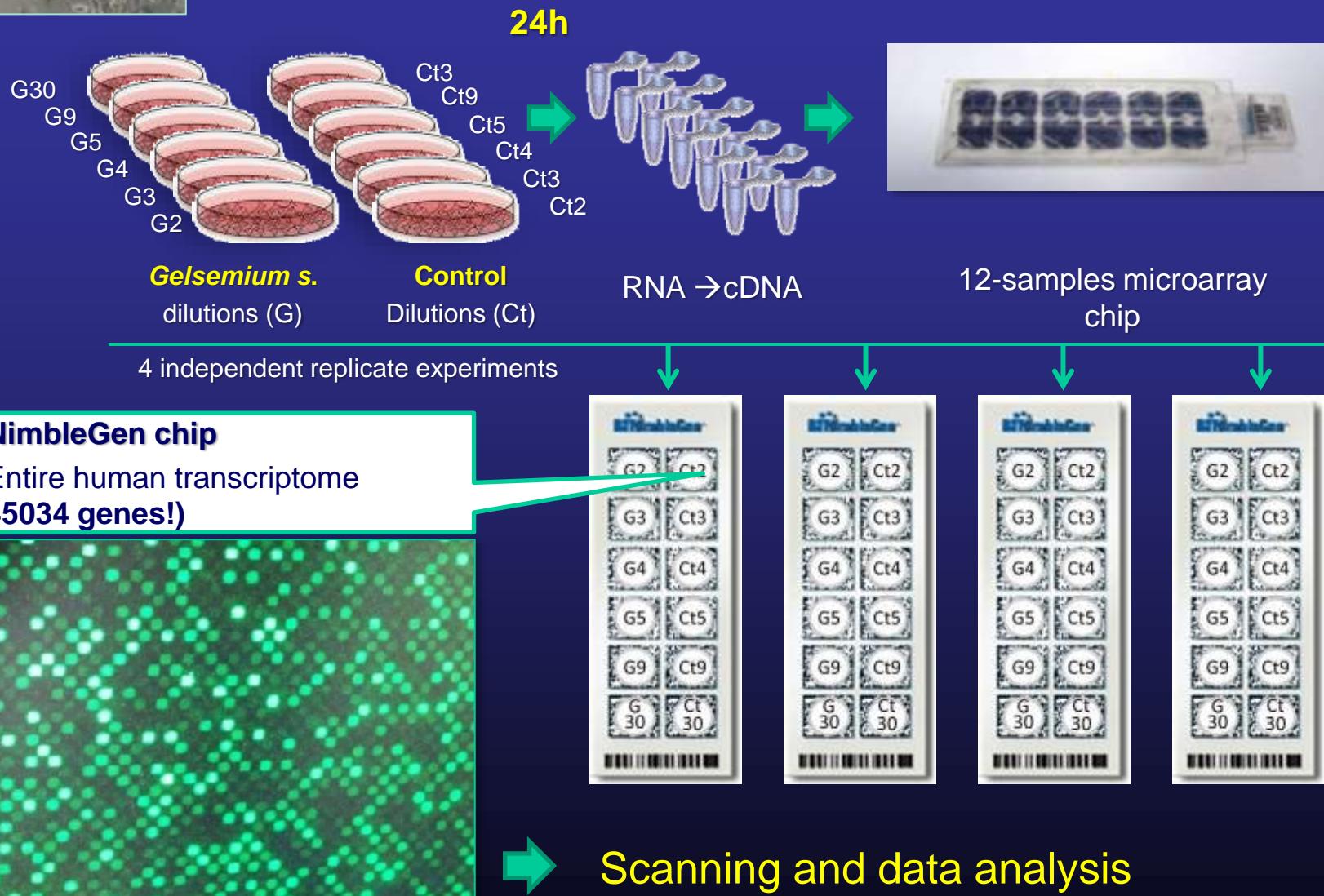
## Doses/dilutions

- An ethanolic extract of this plant contains 21 mg of its active principle gelsemine in 100 ml of solution. This value corresponds to 0.0004 Mol/L, i.e. (if Avogadro number is approximated to  $10^{24}$ )  $4 \times 10^{17}$  molecules/ml of solution.
- 3C (and 6X):  $4 \times 10^{11}$  molecules/ml of solution
- 5C (and 10X):  $4 \times 10^7$  molecules/ml of solution
- 7C (and 14X):  $4 \times 10^3$  molecules/ml of solution (4,000)
- 9C (and 18X): less than 1 molecule/ml of solution

# Dilution and dynamization



# Microarray analysis of gene expression changes in human neurocytes





# Effects of Gelsemium on expression of 49 Gels C2-down-regulated genes

[Gelsemine]=  
 $1.3 \times 10^7$   
molecule/cell

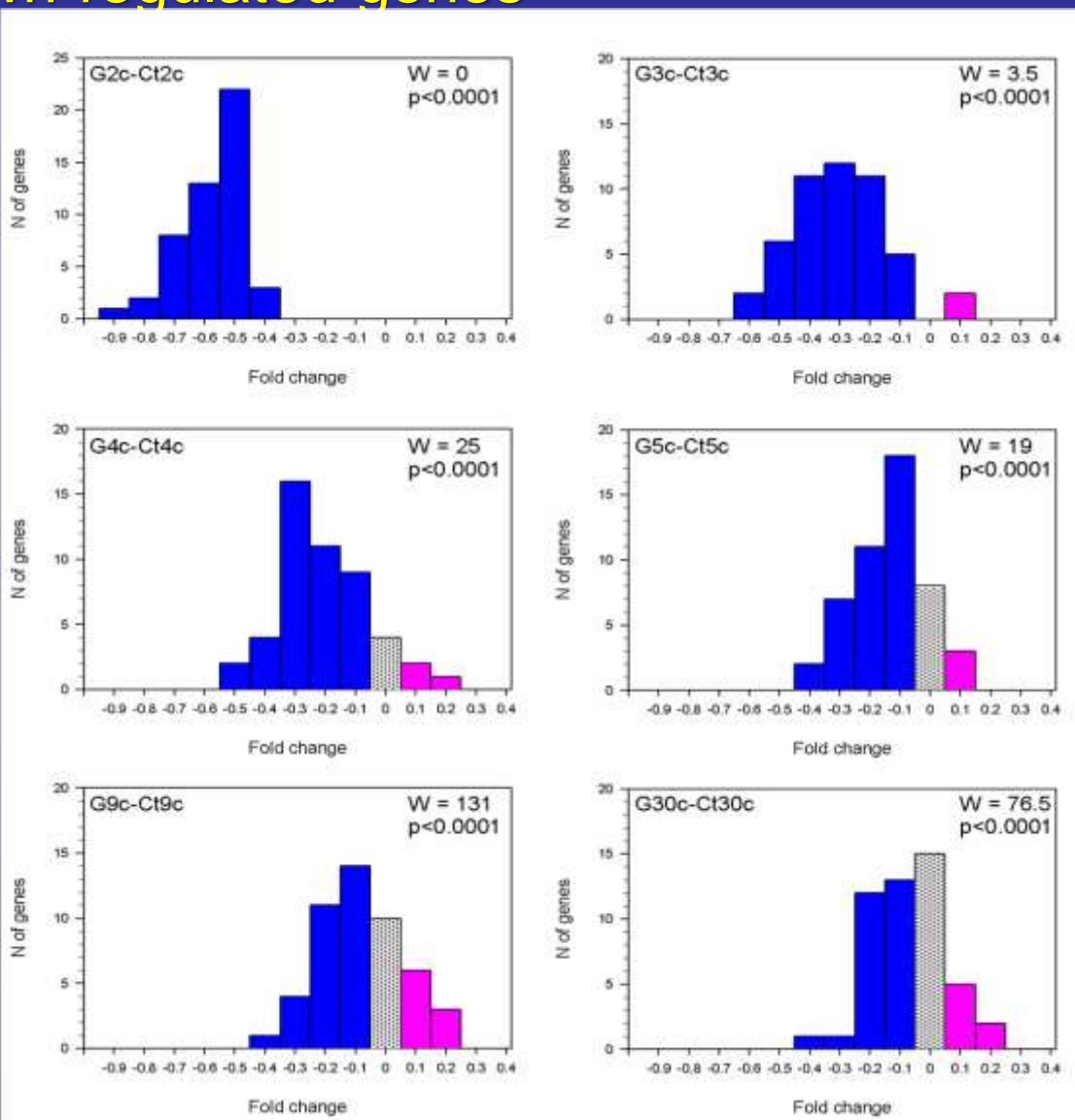
$1.3 \times 10^3$   
molecule/cell

0 molecule/cell

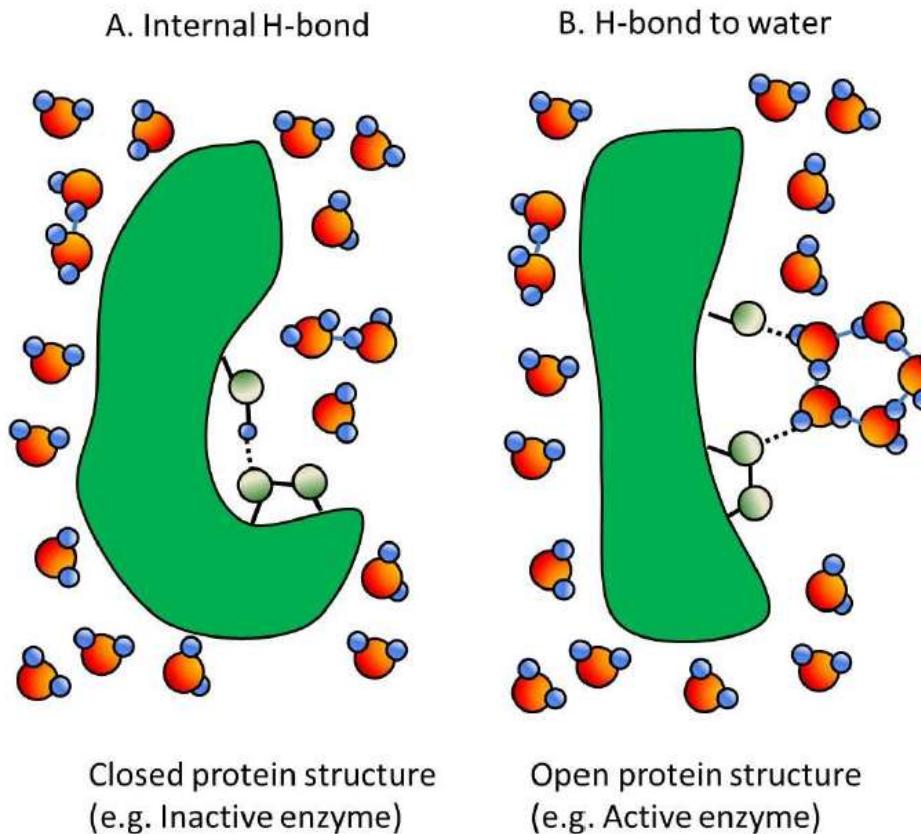
$1.3 \times 10^5$   
molecule/cell

13  
molecules/cell

0 molecule/cell



# Cambiamenti conformazionali di una proteina indotti da legami idrogeno



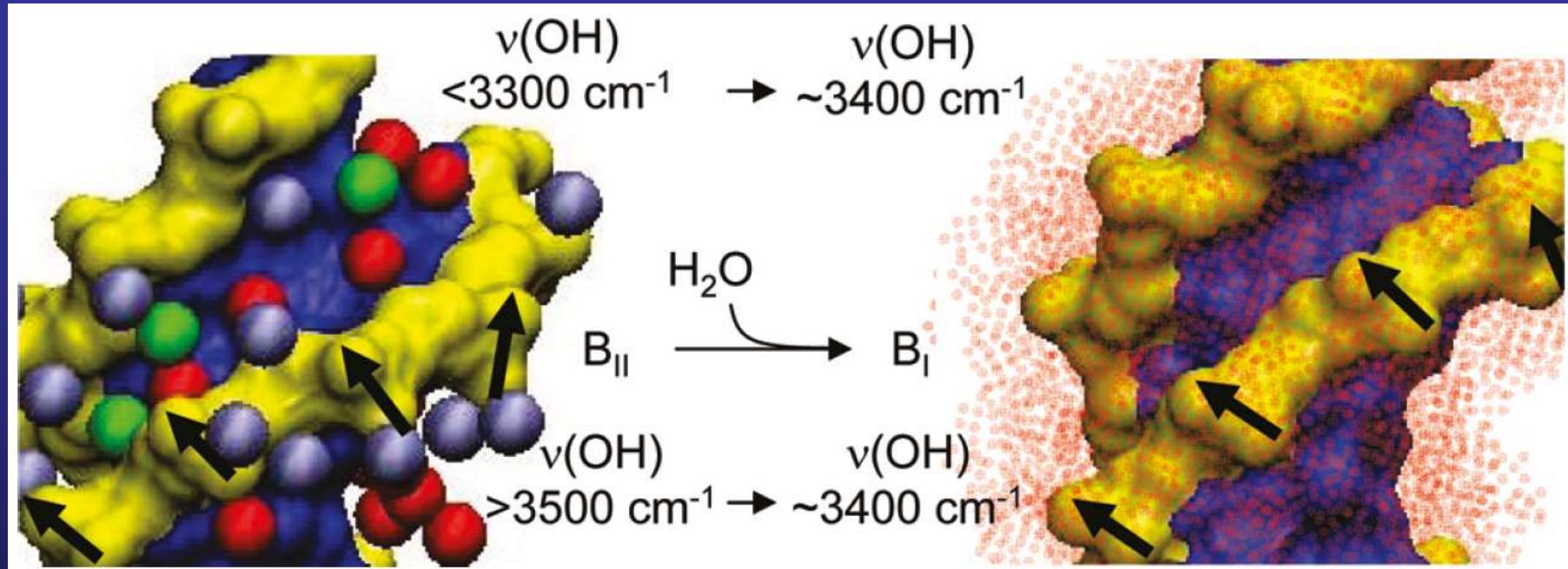
High-dilution effects revisited. 2.  
Pharmacodynamic mechanisms

Paolo Bellavite,<sup>1\*</sup> Marta Marzotto,<sup>1</sup> Debora Olioso,<sup>1</sup> Elisabetta Moratti,<sup>1</sup> Anita Conforti<sup>2</sup>

Homeopathy 103 (2014), pp. 22-43  
DOI: 10.1016/j.homp.2013.08.002

Figure 4. Scheme of how a water cluster may change a protein conformation by breaking internal hydrogen bonds.

