Hypertension Clinical Playbook

The definitive visual guide to diagnosis, stepped-care pharmacotherapy, and special population management.

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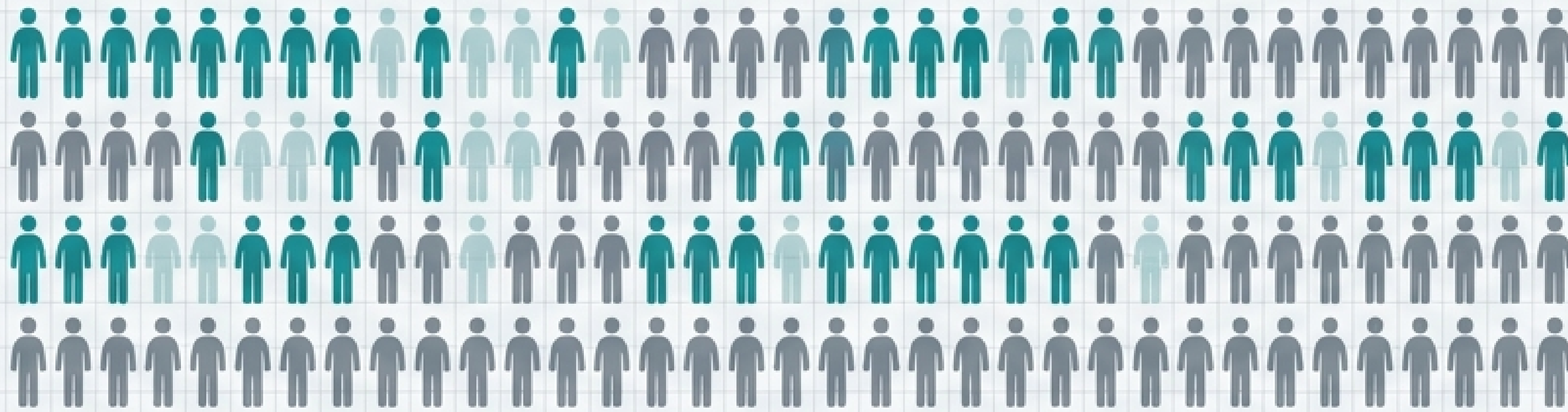
The Silent Epidemic: Australian Burden

34% (6 million) of Australian adults have hypertension.



1 in 3 adults with hypertension are completely unaware of their condition.

AIHW DATA - DOWNSTREAM IMPACT

28% of all Cardiovascular Events

37% of Ischaemic Heart Disease

35% of Stroke Burden

Prevalence shifts at age 65 (Men > Women before 65; Women > Men after 65).

Diagnostic Protocols: Defining the Metric

The Diagnostic Measurement Matrix

Office BP

Threshold:
≥140/90 mmHg

Protocol:
Rest ≥5 min, back supported, arm at heart level. 2 readings, 1-2 min apart.
Use higher arm if difference >20 mmHg.

Home BP (HBPM)

Threshold:
≥135/85 mmHg

Protocol:
7 consecutive days, AM & PM. Discard Day 1.

Cost:
~$100 (consumer).

GOLD STANDARD

Ambulatory BP (ABPM)

24h Threshold:
≥130/80 mmHg

Day: ≥135/85

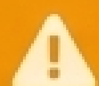
Night: ≥120/70

Note: Non-dipping (<10% nocturnal fall) = high CV risk.

Cost: Out-of-pocket (No MBS item).

The Masked Danger: Identifying Hidden Risk

Office BP \ Out-of-Office BP	Normal	Elevated
Elevated	**White Coat HTN** • 15-20% prevalence. • Low-moderate risk. • Lifestyle/monitoring only.	**Sustained HTN**
Normal	**True Normotension**	**Masked HTN** • 10-15% prevalence. • High CV risk. • Requires active pharmacotherapy.


Actively screen for Masked HTN in patients with diabetes, CKD, OSA, or smoking history using HBPM.

