Universitair Ziekenhuis Antwerpen
Dienst Neus-Keel-Oorziekten

Universiteit Antwerpen
Translationele Neurowetenschappen

Update rond diagnostiek Duizeligheid

Prof. dr. Vincent Van Rompaey

Hoofddocent Otologie UAntwerpen
Adjunct-Diensthoofd Neus-Keel-Oorziekten UZA
Fundamenteel Klinisch Mandaat Fonds Wetenschappelijk Onderzoek

Zaterdag 18 november 2023
Antwerpen

Handvaten voor beleid bij de duizelige patiënt

- **Stel de juiste vragen.**
- **Gericht klinisch vestibulair onderzoek.**
- **Behandel de pathofysiologie.**
- **Evalueer evolutie/compensatie.**

Handvaten voor beleid bij de duizelige patiënt

- **Stel de juiste vragen.**
- **Gericht klinisch vestibulair onderzoek.**
- **Behandel de pathofysiologie.**
- **Evalueer evolutie/compensatie.**

Eerstelijn

Definition

1. Adopt the uniform ICVD nomenclature for the work-up and communication of vestibular symptoms.

Diagnosis

2. Perform a medication review to identify correctable causes of dizziness.
3. Ask for migraine symptoms and, if present, consider vestibular migraine.
4. Always inquire if there is another contributory cause of dizziness.
5. Use the HINTS bedside test to differentiate between vestibular neuritis and stroke.
6. Avoid standard blood analysis in patients with vestibular symptoms.

Treatment

7. Use the effective and safe Epley manoeuvre to treat BPPV of the posterior canal.
8. Use effective and safe vestibular rehabilitation to treat chronic vertigo.
9. When treating chronic vertigo, use exercise not drugs.

Prognosis

10. Employ the 10-item DHI-S questionnaire, not only to assess current handicap and treatment effect, but also to identify patients at risk of an unfavorable outcome.

Front Neurol. 2021 Feb 12;12:642137.

Vestibulaire migraine

Acute unilaterale vestibulopathie
(neuronitis vestibular)

Ziekte van Menière

Hersenstaminfarct

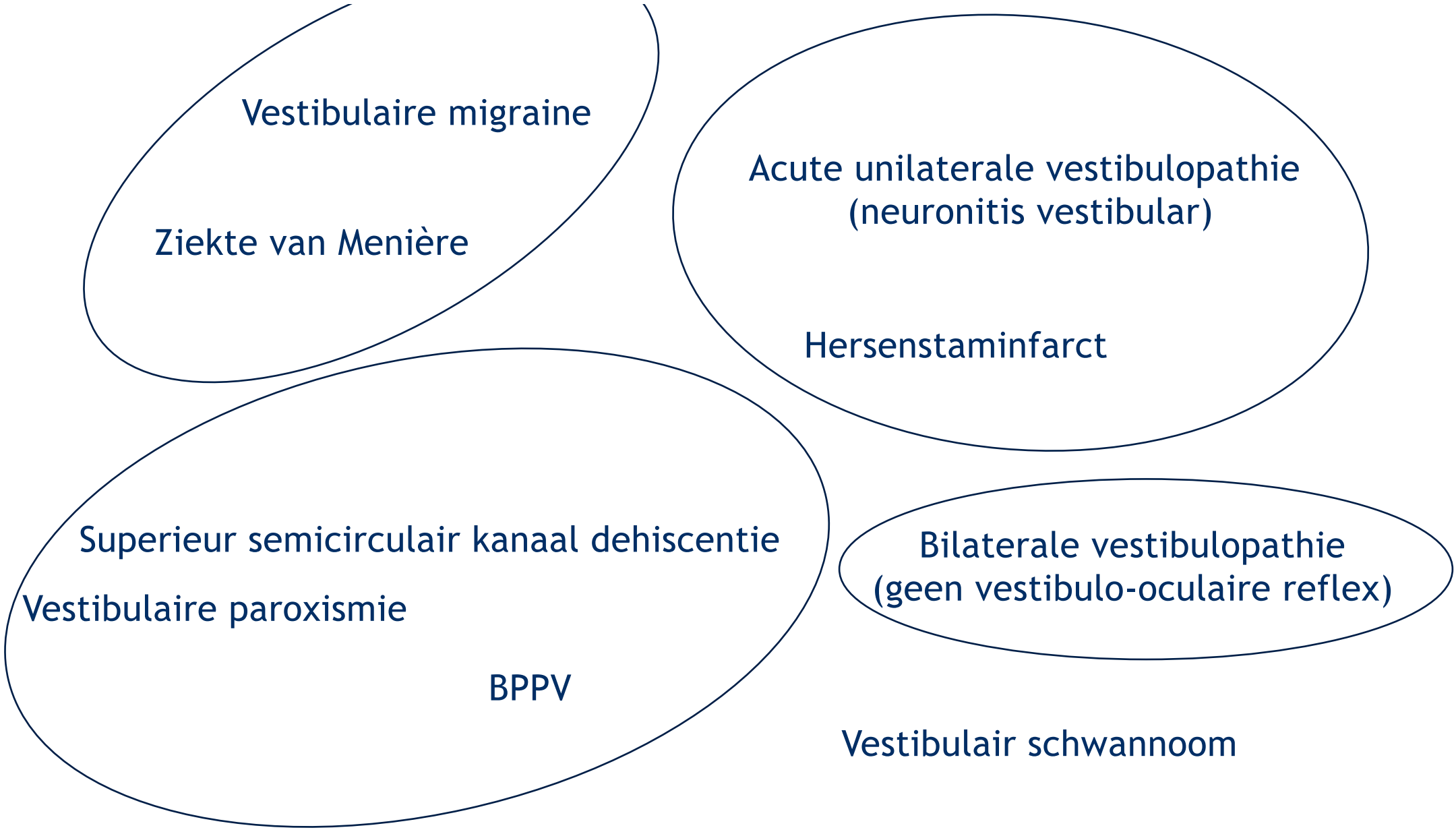
Superieur semicirculair kanaal dehiscentie

