

## 6 Endocrine

**Comment:** For further information refer to  
[Recommendation for Blood Glucose Monitoring \(Appendix 6b\)](#)  
[Blood Glucose Meter Recommendations \(Appendix 6c\)](#)

6.1 Drugs used in Diabetes	Primary Care	Acute/ Specialist Services
<b>6.1.1 Insulins</b>		
Insulin	⊕	✓
<b>Comment:</b> For all insulins recommendation by practitioner experienced in the management of diabetes All prescriptions for insulin should be written by brand name only		

6.1.2 Oral Antidiabetic Drugs	Primary Care	Acute/ Specialist Services
<b>Biguanides</b>		
Metformin	✓	✓
<b>Comment:</b> Metformin M/R may be prescribed in patients who are intolerant of metformin standard tablets due to GI intolerance		
<b>Sulphonylureas</b>		
Gliclazide (1 <sup>st</sup> line)	✓	✓
Glimepiride (only if problems with compliance) (2 <sup>nd</sup> line)	✓	✓
<b>Comment:</b> For once daily dosing, glimepiride is preferred to gliclazide M/R as it more cost-effective		
<b>Glitazones (Thiazolidinediones)</b>		
Pioglitazone (Dual or Triple Therapy with metformin/sulphonylureas)	✓	✓
<b>Gliptins (Dipeptidylpeptidase-IV (DPP4) inhibitors)</b>		
Alogliptin (1 <sup>st</sup> line)	✓	✓
Linagliptin (1 <sup>st</sup> line in renal impairment)	✓	✓
<b>Gliflozins (Sodium glucose co-transporter-2 (SGLT2) inhibitors)</b>		
Dapagliflozin	✓	✓
Empagliflozin	✓	✓
Canagliflozin (restricted use as below)	✓	✓
<b>Comment:</b> Dapagliflozin is also approved for use in chronic heart failure (see Chapter 2) and for use in patients with chronic kidney disease in patients at treatment initiation and who are already receiving a ACE inhibitor or ARB (unless not tolerated or contra-indicated) with: <ul style="list-style-type: none"> <li>• an eGFR 20ml/min/1.73m<sup>2</sup> up to 45ml/min/1.73m<sup>2</sup> or</li> <li>• an eGFR of 45ml/min/1.73m<sup>2</sup> up to 90ml/min/1.73m<sup>2</sup> and either:</li> <li>• a urine albumin creatinine ratio of at least 22.6mg/mmol or more, or</li> <li>• Type 2 diabetes.</li> </ul> <p>Canagliflozin is approved for restricted use to improve renal outcome in patients with Type 2 Diabetes with evidence of diabetic kidney disease (ACR &gt; 30mg/mmol) for those who have suboptimal glycaemic control, BMI of ≥ 30, and an HbA1c of &lt; 75mmol/mol. Can be started down to eGFR of ≥ 30ml/min</p>		

**Key** ✓ Initiate and continue ⊕ Continue where appropriate.

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Empagliflozin is also approved for use in chronic heart failure (see Chapter 2) and for use in adults for the treatment of chronic kidney disease in accordance with [SMC restriction](#).

### Glucagon-like peptide-1 receptor agonists (GLP1-RAs)

	Liraglutide (Diaviv®, Zegluden®)	⊕	✓
	Semaglutide (Ozempic®)	⊕	✓
	Semaglutide (Rybelsus®) Tablets	✓	✓
	Liraglutide + Degludec (Xultophy®)	⊕	✓

**Comment:** For GLP1-RAs recommendation by Practitioner experienced in the management of diabetes

### Long-acting Glucose-dependent Insulinotropic Polypeptide (GIP) receptor & Glucagon-like peptide-1 receptor agonist (GLP1-RAs)

	Tirzepatide (Mounjaro®)	⊕	✓
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**Comment:** Injectable GLP1/GIP-RAs are only accepted for use in Forth Valley for the management of Type 2 diabetes following specialist initiation. They are currently **NOT** accepted for use in NHS Forth Valley for weight management.

### 6.1.4 Treatment of Hypoglycaemia

	Glucagon (Glucagen® Hypokit)	✓	✓
	Glucogel (Glucogel®, GlucoRx®)	✓	✓
	Glucose IV 20%		✓

### 6.1.5 Treatment of Chronic Kidney Disease

	Finerenone (Kerendia®)	⊕	✓
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**Comment:** In line with SMC recommendation, finerenone is approved for the treatment of chronic kidney disease (stage 3 and 4 with albuminuria) associated with type 2 diabetes in adults. Specialist initiation. Once patient has been stabilised on treatment (after 4 months) can be continued in primary care.

