

CONCEPTS OF CARE FOR PATIENTS WITH CANCER

A fatigue-friendly nursing study guide

Treatment Modalities • Toxicities • Safety • Oncologic Emergencies

EXAM PROMISE The lecture is reorganized into short, testable sections. Pink boxes mark urgent nursing action. Gold boxes preserve lecture-specific wording. Green boxes clarify current practice so you can learn the course content safely.

Color map

Color	Meaning
BLUE	Core concept
PINK	Priority / emergency
GREEN	Expected finding / current practice
GOLD	Lecture-specific point—memorize with context

Low-energy route

Read the pink emergency boxes first → master CBC complications → compare radiation with chemotherapy → learn extravasation → finish with tumor lysis syndrome and the one-minute review. Stop after one sprint when your focus drops.

1 Big Picture & Goals of Care

STUDY SPRINT · 8 MIN Connect disease burden to individualized care

CORE IDEA Cancer may remain localized or invade and metastasize. Disease and treatment can affect immunity, clotting, GI function, sensation, movement, cardiac and respiratory function, comfort, identity, and quality of life—so nursing care must be whole-person and continuous.

Goal	Meaning
Cure	Eliminate disease when feasible.
Control	Reduce burden, delay progression, or manage cancer as a chronic illness.
Palliation	Relieve symptoms and improve quality of life at any stage; it can occur with disease-directed treatment.
Hospice	Comfort-focused end-of-life care when eligibility and patient goals align; not the same as palliative care.

CURRENT-PRACTICE CORRECTION Metastatic cancer is not automatically “incurable.” Some metastatic cancers can be cured, and many can be controlled for years. Prognosis depends on cancer type, biology, disease extent, treatment response, health, and goals.

2 Treatment Language & Planning

STUDY SPRINT · 8 MIN Know when therapy occurs and why

Term	Purpose
Neoadjuvant	Given before the main treatment to shrink disease or improve resectability.
Adjuvant	Given after the main treatment to destroy microscopic residual disease and reduce recurrence risk.
Combination therapy	Uses different modalities or drugs to attack cancer by complementary mechanisms.
Maintenance	Continued therapy intended to sustain control or remission.
Salvage	Treatment used after disease fails or returns following prior therapy.

Treatment selection depends on cancer type and molecular features, stage, prior therapy, organ function, performance status, comorbidities, patient goals, fertility concerns, access, and anticipated benefit versus harm.

NURSING LENS Before any therapy: verify diagnosis and plan, baseline labs/organ function, allergies, medications and supplements, pregnancy/fertility needs, vascular access, infection risk, teaching, consent completion, and psychosocial support.

3 Surgery in Cancer Care

STUDY SPRINT • 9 MIN Recognize six surgical purposes

Purpose	Example / nursing focus
Prophylactic	Remove high-risk tissue after risk assessment and shared decision-making.
Diagnostic	Obtain tissue for pathology; monitor biopsy-site bleeding/infection.
Curative	Remove all visible localized disease with appropriate margins/nodes.
Cytoreductive/control	Debulk tumor when complete removal is not feasible or to improve other therapy.
Palliative	Relieve obstruction, bleeding, pain, pressure, or other symptoms.
Reconstructive	Restore form or function after cancer resection.

- Pre-op: nutrition, CBC/coagulation, infection status, organ function, medications, tobacco use, functional baseline, body-image and support needs.
- Post-op: airway/respiratory status, perfusion/bleeding, pain, drains/incisions, infection, VTE prevention, mobility, nutrition/elimination, and function specific to the organ removed.

WHOLE-PERSON CARE Loss of tissue or function may affect appearance, sexuality, fertility, communication, elimination, mobility, or independence. Ask permission, use neutral language, validate grief, and connect the patient with rehabilitation and peer resources.

4 Radiation Therapy Essentials

STUDY SPRINT • 10 MIN Think local field, cumulative dose, delayed effects

MECHANISM Ionizing radiation damages cellular DNA. Cancer cells are less able to repair the damage, but normal cells in the treatment field are also affected. Fractionation divides the total dose to improve tumor kill while allowing normal-tissue recovery.