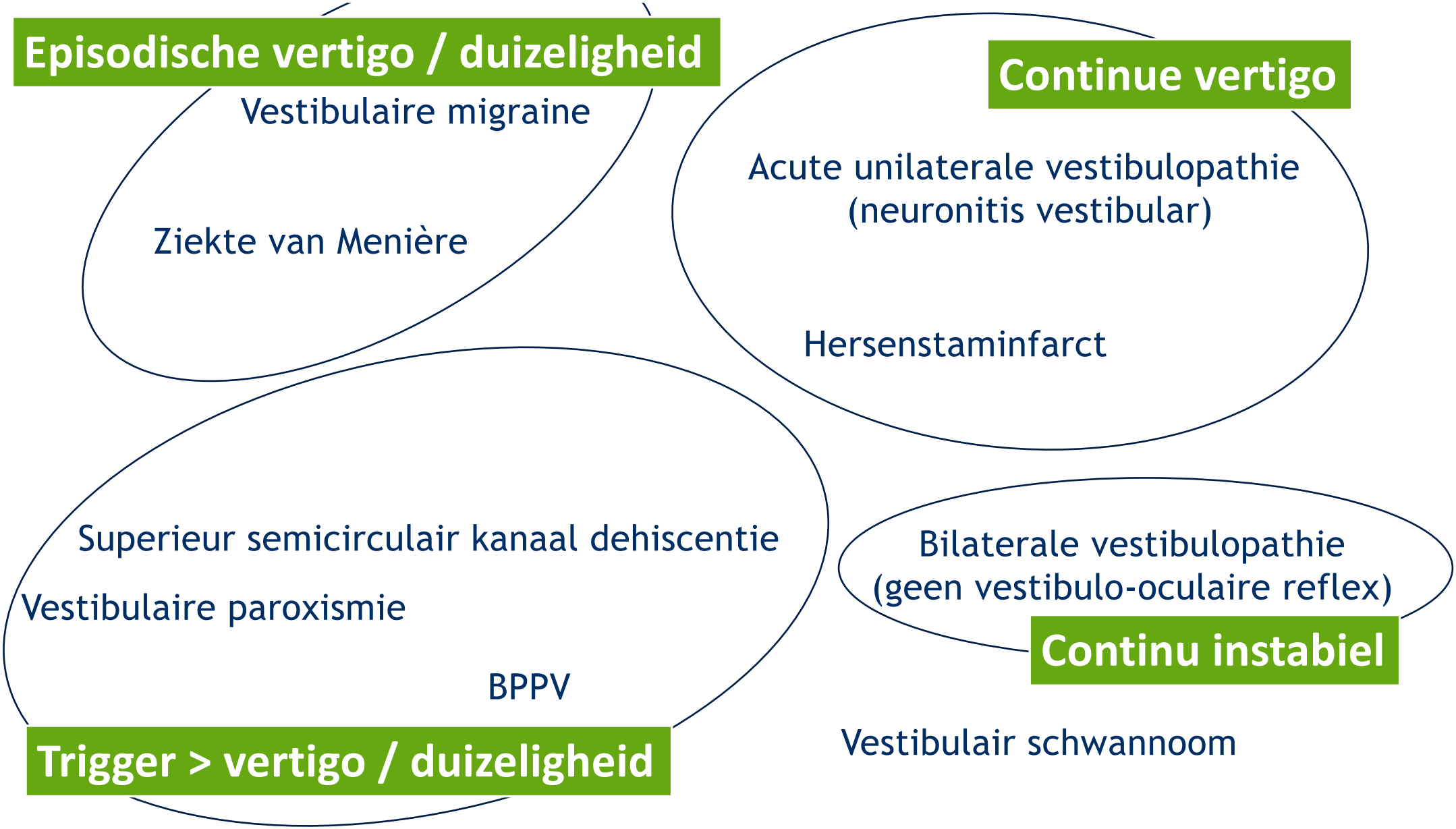
Bilaterale vestibulopathie
(geen vestibulo-oculaire reflex)

Vestibulaire paroxismie

BPPV

Vestibulair schwannoom


Vestibulaire migraine
Ziekte van Menière
Acute unilaterale vestibulopathie
(neuronitis vestibular)
Hersenstaminfarct
Superieur semicirculair kanaal dehiscentie
Vestibulaire paroxismie
BPPV
Bilaterale vestibulopathie
(geen vestibulo-oculaire reflex)
Vestibulair schwannoom


Episodische vertigo / duizeligheid
Vestibulaire migraine
Ziekte van Menière
Continue vertigo
Acute unilaterale vestibulopathie
(neuronitis vestibular)
Hersenstaminfarct
Superieur semicirculair kanaal dehiscentie
Vestibulaire paroxismie
BPPV
Trigger > vertigo / duizeligheid
Bilaterale vestibulopathie
(geen vestibulo-oculaire reflex)
Continu instabiel
Vestibulair schwannoom

Stel de juiste vragen

Beschrijvingen van de kwaliteit van duizeligheid zijn onduidelijk, inconsistent en onbetrouwbaar.

Beschrijvingen van de kwaliteit van duizeligheid door 4 vragen in verschillende formaten (open vragen, meerkeuzevragen, meerkeuzevragen en gerichte vragen).

- **62% selecteerde meer dan 1 type duizeligheid op de meerkeuzevraag;**
- **54% koos een ander type dan eerder in de open beschrijving aangegeven;**
- **52% koos een ander antwoord bij de hertest, ongeveer 6 minuten later.**

Ter vergelijking, rapportages over de duur van duizeligheid en de triggers waren duidelijk, consistent en betrouwbaar.

Mayo Clin Proc. 2007 Nov;82(11):1329-40.

