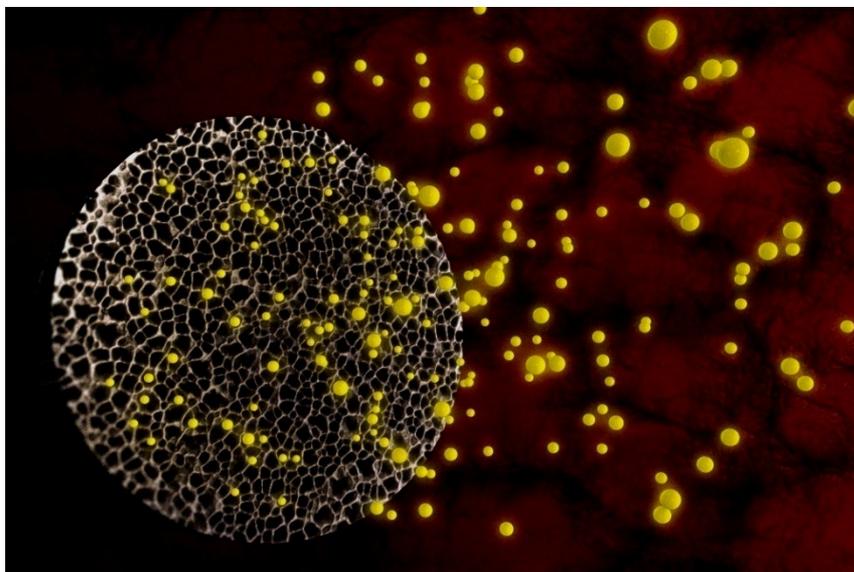




REGIONE AUTONOMA
FRIULI VENEZIA GIULIA

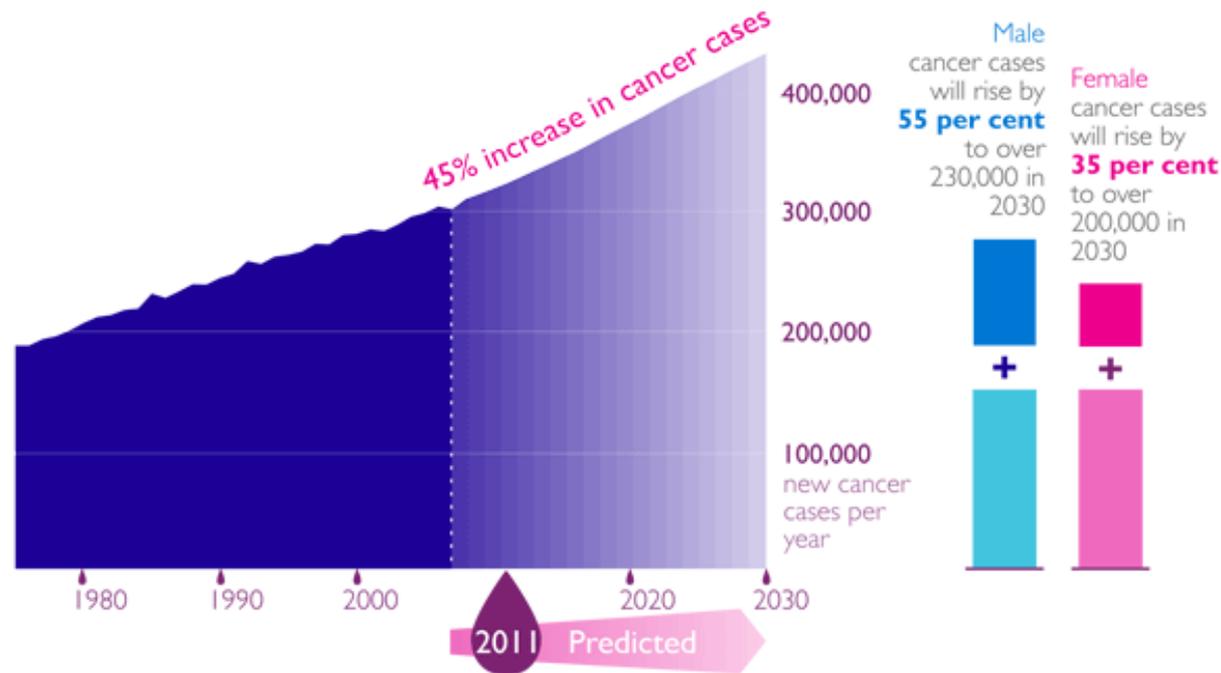
COMBATTERE I TUMORI CON LA RICERCA E I PROGRAMMI DI SCREENING. LE NUOVE FRONTIERE DELL'INNOVAZIONE CON LE NANOTECNOLOGIE

Trieste, 23 maggio 2013



Nei paesi industrializzati il cancro è la seconda causa di morte al mondo dopo le malattie cardiovascolari.

Cancer cases to continue rising



SIDDHARTHA MUKHERJEE

L'IMPERATORE DEL MALE

Una biografia del cancro





CANCER – DID YOU KNOW?

