



PATIENTS TAKING THIAZIDES AND RELATED DIURETICS

Top tips for MURs

- Check that patient has had blood pressure and heart rate measured every twelve months
- Check that the patient has had renal function tests every twelve months
- Check that elderly patients and patients who are on long term treatment with bendroflumethiazide have regular ongoing monitoring and U & E tests
- Advise patient to sit up and stand slowly first thing in the morning and to drink adequate fluid to prevent hypotension (dizziness & light headedness)
- Advise patient to take medication regularly (no missed doses)
- Counsel patient on reason for taking diuretic and advise them on best time to take medication to avoid interference with daily routines (take in the morning if not going out or midday if out in morning - avoid night time dosing)
- Counsel patient about the need to drink adequate fluid but the risk of excessive fluid intake
- Counsel patient on signs and symptoms of complications that need referral (see below)
- Counsel patient on common side effects (see below)
- Counsel patient on reducing alcohol intake to within safe limits (2 units per day for women & 3 units per day for men)
- Counsel patient on healthy eating, exercise & weight loss (if BMI > 25kg/m²) - reduce saturated fat and salt intake, increase oily fish intake, complete a minimum of 30 minutes moderate intensity physical activity, five times a week. Reduce caffeine intake to no more than 5 cups a day and recommend 5 portions of fruit and vegetables a day
- Advise patient who smoke of the benefits of stopping smoking and refer to Stop Smoking Wales or Pharmacy Stop Smoking services if willing to stop
- Check that the patient has had an annual influenza vaccination and a one off pneumococcal vaccination

What are thiazides used for?

Thiazides are used to relieve oedema due to chronic heart failure and, in lower doses, to reduce blood pressure. They are usually administered early in the day so that diuresis does not interfere with sleep. Thiazide diuretics are ineffective in patients with poor renal function.

Red flags that need referral

- Any heaviness in the centre of the chest, triggered by effort or emotion
- Any fatigue or water retention
- Feeling unwell and generally out of sorts, irregular heart beat and muscle weakness (potassium levels need to be checked)
- Any intermittent dull, cramping pain or tightness in legs while exercising that disappears at rest
- Any symptoms of depression (low self esteem, lack of energy, weight loss, appetite loss, early morning wakening, lack of concentration)
- Any symptoms of impaired glucose tolerance or diabetes (extreme tiredness, thirst or excessive urination)
- Any symptoms of hyponatraemia with neurological symptoms (eg nausea, apathy(loss of interest /concern) and progressive disorientation)

How do thiazide and related diuretics work?

Increases excretion of sodium, potassium and water, which causes the circulating volume to be diminished, reducing preload on the heart, reducing cardiac output which reduces blood pressure, and fluid overload.





Potential serious drug interactions? - See BNF Appendix 1: Interactions for more details

- Certain antidepressants (tricyclics, reboxetine & MAOIs) – an increased risk of postural hypotension
- NSAIDs & ciclosporin – an increased risk of nephrotoxicity
- Amiodarone & other anti-arrhythmics – an increased risk of cardiac toxicity
- Anti-diabetic drugs – hypoglycaemic effects antagonised
- Certain antiepileptics – an increased risk of hyponatraemia
- Calcium salts & vitamin D – an increased risk of hypercalcaemia
- Certain lipid-regulating drug – absorption of thiazide reduced
- Lithium – an increased plasma concentration of lithium and risk of toxicity
- Antifungals, antipsychotics, atomoxetine, beta-blockers, cardiac glycosides, corticosteroids, high dose beta2 sympathomimetics, theophylline and other diuretics – an increased risk of hypokalaemia

What are the common side effects of thiazides and related diuretics to look out for?

Common side effects	Recommendation
Gastro-intestinal disturbances	Refer to GP for tests
High blood glucose levels	Refer to GP for blood glucose testing as insulin dosage of some patients may need adjustment
Altered plasma-lipid concentrations	Refer to GP for tests
Hypokalaemia (could lead to arrhythmias)	Advise restriction of salt. Refer to GP for tests (serum electrolyte determination)
Hyponatraemia (weakness, vomiting, nausea, confusion and dizziness) - increased risk in <ul style="list-style-type: none"> • persons over 70 years old • women 	Advise patient to be careful driving or operating machinery if dizzy. Refer to GP for tests (serum electrolyte determination)
Gout	Potential for prophylaxis with allopurinol
Postural hypotension (dizziness on standing)	Advise patient to sit up and stand slowly first thing in the morning. Ensure diuretic taken in the morning with adequate fluid. Refer to GP for dose alteration if continues
Muscle weakness / Cramps	Drink adequate (but not excessive) fluids as cramp is common symptom of dehydration
Sun sensitivity	Encourage the use of sunscreen with adequate UV protection
Less common side effects	Recommendation
Agranulocytosis (sore throat & fever)	Refer to GP for tests
Leucopenia (low white blood cell count)	Refer to GP for full blood count tests
Thrombocytopenia (any signs of bleeding, purpura (purple, brown and red bruises) or petechiae (small red or purple dots))	Refer to GP for full blood count tests
Impotence	Refer to GP for assessment of suitability for erectile dysfunction medication
Systemic lupus erythematosus (blurred vision, fever, malaise, loss of appetite, joint pain and swelling, skin rash, "butterfly rash" over cheeks and bridge of nose, weight loss)	Refer to GP for tests

Where can you find more information?

- Cardiovascular system – BNF sub-section 2.2.1 Thiazides and related diuretics
- Coronary Heart Disease distance learning pack can be found on WCPPE website (<http://www.wcppe.org.uk>)
- NICE guidance: Hypertension – clinical management of primary hypertension in adults, August 2011 can be found on NICE website (<http://www.nice.org.uk>)
- Clinical Knowledge Summary (Prodigy) Hypertension can be found on CKS website (<http://www.cks.nhs.uk/home>)