# Relation of spectroscopically identified water clusters to structurally resolved hydration sites

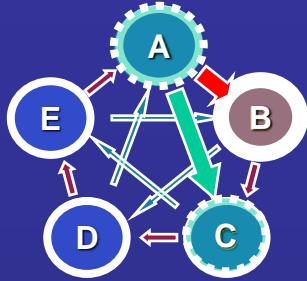


Left: Crystallographically resolved water oxygens are labeled red (minor groove), gray ( $\text{PO}_2^-$ -bound), and green (intermediate locations). The orientation of the  $\text{O}_1-\text{O}_2$  connector at  $\text{PO}_2^-$ -groups (arrows) indicates the presence of three  $\text{PO}_2^-$ -groups in the  $B_{\text{I}}$  and one in the  $B_{\text{II}}$  state (coordinates: [1HQ7](#)). The  $\nu(\text{OH})$  frequencies of  $w_1$  and  $w_2$  are placed at the proposed sites where they extend the inner HS. Right: Growth into a contiguous HS relieves the  $B_{\text{II}}$ -stabilizing constraints, exerted to a large extent by the structured water network linked to the minor groove. The homogeneous nonrandom water envelope (symbolized by dotted surface) exhibits bulk-like average H-bond strength and promotes the  $B_{\text{I}}$  state (arrows) by weakening  $w_2$  H-bonds and enforcing  $\text{PO}_2^-$  H-bonds, resulting in an essentially isoenthalpic transition.

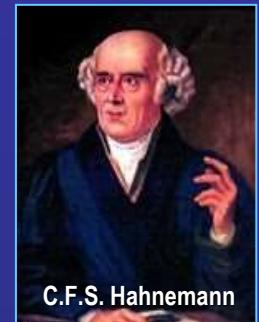
# Aspects of homeopathic pharmacodynamics

## (Bellavite et al. Homeopathy 2014)

Aspect		Medium potencies (Ultra-Low Doses)	High potencies (High Dilutions)
Nature of the medicine*		Very low concentrations of active molecules Nanoparticles	Nanoparticles Water clusters Coherence domains
Biological targets	Local	Molecular interactions: - cell receptors - enzyme activation/regulation - <u>gene expression</u>	Nonlinear dynamics (bifurcation points): - cell receptors - enzyme activation/regulation - <u>gene expression</u>
	Systemic	Neuroimmunologic networks	<u>Neuroimmunologic networks</u> Disease dynamics (attractors-miasms) Bioelectricity (ECG, EEG)
Amplification mechanisms		Cell responsiveness: - receptor priming - signal transduction - <u>stochastic resonance</u> Enzyme activity: - allosteric activation - silica nanostructures	<u>Neuroimmunologic networks</u> <u>Nonlinearity-chaos</u> Grotthus-type water chains
Information transfer		Molecular interactions <u>Water chains</u>	<u>Frequency-coded signals</u> <u>Water chains</u> Water nanoparticles Bioelectromagnetics
Inversion of effects (the “Simile”)		<u>Hormesis</u> Dual receptors Gating by cyclic AMP Heat-shock proteins Paradoxical pharmacology	Rebound in time <u>Systems biology theories</u> Coherent response to stress



# «OMEO-TERAPIA»



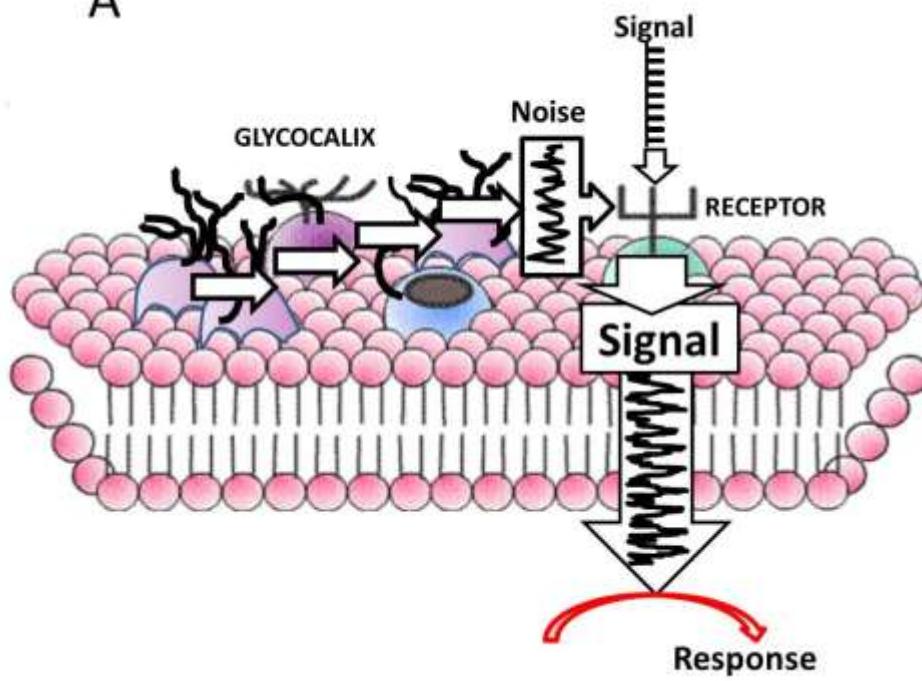
C.F.S. Hahnemann

1. Premesse generali e storia
2. Alcune prove sperimentali
3. Modelli concettuali
  - Retroazione
  - Reti

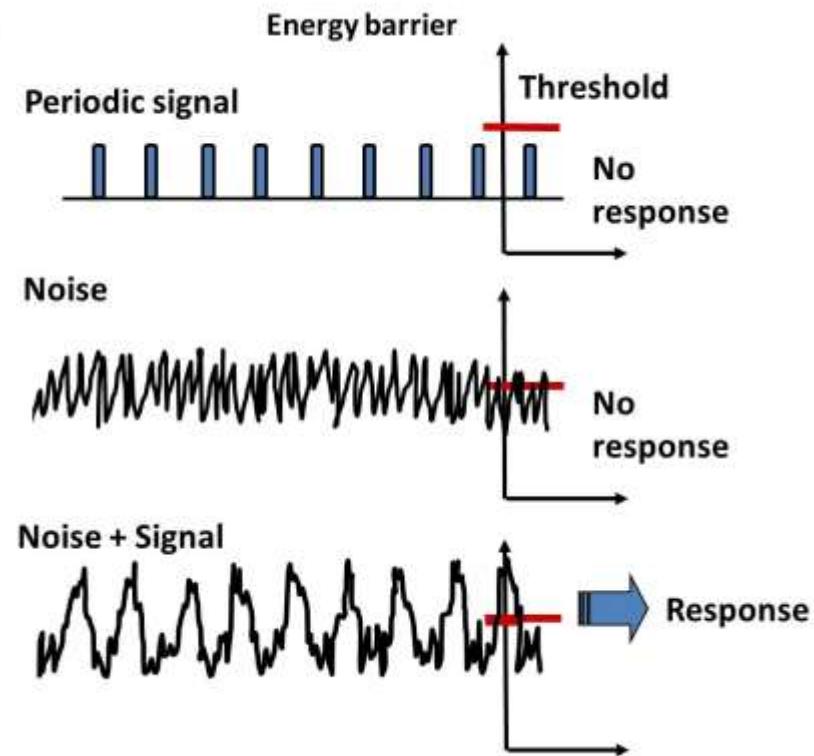


# Risonanza stocastica

A



B





# THE BUTTERFLY EFFECT

Using small perturbations to control chaos  
T. shinbrot et al., Nature 363, 411-417, 1993

*“The extreme sensitivity of chaotic systems to tiny perturbations (the “butterfly effect”) can be used both to stabilize regular dynamic behaviours and to direct chaotic trajectories rapidly to a desired state”*

*“The butterfly effect permits the use of tiny feedback perturbations to control trajectories in chaotic systems – a capability without counterpart in nonchaotic systems”*

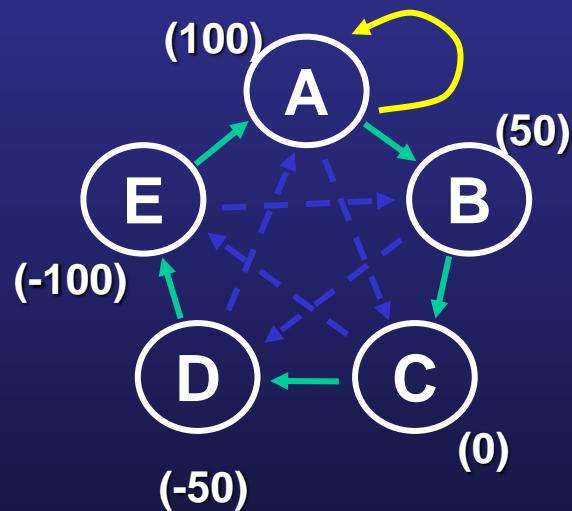
*“Thus small, carefully chosen perturbations are able to effect a large beneficial change in the long-term system behaviour”*

# AUTOORGANIZZAZIONE DI UNA TIPICA RETE OMEODINAMICA A VARIABILI CONTINUE, CON UN SISTEMA (A) NON LINEARE (Bellavite, «Biodinamica», 1998)

$$A = kE - kD + A_{\max}/A_n$$

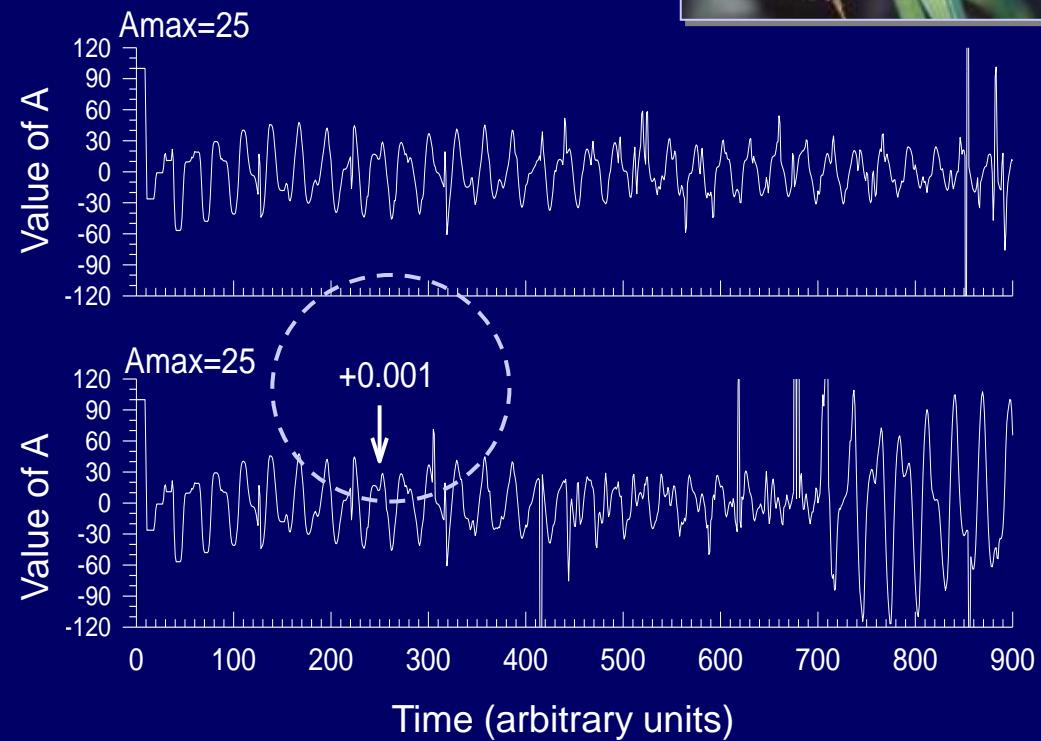
$$B = kA - kE,$$
  
etc...

$$k = 0.53, A_{\max} = 20$$



(In parentesi, i valori iniziali  
assegnati)

*The “butterfly effect”*



# THE «RATIONALE» OF THE SIMILE

Advance Access Publication 5 February 2007

*eCAM* 2007;4(2):149–163  
doi:10.1093/ecam/nel117

Lecture Series

## Immunology and Homeopathy. 5. The Rationale of the ‘*Simile*’

Paolo Bellavite<sup>1</sup>, Riccardo Ortolani<sup>2</sup>, Francesco Pontarollo<sup>1</sup>, Giuseppina Pitari<sup>3</sup>  
and Anita Conforti<sup>4</sup>

Complementary Therapies in Medicine (2013) 21, 750–761



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## A dynamic network model of the similia principle