MYTH 1:
CANCER
IS JUST A
HEALTH
ISSUE

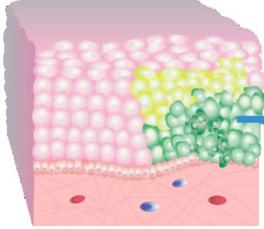
MYTH 2:
CANCER
IS A DISEASE
OF THE WEALTHY,
ELDERLY AND
DEVELOPED
COUNTRIES

MYTH 3:
CANCER
IS A DEATH
SENTENCE

MYTH 4:
CANCER
IS MY
FATE

CANCER – DID YOU KNOW?

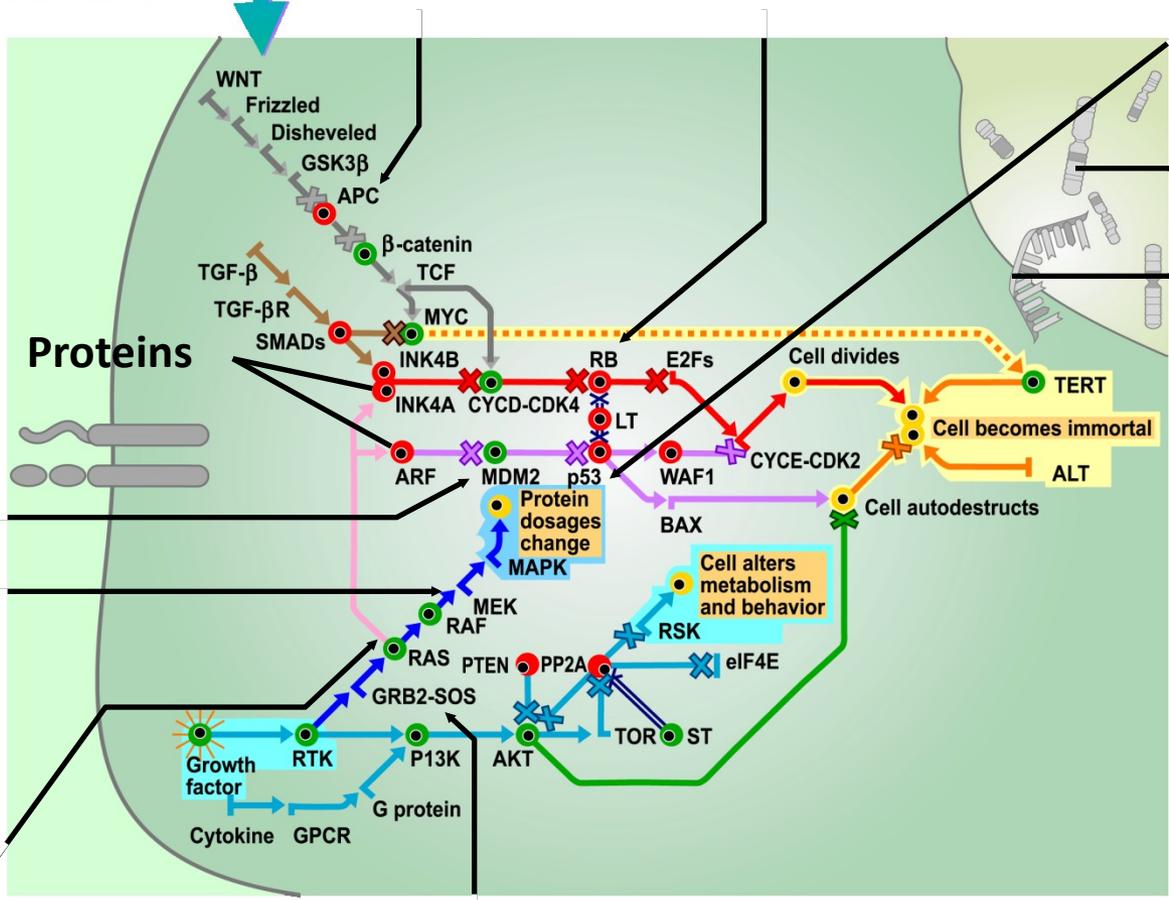
There are many myths out there. On 4 February 2013 get the facts.



