

# Nierarterie stenose **WAAROM NIET (BE)HANDELEN MET PTA?!**

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# Disclosures M. Lafeber

<ul style="list-style-type: none"><li>- Voor bijeenkomst mogelijk relevante relaties met bedrijven</li></ul>	<ul style="list-style-type: none"><li>- <b>GEEN CONFLITERENDE BELANGEN</b><ul style="list-style-type: none"><li>- Internist Erasmus MC</li><li>- Redactiecommissie Geneesmiddelen Bulletin</li><li>- Wetenschappelijke Raad Farmacotherapeutisch kompas</li><li>- Consulent BENU apotheken</li><li>- Consulent klinische farmacologie</li></ul></li></ul>
<ul style="list-style-type: none"><li>- Sponsoring of onderzoeksgeld</li><li>- Honorarium of andere (financiële) vergoeding</li><li>- Aandeelhouder</li><li>- Andere relatie</li></ul>	<ul style="list-style-type: none"><li>- <b>GEEN CONFLITERENDE BELANGEN</b><ul style="list-style-type: none"><li>- n.v.t.</li></ul></li></ul>

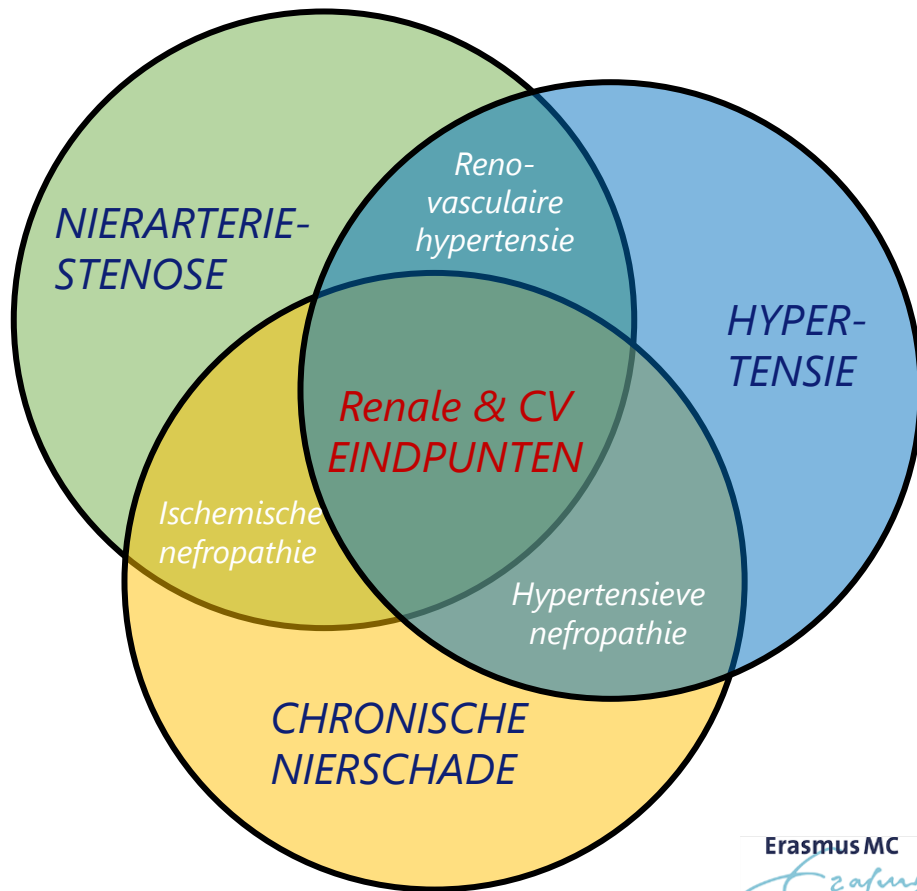
# Nierarteriestenose (NAS)

## Epidemiologie

- $\geq 65$  jr hypertensie (HT)
  - ~7%
- $< 65$  jr therapie resistente HT (TRH)
  - ~6%

