RNZ

Hirn-SPECT
mit den Tracern von heute

- Von der Histologie zur Bildgebung bei Neurodegeneration -

34. Jahrestagung
der Bayerischen Gesellschaft für Nuklearmedizin
Bayreuth
5. und 6. Juli 2013

Visiting Professor (Wroclaw MU) **Dr. Michael Cordes**

Gliederung

1. Biochemie
    - 1.1. Synukleinopathien
    - 1.2. Tauopathien
    - 1.3. Amyloidopathien

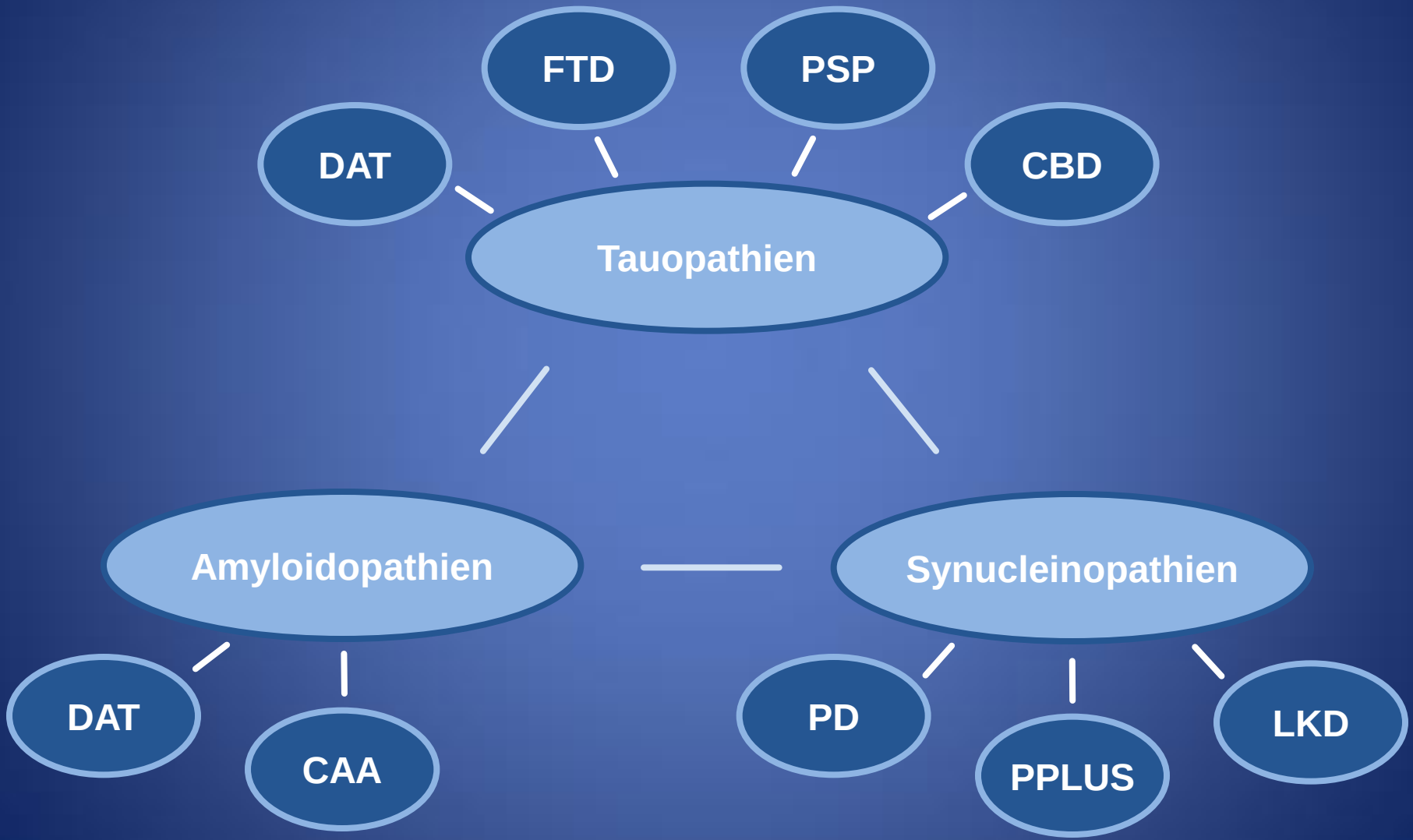
2. Neurodengeneration
    - 2.1. Aggregate
    - 2.2. Klinische Einteilung
    - 2.3. Pathologie
    - 2.4. Ergebnisse

3. Bildgebung
    - 3.1. M. Alzheimer
    - 3.2. FTD
    - 3.3. LKD
    - 3.4. MP

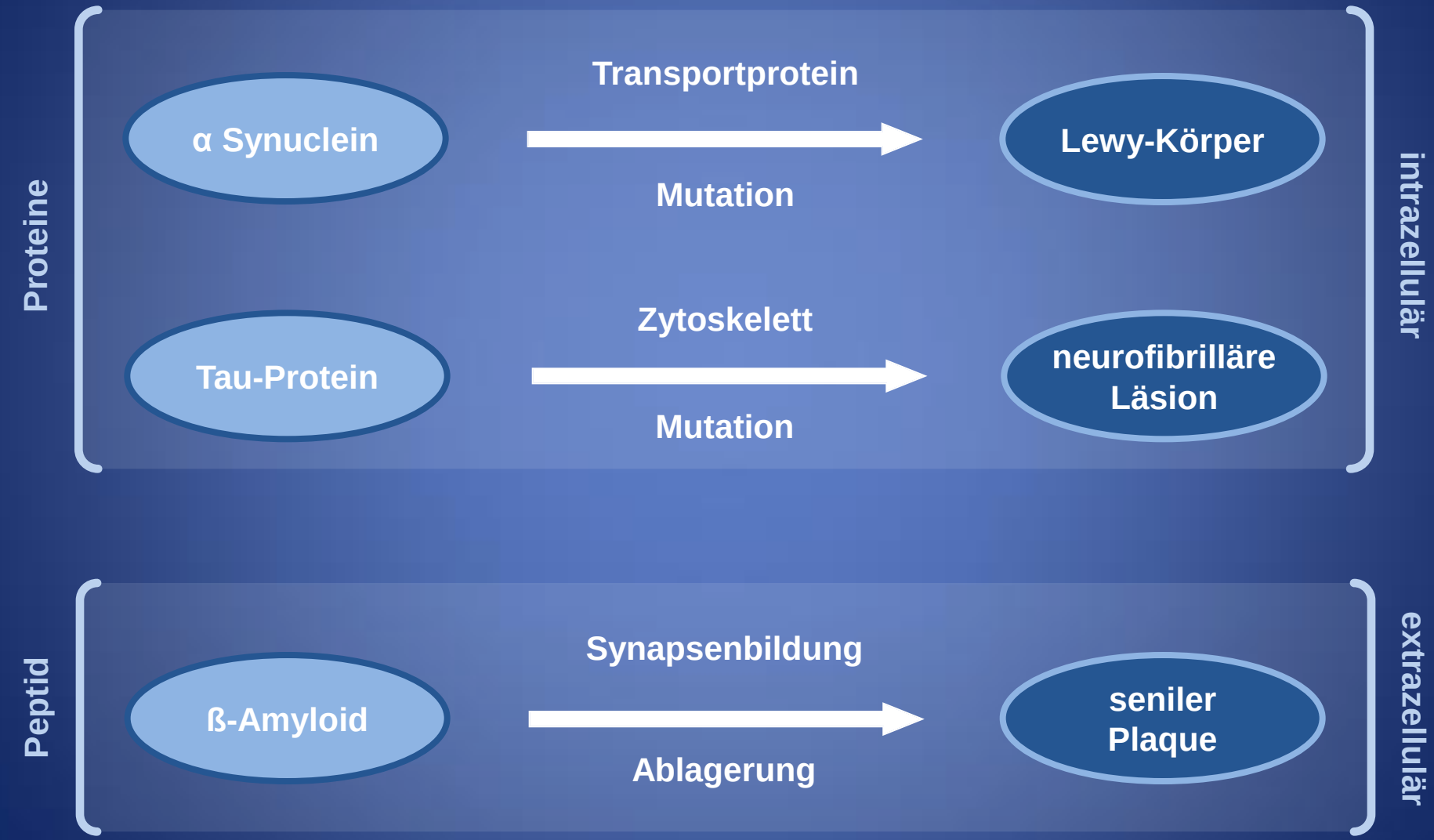
4. Zusammenfassung

1. Biochemie

- Biochemische Einteilung -

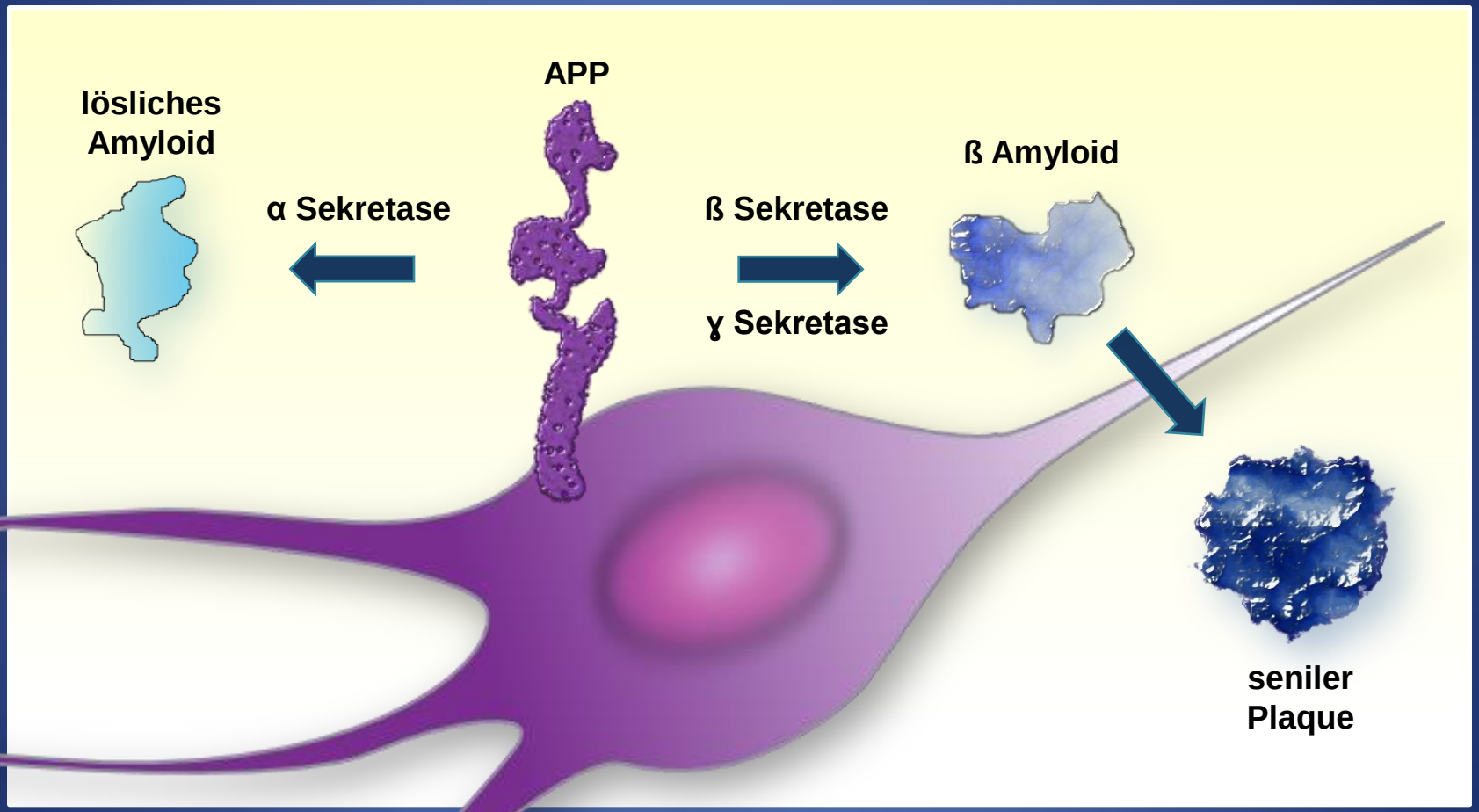


1. Biochemie


Proteine
α Synuclein
Transportprotein
Mutation
Lewy-Körper
Tau-Protein
Zytoskelett
Mutation
neurofibrilläre Läsion
intrazellulär
Peptid
ß-Amyloid
Synapsenbildung
Ablagerung
seniler Plaque
extrazellulär