Retinoblastoma,
bone, bladder,
lung, breast

Colon

Many cancers



Genes
mRNA

Sarcomas

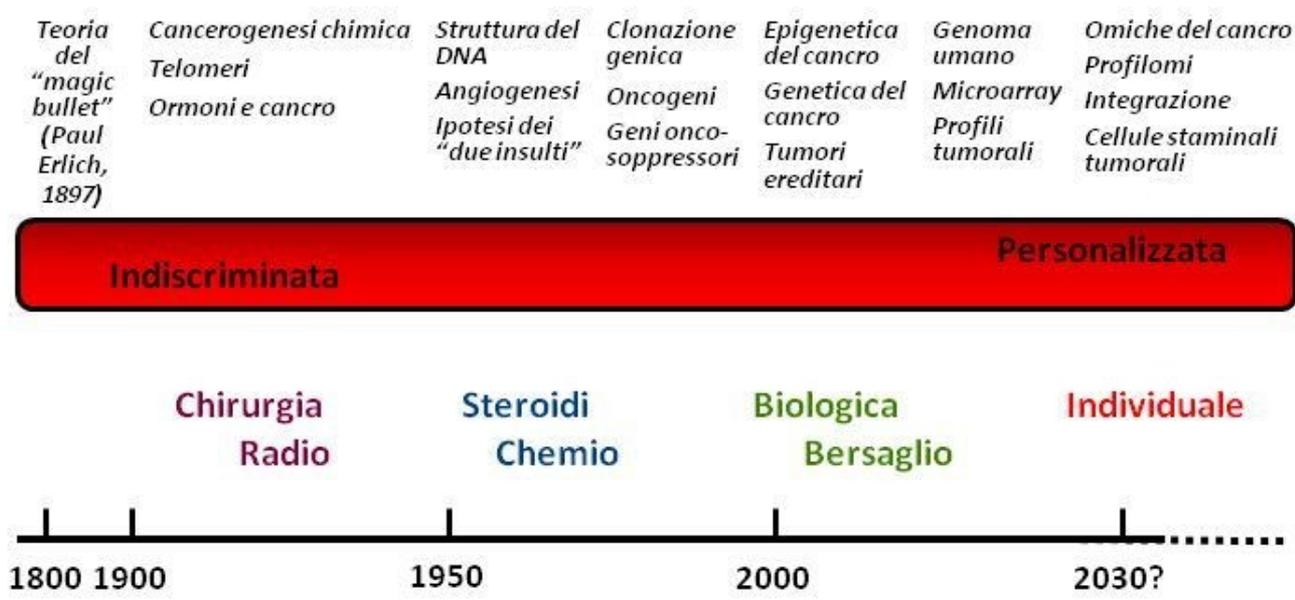
Leukemia,
brain,
breast,
stomach,
lung

Leukemia