## 6.2 Thyroid and Antithyroid Drugs

Primary  
Care

Acute/  
Specialist  
Services

### 6.2.1 Thyroid Hormones

	Levothyroxine (1 <sup>st</sup> line)	✓	✓
	Liothyronine	⊕	✓

**Comment:** Prescribing of Armour Thyroid (dissicated porcine thyroid glands) is not recommended by FV endocrinologists. It is an unlicensed medicine, there is considerable variability in formulations and there is no clinical evidence that it is more effective than levothyroxine

### 6.2.2 Antithyroid Drugs

	Carbimazole (1 <sup>st</sup> line)	✓	✓
	Propylthiouracil	✓	✓
	Potassium iodide		✓
	Propranolol (standard tablets)	✓	✓

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6.3.1 Corticosteroids		Primary Care	Acute/ Specialist Services
<b>6.3.1 Replacement Therapy</b>			
	Fludrocortisone Acetate	✓	✓
<b>6.3.2 Glucocorticoid Therapy</b>			
	Hydrocortisone Tablets	⊕	✓
	Hydrocortisone Injection	✓	✓
	Dexamethasone	✓	✓
	Methylprednisolone	✓	✓
	Prednisolone (standard tablets)	✓	✓
<p><b>Comment:</b> Prednisolone enteric coated (e/c) tablets are non-formulary. There is no evidence that prednisolone e/c reduces the risk of GI ulceration, it is more expensive than std. tablets and may cause erratic absorption from the GI tract.</p> <p>Consider <a href="#">osteoporosis prevention treatment</a> if corticosteroids used long term.</p>			

6.4 Sex Hormones		Primary Care	Acute/ Specialist Services
<b>6.4.1 Female Sex Hormones</b>			
<b>6.4.1.1 Oestrogens and HRT</b>			
<p>For further information on the use of HRT see the <a href="#">British Menopause Society Tool for Clinicians – HRT Guide</a></p>			
<b>Combination Products (for use in women with an intact uterus)</b>			
<b>Sequential Combined Therapy (Cyclical) (Last menstrual period &lt;1 year ago)</b>			
<b>Tablets</b>			
1 <sup>st</sup> line	Femoston® (estradiol 1mg or 2mg/dydrogesterone 10mg)	✓	✓
2 <sup>nd</sup> line	Elleste Duet® (estradiol 1mg or 2mg/norethisterone 1mg)	✓	✓
<b>Patches</b>			
1 <sup>st</sup> line	Evorel Sequi® (estradiol 50mcg/24hrs, norethisterone 170mcg/24hrs)	✓	✓
<b>Continuous Combined Therapy (Last menstrual period &gt;1 year ago)</b>			
<b>Tablets</b>			
1 <sup>st</sup> line	Femoston Conti® (estradiol 500mcg or 1mg/dydrogesterone 2.5mg or 5mg)	✓	✓
2 <sup>nd</sup> line	Kliovance® (estradiol 1mg/norethisterone 500mcg)	✓	✓
2 <sup>nd</sup> line	Kliofem® (estradiol 2mg/norethisterone 1mg)	✓	✓
<b>Patches</b>			
1 <sup>st</sup> line	Evorel Conti® (estradiol 50mcg/24hrs, norethisterone 170mcg/24hrs)	✓	✓
2 <sup>nd</sup> line	FemSeven Conti® (estradiol 50mcg/24hrs, levonorgestrel 7mcg/24hrs)	✓	✓