2. Neurodegeneration

2.1. Aggregate



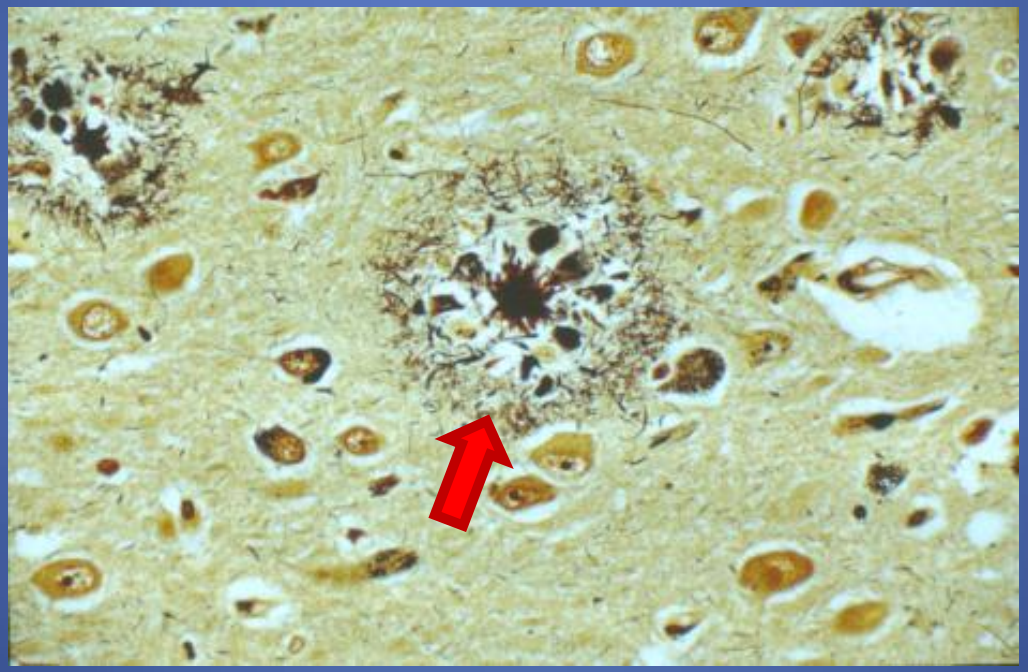
2. Neurodegeneration

2.1. Aggregate

Seniler Plaque

„Synonym“

Neuritischer Plaque



Lokalisation

extrazellulär

Biochemie

ß-Amyloid

Krankheiten

M. Alzheimer

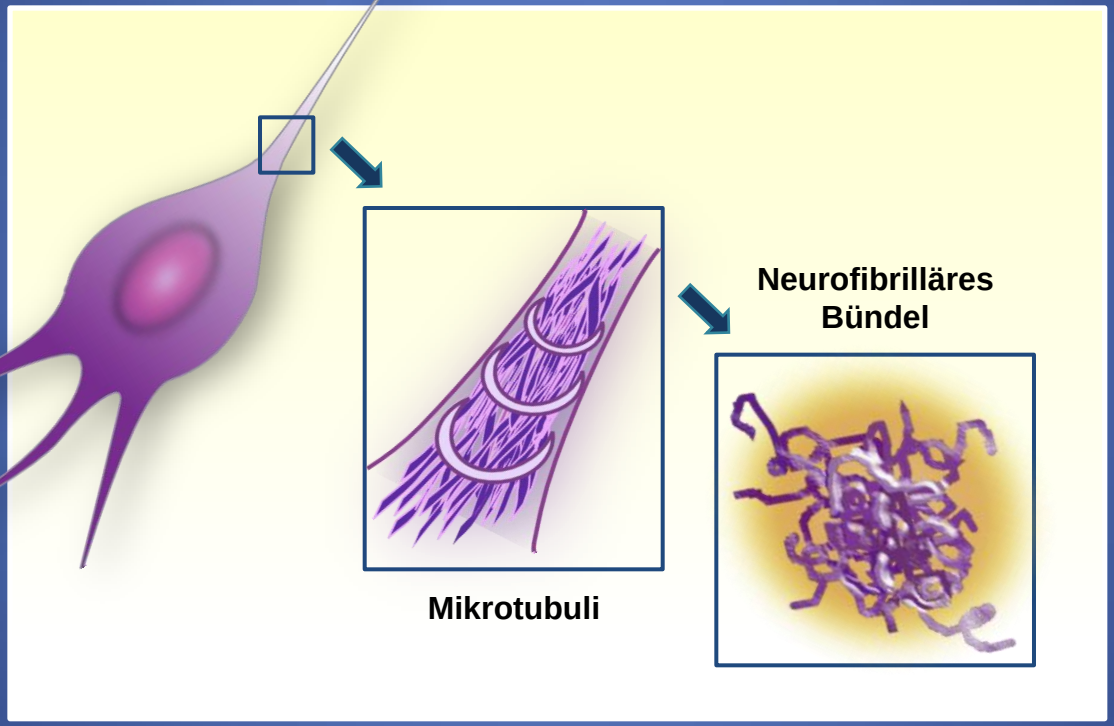
2. Neurodegeneration

2.1. Aggregate

Neurofibrilläres Bündel

Synonym

neurofibrillary tangle



Lokalisation

intrazellulär

Biochemie

tau Protein

⇩

Abbauprodukt

mikrotubuläres Zytoskelett

Krankheiten

M. Alzheimer
PSP
COBD
M. Pick

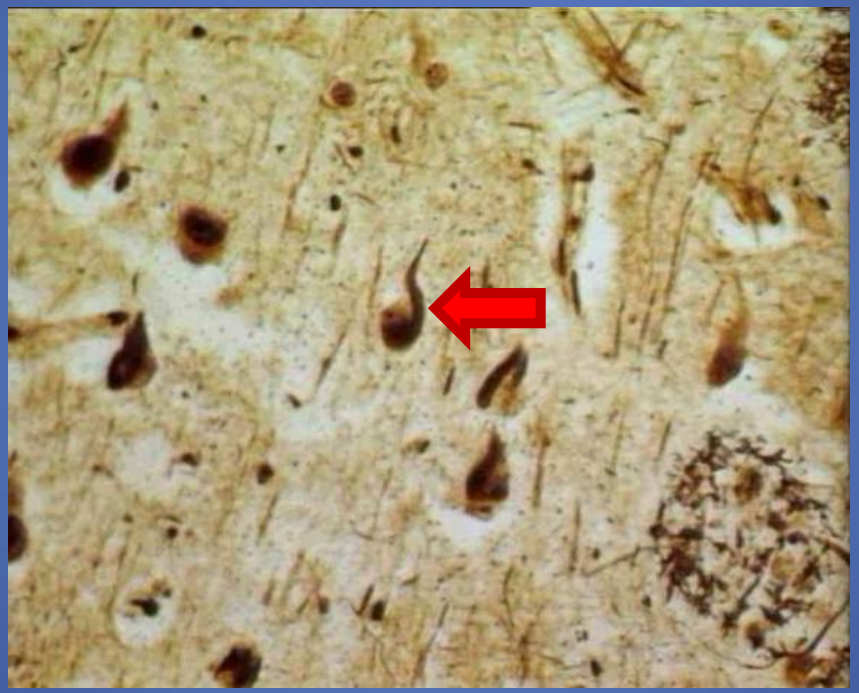
2. Neurodegeneration

2.1. Aggregate

Neurofibrilläres Bündel

Synonym

neurofibrillary tangle



Lokalisation

intrazellulär

Biochemie

tau Protein

⬇

Abbauprodukt

mikrotubuläres Zytoskelett

Krankheiten

M. Alzheimer
PSP
COBD
M. Pick

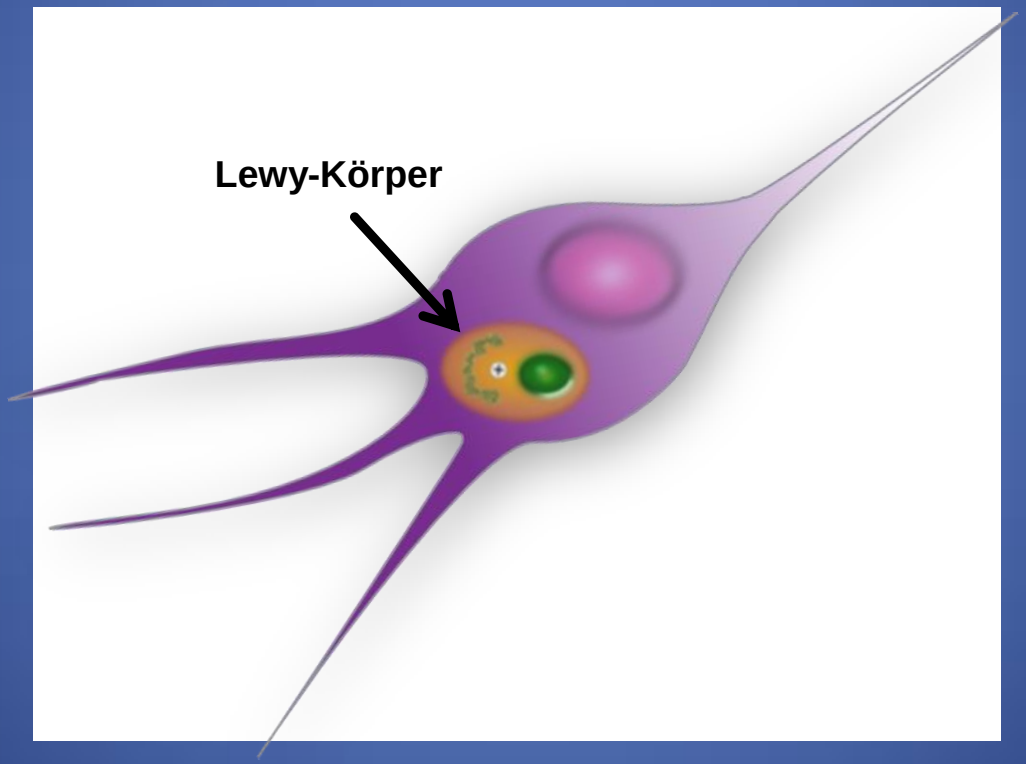
2. Neurodegeneration

2.1. Aggregate

Lewy Körper

Synonym

Lewy Body



Lokalisation