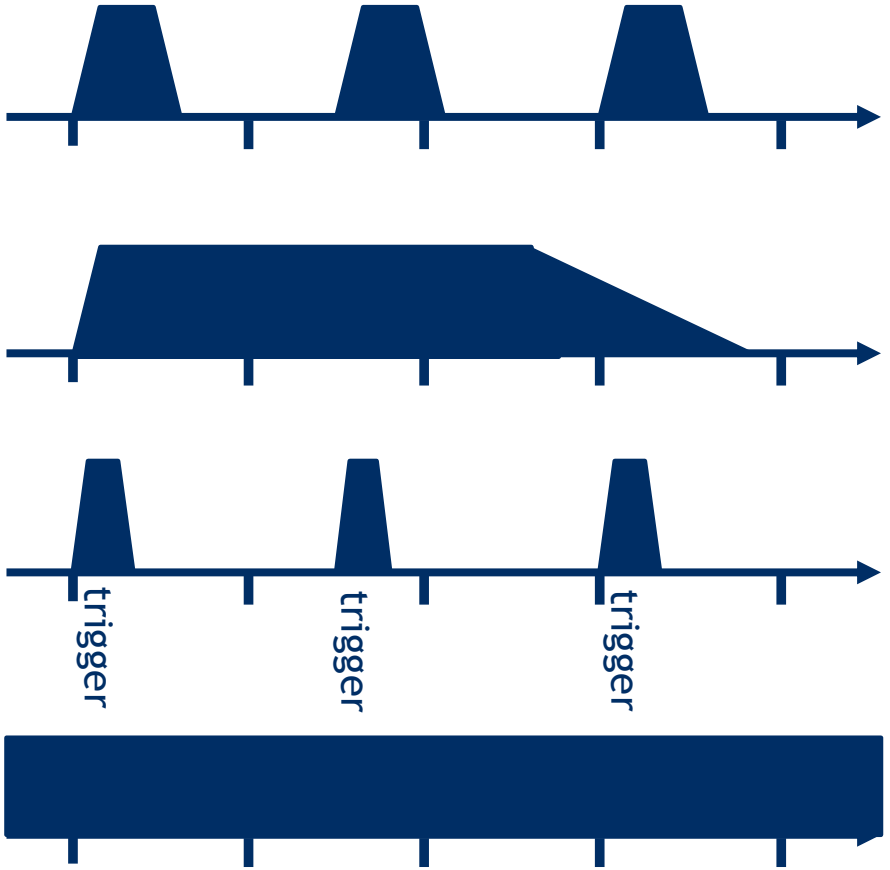
Handvaten voor beleid bij de duizelige patiënt