Baseline Diagnostic Workup

Essential Baselines

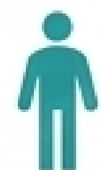
- Serum electrolytes, creatinine, eGFR
  MBS:66511 (Detects hypokalaemia/CKD)
- Urinalysis (Urine ACR)
  MBS:66515 (Screens for albuminuria)
- Fasting lipids
  MBS:66511 (CV risk)
- Fasting glucose/HbA1c
  MBS:66511/66551 (Diabetes screen)

Available/Referral Investigations

- 12-lead ECG
  MBS:11700 (LVH, ischaemia)
- Fundoscopy
  (Retinopathy)
- Echocardiography
  MBS:55114 (If LVH suspected)

Calculate 5-year ACVD risk to contextualize BP management.

Defining the Target: Profile-Driven Goals



General Adult

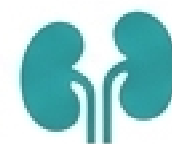
<130/80

(Evidence: SPRINT, 2017 ACC/AHA)

Diabetes

<130/80

(ACEi/ARB preferred)



CKD

<130/80

(ACEi/ARB mandatory if ACR ≥30)

Post-Stroke / TIA

<130/80

(Commence >48h post-ischaemic)

Elderly <80

<130/80

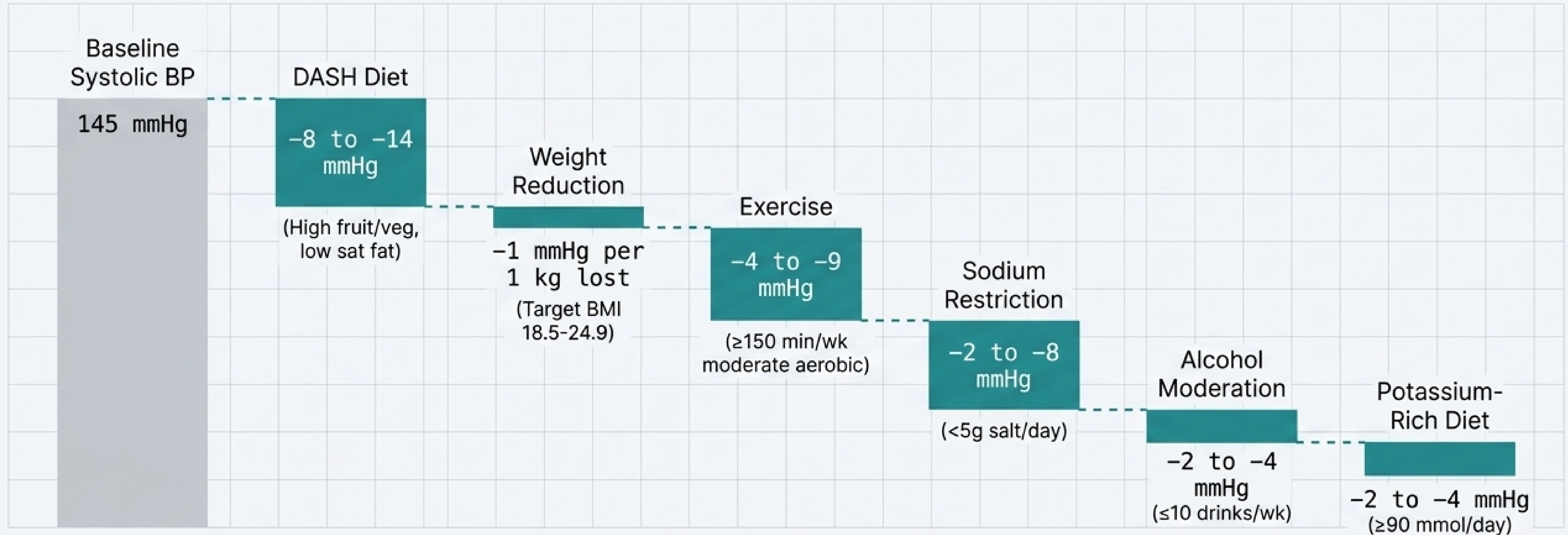
(Individualize based on frailty)

Elderly ≥80

130–149/<80

(Avoid aggressive targeting to prevent falls)

The Baseline Intervention: Quantifying Lifestyle



Combined lifestyle modifications can equal or exceed the efficacy of dual-pharmacotherapy.