intrazellulär

Biochemie

α Synuclein

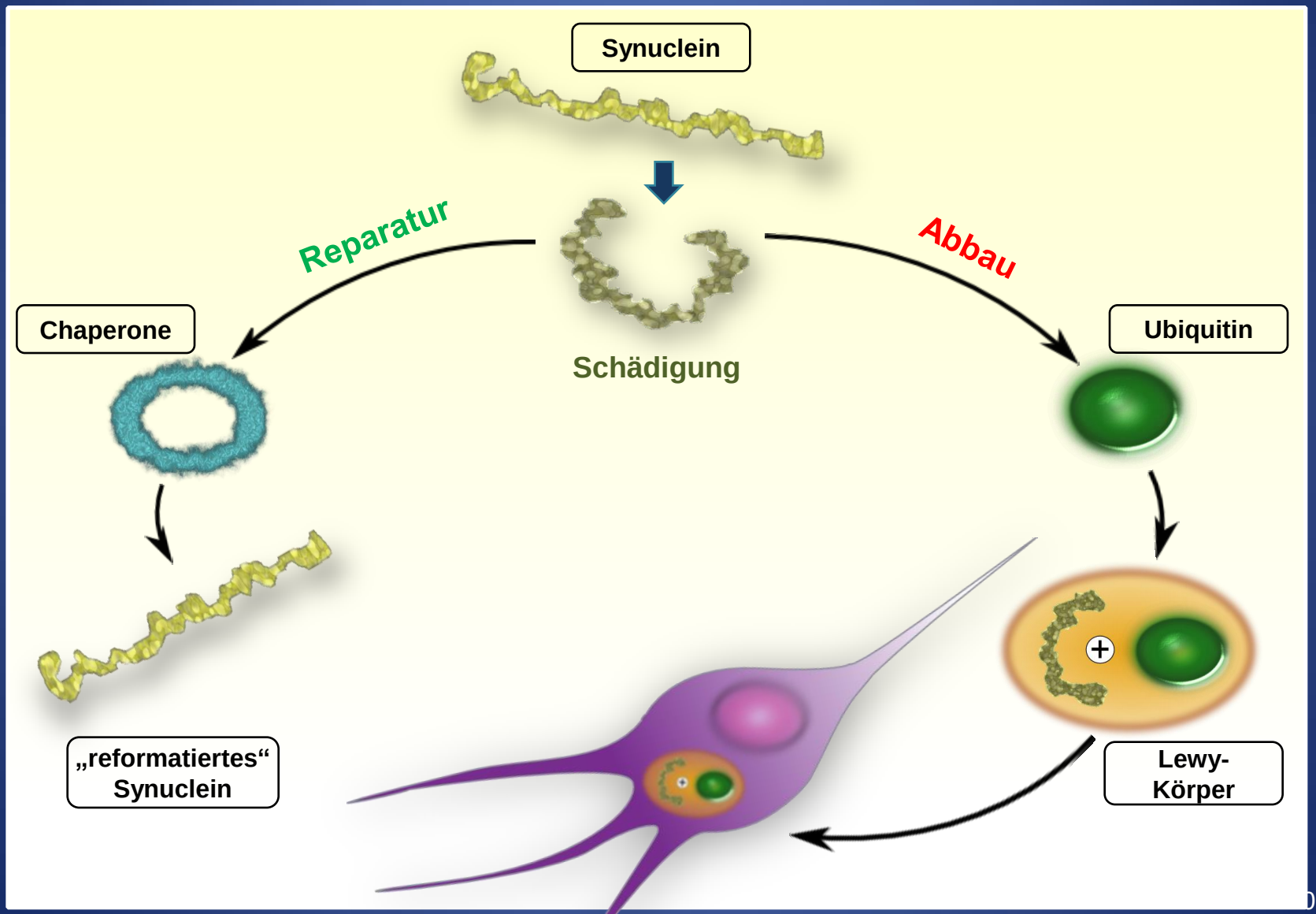
Ubiquitin

Krankheiten

M. Parkinson

2. Neurodegeneration

2.1. Aggregate



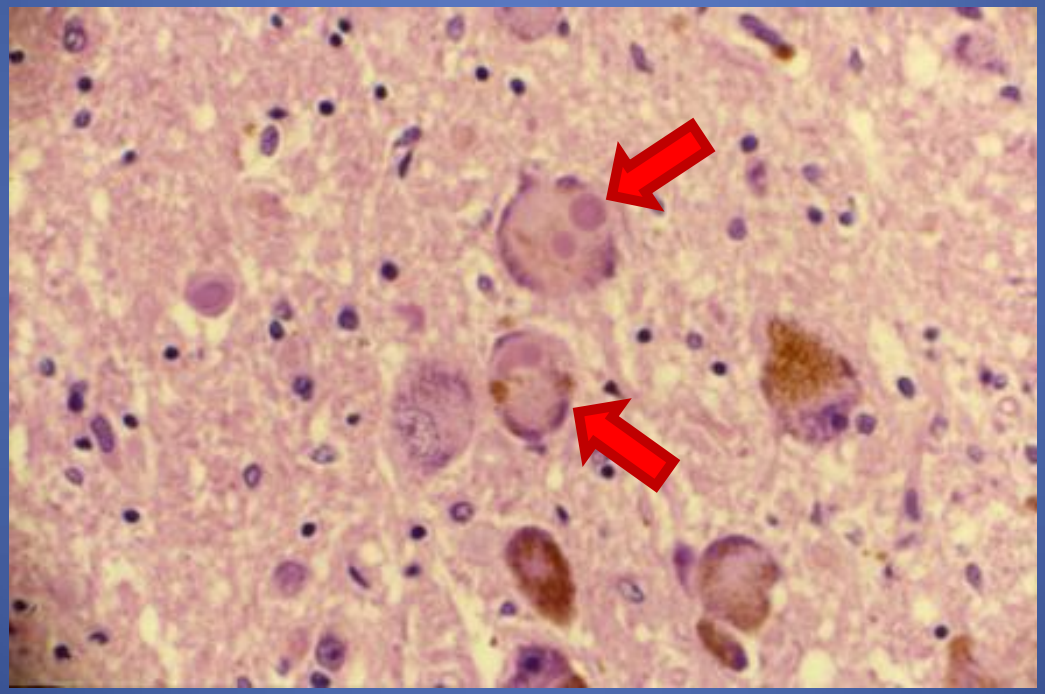
2. Neurodegeneration

2.1. Aggregate

Lewy Körper

Synonym

Lewy Body



Lokalisation

intrazellulär

Biochemie

α Synuclein

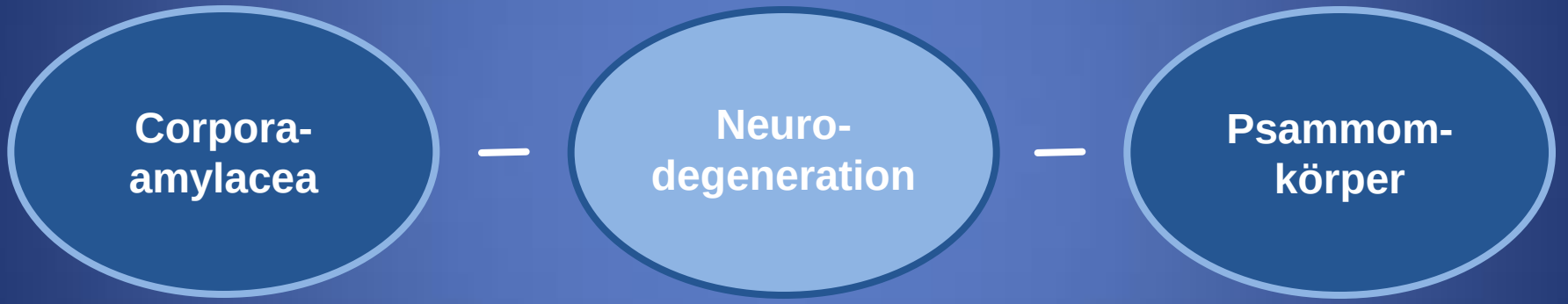
Ubiquitin

Krankheiten

M. Parkinson

2. Neurodegeneration

2.2. Klinische Einteilung



2. Neurodegeneration

2.2. Klinische Einteilung

Psammomkörper
Sulcus hippocampalis
M. Fahr

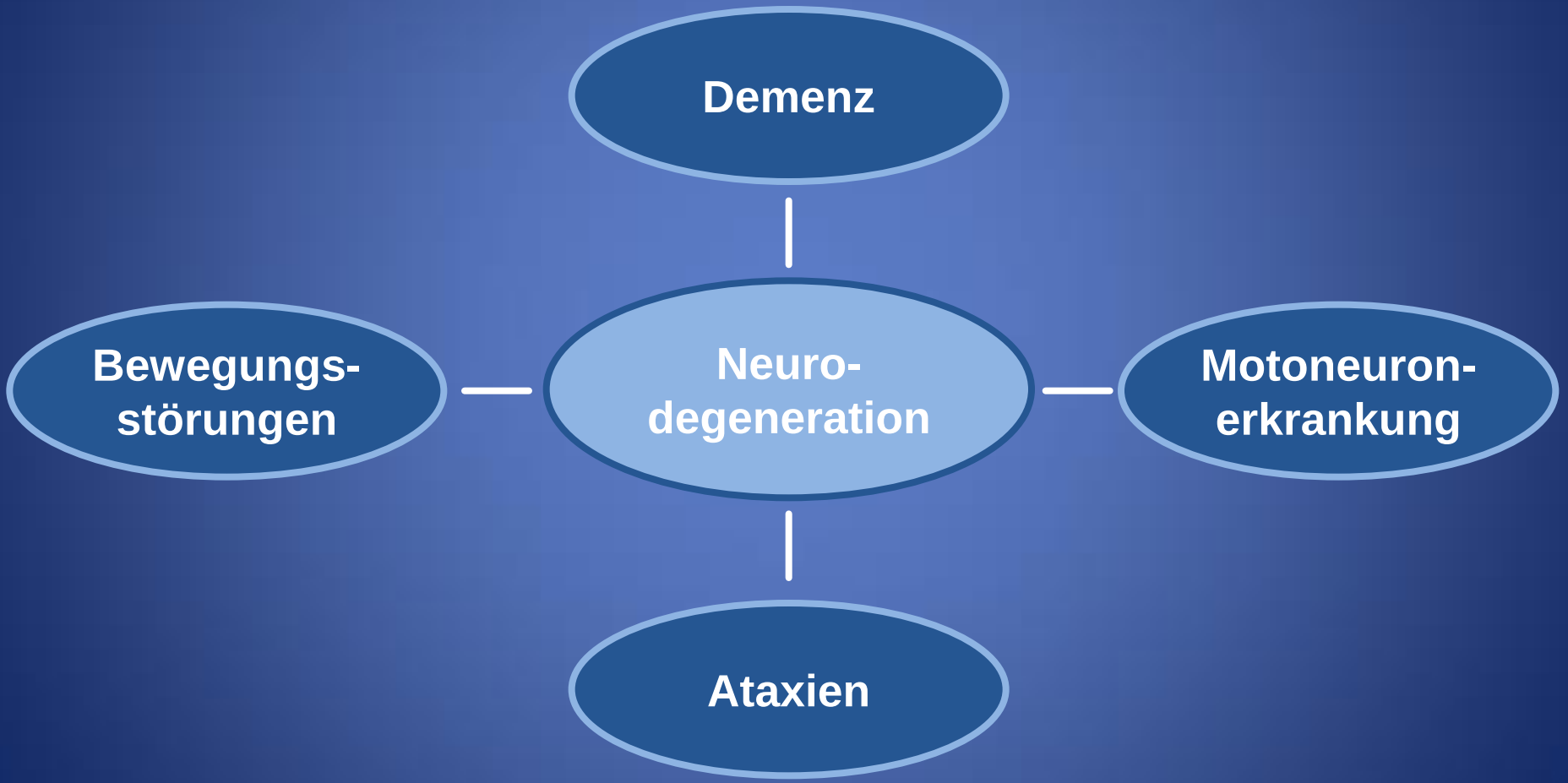
Epidemiologie:	z. T. sehr häufig
Lokalisation:	Plexus choroideus S. hippocampalis Basalganglien
Klinik:	keine

Corpora amylacea

Epidemiologie:	sehr häufig
Ätiologie:	unklar
Lokalisation:	disseminiert
Klinik:	keine

2. Neurodegeneration

2.2. Klinische Einteilung



2. Neurodegeneration

2.3. Pathologie

- DAT -

DAT

Epidemiologie:

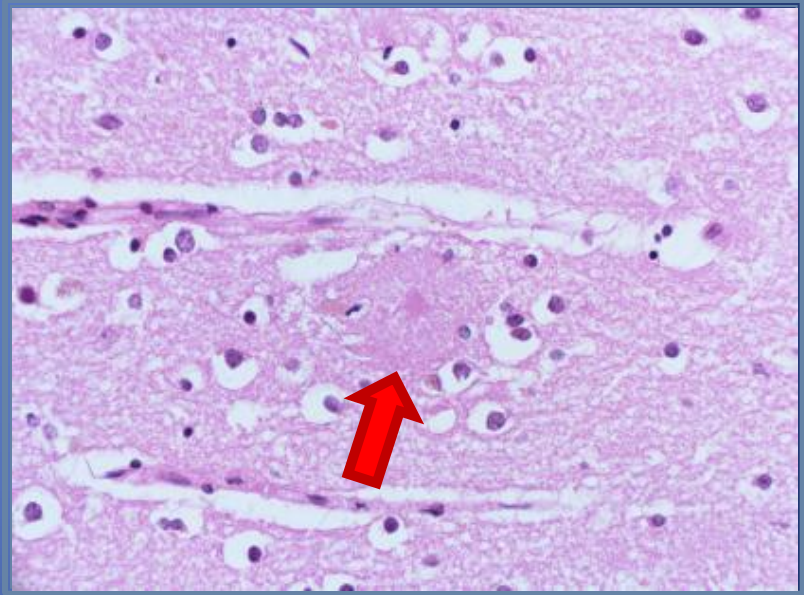
- Prävalenz 1,5 Mio
- Inzidenz 300.000
- late onset 90 %
- early onset 10 %
- altersassoziiert 5 % AK 7
  20 % AK 8
  50 % AK 9

Ätiologie:

→ APP α Sekretase
ß, ɣ Sekretase

Klinik:

- Gedächtnisstörungen
- kognitive Defekte
- Apraxien



2. Neurodegeneration

2.3. Pathologie

- Vaskuläre Demenz -

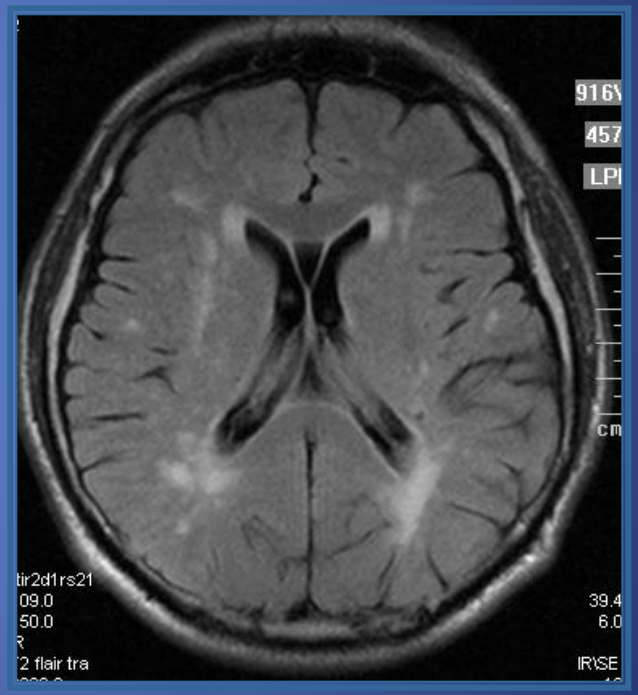
Vaskuläre Demenz

Ätiologie:

- **Mikroangiopathie**

Klinik:

- **fokal-neurologische Zeichen**
- **Affekt- und Antriebsstörungen**
- **Demenz**



2. Neurodegeneration

2.3. Pathologie

- FTD -

FTD

Einteilung:

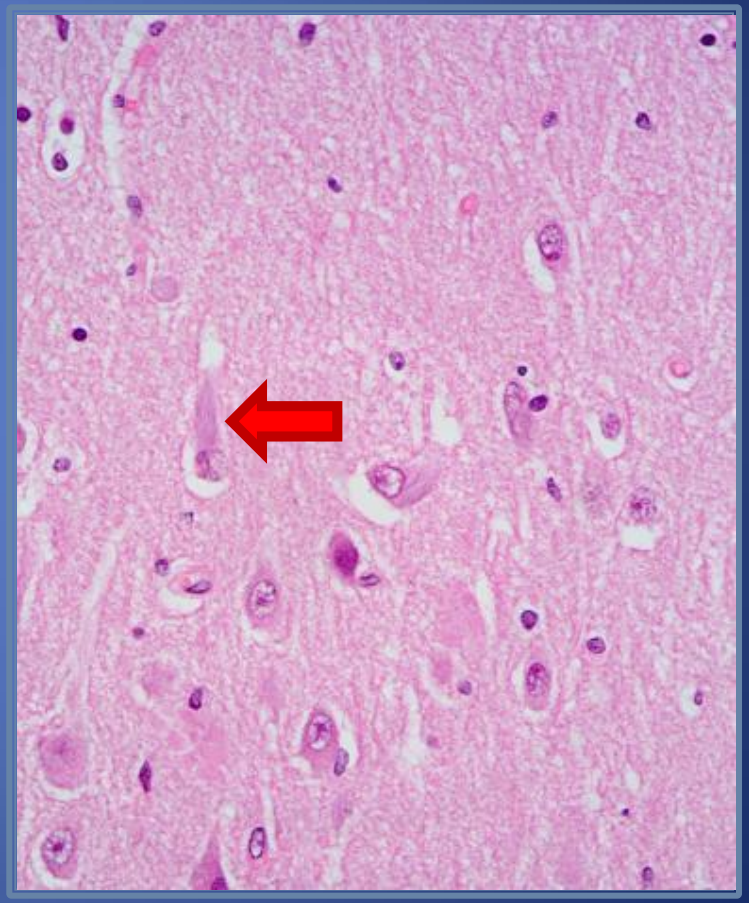
- FTD
- M. Pick
- Primär progressive Aphasie (PPA)

Histologie:

- sporadisch/familiär

Klinik:

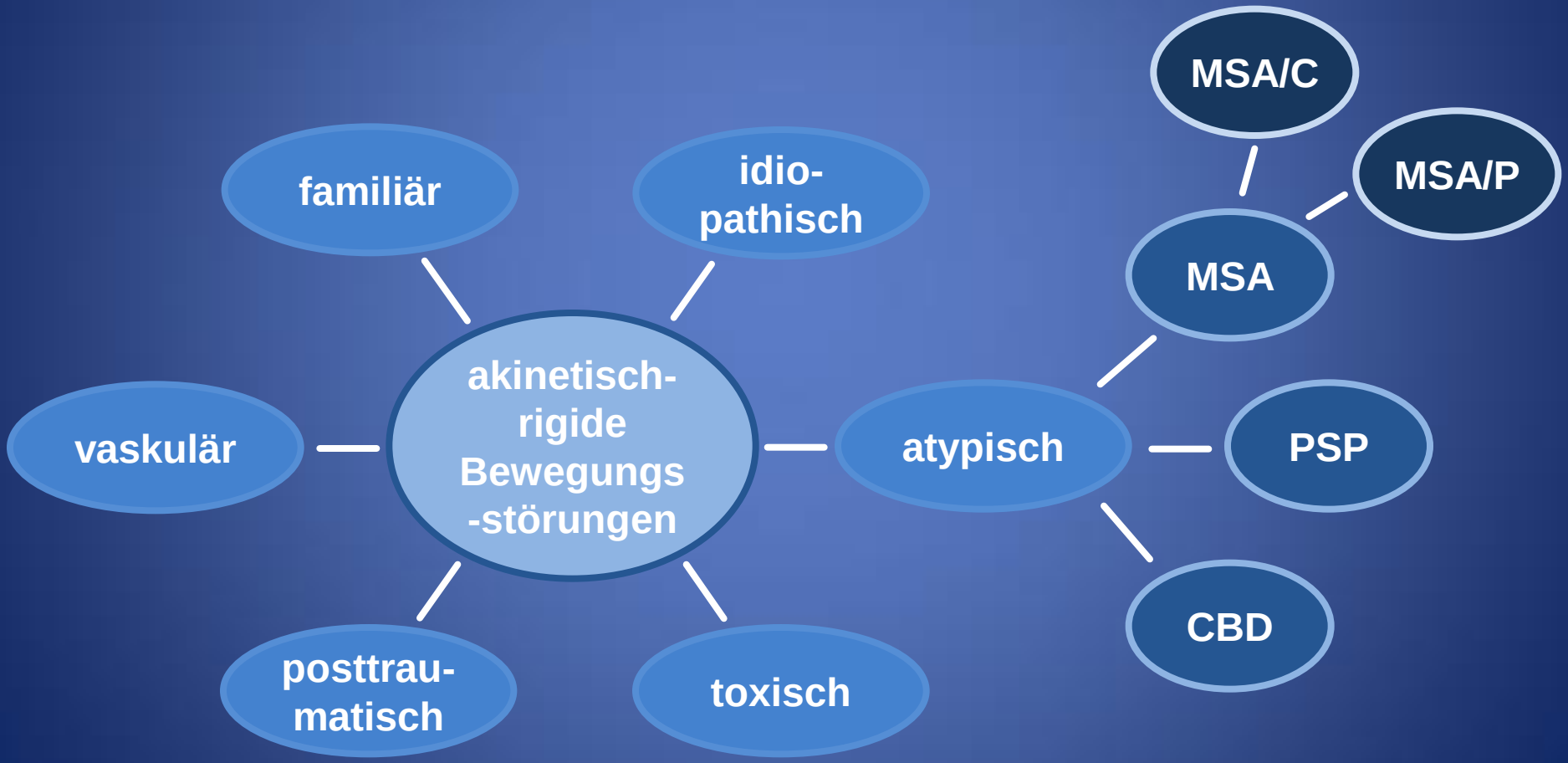
- Verhaltensstörungen
- Aphasie
- Demenz