Paolo Bellavite<sup>a,\*</sup>, Debora Olioso<sup>a</sup>, Marta Marzotto<sup>a</sup>,  
Elisabetta Moratti<sup>a</sup>, Anita Conforti<sup>b</sup>

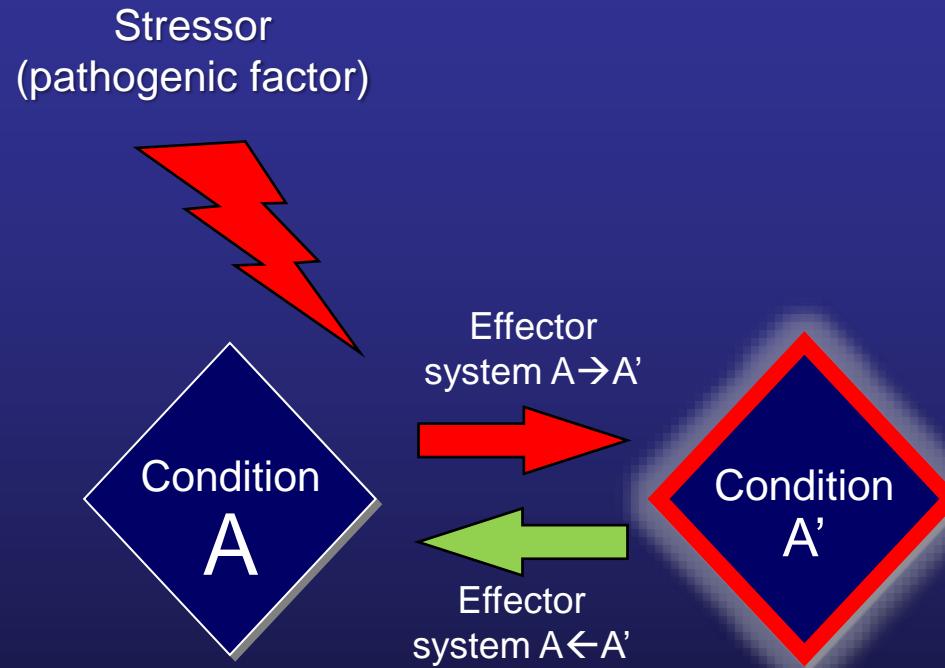


<sup>a</sup> Department of Pathology and Diagnostics, University of Verona, 37134 Verona, Italy

<sup>b</sup> Department of Public Health and Community Medicine, University of Verona, 37134 Verona, Italy

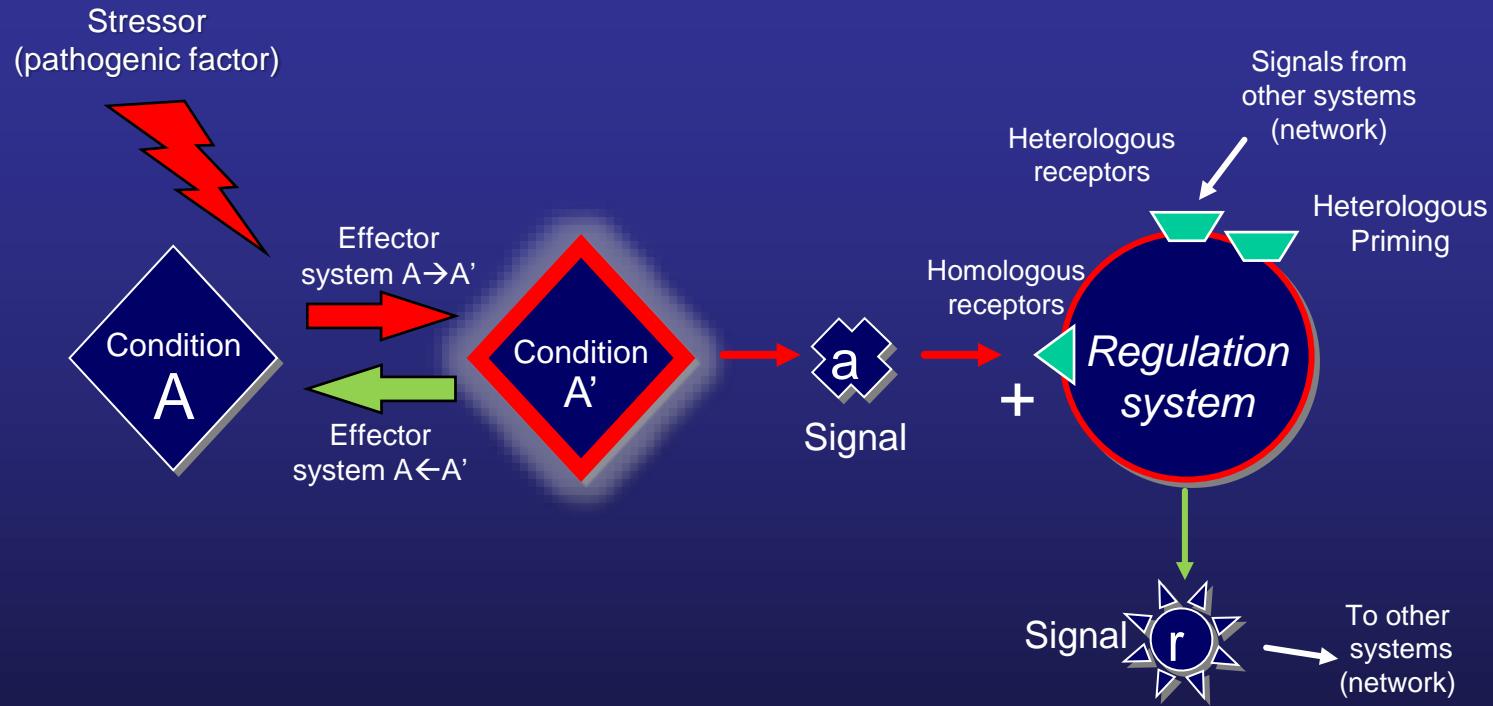
Available online 8 September 2013

# La retroazione è il mattone fondamentale della omeodinamica e quindi della omeoterapia



Bellavite e Signorini, 1992; Bellavite et al. ECAM Journal 2007

# La retroazione funziona con segnali e sistemi regolatori



# La prima idea

CELL BIOCHEMISTRY AND FUNCTION VOL. 11: 93–100 (1993)



## Homologous Priming in Chemotactic Peptide-stimulated Neutrophils

P. BELLAVITE<sup>†</sup>, S. CHIRUMBOLO, G. LIPPI, P. GUZZO AND C. SANTONASTASO

*Istituto di Chimica e Microscopia Clinica, Università di Verona, Ospedale Policlinico, Laboratorio Centrale 37134 Verona, Italy*

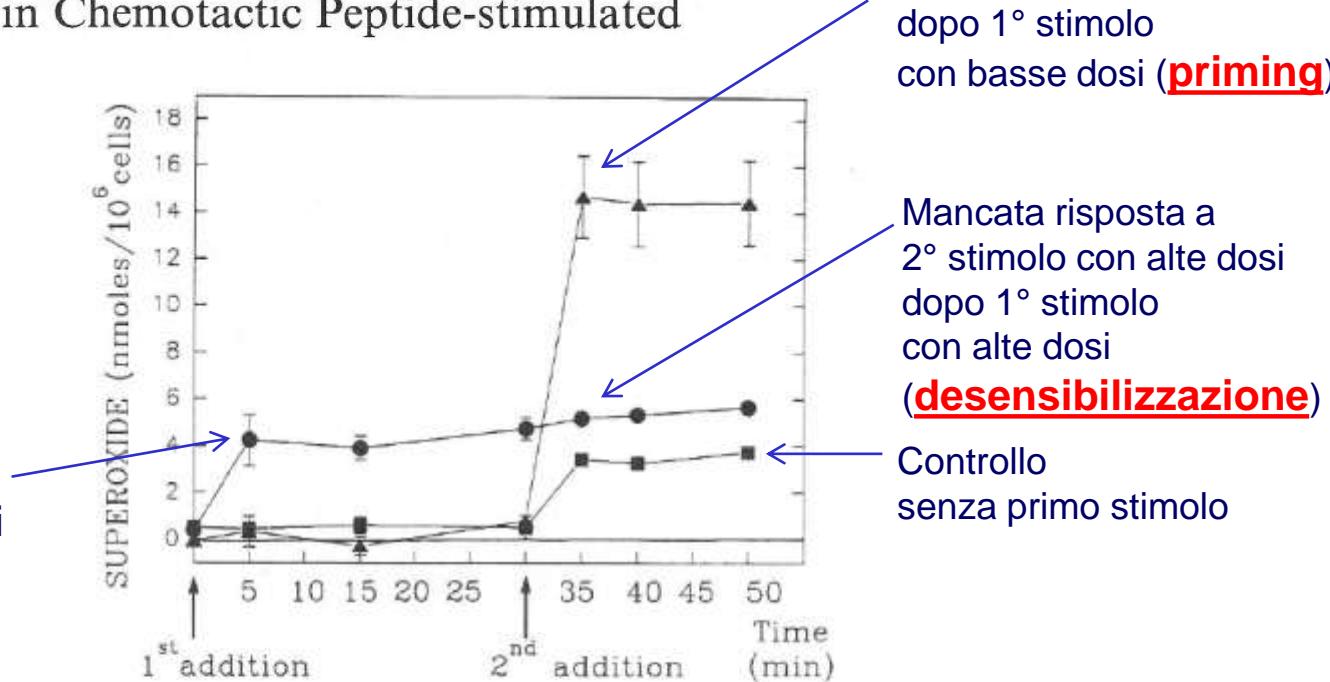
The kinetics and dose-dependence of activation of human neutrophils exposed to sequential additions of the chemotactic peptide *n*-formyl-methionyl-leucyl-phenylalanine (fMLP) have been investigated by multiwell microplate assays. Treatment of neutrophils with medium–high doses (from  $10^{-8}$  to  $5 \times 10^{-7}$  M) of fMLP caused activation of superoxide anion ( $O_2^-$ ) production, but prevented further activation by a subsequent addition of an optimal dose (from  $10^{-7}$  M to  $5 \times 10^{-7}$  M) of fMLP. These findings represent an example of cell desensitization, or adaptation. However, neutrophils treated with low, sub-stimulatory doses (from  $10^{-10}$  to  $5 \times 10^{-9}$  M) of the peptide and then treated with optimal doses of fMLP exhibited an  $O_2^-$  production that was two to three-fold higher than that induced by the same optimal doses on untreated cells. A similar phenomenon of homologous priming of the oxidative metabolism of neutrophil has not previously been described or characterized. Priming was maximal after about 30 min of incubation with fMLP, which differed from desensitization, which required only a few minutes. Homologous priming was not confined to  $O_2^-$  production, but was also observed with the release of the granule enzyme, lysozyme. Low doses of fMLP were also capable of triggering an increase of intracellular free  $Ca^{2+}$  and of fMLP membrane receptors, which are possible mechanisms responsible for priming.

# La prima idea

CELL BIOCHEMISTRY AND FUNCTION VOL. 11: 93–100 (1993)

## Homologous Priming in Chemotactic Peptide-stimulated Neutrophils

Risposta a  
1° stimolo con alte dosi



Risposta a  
2° stimolo con alte dosi  
dopo 1° stimolo  
con basse dosi (**priming**)

Mancata risposta a  
2° stimolo con alte dosi  
dopo 1° stimolo  
con alte dosi  
(**desensibilizzazione**)

Controllo  
senza primo stimolo

Figure 1. Time-course of  $O_2^-$  production by neutrophils treated with sequential additions of fMLP.  $O_2^-$  production was assayed with a microplate method. At zero time, cells were supplemented with either  $10^{-7}$  M (●) or  $5 \times 10^{-9}$  M (▲) fMLP; ■: untreated cells. After 30 min, all the cells were supplemented with  $10^{-7}$  M fMLP. The results are mean values  $\pm$ S.D. for triplicates from a typical experiment, representative of five performed.

# La prima idea

> Inflammation. 1993 Feb;17(1):13-23. doi: 10.1007/BF00916388.

