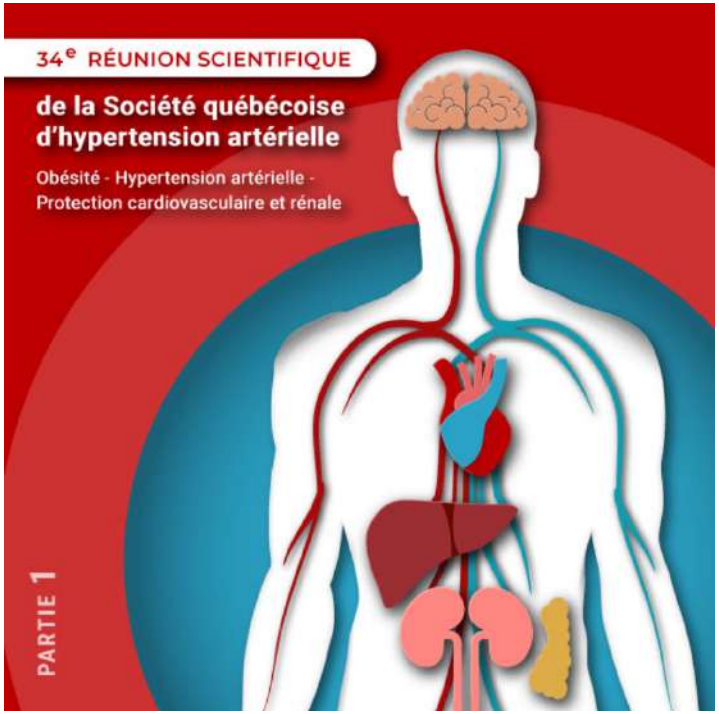
Coups de coeur 2025
Recherche clinique



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Alain Milot

Conflit d'intérêt potentiel
pour cette présentation

subvention de recherche multi-centrique :

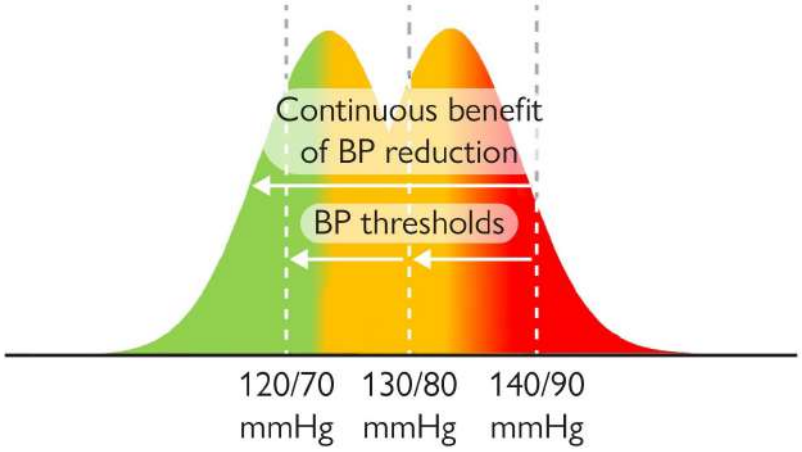
essai ZENITH (**Z**ileb**E**sira**N** Card**I**ovascular Ou**T**come Study in **H**ypertension) Alnylam-Roche *à venir en 2026*

Objectifs

Explorer les données cliniques marquantes de l'année 2025

- mesure de la pression artérielle
- seuils et cibles de traitement
- âge, comorbidités et fragilité
- traitements

Mesure de la pression artérielle



Mesure en clinique

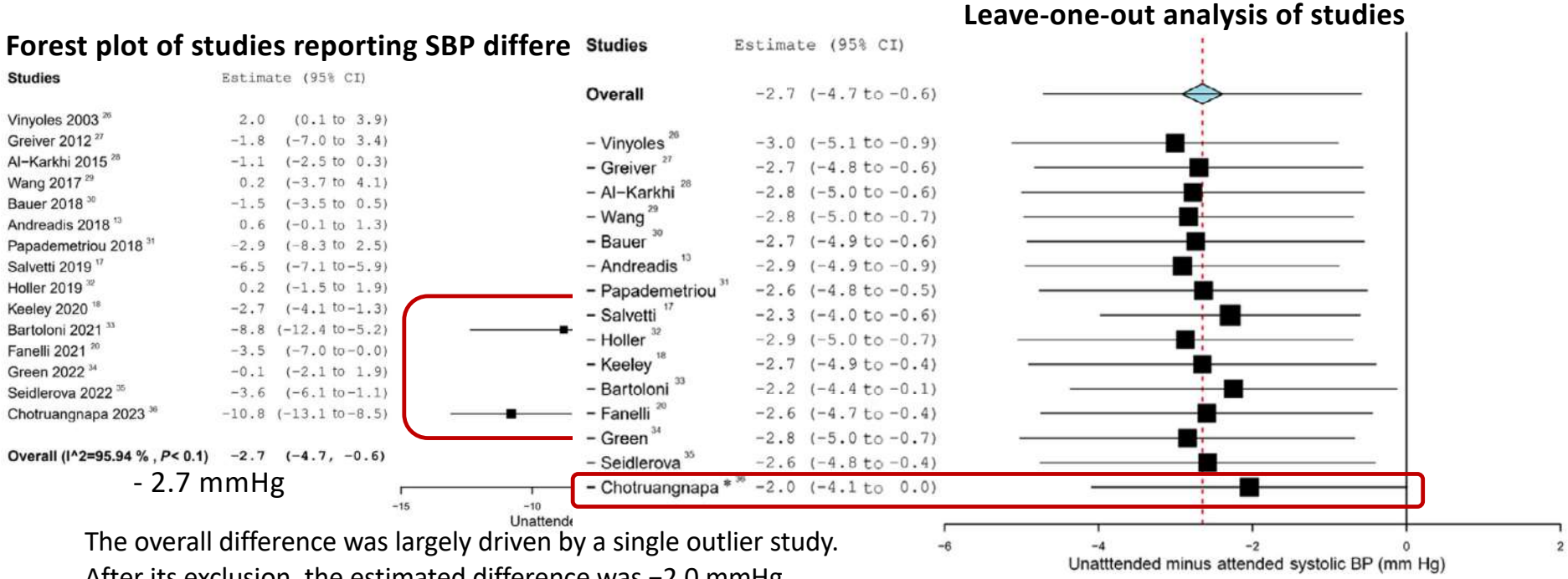
- Revisiting Unattended Versus Attended Automated Office Blood Pressure Measurements: A Systematic Review and Meta-Analysis
  J Am Heart Assoc 2025;14:e042797

- Clinical Impact of 3- Vs. 5-Minute Delay and 30- VS 60-Second Intervals on Unattended Automated Office BP Measurements
  Am J of Hypertension 2025;38:168–177

- *Automated Office Blood Pressure Measurements in Waiting Room or Isolated Room for Diagnosis and Phenotyping of Hypertension*
  J Am Heart Assoc 2025;14:e038011

Revisiting Unattended VS Attended Automated Office BP Measurements: A Systematic Review and Meta-Analysis

From 8088 screened studies, data were extracted from 15 studies (n=1747 participants) to evaluate the need to perform AOBP unattended, where the patient is left alone in a quiet room



The overall difference was largely driven by a single outlier study.
After its exclusion, the estimated difference was −2.0 mmHg
emphasizing the importance of a standardized BP measurement protocol to achieve consistent readings, whether unattended or attended.

Goupil R et al. J Am Heart Assoc 2025;14:e042797

Clinical Impact of 3- Vs. 5-Minute Delay and 30-VS 60-Second Intervals on Unattended Automated Office BP Measurements

Background

Guidelines recommend a 5-minute delay and 60-second time interval between automated office BP measurements.

Question

Can automated office blood pressure measurement protocols be shortened without affecting accuracy or precision?

Population

212 patients referred to a Hypertension Center in Boston for 24-hour ambulatory BP monitoring

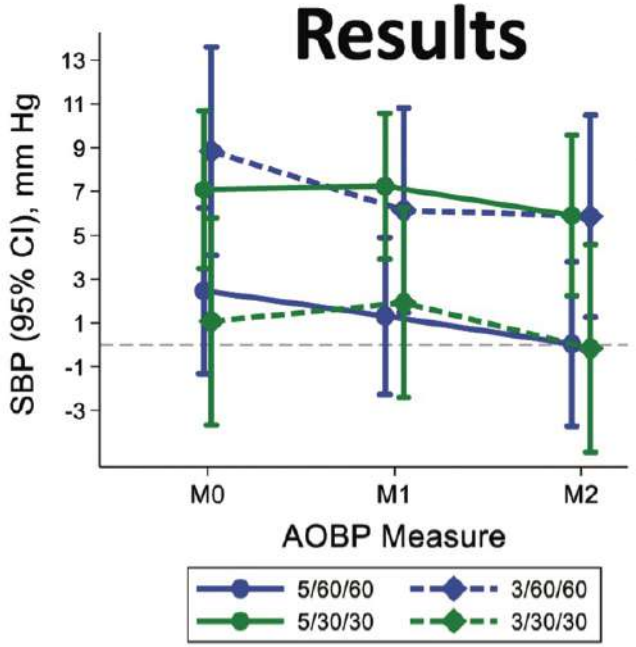
4 distinct automated office BP measures, assigned prospectively by month
5-min delay, 60-sec interval (Ref), N=67
3-min delay, 60-sec interval, N=51
5-min delay, 30-sec interval, N=50
3-min delay, 30-sec interval, N=44

April 2021 to June 2023

Am J of Hypertension 2025;38:168–177

Clinical Impact of 3- Vs. 5-Minute Delay and 30- VS 60-Second Intervals on Unattended Automated Office BP Measurements

Results



Similar performance between:

5/30/30 & 3/60/60

5/60/60 & 3/30/30

AOBP = automated office blood pressure; BP, blood pressure

Conclusions

A 3-minute delay with 30-second interval saved time without compromising measurement accuracy and precision

Applying these findings would make automated office BP measurements more feasible in clinical practice

Am J of Hypertension 2025;38:168–177

Mesure hors du cabinet

- Home Blood Pressure Measurements Are Not Performed According to Guidelines and Standardized Education Is Urgently Needed

  Hypertension 2025;82:149–159

- *How often should self-monitoring of blood pressure be repeated? A secondary analysis of data from two randomized controlled trials*

  J of Hypertension 2025;43:1863–1870

- *Blood pressure measurement at kiosks in public spaces: systematic review and consensus statement by the European Society of Hypertension Working Group on Blood Pressure Monitoring and Cardiovascular Variability*

  J Hypertens 2025 April;43:577–588

- Accuracy of a Novel High-Throughput “Car Blood Pressure” Measurement Protocol

  Am J of Hypertension 2025;38:534–536

Home BP Measurements Are Not Performed According to Guidelines and Standardized Education Is Urgently Needed

n=350
Aged 58±16 years, 54% women

+ in Australia

HBPM practice	HBPM education & training
"I measure blood pressure at different times of the day after doing different things".	Education was ***"ad-hoc"***
Recommendations performed by adults:	37% received education for HBPM
90% measured BP seated	93% sought information online or from health providers
77% with cuff fitted to a bare arm	*"I'm pretty confident on how to use a machine, the information was more understanding what it [BP] meant"*
78% reported BP to doctor	Participants that received education **did not perform higher quality HBPM** than those that did not receive education.
26% averaged BP readings taken over 7 days	
15% measured BP in the morning and evening	

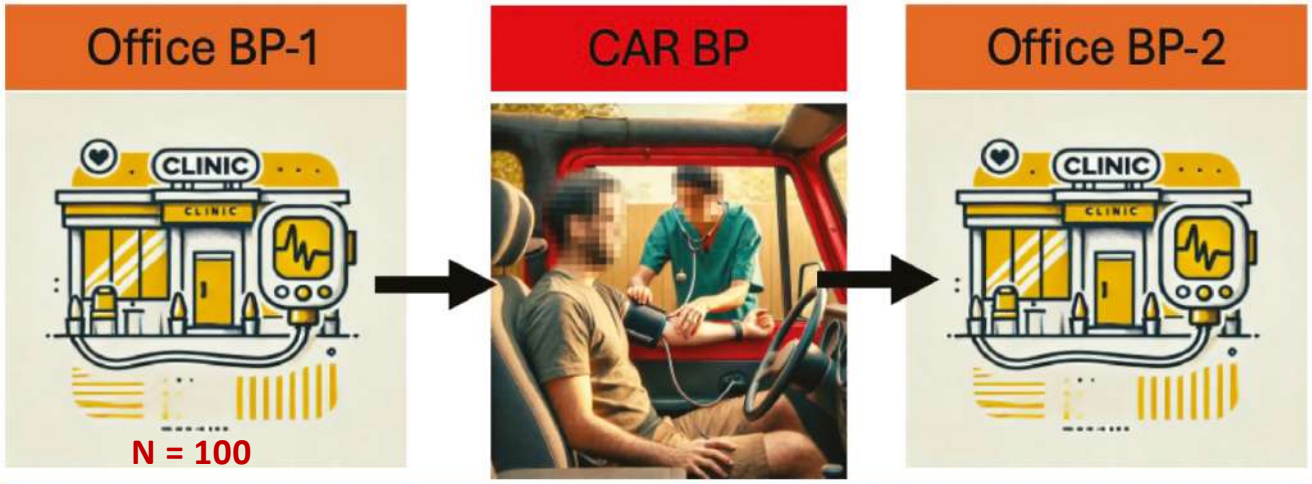
Hypertension 2025;82:149–159

Participants who did not receive education mimicked BP measurement methods of health care practitioners,
"I do it the way I've seen them do it."