2. Neurodegeneration

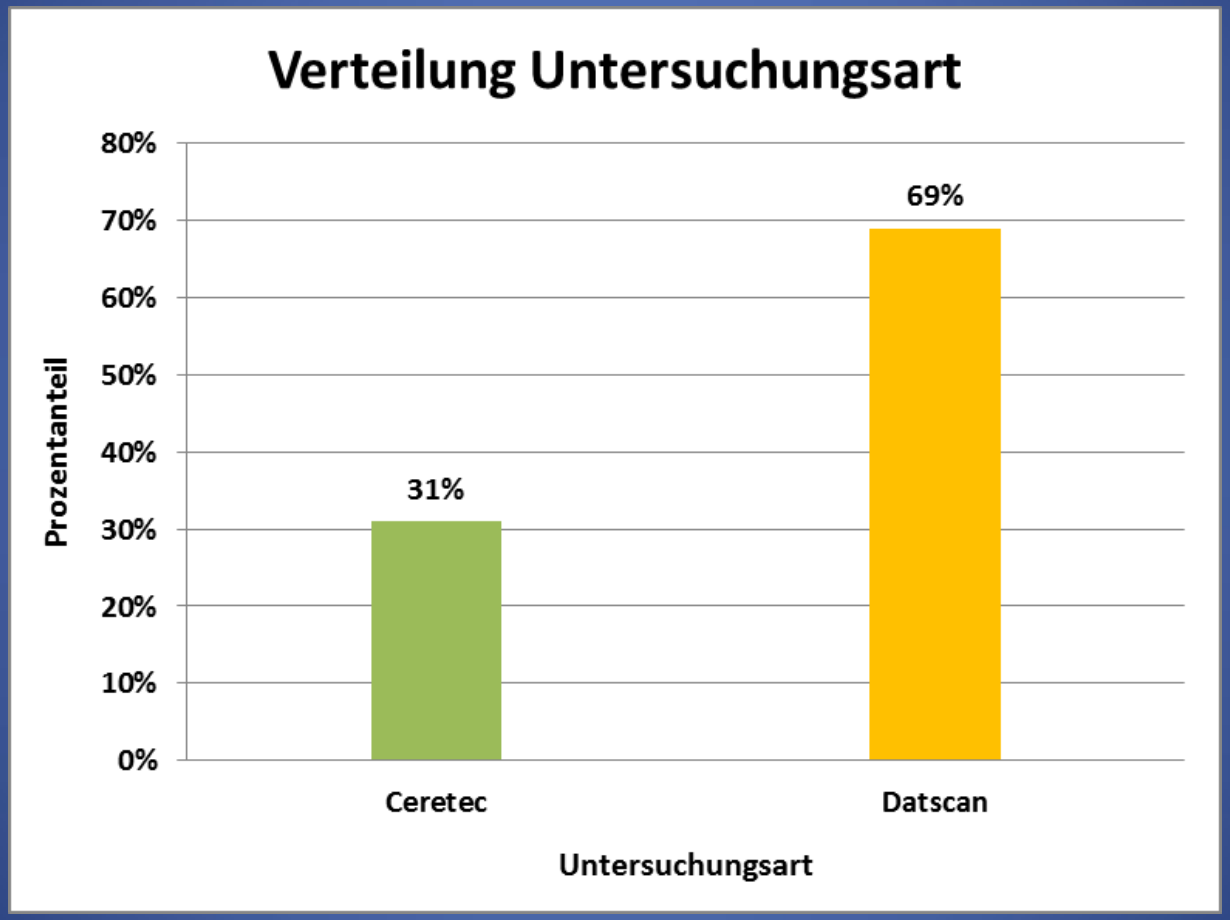
2.3. Pathologie

- Parkinson-Syndrome -



2. Neurodegeneration

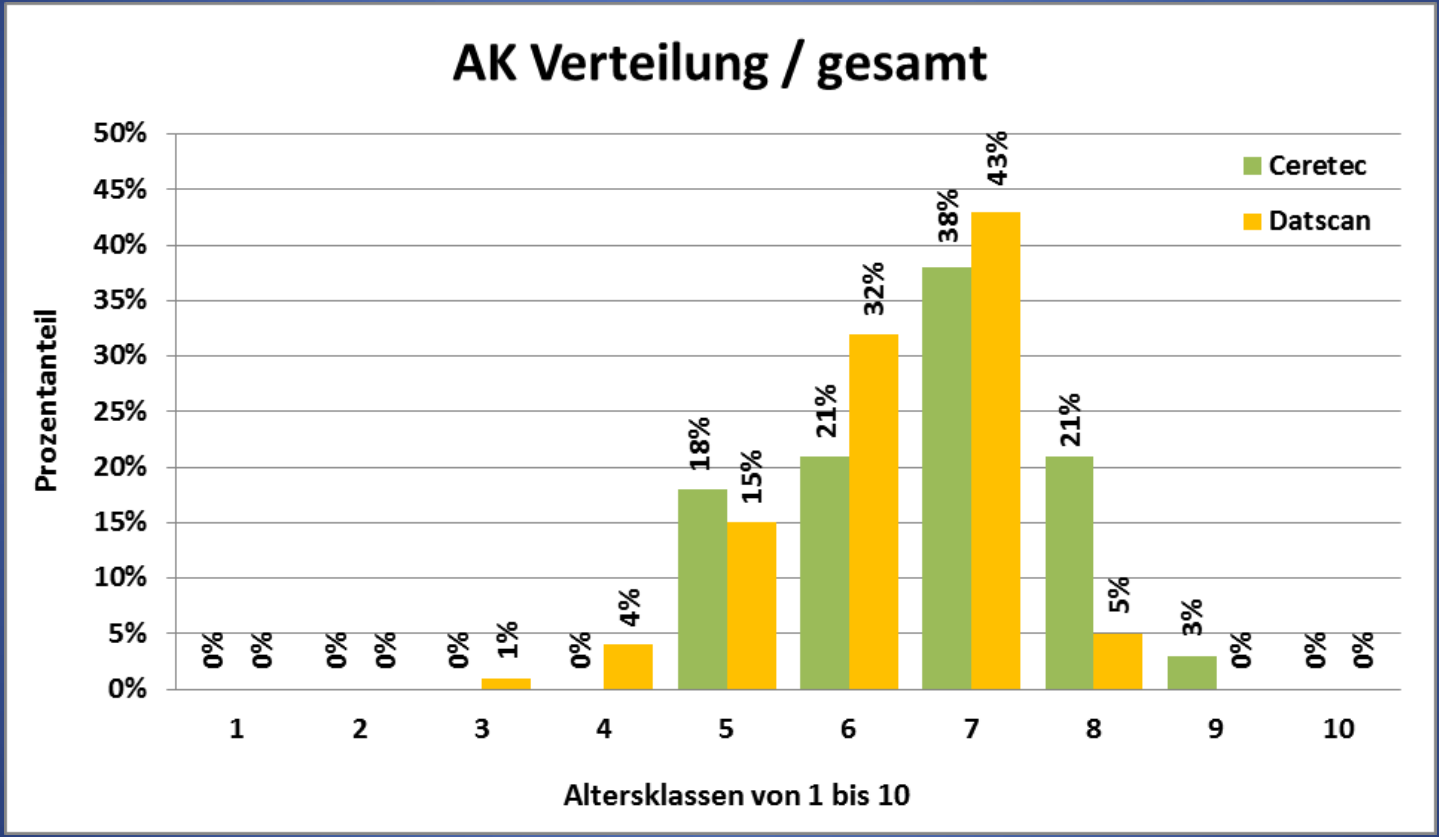
2.4. Ergebnisse RNZ



RNZ

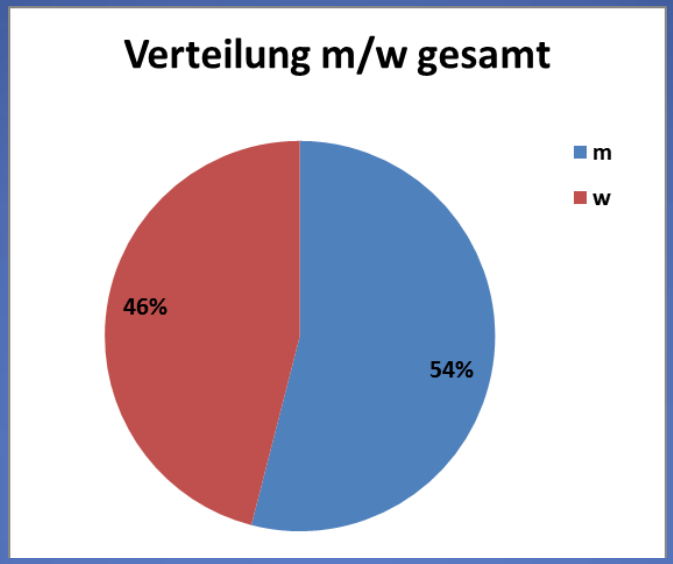
2. Neurodegeneration

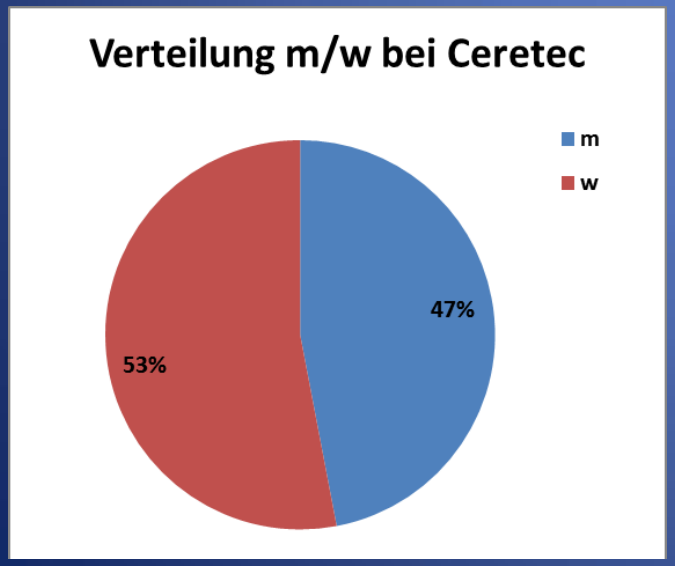
2.4. Ergebnisse RNZ

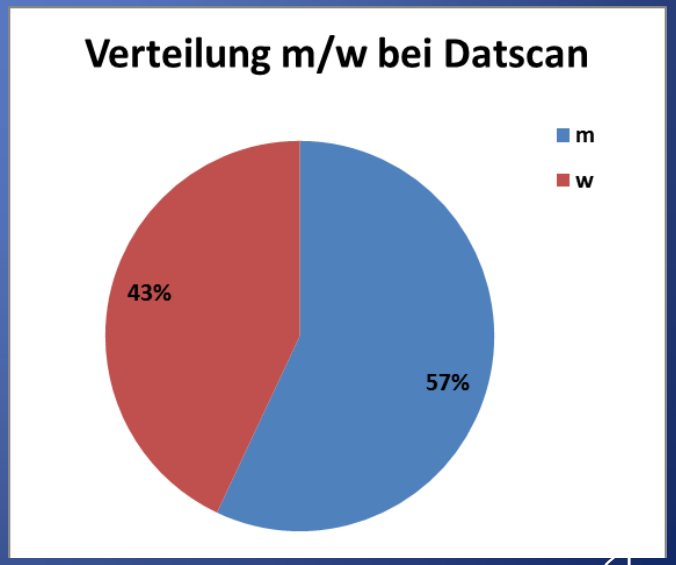


2. Neurodegeneration

2.4. Ergebnisse RNZ

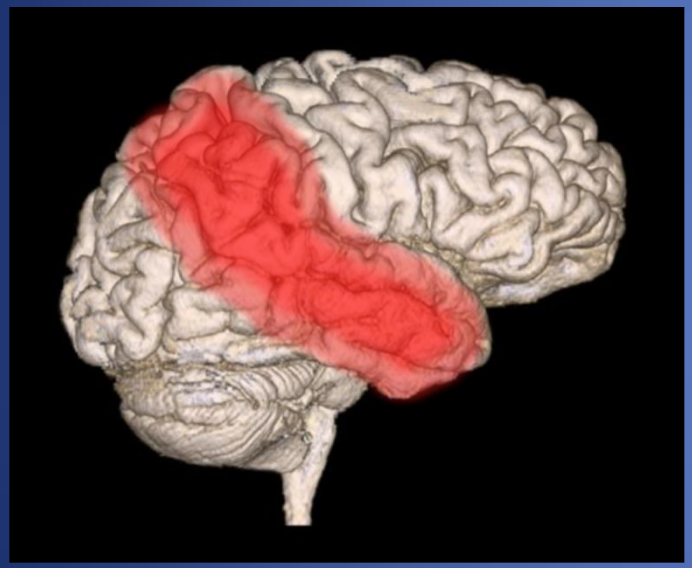


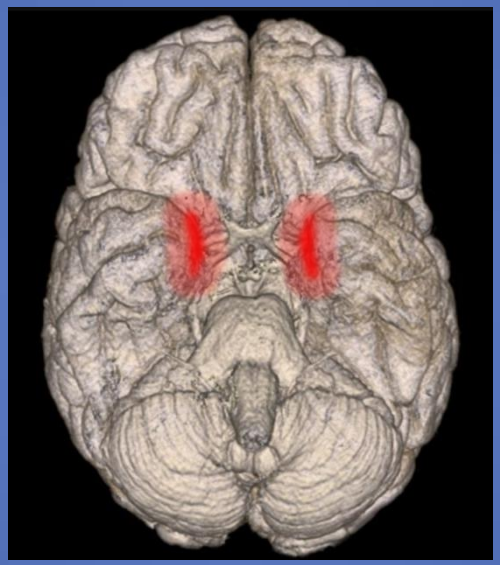


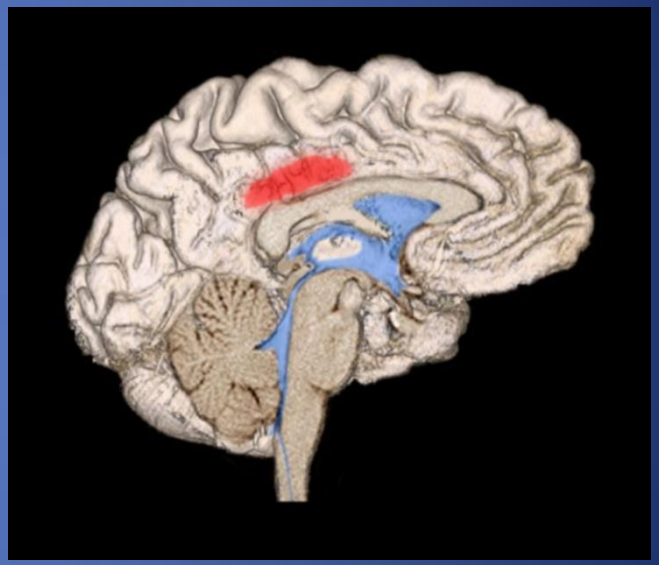


3. Bildgebung

3.1. M. Alzheimer







