CHAMPIONING MEDICALLY INTEGRATED ONCOLOGY:

Celebrating a Decade of Impact



Pancreatic Cancer Pathways: Integrating Nursing, Navigation, & Nutrition Across the Care Continuum

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FALL SUMMIT

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- Summarize the current treatment plan options for adult patients with pancreatic cancer.
- 2. Identify common symptoms of pancreatic cancer and corresponding supportive care strategies.
- Distinguish performance status assessment strategies and nutrition interventions to improve outcomes and quality of life in patients with pancreatic cancer.
- 4. Review survivorship care strategies in pancreatic cancer, including gaps in survivorship care delivery.

DISCLOSURES

The following relevant financial relationships from the past 24 months have been identified and disclosed for the following faculty and planners of this CE activity:

- Jaclyn V. Moore, MS, RD, C.S.O
 - Alcresta Therapeutics, Abbvie Pharmaceuticals
- Dallas Lawry, DNP, FNP-C, AOCNP
 - o Pfizer, IPSEN, Bristol Myers Squibb, Abbvie, Canopy

No relevant financial relationships from the past 24 months have been identified for the following speakers and planners of this CE activity:

- Tara Davis, RN
- Amanda McCauley MSN, RN, OCN
- Tahsin Imam, PharmD

QUESTION 1

How often do you care for a patient with pancreatic cancer?

- a. Daily
- b. Monthly
- c. A few times a year
- d. Never

QUESTION 2

What is the five-year survival rate for pancreatic cancer?

- a. Less than 1%
- b. 50%
- c. 24%
- d. 13%

Pancreatic Cancer Basics

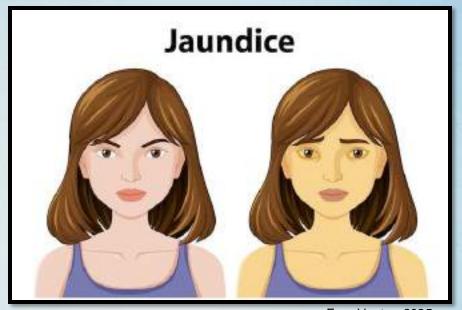
- Expected to be the second leading cause of cancer death as early as 2026, but very likely by 2040
- Once a rare malignancy, now on the rise due to factors that are unexplored due to a lack of research
- Will affect about 67,440 people and take **51,980** lives in 2025
- 5-year survival rates are only 13%, which includes all stages of the disease, many of whom present metastatic
- Pancreatic cancers are defined by endocrine or exocrine tumors



How do these patients present?

Vague Symptoms:

- Abdominal and/or mid-to-upper back pain
- Nausea/loss of appetite
- Jaundice (yellowing of the skin and eyes)
- Changes in stool (oily or watery)
- New-onset diabetes