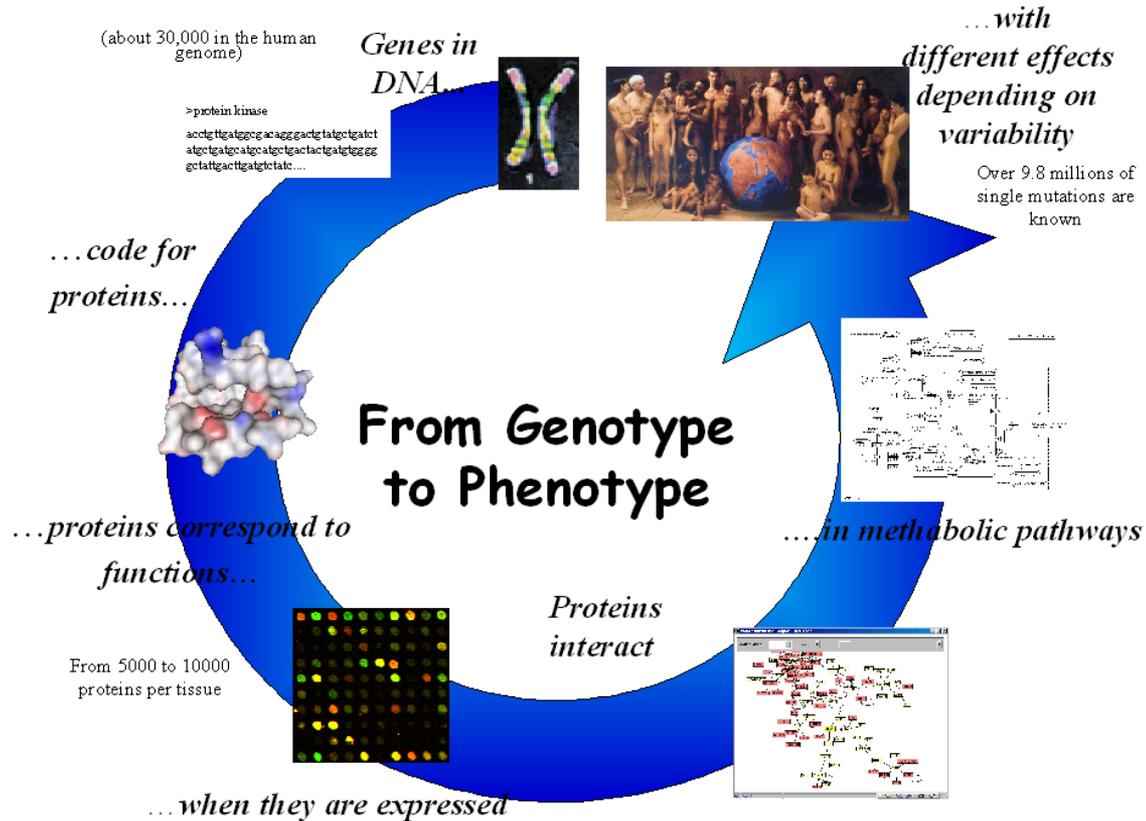
Some neuronal tumors

Mole Rats fight cancer





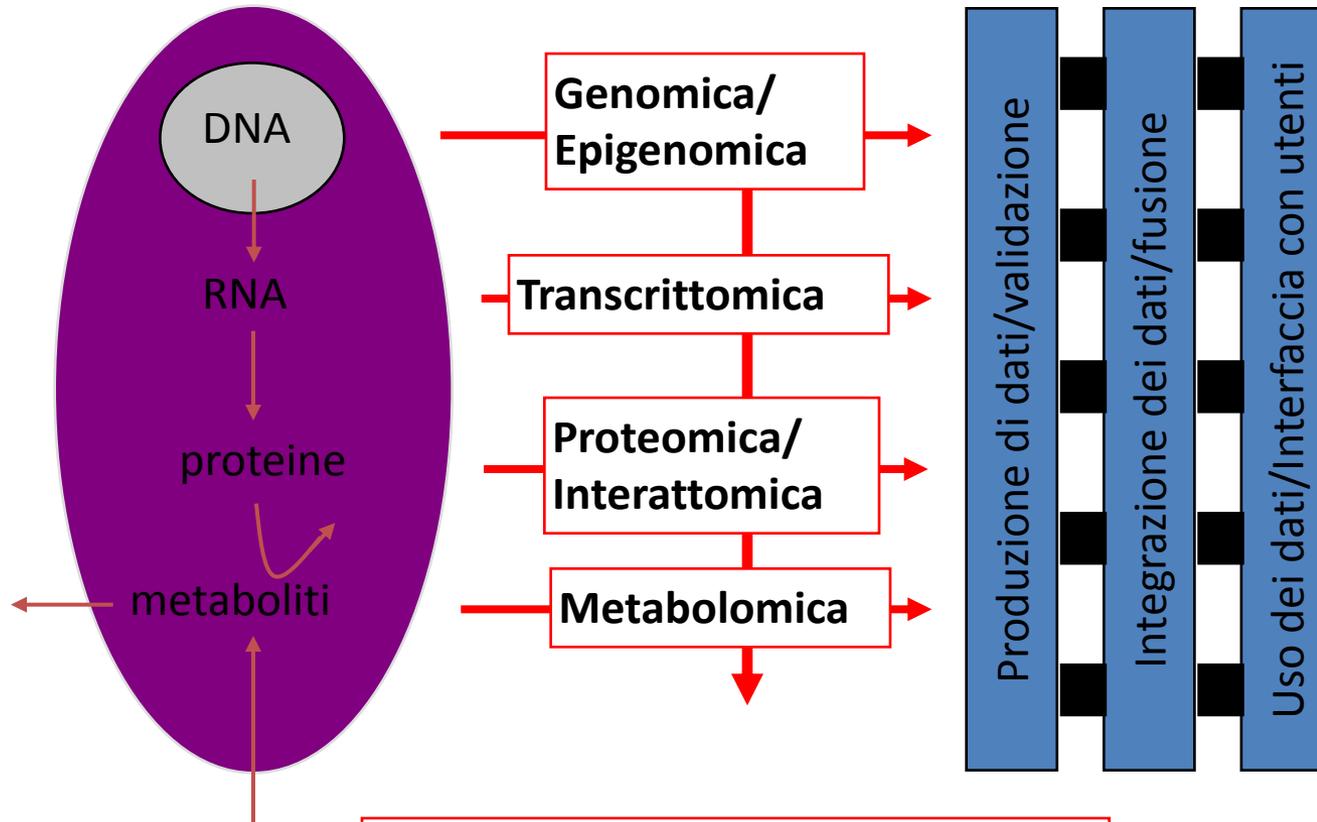
ERA della GENOMICA FUNZIONALE e delle OMICHE