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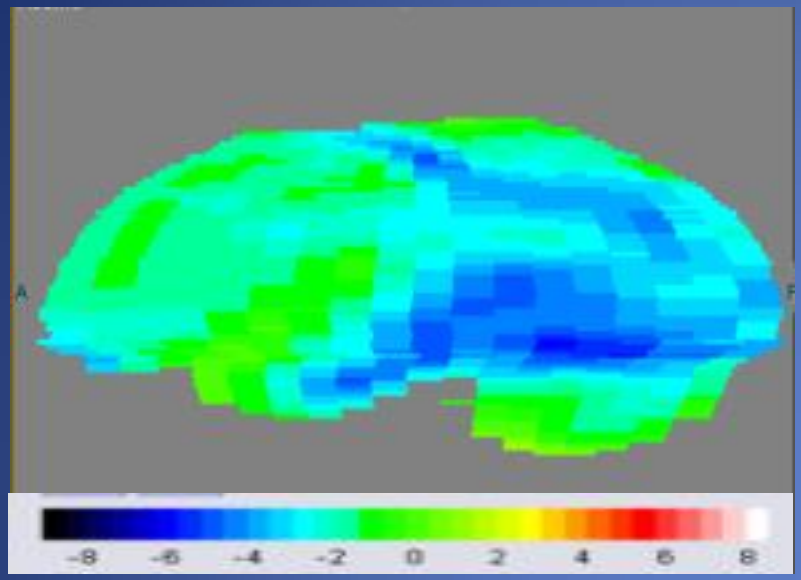
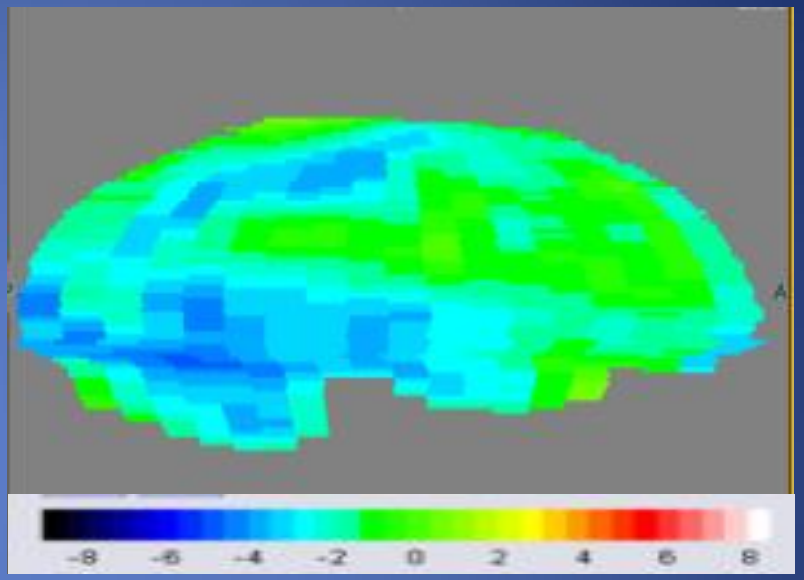
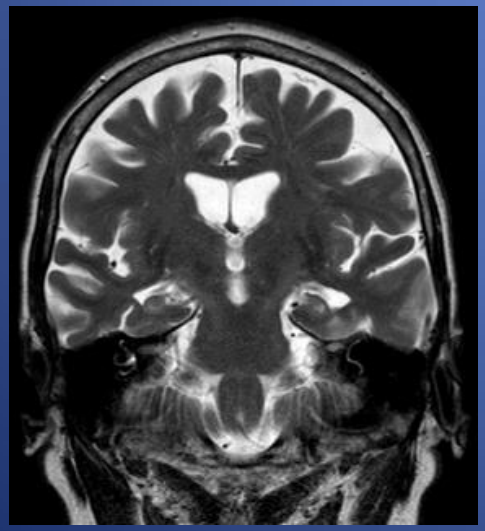
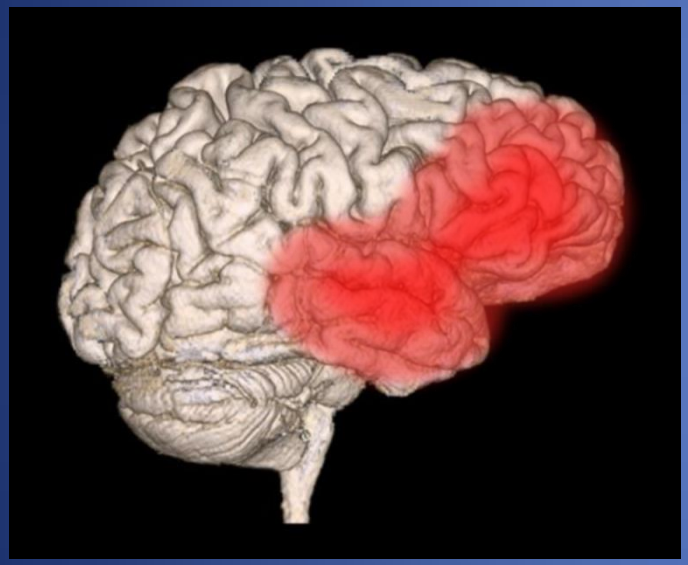


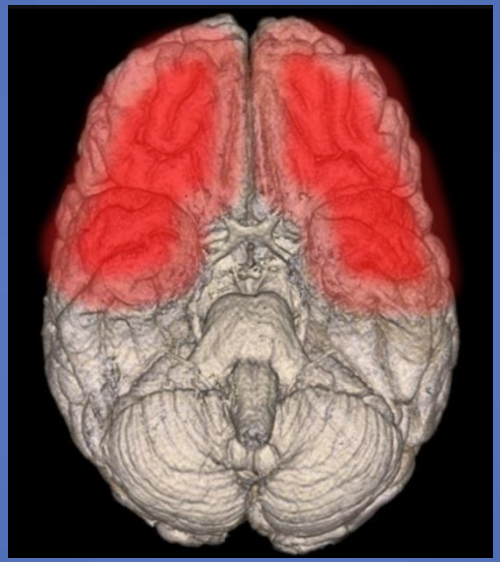


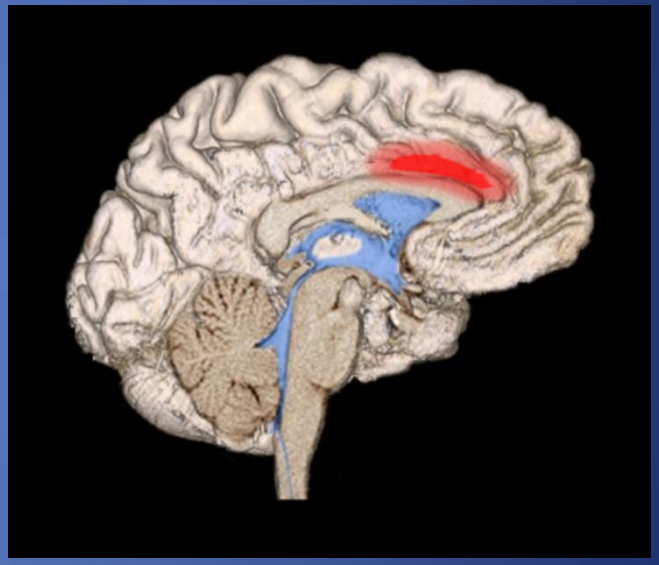


3. Bildgebung

3.2. FTD







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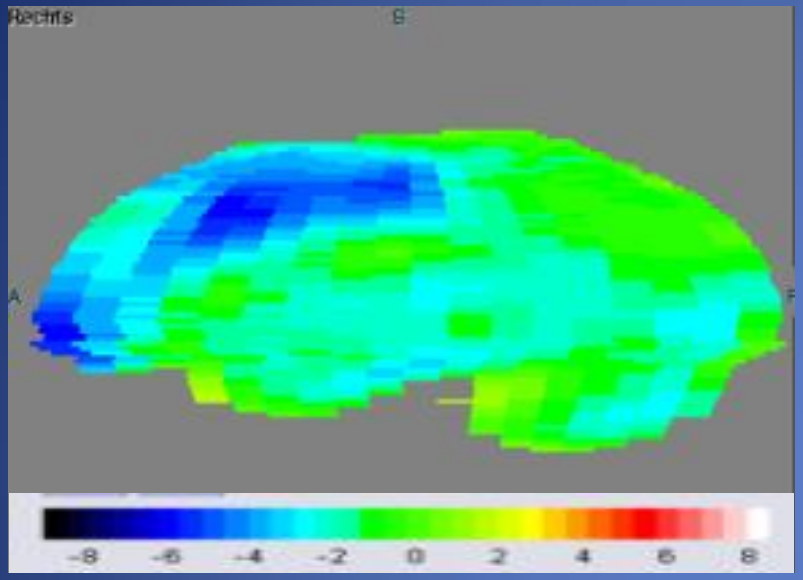
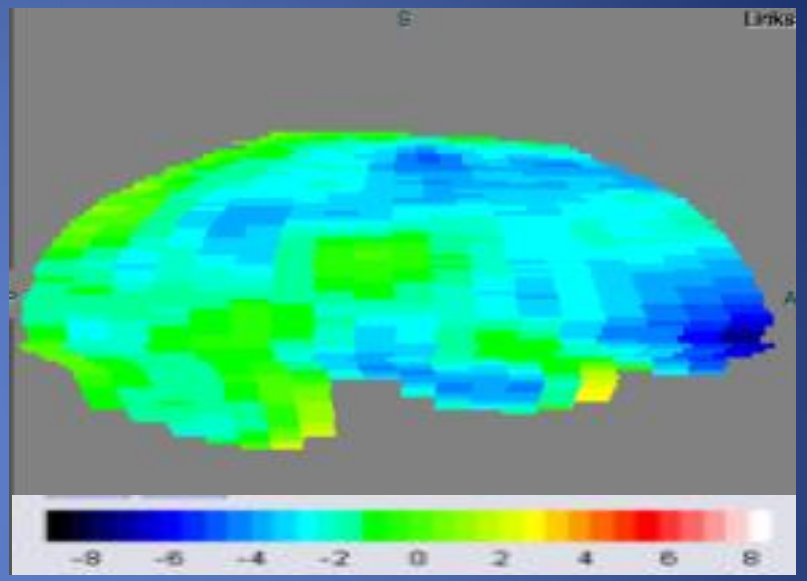
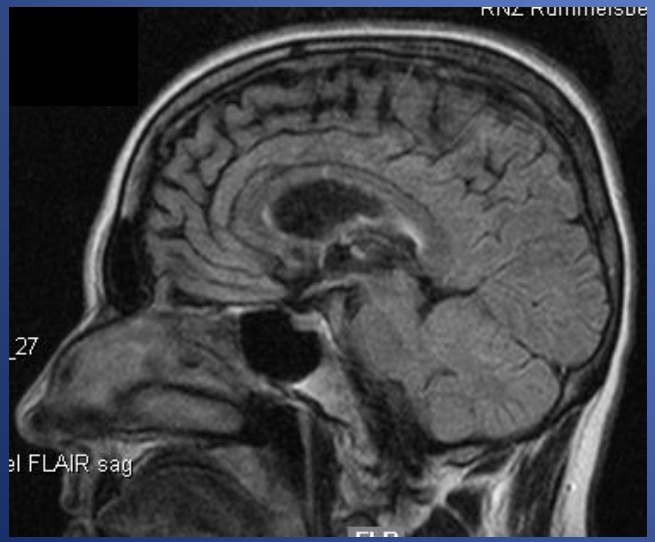
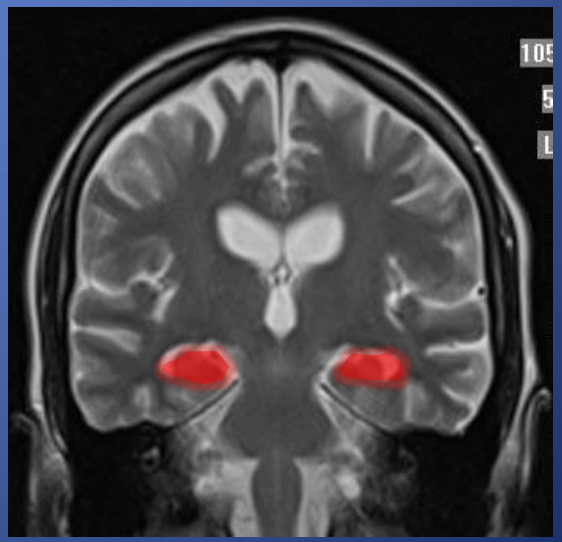