Type	Key distinction
External beam	Source is outside the body. The patient is not radioactive after treatment.

Type	Key distinction
Brachytherapy—sealed source	Radioactive implant is placed in/near tumor. Follow time, distance, shielding, visitor, and source-displacement precautions.
Systemic radionuclide	Radioactive substance travels through the body. Body-fluid precautions and release instructions are agent-specific.

SEALED IMPLANT PRIORITY Limit time, maximize distance, use ordered shielding/dosimeter, follow visitor restrictions, and never handle a dislodged source with bare hands. Keep it in the room, use long-handled forceps and a lead container per policy, then notify radiation safety.

Field-specific effects

Field	Likely effects
Head/neck	Mucositis, xerostomia, taste changes, swallowing difficulty, localized alopecia.
Chest	Esophagitis, cough/pneumonitis, skin change, fatigue.
Abdomen/pelvis	Nausea, diarrhea, urinary irritation, fertility/sexual effects, skin change.
Bone marrow—rich fields	Myelosuppression risk rises with dose/volume.
Any field	Fatigue; localized skin and hair changes may occur.

LECTURE CORRECTION Radiation effects are not limited to fatigue. Nausea, vomiting, mucositis, diarrhea, marrow suppression, and alopecia can occur when the relevant tissue is in the radiation field. Ask: “What body area is being treated?”

5 Radiation Skin & Self-Care

STUDY SPRINT • 8 MIN Protect—not scrub—the treatment field

- Inspect skin gently; wash with lukewarm water and mild approved product, pat dry, and do not remove treatment markings.
- Avoid friction, tight clothing, heating pads, ice packs, adhesive tape, sun exposure, and unapproved lotions/deodorants/powders on the field.
- Use only products and timing approved by the radiation team. Protect treated skin from sun during therapy and afterward.
- Balance rest with light activity; support calories, protein, fluids, sleep, and symptom management.

REPORT Moist desquamation, open skin, fever, severe pain, dehydration, inability to eat/drink, dyspnea, or rapidly worsening symptoms require prompt evaluation.

6 Chemotherapy Foundations

STUDY SPRINT • 11 MIN Connect rapid division to systemic toxicity

CORE IDEA Cytotoxic chemotherapy travels systemically and targets dividing cells. It can treat visible and microscopic disease, but it also damages rapidly dividing normal cells—especially bone marrow, GI mucosa, hair follicles, skin, and reproductive cells.

Timing	Purpose
Primary	Main treatment for selected cancers.
Neoadjuvant	Shrinks tumor before surgery/radiation.
Adjuvant	Targets microscopic disease after local treatment.
Concurrent	Given with radiation for radiosensitization or combined effect.
Palliative	Reduces burden and symptoms when cure is not the goal.

Schedules use cycles so cancer is attacked at planned intervals while normal tissue recovers. Doses and timing are important, but safety findings, organ function, counts, infection, toxicity, and provider parameters determine whether treatment proceeds.

DO NOT FORCE THE SCHEDULE A nursing student should never assume chemotherapy must be given “on time” despite abnormal findings. Verify orders, labs, treatment parameters, consent, dose, route, access, and independent checks; hold and clarify when criteria are not met.

7 Chemotherapy Classes: Pattern Recognition

STUDY SPRINT • 12 MIN Learn class → mechanism → signature risk

Class / examples	High-yield pattern
Alkylating / platinum agents Cyclophosphamide, cisplatin	DNA injury; myelosuppression. Cyclophosphamide: hemorrhagic cystitis. Cisplatin: nephrotoxicity, ototoxicity, severe nausea.
Antimetabolites Methotrexate, 5-FU, cytarabine	Disrupt DNA/RNA synthesis; myelosuppression and mucositis. Drug-specific rescue/monitoring may apply.
Antitumor antibiotics Doxorubicin, bleomycin	Doxorubicin: vesicant and cumulative cardiotoxicity. Bleomycin: pulmonary toxicity with relatively less marrow suppression.

