

VI Curso de divulgación



Los Avances de la Química y su Impacto en la Sociedad

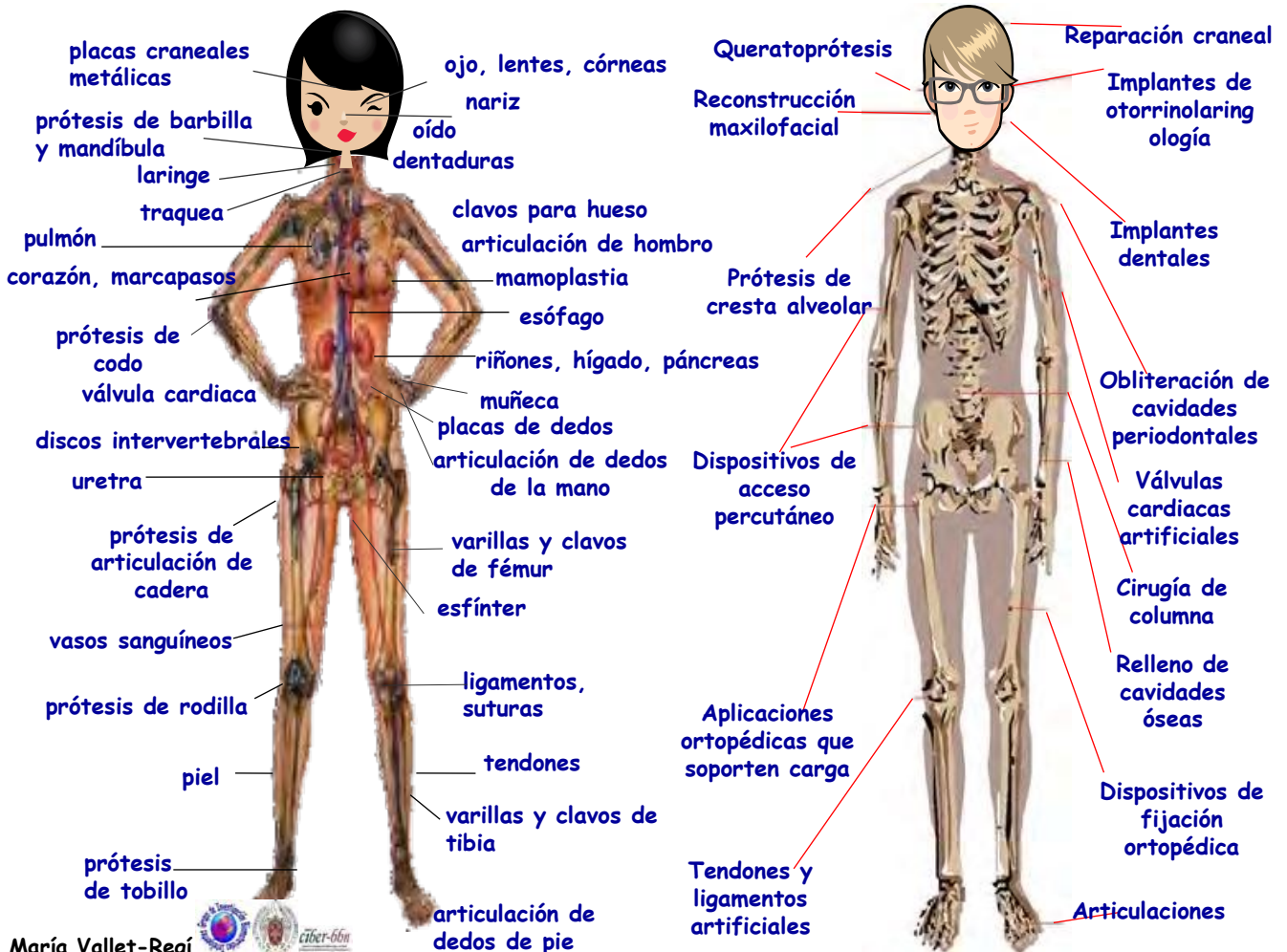
Entre el 14 de septiembre de 2017 y el 5 de abril de 2018

