

**Domenica 16 Febbraio, Hotel Michelangelo**

**La giornata del mitocondrio**

**Fate stare bene lui per stare bene voi!**

# Come continua la mia storia

Ospedale Niguarda -  
Milano



1966 \_ Anatomico  
Patologo



1970 \_  
Pneumologo

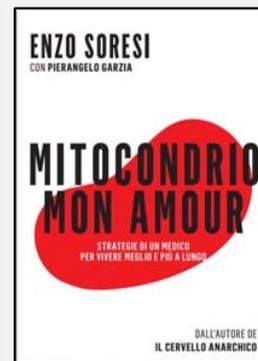
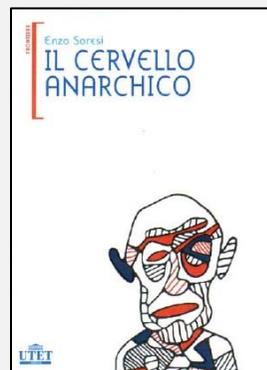


1975 \_  
Oncologo

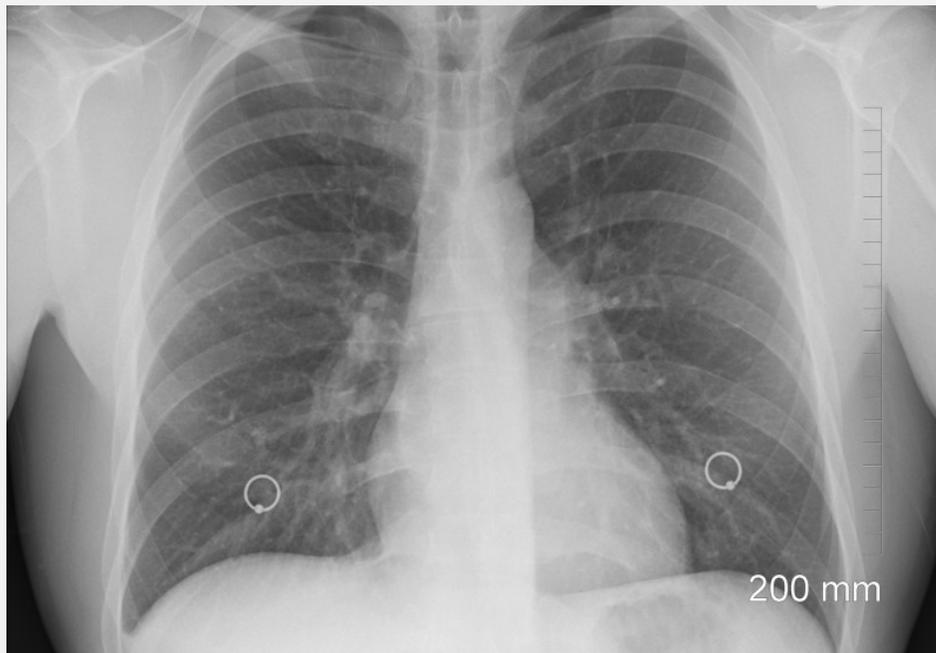


1998 \_ Primario  
Emerito

Dal 2000,  
Libero Studioso  
di Neurobiologia



Enfisema polmonare



Escursione diaframmatica di 1 cm

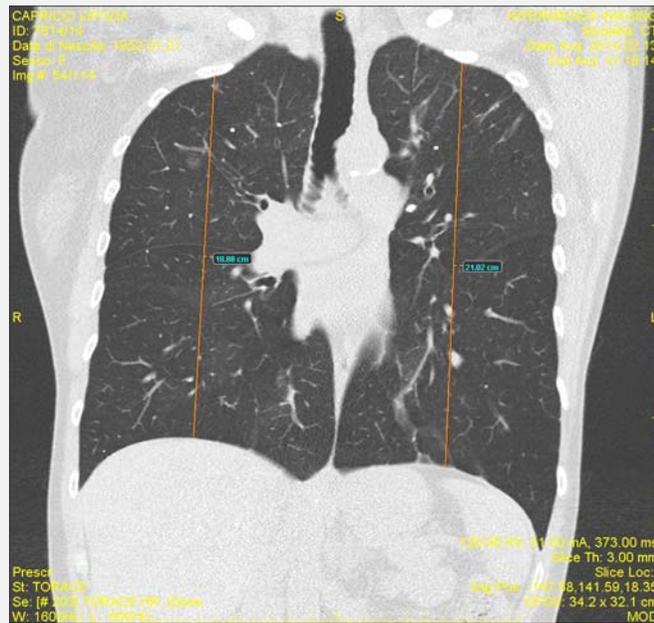
normalità



Escursione diaframmatica di 4 cm



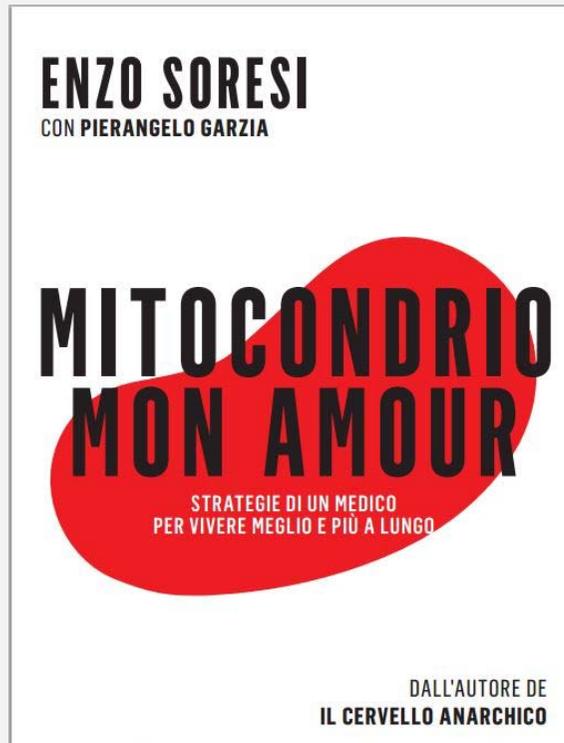