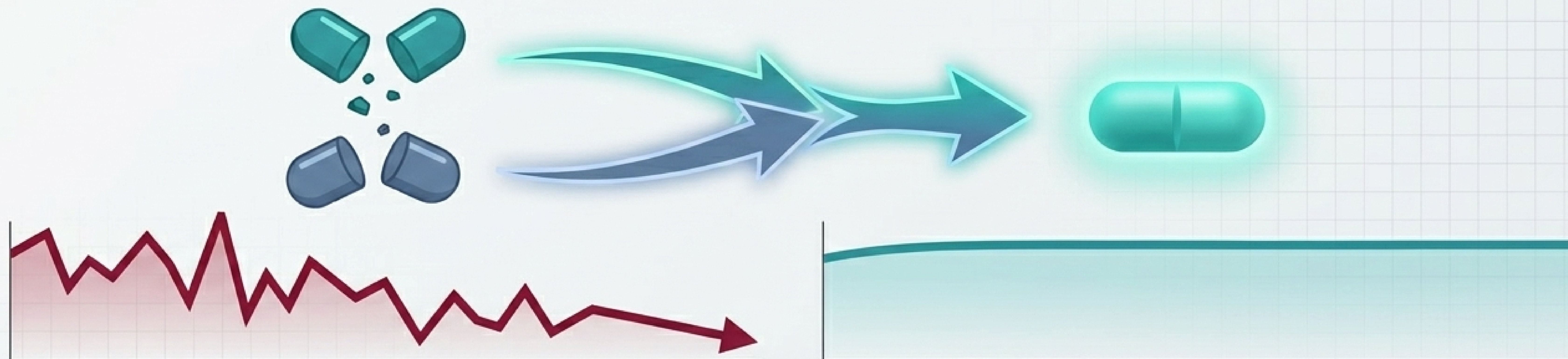
The Arsenal: First-Line Pharmacotherapy

The First-Line Arsenal Matrix				
Class	Example / Starting Dose	Renal Rules	Hepatic Rules	PBS Status
ACE Inhibitor	Perindopril 5mg to 10mg OD	Start 2.5mg if eGFR<30.	-	General
ARB	Irbesartan 150-300mg OD / Telmisartan 40-80mg OD	No dose adjustment, monitor K+/eGFR.	-	General
DHP-CCB	Amlodipine 5mg to 10mg OD	No dose adjustment required.	Start 2.5mg in severe impairment.	General
Thiazide-like	Indapamide 1.5mg SR OD	Contraindicated if eGFR <15 (anuria).	-	General

Prescribing Principle: Start single agent at low dose, titrate over 4-8 weeks. If target not reached, add a second agent from a different class.

Escalation: The Single-Pill Advantage

Context: For patients ≥20/10 mmHg above target or Stage 2 HTN, initiate dual therapy immediately.