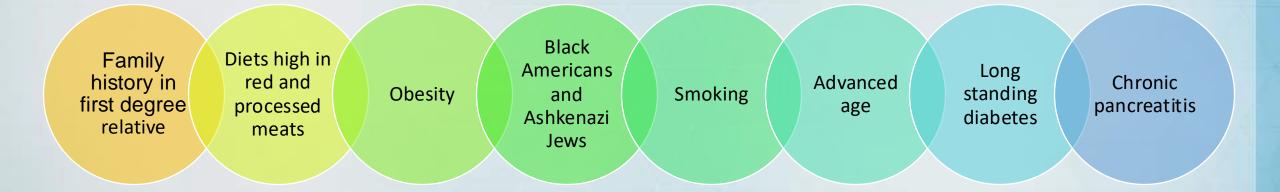


Free Vector, 2025





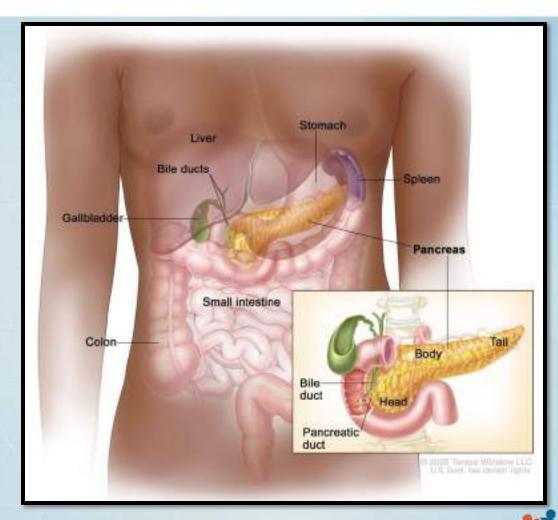
Known Risk Factors for Pancreatic Cancer



Pancreatic Cancer Action Network. 14 Pancreatic Cancer Warning Signs Infographic. https://pancan.org/spread-the-word/14-pancreatic-cancer-warning-signs-infographic/. Published [date unknown]. Accessed [September 15, 2025].

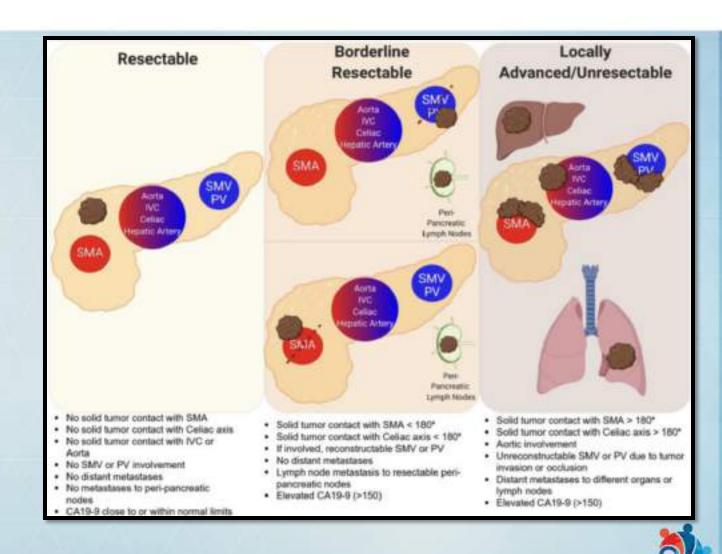
Types of Pancreas Cancer

- Exocrine (~92%)
 - Pancreatic adenocarcinoma (PDAC)
 ~ 90%
 - Acinar cell (very rare)
 - Intraductal papillary-mucinous neoplasm (IPMN, a pre-cancer)
- Endocrine (~8%)
 - Pancreatic neuroendocrine tumor (PNET) ~ 10%
 - Characterized by the type of hormones produced by the tumor
- VERY rare types
 - Adenosquamous carcinoma, squamous cell carcinoma, pancreatoblastoma



Staging of Pancreas Cancer

- Location on pancreas: body, tail, head, mixed, multiple tumors
- Staging:
 - Resectable (curative) stage IA, IB, IIA, IIB
 - Stage II cancers may require neoadjuvant chemotherapy
 - Unresectable (noncurative)
 - Stage III locally advanced
 - Stage IV metastatic



Pancreatic Adenocarcinoma

Treatment plans:

- Systemic therapy examples (pancreatic adenocarcinoma)
 - Neoadjuvant: FOLFIRINOX or gemcitabine/nab-paclitaxel
 - Adjuvant: FOLFIRINOX or gemcitabine/nab-paclitaxel, gemcitabine/capecitabine
 - Metastatic disease: FOLFIRNOX, NALIRIFOX, gemcitabine/nab-paclitaxel
 - Immunotherapy: based on NGS testing
- Surgical options: based on tumor location and metastatic disease
 - Whipple, Appleby, distal pancreatectomy, irreversible electroporation (IRE)
- Radiation therapy/proton therapy
- Clinical trials: KRASi, bispecifics, vaccines, targeted therapy, IRE
- Note: different treatments for the differing types of pancreas cancer, other than PDAC