## Factor-specific changes in oxidative burst response of human neutrophils in skin-window exudates

D Biasi <sup>1</sup>, L M Bambara, A Carletto, M Caraffi, M C Serra, S Chirumbolo, P Bellavite



Priming  
«eterologo»  
in vivo

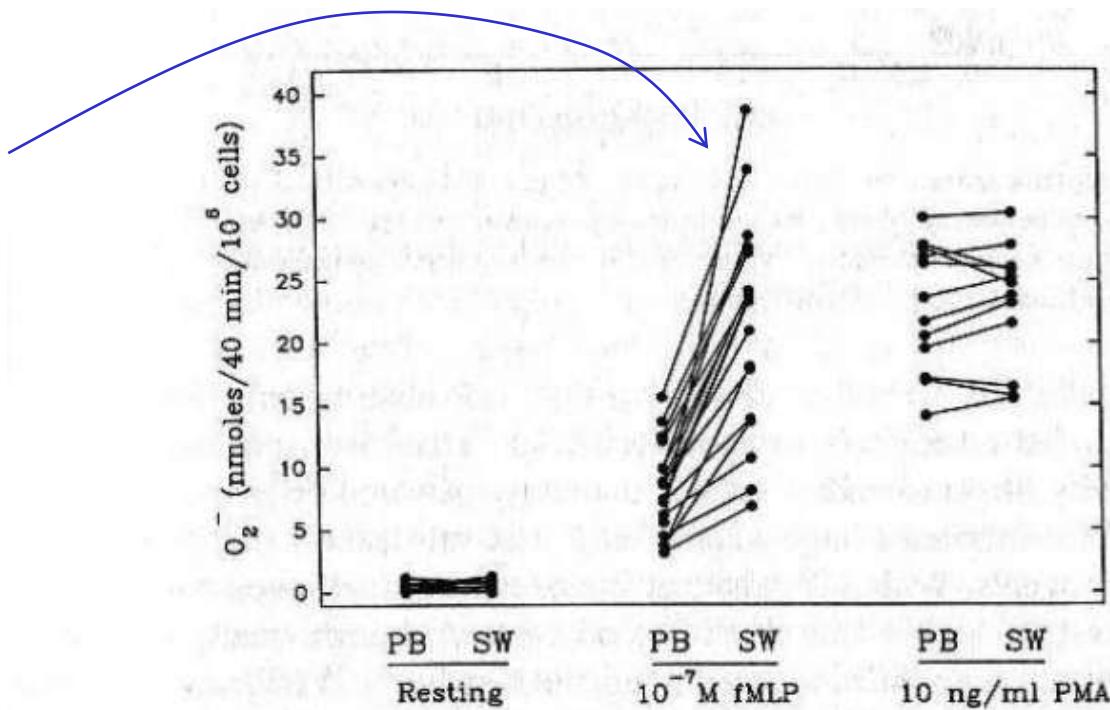
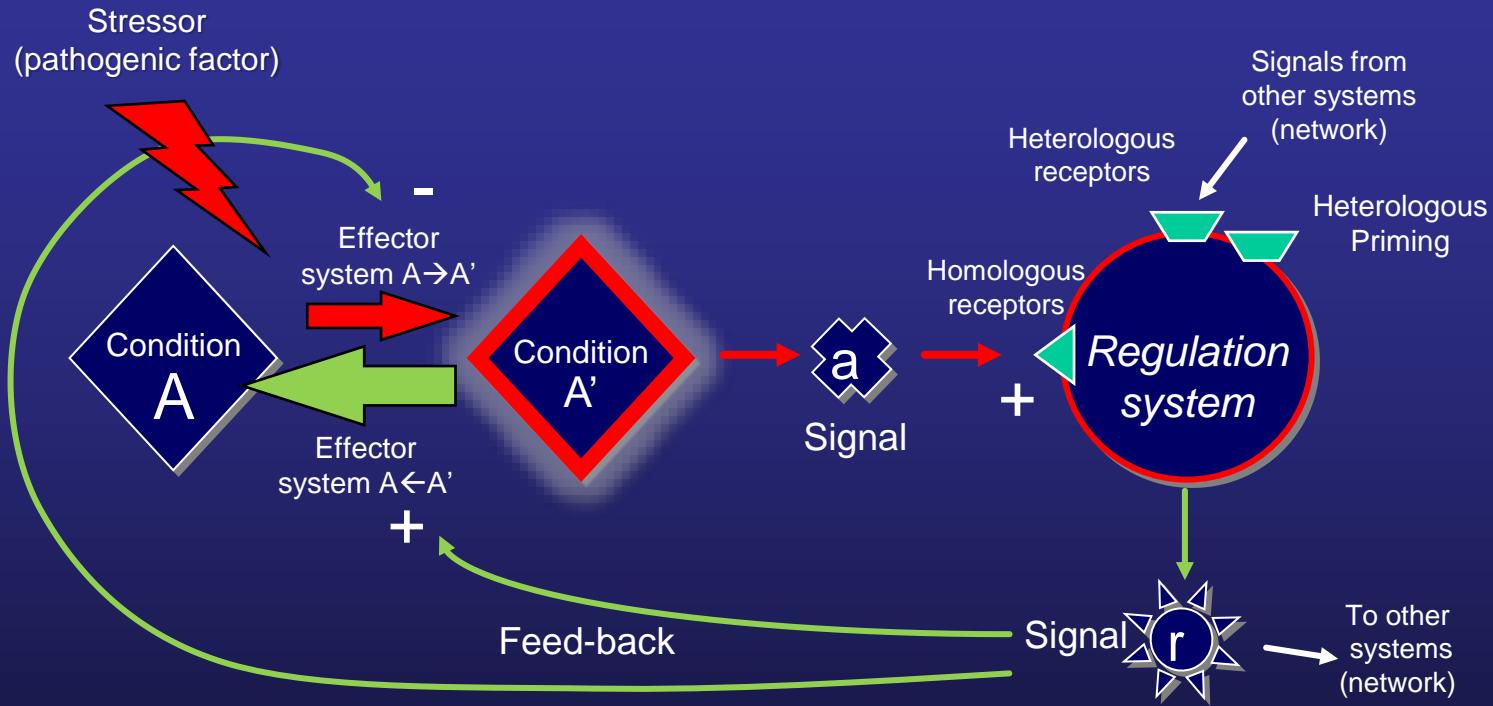
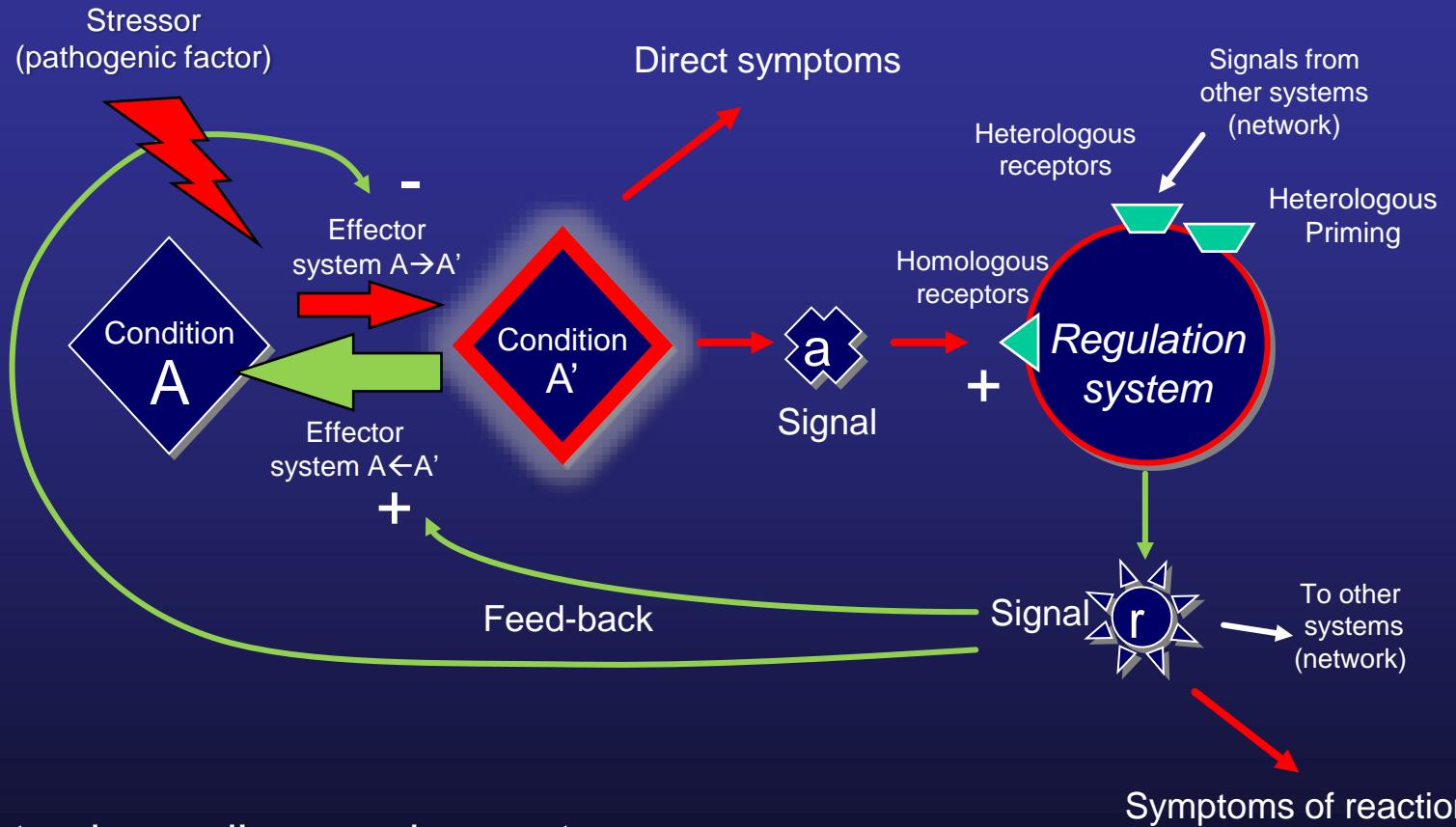


Fig. 2. O<sub>2</sub><sup>-</sup> production by peripheral blood (PB) and skin-window exudate (SW) neutrophils unstimulated and stimulated with fMLP or PMA. Lines connect samples of identical patients. Assays were carried out in microplates as described in Materials and Methods.

# La retroazione funziona con segnali e sistemi regolatori

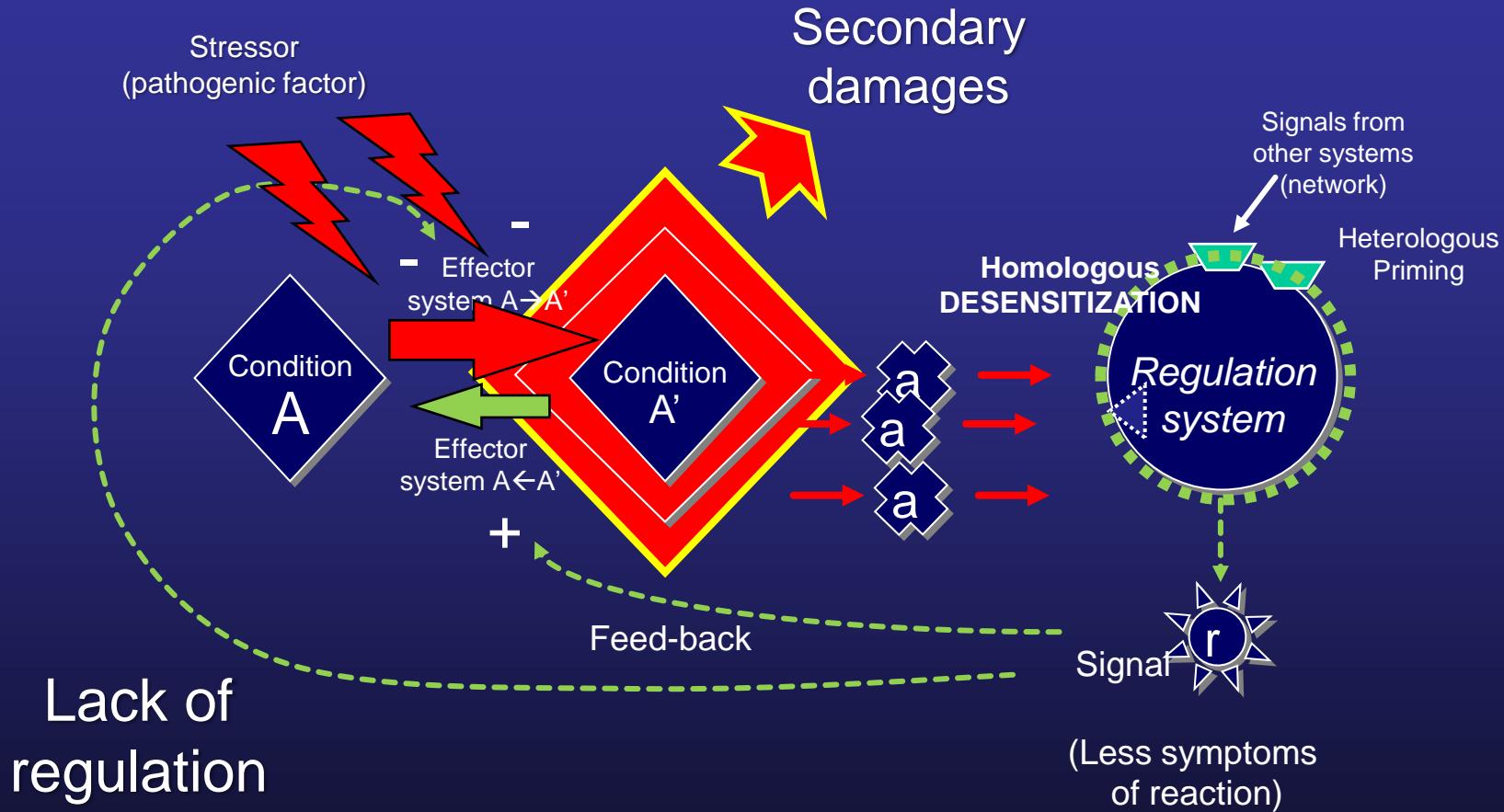


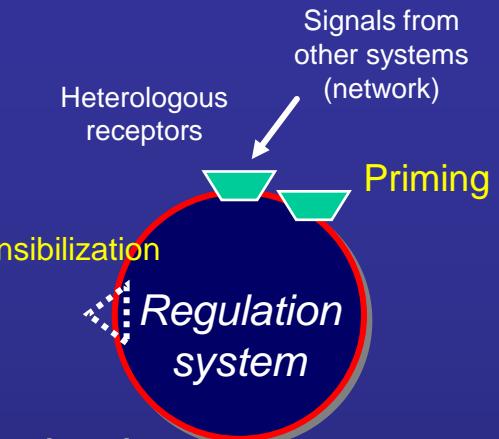
# La retroazione funziona con segnali e sistemi regolatori