Class / examples	High-yield pattern
Mitotic inhibitors Vincristine, paclitaxel	Disrupt microtubules. Vincristine: neuropathy/ileus and vesicant risk; paclitaxel: hypersensitivity and neuropathy.
Topoisomerase inhibitors Etoposide, irinotecan	DNA-strand processing disrupted; marrow suppression. Irinotecan is strongly associated with diarrhea.
Hormonal agents	Alter hormone production or receptor signaling; effects depend on drug and sex-hormone pathway.

EXAM STRATEGY When you cannot recall every adverse effect, start with shared chemotherapy risks—myelosuppression, mucositis, nausea, fatigue—then add the drug’s signature organ toxicity.

8 Routes, Handling & Home Safety

STUDY SPRINT • 10 MIN Treat every antineoplastic route as hazardous

Route	Example / key safety point
IV / central line	Verify blood return and patency when required; vesicants need special access and monitoring.
Oral	Not safer or “weaker.” Do not crush, split, or open unless specifically approved; use safe handling and adherence teaching.
Intrathecal	Delivered into CSF by specially trained clinicians; wrong-route errors can be fatal.
Intraperitoneal	Delivered into abdominal cavity for selected cancers.
Intravesical	Delivered into the bladder—not “intravascular.” Follow dwell, voiding, and body-fluid precautions.
Intra-arterial / topical	Regional or surface delivery in selected protocols.

HAZARDOUS-DRUG SAFETY Only trained, authorized staff administer antineoplastic therapy. Use policy-approved PPE for preparation, administration, spills, disposal, and contaminated body fluids. Precaution duration is drug- and policy-specific—often at least 48 hours, sometimes longer.

- At home: keep oral agents in original containers, away from children/pets; do not share; follow missed-dose and disposal instructions; caregivers use recommended PPE.

9 Extravasation: Vesicant Emergency

STUDY SPRINT • 8 MIN STOP first—then protect the tissue

CLUES Burning, stinging, pain, swelling, blanching, erythema, coolness, slowed infusion, resistance, or loss of blood return during a vesicant infusion.

Order	Action
1	STOP the infusion immediately.
2	Leave the catheter/needle in place; disconnect tubing as policy directs.
3	Attempt aspiration of residual drug with a new syringe—do not flush.
4	Notify the provider/chemotherapy specialist and activate the extravasation protocol.
5	Administer drug-specific antidote and warm or cold compress as ordered; elevate if directed.
6	Document, photograph/measure per policy, and arrange ongoing assessment.

NEVER Do not flush the line, apply pressure, remove the device before aspiration/antidote decisions, or guess whether heat or cold is correct. Management is agent-specific.

10 CBC Complications: ANC & Platelets

STUDY SPRINT • 12 MIN Use the lab to choose the priority

Neutropenia

ANC $ANC = WBC \times (\% \text{ neutrophils} + \% \text{ bands}) \div 100$. Infection risk rises as ANC falls; severe neutropenia is commonly $ANC < 500/\mu L$.

- Fever during neutropenia is an emergency. Follow the oncology threshold and protocol—commonly a single oral temperature $\geq 38.3^\circ C$ ($101^\circ F$) or $\geq 38.0^\circ C$ ($100.4^\circ F$) sustained for 1 hour.
- Assess temperature, chills, cough, dysuria, line/wound changes, diarrhea, mental status, and hemodynamics. Obtain cultures/labs and give broad-spectrum antibiotics promptly as ordered; do not delay antibiotics for results.
- Hand hygiene, avoid sick contacts, food safety, oral/skin/perineal care, no rectal temperatures/suppositories/enemas unless explicitly ordered.

DO NOT MASK FEVER Teach patients to call before taking acetaminophen for a fever. A patient on chemotherapy with fever, rigors, hypotension, confusion, or dyspnea needs urgent evaluation.

Thrombocytopenia

- Assess petechiae, bruising, gums, epistaxis, hematuria, melena, vaginal bleeding, headache, neurologic change, and platelet trend.
- Soft toothbrush, electric shaver, fall protection, prolonged pressure after sticks; avoid IM injections, rectal procedures, aspirin/NSAIDs, and contact sports unless specifically approved.