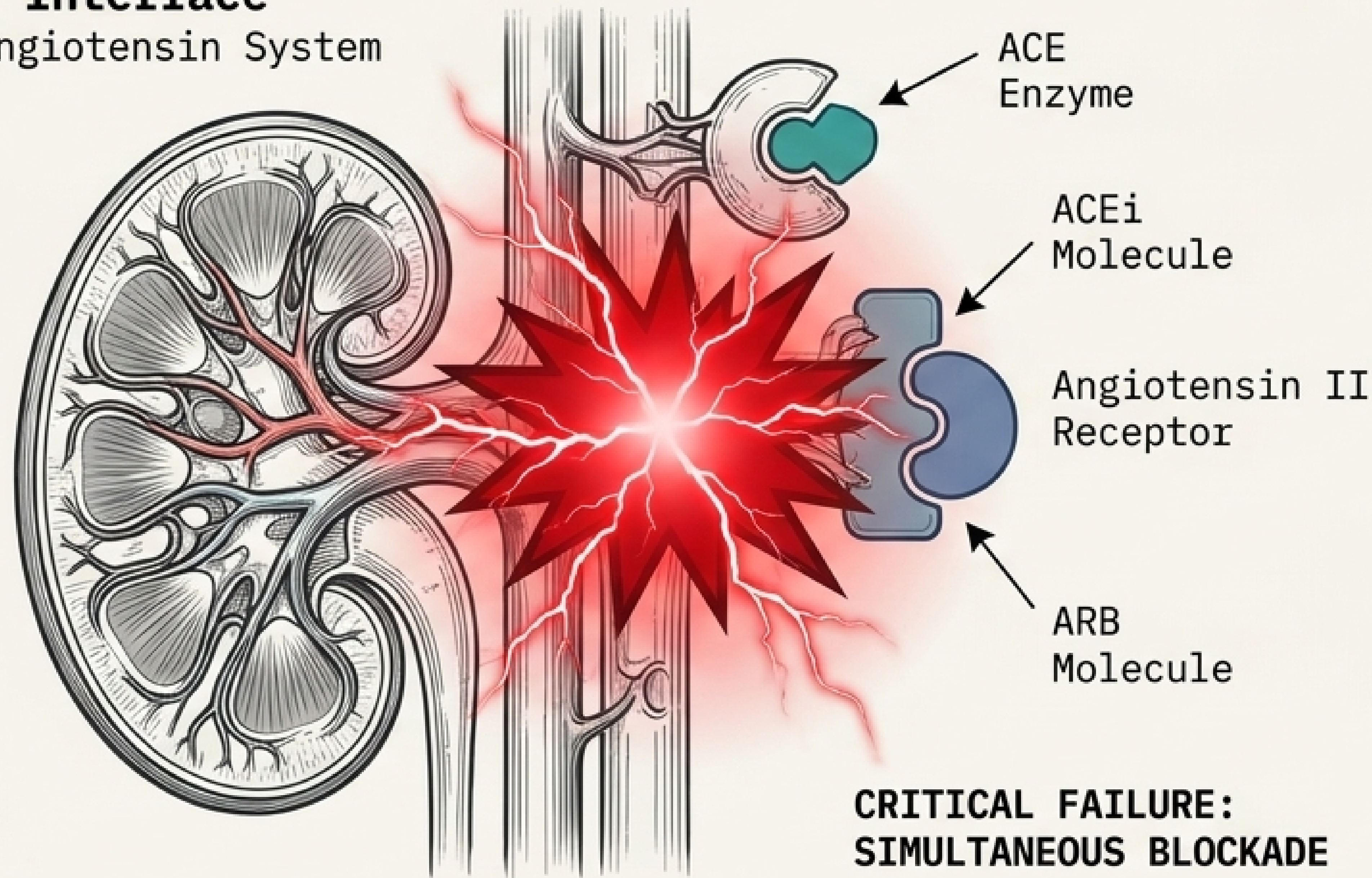
Available PBS-Listed Combos

- **Coveram:** Perindopril + Amlodipine (5/5 to 10/10)
- **Karvea Combo:** Irbesartan + Hydrochlorothiazide (150/12.5 to 300/12.5)
- **Twynsta:** Telmisartan + Amlodipine (40/5 to 80/10)

Key Insight: **Single-pill combinations (SPCs) drastically reduce pill burden and stabilize long-term adherence curves.**

The Fatal Combo: Absolute Contraindication

NEVER COMBINE AN ACE-i WITH AN ARB.