Escursione diaframmatica di 1 cm



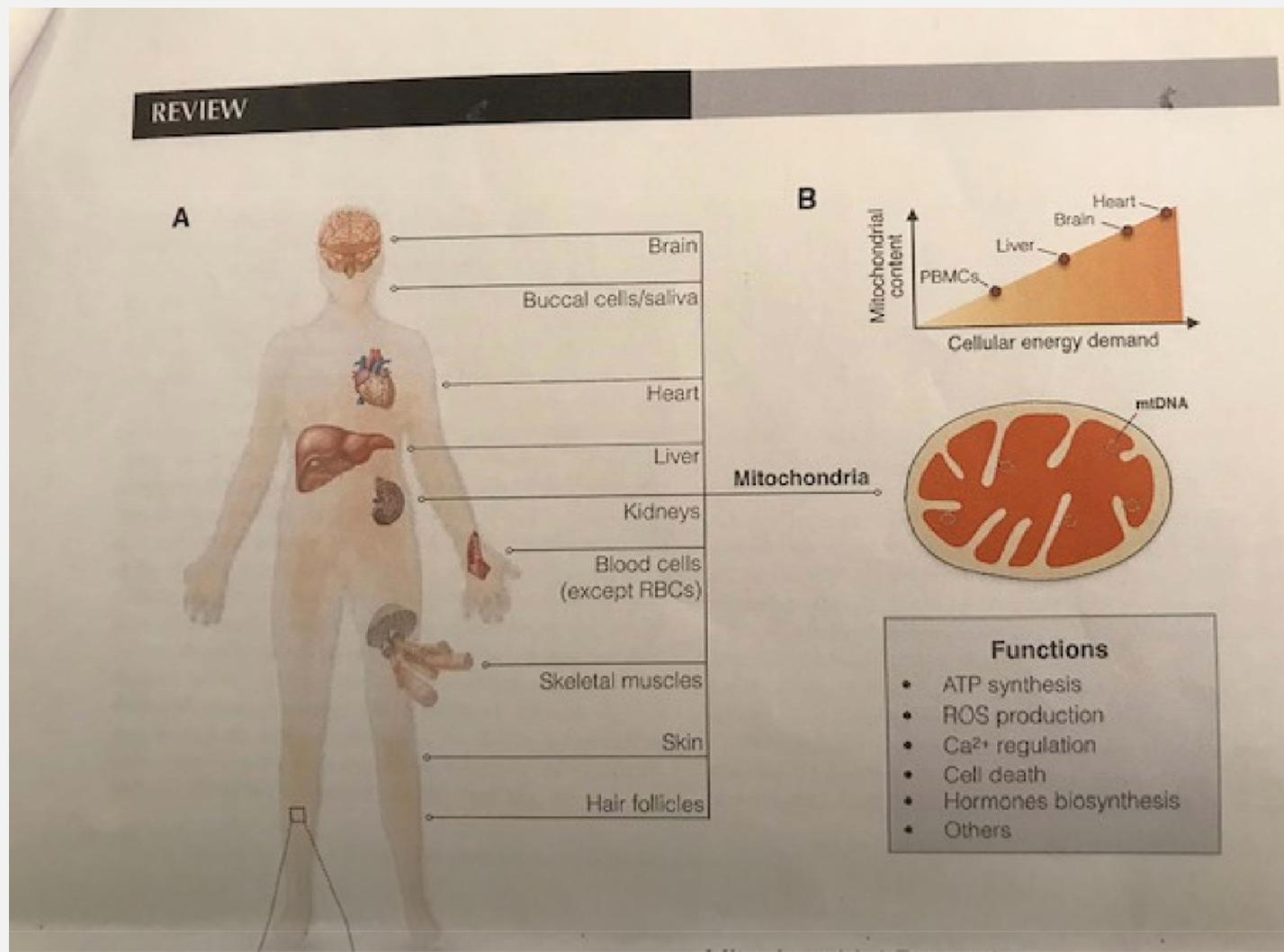
Escursione diaframmatica di 4 cm



**“The effects of aging, physical training, and a single bout of exercise on mitochondrial protein expression in human skeletal muscle”,  
Zontal B. et al., Experimental Gerontology (2012)**