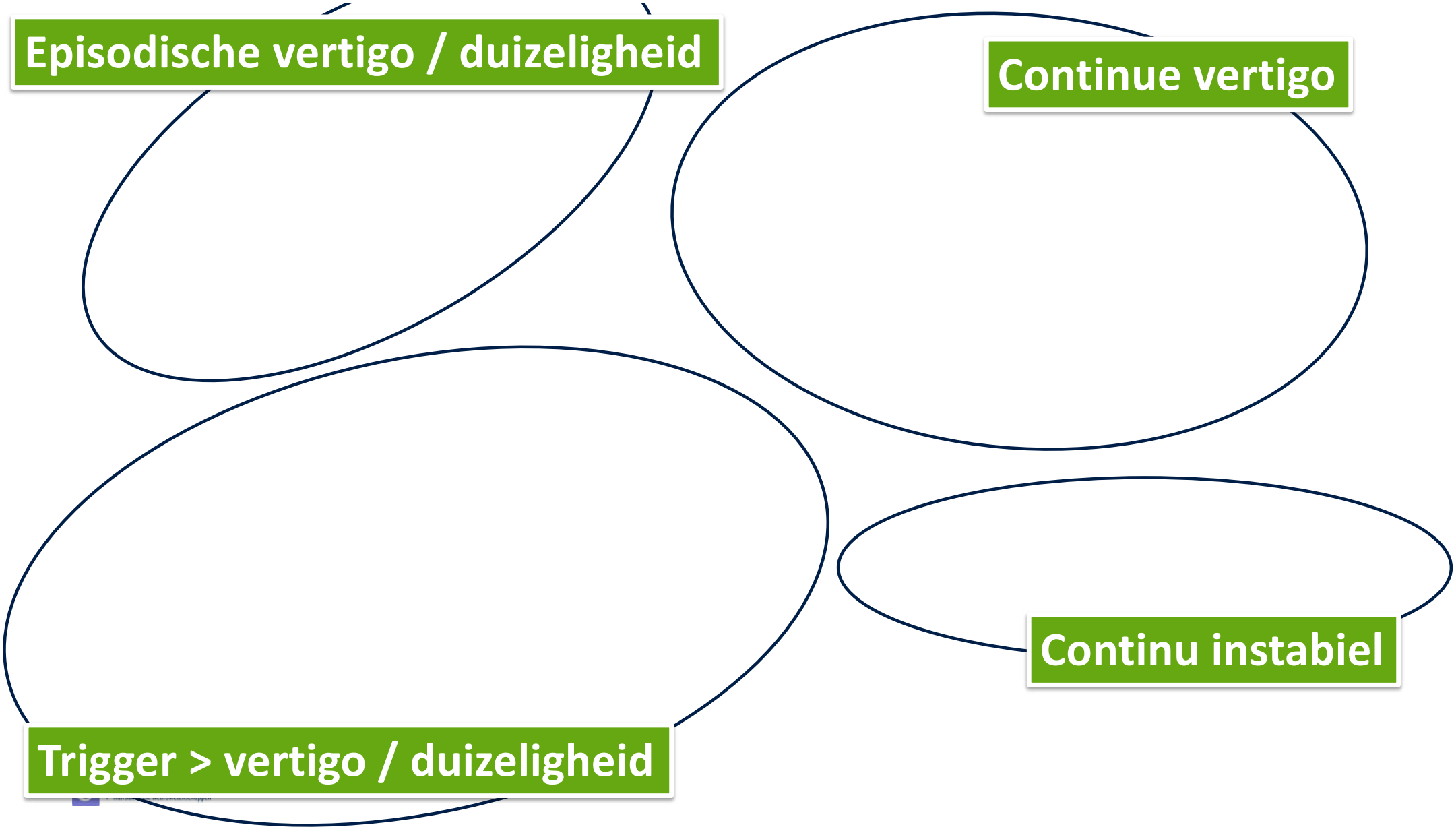
Episodische vertigo / duizeligheid

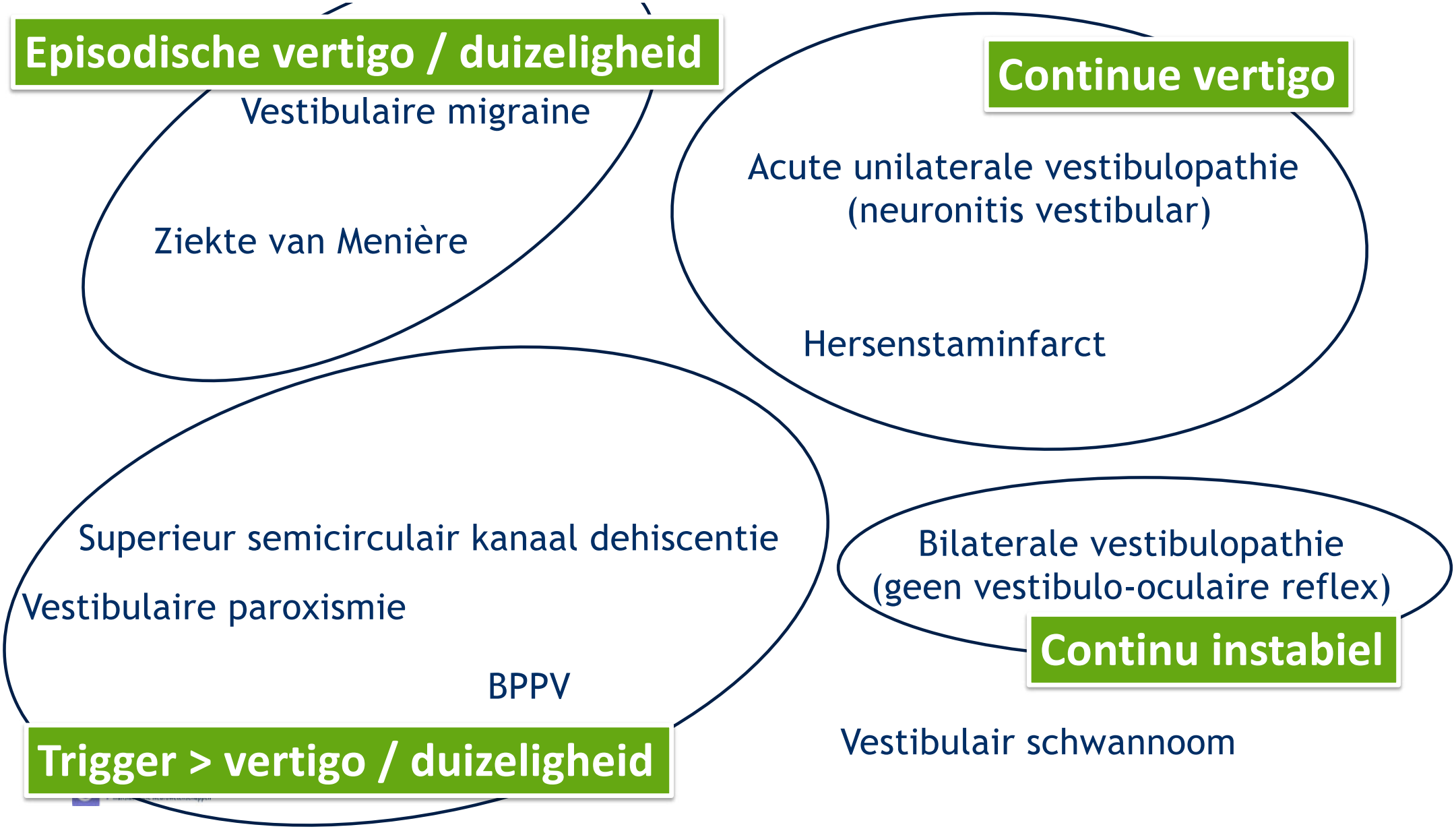
Continue vertigo

Trigger > vertigo / duizeligheid

Continu onstabiel




Episodische vertigo / duizeligheid
Continue vertigo
Continu instabiel
Trigger > vertigo / duizeligheid


Episodische vertigo / duizeligheid
Vestibulaire migraine
Ziekte van Menière
Continue vertigo
Acute unilaterale vestibulopathie
(neuronitis vestibular)
Hersenstaminfarct
Superieur semicirculair kanaal dehiscentie
Vestibulaire paroxismie
BPPV
Trigger > vertigo / duizeligheid
Bilaterale vestibulopathie
(geen vestibulo-oculaire reflex)
Continu instabiel
Vestibulair schwannoom

Stel de juiste vragen

Geassocieerde audiologische klachten

- Gehoorverlies, tinnitus, drukgevoel, otorree, etc.

Geassocieerde neurologische klachten

- Visueel aura, (migraine-)hoofdpijn, paresthesieën, etc.
- Facialisparese of –paralyse, etc.

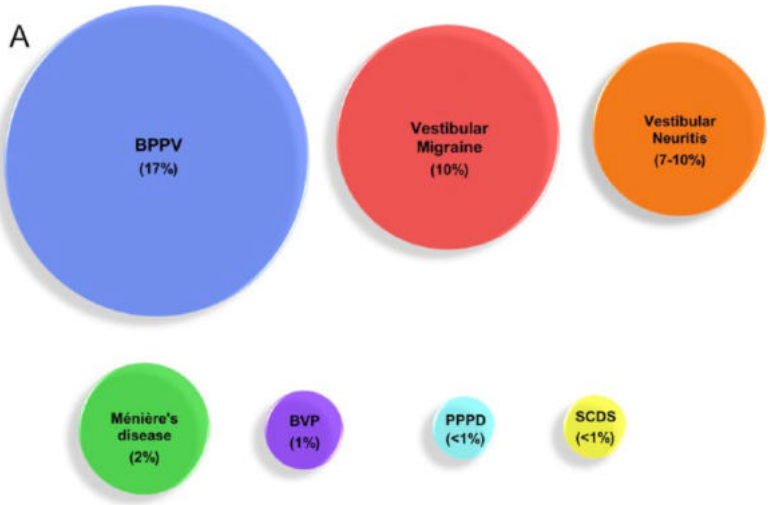
Mayo Clin Proc. 2007 Nov;82(11):1329-40.

