SPLE Clinical Sciences notes

High-yield, original notes for the SPLE Clinical Sciences domain (35% of the exam, SCFHS blueprint Area 4.0). Every fact below carries its primary source. No sign-up, no cost.

SCFHS SPLE Applicant Guide SPLE0622, Appendix B Area 4.0 Clinical Sciences (35%): 4.1 drug information, 4.2 clinical pharmacokinetics / therapeutic drug monitoring, 4.3 clinical pharmacogenomics, 4.4 disease prevention, 4.5 patient assessment (4.5.5 laboratory values, 4.5.6 calculations), 4.6 clinical pharmacology and therapeutic decision making.

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Cardiovascular drugs

Blueprint 4.6. The rows below teach the exact facts tested by the cardiovascular quiz questions.

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
Lisinopril	ACE inhibitor	Persistent dry, tickly cough, explained on the label by increased bradykinin	Drugs acting on the renin-angiotensin system can cause fetal injury and death — stop in pregnancy	—	**DailyMed — ZESTORETIC (LISINOPRIL AND HYDROCHLOROTHIAZIDE) TABLET label, 6 Adverse Reactions — Cough; Clinical Pharmacology (bradykinin)** Fact note-cv-01 · **Report a mistake**
Sildenafil	PDE5 inhibitor	Hypotension when combined with nitrates	Contraindicated with organic nitrates in any form and with	—	**DailyMed — SILDENAFIL TABLET, FILM COATED label, 4 Contraindications —**

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
					Fact note-cv-02 · **Report a mistake**
Digoxin	Cardiac glycoside	Toxicity: nausea, visual disturbance, palpitations. Hypokalaemia, hypercalcaemia, hypomagnesaemia, low body weight, advanced age and impaired renal function predispose to toxicity	Check electrolytes and renal function; obtain a serum digoxin level when toxicity is suspected	—	**DailyMed — DIGOXIN TABLET label, 5 Warnings and Precautions — Risk factors for digoxin toxicity (hypokalaemia)** Fact note-cv-03 · **Report a mistake**
Prazosin	Alpha-1 blocker	Marked first-dose postural hypotension and syncope	Take the first dose with caution about standing up quickly, classically at night	—	**DailyMed — PRAZOSIN HYDROCHLORIDE CAPSULE label, 5 Warnings and Precautions — First-dose postural hypotension and syncope** Fact note-cv-04 · **Report a mistake**
Furosemide	Loop diuretic	Fluid and electrolyte depletion, including low potassium, with worsening renal function	Monitor serum electrolytes, renal function and blood pressure	—	**DailyMed — FUROSEMIDE TABLET label, 5 Warnings and Precautions — Fluid and electrolyte monitoring (potassium, renal function, blood pressure)** Fact note-cv-05 · **Report a mistake**
Sacubitril/valsartan	ARNI (neprilysin inhibitor + ARB)	Angioedema risk	Contraindicated with a history of angioedema from an ACE inhibitor or ARB, and with concomitant ACE inhibitors — allow a 36-hour washout when switching	—	**DailyMed — SACUBITRIL AND VALSARTAN TABLET, FILM COATED label, 4 Contraindications — History of angioedema; 36-hour ACE-inhibitor washout** Fact note-cv-06 · **Report a mistake**
Clopidogrel	P2Y12 antiplatelet (prodrug)	Bleeding; diminished antiplatelet effect in CYP2C19 poor metabolizers because activation is reduced	Avoid concomitant omeprazole or esomeprazole (CYP2C19 inhibitors)	—	**DailyMed — CLOPIDOGREL BISULFATE TABLET label, Boxed Warning — Diminished antiplatelet effect in CYP2C19 poor metabolizers (prodrug activation)** Fact note-cv-07 · **Report a mistake**

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Anticoagulation

Blueprint 4.6. Monitoring and diet consistency are the high-yield warfarin facts.