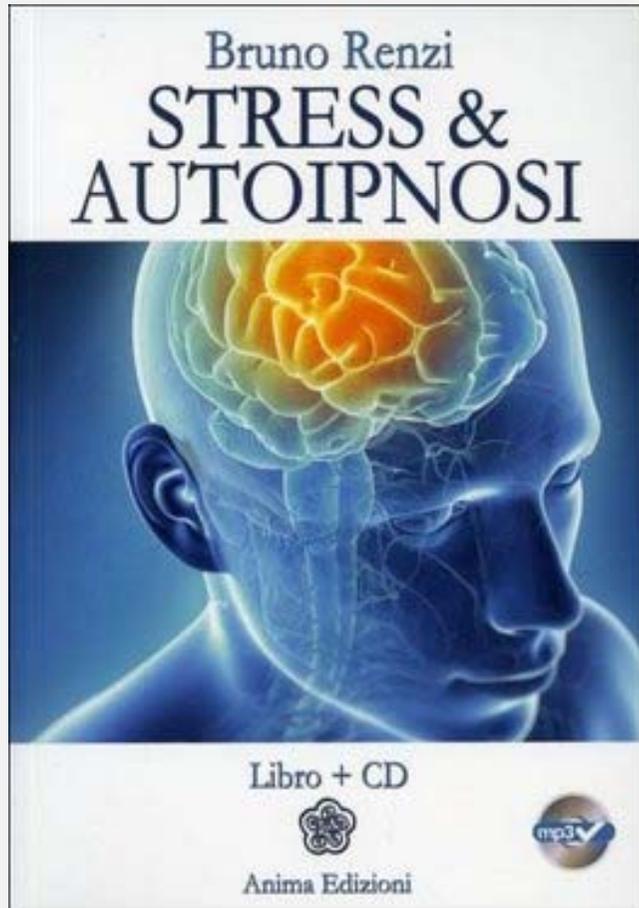


# Funzioni mitocondriali





# Bruno Renzi, medico psichiatra e psicoterapeuta



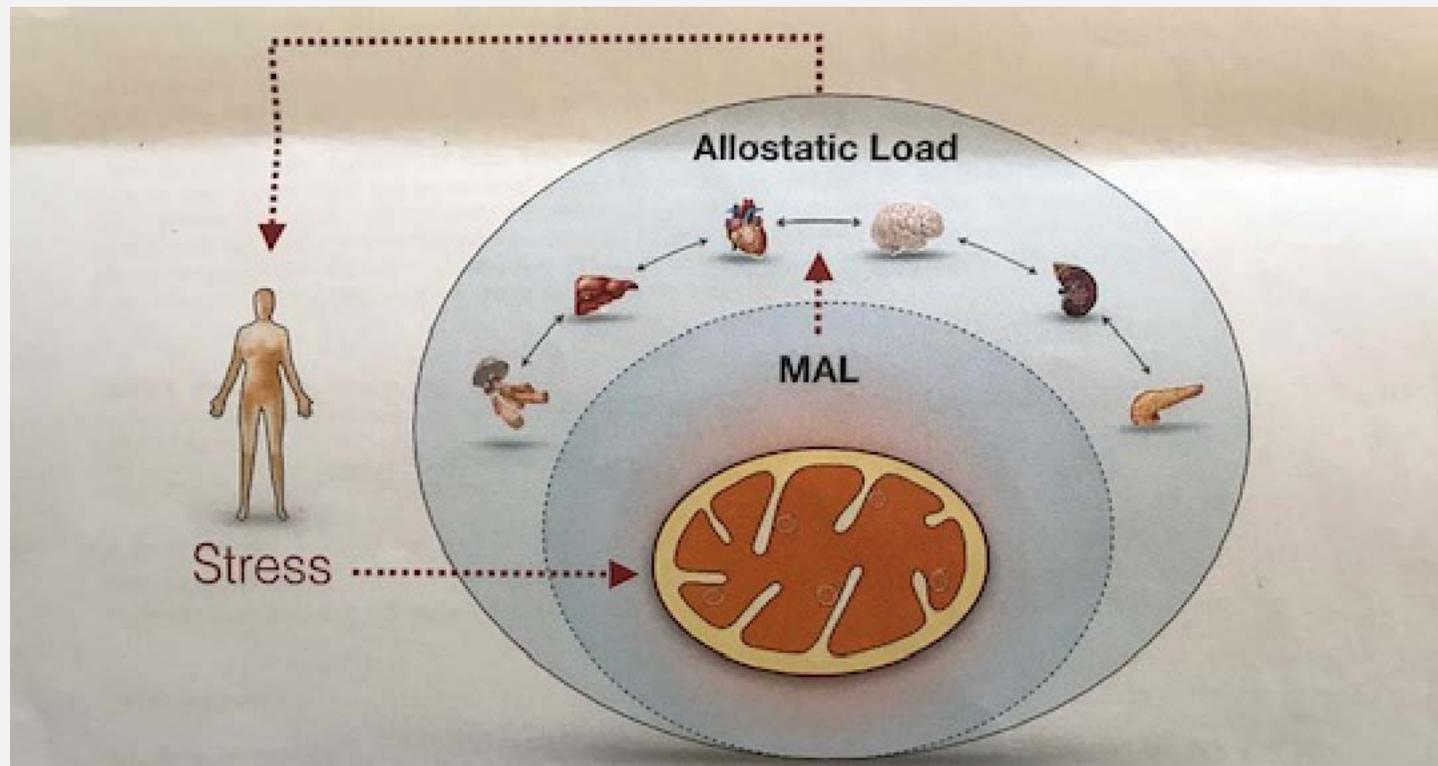
La **mindfulness** è autoregolazione dell'attenzione (intenzionalmente e con amorevolezza verso se stessi) e orientamento verso l'esperienza (con curiosità, con l'atteggiamento mentale del fanciullo). ”