## Geassocieerde aandoeningen

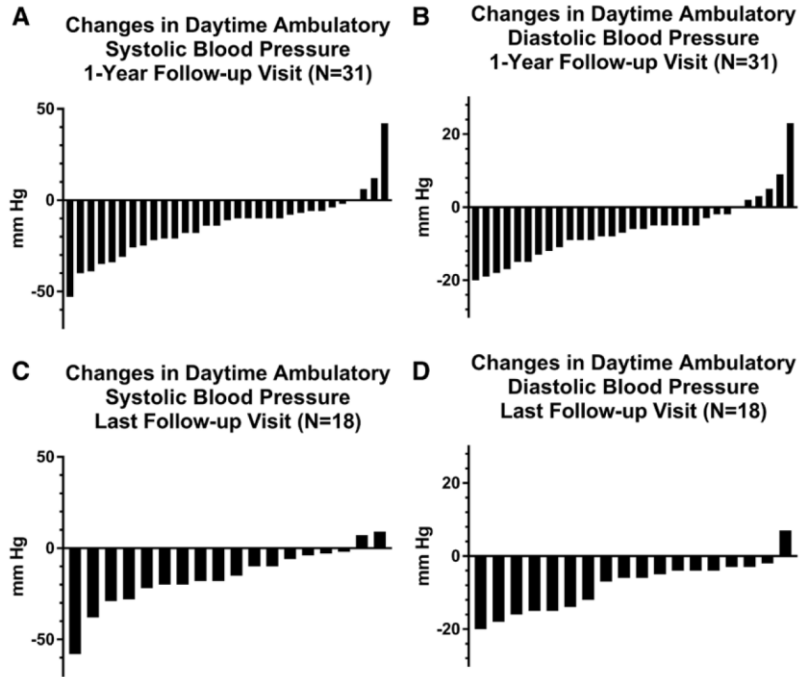
- Chronische nierschade/nierfalen
- Cardiovasculair lijden
  - Cerebrovasculair
  - Coronairlijden
  - Hartfalen



# De magie van (be)handelen

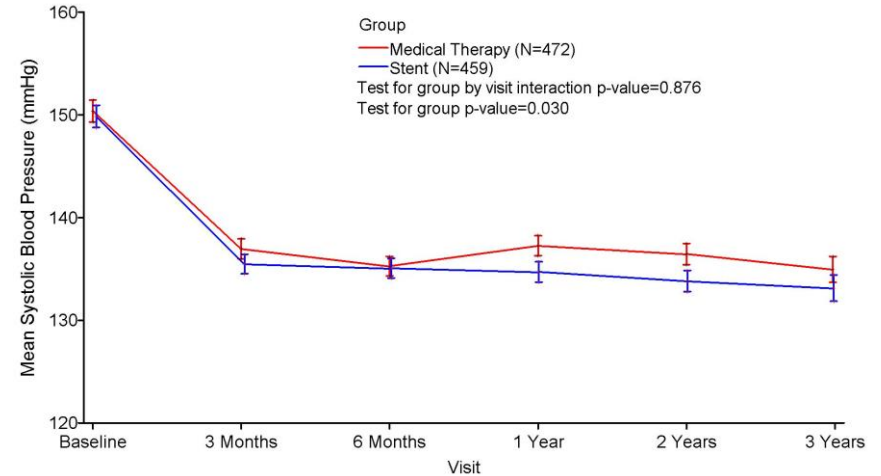
## Inclusie criteria (observationeel)