I sintomi sono l'espressione esterna  
dei «movimenti» interni

# DIFETTO DI REGOLAZIONE OMEODINAMICA → patologia cronica





## «Priming»

Uno stato di ipersensibilità ad un secondo stimolo

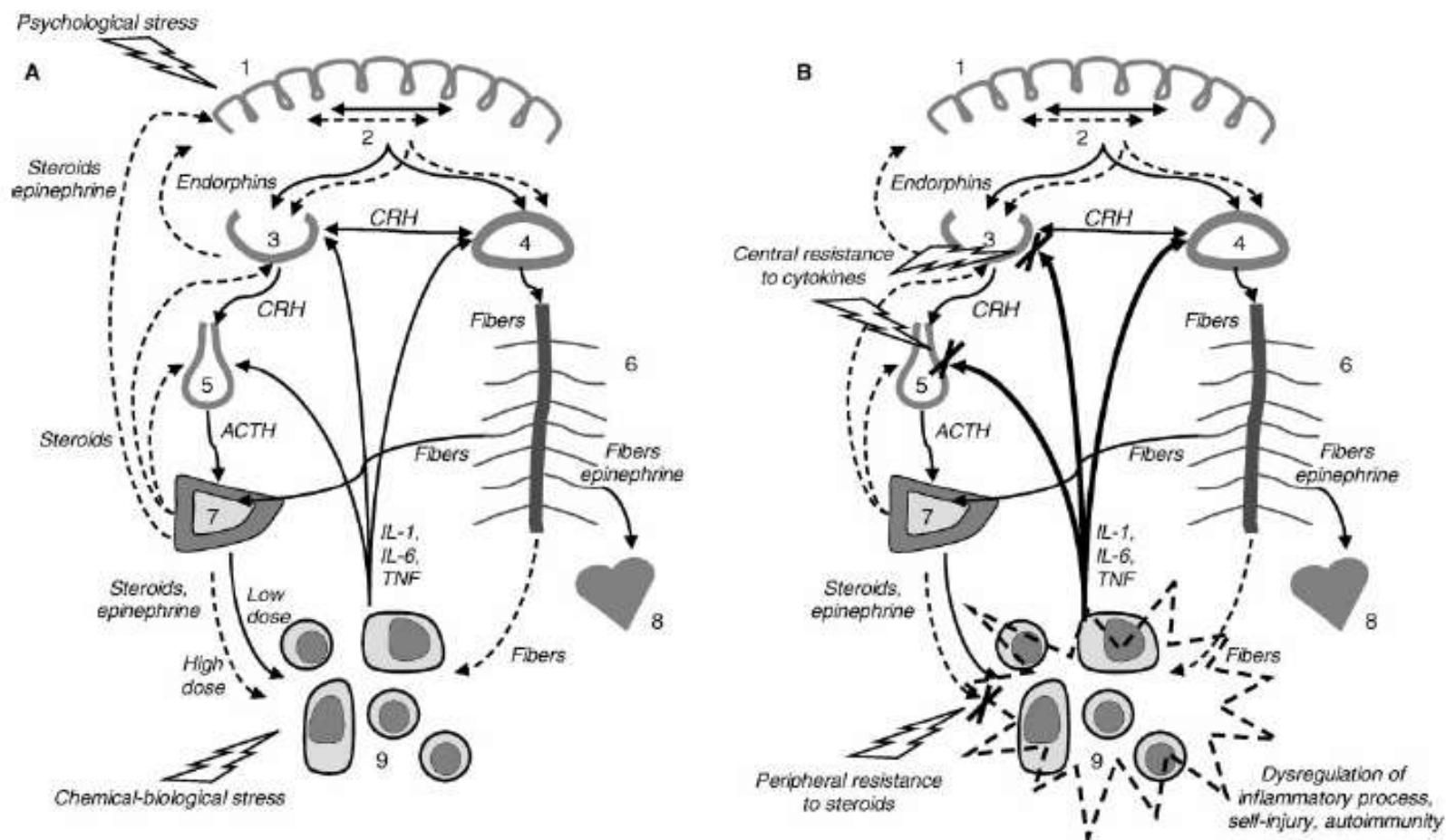
Omologo: dopo che la cellula ha ricevuto lo stesso stimolo (in dose bassa) sullo stesso recettore

Eterologo: dopo che la cellula ha ricevuto uno stimolo di diversa natura su diversi recettori (*include aumentata risposta ai medicinali*)

«Desensibilizzazione» (di solito è «omologa»)

Uno stato di ridotta o mancata risposta allo stesso stimolo dopo che i recettori sono stati impegnati da alte dosi o lungo tempo

# Blocco dell'omeodinamica (ECAM J 2007)



**Figure 3.** Typical neuroimmunoendocrine networks involved in the response to any type of stress (A) and possible dysfunction in chronic inflammatory diseases (B). 1. Cognitive functions, 2. neural networks, 3. hypothalamus, 4. locus ceruleus, 5. hypophysis, 6. sympathetic nervous system (adrenergic), 7. adrenals, 8. cardiovascular system, 9. immune system and inflammatory processes. ACTH, adrenocorticotrophic hormone; CRH, corticotropin-releasing hormone; IL-1, interleukin-1; IL-6, interleukin-6; TNF, tumor-necrosis factor; → stimulation, -→- inhibition.

# ESEMPIO DI PATOLOGIA per l'insorgenza di «insensibilità»



*“I risultati suggeriscono che l’ipercortisolismo di questi pazienti dipende da un’ipersecrezione di CRH da parte dell’ipotalamo, che risulta insensibile al feedback negativo del cortisolo e del desametasone”*

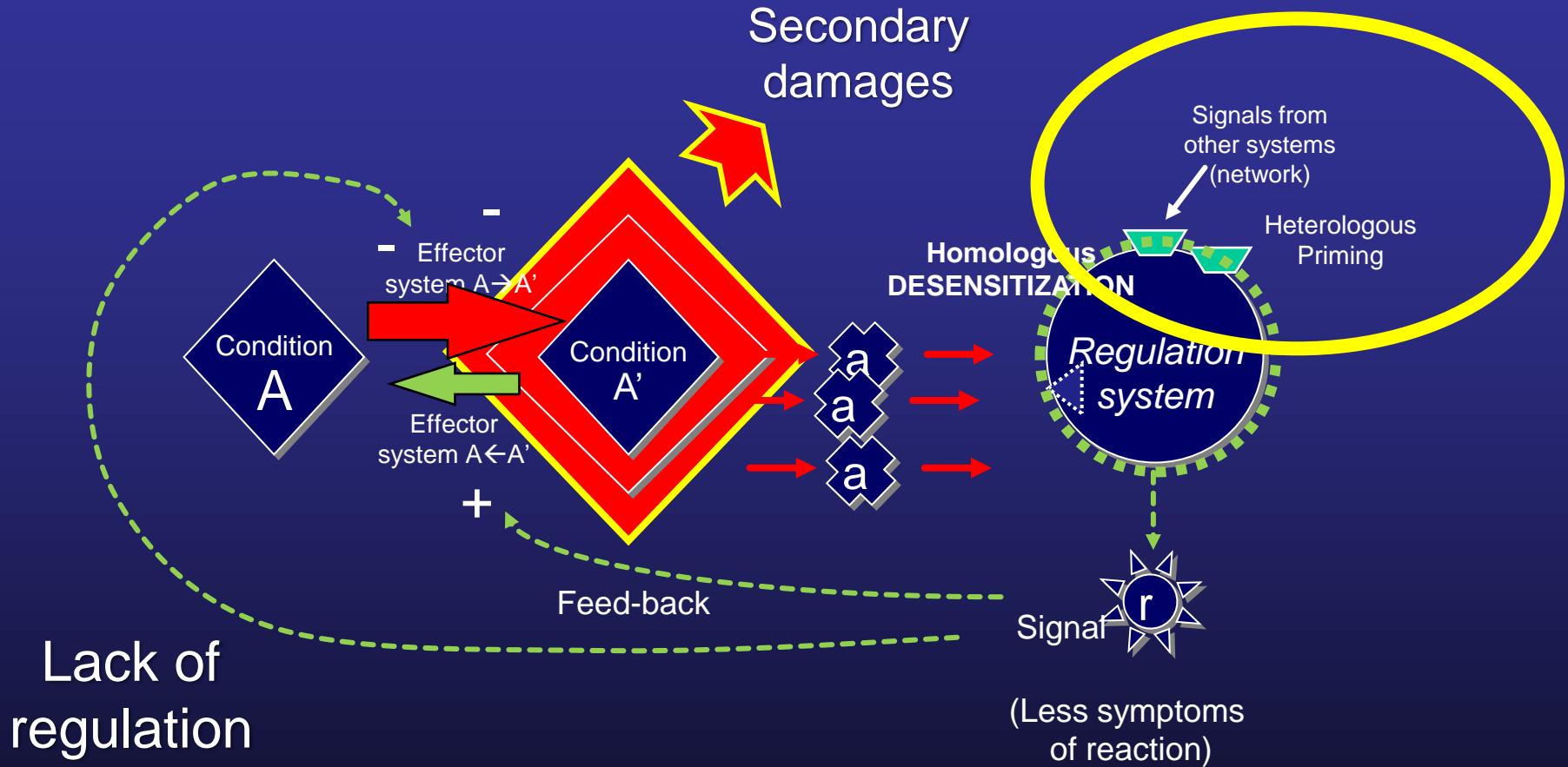
*“La depressione melanconica avrebbe la sua origine fisiopatologica in una risposta generalizzata allo stress, risposta che sarebbe però sfuggita ai normali meccanismi di autocontrollo e di autolimitazione, generando risposte comportamentali non più adattative”*

Calogero, A.E., Serra, M.C.