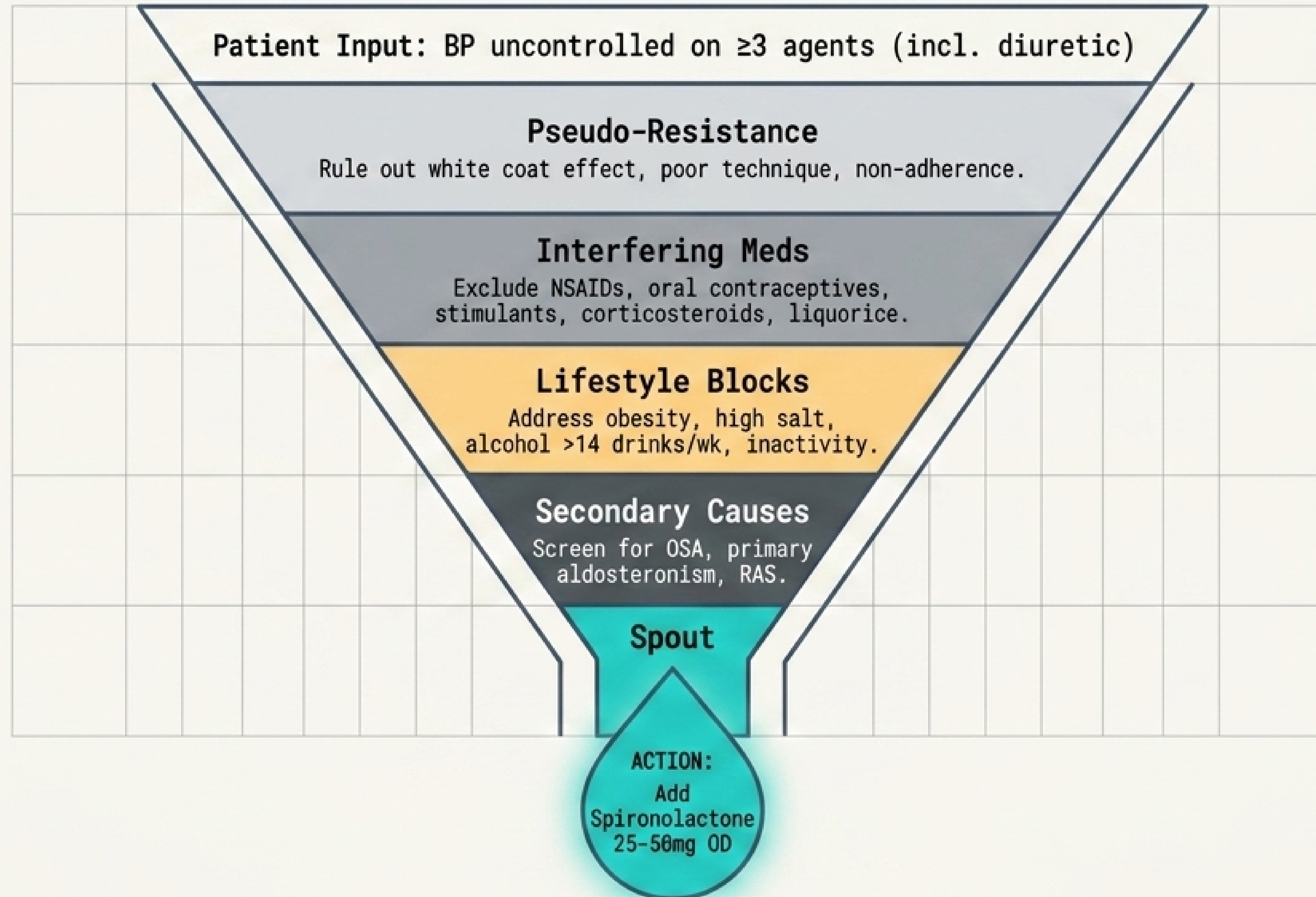
Mechanism of Harm

Dual blockade of the renin-angiotensin system causes severe **hyperkalaemia**, profound **hypotension**, and **Acute Kidney Injury (AKI)**.

Evidence Base

The **ONTARGET Trial** definitively demonstrated increased adverse effects with absolutely zero cardiovascular benefit.

The Resistant Hypertension Elimination Funnel



(4th-line agent, per PATHWAY-2 trial. Avoid if eGFR <30).

Anomalies: Screening for Secondary Hypertension

Trigger Criteria

SCREEN IF:
- Onset <30 yrs
- Sudden worsening HTN
- Resistant HTN
- Hypertensive crisis (≥180/120)