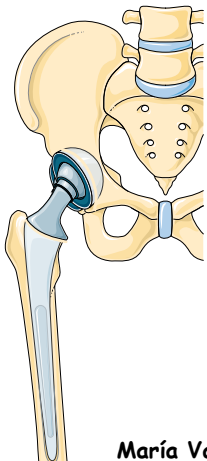
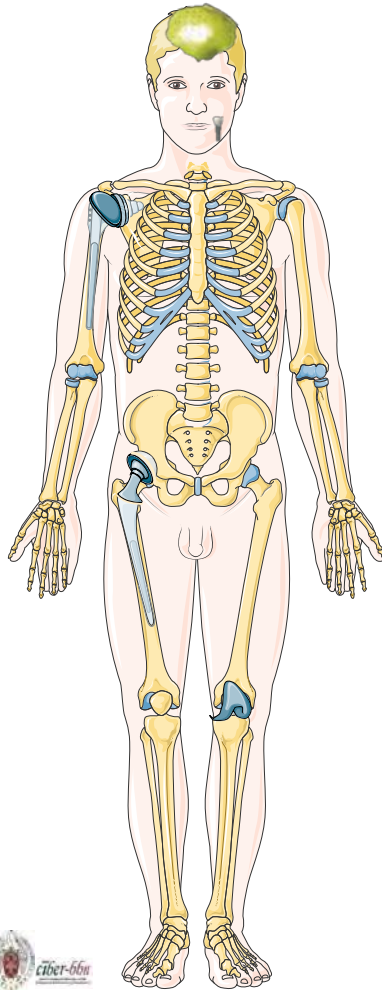
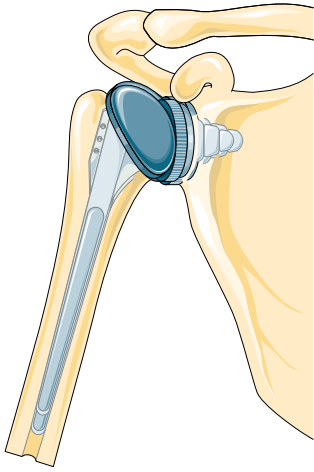
Conferencia de clausura

“Avances recientes en biomateriales”

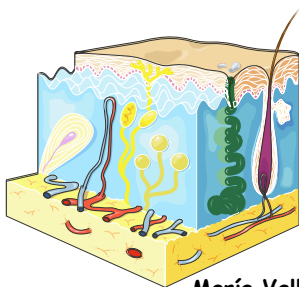
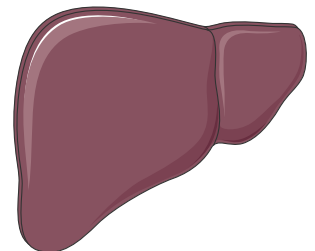
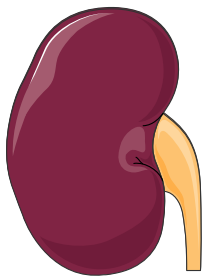
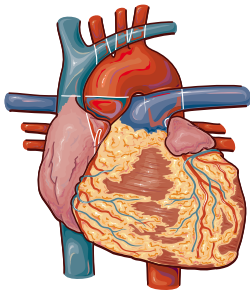
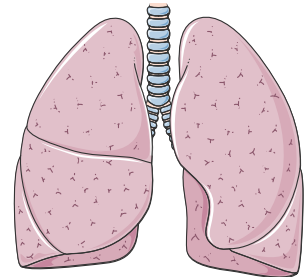
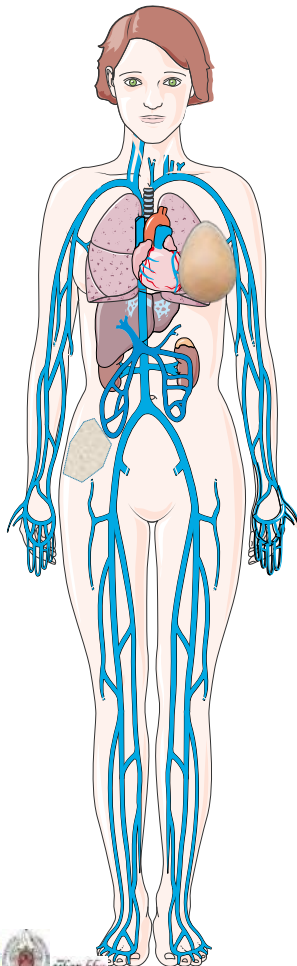
María Vallet-Regí

