MEDICINA NUCLEAR

¡ALGO NUEVO, ALGO USADO, ALGO PRESTADO!

CNEA, JUNIO 2006

Dra. Silvia Vazquez

Depto. de Diagnostico por Imágenes

FLENI


INVESTIGACION
BASICA
DIAGNOSTICO
MEDICINA
NUCLEAR
TRATAMIENTO
INVESTIGACION
CLINICA

1951

Benedict Cassen
Cent. Linear

1952

Hal Anger
Camara Gamma

1959

David Kuhl
Antc. CT/SPECT

1974

Mark Phelps
PET

1929

Ernest O. Lawrence
Ciclotron
Premio Nobel 1939

1946

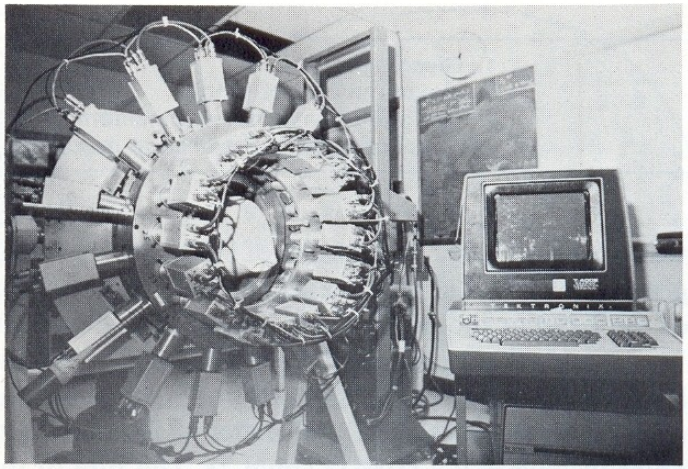
Eugene P. Wigner
1ra entrega Radionucleido
Premio Nobel 1963

1958

W. Tucker; P.Richards
Generador ^{99m}Tc

1976

Desarrollo y Provision
^{18} FDG



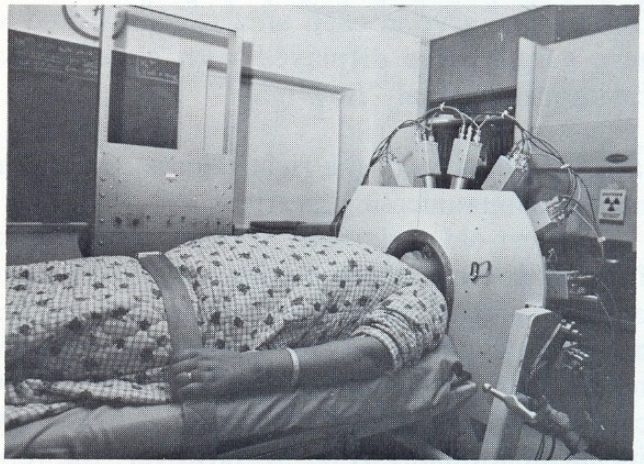
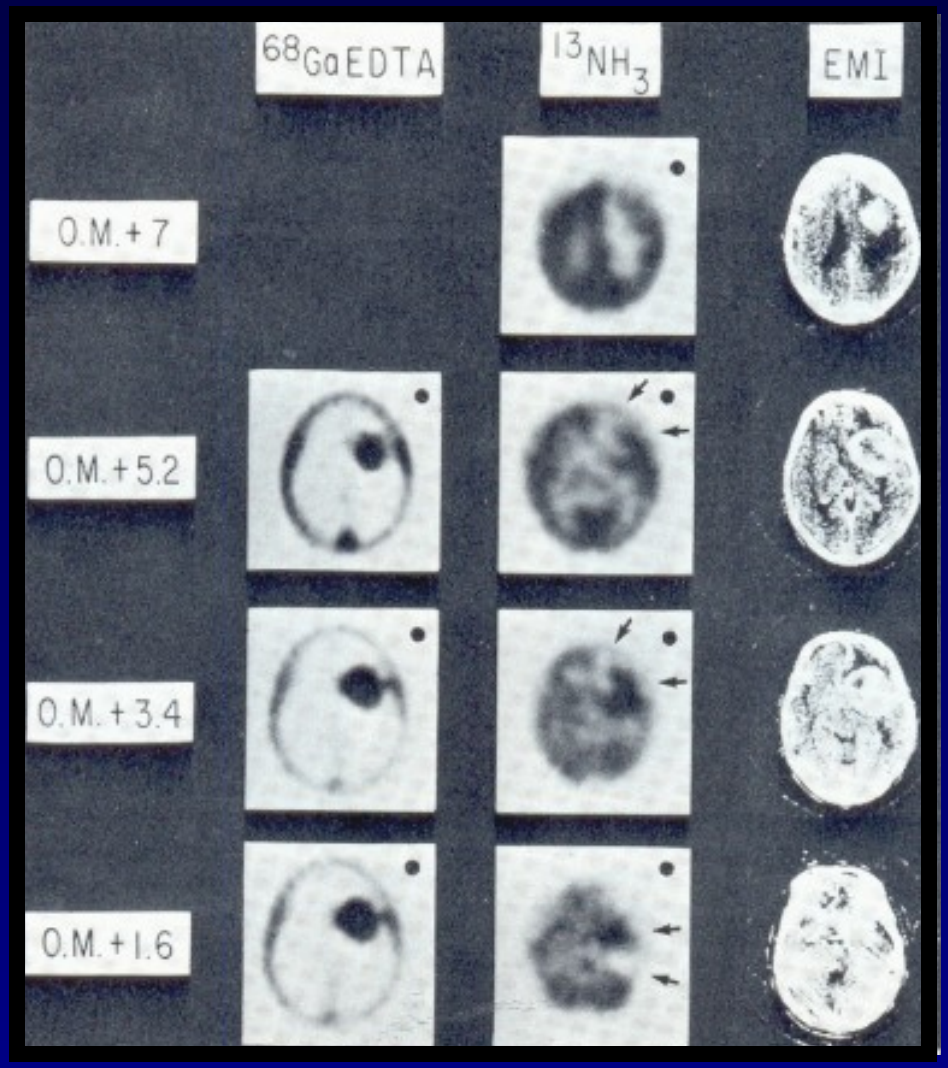