The Secondary Hypertension Sleuth Matrix

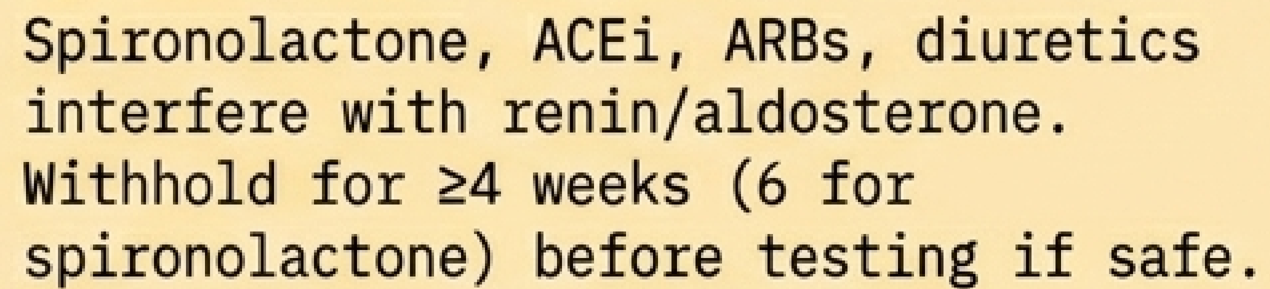
Condition	Clinical Clues	Screening Test	Definitive Treatment
Primary Aldosteronism	Hypokalaemia.	Aldosterone-to-Renin Ratio (ARR).	Adrenalectomy or Spironolactone.
Renovascular (RAS)	Abdominal bruit, older atherosclerosis / young women (FMD).	Duplex US.	ACEi/ARB or Stenting.
Phaeochromocytoma	Episodic headache, sweating, palpitations.	Plasma-free metanephrines.	Alpha then beta-blockade, surgery.
OSA	Snoring, daytime somnolence, BMI ≥30.	Polysomnography.	CPAP (yields 2-3 mmHg drop).

The Primary Suspects: Aldosteronism & Renovascular

Primary Aldosteronism (Conn's Syndrome)

Prevalence: 5-15% (Underdiagnosed in Aus).

Positive screen if ARR >70 pmol/mIU with PAC >400 pmol/L.



MEDICATION INTERFERENCE: Spironolactone, ACEi, ARBs, diuretics interfere with renin/aldosterone. Withhold for ≥4 weeks (6 for spironolactone) before testing if safe.

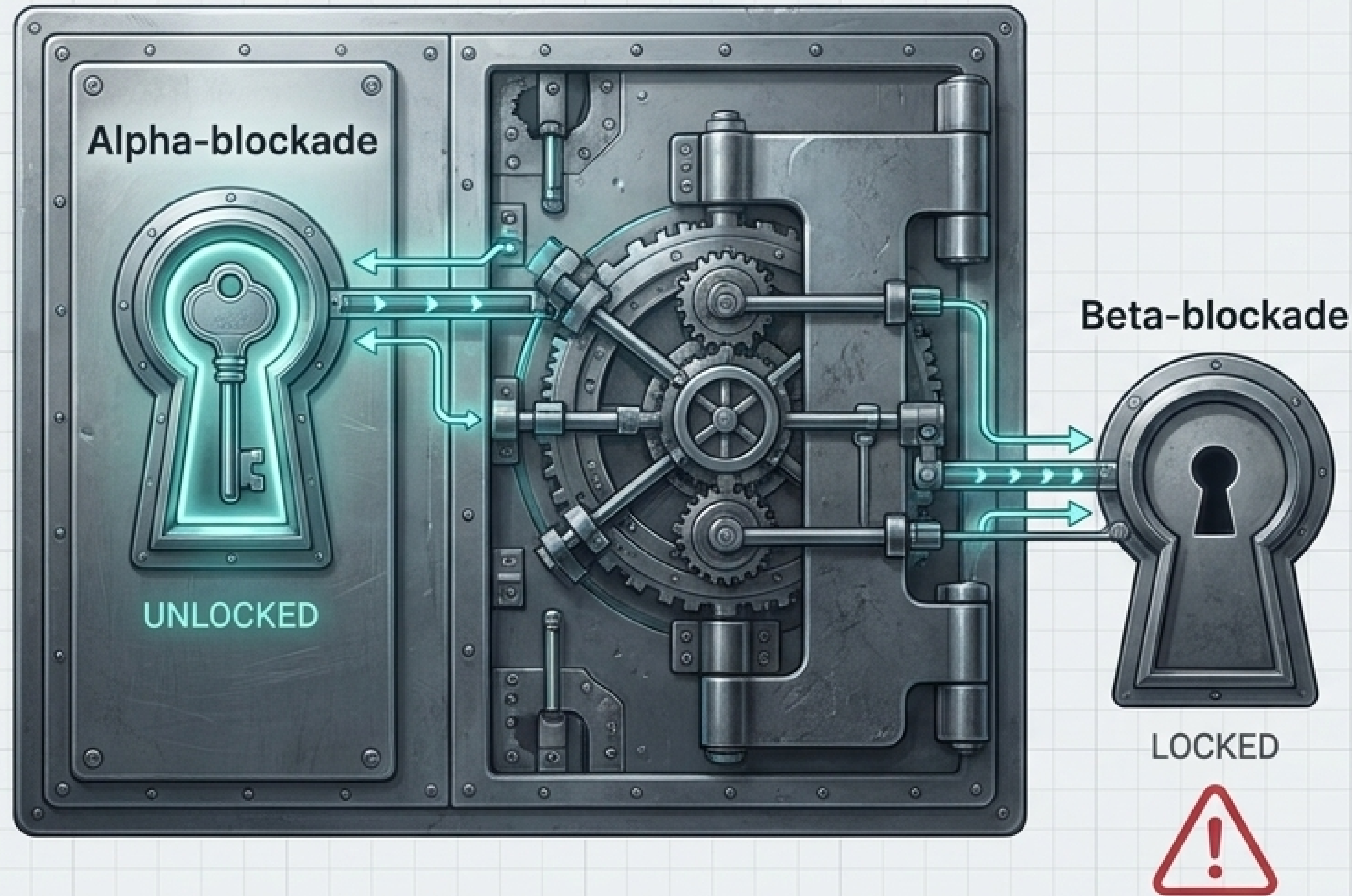
Renovascular Hypertension (RAS)