TRH + >60% stenose; ~20% bilateral NAS



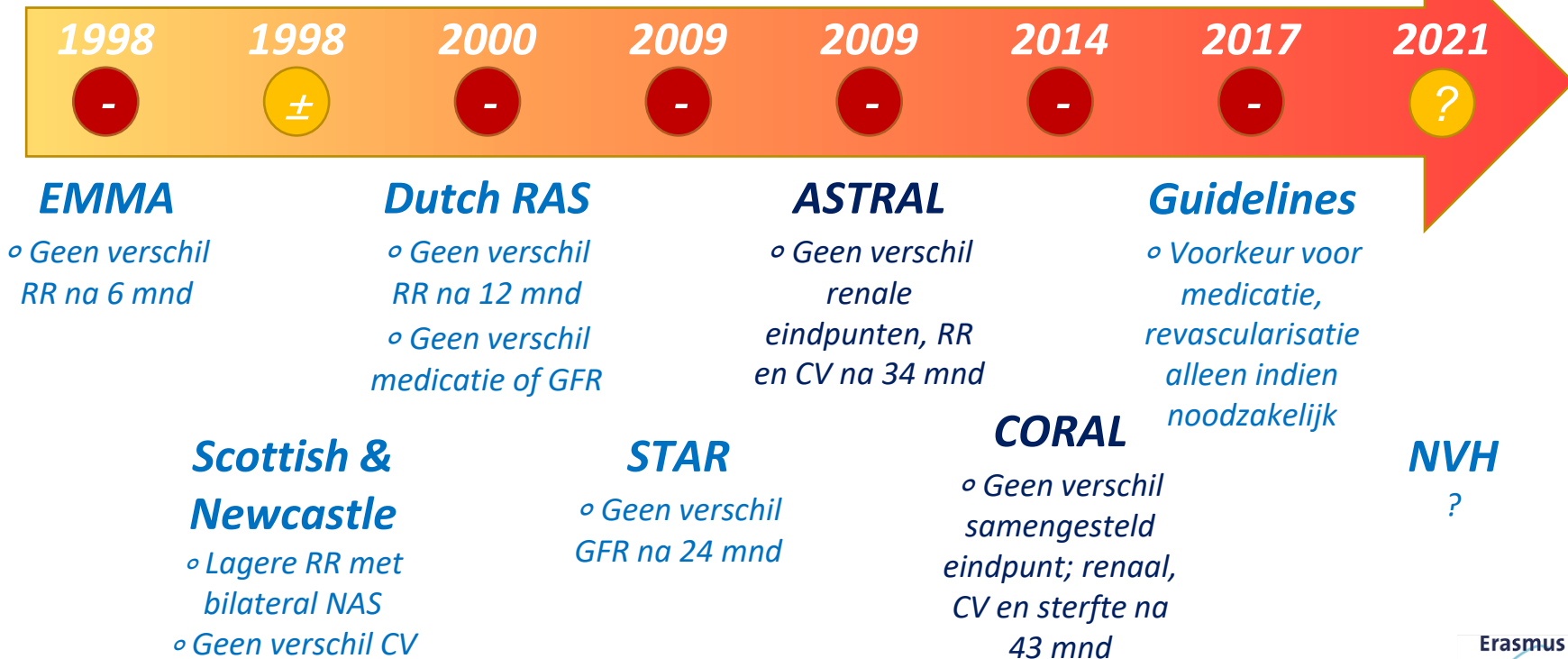
## Inclusiecriteria (RCT)

TRH + >60% stenose; ~20% bilateral NAS



# Blijvende wens om te (be)handelen

Toenemend bewijs tegen winst interventie vs 'usual care'



# Meta-analyse anno 2021

## Inclusiecriteria

1. Gerandomiseerd onderzoek
2. Nierarteriestenose
3. 'Usual care' vs interventie
4. Gepubliceerde studies

## Resultaat

- 9 RCT's
- 2309 patiënten

Selected study	Inclusion criteria
EMMA	<ul style="list-style-type: none"><li>• Diastolic office blood pressure &gt;95 mmHg on anti-hypertensive medication</li><li>• Ccr <math>\geq</math>50 mL/minute</li><li>• A reduction in arterial diameter of &gt;60%</li><li>• A functional kidney on the opposite side with a normal main artery</li></ul>
SNRASCG	<ul style="list-style-type: none"><li>• A minimum diastolic blood pressure of 95 mmHg on two or more anti-hypertensive medications</li><li>• Stenosis of <math>\geq</math>50% in the arteries</li></ul>
DRASTIC	<ul style="list-style-type: none"><li>• Difficult-to-treat hypertension</li><li>• Diastolic blood pressure remained at <math>\geq</math>95 mmHg</li><li>• Unilateral or bilateral renal artery stenosis of at least 50%</li></ul>
STAR	<ul style="list-style-type: none"><li>• Ccr &lt;80 mL/minute</li><li>• A reduction in the renal artery of <math>\geq</math>50%</li></ul>
ASTRAL	Substantial anatomical atherosclerotic stenosis in at least one renal artery
RASCAD	<ul style="list-style-type: none"><li>• Ischemic heart disease</li><li>• Renal artery stenosis &gt;50% and &lt;80%</li></ul>
CORAL	<ul style="list-style-type: none"><li>• Hypertension on two or more anti-hypertensive medications</li><li>• Renal dysfunction (<math>\geq</math>stage 3 chronic kidney disease)</li><li>• Renal artery stenosis &gt;60%</li></ul>
RADAR	<ul style="list-style-type: none"><li>• Renal artery stenosis &gt;70%</li><li>• Estimated glomerular filtration rate &gt;10 mL/minute</li><li>• Hypertension</li></ul>
NITER	<ul style="list-style-type: none"><li>• Glomerular filtration rate <math>\geq</math>30 mL/minute</li><li>• Hypertension</li><li>• Renal artery stenosis &gt;70%</li></ul>