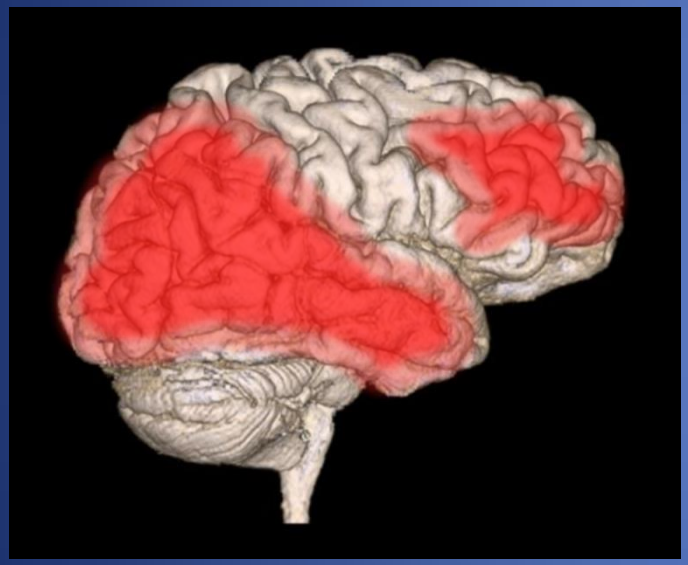


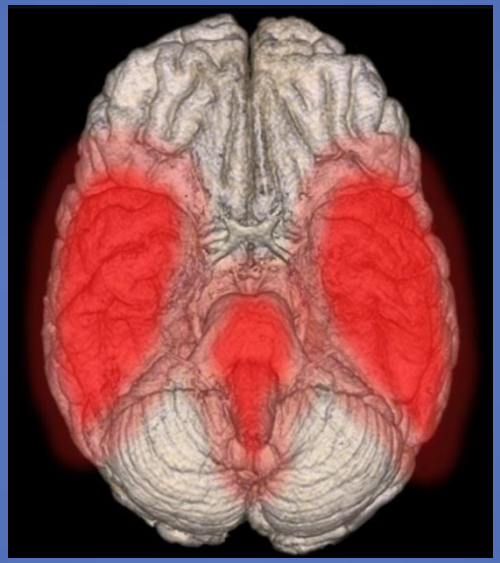


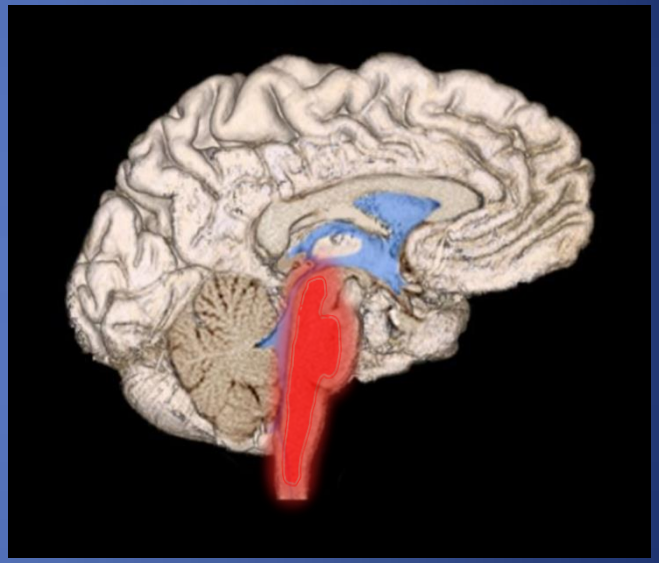


3. Bildgebung

3.3. LKD







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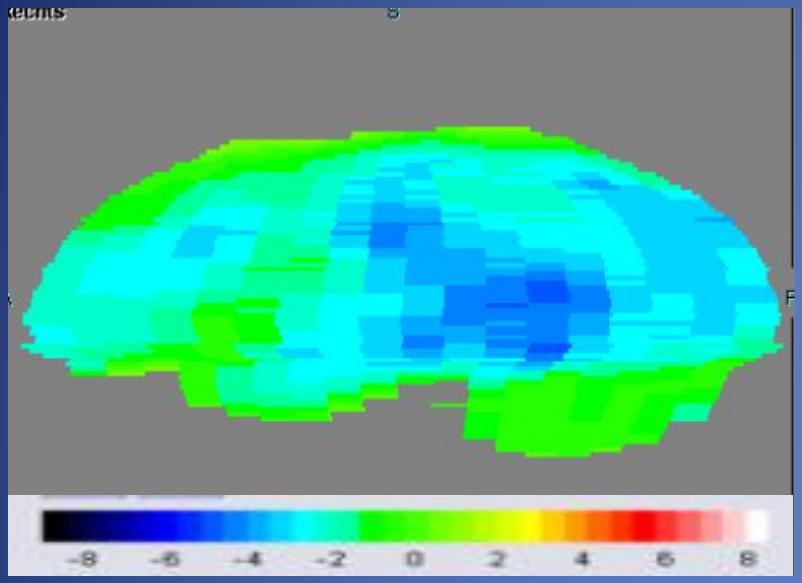
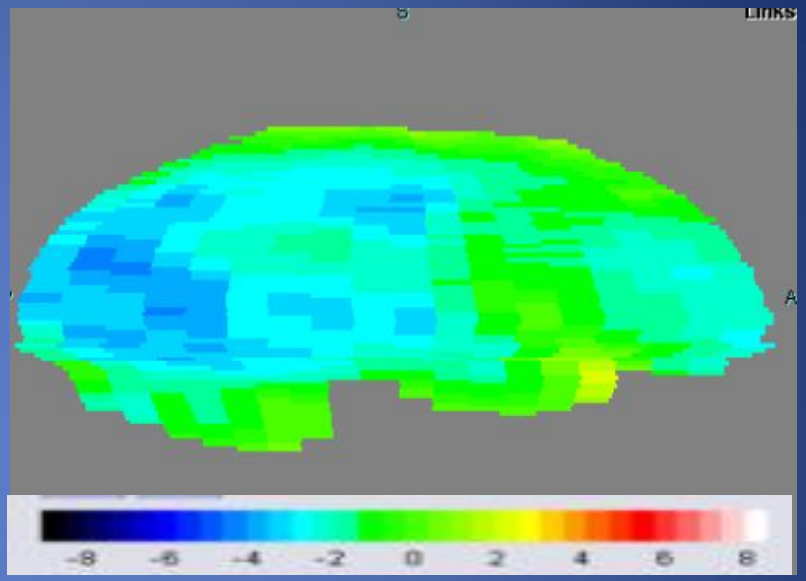
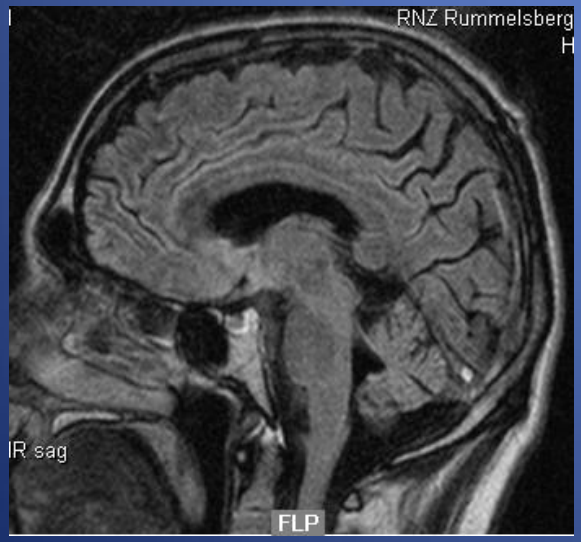
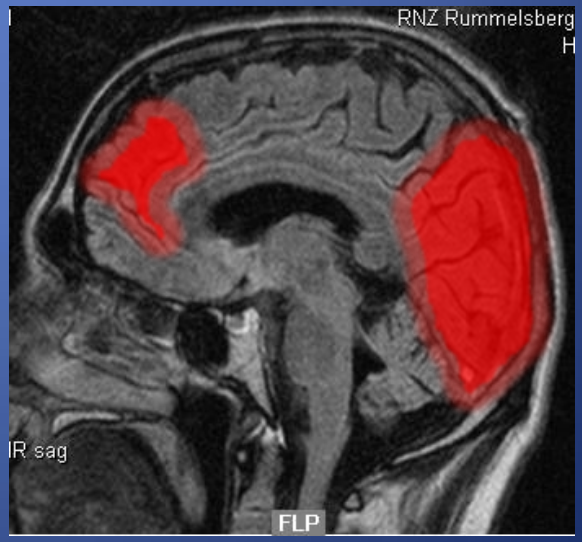
3.3. LKD





