

## 6 Endocrine

**Comment:** For further information refer to  
[Further Guidance on Hypoglycaemic Agents \(Appendix 6a\)](#)  
[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>			
	Empagliflozin (1 <sup>st</sup> line)	✓	✓
	Dapagliflozin (2 <sup>nd</sup> line) (Patients already prescribed this or intolerant of empagliflozin)	✓	✓
	Canagliflozin	✓	✓
<b>Comment:</b> Canagliflozin is approved for restricted use to improve renal outcome in patients with Type 2 Diabetes with evidence of diabetic kidney disease (ACR > 30mg/mmol) for those who have suboptimal glycaemic control, BMI of ≥ 30, and an HbA1c of < 75mmol/mol. Can be started down to eGFR of ≥ 30ml/min			
<b>Glucagon-like peptide-1 receptor agonists (GLP1-RAs)</b>			
	Liraglutide	⊕	✓
	Semaglutide (s.c. inj. only, tablets are non-Formulary)	⊕	✓

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

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	Liraglutide + Degludec (Xultophy®)	⊕	✓
<b>Comment:</b> For GLP1-RAs recommendation by Practitioner experienced in the management of diabetes			
<b>6.1.4 Treatment of Hypoglycaemia</b>			
	Glucagon (Glucagen® Hypokit)	✓	✓
	Glucogel (Glucogel®, GlucoRx®)	✓	✓
	Glucose IV 20%		✓

<b>6.2 Thyroid and Antithyroid Drugs</b>		<b>Primary Care</b>	<b>Acute/ Specialist Services</b>
<b>6.2.1 Thyroid Hormones</b>			
	Levothyroxine (1 <sup>st</sup> line)	✓	✓
	Liothyronine	⊕	✓
<b>Comment:</b> Prescribing of Armour Thyroid (desiccated 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			
<b>6.2.2 Antithyroid Drugs</b>			
	Carbimazole (1 <sup>st</sup> line)	✓	✓
	Propylthiouracil	✓	✓
	Potassium iodide		✓
	Propranolol (standard tablets)	✓	✓

<b>6.3.1 Corticosteroids</b>		<b>Primary Care</b>	<b>Acute/ Specialist Services</b>
<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)	✓	✓
<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. Consider osteoporosis prevention treatment if corticosteroids used long term. Please refer to <a href="https://guidelines.staffnet.fv.scot.nhs.uk/?s=osteoporosis">https://guidelines.staffnet.fv.scot.nhs.uk/?s=osteoporosis</a>			

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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>			
For further information on the use of HRT see the <a href="#">British Menopause Society Tool for Clinicians – HRT Guide</a>			
<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 <sup>®</sup> (estradiol 1mg or 2mg/dydrogesterone 10mg)	✓	✓
2 <sup>nd</sup> line	Elleste Duet <sup>®</sup> (estradiol 1mg or 2mg/norethisterone 1mg)	✓	✓
2 <sup>nd</sup> line (if Elleste Duet <sup>®</sup> is unavailable)	Novofem <sup>®</sup> (estradiol 1mg/norethisterone 1mg)	✓	✓
<b>Patches</b>			
1 <sup>st</sup> line	Evorel Sequi <sup>®</sup> (estradiol 50mcg/24hrs, norethisterone 170mcg/24hrs)	✓	✓
2 <sup>nd</sup> line	FemSeven Sequi <sup>®</sup> (estradiol 50mcg/24hrs, levonorgestrel 10mcg/24hrs)	✓	✓
<b>Continuous Combined Therapy (Last menstrual period &gt;1 year ago)</b>			
<b>Tablets</b>			
	Femoston Conti <sup>®</sup> (estradiol 500mcg or 1mg/dydrogesterone 2.5mg or 5mg)	✓	✓
	Kliovance <sup>®</sup> (estradiol 1mg/norethisterone 500mcg)	✓	✓
	Kliofem <sup>®</sup> (estradiol 2mg/norethisterone 1mg)	✓	✓
<b>Patches</b>			
1 <sup>st</sup> line	Evorel Conti <sup>®</sup> (estradiol 50mcg/24hrs, norethisterone 170mcg/24hrs)	✓	✓
2 <sup>nd</sup> line	FemSeven Conti <sup>®</sup> (estradiol 50mcg/24hrs, levonorgestrel 7mcg/24hrs)	✓	✓
<b>Oestrogen only (for use in women with no uterus or using an alternative progesterone)</b>			
<b>Tablets</b>			
	Estradiol hemihydrates 1mg or 2mg (Elleste-Solo <sup>®</sup> , Zumenon <sup>®</sup> )	✓	✓
<b>Patches</b>			
1 <sup>st</sup> line	Evorel <sup>®</sup> (25mcg-100mcg)	✓	✓
2 <sup>nd</sup> line	Estraderm MX <sup>®</sup> (25mcg-100mcg)	✓	✓
<b>Transdermal Gel</b>			
	Oestrogel <sup>®</sup> (estradiol 0.06%)	✓	✓
<b>Comment: Oestrogel<sup>®</sup> for restricted use only when both tablet and patch formulations are not tolerated</b>			
<b>Gonadomimetic</b>			
	Tibolone	⊕	✓