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
Warfarin	Vitamin K antagonist	Bleeding	Regular INR monitoring in all treated patients; drugs, dietary changes and other factors affect INR. Keep vitamin K intake consistent week to week	Phytonadione (vitamin K) — see reversal table	**DailyMed — WARFARIN SODIUM TABLET label, 2 Dosage and Administration — INR monitoring; 12 Clinical Pharmacology** Fact note-ac-01 · **Report a mistake**

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Antidotes and reversal agents

Blueprint 4.6 and toxicology. Match the agent to the drug — protamine, vitamin K, idarucizumab and naloxone are not interchangeable.

Toxicity / drug to reverse	Reversal agent	Key point	Source
Dabigatran anticoagulation	Idarucizumab	Labelled for reversal of the anticoagulant effects of dabigatran when needed, e.g. urgent procedures or major bleeding	**DailyMed — PRAXBIND (IDARUCIZUMAB) INJECTION label, 1 Indications and Usage — Reversal of dabigatran anticoagulation** Fact note-rv-01 · **Report a mistake**
Heparin anticoagulation	Protamine sulfate	Protamine neutralises heparin; it should not be given when bleeding occurs without prior heparin use	**DailyMed — PROTAMINE SULFATE INJECTION, SOLUTION label** Fact note-rv-02 · **Report a mistake**
Coumarin (warfarin-type) anticoagulation	Phytonadione (vitamin K)	Labelled for anticoagulant-induced hypoprothrombinaemia caused by coumarin or indanedione derivatives, from faulty formation of factors II, VII, IX and X	**DailyMed — PHYTONADIONE TABLET label** Fact note-rv-03 · **Report a mistake**
Opioid overdose	Naloxone hydrochloride injection	An opioid antagonist labelled for reversal of opioid overdose, including respiratory depression	**DailyMed — NALOXONE HYDROCHLORIDE INJECTION, SOLUTION label** Fact note-rv-04 · **Report a mistake**
Benzodiazepine effects	Flumazenil	A benzodiazepine receptor antagonist — it reverses benzodiazepines, not opioids or barbiturates	**DailyMed — FLUMAZENIL INJECTION, SOLUTION label** Fact note-rv-05 · **Report a mistake**

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Diabetes drugs and insulin

Blueprint 4.6. Renal thresholds, genital infection warnings and insulin handling.

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
Metformin	Biguanide	Lactic acidosis risk rises as kidney function falls	Do not use when eGFR is below 30 mL/min/1.73 m^2; initiation is not recommended at eGFR 30 to 45	—	**DailyMed — METFORMIN HYDROCHLORIDE TABLET, FILM COATED label, 4 Contraindications; 5 Warnings and Precautions — Lactic Acidosis** Fact note-dm-01 · **Report a mistake**
Empagliflozin	SGLT2 inhibitor	Genital mycotic infections and volume depletion / hypotension	Monitor for signs and symptoms of genitourinary infections and treat promptly	—	**DailyMed — JARDIANCE (EMPAGLIFLOZIN) TABLET, FILM COATED label, 5 Warnings and Precautions — Genital Mycotic Infections and Volume Depletion** Fact note-dm-02 · **Report a mistake**
Insulin glargine	Long-acting basal insulin	Hypoglycaemia is the class risk; handling errors change the dose delivered	Do not dilute or mix with any other insulin or solution in one syringe. Do not freeze — discard insulin that has been frozen	—	**DailyMed — INSULIN GLARGINE-ALDY INJECTION, SOLUTION label, 2 Dosage and Administration — Do not dilute or mix with other insulins** Fact note-dm-03 · **Report a mistake**

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Endocrine and bone drugs

Blueprint 4.6. Administration technique is the tested fact for both rows.