FIG. 1. Two views of circular 32 crystal dynamic positron scanner.

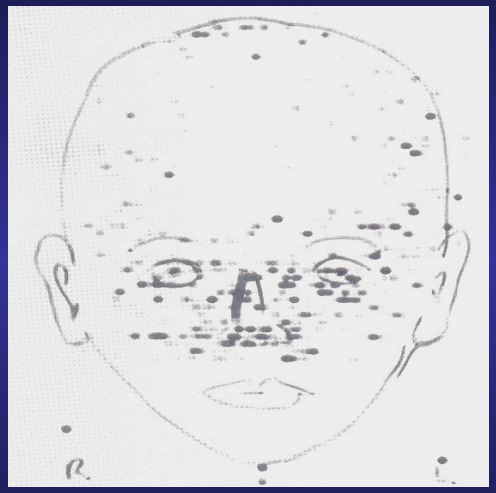


First International Symposium on Positron Emission Tomography

Montreal, Quebec, Canada. June 2-3, 1978

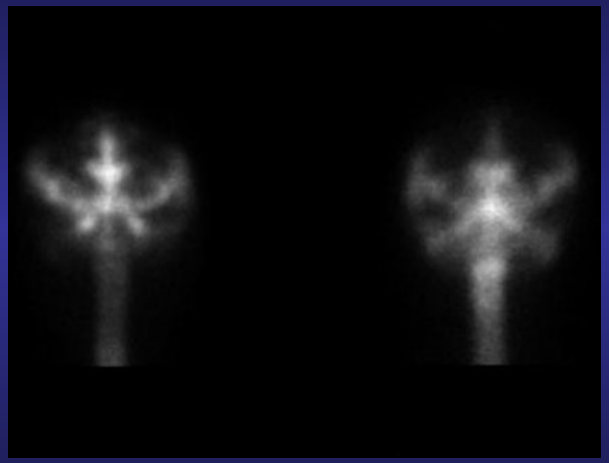
J Comput Assist Tomogr. 1978 Nov;2 (5):637-64