Adults should be supported for HBPM by delivering patient education that provides accurate, appropriate and actionable information.

Accuracy of a Novel High-Throughput "Car Blood Pressure" Measurement Protocol

3 BP readings in a clinic exam room before and after 3 readings while patients seated in a parked car outside with the same validated device model (Omron HEM-907XL) and measurement methods



Primary Outcome – It was deemed accurate if ΔBP was ≤10 mm Hg for both systolic and diastolic BP levels in ≥85% of the participants.

Service au volant!

BP Results	
Clinic BP	
Systolic BP (mm Hg)	120.9 ± 16.2
Diastolic BP (mm Hg)	78.0 ± 9.9
Car BP	
Systolic BP (mm Hg)	118.9 ± 15.2
Diastolic BP (mm Hg)	76.0 ± 10.0
ΔBP results[1]	
Primary outcome[2]	85%
Secondary outcomes	
≤10 mm Hg for systolic BP	90%
≤10 mm Hg for diastolic BP	88%
≤10 mm Hg for either BP level	85%

Car-BP and clinic BP systolic were strongly correlated (Systolic r=0.92, 95% [CI] 0.89 to 0.95) (Diastolic r=0.82, 95%CI 0.74 to 0.87)

Car-BP represents an innovative and accessible approach for potential large-scale hypertension screening campaigns

Am J of Hypertension 2025;38:534–536

Cibles de traitement

Bénéfices des cibles de traitement

- Optimal Antihypertensive Systolic Blood Pressure: A Systematic Review and Meta-Analysis

  Hypertension 2024 December;81:2329–2339

- Intensive Blood-Pressure Control in Patients with Type 2 Diabetes BPROAD

  N Engl J Med 2025 March;392:1155-67

- *Benefit–harm trade-offs of intensive blood pressure control versus standard blood pressure control on cardiovascular and renal outcomes: an individual participant data analysis of randomised controlled trials*

  Lancet 2025;406:1009–19

- Blood pressure reduction and all-cause dementia in people with uncontrolled hypertension: an open-label, blinded-endpoint, cluster-randomized trial

  Nature Medicine 2025;31:2054–2061

Optimal Antihypertensive Systolic Blood Pressure: A Systematic Review and Meta-Analysis

Cardiovascular events

Source		No. of events/total No. More Intensive	Less Intensive	Hazard ratio (95% CI)	Favors more intensive / Favors less intensive	Weight, %
Randomization to an SBP <130 mm Hg vs ≥130 mm Hg						
ACCORD, 2010	Diabetes T2	208/2362	237/2371	0.88 (0.73-1.06)		13.9
SPS3, 2013	Stroke	160/1501	188/1519	0.84 (0.68-1.04)		12.3
SPRINT, 2015/2021	>50 y high CVD risk	264/4678	354/4683	0.73 (0.62-0.85)		16.0
* RESPECT, 2019	Stroke	46/633	59/630	0.76 (0.52-1.12)		5.8
* STEP, 2021	60–80 y	147/4243	196/4268	0.74 (0.60-0.92)		12.3
* CRHCP, 2023	>40 y ≥ 140 or ≥ 130 high CVD risk	808/17407	1127/16588	0.67 (0.61-0.73)		20.9
* ESPRIT, 2024	>50 y high CVD risk	547/5624	623/5631	0.88 (0.78-0.99)		18.7
Overall				0.78 (0.70-0.87)		100.0
Heterogeneity: I^2 = 64.5%, P = .01						

« cibles 130 vs ≥ 130 mmHg»

PAS atteintes en moyenne 119-122

Hypertension 2024 December;81:2329–2339

excluant BPROAD

Intensive Blood-Pressure Control in Patients with Type 2 Diabetes

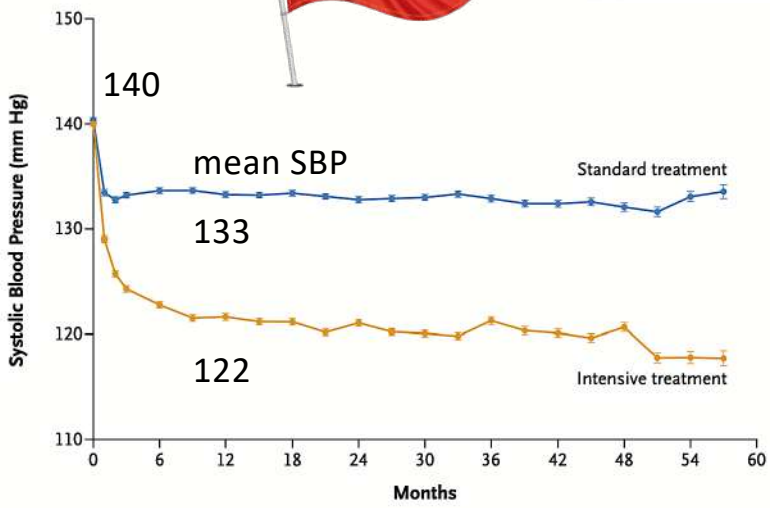
BPROAD ... *15 ans après ACCORD*

- patients 50 years of age or older (64 ± 7)
- men 55%
- type 2 diabetes (10 year duration)
- hypertension (12 year duration)
- elevated systolic blood pressure (140/76)
- increased risk of cardiovascular disease
  - CV events 23%
- MAU ± 30 40%

at 145 clinical sites across China

- 12 821 patients randomly assigned to
  - intensive target SBP <120 mm Hg
  - standard targetSBP <140 mm Hg

for up to 5 years

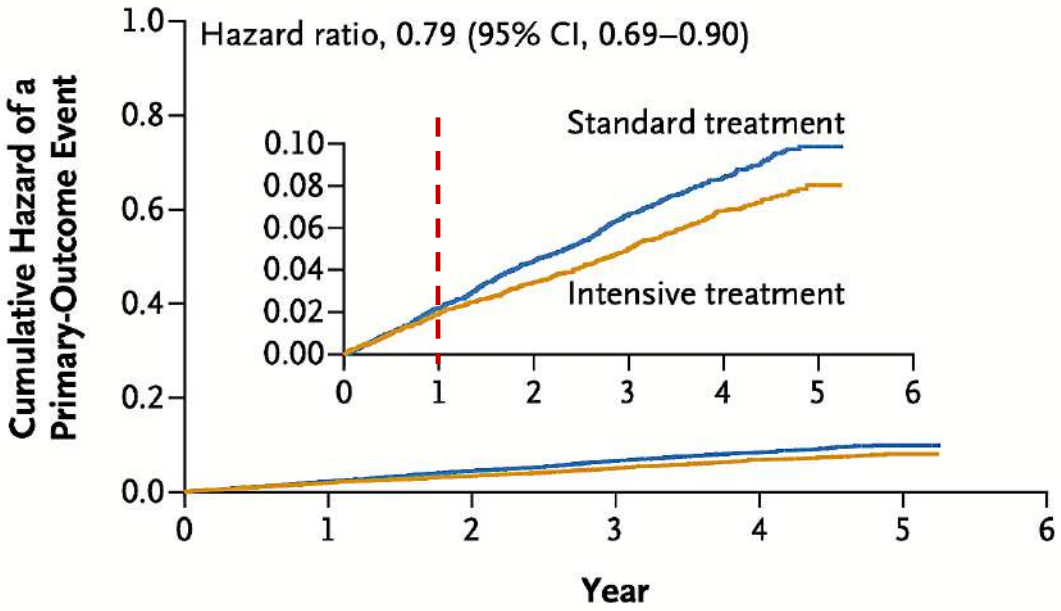


No. with Data										
Standard treatment	6407	5885	5663	5555	5257	4535	4091	3550	3187	1597
Intensive treatment	6414	5858	5612	5474	5244	4541	4119	3573	3198	1622
Mean No. of Medications Prescribed										
Standard treatment	1.6	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.3
Intensive treatment	1.7	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1

N Engl J Med 2025 March;392:1155-67

Intensive Blood-Pressure Control in Patients with Type 2 Diabetes BPROAD

During a median follow-up of 4.2 years



No. at Risk						
Standard treatment	6407	6087	5814	4626	3674	132
Intensive treatment	6414	6092	5871	4692	3738	112

NNT = 62

Composite primary outcome: stroke, myocardial infarction, treatment for heart failure, or CV-related death

N Engl J Med 2025;392:1155-67

Intensive Blood-Pressure Control in Patients with Type 2 Diabetes BPROAD

During a median follow-up of 4.2 years

Outcome	Intensive Treatment (N = 6414)		Standard Treatment (N = 6407)		Hazard Ratio (95% CI)†	P Value†
	No. of Events	Incidence Rate	No. of Events	Incidence Rate		
		no. of events/100 person-yr		*no. of events/100 person-yr*		
Primary outcome: nonfatal stroke, nonfatal MI, treatment or hospitalization for heart failure, or death from cardiovascular causes	393	1.65 (1.50–1.82)	492	2.09 (1.91–2.28)	0.79 (0.69–0.90)	<0.001
Secondary outcomes						
Fatal or nonfatal MI	68	0.28 (0.22–0.35)	81	0.33 (0.27–0.41)	0.84 (0.60–1.16)	—
Fatal or nonfatal stroke	284	1.19 (1.06–1.33)	356	1.50 (1.35–1.66)	0.79 (0.67–0.92)	—
Treatment or hospitalization for heart failure	31	0.13 (0.09–0.18)	46	0.19 (0.14–0.25)	0.66 (0.41–1.04)	—
Death from cardiovascular causes	60	0.24 (0.19–0.31)	79	0.32 (0.26–0.40)	0.76 (0.55–1.06)	—
Death from any cause	169	0.69 (0.59–0.80)	179	0.73 (0.63–0.84)	0.95 (0.77–1.17)	—
Primary-outcome event or death from any cause	493	2.07 (1.90–2.26)	584	2.48 (2.28–2.69)	0.83 (0.74–0.94)	—
CKD outcomes						
CKD progression	24	1.61 (1.08–2.41)	16	1.11 (0.68–1.80)	1.36 (0.71–2.59)	—
CKD development	232	1.14 (1.00–1.29)	214	1.05 (0.92–1.20)	1.11 (0.92–1.34)	—
Incident albuminuria	554	11.29 (10.39–12.27)	648	13.84 (12.81–14.95)	0.87 (0.77–0.97)	—

N Engl J Med 2025;392:1155-67

Intensive Blood-Pressure Control in Patients with Type 2 Diabetes BPROAD

Table 3. Adverse Events.*

Outcome	Intensive Treatment (N=6414)		Standard Treatment (N=6407)		Hazard Ratio (95% CI)	P Value
	No. of Events	Percentage of Participants	No. of Events	Percentage of Participants		
Serious adverse event†	2340	36.5	2328	36.3	1.00 (0.94–1.06)	0.96
Conditions of interest‡						
Arrhythmia	69	1.1	68	1.1	1.01 (0.72–1.41)	0.95
Electrolyte abnormality	36	0.6	35	0.6	1.03 (0.65–1.64)	0.91
Injurious fall	65	1.0	61	1.0	1.06 (0.75–1.51)	0.74
Symptomatic hypotension	8	0.1	1	<0.1	7.92 (0.99–63.34)	0.05
Syncope	10	0.2	10	0.2	1.00 (0.41–2.39)	0.99
Acute renal failure	4	0.1	5	0.1	0.79 (0.21–2.95)	0.73
Clinical safety alerts§						
Serum sodium <130 mmol/liter	46	0.7	47	0.8	0.97 (0.65–1.46)	0.89
Serum sodium >150 mmol/liter	22	0.4	25	0.4	0.88 (0.49–1.56)	0.65
Serum potassium <3.0 mmol/liter	32	0.5	33	0.5	0.97 (0.60–1.58)	0.90
Serum potassium >5.5 mmol/liter	177	2.8	125	2.0	1.41 (1.12–1.77)	0.003

9 / 12 821 ! …

Among patients with type 2 diabetes, the incidence of major cardiovascular events was significantly lower with intensive treatment targeting a SBP <120 than with standard treatment targeting a SBP <140 mm Hg.