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
Levothyroxine	Thyroid hormone	Under-replacement shows as a raised TSH	Iron and calcium supplements and antacids decrease absorption — administer levothyroxine at least 4 hours before or after interfering drugs. Peak therapeutic effect may not be attained for 4 to 6 weeks	—	**DailyMed — LEVOTHYROXINE SODIUM TABLET label, 7 Drug Interactions — Iron and calcium products decrease levothyroxine absorption** Fact note-eb-01 · **Report a mistake**
Alendronate	Bisphosphonate	Oesophageal irritation and injury if the tablet lodges	Take with plain water on waking, remain upright for at least 30 minutes, and take nothing else by mouth in that time	—	**DailyMed — ALENDRONATE (ALENDRONATE SODIUM TABLET) TABLET label, 2 Dosage and Administration — Take with plain water and remain upright for at least 30 minutes** Fact note-eb-02 · **Report a mistake**

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Infectious disease drugs

Blueprint 4.6. Boxed warnings and counselling points dominate this table, including the tuberculosis drugs.

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
Levofloxacin	Fluoroquinolone	Boxed warning: tendinitis and tendon rupture, peripheral neuropathy and central nervous system effects	Counsel active patients to report tendon pain, numbness or tingling	—	**DailyMed — LEVOFLOXACIN TABLET, FILM COATED label, Boxed Warning — Tendinitis, Tendon Rupture, Peripheral Neuropathy and CNS Effects** Fact note-id-01 · **Report a mistake**
Metronidazole	Nitroimidazole antibiotic	Disulfiram-like reaction with alcohol	Avoid alcohol during treatment	—	**DailyMed — METRONIDAZOLE TABLET label, 5 Warnings and Precautions — Alcohol interaction (disulfiram-like reaction)** Fact note-id-02 · **Report a mistake**
Rifampin	Rifamycin (tuberculosis drug)	Reddish-orange discoloration of urine, sweat, sputum and tears; soft contact lenses may stain	Counsel patients before starting so the colour change is not mistaken for blood	—	**DailyMed — RIFAMPIN CAPSULE label, 17 Patient Counseling Information — Discoloration of body fluids** Fact note-id-03 · **Report a mistake**
Isoniazid	Tuberculosis drug	Boxed warning: severe and sometimes fatal hepatitis. Also peripheral neuropathy	Give pyridoxine (vitamin B6) to prevent peripheral neuropathy in at-risk patients, e.g. diabetes	—	**DailyMed — ISONIAZID TABLET label, Boxed Warning — Severe and Fatal Hepatitis (hepatotoxicity)** Fact note-id-04 · **Report a mistake**
Gentamicin	Aminoglycoside	Nephrotoxicity and neurotoxicity manifested by ototoxicity, both vestibular and auditory	Risk is greater with impaired renal function, high dosage or prolonged therapy. Determine BUN, serum creatinine or creatinine clearance periodically; serial audiograms when feasible	—	**DailyMed — GENTAMICIN SULFATE IN SODIUM CHLORIDE (GENTAMICIN SULFATE) INJECTION, SOLUTION label, Boxed Warning / 5 Warnings and Precautions — Nephrotoxicity and Ototoxicity** Fact note-id-05 · **Report a mistake**
Ethambutol	Tuberculosis drug	Optic neuritis: decreased visual acuity and loss of red-green colour discrimination	Vision testing, including acuity and colour discrimination, is required; do not use in known optic neuritis unless benefit outweighs risk	—	**DailyMed — ETHAMBUTOL HYDROCHLORIDE TABLET label, 4 Contraindications / 5 Warnings and Precautions — Optic neuritis and visual monitoring** Fact note-id-06 · **Report a mistake**
Doxycycline	Tetracycline	Use in pregnancy can cause fetal harm: permanent tooth discoloration and effects on bone growth	Avoid tetracyclines in pregnancy unless no suitable alternative and benefit justifies risk	—	**DailyMed — DOXYCYCLINE HYCLATE TABLET, FILM COATED DOXYCYCLINE HYCLATE CAPSULE DOXYCYCLINE POWDER, FOR SUSPENSION label, 8 Use in Specific Populations — Pregnancy (fetal bone and tooth effects)** Fact note-id-07 · **Report a mistake**

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Neurology and psychiatry drugs

Blueprint 4.2 (therapeutic drug monitoring) and 4.6. Lithium levels, clozapine ANC and MAOI interactions.