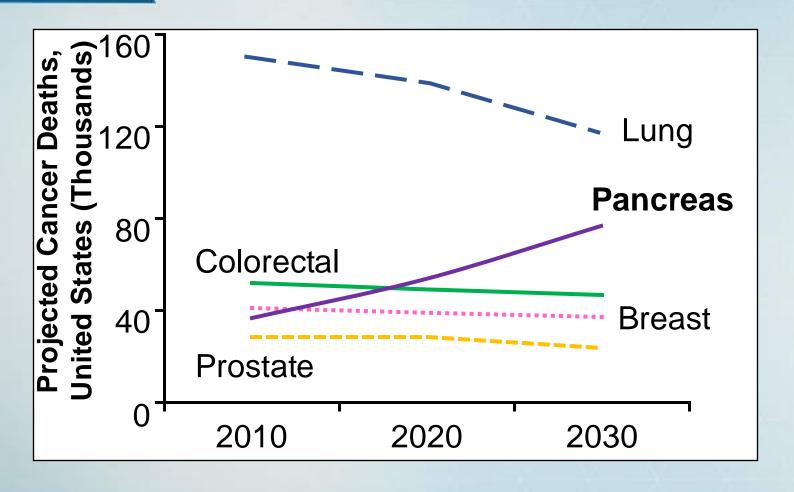
QUESTION 3

According to NCCN guidelines what is a front-line systemic therapy for stage IV pancreatic cancer?

- a. Pembrolizumab
- b. Entrectinib
- c. Nivolumab + Ipilimumab
- d. FOLFIRINOX



Pancreatic Cancer Treatment Modalities



Surgery

Only curative option

Chemotherapy

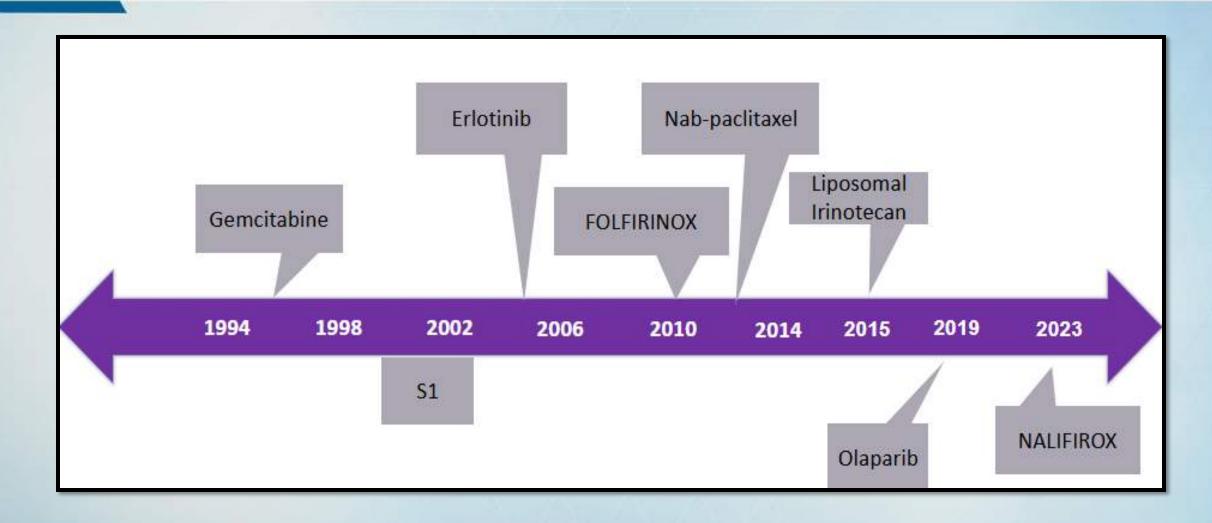
Multiple clinical trials validating its benefit