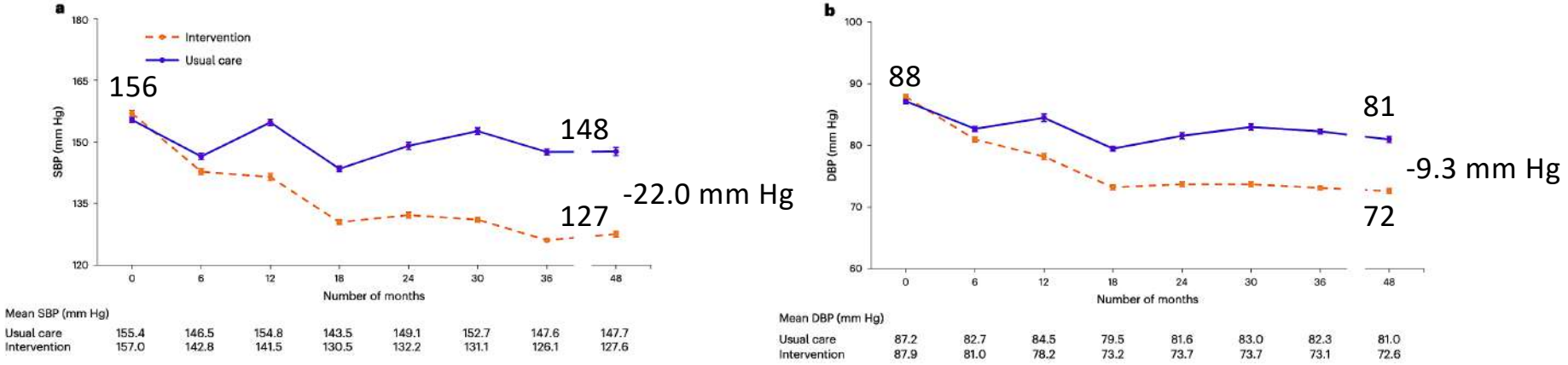
N Engl J Med 2025;392:1155-67

Blood pressure reduction and all-cause dementia in people with uncontrolled hypertension: an open-label, blinded-endpoint, cluster-randomized trial

The China Rural Hypertension Control Project Phase-3

Risk of all-cause dementia among 33,995 individuals aged ≥40 years with uncontrolled hypertension in rural China randomly assigned to a non-physician community healthcare provider-led intervention and to usual care

In the intervention group, trained non-physician community healthcare providers, under supervision from primary care physicians, initiated and titrated antihypertensives according to a simple stepped-care protocol to achieve BP goals of <130 and <80 mm Hg



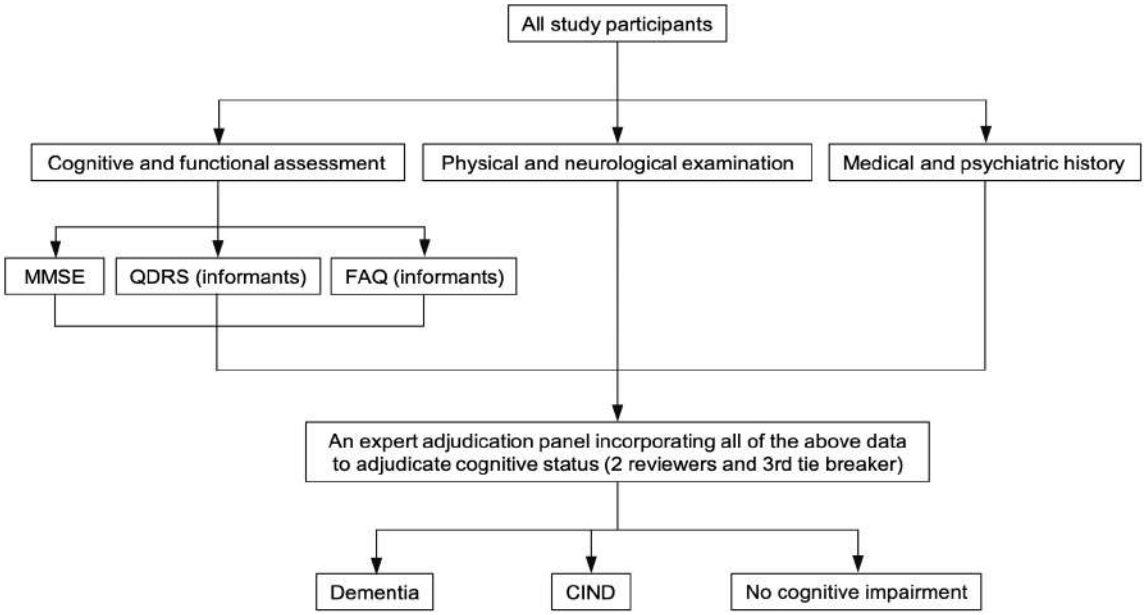
68% in intervention group and 15% in usual care group achieved an SBP <130 mm Hg and a DBP <80 mm Hg

Nature Medicine 2025;31:2054–2061

Blood pressure reduction and all-cause dementia in people with uncontrolled hypertension: an open-label, blinded-endpoint, cluster-randomized trial

The China Rural Hypertension Control Project Phase-3

Diagnostic criteria for all-cause dementia and cognitive impairment no dementia (CIND) adopted from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease.
Final diagnosis of all-cause dementia or CIND determined by expert adjudication panel blinded to the assignment.



Characteristics	Intervention (*n*=17,407)	Usual care (*n*=16,588)
Mean age, years	62.8 (9.3)	63.3 (9.2)
Female sex	10,603 (60.8%)	10,222 (61.6%)
Less than primary school	3,617 (21.6%)	3,848 (23.8%)
Currently smokes	3,690 (21.4%)	3,609 (22.0%)
Drinking alcohol weekly	2,793 (16.2%)	2,687 (16.4%)
Physical activity ≥5 times per week[a]	8,496 (49.3%)	8,233 (50.0%)
Median duration of hypertension, years	8.0 (5.0–10.5)	8.0 (5.0–11.0)
Use of antihypertensive medications	10,574 (60.4%)	8,990 (54.3%)
Mean antihypertensive medications, number per patient	0.8 (1.1)	0.7 (1.0)
History of major CVD[b]	3,713 (21.2%)	3,377 (20.4%)
History of diabetes	1,585 (9.1%)	1,426 (8.6%)
History of chronic kidney disease	108 (0.6%)	91 (0.5%)
Mean 10-year risk for atherosclerotic CVD, %[d]	14.7 (11.9)	14.5 (11.6)

Nature Medicine 2025;31:2054–2061

Blood pressure reduction and all-cause dementia in people with uncontrolled hypertension: an open-label, blinded-endpoint, cluster-randomized trial

The China Rural Hypertension Control Project Phase-3

Study outcomes	Intervention		Usual care		Unadjusted RR (95% CI)[a]	*P* value	Multiple-adjusted RR (95% CI)[b]	*P* value
	Number of events	Proportion of cumulative events, %	Number of events	Proportion of cumulative events, %				
Primary outcome								
All-cause dementia	668	4.59%	734	5.40%	0.85 (0.76, 0.95)	0.0035	0.88 (0.79, 0.98)	0.023
Secondary outcomes								
CIND cognitive impairment no dementia	2,506	17.2%	2,808	20.7%	0.84 (0.80, 0.87)	<0.0001	0.85 (0.81, 0.89)	<0.0001
Composite outcome of dementia and CIND	3,174	21.8%	3,542	26.1%	0.84 (0.81, 0.87)	<0.0001	0.86 (0.83, 0.90)	<0.0001
Death from all causes	1,269	7.3%	1,392	8.4%	0.87 (0.80, 0.94)	0.0004	0.88 (0.82, 0.94)	0.0003
Composite outcome of dementia and deaths	1,908	12.1%	2,092	14.1%	0.86 (0.81, 0.92)	<0.0001	0.88 (0.83, 0.94)	<0.0001
Safety outcomes								
Serious adverse event[c]	6,201	35.7%	6,329	38.2%	0.94 (0.91, 0.98)	0.0006	0.94 (0.91, 0.97)	0.0001
Injurious falls[d]	166	0.96%	157	0.95%	1.01 (0.80, 1.28)	0.92	1.04 (0.82, 1.32)	0.77
Symptomatic hypotension[e]	201	1.16%	156	0.94%	1.20 (0.89, 1.62)	0.23	1.18 (0.88, 1.58)	0.28
Syncope[f]	127	0.73%	102	0.62%	1.20 (0.87, 1.66)	0.27	1.22 (0.89, 1.69)	0.22

N = 123

N = 28

N = 23

Intensive BP reduction is effective in lowering the risk of all-cause dementia in patients with hypertension

Nature Medicine 2025;31:2054–2061

Âge, comorbidités et fragilité dans les essais cliniques « populationnels »

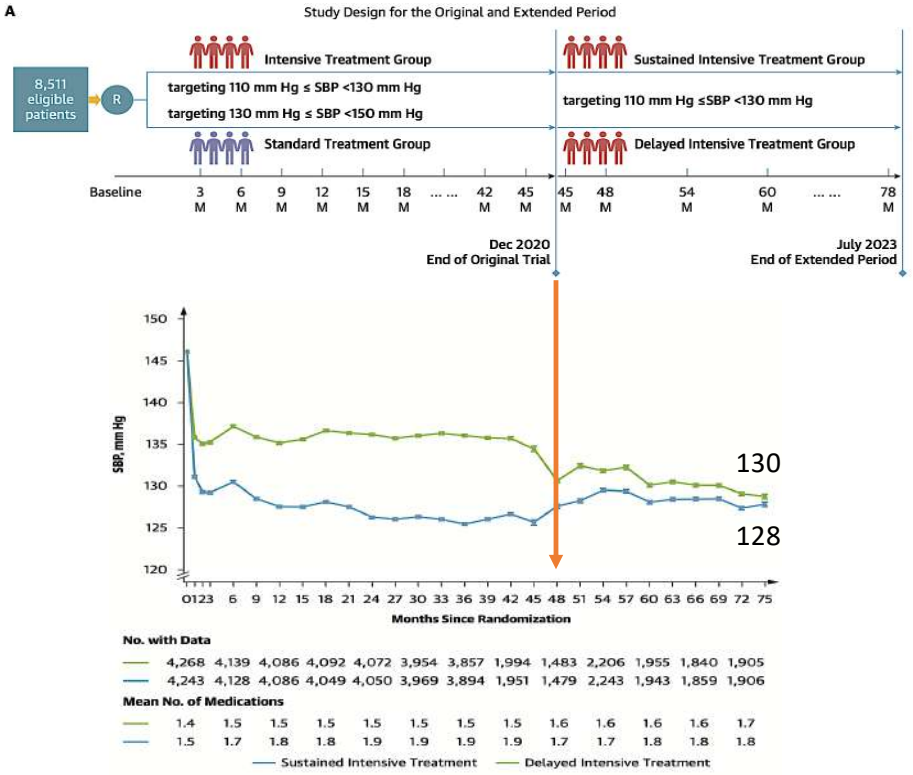
- Intensive Blood Pressure Control in Older Patients With Hypertension 6-Year Results of the STEP Trial
  JACC 2025;86(17):1421–1433