1960



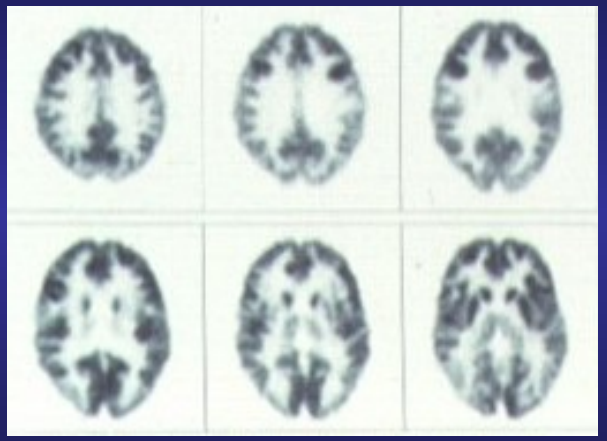
Centellograma cerebral

1970



Cisternografia

1980

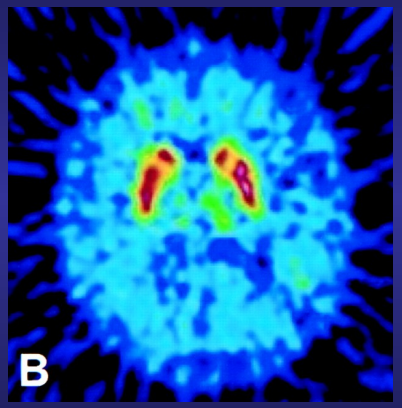


PET-FDG

1990

SPECT- Perfusion

2000



Neuroreceptores

2010

Marcadores moleculares

IMAGENES

ESTRUCTURALES

- **RX**
- **TAC**
- **ANGIOGRAFIA**
- **ECOGRAFIA**
- **MRI**

FUNCIONALES

- **PET (TOMOGRAFIA POR EMSION DE POSITRONES)**
- **SPECT (TOMOGRAFIA POR EMISION DE FOTONES)**
- **MRI**

INTEGRACION DE INFORMACION MORFOLOGICA O ANATOMICA

(MRI - TAC)

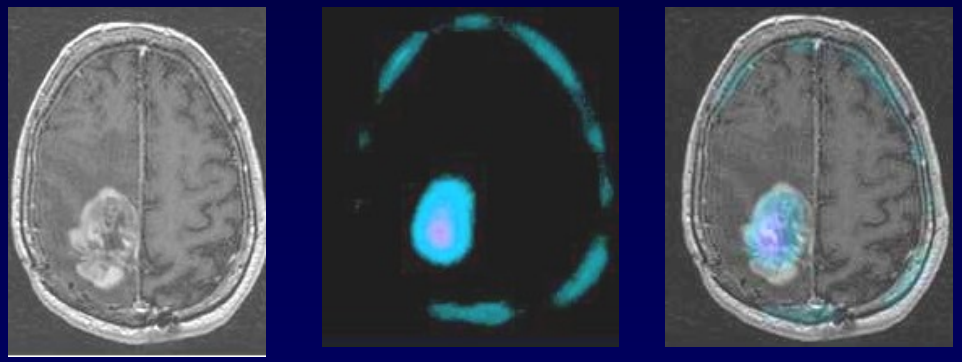
con

INFORMACION METABOLICA O FUNCIONAL

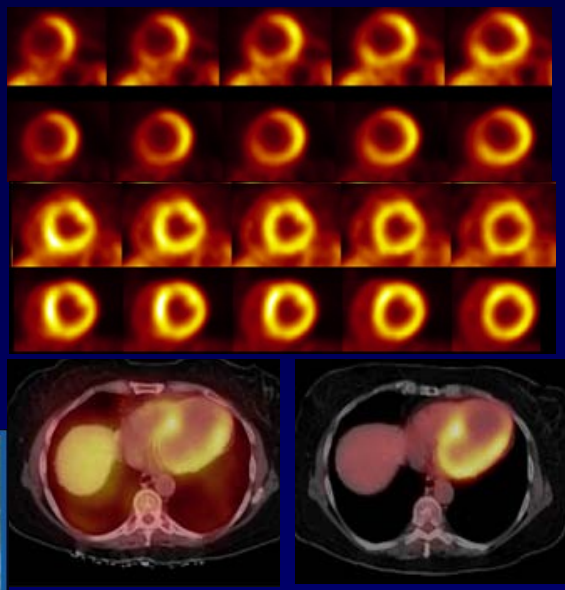
(**PET - SPECT**)