Ccr, creatinine clearance.

# Gemeleerde populaties

Studies	EMMA		SNRASCg		DRASTIC		STAR		RASCAD		CORAL		RADAR		NITER		ASTRAL	
Year of study	1998		1998		2000		2009		2012		2016		2017		2018		2020	
Country	France		UK		The Netherlands		The Netherlands, France		Italy		USA		Germany		Italy		UK, Australia, New Zealand	
Group	BMT	BMT+	BMT	BMT+	BMT	BMT+	BMT	BMT+	BMT	BMT+	BMT	BMT+	BMT	BMT+	BMT	BMT+	BMT	BMT+
	PTRA		PTRA		PTRA		PTRA		PTRA		PTRA		PTRA		PTRA		PTRA	
Patients (n)	26	23	30	25	50	56	76	64	41	43	472	459	45	41	28	24	403	403
Mean age (%)	59.2	59.5	61	61	61	59	67	66	69	69	69	69	68.3	71.1	74	69	71	70
Men (%)	69	78	60	56	56	66	59	67	66	54	49	51	64.8	67.2	61	58	63	63
DM (%)	15	26	NM	NM	6	5	31	30	32	44	34	32	39	31.1	57	67	29	31
Smoking history (%)	62	65	50	36	70	82	68	72	60	47	32.2	28	48.8	55.6	64	63	55	51
Mean SBP (mmHg)	165	165	175	182	180	179	163	160	131	133	150	150	NM	NM	149	148	152	149
No. of drugs	NM	NM	2.4	2.4	2	2	2.9	2.8	2-3	2-3	2.1	2.1	2.8	2.4	3.3	3.3	2.8	2.79
Bilateral (%)	0	0	53	48	22	23	46	50	5	9	18.1	22	NM	NM	46	50	61	58
Degree of stenosis	>50%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99
	>70%	NM	NM	NM	70	79	68	66	NM	NM	NM	NM	97.4	97.9	100	100	58	60
PTRA only, (%)	91.3		80		96.4		NM		NM		0		NM		0		7	
Mean FU (months)	6		6		12		24		12		43		12		43		60	

BMT, best medical therapy; PTRA, percutaneous transluminal renal angioplasty; DM, diabetes mellitus; SBP, systolic blood pressure; NM, not mentioned; FU, follow-up.

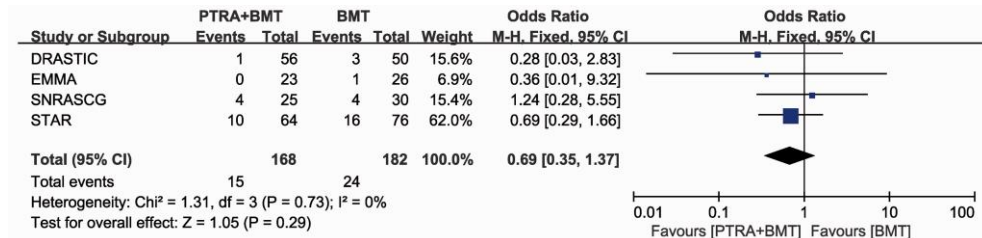
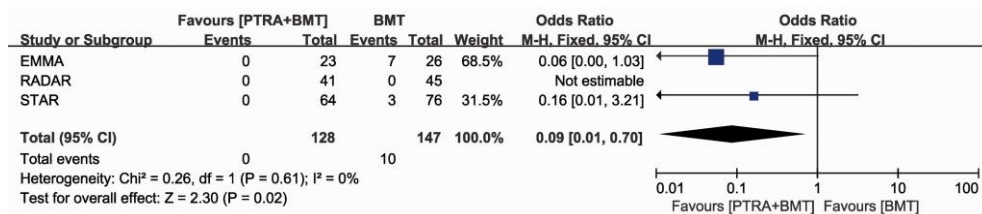
# Voor bloeddruk (be)handelen?