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6.4.1.2 Progestogens			
	Medroxyprogesterone	✓	✓
	Norethisterone	✓	✓
	Progesterone (Cyclogest <sup>®</sup> for subfertility)		✓
<b>Comment:</b> Cyclogest <sup>®</sup> should only be prescribed by a Specialist Tertiary Centre			
6.4.2 Male Sex Hormones & Antagonists			
	Testosterone (Testavan <sup>®</sup> , Testogel <sup>®</sup> )	⊕	✓
	Cyproterone Acetate	⊕	✓
	Finasteride	✓	✓

6.5 Hypothalamic and pituitary hormones and anti-oestrogens		Primary Care	Acute/ Specialist Services
6.5.1 Hypothalamic and anterior pituitary hormones and anti-oestrogens			
	Clomifene Citrate	⊕	✓
	Chorionic Gonadotrophin (HCG)		✓
	Follicle Stimulating Hormone (FSH)		✓
	Gonadorelin (LH-RH)		✓
	Tetracosactide (Synacthen <sup>®</sup> )		✓
<b>Comments:</b> Products for assisted conception, excluding clomifene, are funded centrally and <b>GPs should not prescribe.</b>			
	Human Growth Hormone (preferred brands in new patients are FlexPro <sup>®</sup> , SurePal <sup>®</sup> )	⊕	✓
6.5.2 Posterior Pituitary Hormones and Antagonists			
	Desmopressin	✓	✓
	Terlipressin (oesophageal varices)		✓
	Tolvaptan (Jinarc <sup>®</sup> )		✓

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Disorders of bone metabolism	Primary Care	Acute/ Specialist Services
<p><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="#">SIGN 142 - Management of Osteoporosis and the Prevention of Fragility Fractures – July 20</a>  <a href="#">Hypercalcaemia of Malignancy Treatment Guideline &amp; Suspected Hypercalcaemia of Malignancy Guideline for Primary Care</a> (intranet only)</p> <p><b>Note medicines marked with an asterisk (*) below are currently not available via Forth Valley Royal Hospital for the management of patients with osteoporosis</b></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>			
<b>Oral</b>			
	Alendronic Acid (1 <sup>st</sup> line) + calcium & Vit. D/ Vit. D	✓	✓
<p><b>Comment:</b> Binosto<sup>®</sup> (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)	⊕	✓
<b>Infusion</b>			
<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		✓
<p><b>* Currently not available via Forth Valley Royal Hospital for the management of patients with osteoporosis</b></p>			
Calcium Regulating Drugs			
Parathyroid Hormones and Analogues			
	*Teriparatide (preferred brand in new patients - Movymia <sup>®</sup> )		✓
<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> <p><b>* Currently not available via Forth Valley Royal Hospital for the management of patients with osteoporosis</b></p>			

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Drugs Affecting Bone Structure and Mineralisation			
Monoclonal Antibodies			
	*Denosumab (60mg/ml Prolia <sup>®</sup> ) + calcium & Vit. D/ Vit. D		✓
<b>Comment:</b> Prolia <sup>®</sup> - 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. <b>* Currently not available via Forth Valley Royal Hospital for the management of patients with osteoporosis</b>			
	Denosumab (70mg/ml Xgeva <sup>®</sup> )		✓
<b>Comment:</b> Xgeva <sup>®</sup> - available in line with West of Scotland Cancer Network Protocols			
	*Romosuzumab (Evenity <sup>®</sup> ) + calcium & Vit. D/ Vit. D		✓
<b>Comment :</b> Romosuzumab 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>* Currently not available via Forth Valley Royal Hospital for the management of patients with osteoporosis</b>			
Calcium + Vitamin D/Vitamin D			
<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="#">Investigation and Treatment of Vitamin D Deficiency in Adults</a> (intranet only)			
Calcium + Vitamin D			
	Adcal D3 (caplets, chewable tablets) (1 <sup>st</sup> line)	✓	✓
	Calfovite D3 sachet (2 <sup>nd</sup> line)	✓	✓
Vitamin D			
	Colecalciferol 800 IU (20mcg)	✓	✓
<b>Comment:</b> Vitamin D alone (colecalfiferol) should be considered in patients with adequate dietary calcium intake			

6.7 Other endocrine drugs	Primary Care	Acute/ Specialist Services
6.7.1 Bromocriptine and other dopamine-receptor stimulants		
	Bromocriptine	✓
	Cabergoline	⊕
	Quinagolide	⊕
6.7.2 Drugs affecting gonadotrophins		
	Danazol	⊕
	Naferelin	⊕
	Leuporelin (Prostap <sup>®</sup> ) (1 <sup>st</sup> Line)	⊕
	Goserelin (Zoladex <sup>®</sup> )	⊕
	Triptorelin (Decapeptyl <sup>®</sup> )	⊕

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