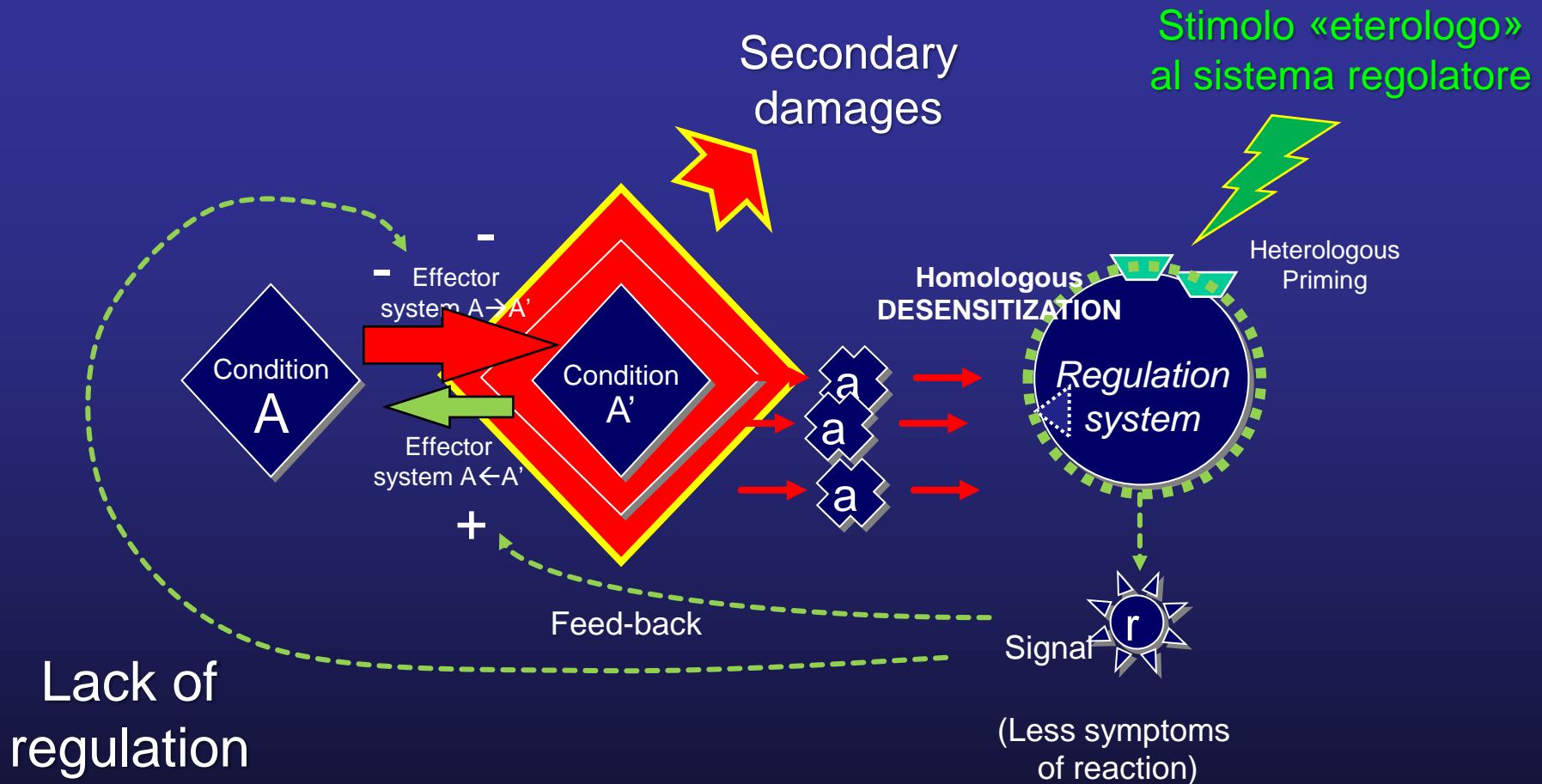
Lo Stress

Piccin, Padova 1999

# DIFETTO DI REGOLAZIONE OMEODINAMICA → patologia cronica

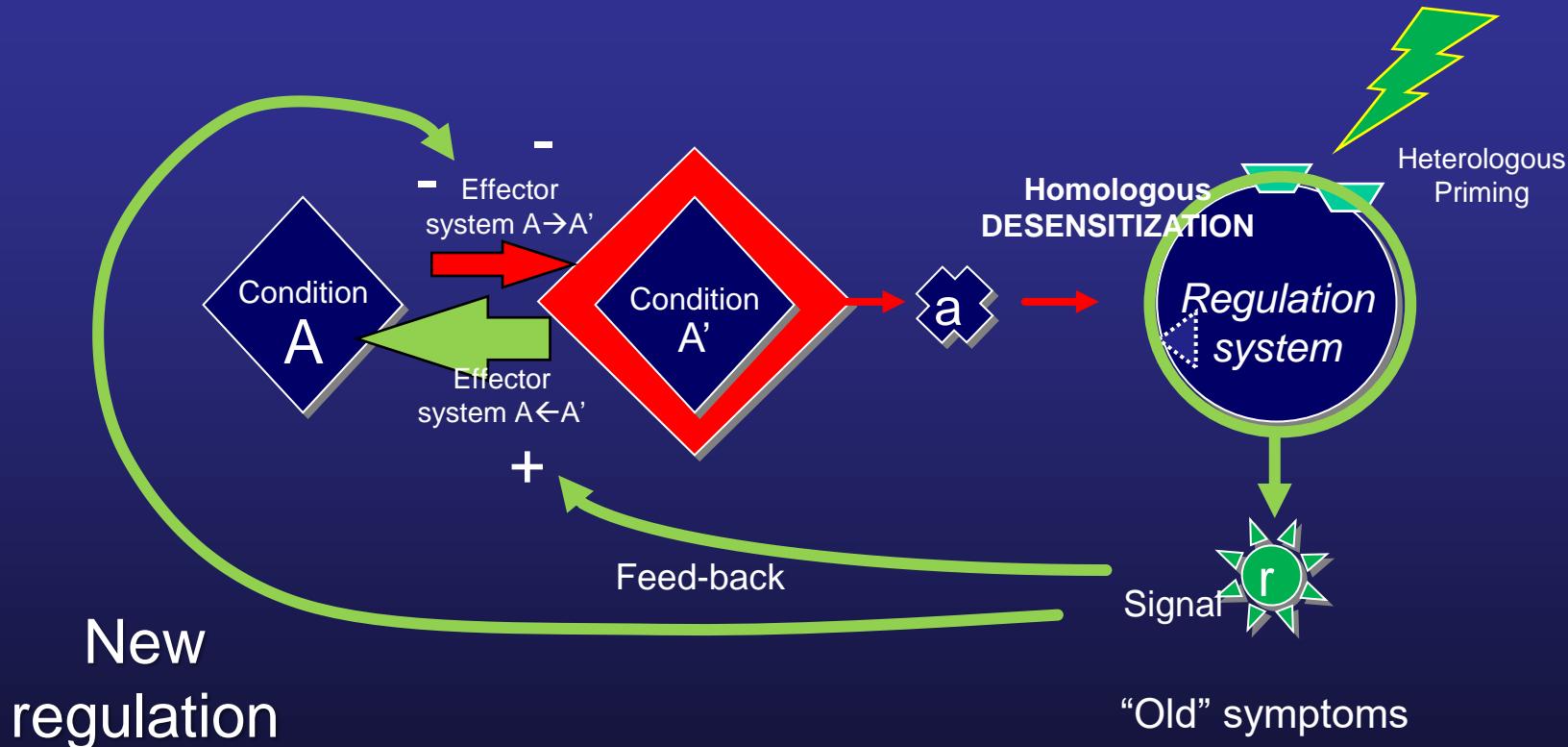


# DIFETTO DI REGOLAZIONE OMEODINAMICA → patologia cronica

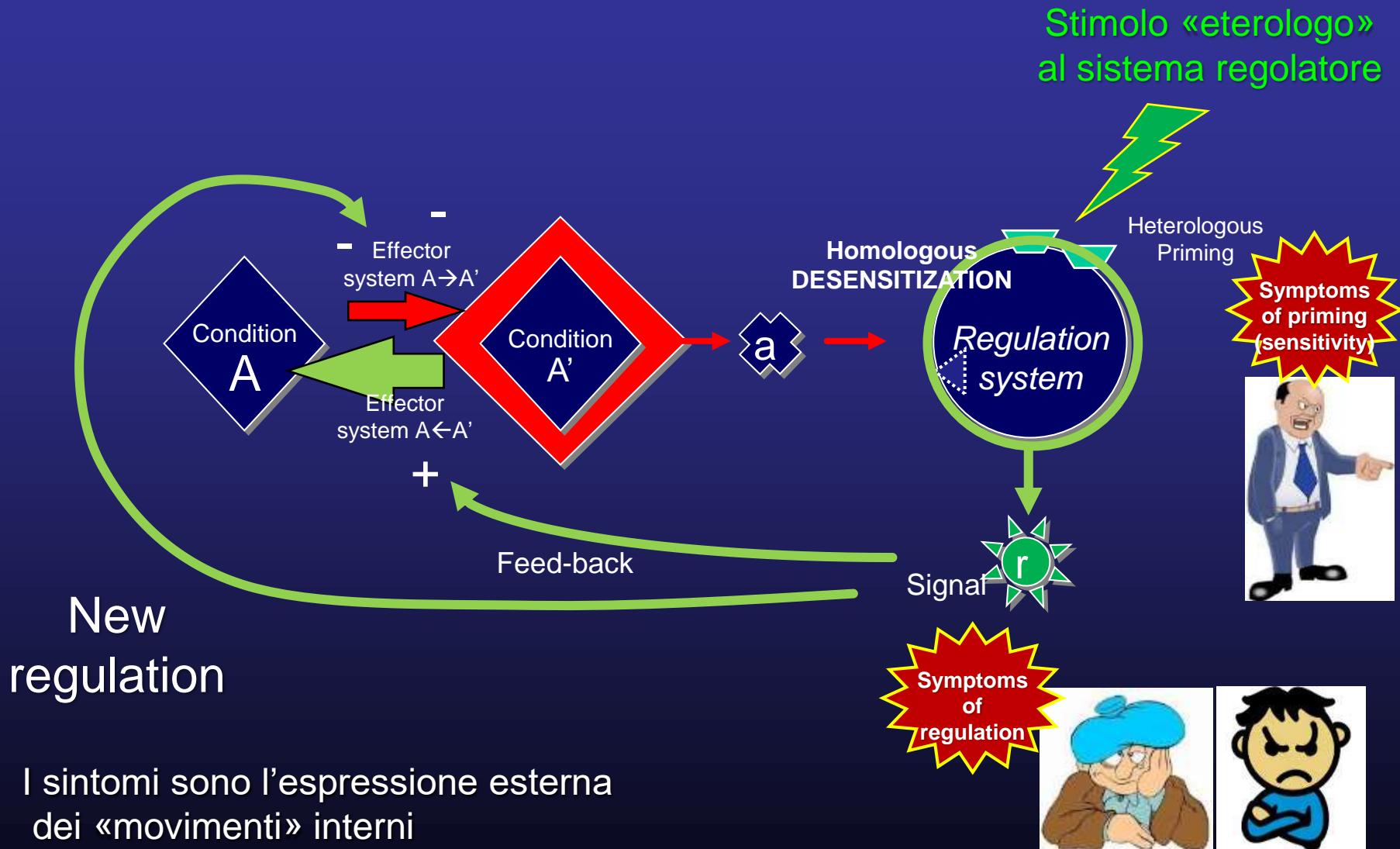


# COME IDENTIFICARE LO STIMOLO «ETEROLOGO» CORRETTO?

Stimolo «eterologo»  
al sistema regolatore

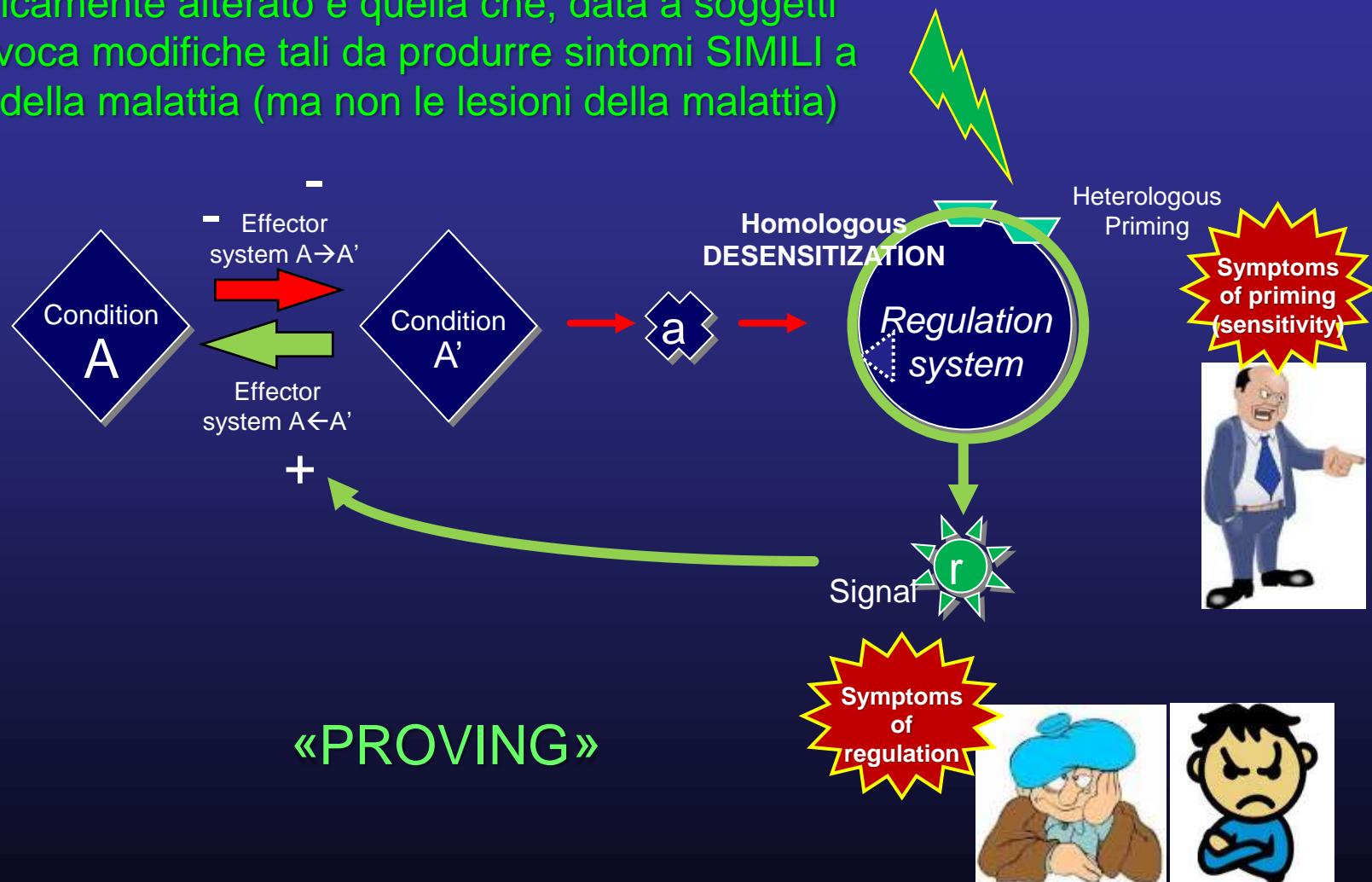


# COME IDENTIFICARE LO STIMOLO «ETEROLOGO» CORRETTO?



# COME IDENTIFICARE LO STIMOLO «ETEROLOGO» CORRETTO?

La «sostanza» giusta per stimolare il sistema regolatore specificamente alterato è quella che, data a soggetti sani, evoca modifiche tali da produrre sintomi SIMILI a quelli della malattia (ma non le lesioni della malattia)