L'ERA dell'OMICA INTEGRATA

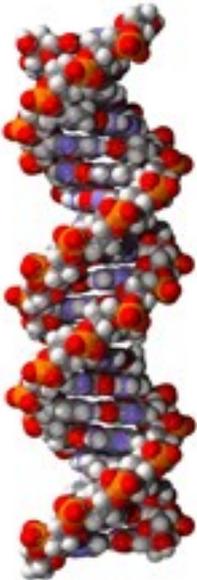
cellula

Bioinformatica



Biologia Sistemica Integrativa

OLIGONUCLEOTIDI TERAPEUTICI

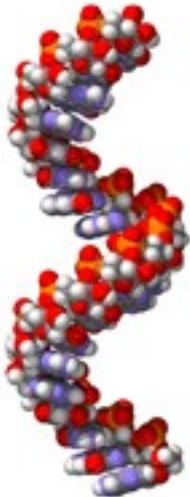


DNA

Transcription



Antigene DNA,
Decoy DNA



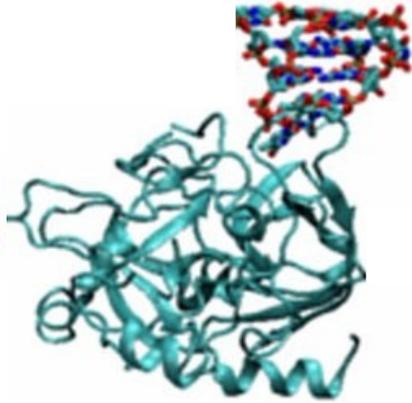
mRNA

Translation



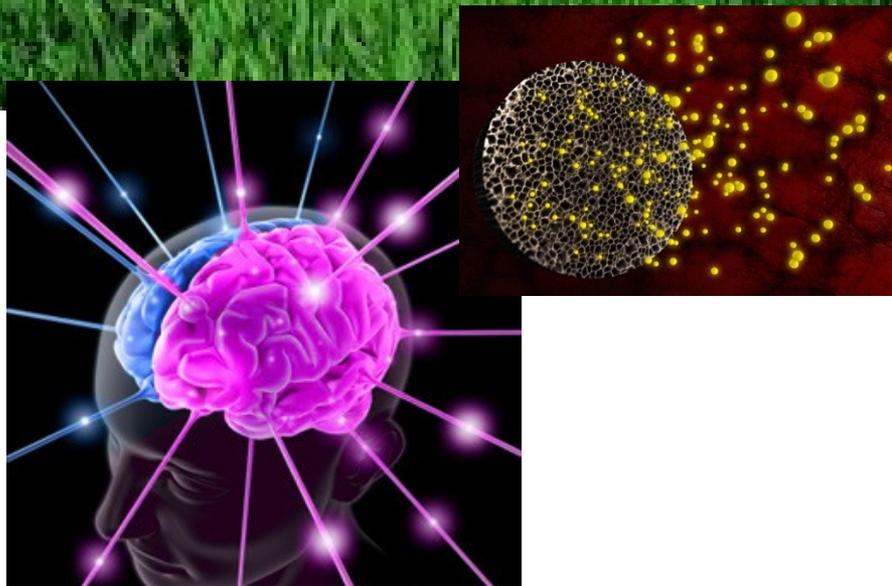
Antisense DNA,
siRNA, microRNA

Aptameric
oligonucleotides



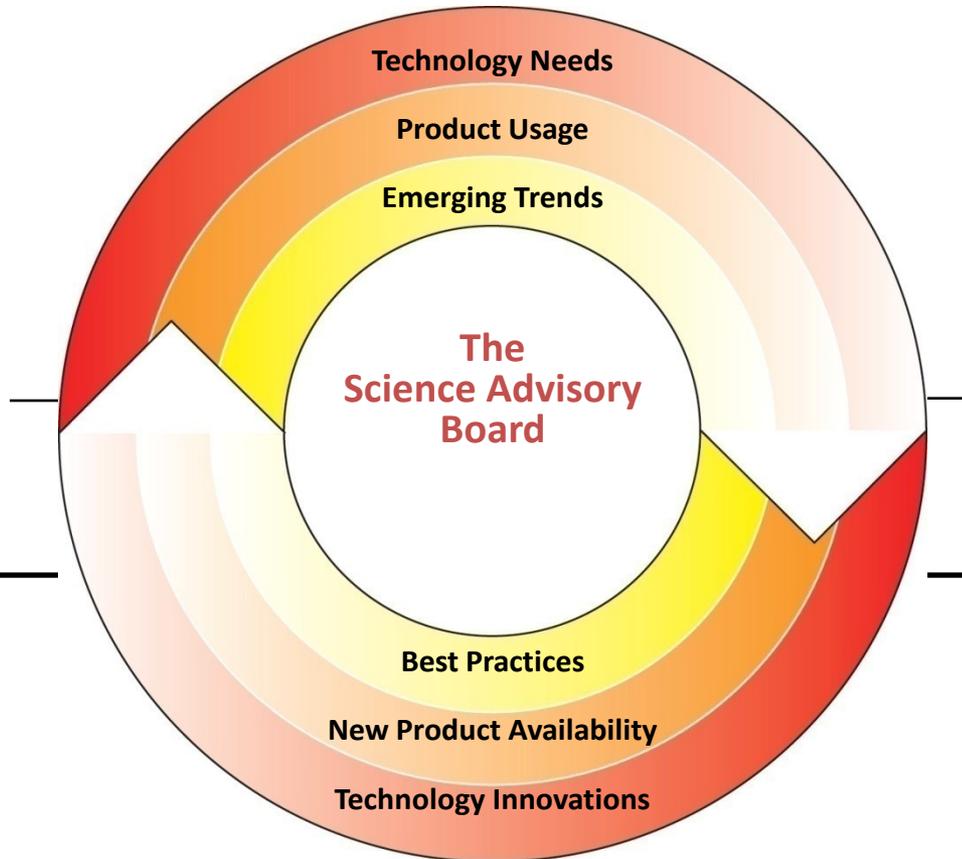
Protein



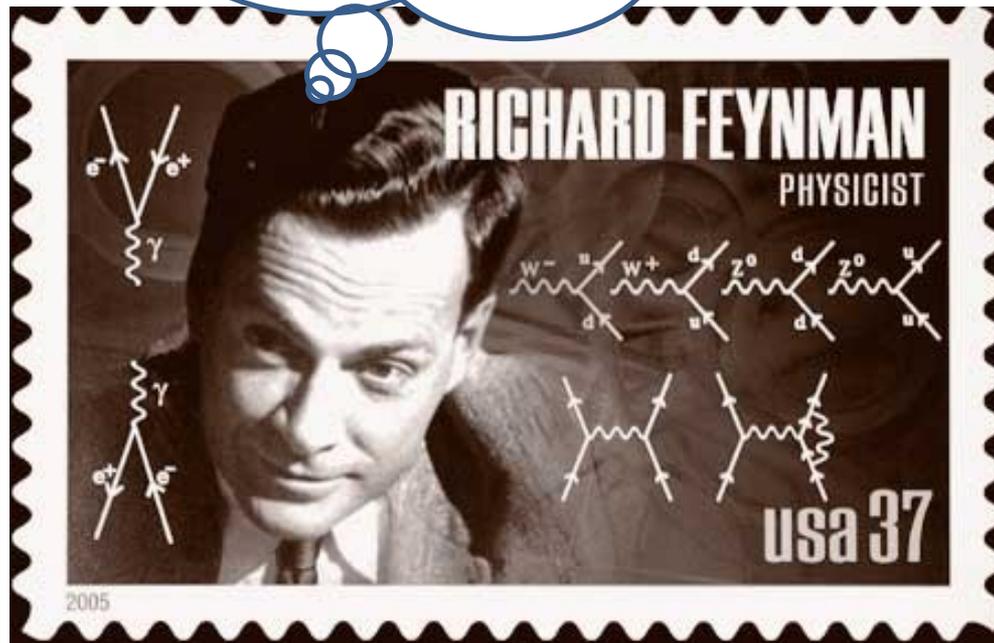
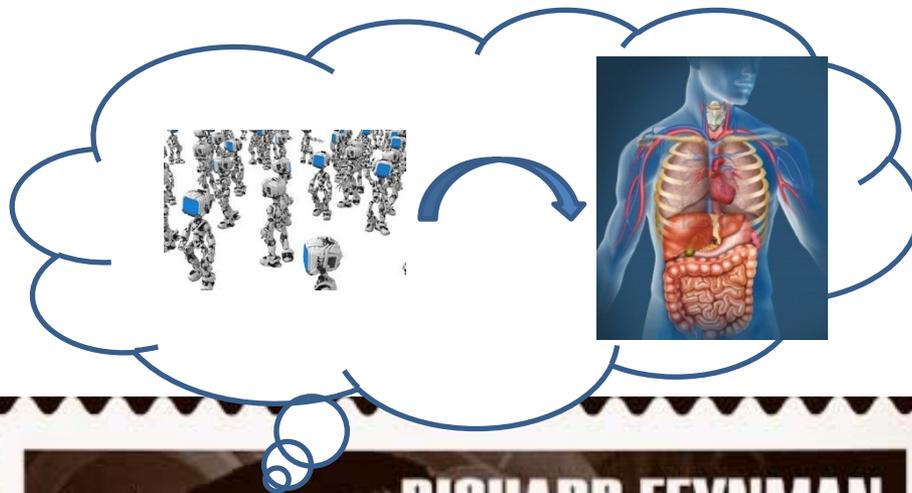


Medicina Personalizzata: interventi terapeutici tipo paziente- centrico

**Life Science
Companies**



Scientists



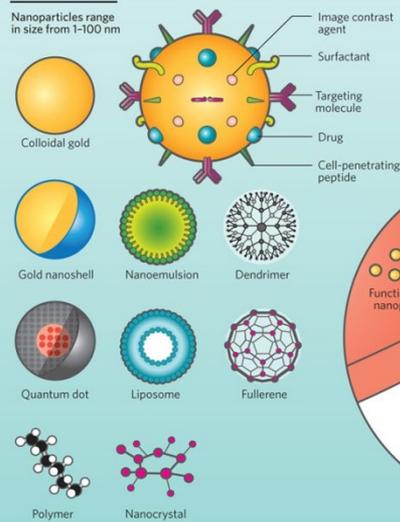
“Il tempo è ciò che accade quando non accade nient’altro.”

SWALLOWING THE SURGEON

Nanomedicines make use of the new physical properties that materials acquire when miniaturized. With suitable tinkering, the particles can be made ready recipients for an array of molecules including: therapeutic