Demographics: Atherosclerotic (>60yo) vs Fibromuscular Dysplasia (<50yo women).

Imaging: Duplex Renal US is 1st-line (85-90% sensitivity). CTA/MRA for anatomical mapping.

EVIDENCE NOTE: Routine stenting for atherosclerotic RAS shows no benefit over medical therapy (ASTRAL/CORAL trials).

Phaeochromocytoma: The Alpha-Before-Beta Rule



THE RULE:
NEVER start a beta-blocker before adequate alpha-blockade.

THE MECHANISM:

Unopposed alpha-receptor stimulation will precipitate a catastrophic hypertensive crisis.

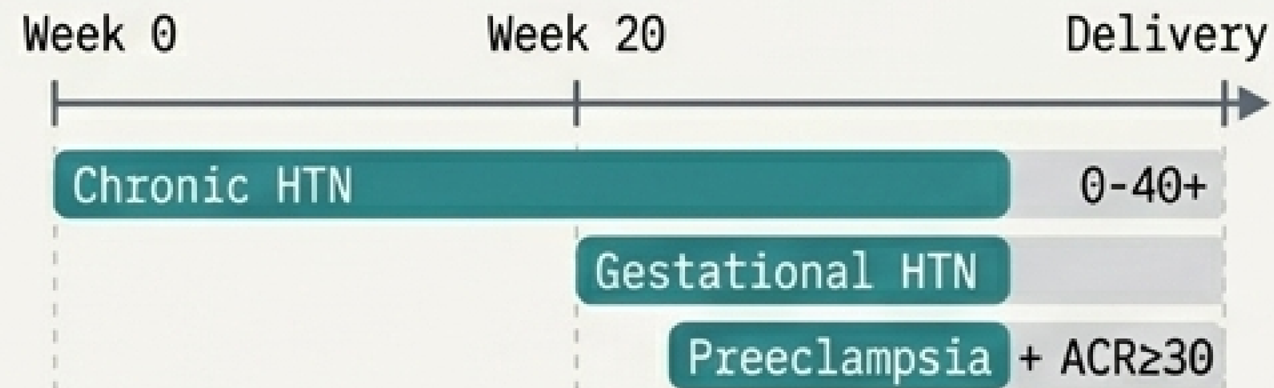
THE PROTOCOL:

Initiate pre-operative alpha-blockade (Phenoxybenzamine 10-40mg BD or Doxazosin) for 10-14 days FIRST.

Only then can a beta-blocker be safely introduced.

Special Populations: Maternal & Paediatric Care

Pregnancy



Targets: 110-135/80-85 mmHg.

Arsenal: Methyldopa (Max 2g/d), Labetalol (PBS Authority), Nifedipine MR.

CRIMSON ALERT: ACEi & ARBs are strictly teratogenic (renal dysgenesis). Cease pre-conception or immediately upon pregnancy.