<https://www.ucm.es/valletregigroup>



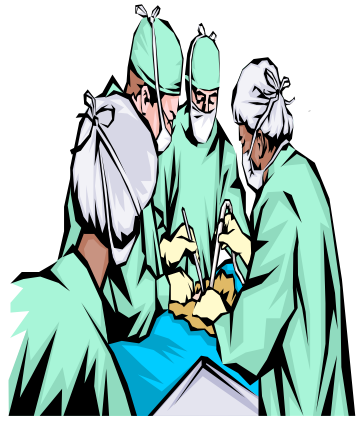


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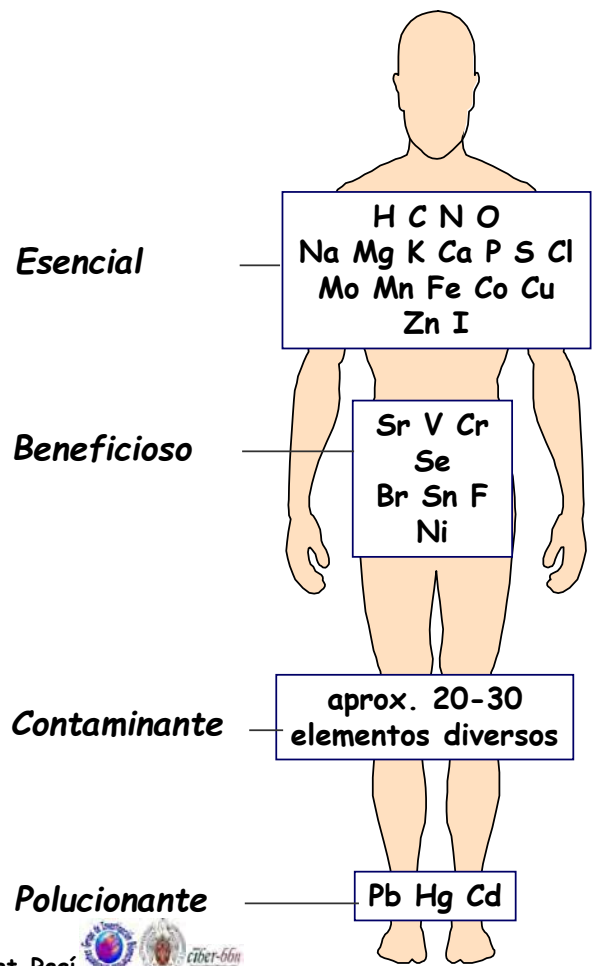
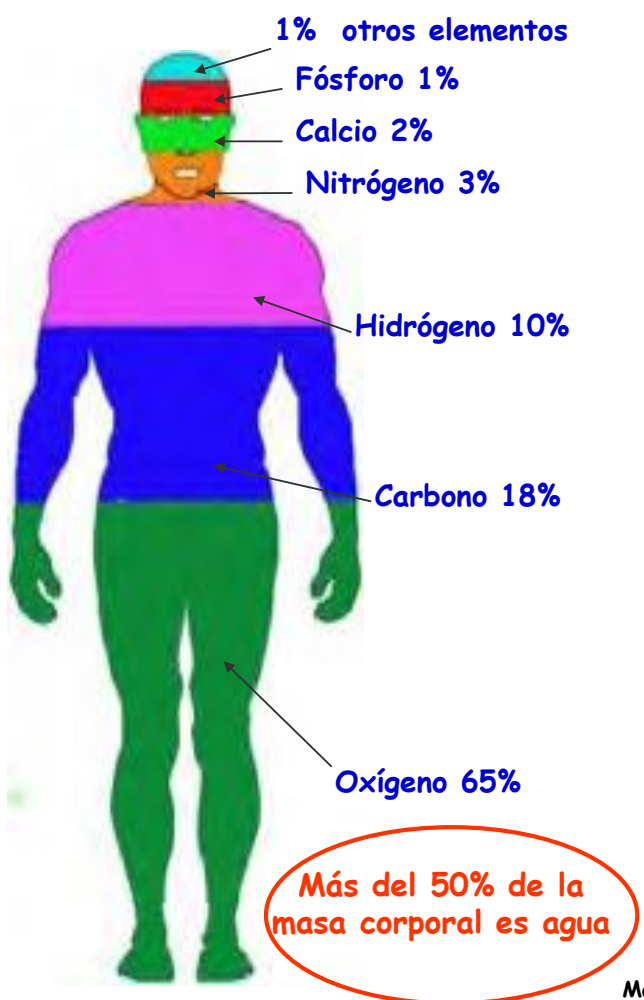