drugs, targeting molecules for cell-specific delivery, surfactants for manipulating the shape of the particle and keeping it in solution, and imaging molecules that track the location of particles in patients.

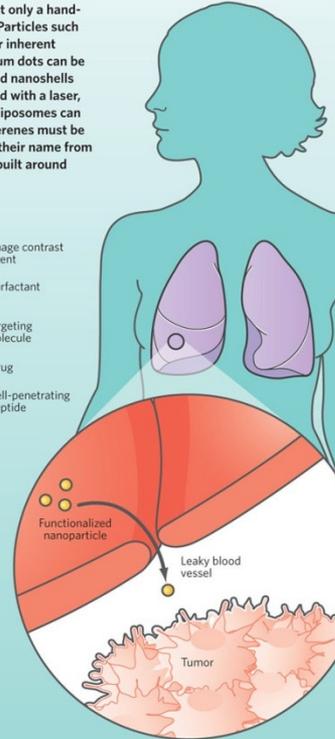
MIX AND MATCH

There is an almost endless variety of nanoparticles, but only a handful have found their way into biomedical applications. Particles such as quantum dots and gold nanoshells make use of their inherent physical properties once inside cells or tissues. Quantum dots can be used to light up specific tissues for surgeons, while gold nanoshells can enter cancer cells where they are selectively heated with a laser, killing tumors with high temperatures. Fullerenes and liposomes can carry cargo inside as well as on their surfaces, but fullerenes must be modified in order to stay in solution. Dendrimers take their name from their fractal-like branches of molecules, which can be built around drugs that might otherwise be insoluble.