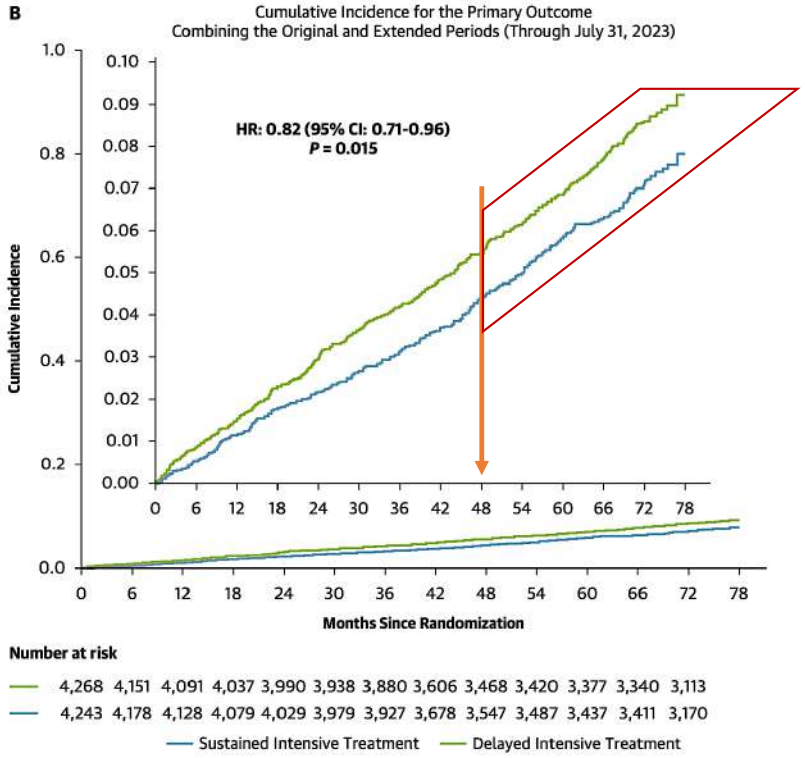
- *Effect of Intensive Blood Pressure Control and Comorbidity Status on the Prognosis of Patients With Hypertension: Insights From SPRINT*
  J Am Heart Assoc 2025;14:e036719

- *Changes in frailty, intensive blood pressure treatment, and risks of adverse clinical outcomes: a post hoc analysis of the SPRINT trial*
  BMC Medicine 2025;23:536

Intensive Blood Pressure Control in Older Patients With Hypertension 6-Year Results of the STEP Trial

Extended follow-up of the STEP trial to determine the longer-term effects of intensive BP control
8,511 patients 60 - 80 years randomly assigned to SBP 110 -130 (intensive) or 130 - 150 mm Hg (standard)



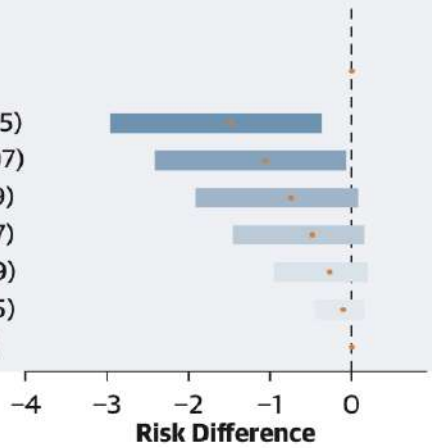


JACC 2025;86(17):1421–1433

Intensive Blood Pressure Control in Older Patients With Hypertension 6-Year Results of the STEP Trial

FIGURE 3 Estimated Effects of Initiation Timing of Intensive BP Treatment

Intervention	g-Formula Estimated Risk % (95% CI)	Risk Difference % (95% CI)	Waterfall Plot	NNT	RR (95% CI)
Standard BP Treatment	8.68 (7.65-9.86)	Reference			Reference
Sustained treatment after randomization					
0 M	7.18 (6.60-7.74)	−1.49 (−2.96 to −0.35)		68	0.83 (0.70-0.96)
12 M	7.63 (7.09-8.19)	−1.05 (−2.40 to −0.07)		96	0.88 (0.76-0.99)
24 M	7.95 (7.47-8.52)	−0.73 (−1.91 to 0.09)		137	0.92 (0.81-1.01)
36 M	8.20 (7.70-8.78)	−0.48 (−1.44 to 0.17)		208	0.94 (0.85-1.02)
48 M	8.41 (7.78-9.02)	−0.27 (−0.95 to 0.19)		370	0.97 (0.90-1.03)
60 M	8.59 (7.80-9.42)	−0.10 (−0.45 to 0.15)		1,000	0.99 (0.95-1.02)
72 M	8.68 (7.65-9.86)	0.00 (0.00-0.00)		na	1.00 (1.00-1.00)



Sustained intensive BP control could benefit patients with hypertension compared with delayed intensive treatment in the longer-term follow-up. However, the earlier intensive treatment is initiated after the diagnosis, the greater the cardiovascular benefits will be.

JACC 2025;86(17):1421–1433

Fragilité dans les essais plus ciblés …

Reduction of Antihypertensive Treatment in Nursing Home Residents The RETREAT-FRAIL Study

Table 1. Characteristics of the Patients at Baseline (Intention-to-Treat Population).*

Characteristic	Step-Down Strategy (N=528)	Usual Care (N=520)	Total (N=1048)
Age — yr	90.0±4.8	90.1±5.3	90.1±5.0
Female sex — no. (%)	423 (80.1)	423 (81.3)	846 (80.7)
Weight — kg†	64.9±14.8	65.2±15.0	65.1±14.9
Height — m‡	1.59±0.09	1.58±0.09	1.59±0.09
Body-mass index§	25.9±5.6	26.3±5.8	26.1±5.7
Systolic blood pressure — mm Hg¶	113±11	114±11	114±11
Diastolic blood pressure — mm Hg¶	65±10	65±10	65±10
Heart rate — beats/min¶	72±12	71±12	71±12
MMSE score‖ (0 to 30)	13.5±10.0	13.3±10.1	13.4±10.0
Clinical Frailty Scale score — no./total no. (%)¶¶ (1 to 9)			
1, 2, or 3	47/525 (9.0)	52/514 (10.1)	99/1039 (9.5)
4 or 5	147/525 (28.0)	164/514 (31.9)	311/1039 (29.9)
6	118/525 (22.5)	111/514 (21.6)	229/1039 (22.0)
7 or 8	213/525 (40.6)	187/514 (36.4)	400/1039 (38.5)
Medications‖‖			
No. of list 1 and list 2 antihypertensive medications	2.6±0.7	2.5±0.7	2.5±0.7
No. of concomitant medications	6.7±3.2	6.7±2.8	6.7±3.0

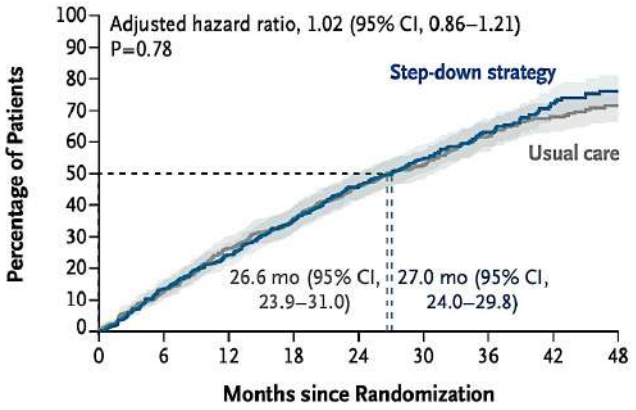
Mean number of antihypertensive drugs decreased
- from 2.6 to 1.5 in the step- down group
- from 2.5 to 2.0 in the usual-care group

The adjusted mean between-group difference in the change in systolic BP during the 38.4 months follow-up period was 4.1 mm Hg (1.9 to 5.7)

N Engl J Med 2025;393:1990-2000

Reduction of Antihypertensive Treatment in Nursing Home Residents
The RETREAT-FRAIL Study

Death from any cause



No. at Risk									
Step-down strategy	528	446	387	330	267	172	101	51	8
Usual care	520	446	374	325	266	175	107	62	8

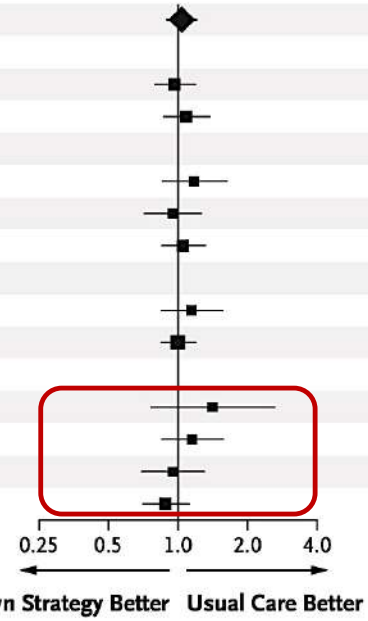
End Points	Step-Down Strategy (N=528)	Usual Care (N=520)	Adjusted Effect Measure (95% CI)	P Value†
Primary end point: death from any cause				
Intention-to-treat analysis — no. (%)	326 (61.7)	313 (60.2)	1.02 (0.86–1.21)‡	0.78
Per-protocol analysis — no./total no. (%)§	311/499 (62.3)	305/497 (61.4)	1.04 (0.87–1.23)‡	
Secondary end points				
Death from noncardiovascular causes — no. (%)	284 (53.8)	278 (53.5)	1.00 (0.83–1.19)¶	
Acute heart failure — no. (%)	67 (12.7)	57 (11.0)	1.19 (0.80–1.78)‖	
Falls				
Overall — no. (%)	264 (50.0)	260 (50.0)	—	
No. of falls per year	0.81±2.08	0.71±1.91	1.14 (0.84–1.51)**	
Fractures				
Overall — no. (%)	41 (7.8)	48 (9.2)	—	
No. of fractures per year	0.03±0.17	0.04±0.17	0.80 (0.51–1.26)††	
Composite of major adverse cardiovascular events — no. (%)§§	102 (19.3)	90 (17.3)	1.15 (0.84–1.56)¶¶	

Among older nursing home residents with frailty who were receiving antihypertensive agents and had a SBP below 130 mmHg, a treatment step-down strategy did not lead to lower all-cause mortality than usual care.

N Engl J Med 2025;393:1990-2000

Reduction of Antihypertensive Treatment in Nursing Home Residents The RETREAT-FRAIL Study

Subgroup	Step-Down Strategy	Usual Care	Hazard Ratio for Death from Any Cause (95% CI)
	no. of patients with event/total no. of patients (%)		
All patients	326/528 (61.7)	313/520 (60.2)	1.02 (0.86–1.21)
Age			
>90 yr	185/267 (69.3)	176/253 (69.6)	0.97 (0.79–1.20)
≤90 yr	141/261 (54.0)	137/267 (51.3)	1.09 (0.86–1.38)
Systolic blood pressure			
<105 mm Hg	76/104 (73.1)	71/104 (68.3)	1.18 (0.85–1.63)
105–115 mm Hg	97/168 (57.7)	88/154 (57.1)	0.95 (0.71–1.27)
>115 mm Hg	153/256 (59.8)	154/262 (58.8)	1.06 (0.84–1.32)
Chronic heart failure			
Yes	87/128 (68.0)	74/118 (62.7)	1.15 (0.84–1.57)
No	239/400 (59.8)	239/402 (59.5)	1.00 (0.84–1.20)
Clinical Frailty Scale score			
1, 2, or 3	21/47 (44.7)	19/52 (36.5)	1.42 (0.76–2.64)
4 or 5	78/147 (53.1)	80/164 (48.8)	1.16 (0.84–1.58)
6	79/118 (66.9)	76/111 (68.5)	0.95 (0.69–1.31)
7 or 8	146/213 (68.5)	134/187 (71.7)	0.89 (0.70–1.12)



N Engl J Med 2025;393:1990-2000

Traitement

« Vieux » anti-hypertenseurs

1930

Thyocyanates
Réserpine
Hydralazine
Guanethidine
Spironolactone
Thiazides
Méthyldopa/clonidine
Bêta-bloqueurs
BCC non-DHP
Alpha-bloquants
IECA
BCC-DHP
ARA
...