Radiotherapy

Commonly utilized in neoadjuvant setting

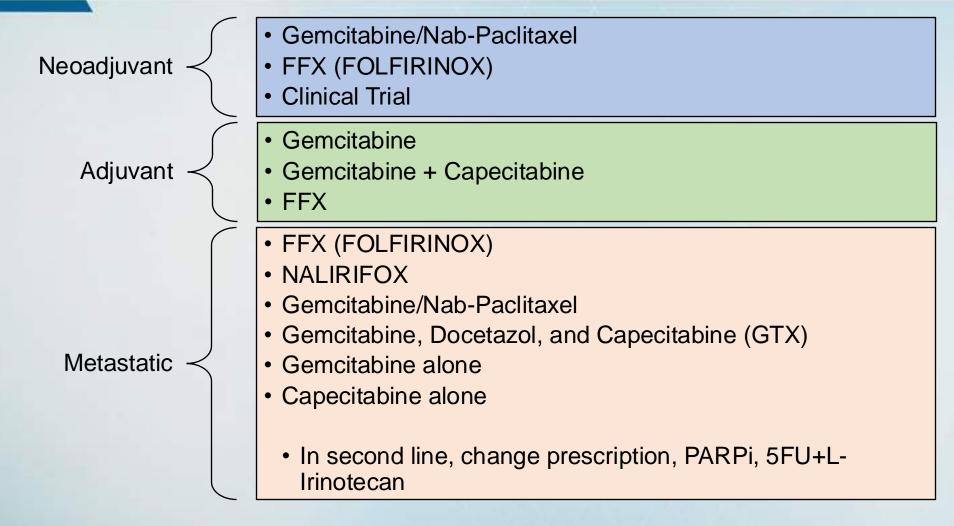


Pancreatic Cancer Chemotherapies





Systemic Treatments





FOLFIRINOX in Pancreatic Cancer

Treatment Regimen

- Combination of 5-FU, Leucovorin, Irinotecan, and Oxaliplatin.
- Used in patients with good performance status, often metastatic or locally advanced disease.



Common Side Effects

- Fatigue
- Nausea, vomiting
- Diarrhea
- Myelosuppression (neutropenia, anemia, thrombocytopenia)
- Peripheral neuropathy (oxaliplatin)
- Mucositis,
- Alopecia
- Loss of appetite
- Weight loss



Nursing Considerations and Supportive Care - FOLFIRINOX



Nursing Considerations

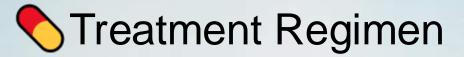
- Monitor CBC, electrolytes, and organ function.
- Assess for neuropathy at each visit.
- Educate patients on cold sensitivity related to oxaliplatin.

Supportive Care

- Manage oral mucositis with salt & soda rinses and magic mouthwash.
- Support hydration, bowel regimen, and infection prevention.



Gemcitabine + nab-paclitaxel (albumin-bound paclitaxel) in Pancreatic Cancer



- Combination of gemcitabine and nab-Paclitaxel
- Standard first-line therapy,
- Often for patients not eligible for FOLFIRINOX.



Common Side Effects

- **Fatigue**
- Nausea, vomiting, diarrhea, constipation
- Myelosuppression: neutropenia, anemia, thrombocytopenia
- Peripheral neuropathy
- Alopecia
- Rash
- Mucositis
- Edema



Nursing Considerations and Supportive Caregemcitabine + nab-paclitaxel



Nursing Considerations

- Monitor CBC and organ function before each cycle.
- Assess neuropathy at each visit Educate patients on safety and fall prevention
- Manage mucositis with salt & soda rinses and magic mouthwash.
- Support hydration and bowel regimen to reduce GI side effects.
- Educate patients on signs of infection and bleeding risk.



Supportive Care

- Provide teaching on managing fatigue and maintaining nutrition.
- Encourage use of wigs, scarves, or head coverings for alopecia if distressing.
- Coordinate referrals to supportive care and rehabilitation services as needed.



Olaparib in Pancreatic Cancer

Treatment Regimen

- Olaparib (PARP inhibitor) is an oral targeted therapy.
- Used as maintenance therapy for patients with germline BRCA1/2 mutation who have not progressed after ≥16 weeks of platinum-based chemotherapy.