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Esperanza de vida

**Roma Imperial:
22 años**

**Principios de siglo XX
40 años**

**Final siglo XX
80 años**



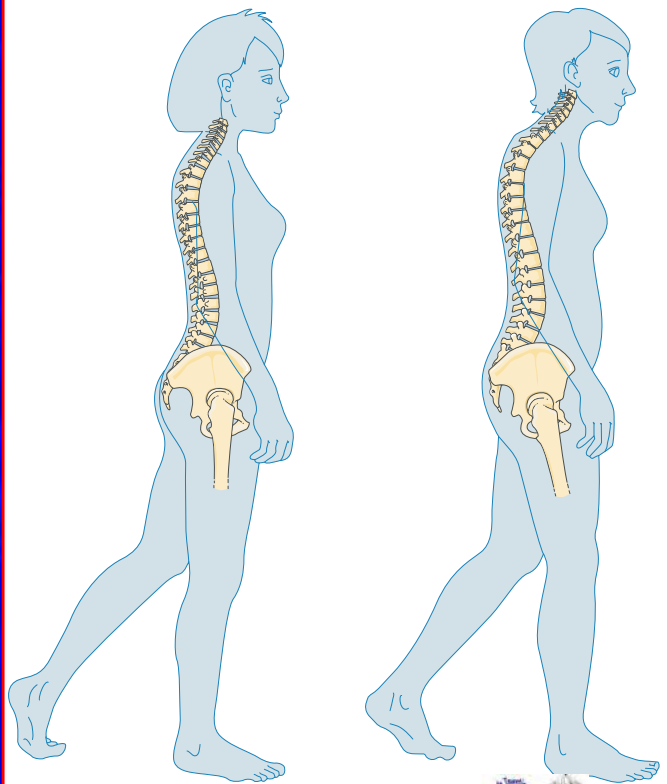
España 2017

Hombres: 80,1

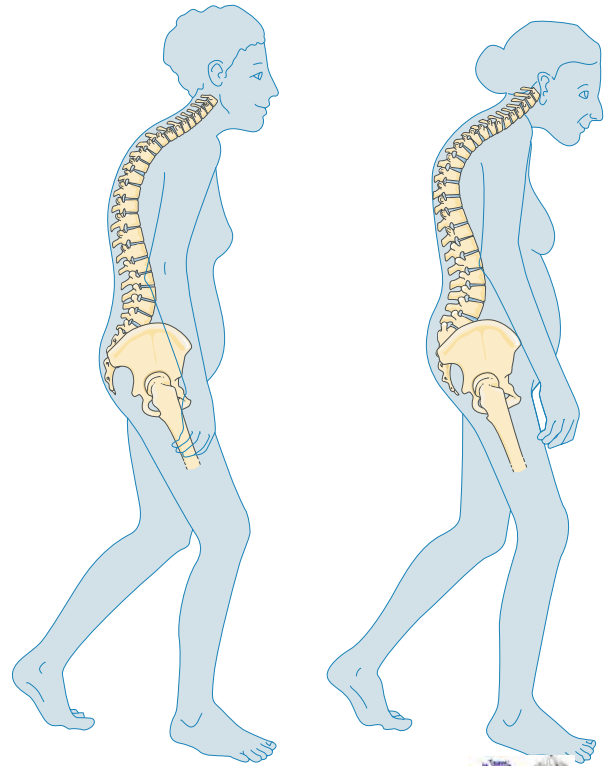
Mujeres: 85,8



Adult-Premenopause

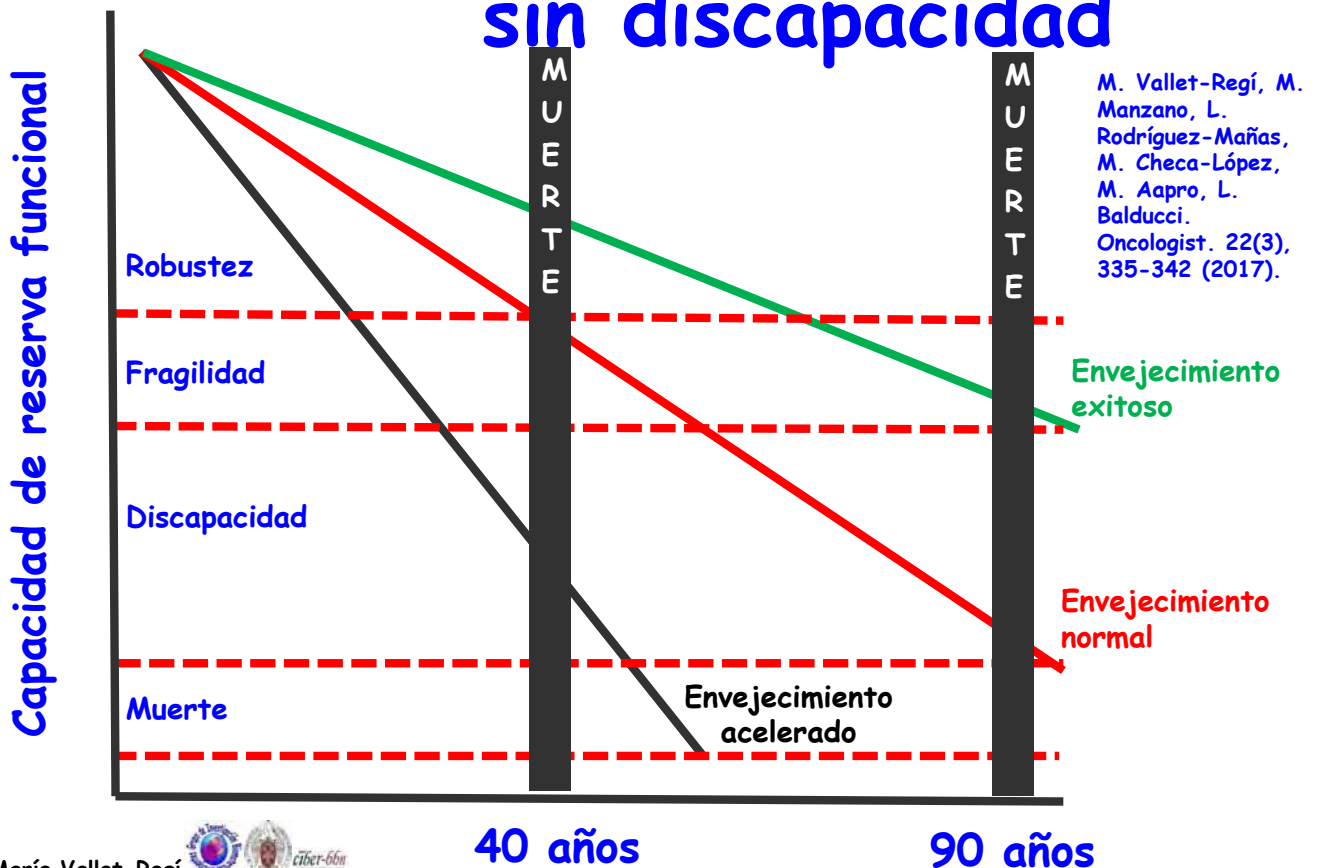


menopausa-Osteoporosis



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Vivir más ≠ Vivir mejor: sin discapacidad



Reparación del cuerpo humano

Aproximación
biónica

Aproximación
medicina regenerativa

Prótesis e implantes
*Ortopedia, Oftalmología,
Cardiología, Vascular,
Cirugía Estética,
Odontología, Urología, etc.*