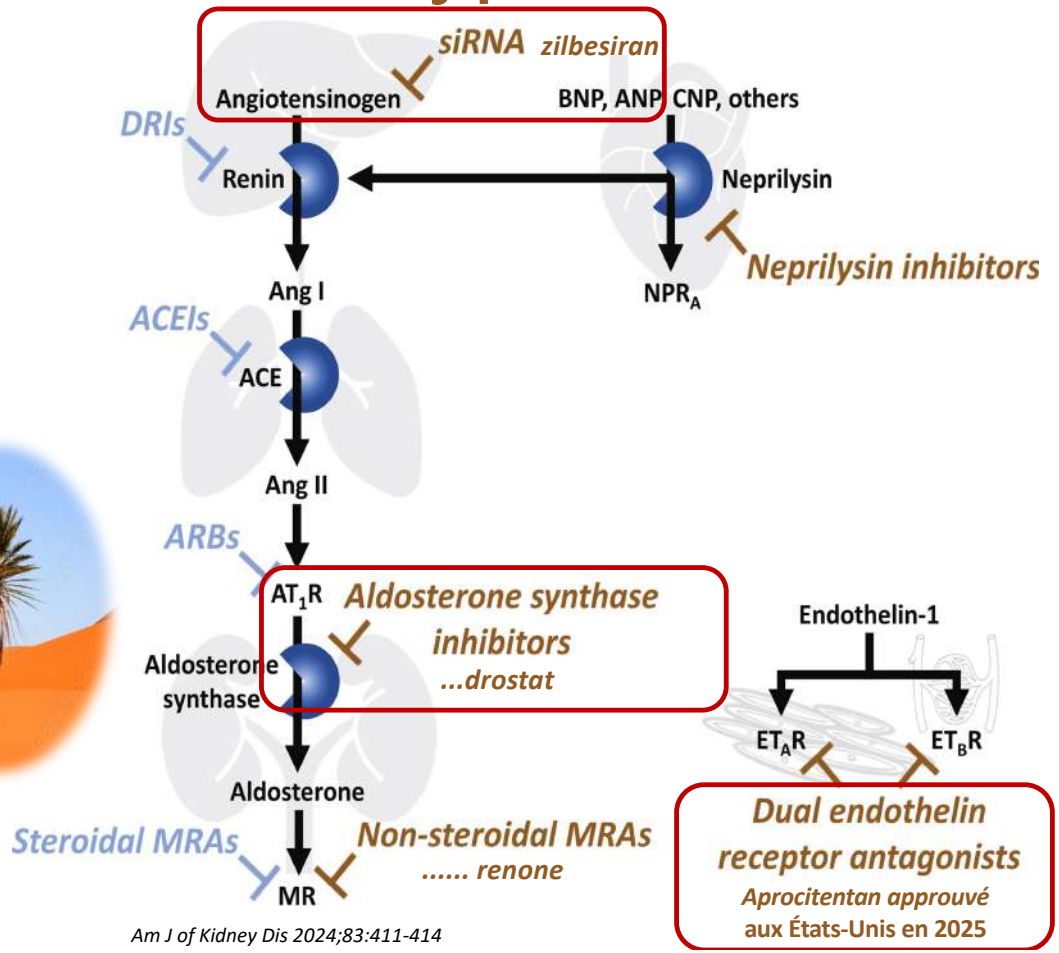
2000

...
2006 Inhibiteurs directs de la rénine dont aliskiren
...
ARA-inhibiteur de la néprylisine ... ICC
Éplérénone ... ICC
sGLT ... diabète
...
...
Finérénone ... néphropathie diabétique

2020

2023 Aliskiren ... retiré du marché canadien
...
...
2025 **Combo telmisartan+amlodipine+indapamide ... aux États-Unis**

« Nouveaux » anti-hypertenseurs



Am J of Kidney Dis 2024;83:411-414

« Nouveaux » anti-hypertenseurs

Aldosterone synthase inhibitors (…drostat) en phase 3

- Efficacy and Safety of Baxdrostat in Uncontrolled and Resistant Hypertension BaxHTN

  N Engl J Med 2025;393:1363-74

- *Lorundrostat Efficacy and Safety in Patients with Uncontrolled Hypertension The Advance-HTN Trial*

  N Engl J Med 2025;392:1813-23

- Lorundrostat in Participants With Uncontrolled Hypertension and Treatment-Resistant Hypertension The Launch-HTN Randomized Clinical Trial

  JAMA 2025;334(5):409-418

Efficacy and Safety of Baxdrostat in Uncontrolled and Resistant Hypertension BaxHTN

phase 3, multinational, double-blind, randomized, placebo-controlled trial,

seated systolic BP 140-170 mmHg
despite the receipt of

- stable with two Rx = uncontrolled HT
- ≥ 3 Rx incl. diuretic = resistant HT

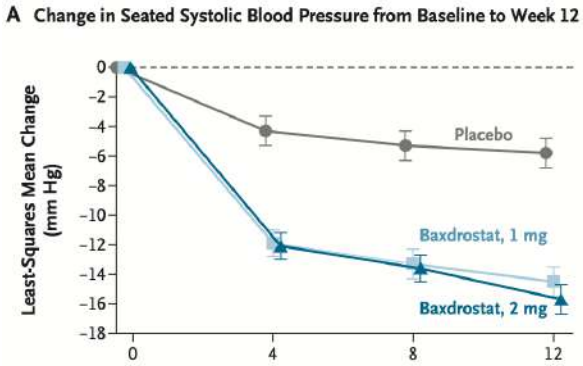
796 patients underwent randomization

- 264 to 1-mg baxdrostat
- 266 to 2-mg baxdrostat (266)
- 264 to placebo

in addition to background therapy

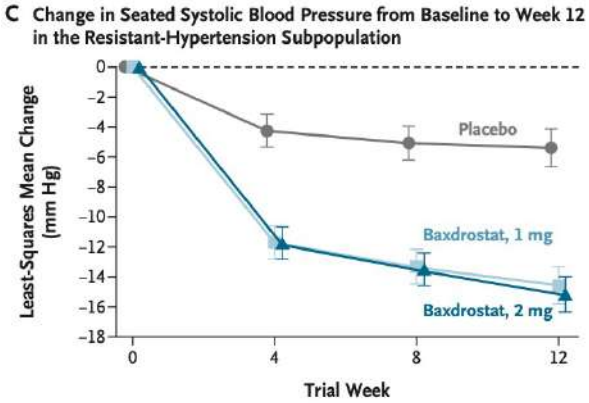
N Engl J Med 2025;393:1363-74

Change in seated systolic BP from baseline to week 12



placebo corrected difference

- 8.7 mmHg
- 9.8 mmHg



- 9.1 mmHg
- 9.8 mmHg

Efficacy and Safety of Baxdrostat in Uncontrolled and Resistant Hypertension BaxHTN

Table 3. Adverse Events during the 12-Week Double-Blind Treatment Period.

Adverse Events	Baxdrostat, 1 mg (N=264)	Baxdrostat, 2 mg (N=266)	Placebo (N=264)
Any serious adverse event — no. (%)*	5 (1.9)	9 (3.4)	7 (2.7)
Death — no. (%)	0	0	1 (0.4)
Any adverse event — no. (%)	125 (47.3)	119 (44.7)	109 (41.3)
Moderate or severe event	27 (10.2)	37 (13.9)	23 (8.7)
Severe event	3 (1.1)	7 (2.6)	5 (1.9)
Adverse event leading to discontinuation — no. (%)			
Any	7 (2.7)	12 (4.5)	5 (1.9)
Hyperkalemia	2 (0.8)	4 (1.5)	0
Adverse event of special interest — no. (%)†			
Hyperkalemia	7 (2.7)	21 (7.9)	0
Hyponatremia	2 (0.8)	6 (2.3)	1 (0.4)
Hypotension	5 (1.9)	6 (2.3)	2 (0.8)
Serum potassium — no./total no. (%)‡			
>5.5 mmol/liter	16/262 (6.1)	29/261 (11.1)	1/260 (0.4)
>6.0 mmol/liter	6/262 (2.3)	8/263 (3.0)	1/262 (0.4)
>6.5 mmol/liter	5/262 (1.9)	1/263 (0.4)	1/263 (0.4)

Among patients with uncontrolled or resistant hypertension, the addition of baxdrostat to background therapy resulted in a significantly lower seated systolic blood pressure at 12 weeks than placebo.

N Engl J Med 2025;393:1363-74

Lorundrostat in Participants With Uncontrolled Hypertension and Treatment-Resistant Hypertension The Launch-HTN Randomized Clinical Trial

JAMA

QUESTION Is the aldosterone synthase inhibitor lorundrostat more effective than placebo in reducing blood pressure in participants with uncontrolled hypertension, including treatment-resistant hypertension, taking 2 to 5 prescribed antihypertensive medications?

CONCLUSION These data support use of lorundrostat as a treatment option for patients with uncontrolled hypertension, including treatment-resistant hypertension.

POPULATION

575 Men
508 Women

Adults with uncontrolled or treatment-resistant hypertension

Median age: 61.6 years

40% were taking 2 antihypertensives

60% were taking ≥ 3

LOCATIONS

159 Clinic sites worldwide

INTERVENTION

1083 Participants randomized
1078 Participants analyzed

808 **Lorundrostat**
50 mg/d for 12 weeks;
50 mg/d for 6 weeks and escalated to 100 mg/d for 6 weeks if met prespecified criteria

270 **Placebo**
Placebo once/d for 12 weeks

PRIMARY OUTCOME

The primary efficacy outcome was the least-squares mean change in automated office systolic blood pressure at week 6

FINDINGS

Mean change in systolic blood pressure at week 6

Lorundrostat
−16.9 (95% CI, −19.0 to −14.9) mm Hg

Placebo
−7.9 (95% CI, −11.5 to −4.2) mm Hg

Lorundrostat demonstrated blood-pressure lowering efficacy:
Least-squares between-group difference,
−9.1 (95% CI, −13.3 to −4.9) mm Hg; $P < .001$

JAMA 2025;334(5):409-418

including those with treatment-resistant hypertension

2 vs ≥ 3 medications

−8.8 (−14.8 to −2.9)[e]	<.001
−9.0 (−14.0 to −4.1)[e]	<.001

Characterizing the Origins of Primary Aldosteronism

Continuum from normotension to overt primary aldosteronism disease spanning clinical, biochemical, and histopathologic domains.