11 Anemia, Fatigue & Colony-Stimulating Factors

STUDY SPRINT • 8 MIN Balance oxygen demand with safe activity

Problem	Nursing care
Anemia	Assess fatigue, pallor, dyspnea, tachycardia, dizziness, chest pain, Hgb trend, bleeding, and activity tolerance; oxygen/transfusion/therapy as ordered.
Cancer-related fatigue	Cluster care, prioritize tasks, encourage light regular activity as tolerated, sleep hygiene, nutrition, hydration, and evaluation for reversible causes.
G-CSF/GM-CSF support	Stimulates marrow recovery in selected regimens; bone pain is common. Monitor counts and serious drug-specific reactions.

PRIORITY Chest pain, syncope, severe dyspnea, hypoxia, hemodynamic instability, or active bleeding outranks routine fatigue teaching.

12 GI, Oral, Hair & Cognitive Effects

STUDY SPRINT • 11 MIN Prevent symptoms before they spiral

Effect	Nursing management
Nausea/vomiting	Give prophylactic antiemetics on schedule before emetogenic therapy; track intake/output, weight, electrolytes, and dehydration.
Mucositis	Frequent assessment; soft toothbrush, bland saline/bicarbonate rinses per plan, pain control, soft moist foods, hydration. Avoid alcohol mouthwash and irritating foods.
Diarrhea	Assess severity, timing, infection, dehydration and regimen-specific danger; replace fluids/electrolytes and treat only as ordered.
Constipation/ileus	Assess bowel pattern, opioids, hydration, mobility, neuropathy and obstruction; do not give laxatives when obstruction is suspected.
Alopecia	Usually temporary with many regimens but not all; prepare before loss, protect scalp, offer wigs/head coverings/cooling-cap discussion when appropriate.

Effect	Nursing management
"Chemo brain"	Written plans, reminders, pacing, sleep, exercise, and evaluation for medications, anemia, depression, infection, or neurologic red flags.

LECTURE NUANCE Hair regrowth timing varies and can begin weeks to months after treatment. Texture or color may change. Scalp cooling reduces alopecia risk with some regimens but does not completely prevent it.

13 Peripheral Neuropathy & Falls

STUDY SPRINT • 7 MIN Protect hands, feet, balance, and independence

- Assess numbness, tingling, burning, pain, weakness, fine-motor difficulty, gait, falls, bowel/bladder changes, and functional impact before each cycle.
- Well-fitting shoes, clear walkways, nightlights, handrails, temperature testing with an unaffected area, skin/foot checks, and protection from cuts/burns.
- Report worsening symptoms early; dose modification may prevent permanent injury. Coordinate PT/OT and assistive devices.

URGENT New unilateral weakness, facial droop, severe headache, acute confusion, or sudden gait change is not routine neuropathy—activate neurologic evaluation.

14 Immunotherapy & Infusion Reactions

STUDY SPRINT • 11 MIN Inflammation can affect almost any organ

IMMUNE-RELATED ADVERSE EVENTS Checkpoint immunotherapy can activate immune attack on healthy tissue. Toxicities may begin during treatment or after it ends. Early reporting matters because organ inflammation can become severe or fatal.

Organ system	Report / assess
Lung	New cough, dyspnea, hypoxia → pneumonitis.
GI	Persistent diarrhea, blood/mucus, abdominal pain → colitis.
Liver	Jaundice, dark urine, RUQ pain, elevated enzymes → hepatitis.
Endocrine	Fatigue, headache, dizziness, temperature intolerance, thirst/urination changes → thyroid, pituitary, adrenal, or pancreatic dysfunction.
Skin	New/worsening rash, pruritus, blistering, mucosal involvement.
Heart/neuro/kidney	Chest pain, arrhythmia, weakness, confusion, decreased urine—rare but urgent toxicities.

DO NOT SELF-TREAT Do not label diarrhea, cough, or fatigue as “expected” without assessment. Notify the oncology team before using antidiarrheals or steroids unless the established plan directs it; immunosuppression and holding therapy are provider-managed.

Monoclonal antibody infusion reaction

Watch especially early in the infusion for fever, chills/rigors, flushing/rash, headache, dyspnea/wheeze, chest/back pain, hypotension, or anaphylaxis. Stop or pause per protocol, maintain IV access with compatible fluid, assess ABCs/vitals, call for help, and give emergency medications as ordered.