## Therapieresistente hypertensie

- Na 1 jaar effect
  - *OR: 0,09 [0,01 – 0,70]*
  - *NNT: 20*

## Graad II hypertensie

- Na 1 jaar geen effect
  - *OR: 0,69 [0,35 – 1,37]*
  - *'NNT: 25'*





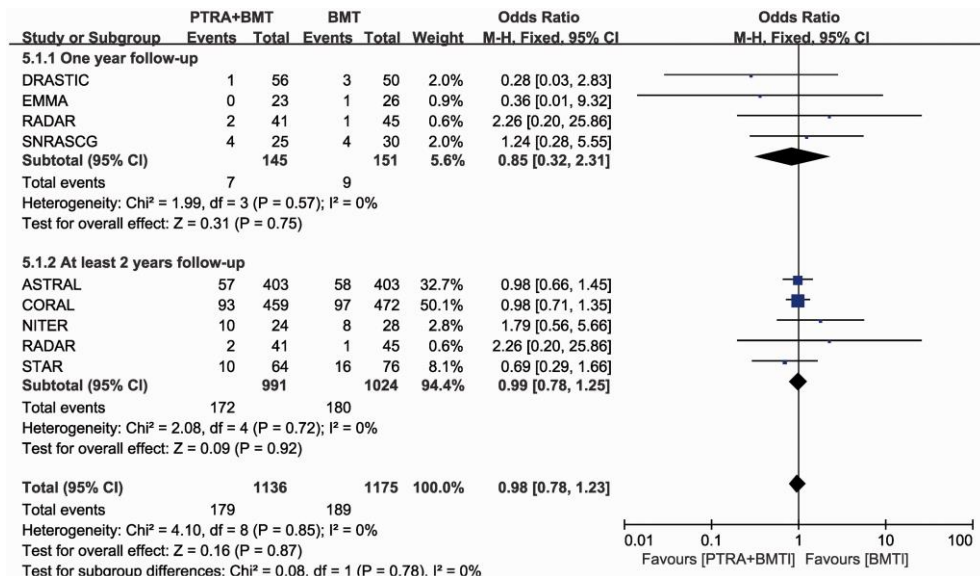
# Voor renale eindpunten (be)handelen?

## Renale eindpunten

- Na 2 jaar geen effect
  - $OR: 0,98 [0,78 - 1,23]$

NB eindpunt varieert per studie;

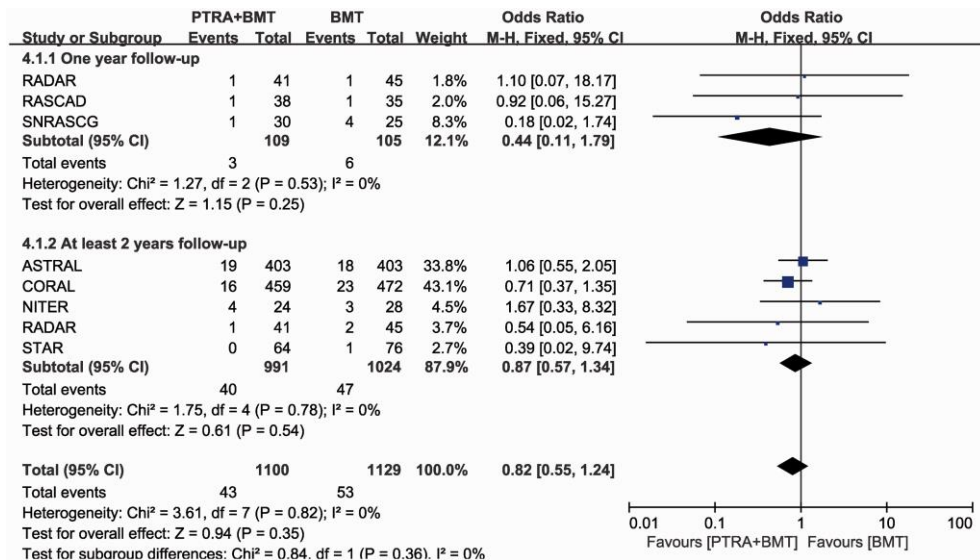
>30% stijging eGFR tot nierfalen met dialyse/transplantatie