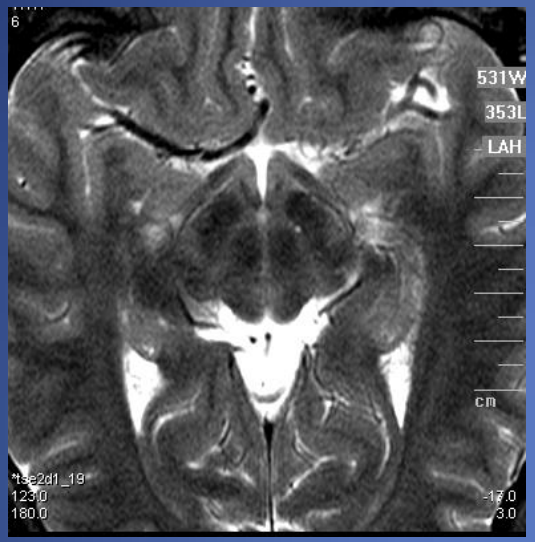


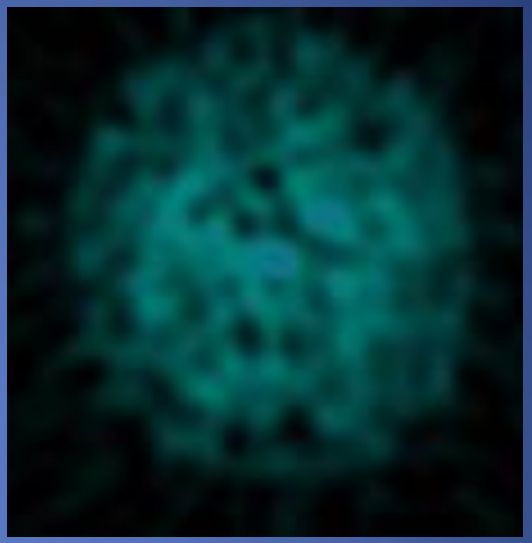


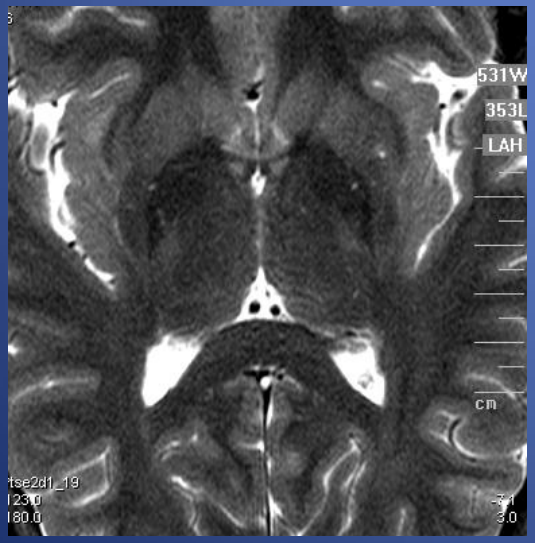
RNZ

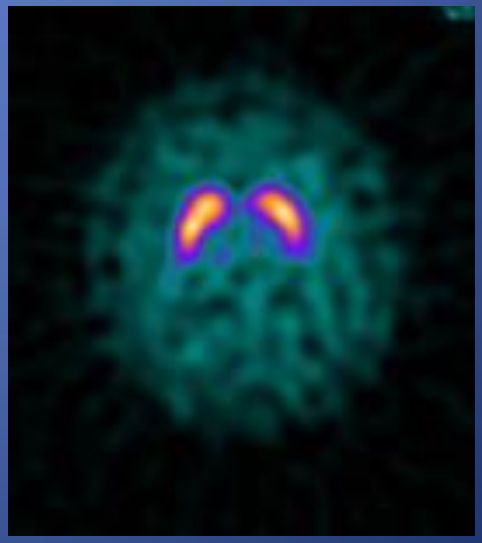
3. Bildgebung

3.4. MP



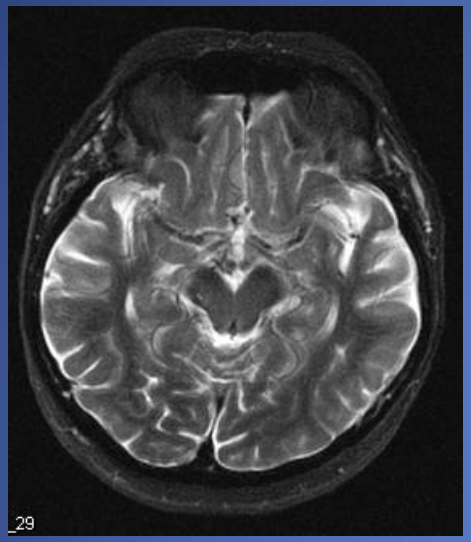


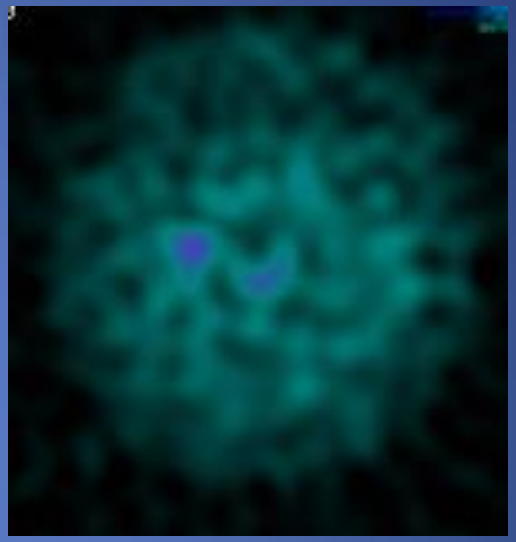


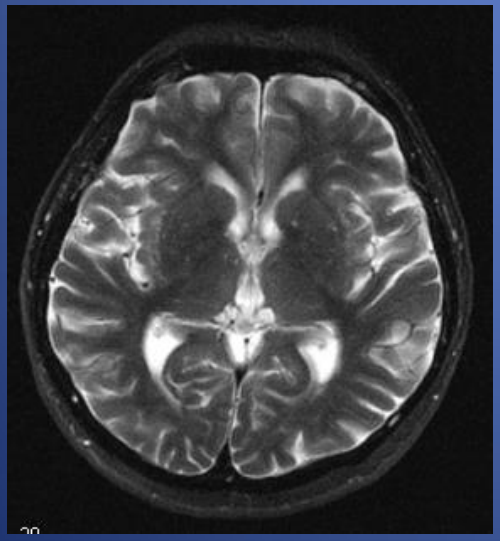


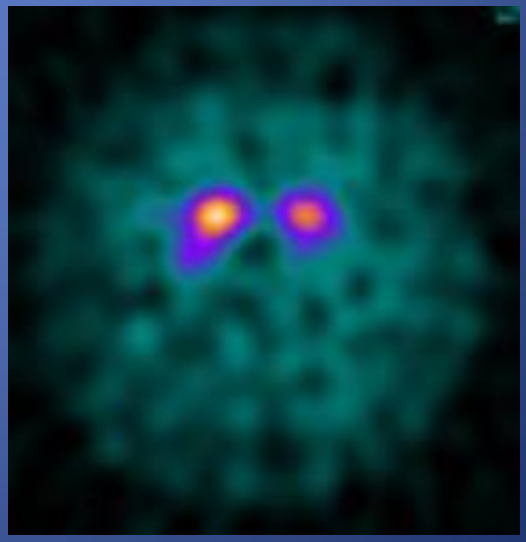
3. Bildgebung

3.4. MP



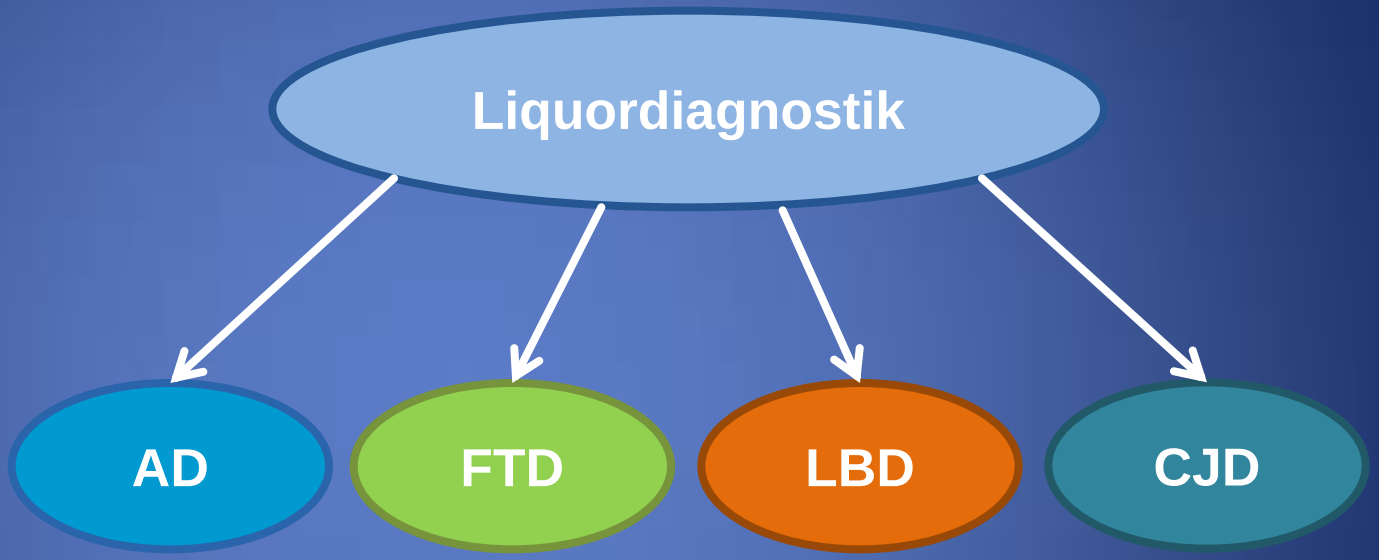






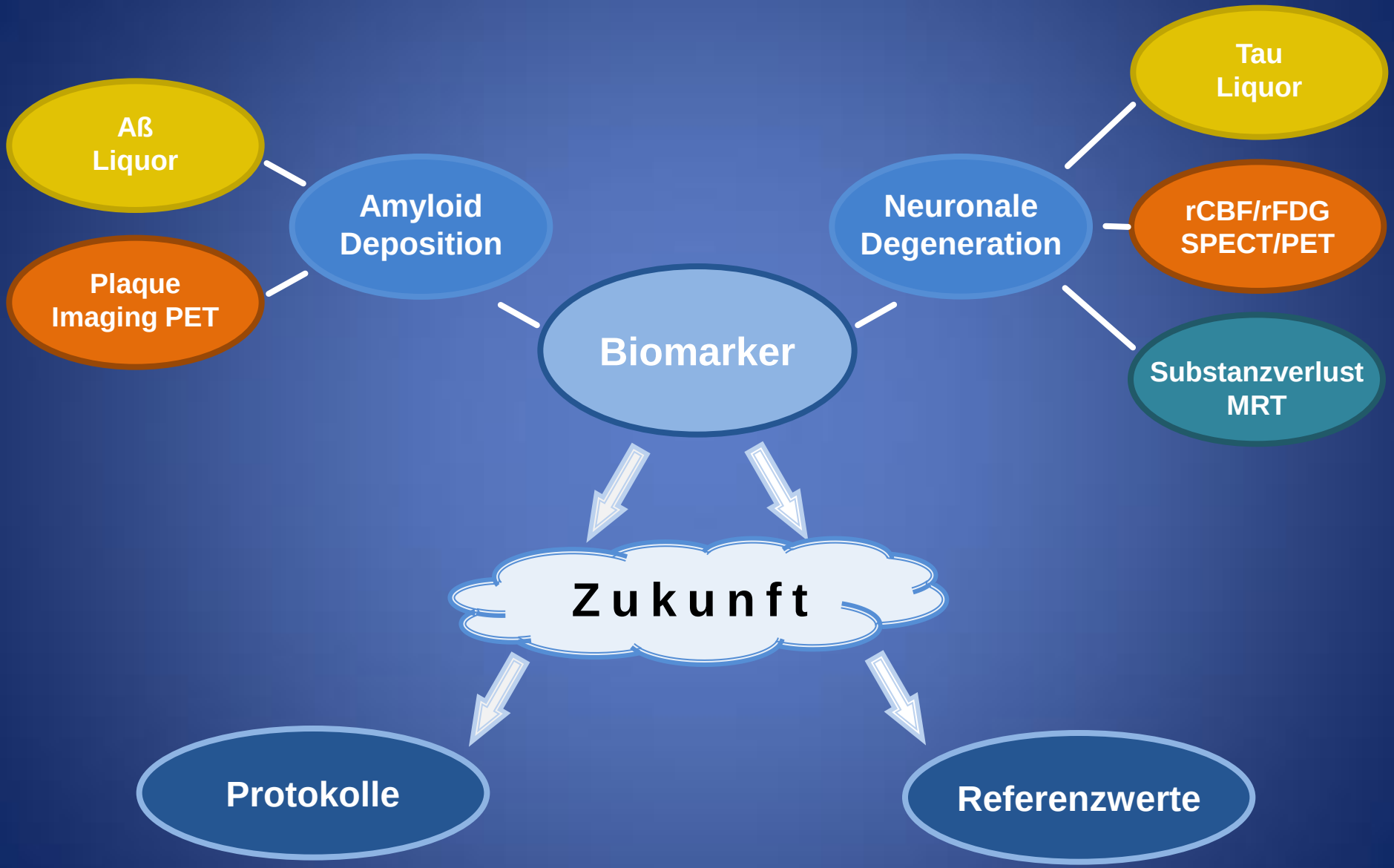
4. Zusammenfassung

- Liquordiagnostik -



	AD		FTD		LBD		CJD	
ß Amyloid [pg/ml]	↓	< 500	↓	< 500	↓	< 500		
t Tau Protein [pg/ml]	↓	> 600	↑↑	> 600	↑	> 600	↑↑	> 5000
p Tau Protein [pg/ml]	↑↑	> 60	→	< 60	↑	> 60		

4. Zusammenfassung



Bildbezug

Die histologischen Schnitte wurden dem Autor freundlicherweise von Herrn Prof. Dr. med. Wolfgang Brück, Institut für Neuropathologie, Universität Göttingen überlassen.