15 Targeted & Hormonal Therapies

STUDY SPRINT • 10 MIN Targeted does not mean harmless

Group	High-yield toxicities
Tyrosine/multikinase inhibitors	Diarrhea, rash, hypertension, hepatotoxicity, cytopenias, fluid/electrolyte or cardiac effects—drug-specific.
EGFR inhibitors	Acneiform rash, diarrhea, infusion/hypersensitivity reactions, electrolyte loss.
VEGF/angiogenesis inhibitors	Hypertension, bleeding/thrombosis, proteinuria, impaired wound healing, GI perforation risk.
Proteasome inhibitors	Peripheral neuropathy, cytopenias, GI effects, hypotension; herpes-zoster prophylaxis may be used.
mTOR inhibitors	Hyperglycemia, hyperlipidemia, stomatitis, infection, pneumonitis.
Hormonal therapies	Hot flashes, sexual/fertility effects, bone loss, thromboembolism or metabolic/cardiovascular effects depending on agent.

SURGERY ALERT Some antiangiogenic drugs impair wound healing. Verify whether and when therapy must be held before and after procedures—never stop it independently.

16 Oncologic Emergencies: Rapid Map

STUDY SPRINT • 12 MIN Identify the syndrome and act on ABCs

Emergency	Signature clues / first priorities
Neutropenic sepsis	Fever or hypothermia, rigors, hypotension, confusion, tachypnea. Sepsis pathway, cultures/lactate, rapid antibiotics/fluids as ordered.
DIC	Bleeding/oozing plus microthrombi and organ dysfunction; platelets/fibrinogen fall, PT/aPTT and D-dimer rise. Treat cause; blood products/support as ordered.
SIADH	Hyponatremia, low serum osmolality, concentrated urine, headache/confusion/seizure. Neuro/seizure precautions; fluid strategy and sodium correction as ordered.
Spinal cord compression	New back pain, weakness/numbness, gait change, saddle anesthesia, bowel/bladder dysfunction. Limit unsafe movement; urgent neuro assessment and escalation.
Hypercalcemia of malignancy	Weakness, confusion, constipation, polyuria/dehydration, shortened QT/arrhythmia. IV isotonic fluid and calcium-lowering therapy as ordered.
SVC syndrome	Face/neck/upper chest or arm edema, venous distention, dyspnea, cough, headache, cyanosis/stridor. Elevate HOB, oxygen, avoid upper-extremity lines if possible, urgent escalation.
Tumor lysis syndrome	HyperK, hyperphosphatemia, hypocalcemia, hyperuricemia, AKI after rapid tumor death. Cardiac monitoring, frequent labs, IV hydration and urate-lowering therapy as ordered.

17 Tumor Lysis Syndrome Deep Dive

STUDY SPRINT • 10 MIN K-P-UP, Ca DOWN

LAB PATTERN Rapid cell breakdown releases potassium and phosphate. Nucleic acids are metabolized to uric acid. Phosphate binds calcium. Result: K $\uparrow$, phosphate $\uparrow$, uric acid $\uparrow$, calcium $\downarrow$, creatinine $\uparrow$.

Abnormality	Danger
Hyperkalemia	Peaked T waves, PR prolongation, flattened/absent P waves, widened QRS, bradycardia or lethal dysrhythmia.
Hyperphosphatemia + hypocalcemia	Paresthesia, cramps, tetany, seizures, prolonged QT; calcium-phosphate deposits can worsen kidney injury.
Hyperuricemia	Uric-acid crystal nephropathy and acute kidney injury.
AKI	Oliguria, fluid/electrolyte accumulation and worsening dysrhythmia risk.

PREVENT / RESPOND Identify high-risk bulky or rapidly responsive cancers; baseline and frequent electrolytes/uric acid/creatinine; strict I&O and weight; vigorous IV hydration when appropriate; allopurinol or rasburicase as ordered; telemetry for major abnormalities. Dialysis may be needed.

TRANSCRIPT CORRECTION TLS uric acid comes from purine/nucleic-acid breakdown—not increased liver production. The ECG pattern is more than “tall T waves”: progressive hyperkalemia can flatten P waves, widen QRS, and cause arrest.