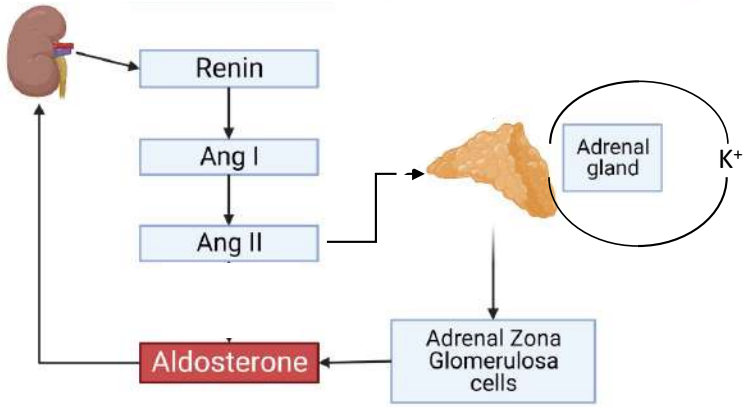
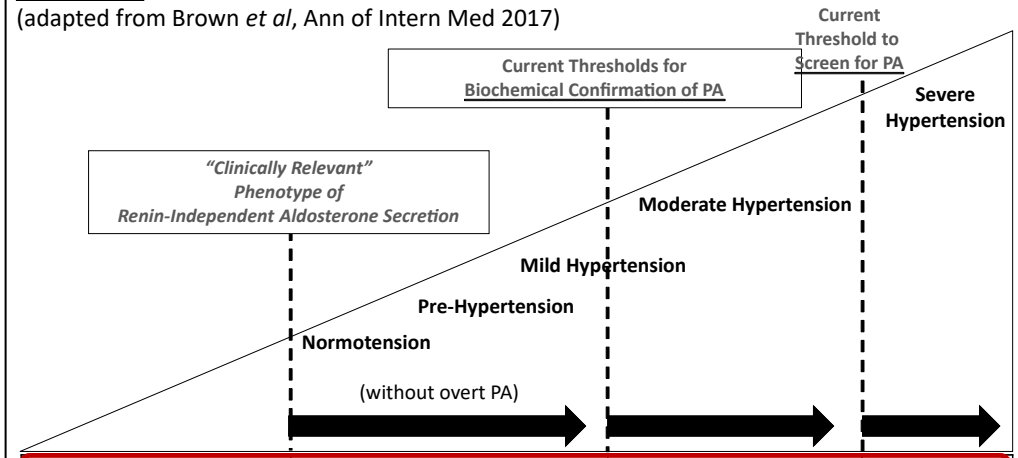


FIGURE 2: Spectrum of Renin-Independent Aldosteronism

(adapted from Brown *et al*, Ann of Intern Med 2017)



DISEASE	Subclinical PA	Unrecognized Yet Biochemically Overt PA	Overt PA
Obvious Clinical Syndrome of Excessive MR Activation	NO	NO	YES
Biochemical Confirmation of PA	NO	YES	YES
Cardiovascular Disease Risk	????		*Highest*

Hypertension 2025;82:306–318

« Nouveaux » anti-hypertenseurs …

RNA interference targeting hepatic synthesis of angiotensinogen by small interfering RNA siRNAs (...siran) en phase 2→3 à venir

- Add-On Treatment With Zilebesiran for Inadequately Controlled Hypertension

  The KARDIA-2 Randomized Clinical Trial

  JAMA 2025;334(1):46-55

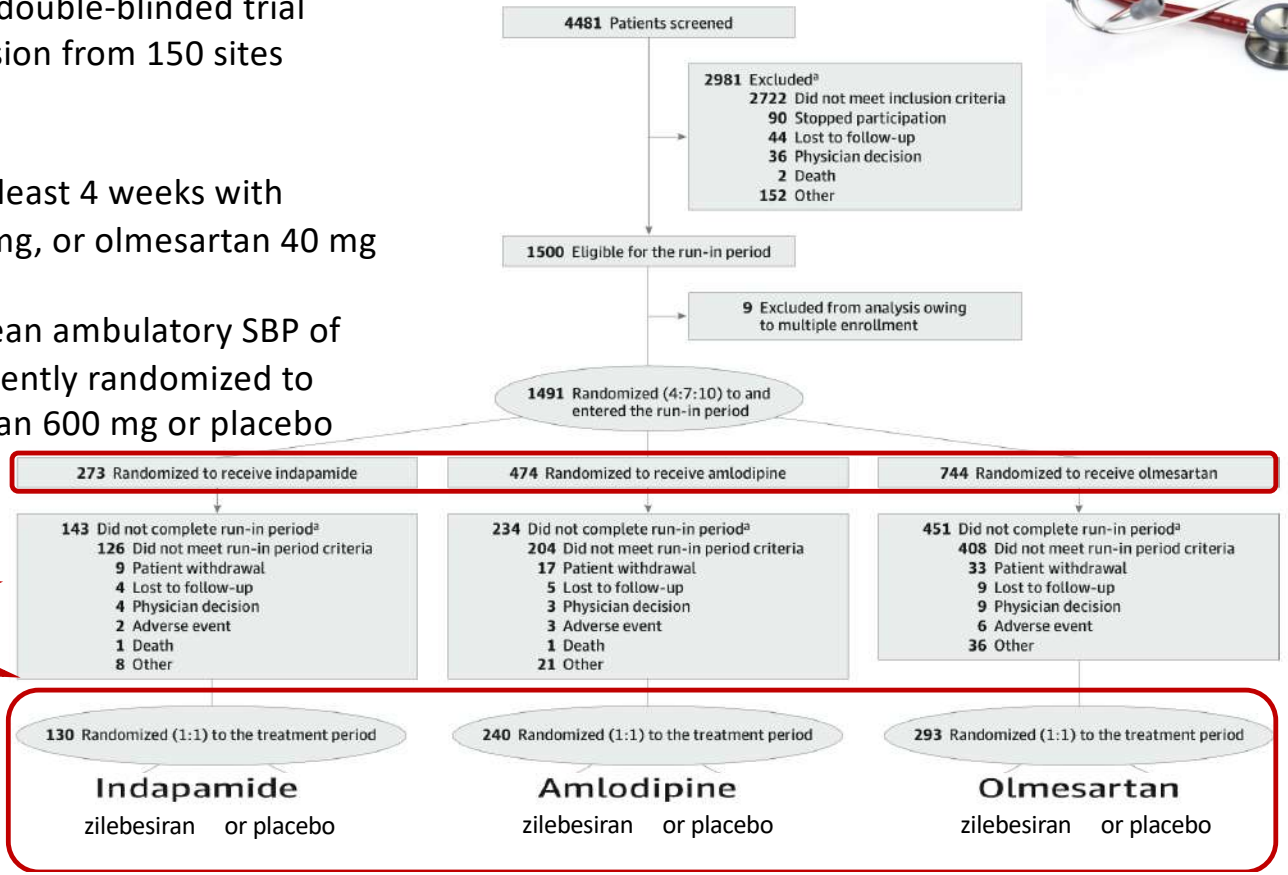
Add-On Treatment With Zilebesiran for Inadequately Controlled Hypertension
The KARDIA-2 Randomized Clinical Trial

Phase 2, randomized, prospective, double-blinded trial
Adults with uncontrolled hypertension from 150 sites across 8 countries

Open-label run-in treatment for at least 4 weeks with indapamide 2.5 mg, amlodipine 5 mg, or olmesartan 40 mg

Adherent patients with 24-hour mean ambulatory SBP of 130 mm Hg to 160 mm Hg subsequently randomized to receive **a single sc dose** of zilebesiran 600 mg or placebo

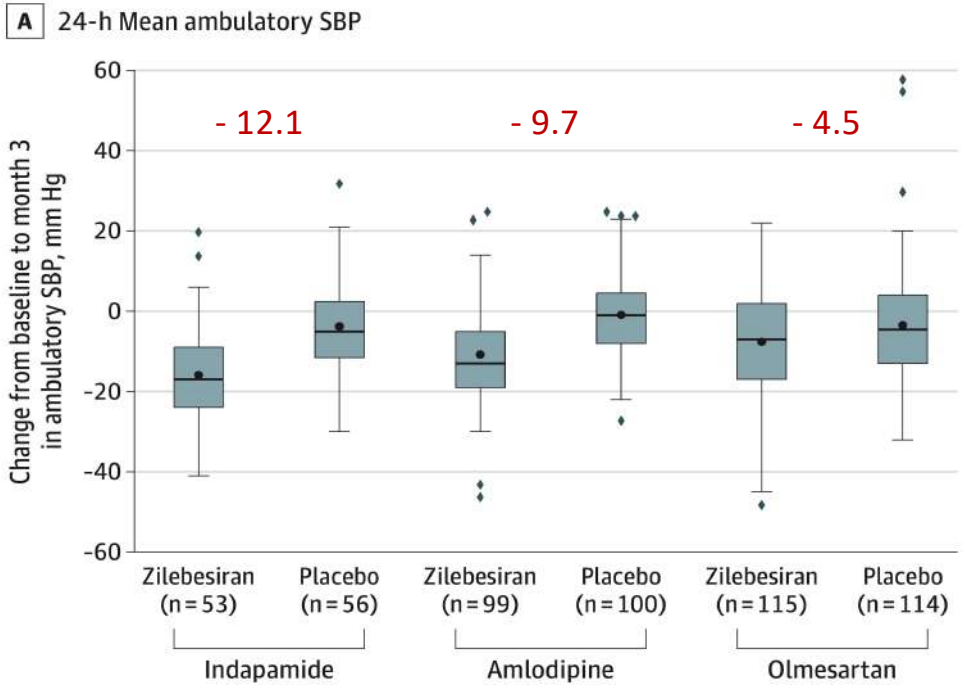
une seule injection
au début de la période
de traitement



JAMA 2025;334(1):46-55

Add-On Treatment With Zilebesiran for Inadequately Controlled Hypertension
The KARDIA-2 Randomized Clinical Trial

à 3 mois



In patients with uncontrolled hypertension despite treatment with indapamide, amlodipine, or olmesartan, the addition of single-dose zilebesiran resulted in significant SBP reductions compared with placebo at 3 months

JAMA 2025;334(1):46-55

Add-On Treatment With Zilebesiran for Inadequately Controlled Hypertension
The KARDIA-2 Randomized Clinical Trial

... with low rates of serious adverse events

Table 3. Adverse Events (AEs) and Laboratory Assessments by Cohort and Treatment Assignment[a]

	No. (%)							
	Background medication							
	Indapamide		Amlodipine		Olmesartan		Overall	
Outcome	Zilebesiran (n = 63)	Placebo (n = 64)	Zilebesiran (n = 118)	Placebo (n = 120)	Zilebesiran (n = 148)	Placebo (n = 145)	Zilebesiran (n = 329)	Placebo (n = 329)
AEs								
At least 1 serious AE[b]	0	2 (3.1)	3 (2.5)	1 (0.8)	4 (2.7)	4 (2.8)	7 (2.1)	7 (2.1)
At least 1 AE	31 (49.2)	25 (39.1)	64 (54.2)	56 (46.7)	87 (58.8)	69 (47.6)	182 (55.3)	150 (45.6)
Injection-site reaction AE	4 (6.3)	0	2 (1.7)	0	4 (2.7)	1 (0.7)	10 (3.0)	1 (0.3)
Hypotension/orthostatic hypotension AE[c]	0	0	7 (5.9)	4 (3.3)	7 (4.7)	3 (2.1)	14 (4.3)	7 (2.1)
Hyperkalemia AE[d]	2 (3.2)	0	6 (5.1)	2 (1.7)	10 (6.8)	4 (2.8)	18 (5.5)	6 (1.8)
Laboratory parameters								
Potassium >5.5 mmol/L	2 (3.2)	0	8 (6.8)	1 (0.8)	10 (6.8)	3 (2.1)	20 (6.1)	4 (1.2)
Confirmed on repeat measure[e]	1 (1.6)	0	2 (1.7)	0	2 (1.4)	0	5 (1.5)	0
Hepatic AE[f]	0	3 (4.7)	6 (5.1)	1 (0.8)	5 (3.4)	3 (2.1)	11 (3.3)	7 (2.1)
ALT >3 × ULN	0[g]	0	3 (2.5)	1 (0.8)[g]	4 (2.7)[g]	1 (0.7)[g]	7 (2.1)	2 (0.6)
AST >3 × ULN	0[g]	1 (1.6)	2 (1.7)	1 (0.8)[g]	3 (2.0)[g]	3 (2.1)[g]	5 (1.5)	5 (1.5)
Acute kidney failure AE*	4 (6.3)	1 (1.6)	4 (3.4)	1 (0.8)	8 (5.4)	3 (2.1)	16 (4.9)	5 (1.5)
Decrease ≥30% from baseline in eGFR	8 (12.7)	1 (1.6)	10 (8.5)	5 (4.2)	10 (6.8)	4 (2.8)	28 (8.5)	10 (3.0)
Confirmed on repeat measure[e]	3 (4.8)	0	1 (0.8)	2 (1.7)	4 (2.7)	1 (0.7)	8 (2.4)	3 (0.9)

* most episodes were mild and resolved without medical intervention

JAMA 2025;334(1):46-55

Meilleure étude toutes catégories?