FUSION DE IMÁGENES
O
INTEGRACION DE INFORMACION

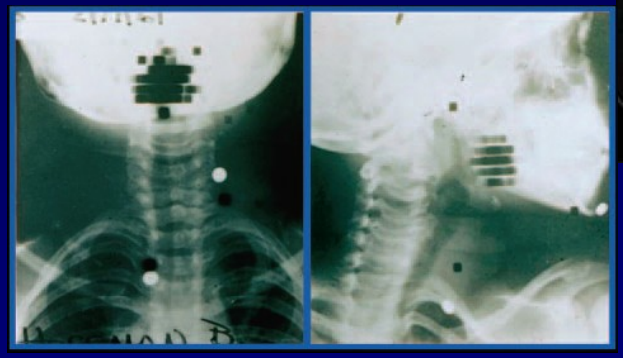
IMAGEN
ANATOMOMETABOLICA



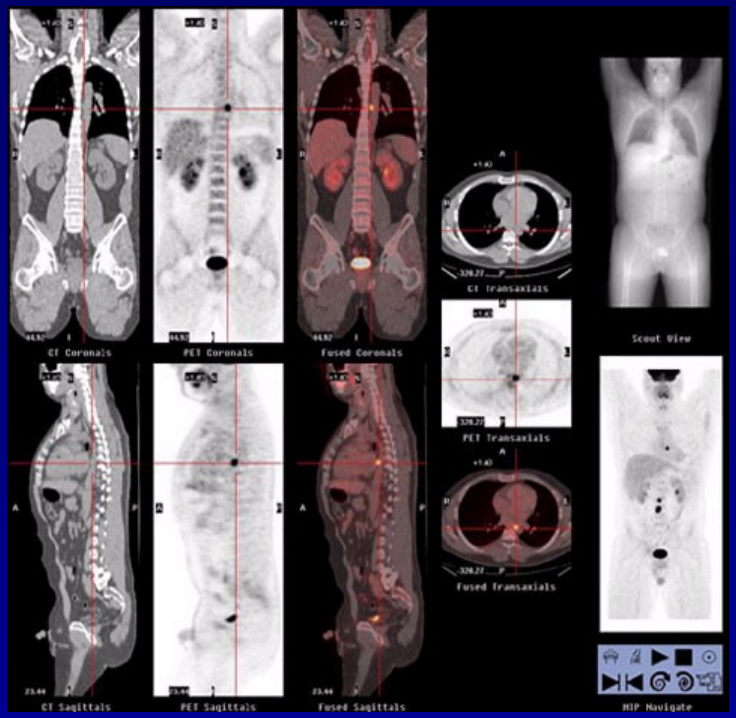
^{99m}Tc-MIBI-SPECT + MRI



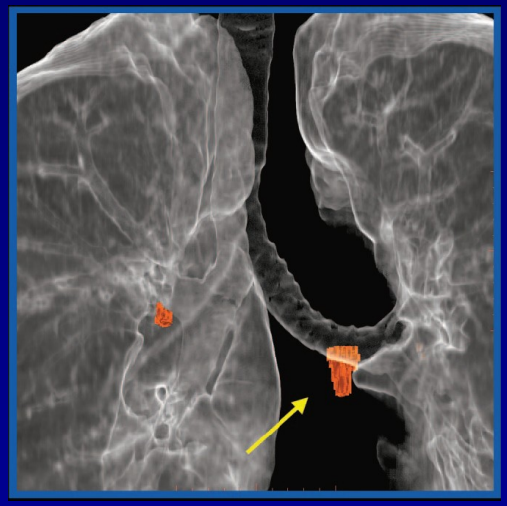
^{18}FDG-PET + CT



’60: Tiroides sublingual
^{131}I + Rx



^{18}FDG-PET + CT



^{18}FDG-PET + CT 3D
Imagen del año 2005

" in the new millennium, imaging the form or anatomy of the tumors will remain very important, but new methods to image function will increasingly be used as primary imaging test, and, at least in some settings, it is expected that "form will follow function" in cancer imaging.