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
Lithium carbonate	Mood stabiliser	Toxicity is closely related to serum lithium levels and can occur at doses close to therapeutic levels: tremor, nausea, unsteady gait	NSAIDs have been reported to increase steady-state plasma lithium concentrations (indomethacin and piroxicam significantly) — monitor lithium levels closely when an NSAID is started or stopped	—	**DailyMed — LITHIUM CARBONATE TABLET, EXTENDED RELEASE label, 7 Drug Interactions — NSAIDs decrease renal lithium clearance** Fact note-np-01 · **Report a mistake**
Clozapine	Antipsychotic	Boxed warning: severe neutropenia (agranulocytosis), with risk of serious and potentially fatal infections	Obtain baseline ANC before starting; initiation is not recommended with a baseline ANC below 1500/µL (below 1000/µL in benign ethnic neutropenia)	—	**DailyMed — VERSACLOZ (CLOZAPINE) SUSPENSION label, Boxed Warning — Severe Neutropenia (Agranulocytosis); ANC monitoring** Fact note-np-02 · **Report a mistake**
Phenelzine	MAOI antidepressant	Serotonin syndrome and hypertensive crisis with serotonergic or sympathomimetic agents	Contraindicated / avoid with serotonergic opioids such as meperidine (pethidine)	—	**DailyMed — PHENELZINE SULFATE TABLET, FILM COATED label, 4 Contraindications; 7 Drug Interactions — Serotonergic agents and serotonin syndrome** Fact note-np-03 · **Report a mistake**
Carbamazepine	Anticonvulsant	Enzyme induction lowers levels of many co-prescribed drugs	A potent CYP3A4 inducer: it increases clearance of CYP3A4 substrates, including hormonal contraceptives, which can cause contraceptive failure	—	**DailyMed — CARBAMAZEPINE TABLET, FILM COATED, EXTENDED RELEASE label, 7 Drug Interactions; 12 Clinical Pharmacology — CYP3A4 enzyme induction** Fact note-np-04 · **Report a mistake**

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Lipids, gout and immune suppression

Blueprint 4.3 (pharmacogenomics: HLA-B*58:01) and 4.6.

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
Simvastatin	Statin (HMG-CoA reductase inhibitor)	Myopathy risk rises sharply with strong CYP3A4 inhibitors	Contraindicated with strong CYP3A4 inhibitors, including selected azole antifungals and	—	**DailyMed — SIMVASTATIN TABLET, FILM COATED label, 4 Contraindications — Strong CYP3A4 inhibitors**

Drug	Class	Key side effects / warnings	Key interactions / cautions	Antidote / reversal	Source
			macrolide antibiotics such as clarithromycin		Fact note-lg-01 · **Report a mistake**
Atorvastatin	Statin	Myopathy and rhabdomyolysis: unexplained muscle pain, weakness or fever with dark urine needs urgent assessment	Report unexplained muscle symptoms promptly so muscle and kidney tests can be checked	—	**DailyMed — ATORVASTATIN CALCIUM TABLET, FILM COATED label, 5 Warnings and Precautions — Myopathy and Rhabdomyolysis** Fact note-lg-02 · **Report a mistake**
Allopurinol	Xanthine oxidase inhibitor	Severe cutaneous reactions. The HLA-B*58:01 allele is a genetic marker for severe skin reactions to allopurinol	Consider HLA-B*58:01 screening before the first dose in higher-risk ancestry groups	—	**DailyMed — ALLOPURINOL TABLET label, 5 Warnings and Precautions — Severe cutaneous reactions; pharmacogenomic screening (HLA-B*58:01)** Fact note-lg-03 · **Report a mistake**
Methotrexate	Antifolate / immunosuppressant	Pancytopenia and antifolate toxicity, e.g. mouth ulcers and fatigue on weekly therapy	Inhibits dihydrofolate reductase, blocking tetrahydrofolate production and DNA synthesis	Administer folic acid or folinic acid to reduce the risk of methotrexate adverse reactions; leucovorin rescue is labelled for high-dose methotrexate	**DailyMed — METHOTREXATE INJECTION, SOLUTION label, 12 Clinical Pharmacology — Mechanism of Action (dihydrofolate reductase inhibition)** Fact note-lg-04 · **Report a mistake**