International Classification of Vestibular Disorders

1. Classification of Vestibular Symptoms: Towards an International Classification of Vestibular Disorders
2. Vestibular Migraine
3. Meniére's Disease
4. Benign Paroxysmal Positional Vertigo
5. Vestibular Paroxysmia
6. Persistent postural-perceptual dizziness (PPPD)
7. Bilateral vestibulopathy: Diagnostic criteria
8. Classification of Vestibular Signs and Examination Techniques: Nystagmus and Nystagmus-like Movements
9. Hemodynamic Orthostatic Dizziness/Vertigo: Diagnostic Criteria
10. Presbyvestibulopathy: Diagnostic Criteria
11. Mal de Débarquement Syndrome
12. Vestibular Migraine of Childhood and Recurrent Vertigo of Childhood
13. Superior Semicircular Canal Sehiscence Syndrome
14. Motion Sickness Diagnostic Criteria
15. Vestibular Migraine: Diagnostic Criteria (Update)
16. Vascular Vertigo and Dizziness: Diagnostic Criteria
17. Acute unilateral vestibulopathy/vestibular neuritis: Diagnostic criteria
18. The Bárány Society position on 'Cervical Dizziness'

Diagnostische criteria…

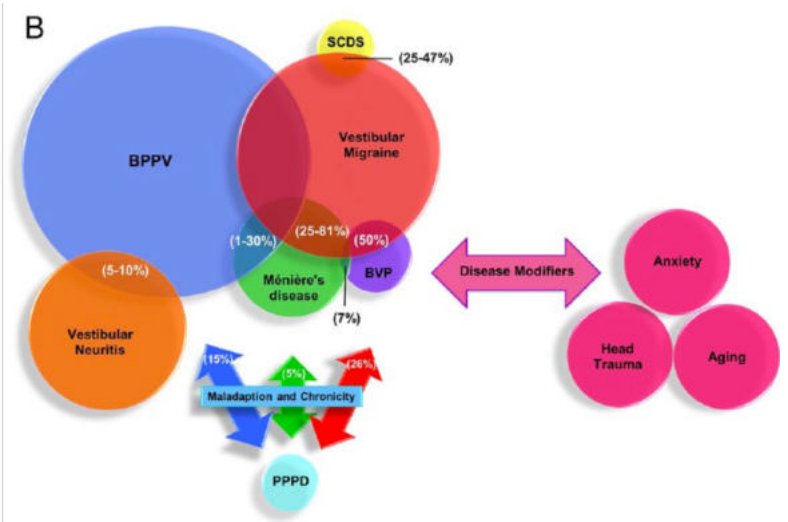
Overlap!!!



Annals of Otology, Rhinology & Laryng
1–10
© The Author(s) 2019
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0003489419845014
journals.sagepub.com/home/aor
SAGE

The Interrelations Between Different Causes of Dizziness: A Conceptual Framework for Understanding Vestibular Disorders

Richard T. Zhu, MD[1], Vincent Van Rompaey, MD, PhD[2,3], Bryan K. Ward, MD[4], Raymond Van de Berg, MD[5], Paul Van de Heyning, MD, PhD[2,3], and Jeffrey D. Sharon, MD[1]

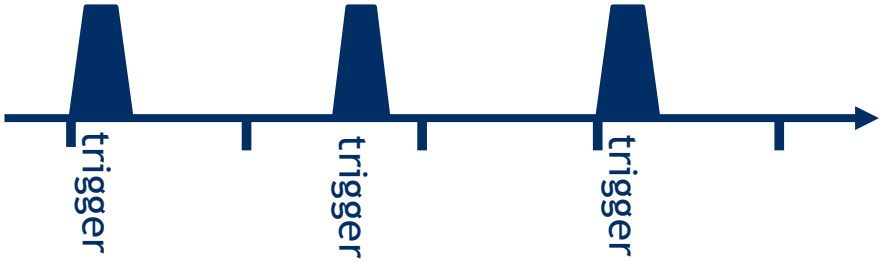


Complexe patronen = anamnese

Menière + Vestibulaire M

PPPD na AUVP

BPPV in gekende Menière



...

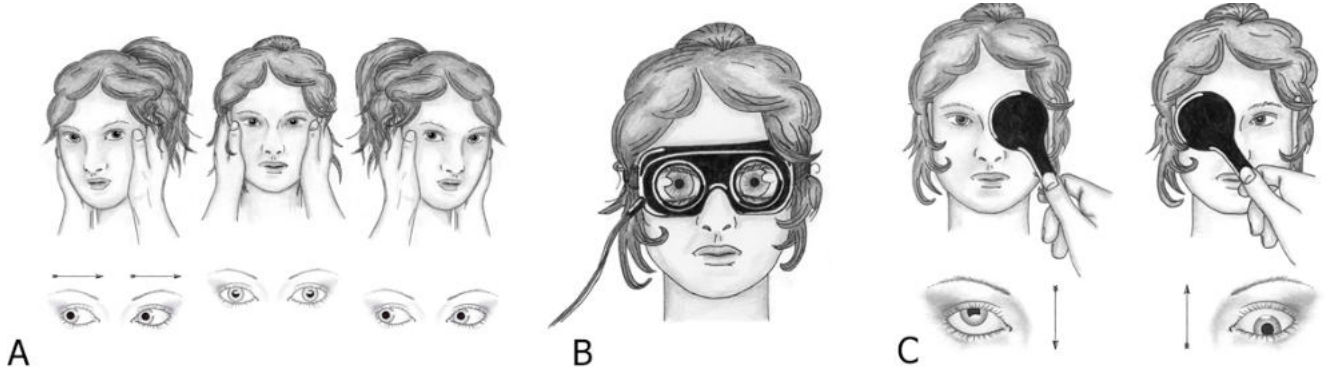
Handvaten voor beleid bij de duizelige patiënt

- **Stel de juiste vragen.**
- **Gericht klinisch vestibulair onderzoek.**
- **Behandel de pathofysiologie.**
- **Evalueer evolutie/compensatie.**