SCOTT R. BISHOP



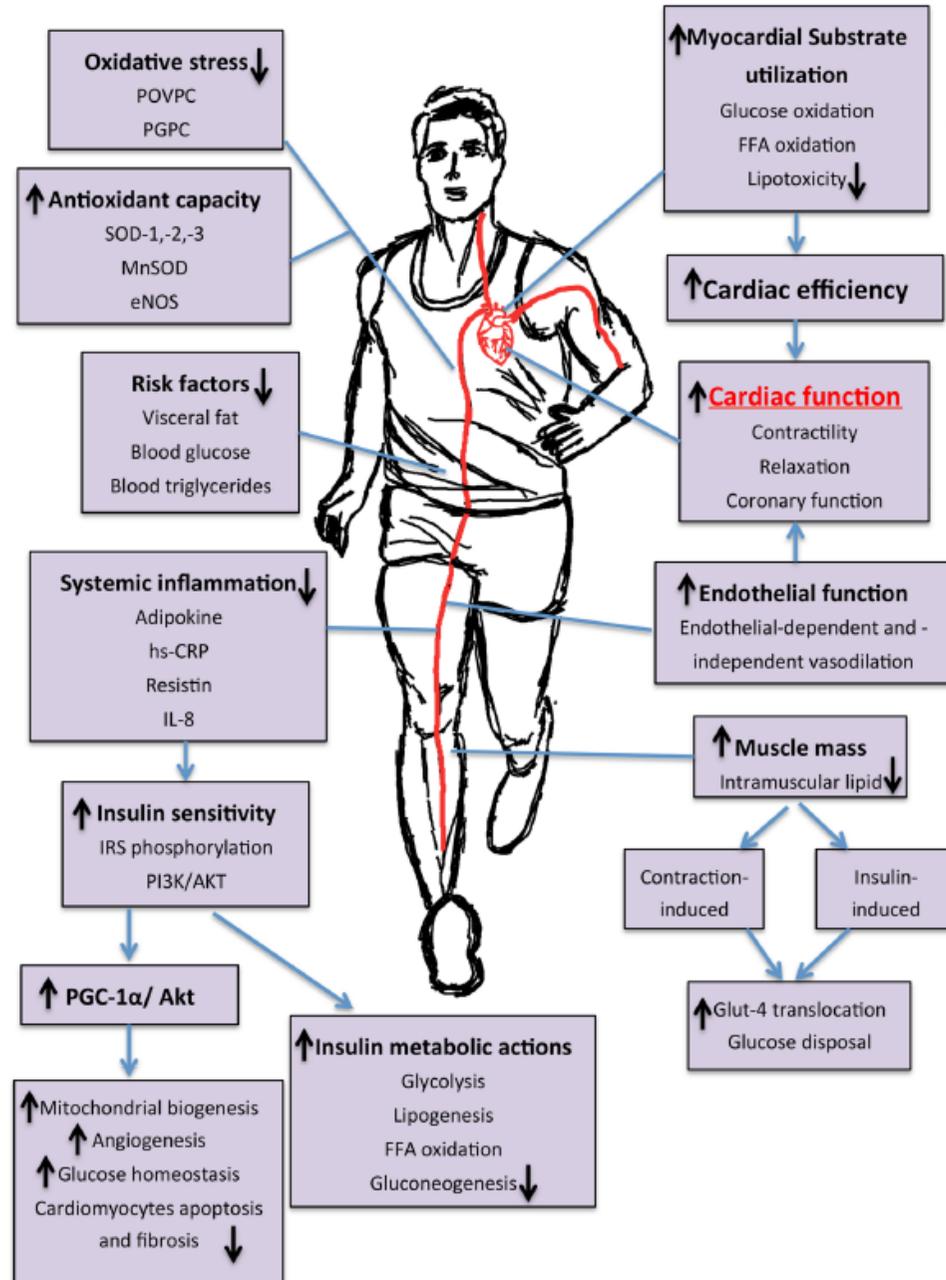
# Psychological Stress and Mitochondria: A Conceptual Framework, Martin Picard, PhD, and Bruce S. McEwen, PhD