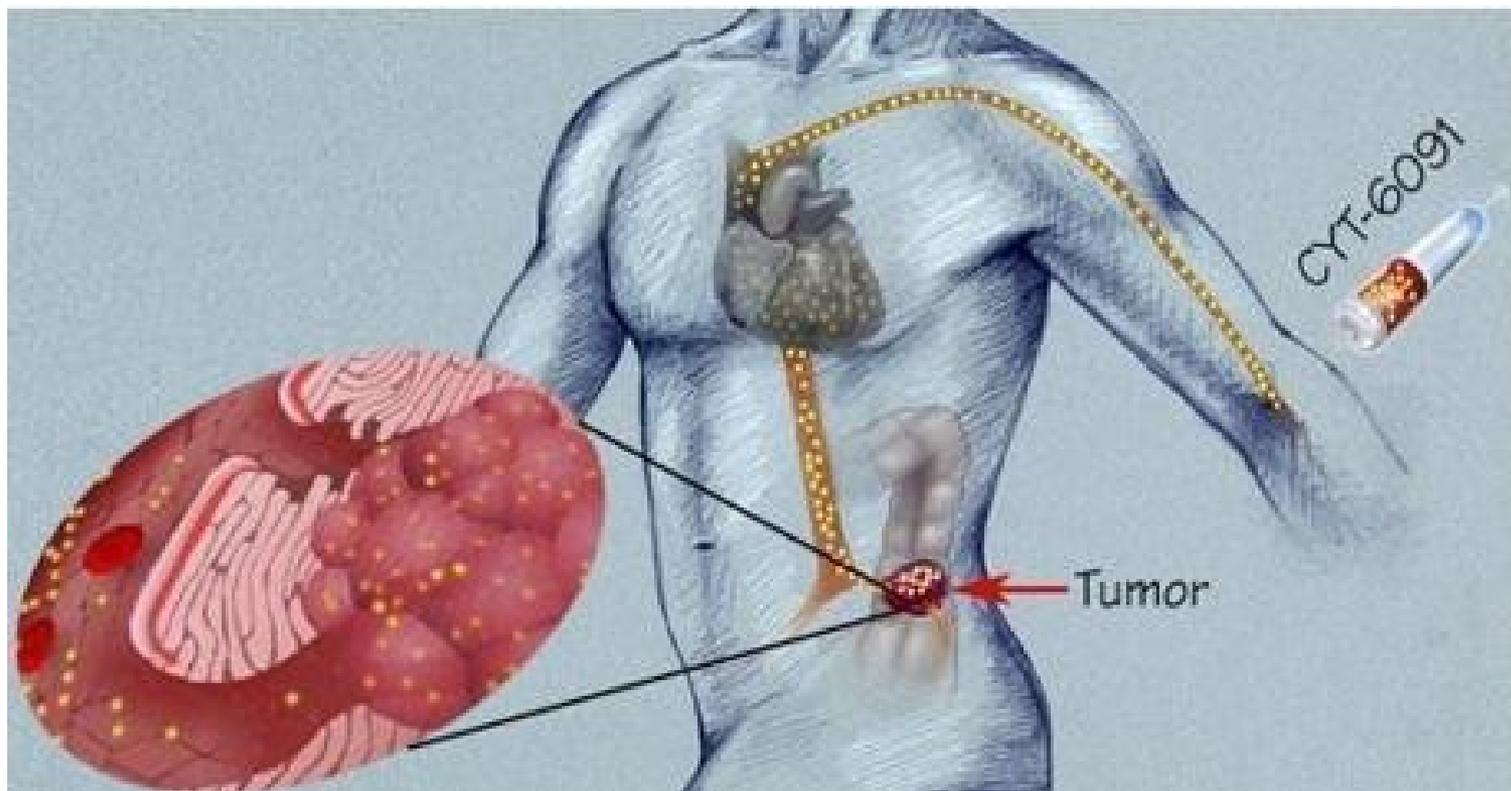


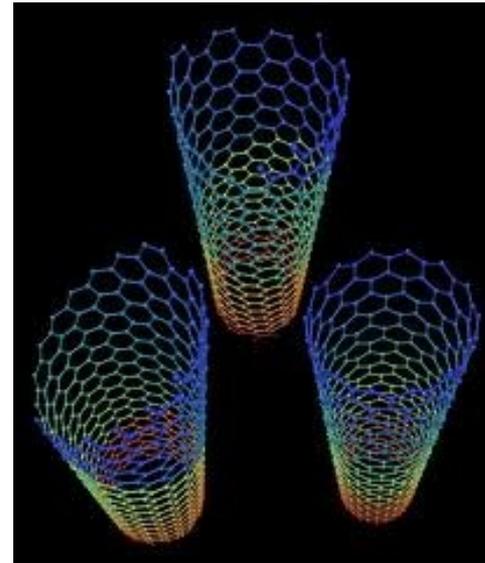
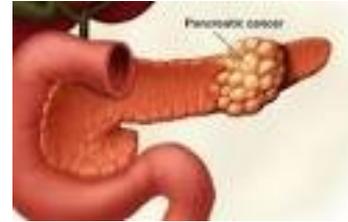
Red blood cell, diameter 8,000 nm

Nanoparticles (100 nm)



SMALLER IS BETTER
The blood vessels that grow throughout a tumor mass are generally leakier than vessels in the rest of the body. So researchers have designed nanoparticles just small enough to escape through those holes, targeting only the tumor tissue with drugs hitching a ride on their surfaces.