# Voor CV eindpunten (be)handelen?

## Cerebrovasculair lijden

- Na 2 jaar geen effect
  - *OR: 0,82 [0,55 – 1,24]*
  - *'NNT: 180'*



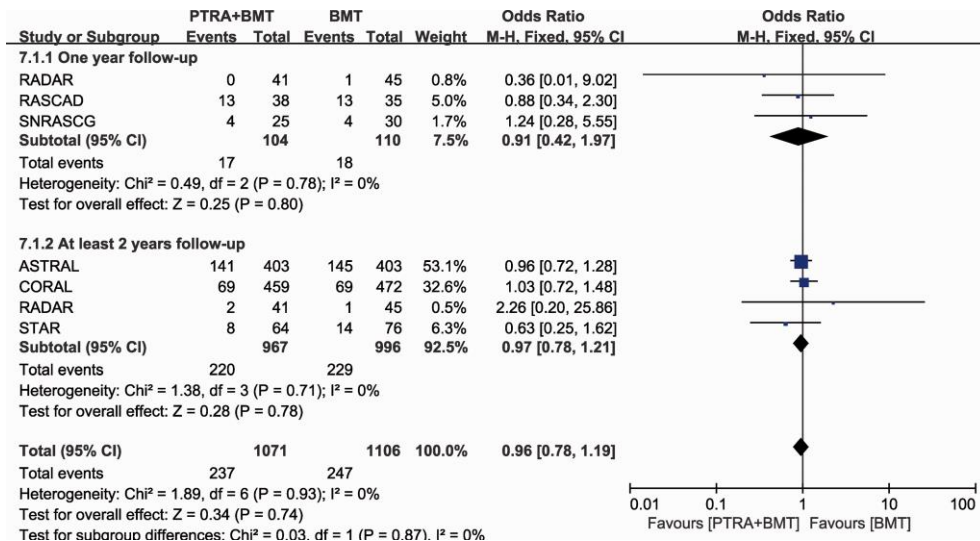
# Voor CV eindpunten (be)handelen?

## Cerebrovasculair lijden

- Na 2 jaar geen effect
  - OR: 0,82 [0,55 – 1,24]
  - 'NNT: 180'

## Coronair lijden

- Na 2 jaar geen effect
  - OR: 0,97 [0,78 – 1,21]
  - 'NNT: 410'



# Voor CV eindpunten (be)handelen?

## Cerebrovasculair lijden

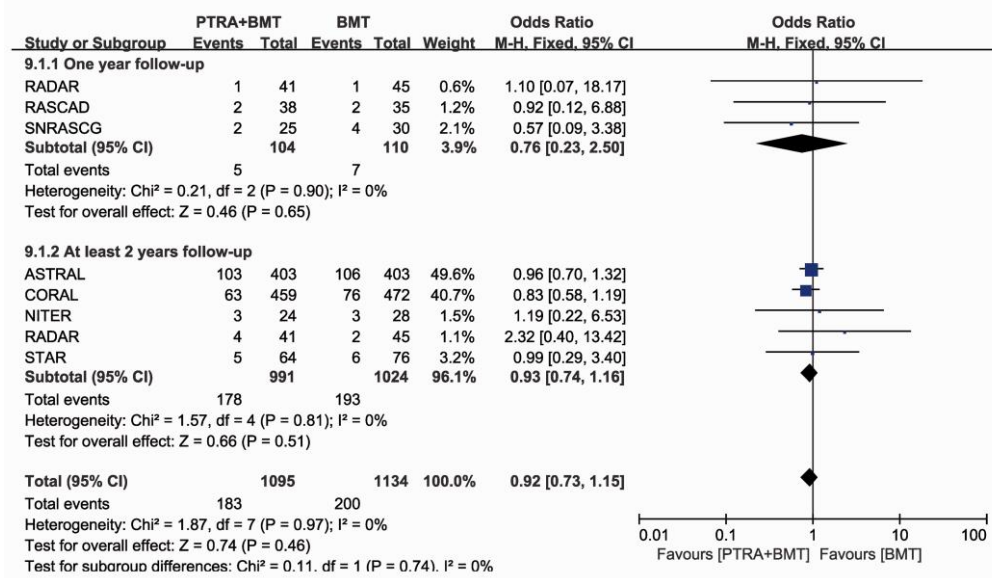
- Na 2 jaar geen effect
  - OR: 0,82 [0,55 – 1,24]
  - 'NNT: 180'