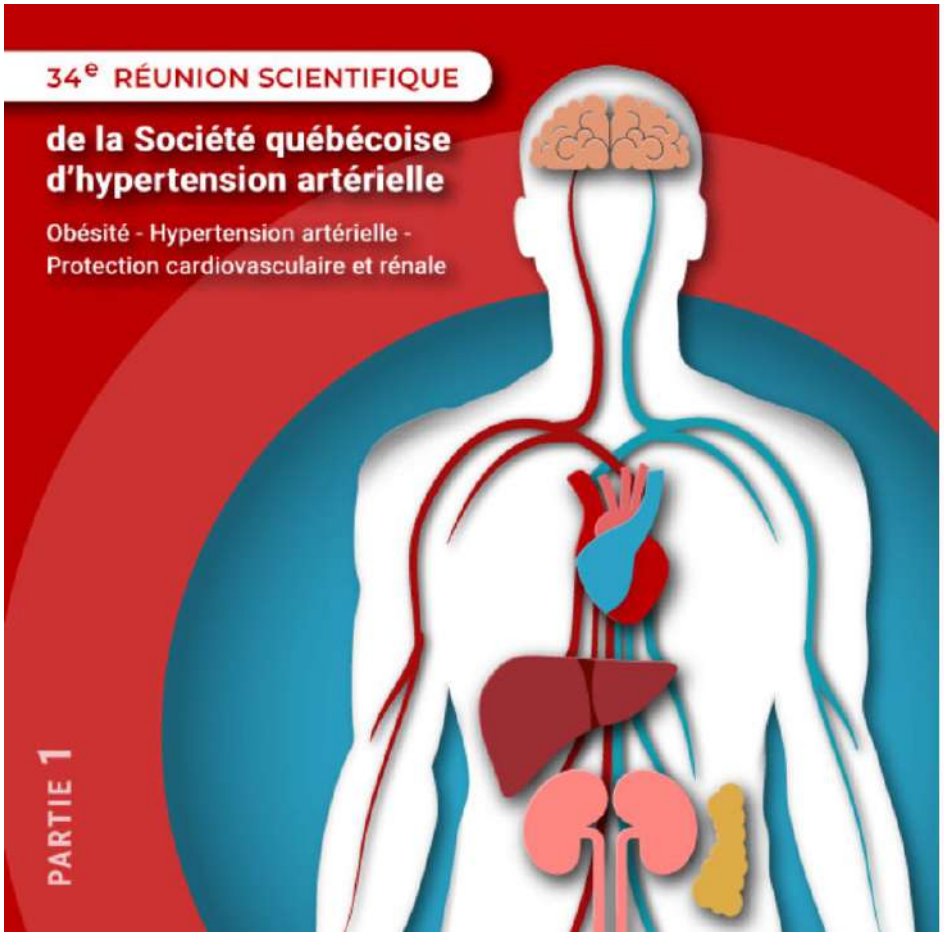
- Clinical Impact of 3- Vs. 5-Minute Delay and 30- VS 60-Second Intervals on Unattended Automated Office BP Measurements

- Intensive Blood-Pressure Control in Patients with Type 2 Diabetes The BPROAD Trial

- Blood pressure reduction and all-cause dementia in people with uncontrolled hypertension The China Rural HT Control Project

- Intensive Blood Pressure Control in Older Patients With Hypertension 6-Year Results of the STEP Trial

- Add-On Treatment With Zilebesiran for Inadequately Controlled Hypertension The KARDIA-2 Randomized Clinical Trial



34e RÉUNION SCIENTIFIQUE ANNUELLE

de la Société québécoise d'hypertension artérielle

Obésité – Hypertension artérielle – Protection cardiovasculaire et rénale

Jeudi 15 et vendredi 16 janvier 2026

Hôtel le Concorde – Québec
1225, cours du Général-de Montcalm
Québec

Optimal Antihypertensive Systolic Blood Pressure: A Systematic Review and Meta-Analysis

« cibles 130 vs ≥ 130 »

Trial outcomes and adverse events	No. of trials	No./total No.	Hazard ratio (95% CI)
Issues CV			
Stroke	7	1219/36 448 vs 1620/35 690	0.74 (0.66–0.84)
Coronary heart disease	7	638/36 448 vs 756/35 690	0.83 (0.75–0.92)
Heart failure	5	258/34 314 vs 358/33 541	0.69 (0.55–0.87)
Cardiovascular mortality	6	414/35 815 vs 561/35 060	0.73 (0.61–0.86)
Evénements adverses NNH			NNH (95% CI)
Hypotension	6	642/35 815 vs 359/35 060	508 (309–1425)
Syncope	7	279/36 448 vs 188/35 690	1701 (991–5999)
Injurious falls	4	460/29 210 vs 419/28 421	2941 (1479–258 938)
Electrolyte abnormality	5	277/30 704 vs 233/29 903	3222 (1150–4013)
Acute kidney injury or acute renal failure	5	276/17 540 vs 193/17 583	1657 (693–4235)

N.B.
PAS atteintes en moyenne 119-122 avec différentes méthodes de mesure

Cibler un PAS <130 mm Hg réduit considérablement les risques de MCV majeures et de mortalité toutes causes.

Hypertension 2024 December;81:2329–2339

Benefit–harm trade-offs of intensive BP control vs standard BP control on cardiovascular and renal outcomes: an individual participant data analysis

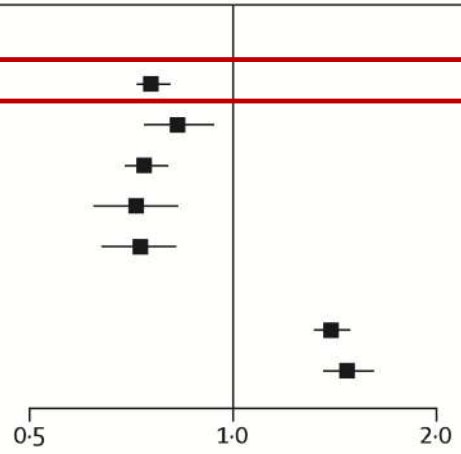
80 220 participants from six trials — ACCORD BP, SPRINT, ESPRIT, BPROAD, STEP and CRHCP — SBP target < 120 mmHg / SBP target < 130 mmHg

Median age 64 – 51.3% female – 82.6% Asian 10.1% White 4.8% Black 1.6% Hispanic

Median F/U 3.2 years

Net difference between the intensive and standard treatment groups: - 12.6 / - 5.7 mmHg

	Intensive treatment, n/N (%)	Standard treatment, n/N (%)	HR or OR (95% CrI)*	p value
Benefit				
Major cardiovascular event	2158/40503 (5·3%)	2811/39717 (7·1%)	0·76 (0·72 to 0·81)	<0·0001
Myocardial infarction	491/40503 (1·2%)	589/39717 (1·5%)	0·83 (0·74 to 0·94)	0·0010
Stroke	1331/40503 (3·3%)	1761/39717 (4·4%)	0·74 (0·69 to 0·80)	<0·0001
Heart failure	282/40503 (0·7%)	399/39717 (1·0%)	0·72 (0·62 to 0·83)	<0·0001
Death from cardiovascular causes	432/40503 (1·1%)	589/39717 (1·5%)	0·73 (0·64 to 0·82)	<0·0001
Harm				
Total adverse events of interest	2917/40503 (7·2%)	2139/39717 (5·4%)	1·39 (1·31 to 1·48)	<0·0001
Renal adverse events	1535/40503 (3·8%)	1072/39717 (2·7%)	1·47 (1·35 to 1·60)	<0·0001

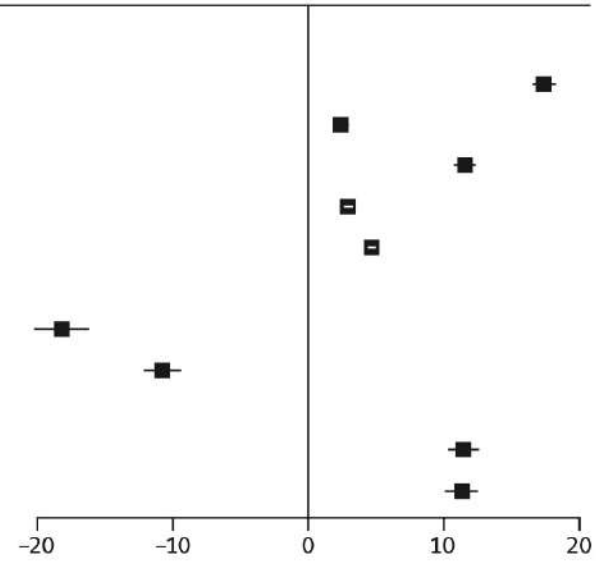


Lancet 2025;406:1009–19

Compared with standard blood pressure control, intensive blood pressure control was also associated with a lower risk of all-cause mortality (HR 0·87 [95% CrI 0·80–0·94] p=0·0016)

Benefit–harm trade-offs of intensive BP control versus standard BP control on cardiovascular and renal outcomes: an individual participant data analysis of randomised controlled trials

Absolute risk reduction		Absolute risk difference or net benefit, % (95% CrI)	NNT or NNH (95% CrI)
Benefit			
Major cardiovascular event		1·73 (1·65 to 1·81)	58 (55 to 61)
Myocardial infarction	- 1.73%	0·24 (0·21 to 0·28)	417 (357 to 476)
Stroke	NNT 58	1·15 (1·08 to 1·22)	87 (82 to 93)
Heart failure		0·29 (0·26 to 0·32)	345 (313 to 385)
Death from cardiovascular causes		0·46 (0·44 to 0·48)	217 (208 to 227)
Harm			
Total adverse events of interest	+ 1.82%	−1·82 (−2·01 to −1·63)	55 (49 to 61)
Renal adverse events *	NNH 55	−1·08 (−1·21 to −0·95)	93 (83 to 105)
Benefit vs harm			
Major cardiovascular event versus total adverse events		1·14 (1·03 to 1·25)	..
Major cardiovascular event versus renal adverse events		1·13 (1·01 to 1·24)	..



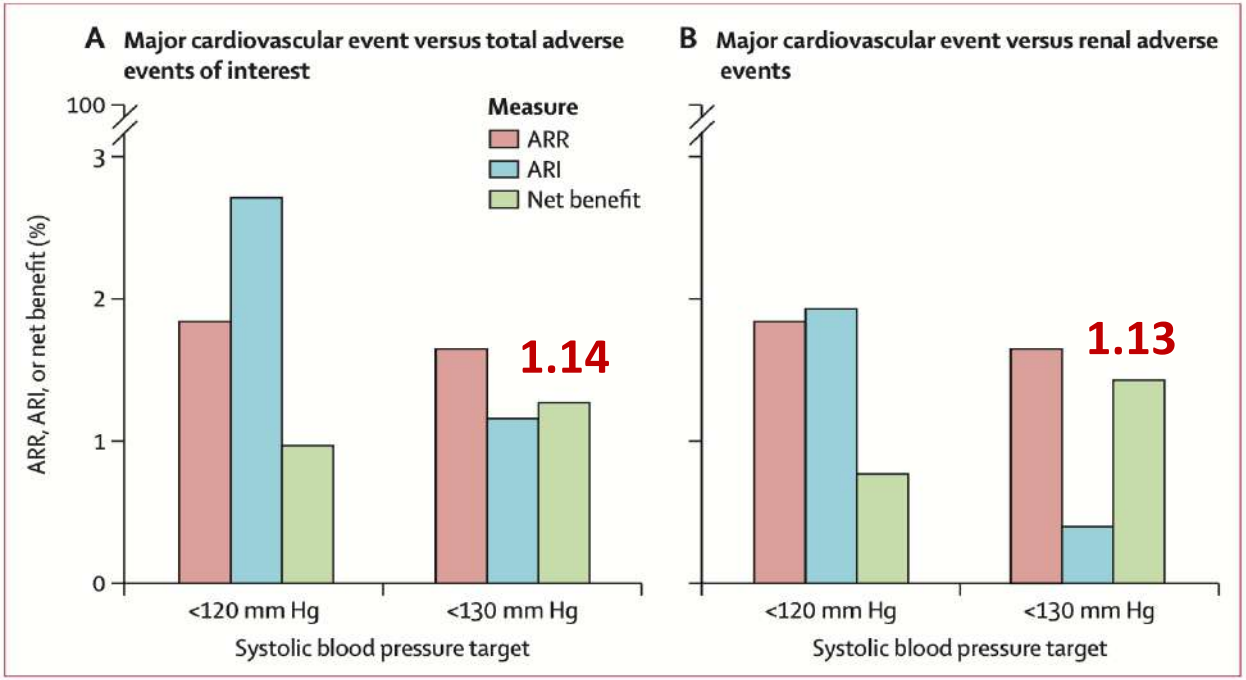
* In SPRINT, most renal adverse events with intensive BP lowering were mild and often transient reductions in GFR

Lancet 2025;406:1009–19

Benefit–harm trade-offs of intensive BP control versus standard BP control on cardiovascular and renal outcomes: an individual participant data analysis

For 1000 patients treated with intensive control over 3 years,
17 CV events would be prevented at the cost of
18 adverse events of interest or
11 kidney-related adverse outcomes

Intensive BP control showed a favourable benefit–harm profile compared with standard control, using an *adjudicated weighting* in which *one CV benefit was considered equivalent to 3·1 harms*, resulting in a net benefit of ...