Più del 40% di tutti i tumori può essere prevenuto o diagnosticato in tempo per essere curato con grandi probabilità di guarigione (mammella, colon-retto e cervice)

Più del 30% dei tumori può essere prevenuto agendo sui fattori di rischio:



Tabacco

Sovrappeso e obesità

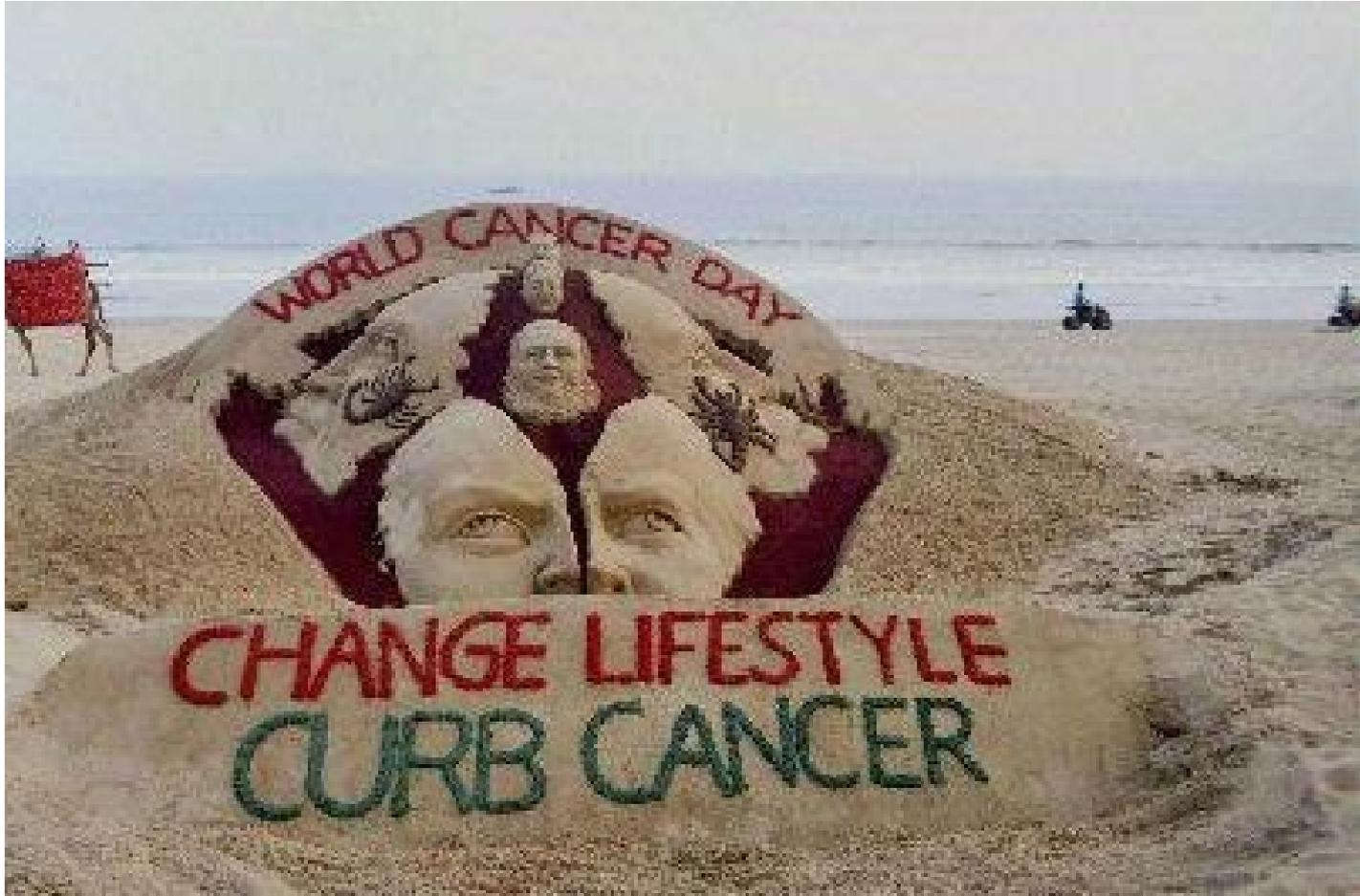
Inattività fisica

Basso consumo di frutta e vegetali

Alcool

Infezioni sessualmente trasmesse (HPV, HCV)

Polveri sottili





DIPARTIMENTO DI
SCIENZE DELLA VITA