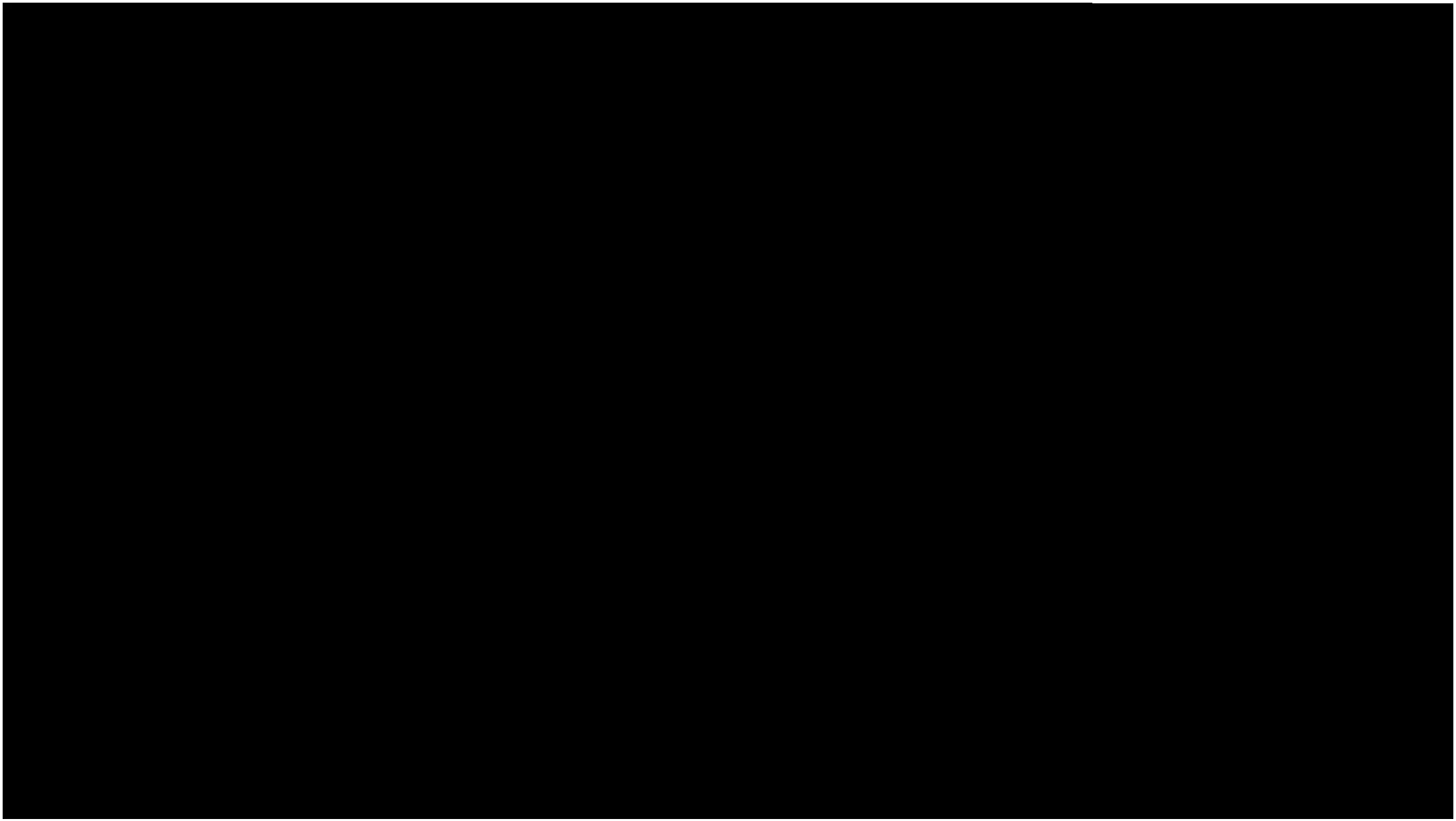
Gericht klinisch vestibulair onderzoek

Anamnese kan u al in de richting wijzen van een diagnose

- Dix-Hallpike
- HINTS



Mayo Clin Proc. 2007 Nov;82(11):1329-40.



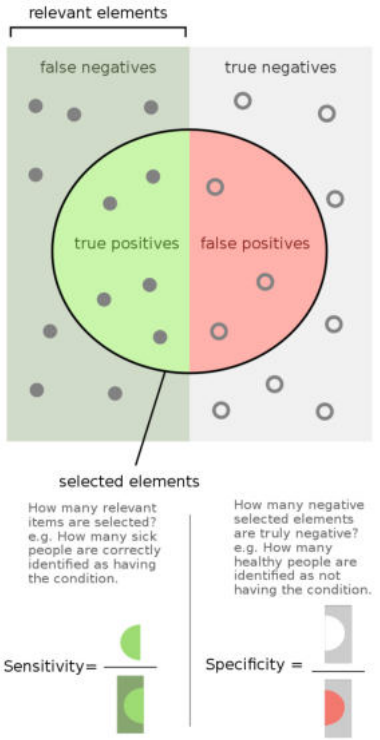
Infarct of acute unilaterale vestibulopathie?

HINTS?
Head-Impulse
Nystagmus
Test-of-Skew

INFARCT?
Impulse Normal
Fast-phase Alternating
Refixation on Cover Test

Table 4. Bedside Signs and Initial MRI With DWI Test Properties for Ischemic Stroke in AVS

	Sensitivity (n=69)	Specificity (n=25)	NLR Stroke (95% CI)
General neurological signs*	19%	100%	0.81 (0.72–0.91)
Obvious oculomotor signs	28%	100%	0.72 (0.63–0.84)
Severe truncal ataxia	33%	100%	0.67 (0.56–0.79)
Any obvious signs	64%†	100%	0.36 (0.27–0.50)
Initial MRI with DWI	88%‡	100%	0.12 (0.06–0.22)
Dangerous bedside HINTS	100%	96%	0.00 (0.00–0.12)