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Emergency, prevention and counselling points

Blueprint 4.4 (disease prevention) and 4.6. Short counselling facts that are tested as single-best-answer questions.

Situation	Action / fact	Why it matters	Source
Anaphylaxis (peanut, lip swelling, wheeze, hypotension)	Give epinephrine intramuscularly into the anterolateral (mid-outer) thigh with the auto-injector, through clothing if necessary	This is the labelled first-line route and site; deltoid, subcutaneous abdominal and intravenous bolus are not the auto-injector route	**DailyMed — EPIPEN (EPINEPHRINE) INJECTION EPIPEN JR (EPINEPHRINE) INJECTION label, 2 Dosage and Administration — Intramuscular injection into the anterolateral thigh** Fact note-cn-01 · **Report a mistake**
Inhaled fluticasone for asthma	Rinse the mouth with water and spit after each inhaled dose	Reduces oral candidiasis and dysphonia (hoarse voice, white mouth patches)	**DailyMed — FLOVENT HFA (FLUTICASONE PROPIONATE) AEROSOL, METERED label, 17 Patient Counseling Information — Rinse mouth after inhalation (oral candidiasis prevention)** Fact note-cn-02 · **Report a mistake**

Situation	Action / fact	Why it matters	Source
patient on clopidogrel	label advises	metabolite and platelet inhibition	**Diminished antiplatelet effect in CYP2C19 poor metabolizers (prodrug activation)** Fact note-cn-03 · **Report a mistake**
Severe acne in a woman who could become pregnant	Oral isotretinoin is supplied only under a strict pregnancy-prevention programme with regular pregnancy testing	Isotretinoin carries a boxed warning for embryo-fetal toxicity (major birth defects)	**DailyMed — ZENATANE (ISOTRETINOIN) CAPSULE, GELATIN COATED label, Boxed Warning — Embryo-Fetal Toxicity; REMS pregnancy-prevention programme** Fact note-cn-04 · **Report a mistake**
Influenza prevention (live intranasal vaccine, FluMist)	Do not administer to a person who has had a severe allergic reaction (e.g. anaphylaxis) to any component of the vaccine, including egg protein, or after a previous dose of any influenza vaccine	Immunisation is a Clinical Sciences blueprint topic (4.4); allergy history is checked before vaccination	**DailyMed — FLUMIST (INFLUENZA VACCINE LIVE INTRANASAL) SPRAY label** Fact note-cn-05 · **Report a mistake**

Practise the Clinical Sciences quiz · Report a mistake in this section

Lab values used in dosing decisions

Blueprint 4.5.5. These are thresholds stated in the cited drug labels, not a substitute for your local laboratory reference ranges.