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Oestrogen only (for use in women with no uterus or using an alternative progesterone)			
Tablets			
	Estradiol hemihydrates 1mg or 2mg (Elleste-Solo®)	✓	✓
Patches			
1 <sup>st</sup> line	Evorel® (25mcg-100mcg)	✓	✓
2 <sup>nd</sup> line	Estradot® (25mcg-100mcg)	✓	✓
Transdermal Gel			
	Oestrogel® (estradiol 0.06%)	✓	✓
<b>Comment:</b> Oestrogel® for restricted use when patch formulations are considered inappropriate			
Gonadomimetic			
	Tibolone	⊕	✓
6.4.1.2 Progestogens			
	Dienogest	⊕	✓
<b>Comment:</b> Dienogest tablets are approved for the management of endometriosis. To be prescribed when use of simple analgesia or the contraceptive pill has been ineffective, not tolerated or not considered appropriate. Can be initiated in Primary Care on the recommendation of a specialist.			
1 <sup>st</sup> line	Medroxyprogesterone acetate (Provera®)	✓	✓
1 <sup>st</sup> line	Micronised progesterone (Utrogestan®) 100mg capsules	✓	✓
2 <sup>nd</sup> line	Norethisterone	✓	✓
<b>Comment:</b> Norethisterone should be avoided in patients at risk of venous thromboembolism or who have a history of migraine with aura			
	Progesterone (Cyclogest® for subfertility)		✓
<b>Comment:</b> Cyclogest® should only be prescribed by a Specialist Tertiary Centre			
6.4.2 Male Sex Hormones & Antagonists			
	Testosterone (Testavan®, Testogel®)	⊕	✓
	Cyproterone Acetate	⊕	✓
	Finasteride	✓	✓

6.5 Hypothalamic and pituitary hormones and anti-oestrogens		Primary Care	Acute/ Specialist Services
Anti-oestrogens			
	Clomifene Citrate (1 <sup>st</sup> line)	⊕	✓
	Letrozole (off-label use) (2 <sup>nd</sup> line)	⊕	✓
<b>Comment:</b> Products for assisted conception, excluding clomifene, letrozole are funded centrally and are available through the tertiary infertility centre. <b>GPs should not prescribe.</b>			
Human Growth Hormone			
	Somatropin (preferred brands in new patients are FlexPro®, SurePal®) (daily administration)	⊕	✓
	Somatogon (Ngenla®) (once weekly administration)	⊕	✓
	Somapacitan (Sogroya®) (once weekly administration)		✓

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### 6.5.2 Posterior Pituitary Hormones and Antagonists

	Desmopressin	✓	✓
<b>Comment:</b> Desmopressin Spray is no longer indicated for nocturnal enuresis unless treatment is associated with multiple sclerosis			
	Terlipressin (oesophageal varices)		✓
	Tolvaptan (Jinarc®)		✓

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Disorders of bone metabolism	Primary Care	Acute/ Specialist Services
<p><b>Comment:</b> For further information, also refer to -</p> <p><a href="#">Guidelines for the Management of Osteoporosis in Patients aged 50 or over presenting with a Fragility Fracture, and in Patients on Aromatase Inhibitors</a> (intranet only)</p> <p><a href="#">SIGN 142 - Management of Osteoporosis and the Prevention of Fragility Fractures – January 21</a></p> <p><a href="#">Hypercalcaemia of Malignancy Treatment Guideline &amp; Suspected Hypercalcaemia of Malignancy Guideline for Primary Care</a> (intranet only)</p>		

Bisphosphonates			
<p><b>Comment:</b> To aid compliance <b>once weekly</b> alendronic acid/risedronate is the preferred formulation for all indications. For some indications the once weekly formulation will be an off-label use (See BNF/SPC for further details)</p> <p>Oral bisphosphonates are unsuitable for use in patients with moderate-severe renal impairment. Alendronic acid should be avoided in patients with eGFR &lt;35ml/min./1.73m<sup>2</sup>. Ibandronic acid (when used for postmenopausal osteoporosis) and risedronate should be avoided if eGFR &lt;30ml/min./1.73m<sup>2</sup></p> <p>Oral bisphosphonates should always be co-prescribed with Calcium &amp; vitamin D or if patient has sufficient dietary intake of calcium with vitamin D only.</p>			
Oral			
	Alendronic Acid (1 <sup>st</sup> line) + calcium & Vit. D/ Vit. D	✓	✓
<p><b>Comment:</b> Binosto® (70mg once weekly alendronic acid effervescent tablets can be used in patients who are unable to swallow alendronic acid tablets.</p>			
	Risedronate Sodium (2 <sup>nd</sup> line) + calcium & Vit. D/ Vit. D	✓	✓
	Ibandronic acid 150mg tablets (postmenopausal osteoporosis) (3 <sup>rd</sup> line) + calcium & Vit. D/ Vit. D	✓	✓
	Ibandronic acid 50mg tablets (as adjuvant treatment in early breast cancer)	⊕	✓
Infusion			
<p><b>Comment:</b> For the management of hypercalcaemia refer to the <a href="#">Scottish Palliative Care Guidelines</a></p> <p>For prevention of skeletal related events in patients with bone metastases. Refer to <a href="#">Woscan Guideline</a> (intranet only)</p> <p>For adjuvant treatment of early breast cancer. Refer to <a href="#">Woscan Guideline</a> (intranet only)</p> <p>For prevention of osteoporosis in patients on long term androgen deprivation therapy. Refer to <a href="#">WOSCAN guideline</a> (intranet only)</p>			
	Pamidronate disodium		✓
	Zoledronic Acid		✓
Calcium Regulating Drugs			
Parathyroid Hormones and Analogues			
	Teriparatide (preferred brand in new patients - Movymia®)		✓
<p><b>Comment:</b> Teriparatide is a biological medicine. Must be prescribed by brand name.</p> <p>Teriparatide is approved by the SMC for the treatment of severe osteoporosis in post-menopausal women. Not SMC approved for use in men or steroid induced osteoporosis.</p>			
Drugs Affecting Bone Structure and Mineralisation			
Monoclonal Antibodies			