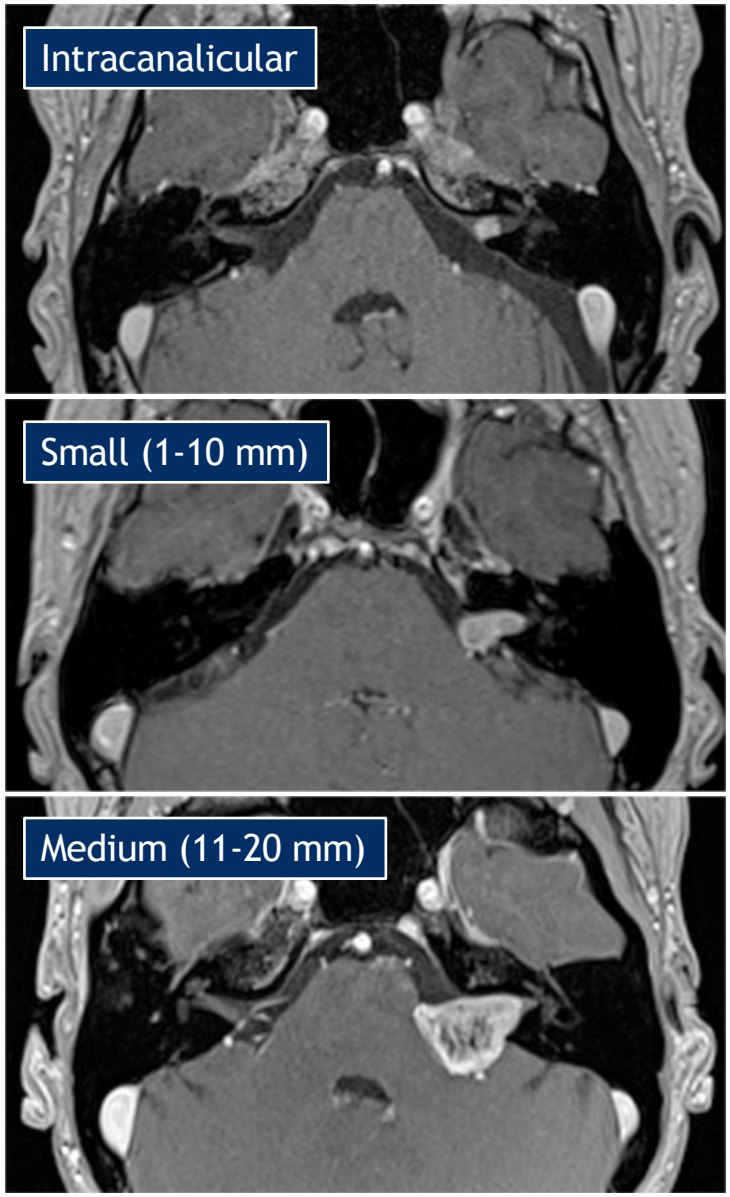


Hersenstaminfarct niet te missen
> vals-negatieven vermijden

Kattah JC • Talkad AV • Wang DZ • Hsieh YH • Newman-Toker DE
HINTS to diagnose stroke in acute vestibular syndrome: bedside oculomotor examination more sensitive than early MRI DWI
Stroke. 2009 Nov;40(11):3504-10

https://www.youtube.com/watch?v=bUzKZEqya1U

Kattah JC • Talkad AV • Wang DZ • Hsieh YH • Newman-Toker DE
HINTS to diagnose stroke in acute vestibular syndrome: bedside oculomotor examination more sensitive than early MRI DWI
Stroke. 2009 Nov;40(11):3504-10


Intracanalicular
Small (1-10 mm)
Medium (11-20 mm)
Moderate (21-30 mm)
Large (31-40 mm)
Giant (>40 mm)

Handvaten voor beleid bij de duizelige patiënt

- **Stel de juiste vragen.**
- **Gericht klinisch vestibulair onderzoek.**
- **<u>Behandel de pathofysiologie.</u>**
- **Evalueer evolutie/compensatie.**

Handvaten voor beleid bij de duizelige patiënt

- **Stel de juiste vragen.**
- **Gericht klinisch vestibulair onderzoek.**
- **<u>Behandel de pathofysiologie.</u>**
- **Evalueer evolutie/compensatie.**

BPPV

Ziekte van Menière

Vestibulaire migraine

Etc.

Review > Cochrane Database Syst Rev. 2023 Feb 27;2(2):CD015244.
doi: 10.1002/14651858.CD015244.pub2.

Lifestyle and dietary interventions for Ménière's disease

Katie E Webster [1], Ben George [2], Ambrose Lee [3], Kevin Galbraith [1], Natasha A Harrington-Benton [4], Owen Judd [5], Diego Kaski [6], Otto R Maarsingh [7], Samuel MacKeith [8], Louisa Murdin [9], Jaydip Ray [10], Vincent A Van Vugt [7], Martin J Burton [11]

Affiliations + expand
PMID: 36848645 PMCID: PMC9969956 DOI: 10.1002/14651858.CD015244.pub2

Review > Cochrane Database Syst Rev. 2023 Feb 27;2(2):CD015246.
doi: 10.1002/14651858.CD015246.pub2.

Intratympanic gentamicin for Ménière's disease

Katie E Webster [1], Kevin Galbraith [1], Ambrose Lee [2], Natasha A Harrington-Benton [3], Owen Judd [4], Diego Kaski [5], Otto R Maarsingh [6], Samuel MacKeith [7], Jaydip Ray [8], Vincent A Van Vugt [6], Martin J Burton [9]

Affiliations + expand
PMID: 36847592 PMCID: PMC9969977 DOI: 10.1002/14651858.CD015246.pub2

...

Review > Cochrane Database Syst Rev. 2023 Feb 27;2(2):CD015245.
doi: 10.1002/14651858.CD015245.pub2.

Intratympanic corticosteroids for Ménière's disease

Katie E Webster [1], Ambrose Lee [2], Kevin Galbraith [1], Natasha A Harrington-Benton [3], Owen Judd [4], Diego Kaski [5], Otto R Ma
Vincent A Van Vugt [6], Brian Westerberg

Affiliations + expand
PMID: 36847608 PMCID: PMC996995

Cochrane Library

Review > Cochrane Database Syst Rev. 2023 Feb 24;2
doi: 10.1002/14651858.CD015249.pub2.

Surgical interventions for Ménière's disease

Ambrose Lee [1], Katie E Webster [2], Ben George [3], Natasha A Harrington-Benton [4], Owen Judd Diego Kaski [6], Otto R Maarsingh [7], Samuel MacKeith [8], Jaydip Ray [9], Vincent A Van Vugt [7], Martin J Burton [10]

Affiliations + expand
PMID: 36825750 PMCID: PMC9955726 DOI: 10.1002/14651858.CD015249.pub2

Review > Cochrane Database Syst Rev. 2023 Feb 23;2(2):CD015171.
doi: 10.1002/14651858.CD015171.pub2.

Systemic pharmacological interventions for Ménière's disease

Katie E Webster [1], Kevin Galbraith [1], Natasha A Harrington-Benton [2], Owen Judd [3], Diego Kaski [4], Otto R Maarsingh [5], Samuel MacKeith [6], Jaydip Ray [7], Vincent A Van Vugt [5], Martin J Burton [8]

Affiliations + expand
PMID: 36827524 PMCID: PMC9948543 DOI: 10.1002/14651858.CD015171.pub2

Review > Cochrane Database Syst Rev. 2023 Feb 27;2(2):CD015244.
doi: 10.1002/14651858.CD015244.pub2.