Test	Label threshold / range	How it changes the decision	Source
eGFR (metformin)	Do not use below 30 mL/min/1.73 m^2	Metformin is contraindicated below this threshold because of lactic acidosis risk	**DailyMed — METFORMIN HYDROCHLORIDE TABLET, FILM COATED label, 4 Contraindications; 5 Warnings and Precautions — Lactic Acidosis** Fact note-lb-01 · **Report a mistake**
eGFR (metformin)	Initiation is not recommended at 30 to 45 mL/min/1.73 m^2; assess risk/benefit of continuing if eGFR falls below 45, and discontinue if it falls below 30	Starting, continuing and stopping metformin are all eGFR decisions	**DailyMed — METFORMIN HYDROCHLORIDE TABLET, FILM COATED label, 4 Contraindications; 5 Warnings and Precautions — Lactic Acidosis** Fact note-lb-02 · **Report a mistake**
Serum digoxin	Levels below 0.5 ng/mL have been associated with diminished efficacy; levels above 2 ng/mL with increased toxicity without increased benefit	Use the level, with symptoms and electrolytes, to judge digoxin effect and toxicity	**DailyMed — DIGOXIN TABLET label, 5 Warnings and Precautions — Risk factors for digoxin toxicity (hypokalaemia)** Fact note-lb-03 · **Report a mistake**
Serum lithium	Therapeutic range 0.8 to 1.2 mEq/L; toxic concentrations are ≥1.5 mEq/L	The narrow gap between therapeutic and toxic levels is why lithium is a therapeutic-drug-monitoring drug	**DailyMed — LITHIUM CARBONATE TABLET, EXTENDED RELEASE label, 7 Drug Interactions — NSAIDs decrease renal lithium clearance** Fact note-lb-04 · **Report a mistake**
Absolute neutrophil count (clozapine)	Initiation is not recommended below 1500/µL (below 1000/µL in benign ethnic neutropenia)	Baseline and ongoing ANC monitoring guard against severe neutropenia	**DailyMed — VERSACLOZ (CLOZAPINE) SUSPENSION label, Boxed Warning — Severe Neutropenia (Agranulocytosis); ANC monitoring** Fact note-lb-05 · **Report a mistake**

Test	Label threshold / range	How it changes the decision	Source
INR (warfarin)	Regular INR monitoring is required in all treated patients; no single target is stated here because the target depends on the indication	Drugs, dietary changes and other factors move the INR — recheck after changes	**DailyMed — WARFARIN SODIUM TABLET label, 2 Dosage and Administration — INR monitoring; 12 Clinical Pharmacology** Fact note-lb-06 · **Report a mistake**
Serum potassium (digoxin)	Hypokalaemia predisposes to digoxin toxicity, as do hypercalcaemia and hypomagnesaemia	Correct low potassium in any patient on digoxin with palpitations, nausea or visual symptoms	**DailyMed — DIGOXIN TABLET label, 5 Warnings and Precautions — Risk factors for digoxin toxicity (hypokalaemia)** Fact note-lb-07 · **Report a mistake**

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Renal and hepatic dose rules

Blueprint 4.5 and 4.6. When kidney or liver function changes, these label rules change the prescription.

Rule	Detail	Source drug	Source
Metformin and iodinated contrast	Metformin may need to be discontinued at the time of, or prior to, iodinated contrast imaging procedures in at-risk patients, and kidney function reassessed before restarting	Metformin label, 5 Warnings and Precautions	**DailyMed — METFORMIN HYDROCHLORIDE TABLET, FILM COATED label, 5 Warnings and Precautions — Lactic Acidosis; hold for iodinated contrast procedures** Fact note-rh-01 · **Report a mistake**
Gentamicin in renal impairment	Nephrotoxicity risk is greater in patients with impaired renal function and in those who receive high dosage or prolonged therapy; determine BUN, serum creatinine or creatinine clearance periodically	Gentamicin label	**DailyMed — GENTAMICIN SULFATE IN SODIUM CHLORIDE (GENTAMICIN SULFATE) INJECTION, SOLUTION label, Boxed Warning / 5 Warnings and Precautions — Nephrotoxicity and Ototoxicity** Fact note-rh-02 · **Report a mistake**
Lithium and NSAIDs	NSAIDs have been reported to increase steady-state plasma lithium concentrations, and lithium toxicity has resulted from NSAID and lithium interactions — monitor lithium levels closely when NSAID use starts or stops	Lithium label, 7 Drug Interactions	**DailyMed — LITHIUM CARBONATE TABLET, EXTENDED RELEASE label, 7 Drug Interactions — NSAIDs decrease renal lithium clearance** Fact note-rh-03 · **Report a mistake**
Digoxin in renal impairment	Impaired renal function predisposes to digoxin toxicity, especially with low body weight or advanced age	Digoxin label, 5 Warnings and Precautions	**DailyMed — DIGOXIN TABLET label, 5 Warnings and Precautions — Risk factors for digoxin toxicity (hypokalaemia)** Fact note-rh-04 · **Report a mistake**
Isoniazid and the liver	Severe and sometimes fatal hepatitis is associated with isoniazid; dark urine, itching and jaundice with raised liver enzymes mean stop and monitor liver function	Isoniazid label, Boxed Warning	**DailyMed — ISONIAZID TABLET label, Boxed Warning — Severe and Fatal Hepatitis (hepatotoxicity)** Fact note-rh-05 · **Report a mistake**