Richard Wahl, MD, Ann Arbor, Mi

Radiology,1999; 213 (p):25

TRATAMIENTO

DIAGNOSTICO

^{131}I

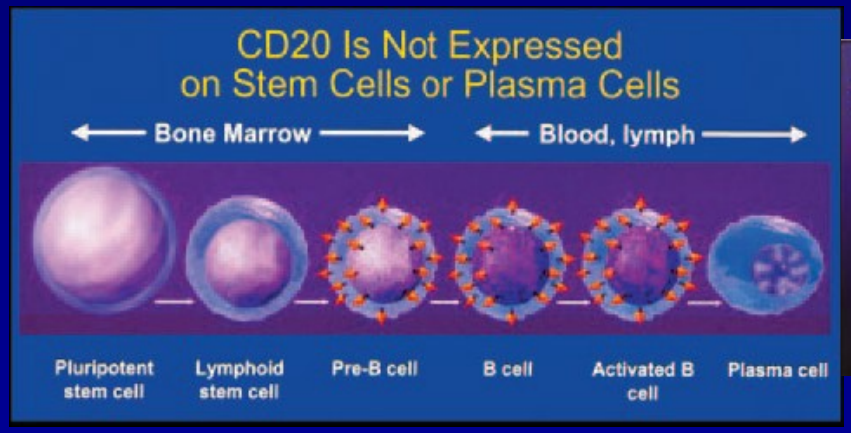
^{131}I MIBG

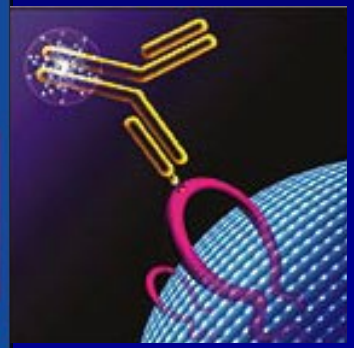
^{153} Sm-EDTMP

^{89} Sr

^{90}Y o ^{177}Lu-DOTA-Tyr3-octreotate

^{90}Y ibritumomab tiuxetan





TRATAMIENTO

Targeted Radiotherapy: Is the "Holy Grail" in Sight?

The "Holy Grail" of radiotherapy is to find a treatment or technique that can **maximize** tumor cell sterilization, **minimize** normal tissue damage, and **be refractive** to selection for resistance.

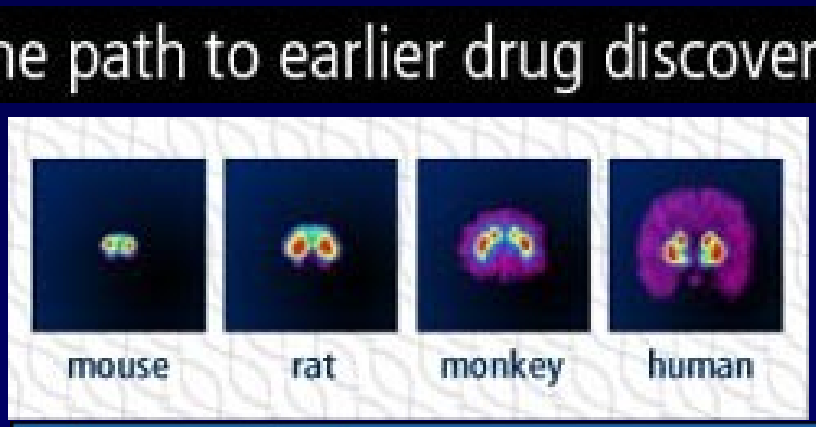
"However, from the practical point of view, as this article demonstrates so effectively, it is not necessary to understand **why**, **what**, or **how** to exploit bystander effects for therapy."

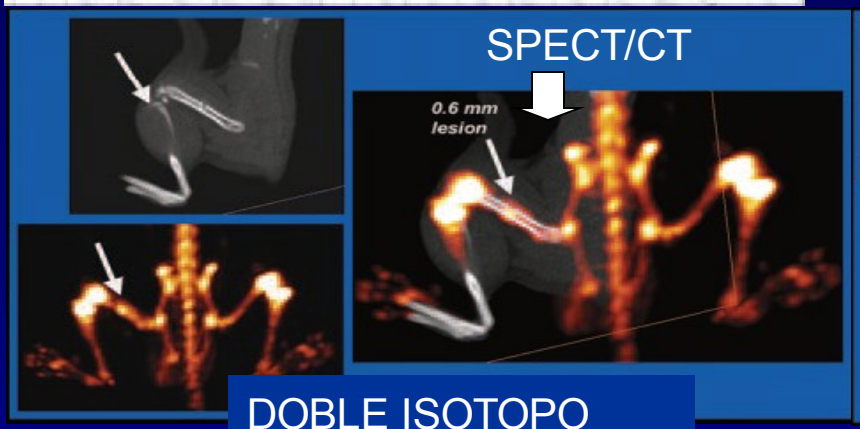
Carmel Mothersill
Colin B. Seymour
McMaster University
Hamilton, Ontario, Can

JNM, JUN, 2006

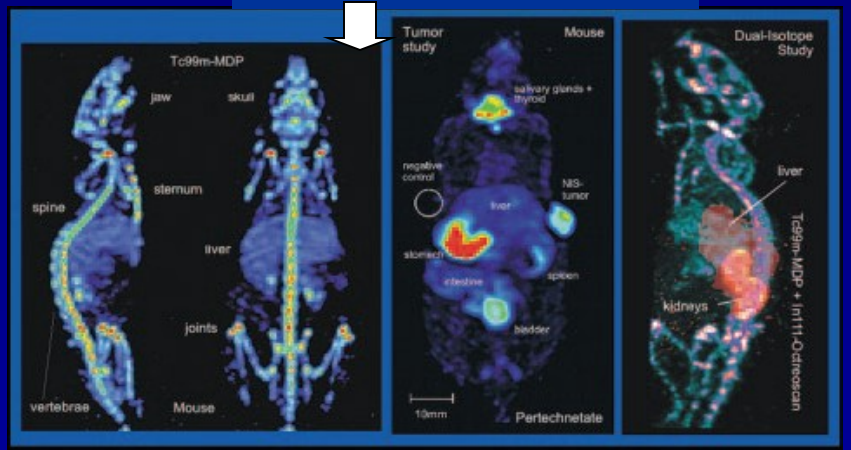
INVESTIGACION BASICA

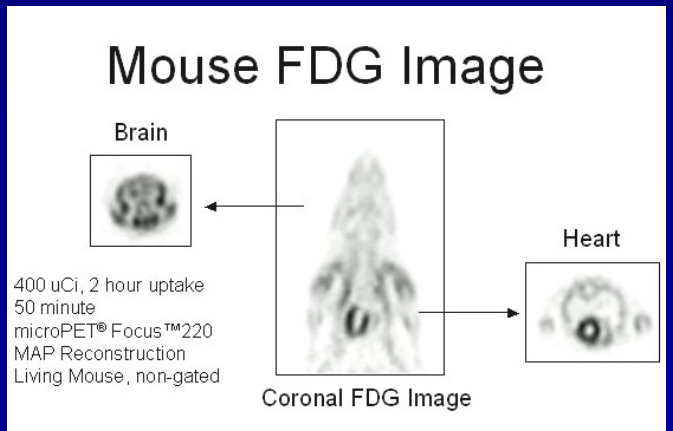
PET/CT



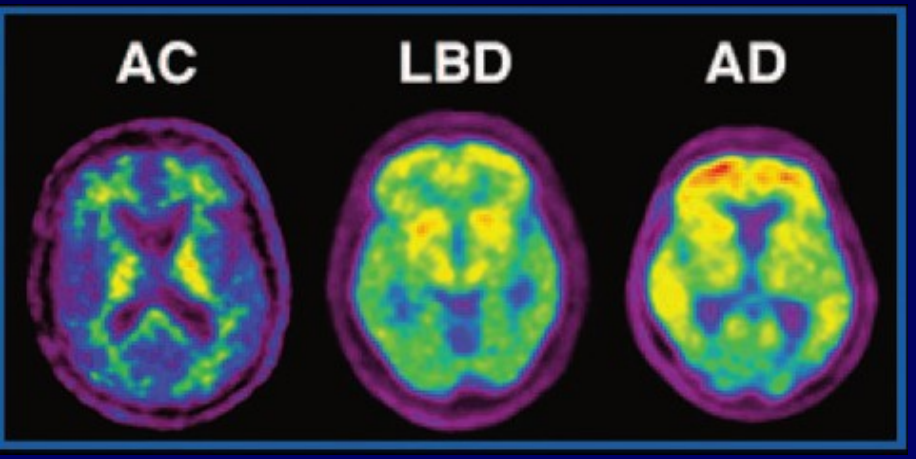


DOBLE ISOTOPO

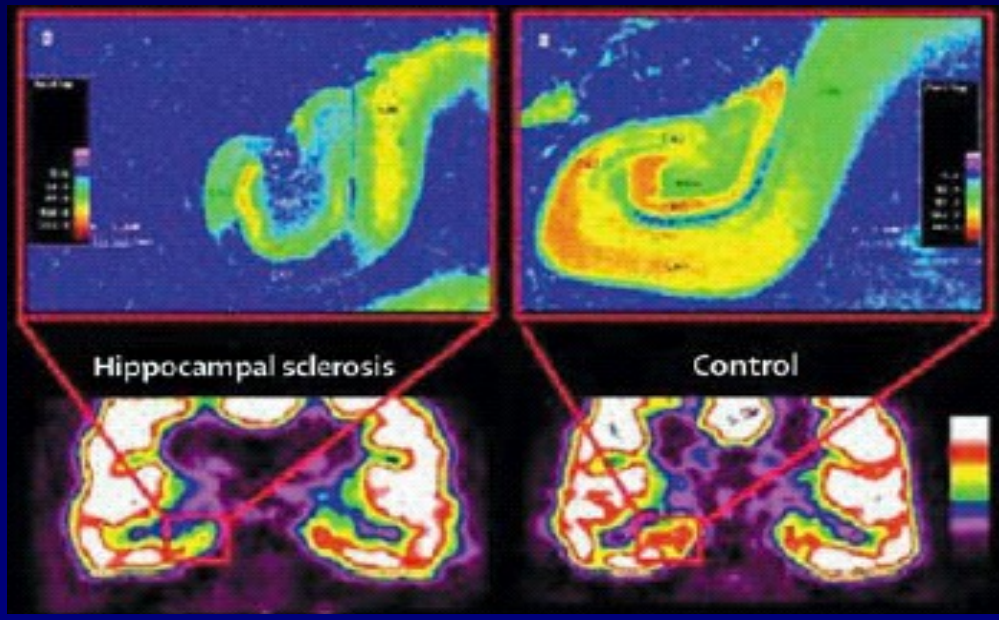




INVESTIGACION CLINICA

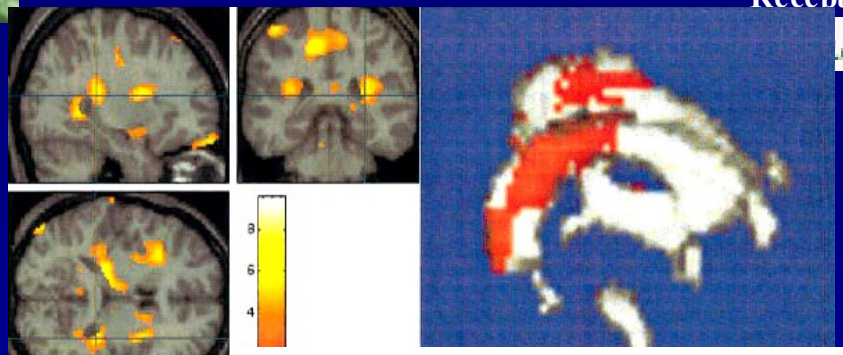


^{11}C-PIB PET



Receptores GABA in vivo/ex vivo en EH

Lancet Neurol 2005; 4: 42–53



DOI: 10.1093/brain/awg138 Advanced Access publication April 8, 2003 *Brain* (2003), **126**, 1300–1318

Grey and white matter flumazenil binding in neocortical epilepsy with normal MRI. A PET study of 44 patients


INVESTIGACION
BASICA
INVESTIGACION
TRASLACIONAL
DIAGNOST
TAMIENTO
INVESTIGACION
CLINICA

CONDICIONES NECESARIAS

- RECURSOS HUMANOS
- RECURSOS TECNOLOGICOS
- SOPORTE ECONOMICO
- SOPORTE REGULATORIO

- DIAGNOSTICO DE REALIDAD
- OPTIMIZACION DE RECURSOS
- TRABAJO EN EQUIPO

MUCHAS GRACIAS