Paediatrics

Definition: BP ≥95th percentile for age/sex/height.

Causes: <12 years mostly renal (70-80%); adolescents mostly primary.

Action: Confirm oscillometric screens with auscultatory method. Refer to paediatric nephrologist.

Special Populations: Age & Systemic Impairment

Elderly (≥65)

- Check for orthostatic hypotension (Systolic drop ≥20, Diastolic drop ≥10).
- Avoid high-dose thiazides (hyponatraemia) and centrally-acting clonidine.
- Target guided by Clinical Frailty Scale.

Chronic Kidney Disease

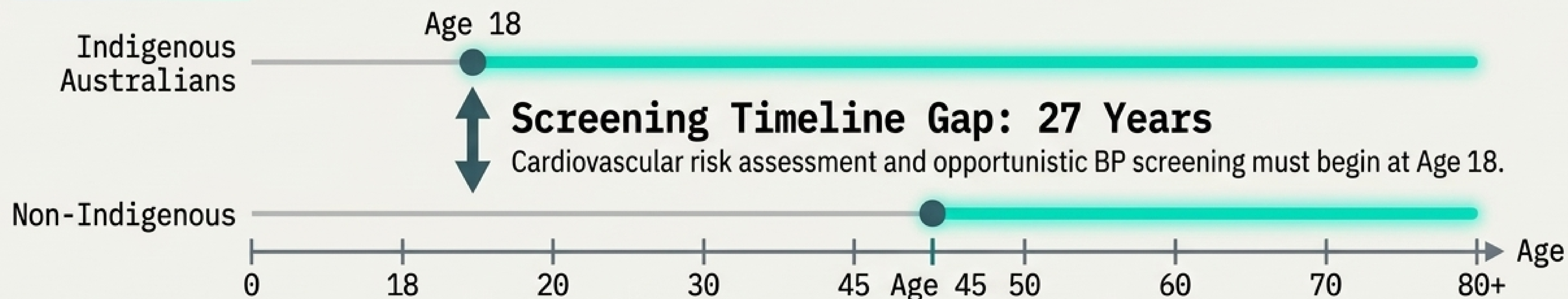
- ACEi/ARB mandatory if ACR ≥30 mg/mmol.
- Expect up to 30% initial creatinine rise. Do NOT cease unless rise >30% or K+ >6.0.
- Use Loop diuretics if eGFR <30.

Hepatic & Transplant

- HEPATIC: Amlodipine preferred (start 2.5mg). Avoid high-dose diuretics (precipitates encephalopathy).
- TRANSPLANT: Avoid non-DHP CCBs (diltiazem, verapamil) as they inhibit CYP3A4, spiking tacrolimus/ciclosporin levels.

The Disparity Gap: Indigenous Health Burden

The Multiplier: Aboriginal and Torres Strait Islander peoples experience hypertension at **1.3 - 1.6x** the rate of non-Indigenous Australians.



End-Organ Impact: Indigenous Australians suffer **7-8 times** the rate of dialysis-requiring ESKD. Annual eGFR and urine ACR screening is **mandatory**.

Closing the Gap: Culturally Safe Management

The Stratified Stepped-Care Blueprint

Elevated Office BP

Confirm with ABPM/HBPM.

Classify Risk & Target (General <130/80, Elderly ≥80 130-149, etc.)

Base Layer → Lifestyle modification (DASH, Weight, Sodium)

Step 1 → Monotherapy (ACEi/ARB/CCB/Thiazide)

Step 2 → Single-Pill Combination (e.g., ACEi + CCB)

Step 3 → Add Thiazide-like diuretic

⚠ Step 4 (Resistant) → Rule out pseudo/secondary causes → Add Spironolactone

Clinical Reference Library

Core Guidelines

- NHFA / CSANZ Position Statement (2016)
- 2017 ACC/AHA Guidelines

Landmark Trials

- SPRINT: Intensive vs standard BP control.
- ONTARGET: Harm of ACEi + ARB combination.
- PATHWAY-2: Spironolactone in resistant HTN.

Special Populations

- KDIGO 2021: BP in Chronic Kidney Disease.
- SOMANZ: Hypertensive disorders of pregnancy.
- AIHW: Cardiovascular disease in Indigenous Australians.