## MAL Mitochondrial allostatic load



**FIGURE 2.** Model of MAL as a source of systemic allostatic load. Mitochondrial allostasis is the active process of responding to challenges including the demand for ATP and other biomolecules to maintain cell function and survival, as well as providing biochemical signals (e.g., limited amount of ROS). MAL is defined as the dysregulation mitochondrial functions resulting from the structural and functional changes that mitochondria undergo in response to stressors. Challenges that overwhelm the capacity to respond and produce an imbalance contribute, over time, to impaired cell function, senescence, and even cell death. Clinical cases of inherited mitochondrial disorders demonstrate the direct influence of mitochondrial dysfunction on multiple organ systems. Because mitochondria are intrinsic partners and participants in systemic allostasis (48), MAL is a nested construct that contributes to systemic allostatic load and overload. MAL = mitochondrial allostatic load; ATP = adenosine triphosphate; ROS = reactive oxygen species. Color image is available only in online version ([www.psychosomaticmedicine.org](http://www.psychosomaticmedicine.org)).

## Exercise-mediated cardioprotection



**Fig. 2** Exercise-induced cardioprotection through the modulation of (1) systemic risk factors, (2) endothelial and vascular functions and (3) cardiac performance directly

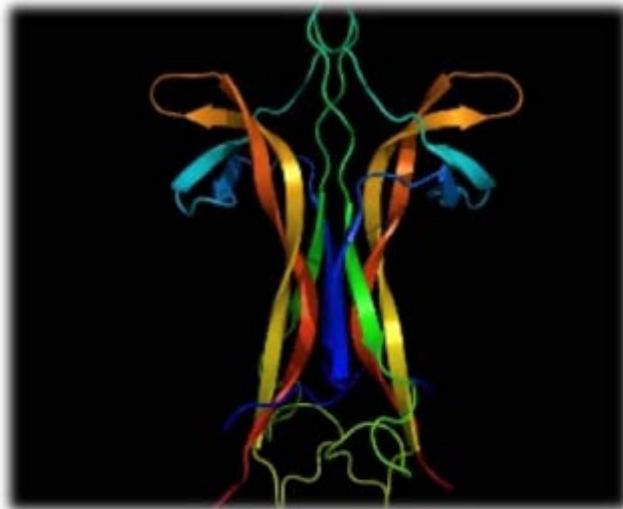
# A 85 anni corre la maratona sotto le 4 ore: il nuovo record di Ed Whitlock



# Attività fisica e liberazione dal muscolo (cellule N.E.) di ormone BDNF (body nerve growth factor)

## NGF o NERVE GROWTH FACTOR

Negli anni '50 **Rita Levi-Montalcini**, una scienziata italiana (Torino- 1909; Roma-2012), scoprì il fattore di crescita nervoso, noto come **NGF (Nerve Growth Factor)**, una proteina essenziale nella crescita e nella differenziazione delle cellule nervose. Le fu attribuito il premio Nobel del 1986 per la medicina insieme a Stanley Cohen, suo studente statunitense.