Common Side Effects

- Fatigue
- Nausea
- Anemia
- Decreased appetite
- GI upset (vomiting, diarrhea, constipation).
- Cytopenias (neutropenia, thrombocytopenia).
- Rare but serious: myelodysplastic syndrome (MDS), acute myeloid leukemia (AML).



Nursing Considerations and Supportive Care-



Nursing Considerations

- Monitor CBC routinely for anemia and cytopenias.
- Educate patients on adherence (oral daily dosing with a full glass of water).
- Manage nausea proactively with antiemetics; encourage hydration and nutrition.
- Monitor for unusual bruising, infections, or prolonged fatigue.
- Reinforce need for genetic testing to identify eligible patients.

Why NCCN Recommends It

- Improves progression-free survival in BRCA-mutated pancreatic cancer.
- Represents a step toward personalized, biomarker-driven therapy.
- Expands treatment beyond chemotherapy, giving patients a new targeted option



Benefits of a Multidisciplinary Pancreatic Clinic

- Expert Collaboration
 - Specialists (oncology, surgery, GI, radiology, pathology, genetics, supportive care) evaluate patients together.
- ✓ Efficient & Coordinated Care One visit, same day, same place → reduces delays and repetition.
- Personalized Care Plans
 Joint review of imaging, pathology, and genetics ensures tailored treatment.
- Access to Research & Trials

 Quicker identification of eligible patients for clinical studies and new therapies.
- Improved Patient & Family Experience
 Streamlined appointments and unified communication → less stress, more support.

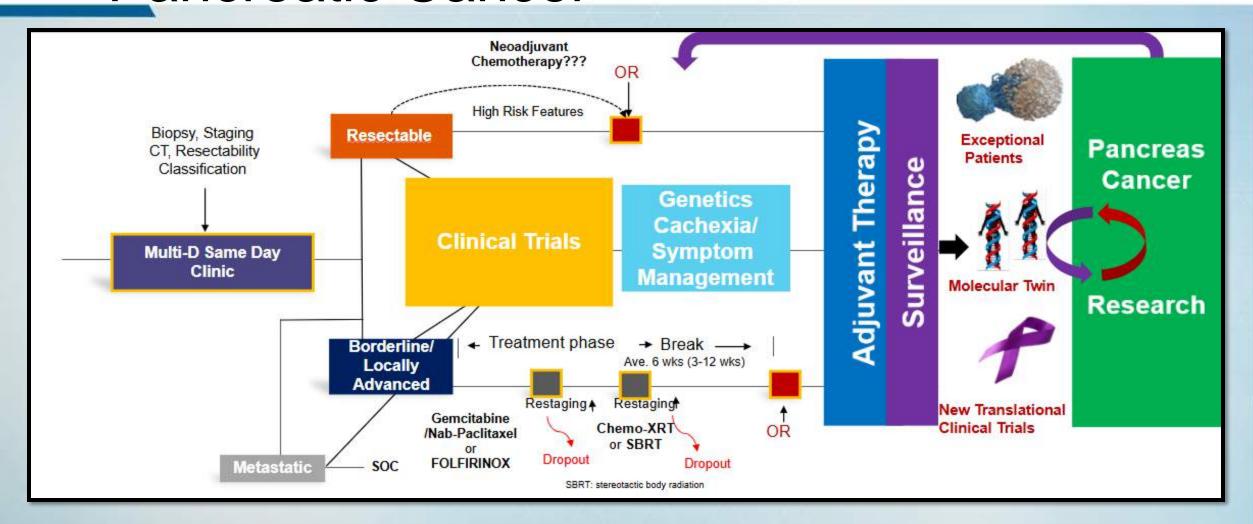


IStock

Ebia MI, Abbas AA, Levi A, Davelaar J, Rosenberg E, Atkins KM, Kamrava M, Lo S, Gaddam S, Gangi A, Kosari K, Arora A, Haladjian N, Laszlo M, Oppenheim S, Reckamp KL, Nissen N, Larson BK, