



2° Simposio
**Audiología
& Otología**

Potenciales evocados Auditivos

Aplicación clínica

Joaquín Valderrama, PhD — NAL Research Scientist



ORGANIZA

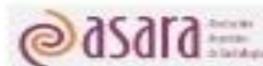


AUSPICIAN



TECNOSALUD

Montpellier

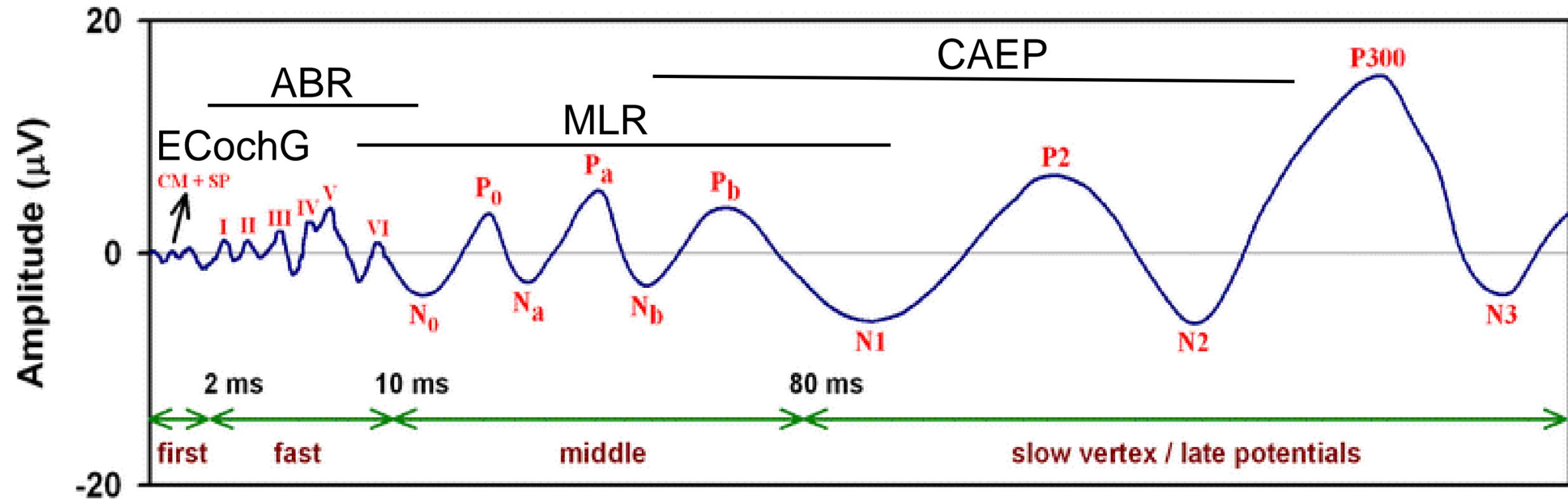
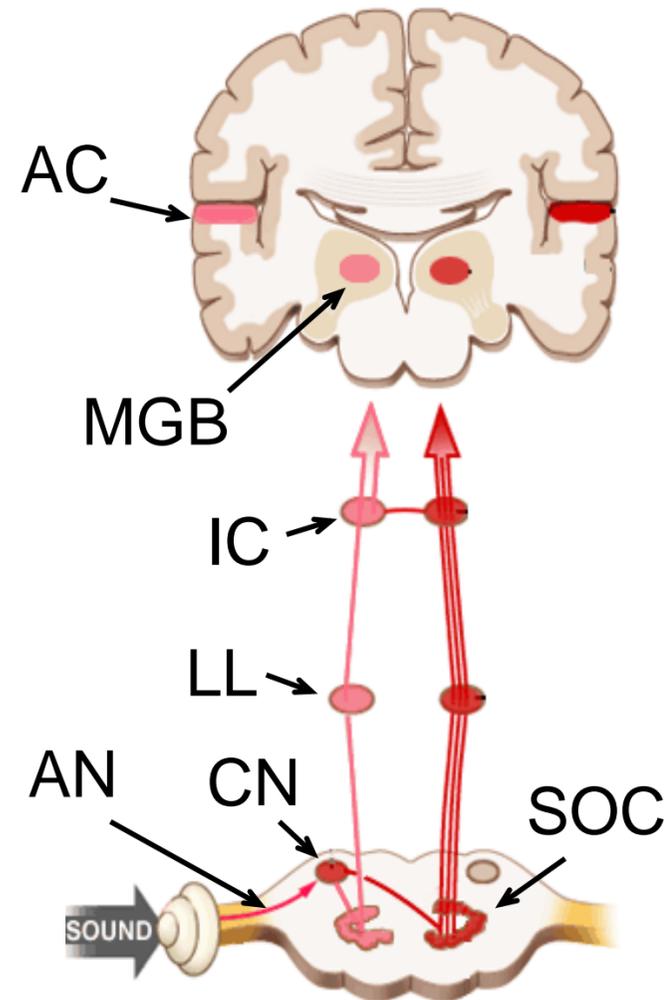


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MED⁹EL



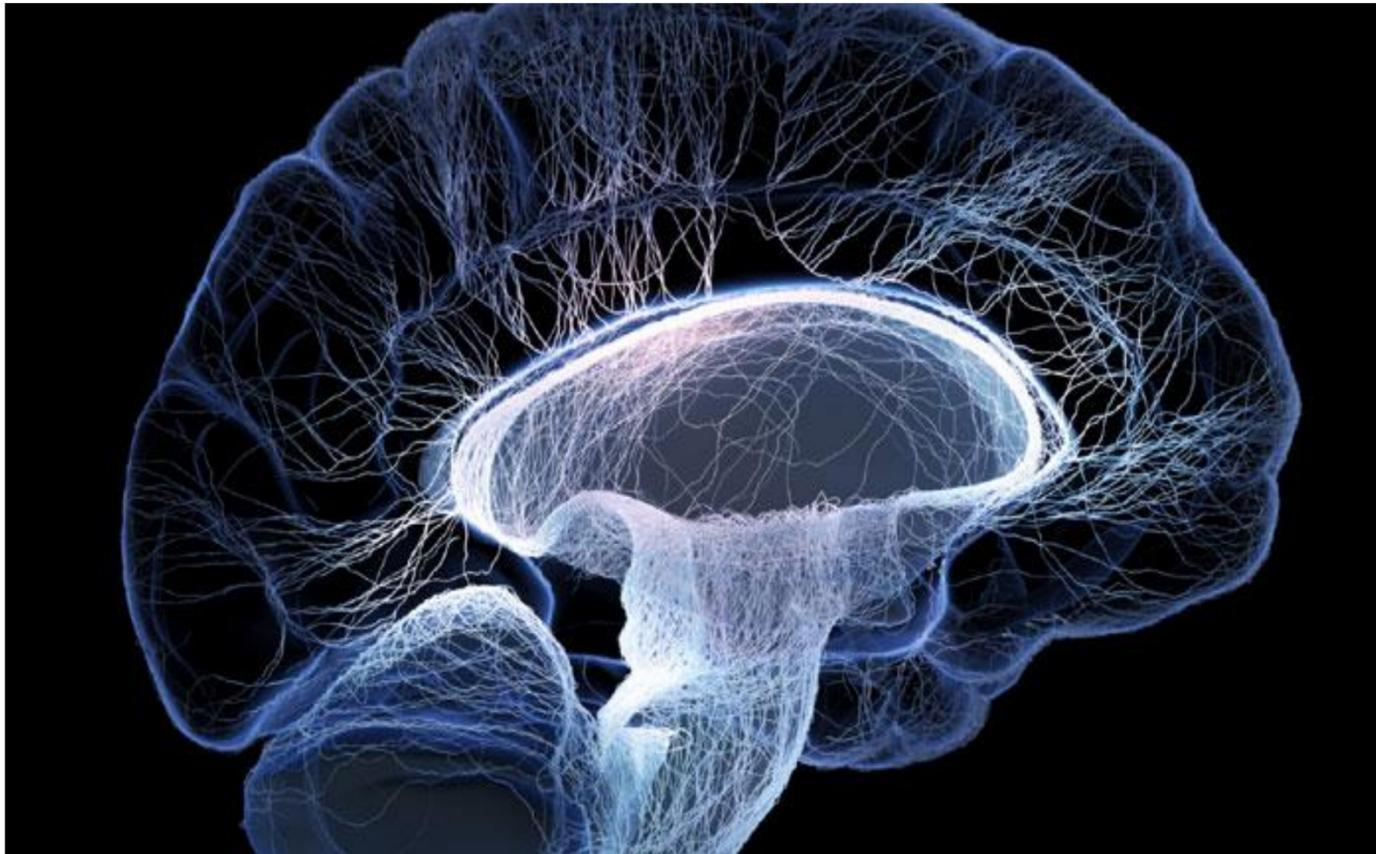
Qué son los potenciales evocados auditivos?



Los potenciales evocados auditivos (AEPs) son ondas de voltaje que representan la actividad sincrónica de las neuronas en diferentes estaciones de las vías auditivas en respuesta a un estímulo auditivo

¿Por qué necesitamos **potenciales evocados auditivos**?

Para comprender mejor nuestras estructuras neuronales

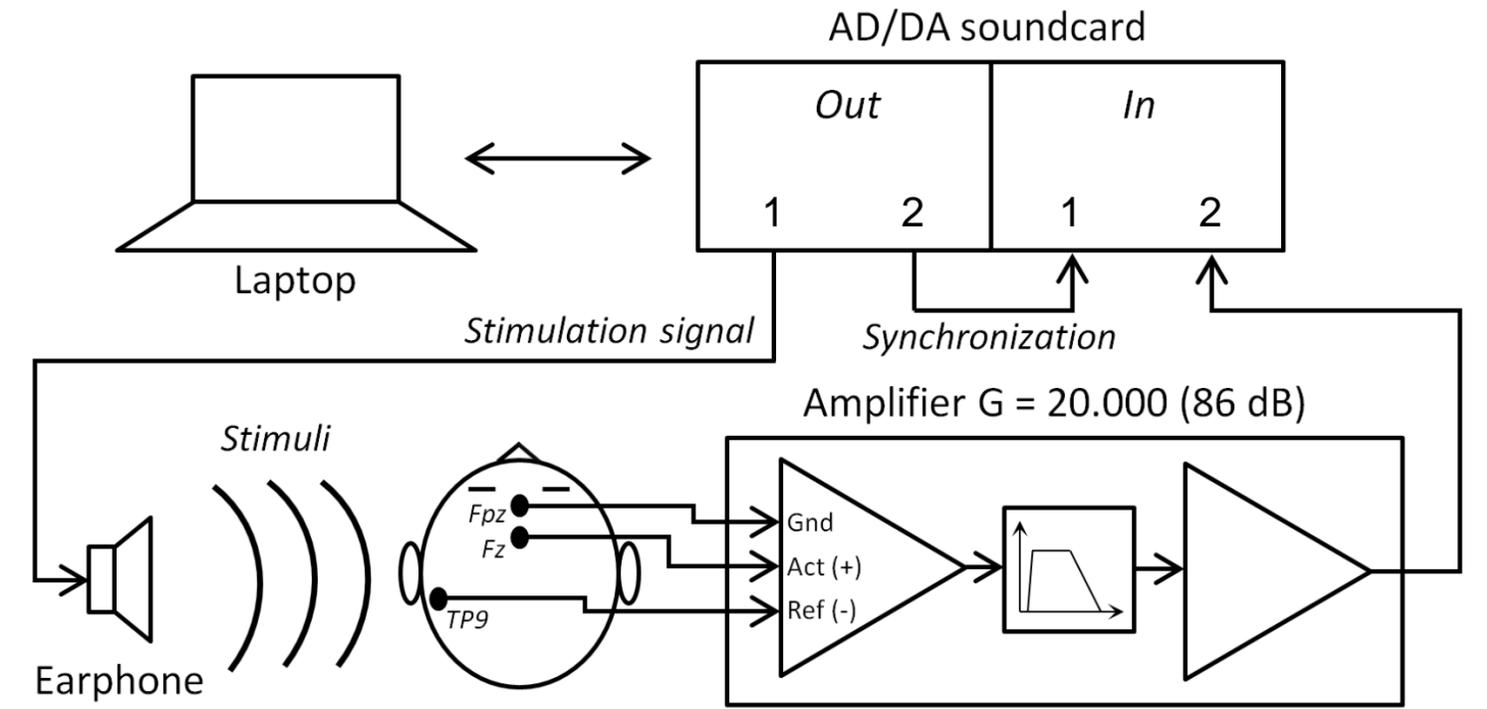
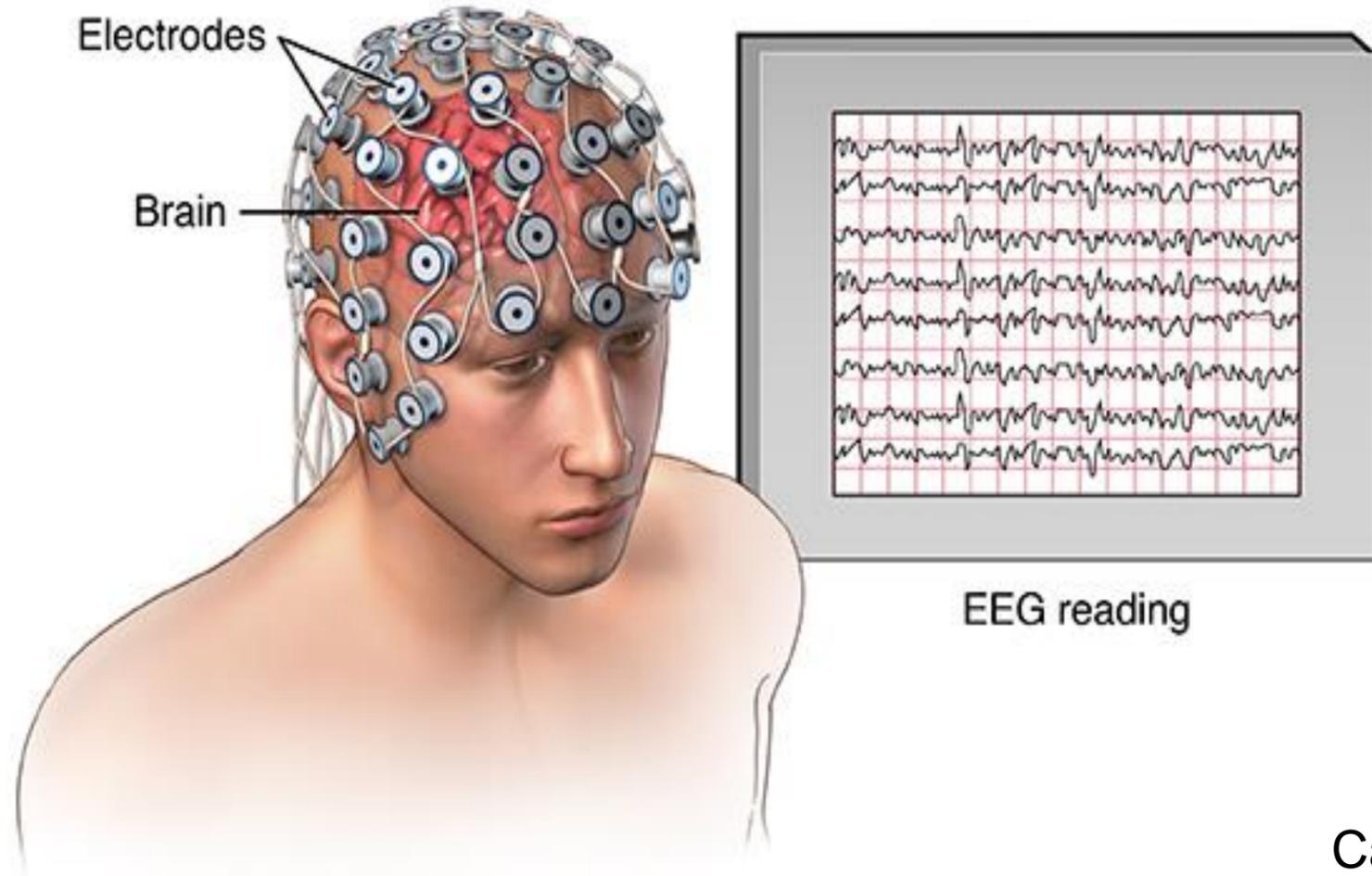


Para implementar técnicas de diagnóstico objetivas



El proceso registro de EEG

Electroencephalogram (EEG)



Valderrama et al. (2014)

Ventajas

- Alta resolución temporal
- Relativo bajo coste
- Puede utilizarse en niños

Inconvenientes

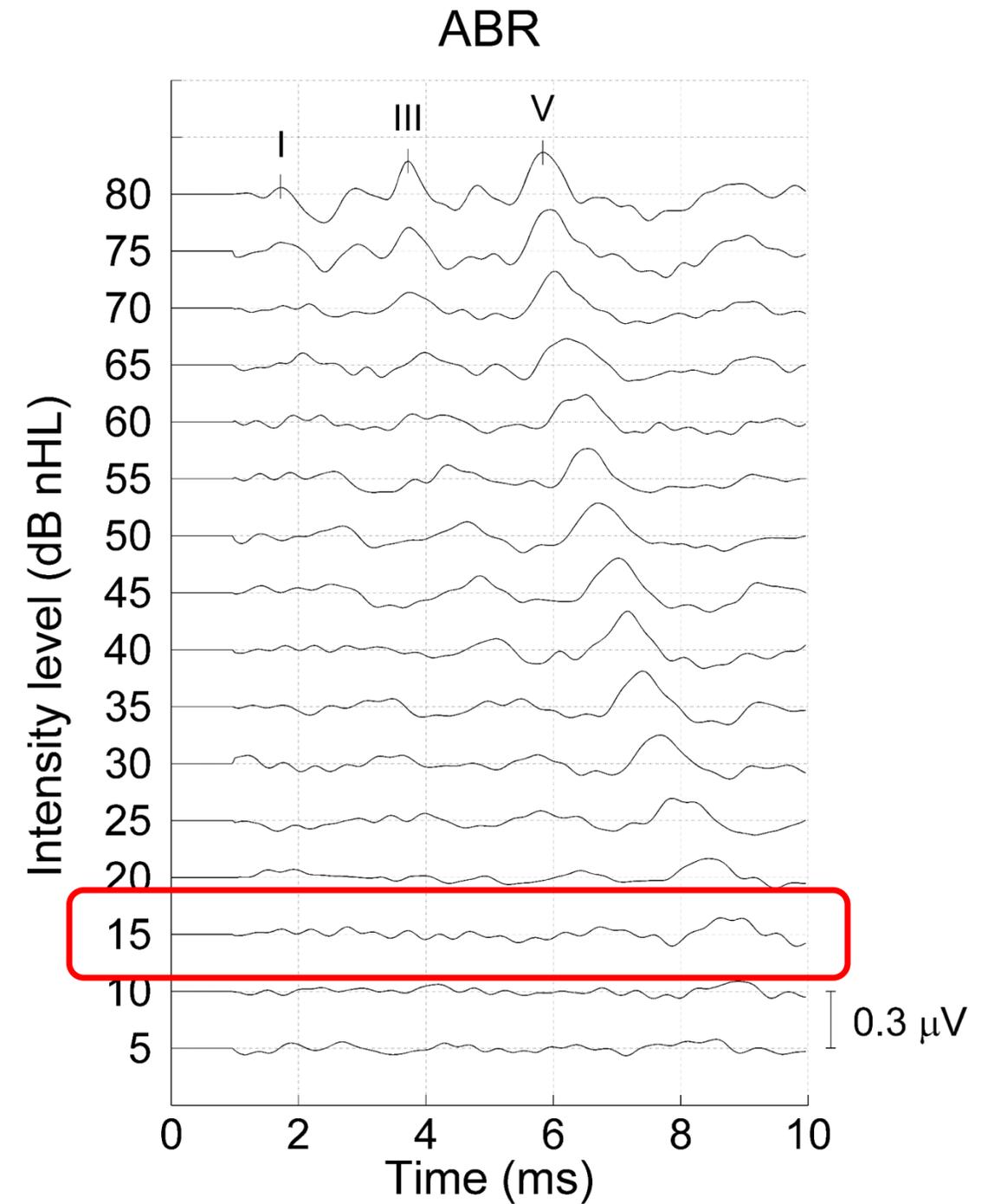
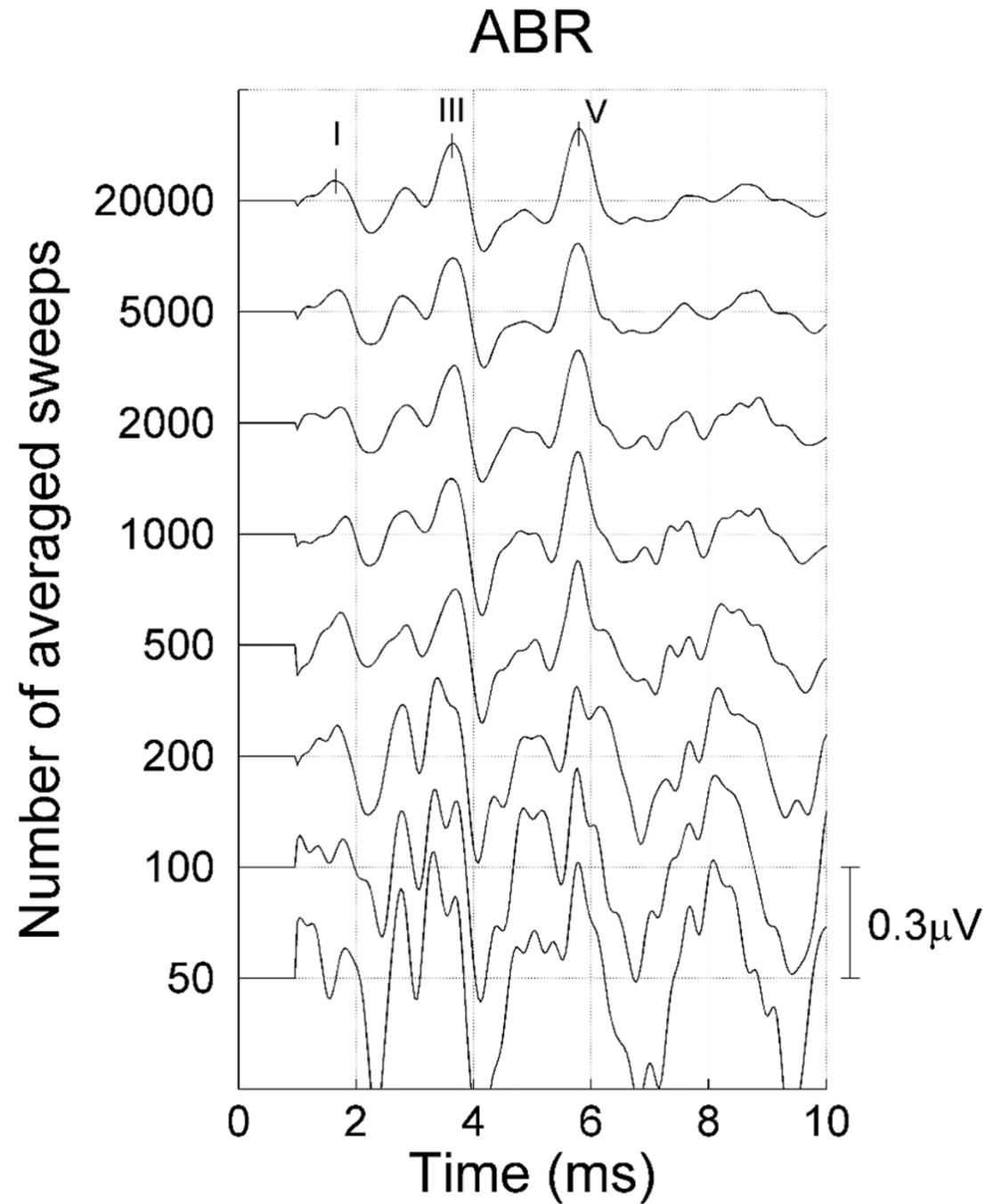
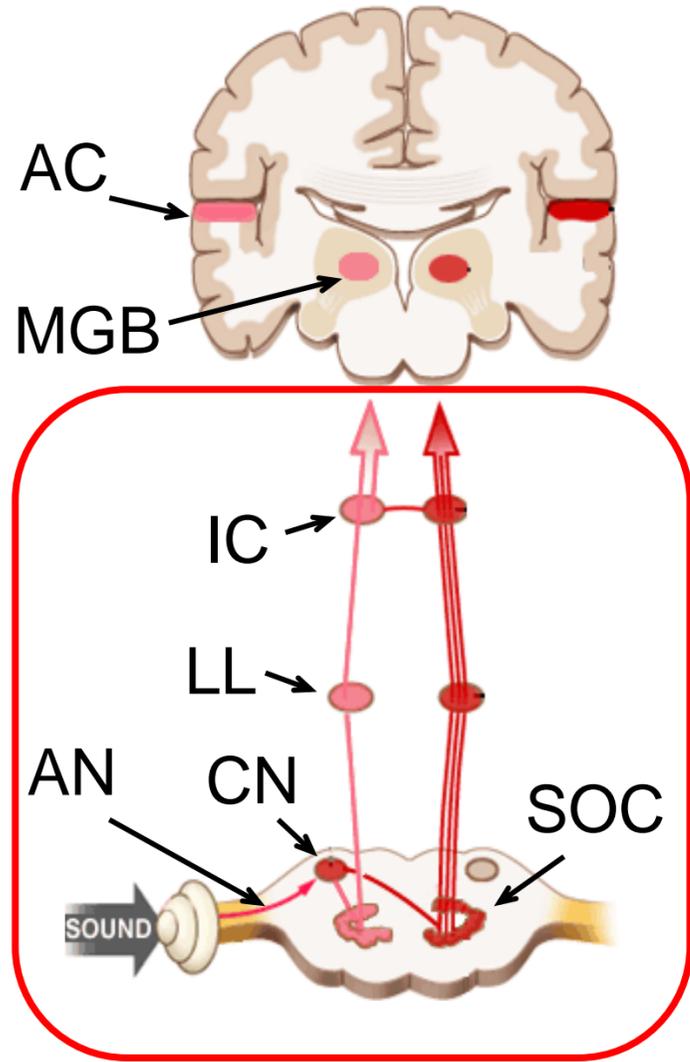
- Requiere tiempo
- Requiere que el sujeto esté quieto

Canal 1:
Sincronización

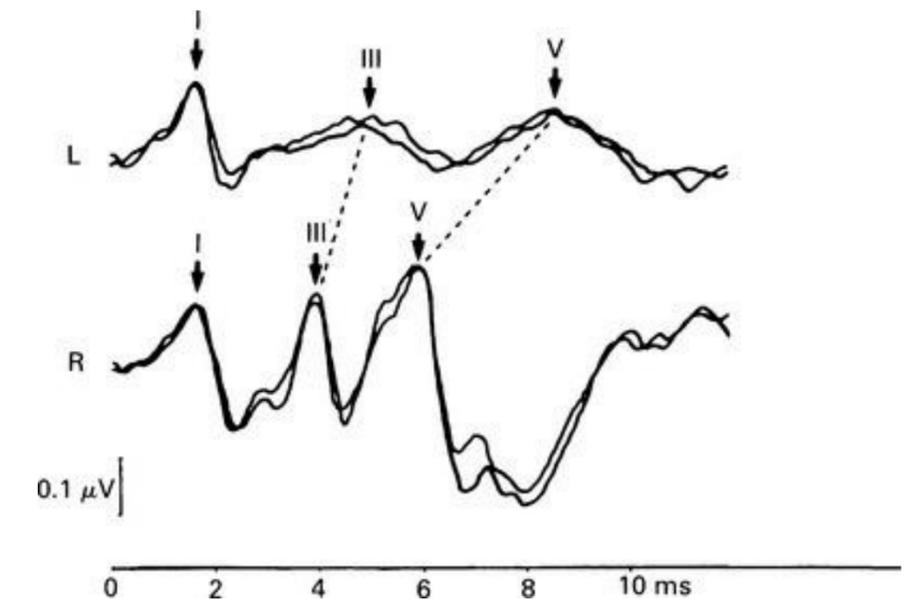
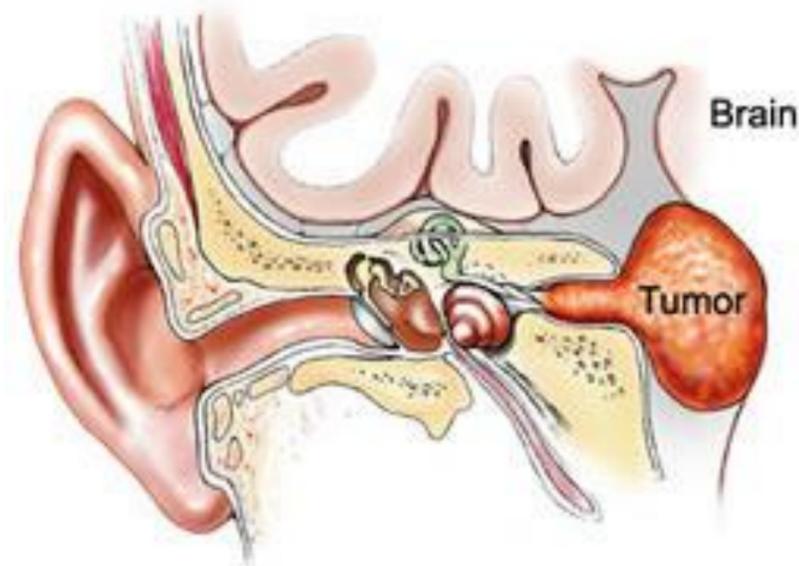
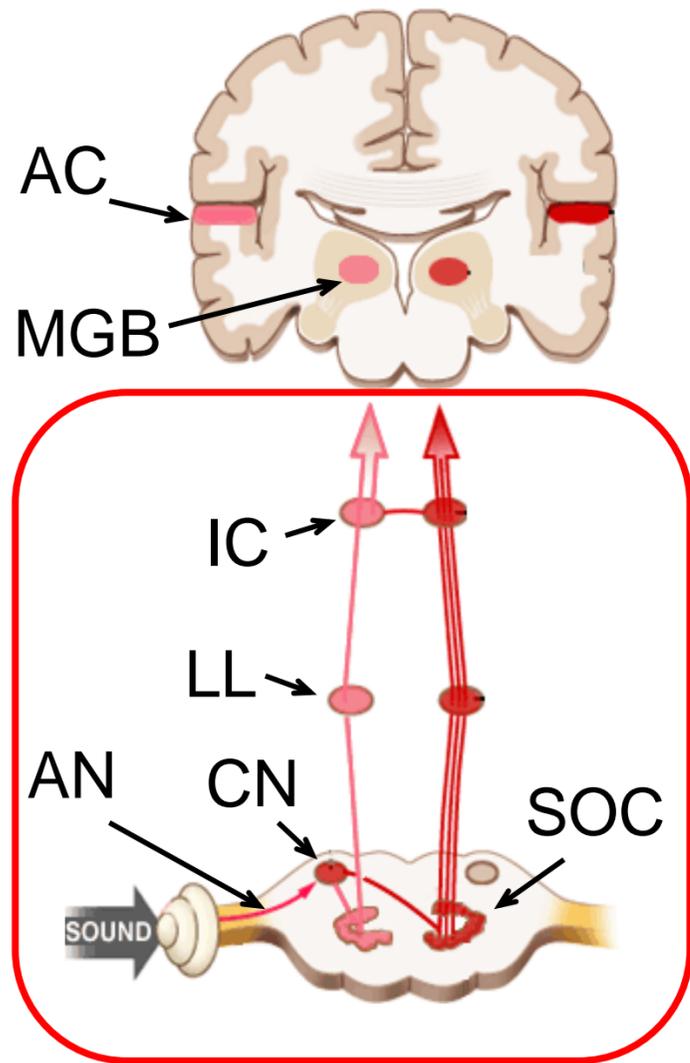
Canal 2: EEG



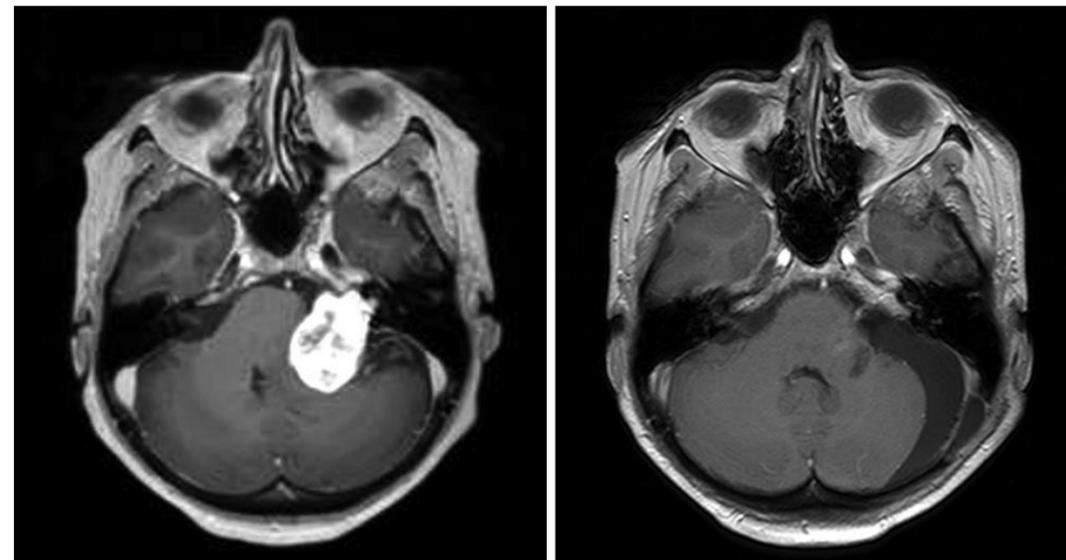
Los potenciales del tronco (ABR)



ABR en el neuroma acústico

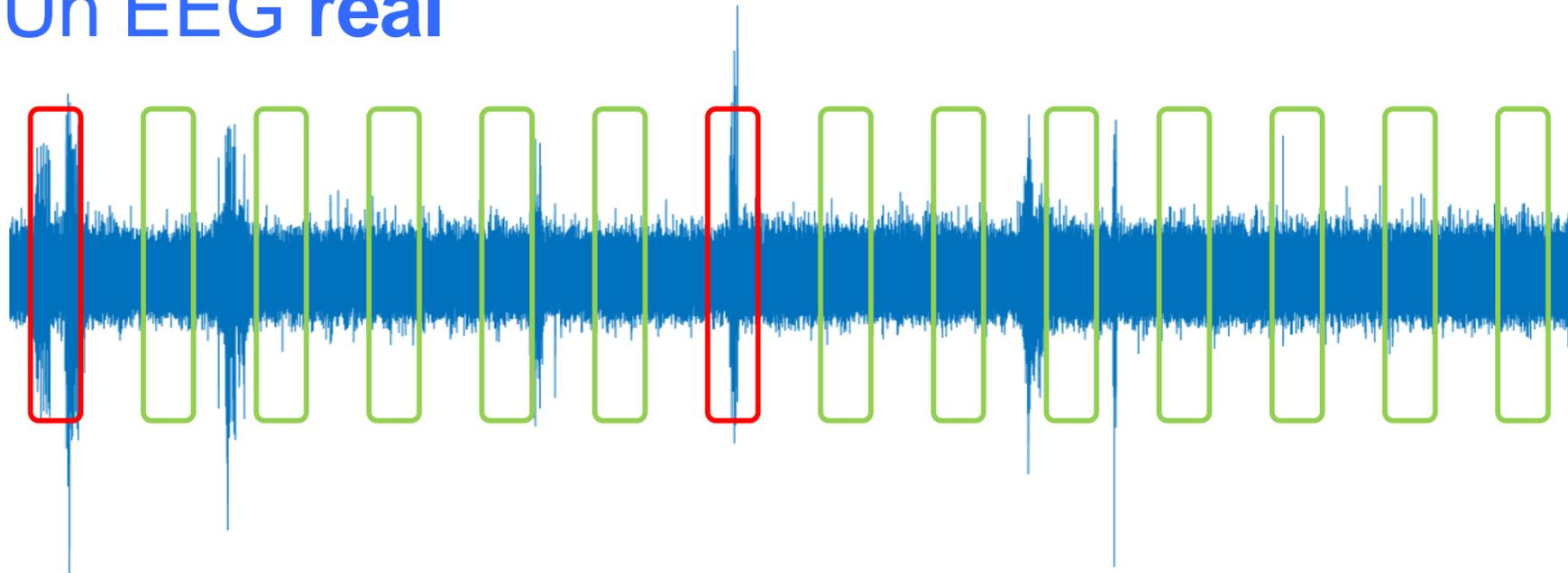


- 10-20% sólo onda I
- 40-60% onda III y V retrasadas
- 10-15% morfología normal

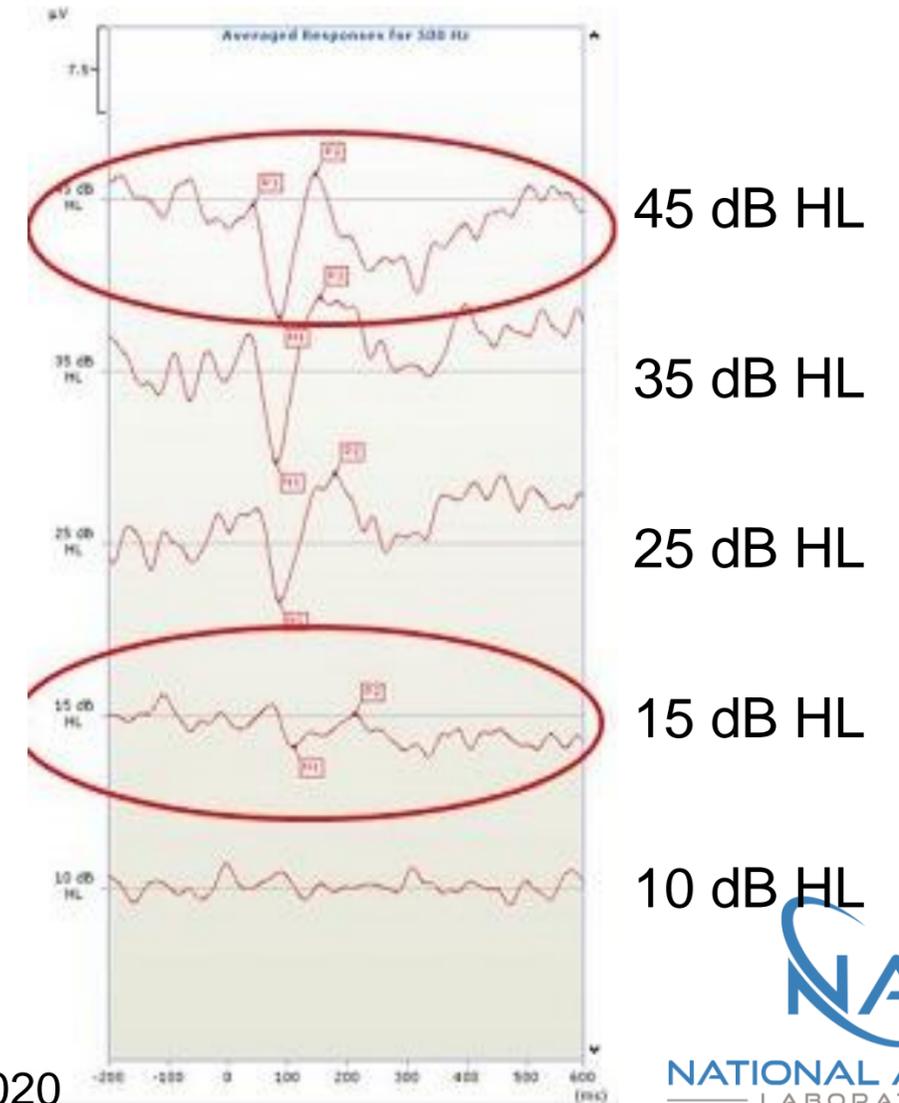
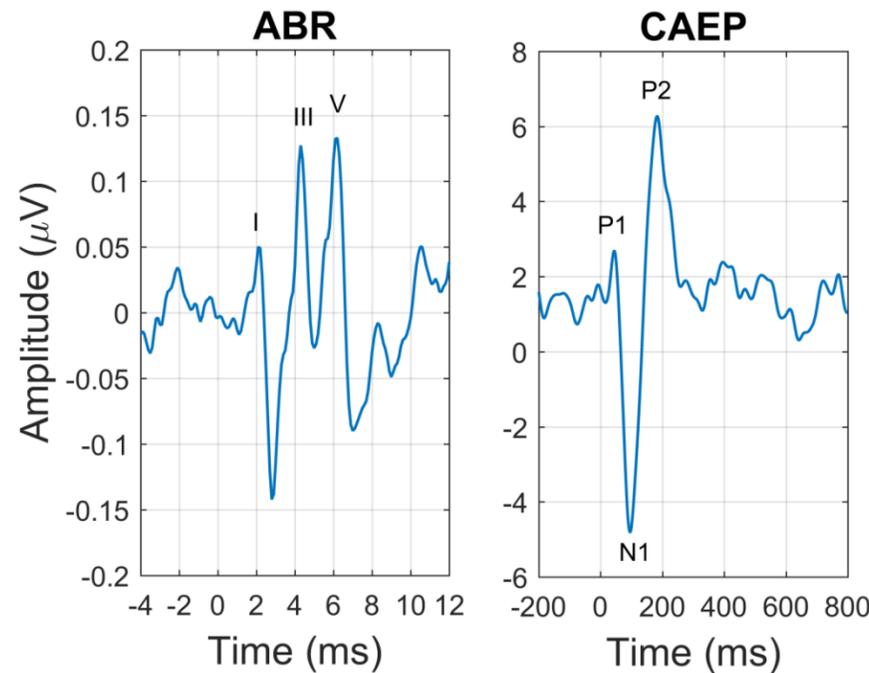


ABR – Principal limitación

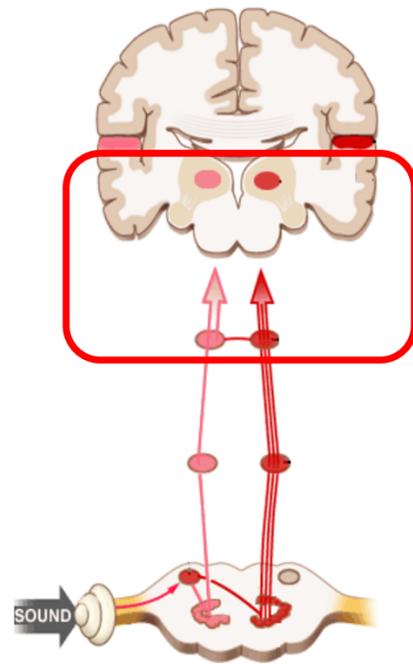
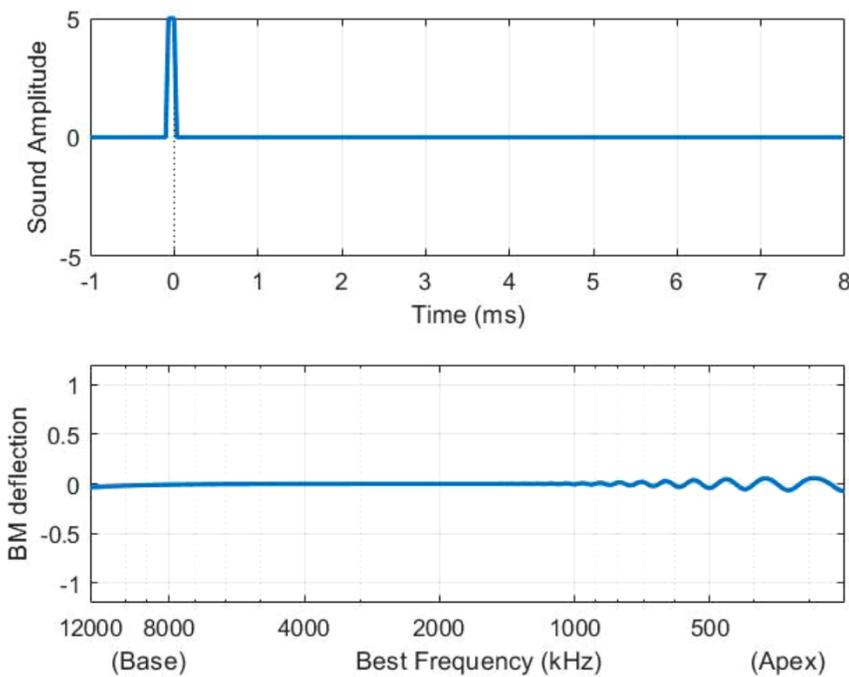
Un EEG real



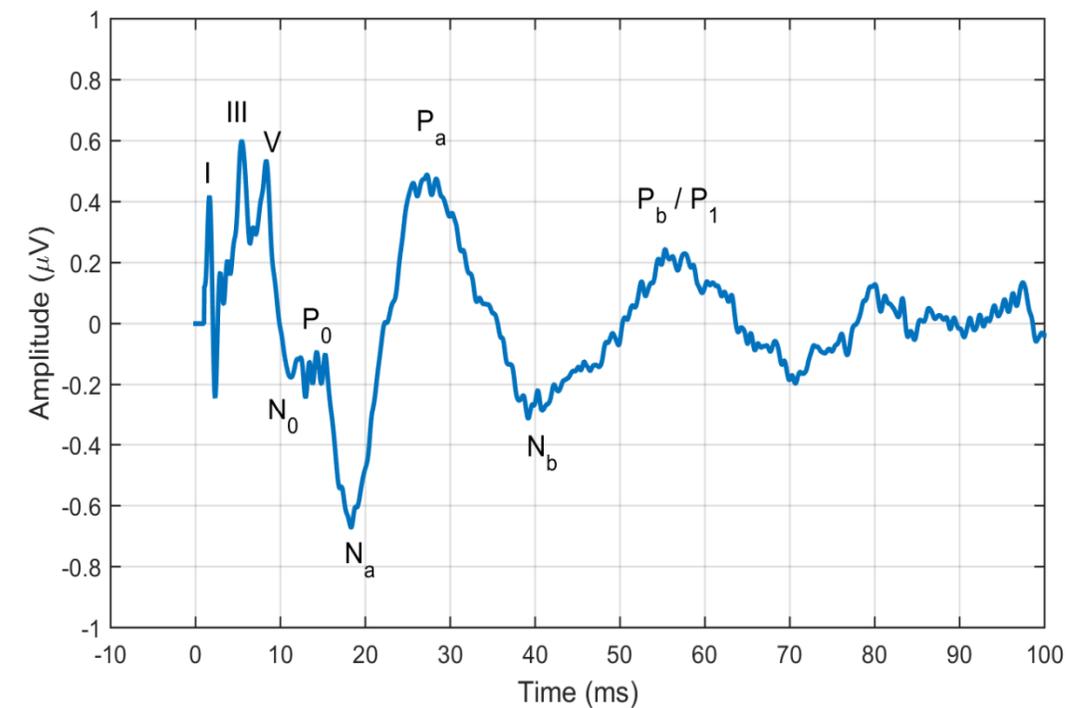
HEARLab: Una solución alternativa



Los Clics activan prácticamente toda la cóclea, por lo que no tienen **especificidad frecuencial**

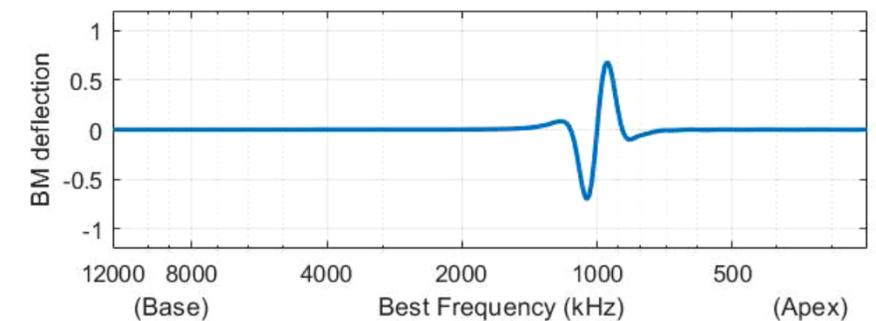
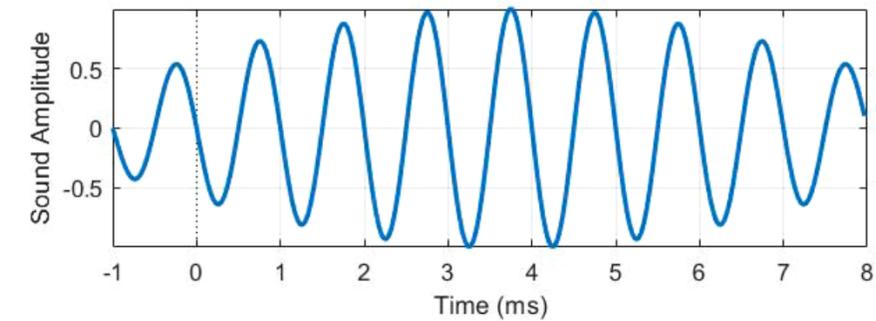
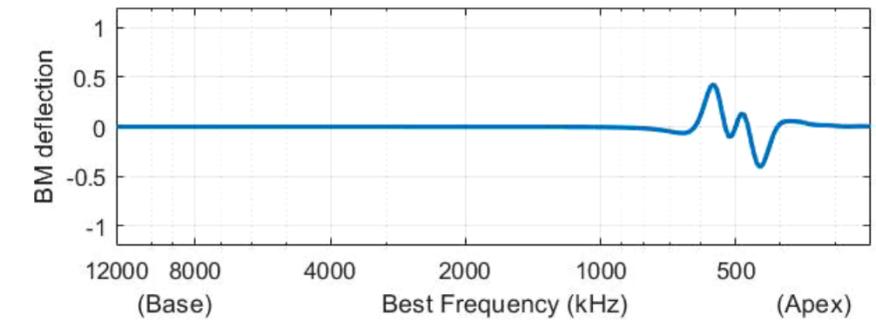
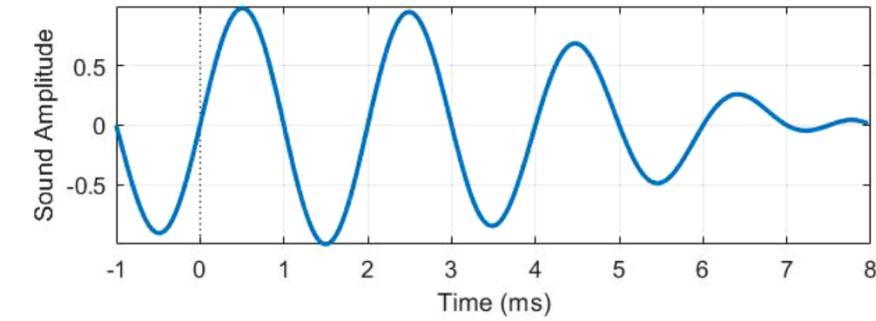
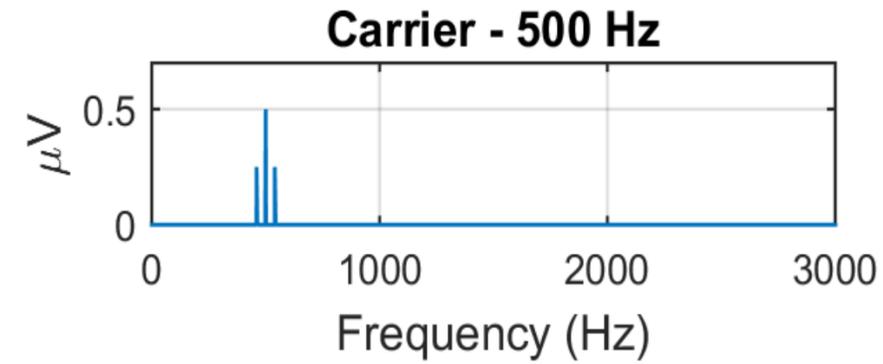
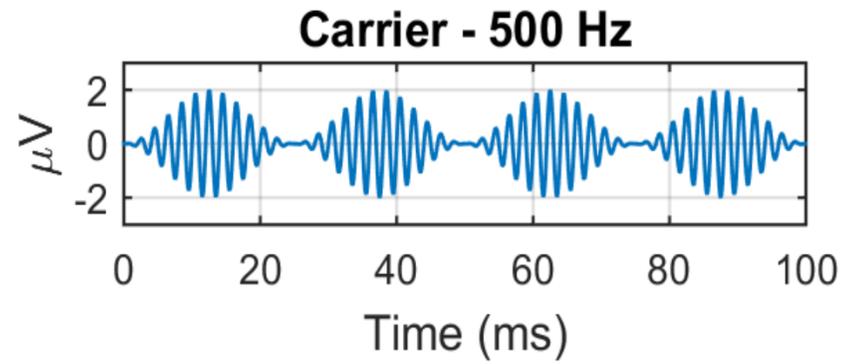


The Middle Latency Response (MLR)

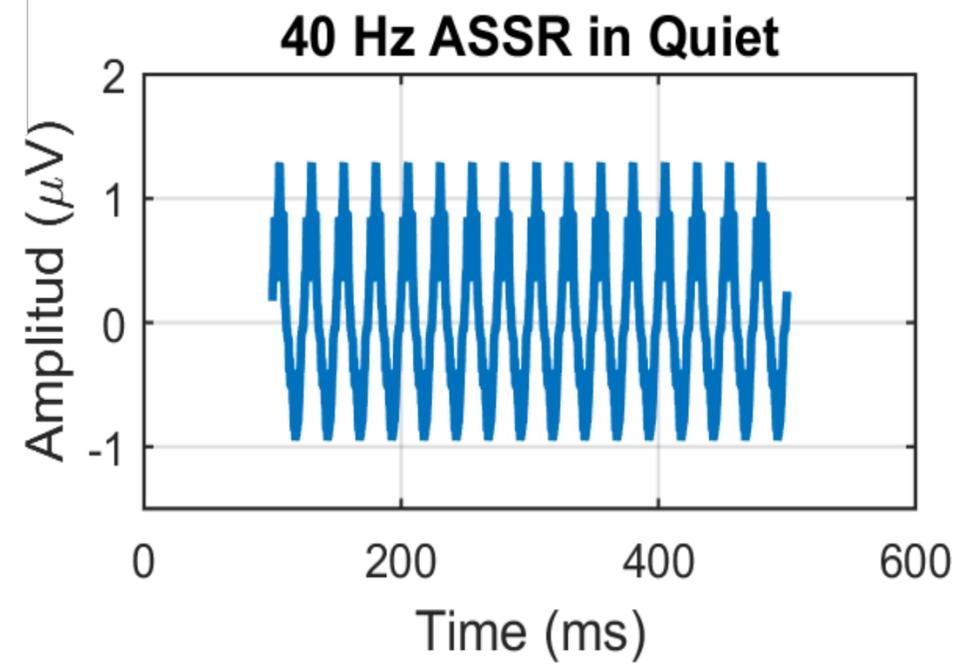
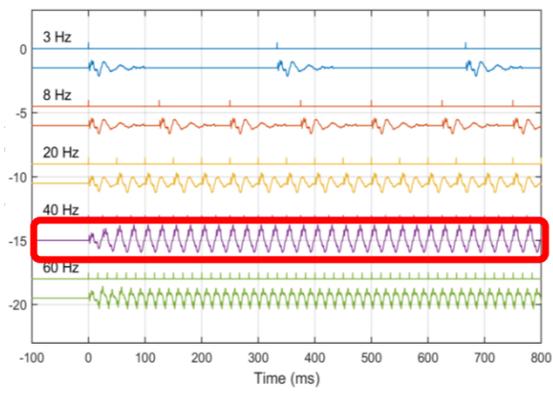


Una solución es el **40 Hz ASSR**

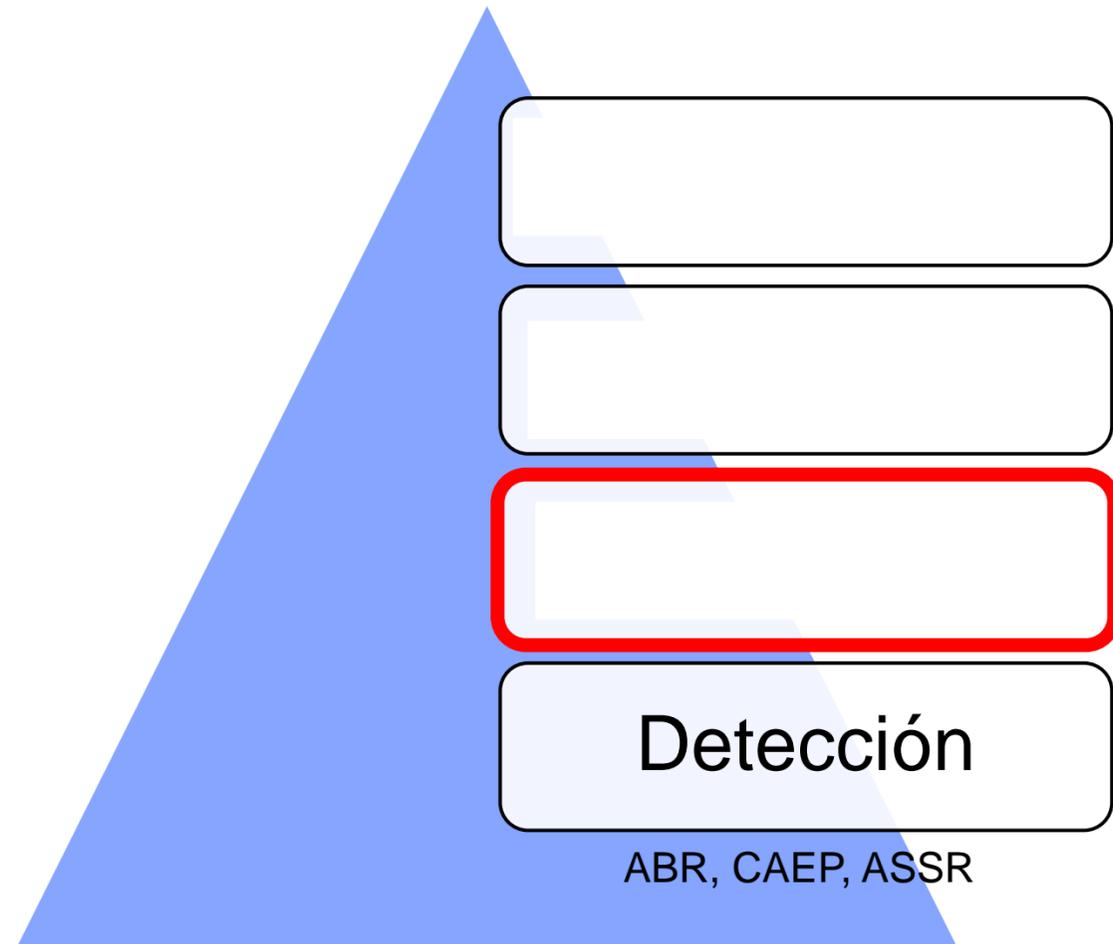
El estímulo en los 40 Hz ASSR



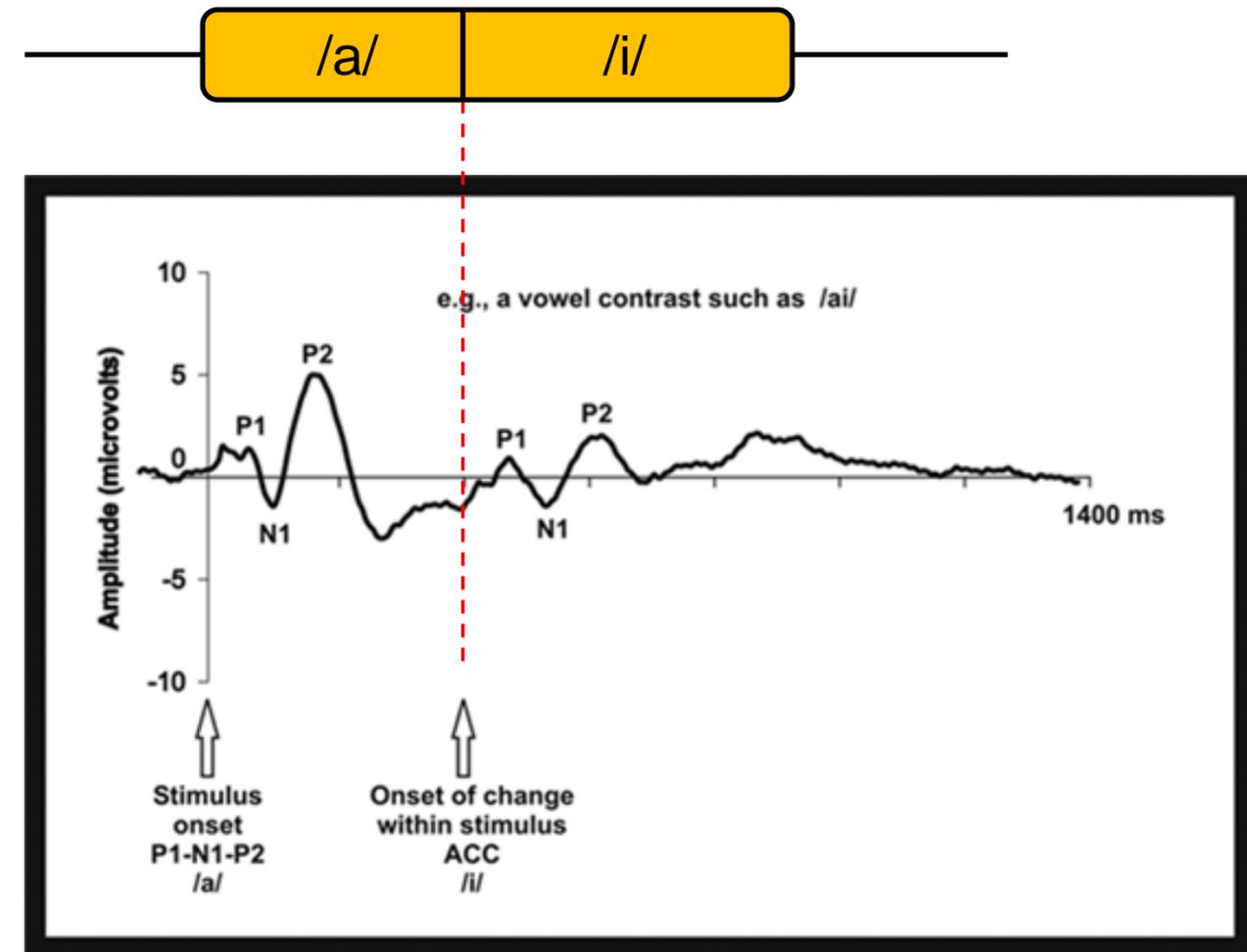
Tipo de análisis en los 40 Hz ASSR



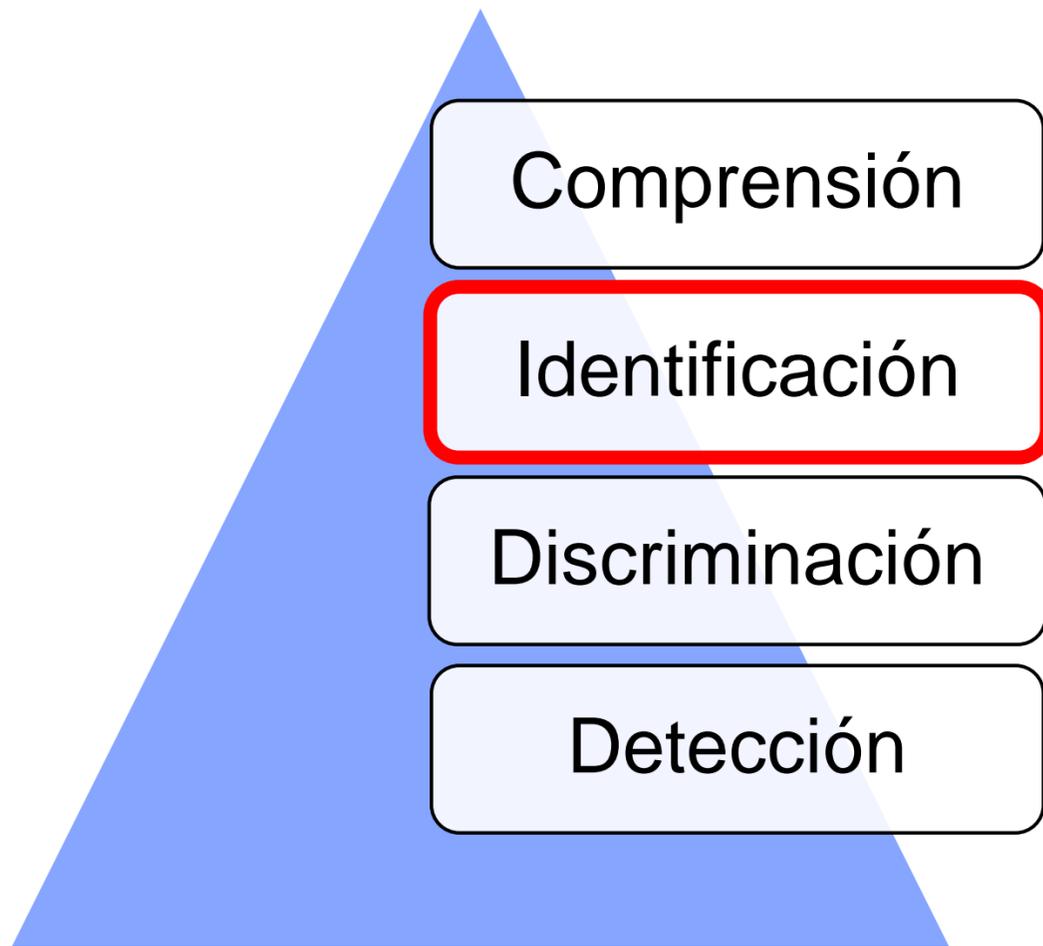
¿Qué otros indicadores neuronales hay?