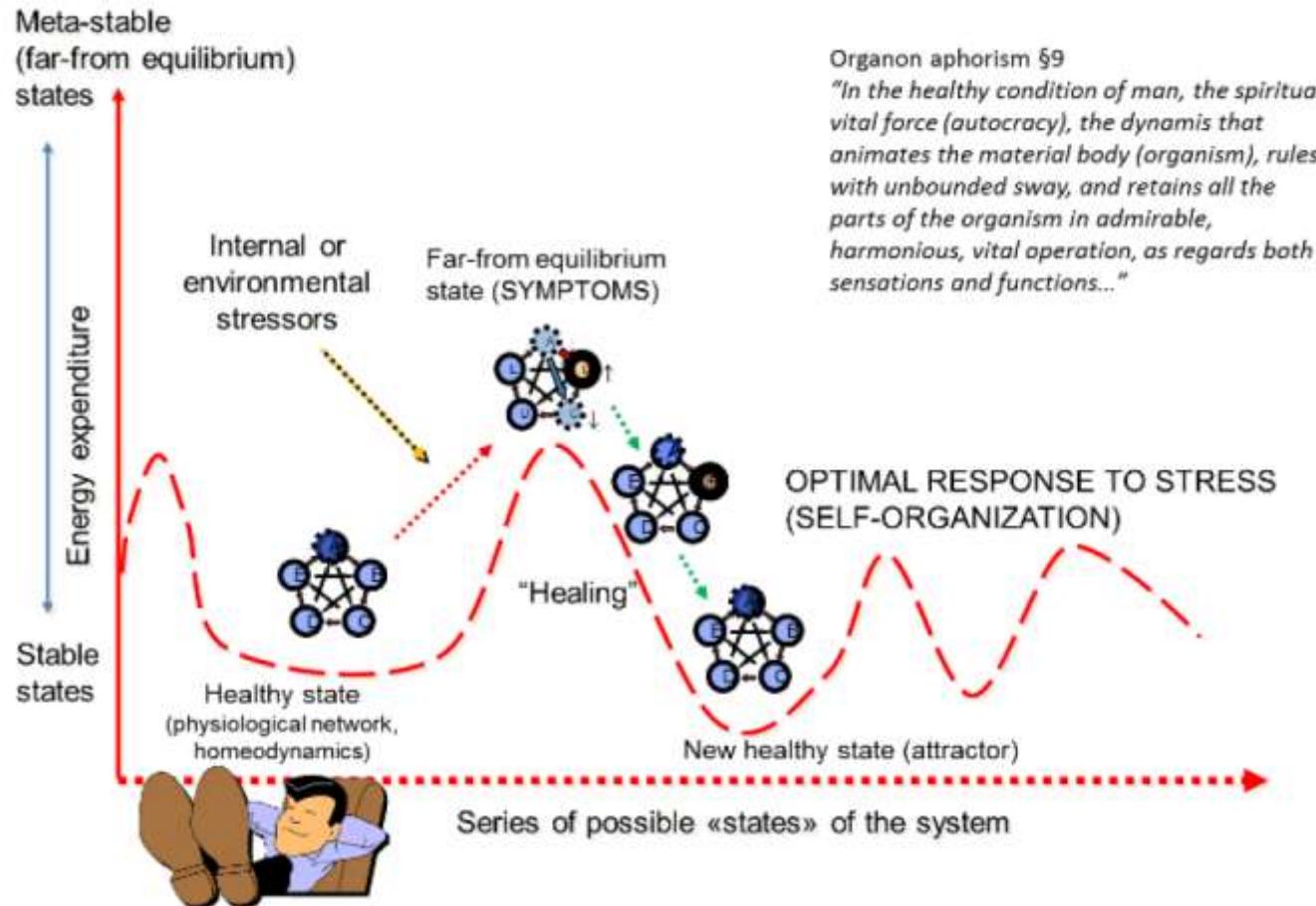
# “SIMILI” E “CONTRARII”

L.J. Boyd, *A Study of the Simile in Medicine*, Boericke & Tafel, Philadelphia 1936, (Cap. 1)  
(*Il Simile in Medicina*, Ed. Libreria Cortina, Verona 2001)

*“Il simile, che opera attraverso gli stessi mezzi che usa il potere di guarigione dell’organismo (che dal simile viene attivato o potenziato), dovrebbe essere chiamato appropriatamente guarigione biologica”*

# La teoria più recente

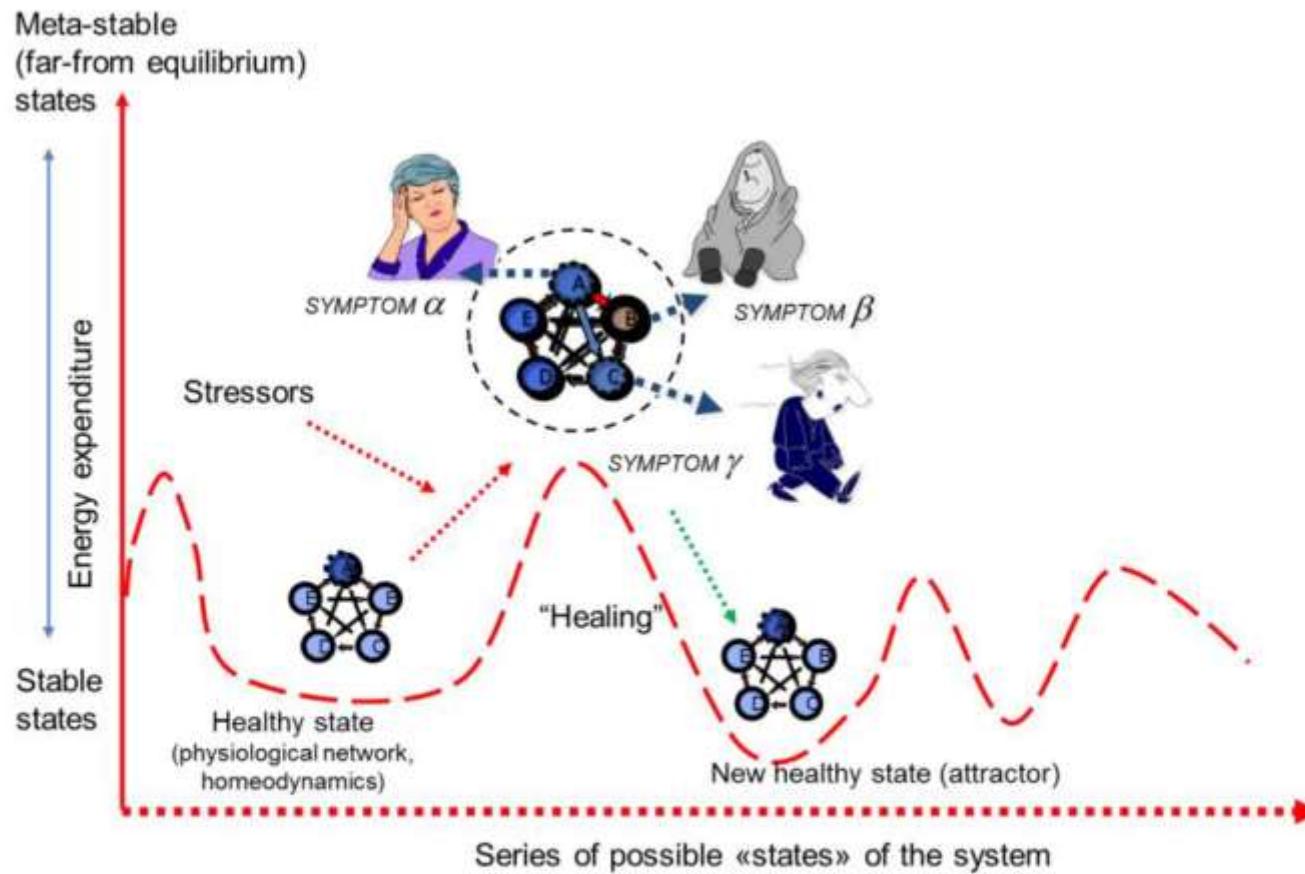
OBM Integrative and Complementary Medicine 2021; 6(3), doi:10.21926/obm.icm.2103023



**Figure 2** The healing power of the vital force in the “space of energy”

# La teoria più recente

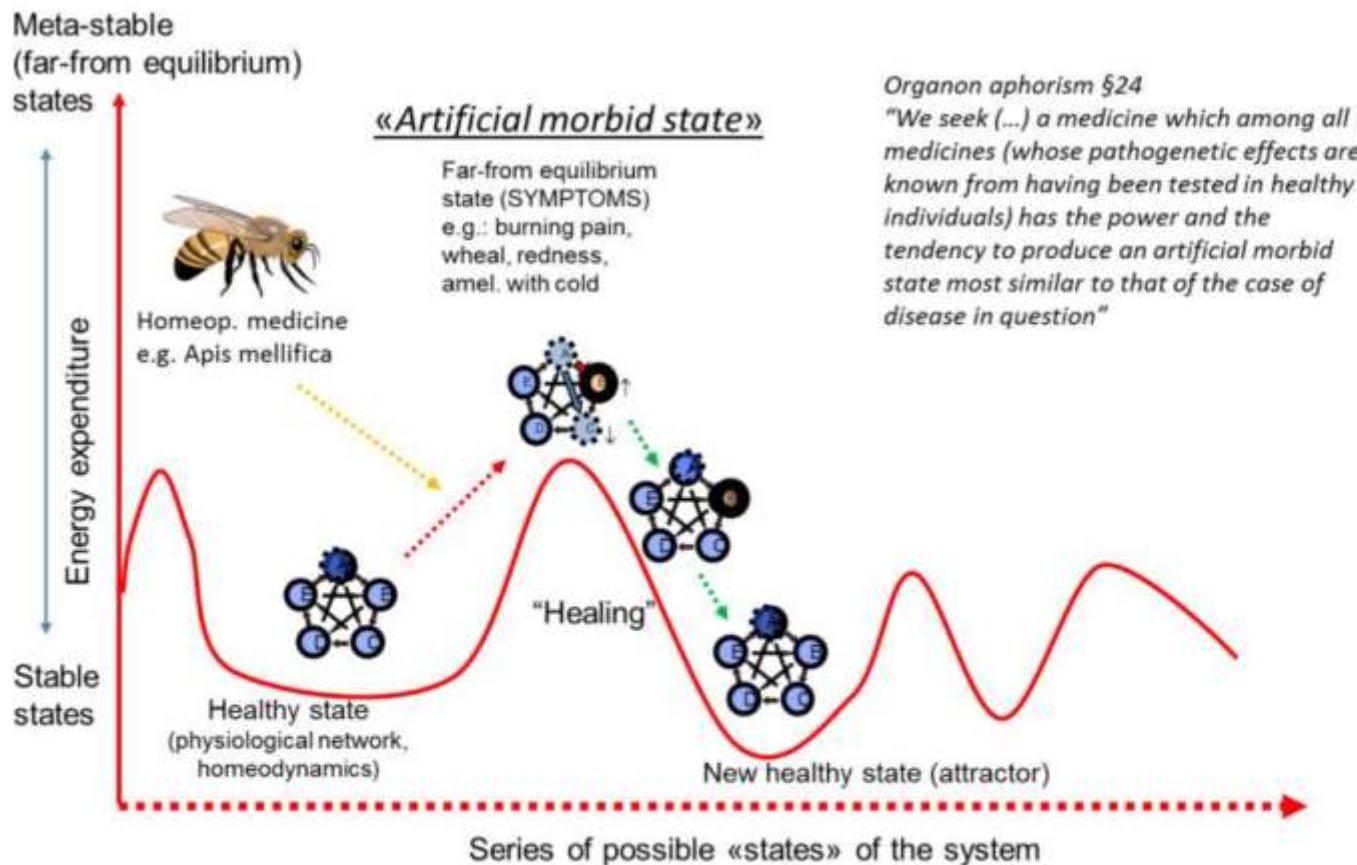
OBM Integrative and Complementary Medicine 2021; 6(3), doi:10.21926/obm.icm.2103023



**Figure 3** Emergence of signs and symptoms in stressed homeodynamic networks.

# La teoria più recente

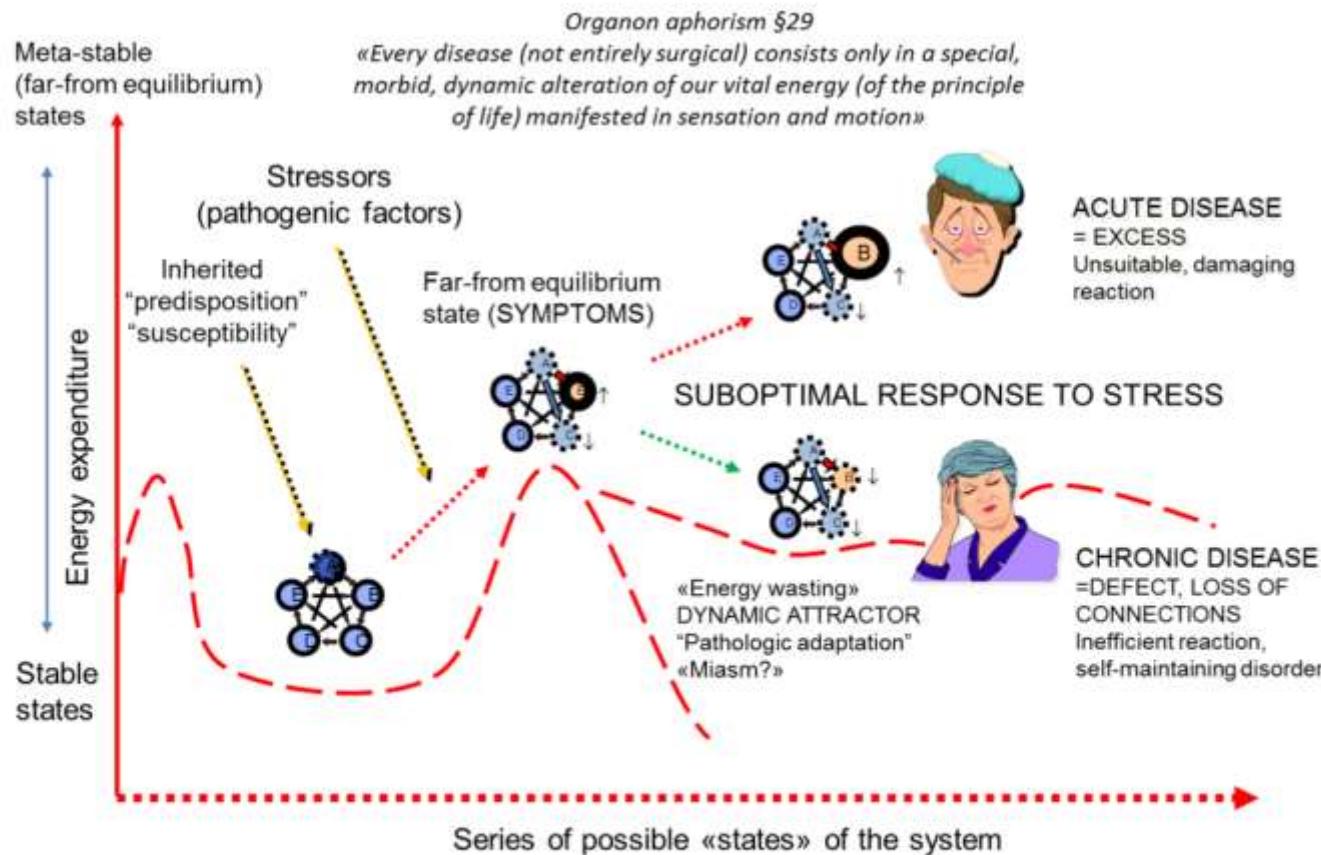
OBM Integrative and Complementary Medicine 2021; 6(3), doi:10.21926/obm.icm.2103023