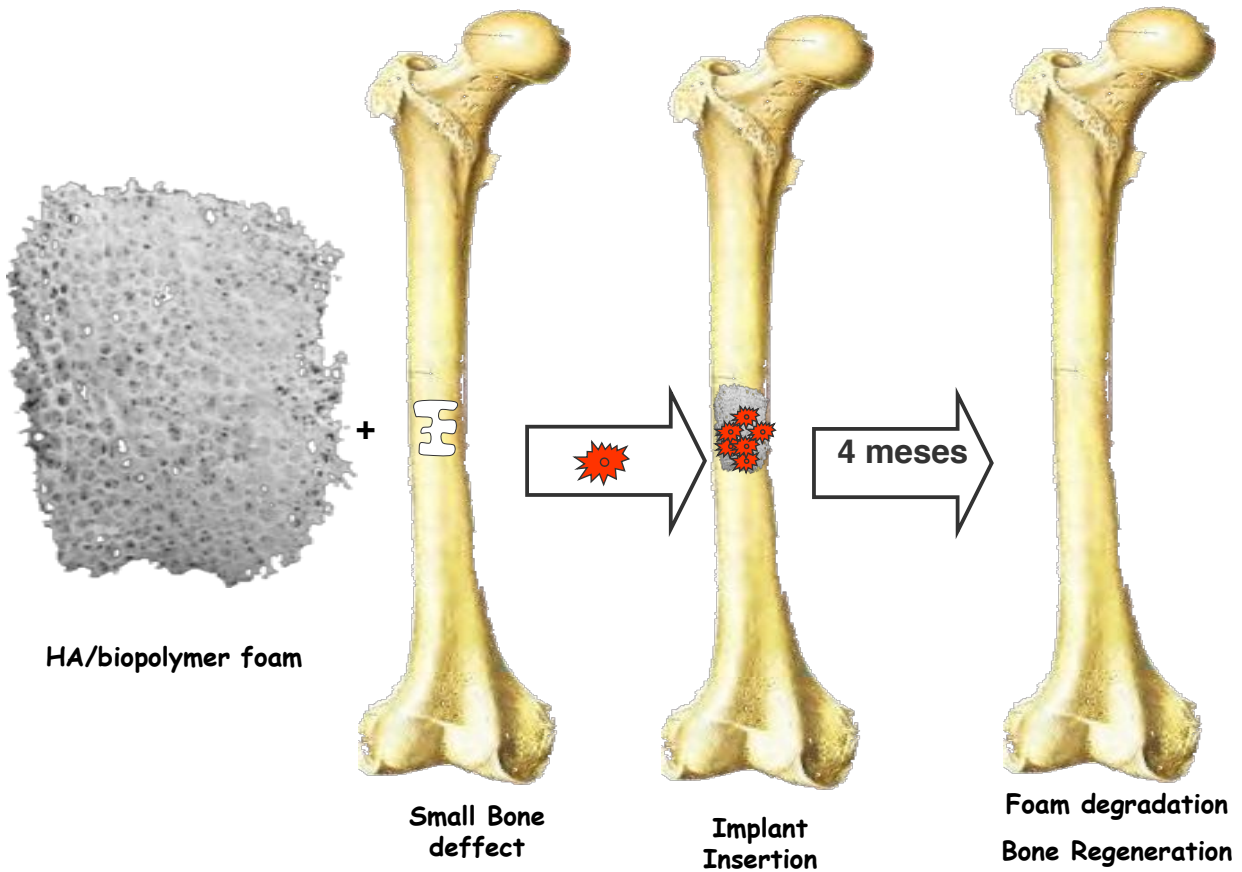
1ª y 2ª generación

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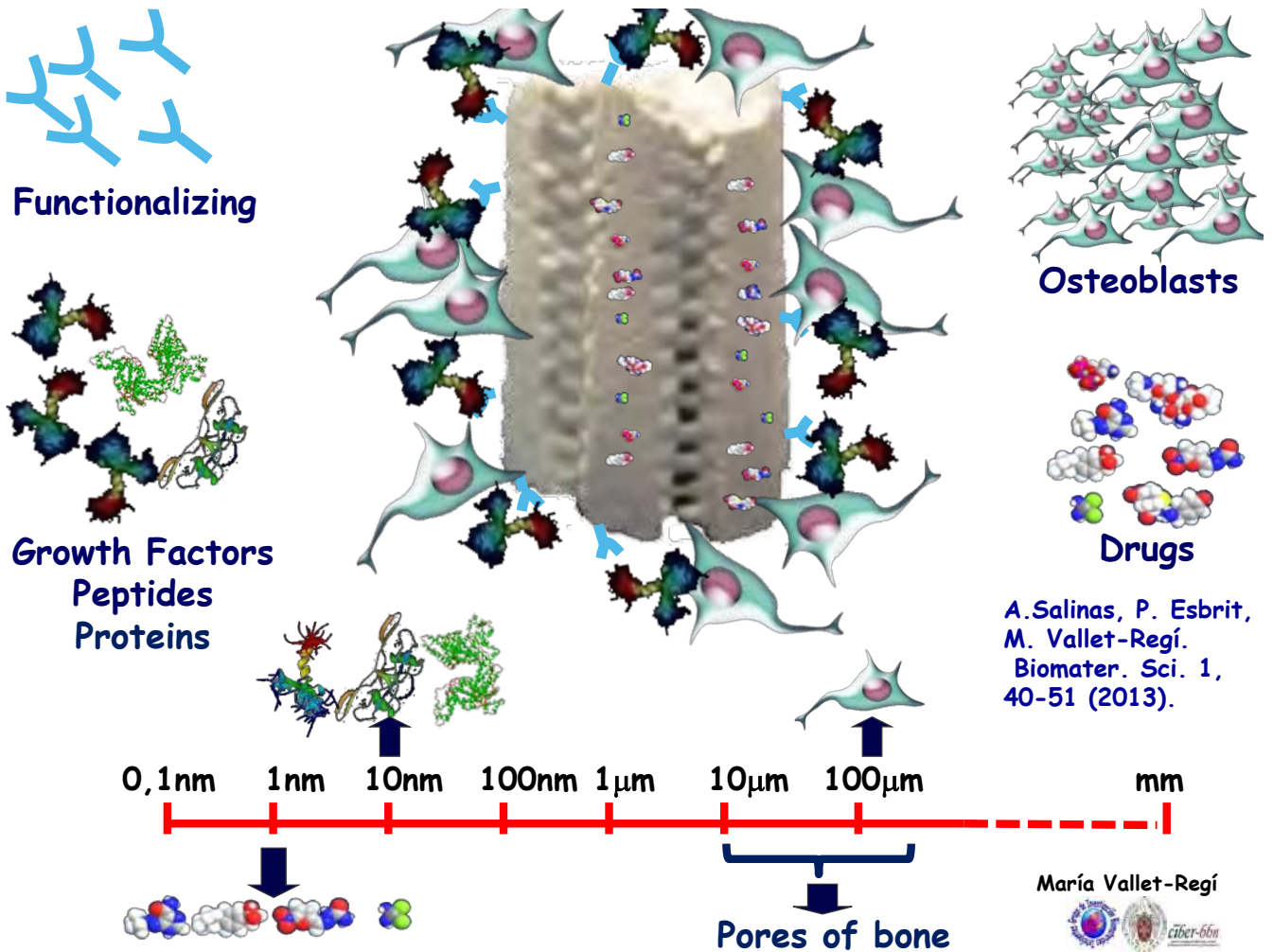
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J. Gil-Albarova, M. Vila, J. Badiola-Vargas, S. Sánchez-Salcedo, A. Herrera, M. Vallet-Regí. *Acta Biomaterialia*. 8, 3777-3783 (2012).