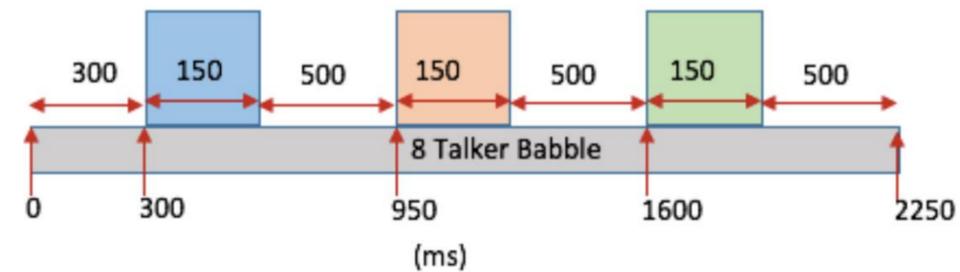
El Acoustic Change Complex (ACC)



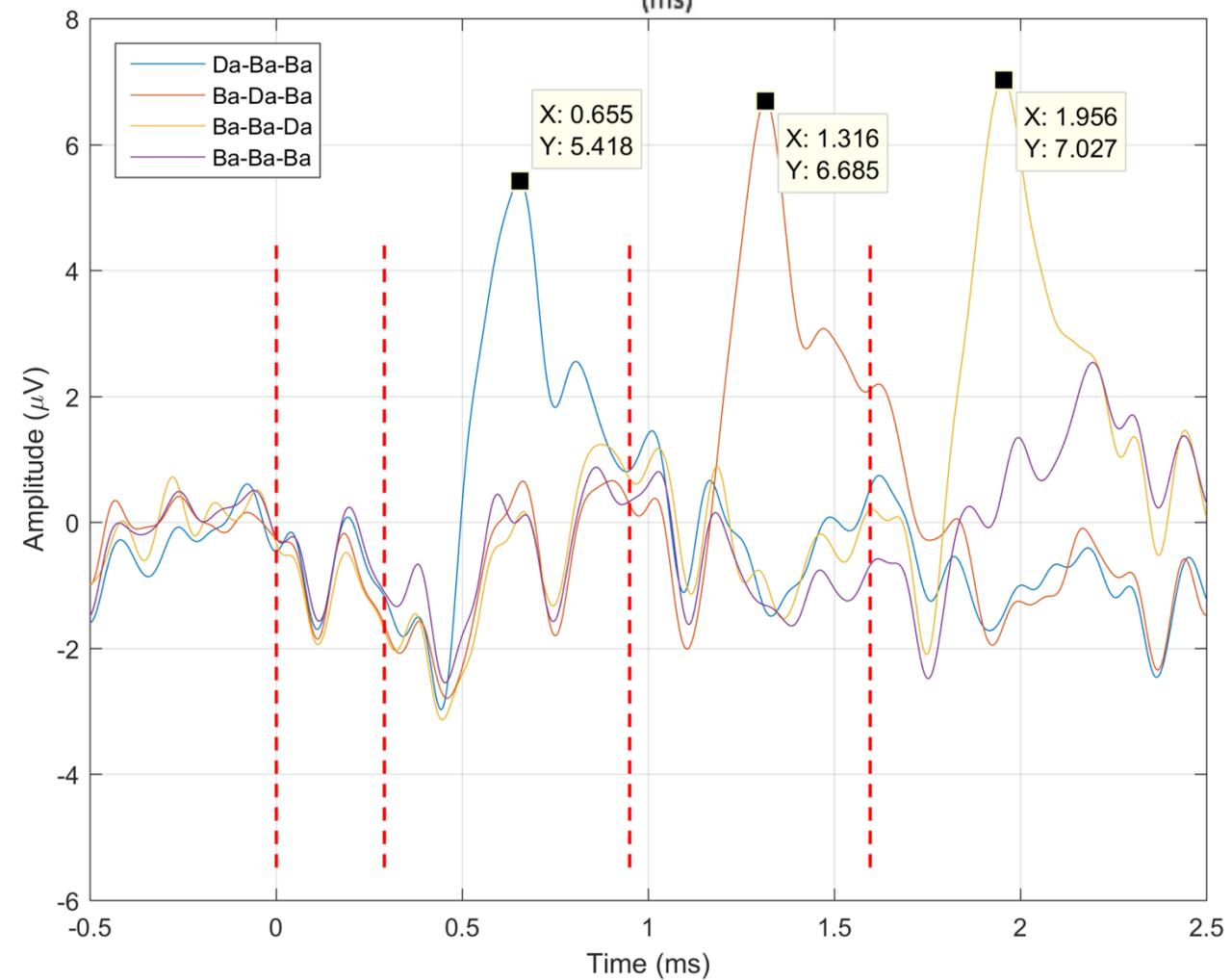
Indicadores de Identificación



El potencial P300



- [70%] Ba – Ba – Ba
- [10%] **Da** – Ba – Ba
- [10%] Ba – **Da** – Ba
- [10%] Ba – Ba – **Da**



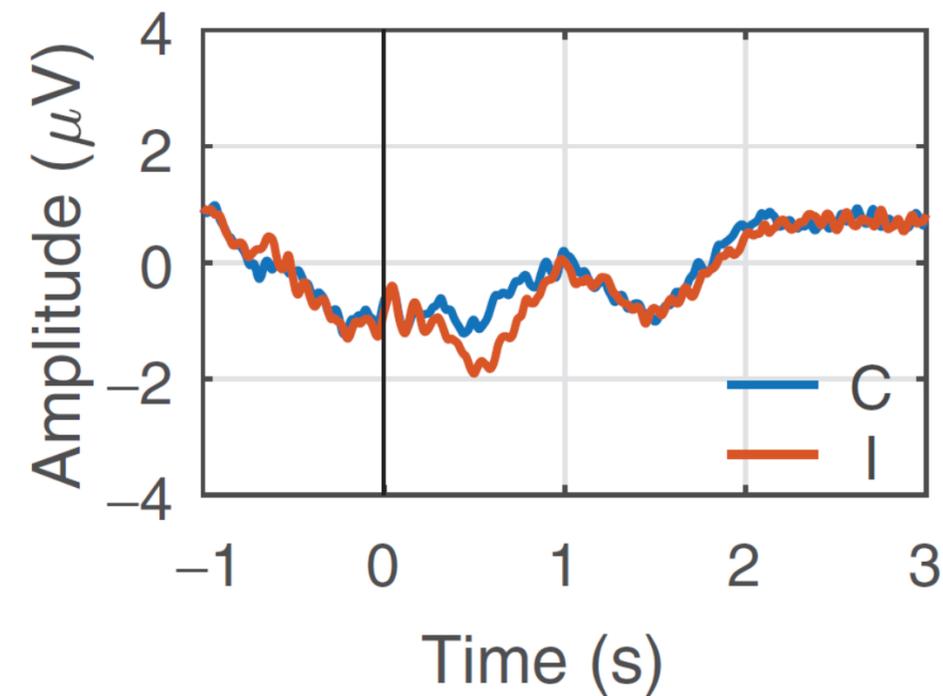
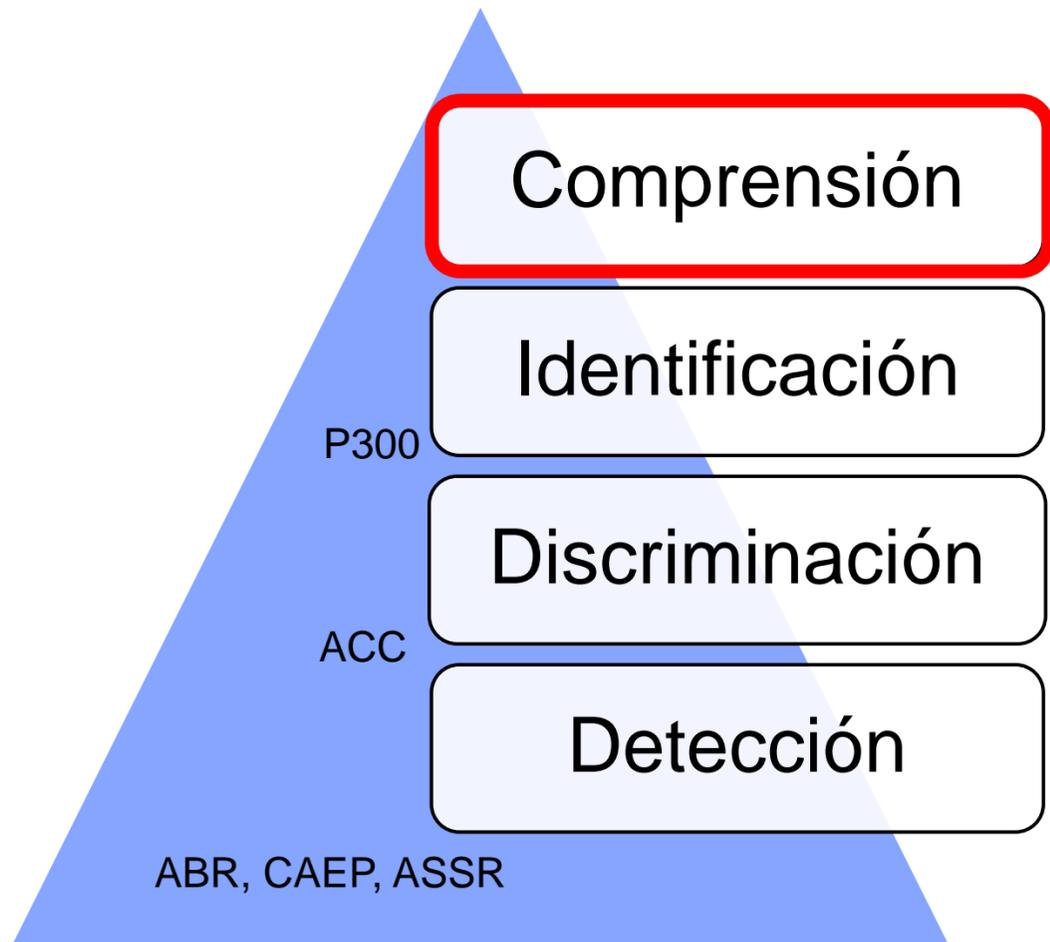
El potencial N400