**Figure 4** Hahnemann's brilliant idea: the provings of medicines.

# La teoria più recente

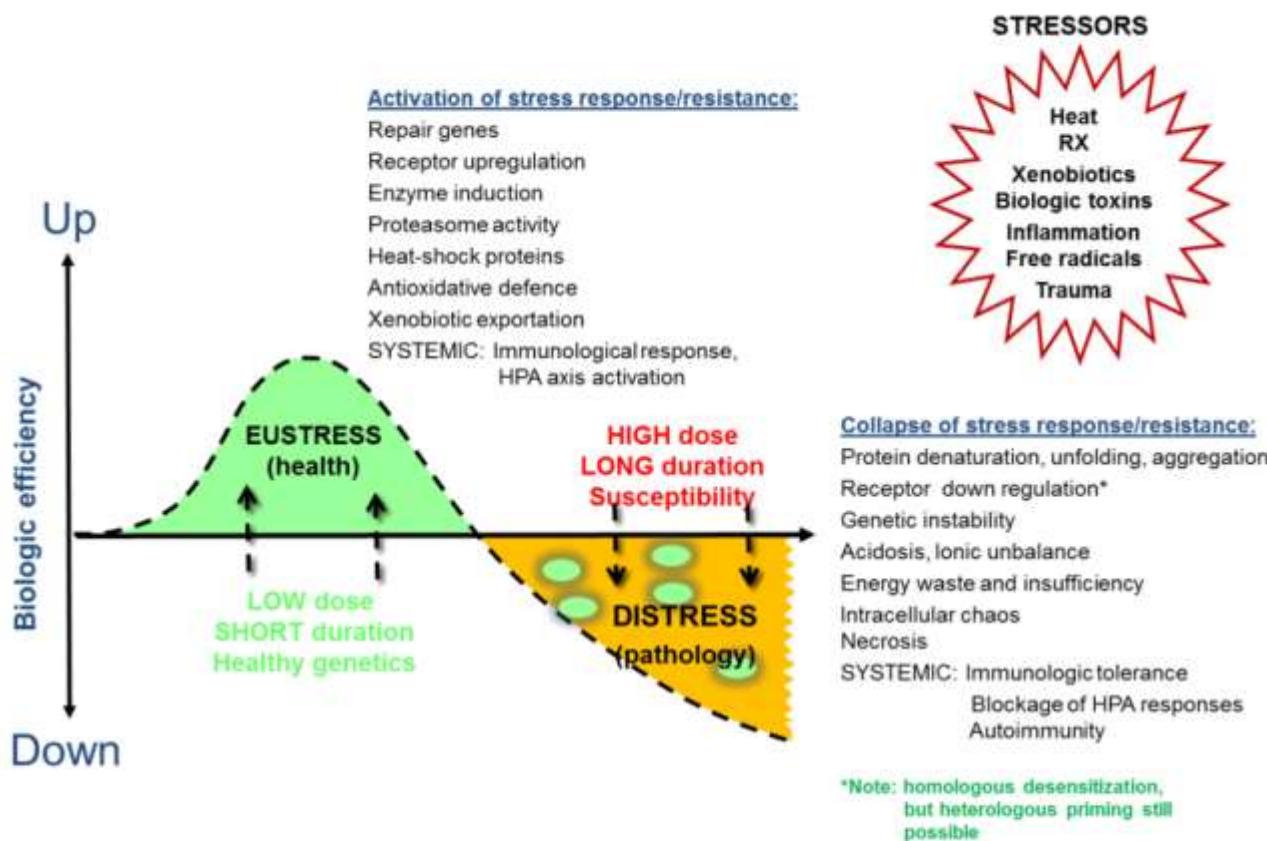
OBM Integrative and Complementary Medicine 2021; 6(3), doi:10.21926/obm.icm.2103023



**Figure 5** The “disease” as a disorder of the network dynamics in the space of energy.

# La teoria più recente

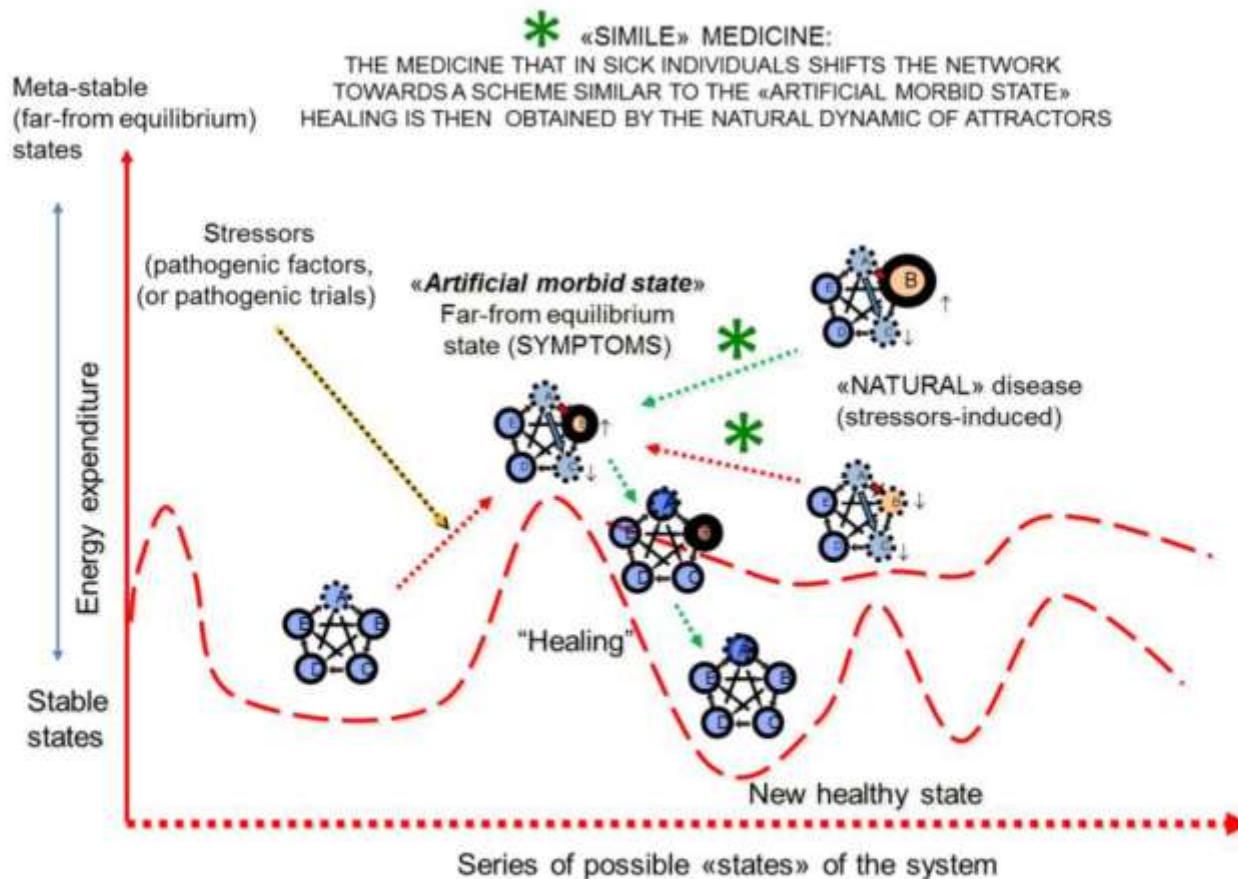
OBM Integrative and Complementary Medicine 2021; 6(3), doi:10.21926/obm.icm.2103023



**Figure 6** Dynamics of the biologic efficiency and the suboptimal response to stress at a molecular level.

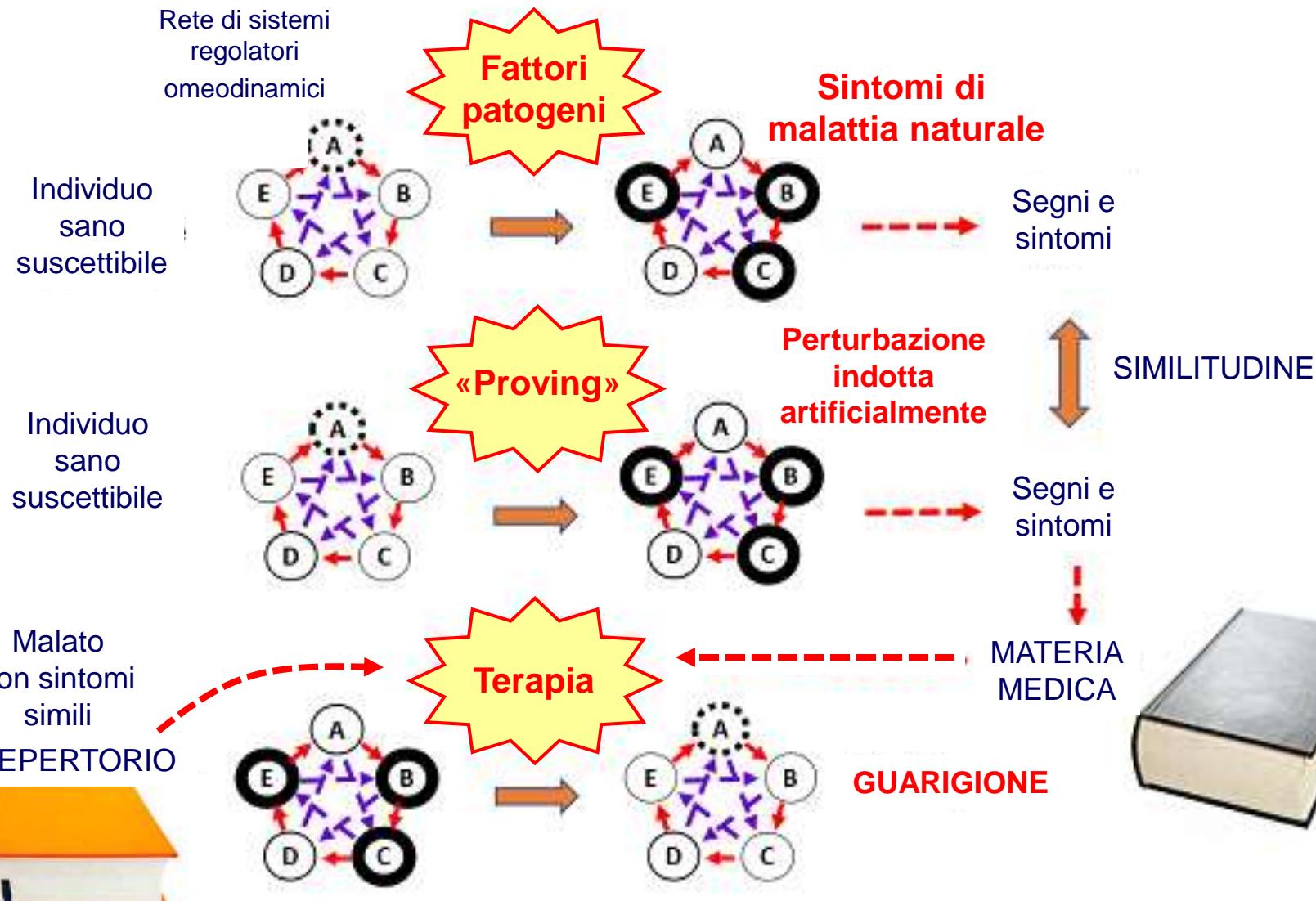
# La teoria più recente

OBM Integrative and Complementary Medicine 2021; 6(3), doi:10.21926/obm.icm.2103023



**Figure 7** Homeo-therapy, i.e., the «logic» of the Similia principle in the energy landscape

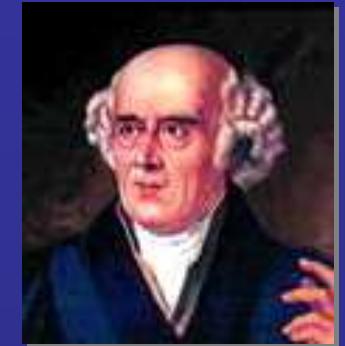
# SCHEMA DEL «SIMILE» CLASSICO



OBM Integrative and Complementary Medicine 2021; 6(3), doi:10.21926/obm.icm.2103023



## Saggio su un nuovo principio



C.F.S. Hahnemann

Versuch über ein neues Princip zur  
Auffindung der Heilkrafte der  
Arzneisubstanzen -*Hufeland's Journal* 2,  
381, 1796

*“Noi dobbiamo conoscere da una parte le malattie del corpo umano accuratamente, dall’altra gli effetti puri dei farmaci, cioè le caratteristiche essenziali ed i sintomi di quelle specifiche malattie artificiali che essi inducono. In questo modo, scegliendo per una certa malattia naturale quel rimedio che è capace di produrre una malattia artificiale molto simile noi saremo capaci di curare le malattie più ostinate”*

# Tomba ed epitaffio di Samuel Hahnemann

(Meißen, 10 aprile 1755 – Parigi, 2 luglio 1843)