18 Survivorship & Ongoing Care

STUDY SPRINT · 8 MIN Cancer care continues after treatment

- Use the survivorship plan: cancer-specific surveillance, late-effect monitoring, medication review, vaccination/prevention, rehabilitation, and primary-care coordination.
- Assess pain, fatigue, sleep, cognition, neuropathy, lymphedema, cardiopulmonary/endocrine/bone effects, sexuality/fertility, nutrition, employment, finances, caregiving, anxiety and fear of recurrence.
- Teach which symptoms need routine follow-up versus urgent care; reinforce adherence without blaming patients for access barriers.

PSYCHOSOCIAL PRIORITY Ask directly about depression, anxiety, isolation, coping, family strain, and suicidal thoughts. Offer social work, counseling, support groups, rehabilitation, spiritual care, financial navigation, and palliative care based on the patient’s wishes.

19 Lecture Questions Decoded

STUDY SPRINT · 8 MIN Learn the rationale behind the answer

Prompt	Best reasoning
Expected outcome of chemotherapy-related hair loss	Often temporary, with regrowth after therapy; timing and texture/color vary, and some agents can cause prolonged or permanent loss.
Breast-radiation adverse effect	Fatigue is common. Also assess localized skin change, edema/tenderness and localized hair loss; effects follow the field.
Greatest tumor-lysis risk	High-grade, bulky, highly treatment-sensitive hematologic malignancy—often shortly after chemotherapy, radiation, steroids, or other effective therapy; spontaneous TLS can occur.

EXAM TRAP The lecture contrasts radiation fatigue with “chemotherapy-only” mucositis, alopecia, nausea, and vomiting. Safer rule: radiation effects are field-specific; chemotherapy effects are systemic. Either treatment can cause several overlapping symptoms.

20 Retrieval Practice

STUDY SPRINT • 10 MIN Cover the answers and say them aloud

Question	Answer
1. External radiation: radioactive afterward?	No.
2. First action for vesicant extravasation?	Stop the infusion; leave access in place and do not flush.
3. Fever plus severe neutropenia means?	Medical emergency; rapid cultures/evaluation and antibiotics per protocol.
4. Platelet precautions?	Bleeding assessment, gentle care, electric razor, avoid rectal/IM trauma and unapproved NSAIDs.
5. Immune therapy + diarrhea/cough?	Possible colitis/pneumonitis; notify and evaluate early.
6. SVC syndrome clue?	Upper-body edema/venous distention with respiratory or neurologic symptoms.
7. Cord compression clue?	Back pain plus weakness, sensory change, gait or bowel/bladder dysfunction.
8. TLS pattern?	K $\uparrow$, phosphate $\uparrow$, uric acid $\uparrow$, calcium $\downarrow$, AKI.
9. Oral chemotherapy safer than IV?	No—same hazardous-drug discipline and adherence monitoring.
10. Palliative care requires stopping treatment?	No; it can accompany disease-directed treatment.

21 One-Minute Review

IF YOU REMEMBER ONLY 12 THINGS 1) Cancer care may cure, control, or palliate. 2) Metastatic does not always mean incurable. 3) External radiation does not make the patient radioactive. 4) Radiation effects follow the field. 5) Chemotherapy affects rapidly dividing normal cells. 6) Oral chemotherapy is hazardous too. 7) Extravasation: STOP—leave access—aspirate—do not flush. 8) Neutropenic fever is an emergency. 9) Low platelets require bleeding precautions. 10) Immunotherapy can inflame any organ. 11) SVC and cord compression threaten airway/neurologic function. 12) TLS = K, phosphate, uric acid UP; calcium DOWN.

Four short study passes

Pass	What to do	Time
1 Pink scan	Read extravasation, neutropenic fever, immune toxicity, and emergency boxes.	7 min
2 Compare	External vs sealed radiation; chemotherapy vs targeted/immunotherapy.	8 min
3 Trace	Therapy → tissue injury → assessment → nursing action.	7 min
4 Retrieve	Answer all ten questions; review only your misses.	10 min