Coherente & predecible

Me gusta el café con leche y **azúcar**

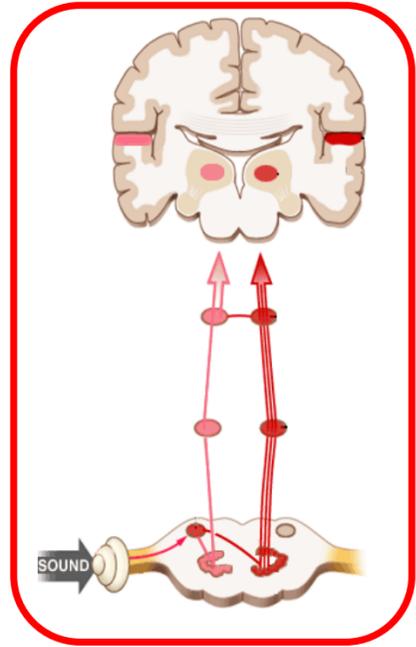
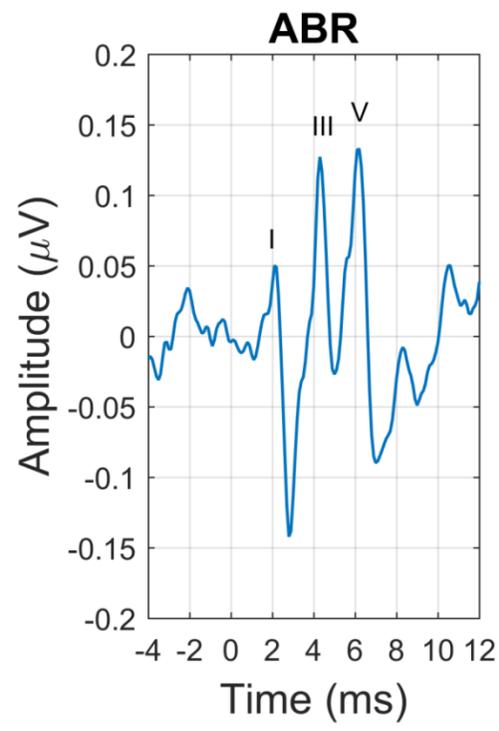
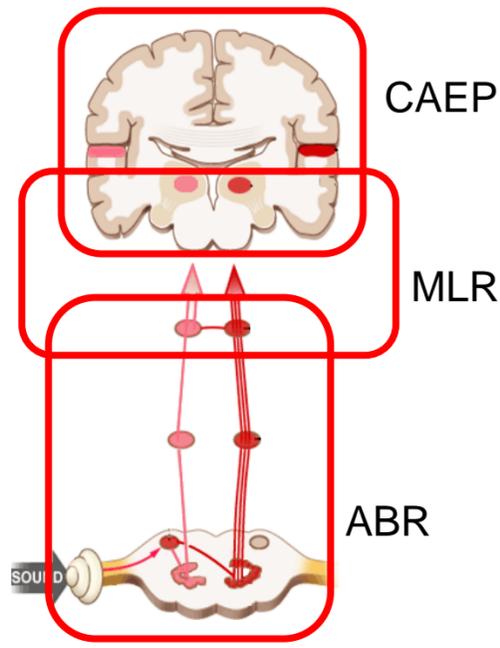
Incoherente, anómalo

Me gusta el café con leche y **madera**

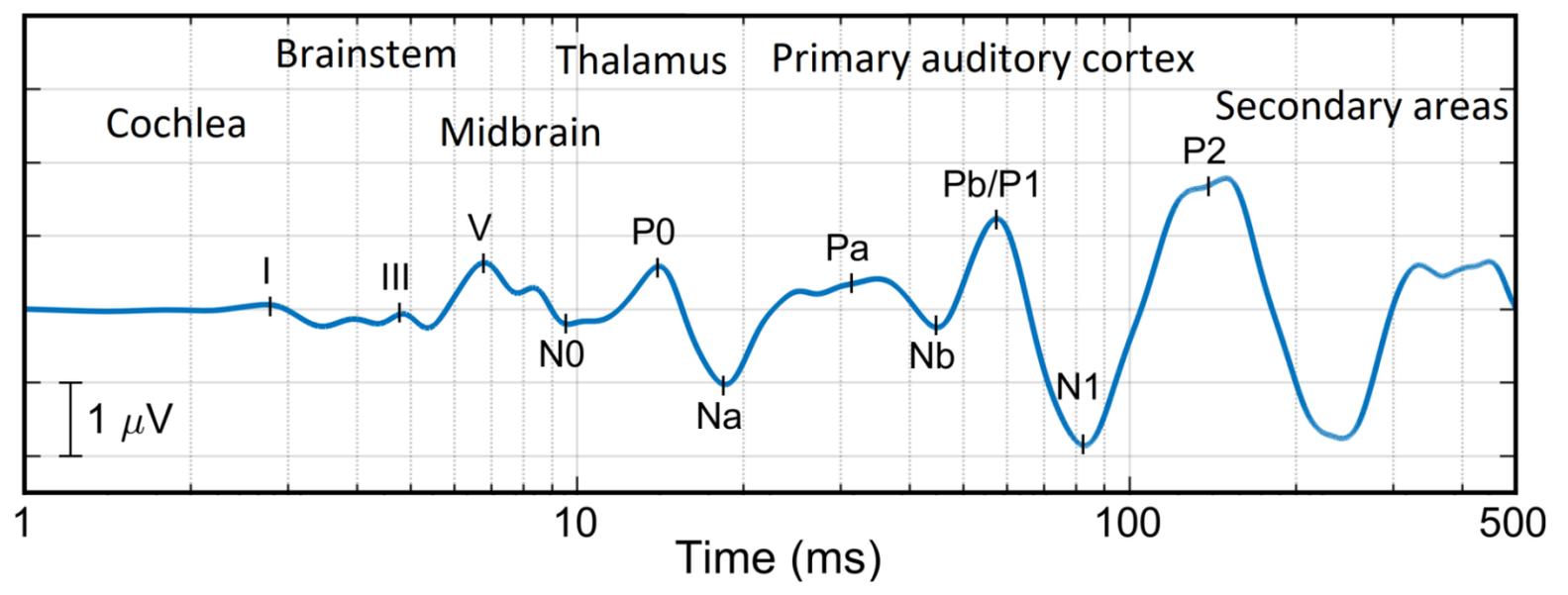


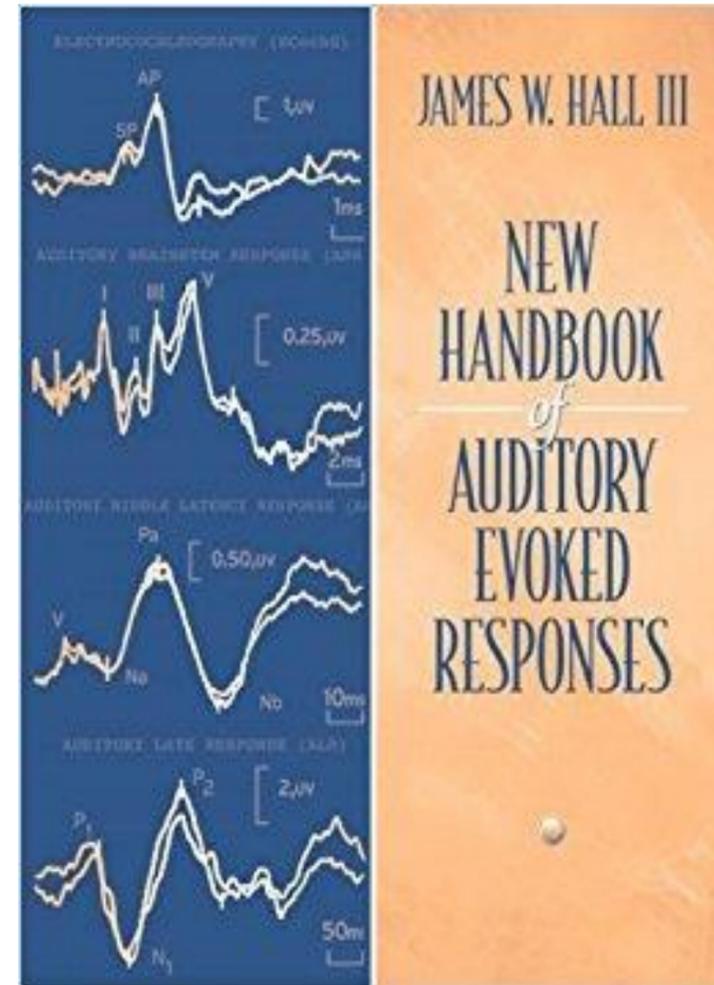
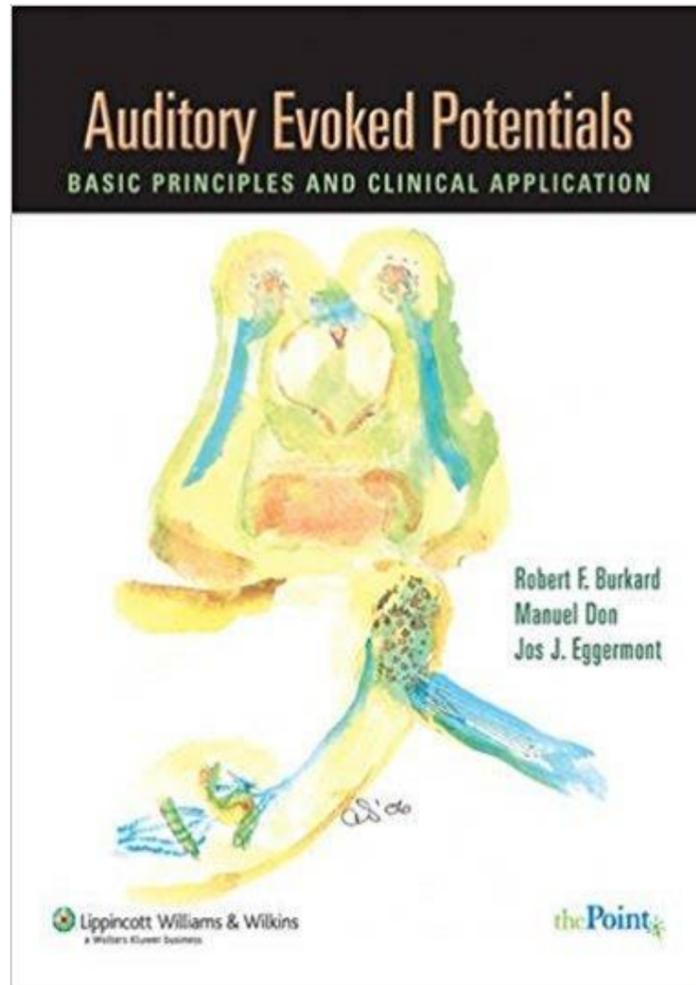
Valderrama et al. (2020), IJA

Registro integral de AEPs



Valderrama et al. (2020), JASA






**THANK YOU
FOR
YOUR
ATTENTION!
ANY QUESTIONS?**



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¡Muchas gracias!

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Asociación
Lingüística
de Mendoza



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