## Coronair lijden

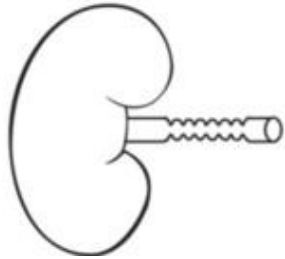
- Na 2 jaar geen effect
  - OR: 0,97 [0,78 – 1,21]
  - 'NNT: 410'

## Sterfte

- Na 2 jaar geen effect
  - OR: 0,92 [0,73 – 1,15]
  - 'NNT: '120'

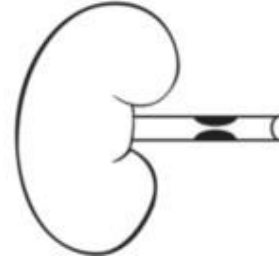


***Fibromusculaire dysplasia  
(FMD)***



- *Behouden renale flow*
- *Behouden GFR*
- *Intact RAAS*
- *Interventie curatief 40-60%*

***Atherosclerotische  
nierarteriestenose (NAS)***

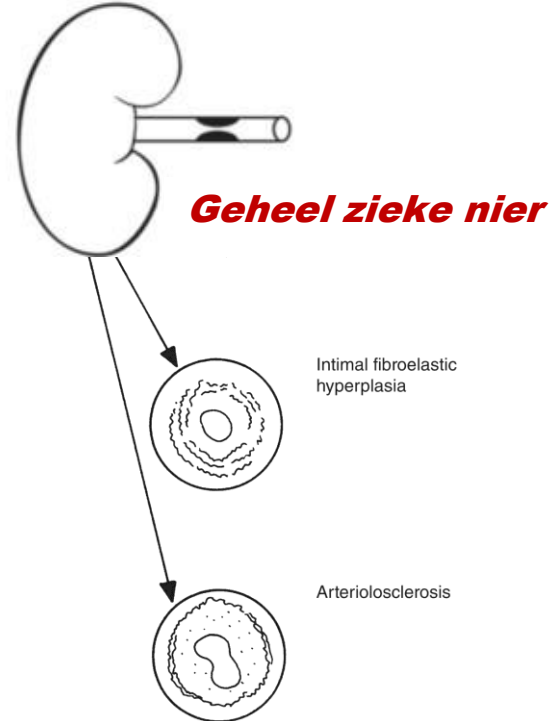


- *Afgenomen renale flow*
- *Afgenomen GFR*
- *Actief RAAS*
- *Interventie niet superieur*

**Fibromusculaire dysplasia  
(FMD)**

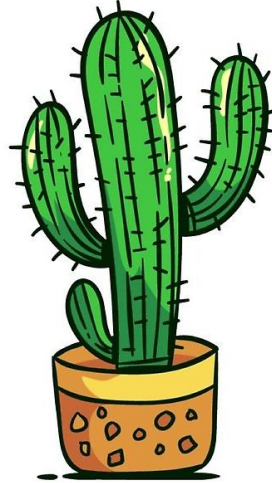


**Atherosclerotische  
nierarteriostenose (NAS)**



# Atherosclerotische nierarteriostenose

DON'T



TOUCH