Lifestyle and dietary interventions for Ménière's disease

Katie E Webster [1], Ben George [2], Ambrose Lee [3], Kevin Galbraith [1], Natasha A Harrington-Benton [4], Owen Judd [5], Diego Kaski [6], Otto R Maarsingh [7], Samuel MacKeith [8], Louisa Murdin [9], Jaydip Ray [10], Vincent A Van Vugt [7], Martin J Burton [11]

Affiliations + expand
PMID: 36848645 PMCID: PMC9969956 DOI: 10.1002/14651858.CD015244.pub2

Review > Cochrane Database Syst Rev. 2023 Feb 27;2(2):CD015245.
doi: 10.1002/14651858.CD015245.pub2.

Intratympanic corticosteroids for Ménière's disease

Katie E Webster [1], Ambrose Lee [2], Kevin Galbraith [1], Natasha A Harrington-Benton [3], Owen Judd [4], Diego Kaski [5], Otto R Ma
Vincent A Van Vugt [6], Brian Westerberg

Affiliations + expand
PMID: 36847608 PMCID: PMC996995

Review > Cochrane Database Syst Rev. 2023 Feb 24;2
doi: 10.1002/14651858.CD015249.pub2.

rventions for Ménière's disease

Webster [2], Ben George [3], Natasha A Harrington-Benton [4], Owen Judd
laarsingh [7], Samuel MacKeith [8], Jaydip Ray [9], Vincent A Van Vugt [7],

ID: PMC9955726 DOI: 10.1002/14651858.CD015249.pub2

> Cochrane Database Syst Rev. 2023 Feb 23;2(2):CD015171.
02/14651858.CD015171.pub2.

Vincent A Van Vugt [6], Martin J Burton [9]

Affiliations + expand
PMID: 36847592 PMCID: PMC9969977 DOI: 10.1002/14651858.CD015

PMID: 36827524 PMCID: PMC9948543 DOI: 10.1002/14651858.CD015171.pub2

Cochrane Library

"Uncertain"
"Evidence of very low and low quality"

...

"Core Menière's disease outcome set needed"
"Harms versus benefits"

Vestibulaire migraine

Ten minste 5 episoden met vestibulaire symptomen van matige tot ernstige intensiteit, gedurende 5 min - 72 uur.

Huidige of eerdere voorgeschiedenis van migraine met/zonder aura (ICHD)

Een of meer migraine kenmerken symptomen met ten minste 50% van de vestibulaire episodes:

- hoofdpijn met 2 of meer van kenmerken: eenzijdig, pulserend, matige of ernstige pijnintensiteit, verergering door routinematige fysieke activiteit.
- fotofobie en fonofobie
- visuele aura

Ziekte van Menière

Definitieve

≥ 2 definitieve spontane episoden van duizeligheid ≥ 20 min tot 12 uur

audiometrisch gedocumenteerd laag- tot middenfrequent perceptief gehoorverlies ten minste één keer voor, tijdens of na een episode

fluctuerende auditieve symptomen (gehoor, oorsuizen of volheid) in het aangedane oor

Waarschijnlijk

2 of meer episoden van duizeligheid, die elk 20 minuten tot 24 uur duren

fluctuerende auditieve symptomen (gehoor, oorsuizen of volheid) in aangedaan oor

Ziekte van Menière

Table 2 | Postrandomisation data regarding initial attack frequency and treatment compliance (FAS population)

Characteristics	Placebo (n=72)	Low dose betahistine (n=70)†	High dose betahistine (n=72)	P‡
Pseudobaseline*				
No of attacks per 30 days				
Mean (standard deviation)	6.2 (6.9)	5.8 (4.6)	5.1 (4.5)	
Median (range)	4.5 (0-37)	5.0 (0-19)	4.0 (0-23)	0.625
Missing (No)	6	1	3	
Follow-up				
Treatment duration (days)				
Mean (standard deviation)	222.5 (87.5)	225.8 (89.0)	215.8 (98.8)	
Median (range)	266.5 (2.0-348.0)	269.0 (0-317.0)	269.0 (2.0-311.0)	0.824

*Pseudobaseline=data documented during the first treatment month (with day 1 being the day of first study drug intake). Pretreatment attack data were not available.
†One patient from the full analysis set refused to take the allocated treatment, no postbaseline data available. For this patient, treatment duration was set zero.
‡Kruskal-Wallis rank sum test applied.

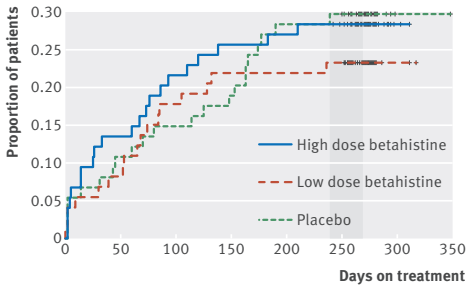


Fig 2 | Proportion and timing of patient withdrawal for all 221 patients randomised to each treatment group. According to the protocol, 270 days was the preplanned treatment duration. An event was defined as end of treatment before day 241 (start of grey region), according to the prespecified minimum exposure to the treatment regimen defined as per protocol and the corresponding definition of a major protocol deviation

the definition for per protocol). For example, about 10%

- **Patient allocation**
  - N=74 placebo
  - N = 73 low-dose betahistine 2 × 24 mg daily
  - N = 74 high-dose betahistine 3 × 48 mg daily
- **During 9 months, primary outcome number of attacks per 30 days**
- **No statistically significant difference**

OPEN ACCESS

Efficacy and safety of betahistine treatment in patients with Meniere's disease: primary results of a long term, multicentre, double blind, randomised, placebo controlled, dose defining trial (BEMED trial)

Christine Adrion,[1,2] Carolin Simone Fischer,[1] Judith Wagner,[3] Robert Gürkov,[4] Ulrich Mansmann,[2] Michael Strupp[1,3] On behalf of the BEMED study group

Handvaten voor beleid bij de duizelige patiënt

- **Stel de juiste vragen.**
- **Gericht klinisch vestibulair onderzoek.**
- **Behandel de pathofysiologie.**
- **<u>Evalueer evolutie/compensatie.</u>**