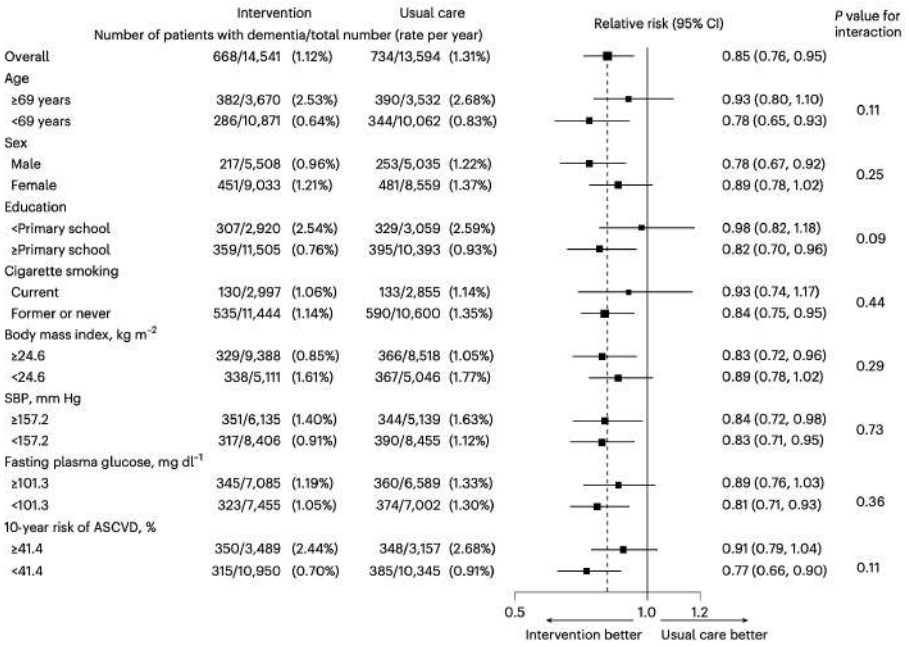
Compared with standard BP control, intensive control provides a net benefit between the reduction in cardiovascular events and the increase in adverse events, including renal events

Lancet 2025;406:1009–19

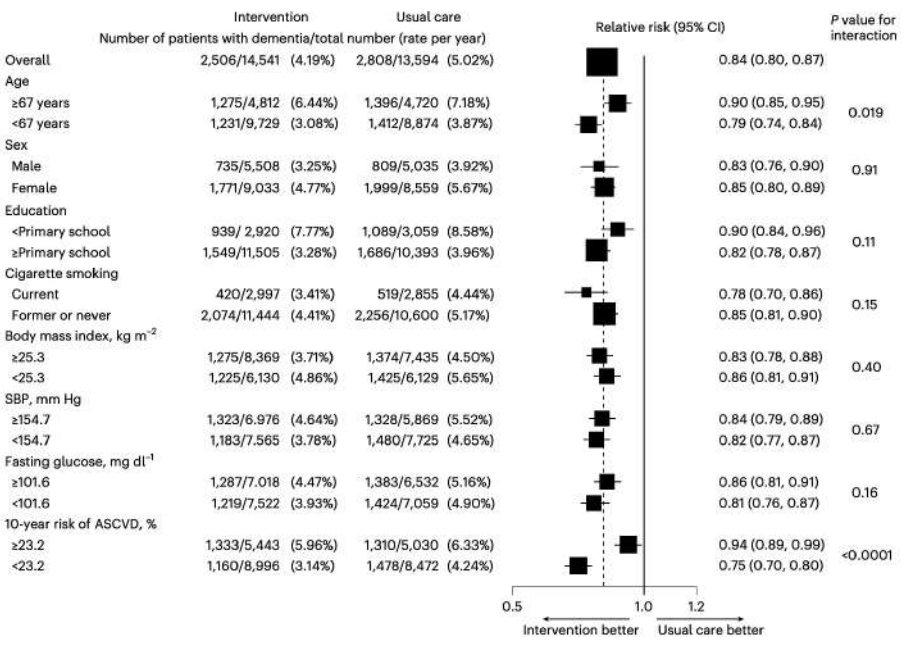
Blood pressure reduction and all-cause dementia in people with uncontrolled hypertension: an open-label, blinded-endpoint, cluster-randomized trial

The China Rural Hypertension Control Project Phase-3

all-cause dementia

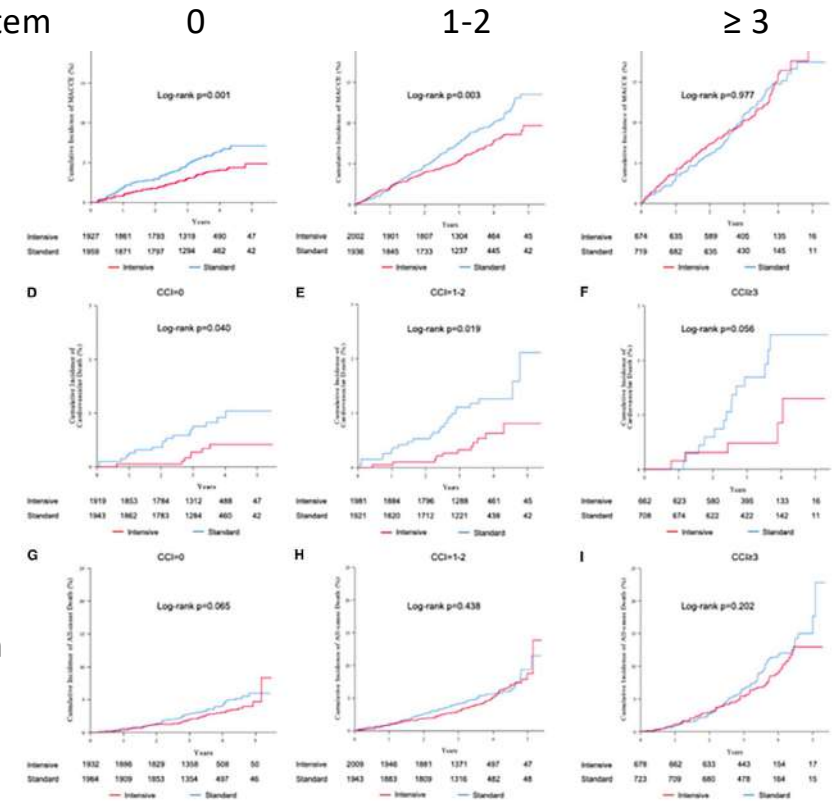


cognitive impairment no dementia



Nature Medicine 2025;31:2054–2061

Effect of Intensive Blood Pressure Control and Comorbidity Status on the Prognosis of Patients With Hypertension: Insights From SPRINT



Charlson Comorbidity Index (CCI) scoring system:
19 disease conditions

Intensive vs standard BP control decreased CV events and mortality in patients with mild or moderate comorbidity burden, particularly in those with mild comorbidities.

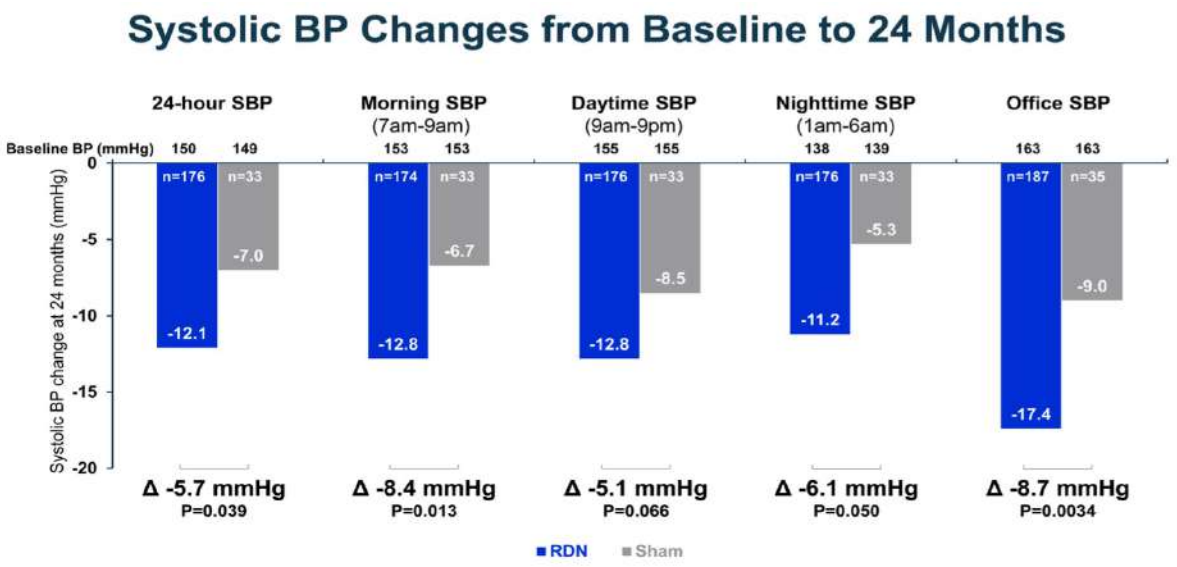
This emphasizes the importance of optimizing BP management even in patients with hypertension without extensive comorbid conditions, as their risk may be underestimated.

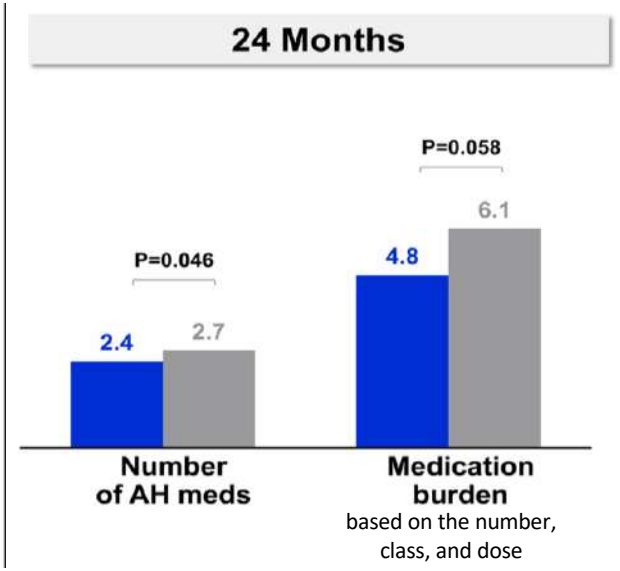
J Am Heart Assoc 2025;14:e036719

Long-Term Safety and Efficacy of Renal Denervation: 24-Month Results From SPYRAL HTN-ON MED Trial

Prospective, randomized, sham-controlled, blinded trial enrolling 337 patients globally from 56 clinical centers with office BP 150-180 / ≥ 90 and 24-hr systolic BP 140-170 mmHg prescribed 1-3 antihypertensive medications

24 months changes in BP, antihypertensive use, and safety outcomes are compared between RDN and sham control





RDN produced greater ambulatory and office systolic BP reductions at 24 months compared with sham control, despite higher antihypertensive medication use in the control group.

Circ Cardiovasc Interv 2025;18:e015194

Guides de pratique et consensus

- ***2025 Hypertension Canada guideline*** *for the diagnosis and treatment of hypertension in adults in primary care*

  CMAJ 2025 May;197(20):E549-E564

- ***2025 ACC/AHA Guideline*** *for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology / American Heart Association Joint Committee on Clinical Practice Guidelines*

  Hypertension 2025 October;82(10):e212-e316

- *Blood pressure measurement at kiosks in public spaces: systematic review and consensus statement by the European Society of Hypertension Working Group on Blood Pressure Monitoring and Cardiovascular Variability*

  J Hypertens 2025 April;43:577–588

- *Hypertension Canada Statement on the Use of Cuffless Blood Pressure Monitoring Devices in Clinical Practice*

  Am J of Hypertension 2025 April;38(5):259–266