

## Appendix B: Hypertension Treatment during weight management

- Weight loss is a potent treatment for hypertension.
- The combination of Counterweight-Plus and either diuretic or antihypertensive medications can produce postural hypotension, potentially hazardous. Practitioners should advise patients about the risk of postural hypotension, and its symptoms (light-headedness on standing)
- **If antihypertensive and diuretic medications are continued during TDR, monitor blood pressure regularly, and seek medical advice if blood pressure falls or if dizziness develops.**
- **From the safety evidence in the DiRECT trial\*, we recommend stopping all antihypertensive and diuretic medications on day one of Total Diet Replacement (TDR ~850cals) When antihypertensive drugs are stopped, re-emphasise the importance of weight loss and avoiding sodium (salt)**
- Reassure patients that their treatment of hypertension is not stopping, rather it is being replaced with Counterweight-Plus. The most potent hypotensive element is acute negative energy balance during TDR, so BP can fall before there is significant weight loss.
- Antihypertensive drugs given for other reasons (e.g. angina, heart failure) should be continued.
- **When two or more drugs are prescribed for hypertension, BP may not fall so markedly, and reintroduction of some medication is often needed when weight loss ceases.** It is reasonable to remain on treatment during TDR, perhaps with one drug, and monitor lying and standing BP weekly or if there are symptoms of light-headedness. If systolic BP falls below 120 mmHg, at any stage of Counterweight-Plus, we suggest that BP is reviewed by GP.

\*Wilma S. Leslie et al. Antihypertensive medication needs and blood pressure control with weight loss in the Diabetes Remission Clinical Trial (DiRECT), 2021. *Diabetologia* <https://doi.org/10.1007/s00125-021-05471-x>

This protocol lays out a “standard approach” to follow, but different clinical decisions may be necessary for some patients. To simplify decision making, systolic pressure only is used as a guide to therapy. The level of 140mmHg is chosen to allow safe decisions during the weight loss period for those who have stopped their antihypertensive medications.

### During TDR

Evidence from the DiRECT trial shows that when patients start Counterweight-Plus and stop their diuretic and antihypertensive drugs, blood pressure does not change for 4 weeks, and then it starts to fall

- **Monitor BP weekly/fortnightly (as per appointment schedule):** make changes only for persistently elevated BP (on repeat testing)
- **If systolic BP is over 165 mmHg** on repeated measurement In the first 2 weeks after stopping antihypertensives and diuretics:
- Restart one drug, using the order set out below.\*
- **Thereafter, if systolic BP is repeatedly >140 mmHg –**  
Restart one drug as per order listed below.\* Increase dose weekly to achieve systolic BP<140mmHg.
- If systolic BP remains repeatedly >140mmHg on the first drug – add a second, as per order listed below. \*  
Increase dose weekly to achieve target <140mmHg.
- Repeat as necessary with third, fourth or more drugs (increasing each to maximum dose).

### During FR

As body weight stabilises at a lower level, most patients with previous hypertension do need some antihypertensive medication, but usually less than before weight loss.

- **After Food Reintroduction,** Measure BP 4-weekly and follow usual guidelines for management of hypertension.

**\* Order of reintroduction of previously used drugs (protocol based on current NICE/SIGN guidelines)**

**Note the previous drugs which the patient had been taking and choose from these in the following order:**

- Advise salt avoidance
- ACE inhibitors (ramipril, lisinopril, perindopril, etc.)
- Angiotensin receptor blockers (irbesartan, candesartan, etc.)
- Thiazide type (bendroflumethazide, indapamide, etc.)
- Spironolactone
- Calcium channel blocker (nifedipine, amlodipine, etc.)
- Beta blocker (atenolol, labetalol, etc.)
- Alpha blocker (doxazosin, prazosin, etc.)
- Others

**Supporting information when Managing Blood Pressure for patients with hypertension on Counterweight-Plus**

- The Counterweight Practitioner will communicate with the patient and patients GP/Prescribing nurse when guidance is required on medication adjustment as indicated per protocol.
- The Doctor / Prescribing Nurse will deal with each patient individually, to weigh up BP control against other aspects of care and personal situations.
- Blood Pressure will fall during active weight loss, especially if antihypertensive drugs or diuretics are being taken. This can cause unpleasant symptoms of dizziness, postural hypotension, and sometimes blackouts and falls.
- No SAEs or other problems have been reported. And Q-risk (risk of a cardiac event in the next 10 years) falls from 16% to 8% in patients who achieve remission of type 2 diabetes.
- The evidence from clinical trials is that BP does not rise after stopping antihypertensive or diuretic medications, provided the patient is on the programme and losing weight.
- BP tends to rise after weight loss has stabilised, so some patients need to go back onto medication.
- To help keep the BP lower, and avoid the need for drugs, all patients should be advised to limit salt intake. Avoid adding salt to foods in cooking and at the table.
- BP should be monitored at each appointment weekly/fortnightly, until stable (measured by Counterweight practitioner or self-monitored by participant, with appropriate training)
- Measure BP Lying (rested) and Standing (for 2-3 minutes). If there is no postural drop (>20mmHg) at baseline or after 1-2 weeks, continue monitoring as per protocol, see last bullet point.
- If there is a postural drop of >20 mmHg, at baseline or 1-2 weeks, advise caution when rising to stand, and check that the patient has stopped antihypertensive or diuretic drugs during weight loss.
- **How often should you monitor BP? When to take action?**

The timing is not critical, and changes in medication need to be on the advice of the doctor or prescribing nurse.

**As a general guideline:** For people previously on antihypertensive medications, check BP at 1 week, then 2 weeks, then fortnightly thereafter. If it is OK (under about 140 systolic) for 3 or 4 weeks, then you could relax to 4 weekly. If it is elevated once, it should be repeated in say 1 and 2 weeks (after encouraging further weight loss). (Re-)starting medication should be considered if there are 3 consecutive BP measurements above 140 mmHg, or perhaps 2 above 160mmHg.