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Reparación del cuerpo humano

Aproximación
biónica

Aproximación
medicina regenerativa

Terapia
celular

Ingeniería
de
tejidos

3^a generación

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Recolección de células



Aislamiento
de células

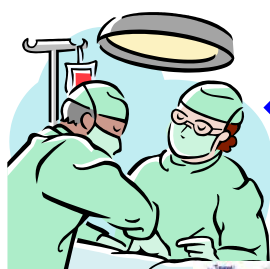


Proliferación
celular

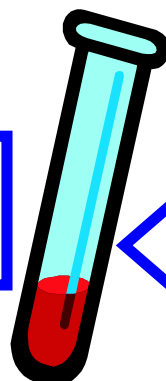


Ingeniería de tejidos

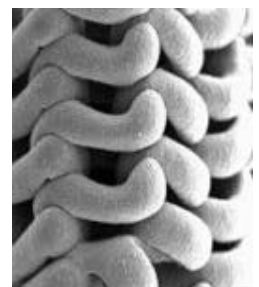
Sembrado
de células
en el
andamiaje



Relleno del
defecto
óseo

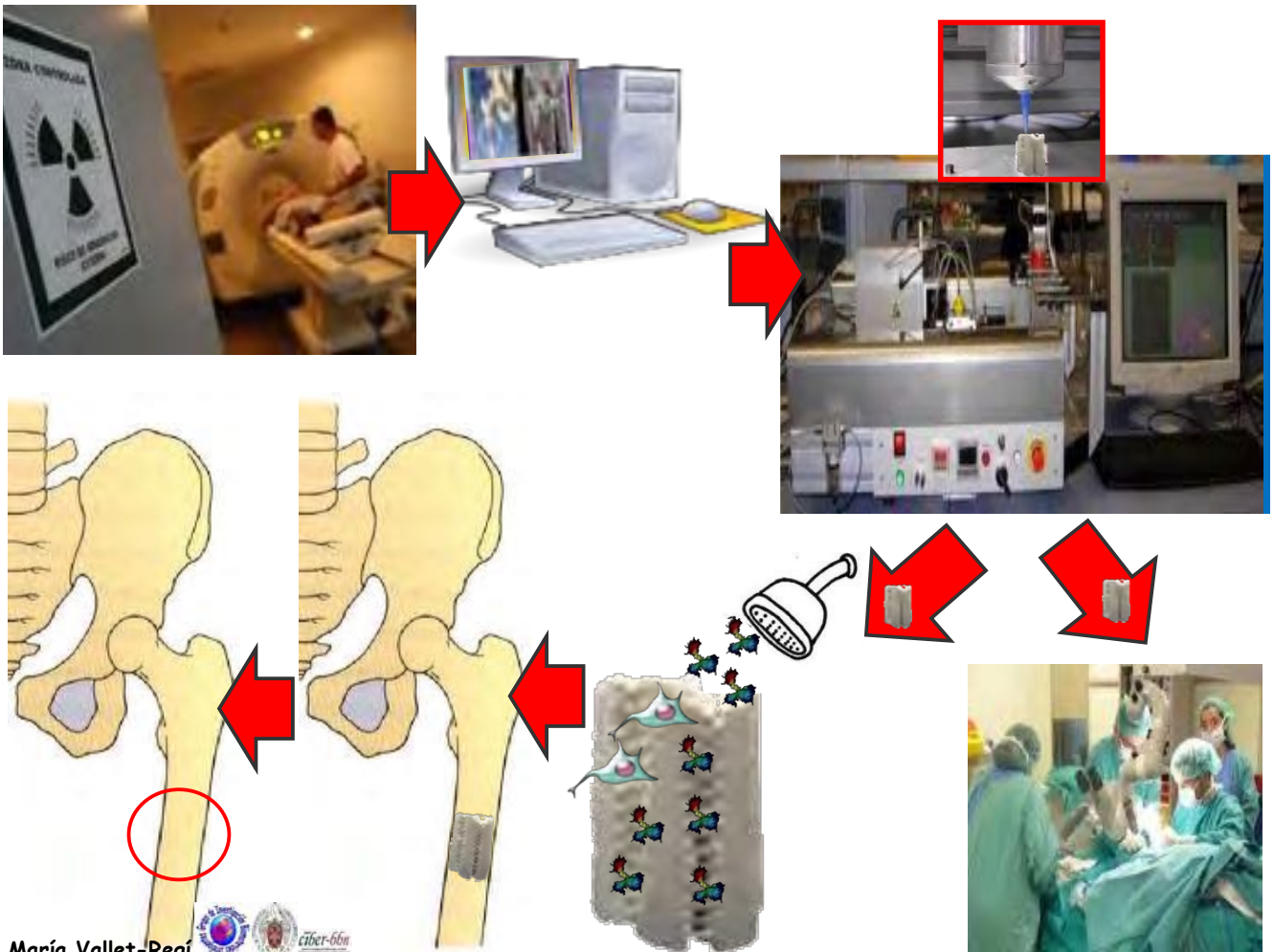


Proliferación
y/o
diferenciación
en condiciones
óptimas



María Vallet-Regí 

Nanotecnología e Ingeniería de tejidos



Solving Drug Delivery by Drawing from Two Different Fields: Materials Chemistry and Pharmacy

Viewpoint of Science & Tech. from Vallet Regi



Dr. María Vallet-Regí is a leading expert in the field of drug delivery systems. She has been instrumental in the development of novel materials for the controlled release of drugs, particularly in the area of mesoporous silica nanoparticles. Her research has focused on the synthesis and functionalization of these materials to improve drug solubility, stability, and targeting. She has published extensively in the field and is a frequent speaker at international conferences. Her work has been recognized with several awards, including the Ibero-American Award for Science and Technology in 2010.

The development of drug delivery systems is a multidisciplinary challenge that requires the integration of materials chemistry and pharmacy. One of the most promising approaches is the use of mesoporous silica nanoparticles (MSNs). These materials possess a high surface area and tunable pore sizes, making them ideal for the encapsulation and controlled release of drugs. However, the synthesis and functionalization of MSNs must be carefully controlled to ensure their biocompatibility and stability in physiological environments. Dr. Vallet-Regí's research group has developed novel synthesis routes and functionalization strategies to address these challenges. For example, they have synthesized MSNs with hierarchical porosity, which allows for the simultaneous loading of multiple drugs. Additionally, they have developed functionalized MSNs that can target specific cells or tissues, thereby improving the efficacy of drug delivery. These advances have led to the development of novel drug delivery systems for the treatment of various diseases, including cancer and infectious diseases. The work of Dr. Vallet-Regí and her team represents a significant contribution to the field of drug delivery, demonstrating the power of interdisciplinary research in solving complex scientific and technological challenges.



Scientific Papers

Search:
 "Mesoporous Silica Nanoparticles"
 +
 "Drug Delivery"
 +
 "Responsive"

A new property of MCM-41: drug delivery system. M. Vallet-Regí et al. Chemistry of Materials 13 (2), 308-311, 2001