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	Denosumab (60mg/ml Prolia®) + calcium & Vit. D/ Vit. D		✓
<b>Comment:</b> Prolia® - is approved by the SMC for the treatment of postmenopausal osteoporosis in women at increased risk of fractures for whom oral bisphosphonates are unsuitable. Not SMC approved for use in men or steroid induced osteoporosis.			
	Denosumab (70mg/ml Xgeva®)		✓
<b>Comment:</b> Xgeva® - available in line with West of Scotland Cancer Network Protocols			
	Romozsumab (Evenity®) + calcium & Vit. D/ Vit. D		✓
<b>Comment :</b> Romozsumab is approved for the treatment of severe osteoporosis in post-menopausal women who have experienced a fragility fracture and are at imminent risk of another fracture within 24 months. Duration of treatment is for a maximum of 12 months.			
<b>Calcium + Vitamin D</b>			
<b>Comment:</b> For further information, also refer to <a href="#">Guidelines for the Management of Osteoporosis in Patients aged 50 or over presenting with a Fragility Fracture, and in Patients on Aromatase Inhibitors</a> (intranet only) <a href="#">Vitamin D Deficiency in Adults</a> (intranet only)			
	Accrete D3® One A Day Chewable Tablets (1 <sup>st</sup> line)	✓	✓
	Adcal-D3® Caplets (2 <sup>nd</sup> line)	✓	✓
	Adcal-D3® Dissolve effervescent tablets (3 <sup>rd</sup> line)	✓	✓
<b>Comment:</b> Adcal-D3 Dissolve® is restricted to use in patients who are unable to take chewable tablets/caplets or with swallowing difficulties,			
<b>Vitamin D</b>			
	Colecalciferol 800 IU (20mcg)	✓	✓
<b>Comment:</b> Vitamin D alone (colecalciferol) should be considered in patients with adequate dietary calcium intake			

5 Dopamine responsive conditions	Primary Care	Acute/ Specialist Services
<b>Dopamine-receptor agonists</b>		
	Cabergoline	⊕ ✓
6 Gonadotrophin responsive conditions	Primary Care	Acute/ Specialist Services
<b>Drugs affecting gonadotrophins</b>		
	Naferelin (Synarel®)	⊕ ✓
	Leuprorelin (Prostap®) (1 <sup>st</sup> Line)	⊕ ✓
	Goserelin (Zoladex®)	⊕ ✓
	Triptorelin (Decapeptyl®)	⊕ ✓
<b>Uterine fibroids and Endometriosis</b>		
	Relugolix, estradiol hemihydrates, norethisterone acetate combination tablets (Ryeqo®)	⊕ ✓
	Linzagolix (Yseltly®)	⊕ ✓
<b>Comment:</b> Ryeqo® is approved for use in adult women of reproductive age for symptomatic treatment of endometriosis in those with a history of previous medical or surgical treatment for their endometriosis. It is also		

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approved for use as 2<sup>nd</sup> line treatment for the management of moderate to severe uterine fibroids in line with SMC restrictions

**Yselty®** is approved for use as 2<sup>nd</sup> line treatment for the management of moderate to severe uterine fibroids in adult women of reproductive age, in line with SMC restrictions.

For Ryego® and Yselty®, specialists will undertake a baseline DEXA scan and then repeat after 12 months to confirm that there has not been an unwanted degree of BMD loss that exceeds the benefit of treatment. Specialist will also undertake ongoing patient reviews

### Adrenocortical function testing

	Tetracosactide (Synacthen®)		✓
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