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**SUPERVIP**  
Bruno Bozzetto

# Marker ematici di stress ossidativo

danno mitocondriale da antibiotici chinolonici in donna di 56 anni trattata per 10 giorni con Tavanic 500, 1 cpr al giorno

Fine Referto d-ROMS, BAP-test e G6PDH prelievo del 10.11.18.pdf

Esami di Laboratorio	Risultati	Unita' di Misura	Valori di Riferimento
<b>METABOLITI REATTIVI DELL'OSSIGENO</b> Metodo:Colorimetrico Esame eseguito in service al Synlab Brescia	568	CARR U	250-300:valori normali 300-320:condizioni border-line 321-340:stress ossid.lieve 341-400:stress ossid.medio 401-500:stress ossid.elevato >500:stress ossidativo elevatissimo
	Esame ripetuto		
<b>POTENZIALE BIOLOGICO ANTIOSSIDANTE (DERIVATI DEI RADICALI LIBERI)</b> Metodo : colorimetrico Esame eseguito in service al Synlab Brescia	2278	micromol/l	stato di fortissima carenza:<1400  stato di forte carenza:1400-1599  stato di carenza:1600- 1799  stato di discreta carenza:1800-1999  valore border-line:2000- 2200  valore ottimale:>2200

Laboratorio Lam, via Torino 51, Milano

**Caso clinico: donna di 56 anni, sovrappeso, depressa, in terapia da 2 anni con 4 farmaci antidepressivi.**

**IL6 = 100**

**PCR = 13**

**D-Roms = 560**

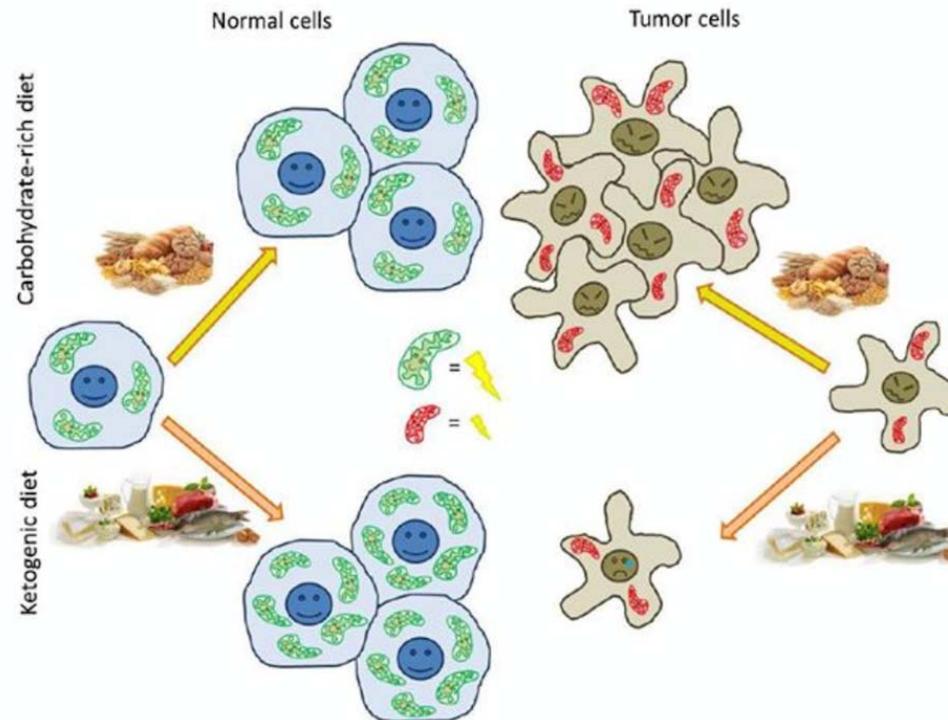
**CoQ10 = 350**



# Dieta chetogenica e tumori solidi...

## METABOLIC TARGETING OF SOLID CANCERS

Silvia Vidali – ESR4  
SALK, Salzburg, Austria



Cells produce energy mostly through organelles called mitochondria. They transform either carbohydrate, fat or protein into ATP, the primary cellular energy fuel. Cancer cells mainly rely on glucose consumption. Ketogenic diet is a high fat and low carbohydrate diet that allows cells to utilize fat as primary energy source.  
→ Ketogenic diet, reducing glucose levels, has been proven beneficial in cancer therapy.

**Capitolo sullo stress ossidativo e sul danno mitocondriale**  
**“Movimento e mitocondrio” di Andrea Chellini, specialista del movimento e socio fondatore di Life Changer**



**Buteyko 1923-2003**