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Worked calculations

note-calc-01

1. Creatinine clearance (Cockcroft–Gault) — a 70-year-old man, weight 70 kg, serum creatinine 1.4 mg/dL. Gentamicin dosing decisions use creatinine clearance, so estimate it first.
2. CrCl = [(140 − age) × weight (kg)] ÷ [72 × serum creatinine (mg/dL)]
3. = [(140 − 70) × 70] ÷ [72 × 1.4] = 4900 ÷ 100.8
4. Answer: CrCl ≈ 49 mL/min. This is reduced kidney function: gentamicin dose and interval must follow the label's renal guidance, with BUN, creatinine or creatinine clearance checked periodically. (For women, multiply the result by 0.85.)

Source: **DailyMed — GENTAMICIN SULFATE IN SODIUM CHLORIDE (GENTAMICIN SULFATE) INJECTION, SOLUTION label, Boxed Warning / 5 Warnings and Precautions — Nephrotoxicity and Ototoxicity** · Fact note-calc-01 · **Report a mistake**

note-calc-02

1. Body mass index — a patient weighs 85 kg and is 1.70 m tall.
2. BMI = weight (kg) ÷ height² (m^2) = 85 ÷ (1.70 × 1.70) = 85 ÷ 2.89
3. Answer: BMI ≈ 29.4 kg/m^2, in the WHO overweight range (25.0–29.9); obesity is ≥30.0. BMI is a patient-assessment calculation under blueprint 4.5.6.

Source: WHO, Obesity: Preventing and Managing the Global Epidemic (WHO Technical Report Series 894), 2000 · Fact note-calc-02 · **Report a mistake**

note-calc-03

1. Anion gap — Na^+ 140 mmol/L, Cl^- 102 mmol/L, HCO_3^- 18 mmol/L.
2. Anion gap = $Na^+ - (Cl^- + HCO_3^-)$ = 140 − (102 + 18) = 140 − 120
3. Answer: anion gap = 20 mmol/L, a raised anion gap. In diabetic ketoacidosis assessment the anion gap is used with glucose, ketones and pH to grade severity and track closure of the gap during treatment.

Source: American Diabetes Association, Standards of Care in Diabetes (Diabetic Ketoacidosis section), 2025 · Fact note-calc-03 · **Report a mistake**

note-calc-04

1. Insulin volume from a U-100 pen — the prescription is insulin glargine 18 units at bedtime. U-100 insulin contains 100 units in 1 mL.
2. Volume = dose ÷ concentration = 18 units ÷ 100 units/mL

3. Answer: 0.18 mL delivers 18 units. With a pen, dial 18 units — never draw glargine into a syringe mixed with another insulin, because the label states it must not be diluted or mixed.

Source: **DailyMed — INSULIN GLARGINE-ALDY INJECTION, SOLUTION label, 2 Dosage and Administration — Do not dilute or mix with other insulins** · Fact note-calc-04 · **Report a mistake**

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Sources checked 2026-11-02. These notes are independent practice material, not official SCFHS material and not a substitute for the current drug label or guideline. If a fact here disagrees with a current label, the label wins — please report it.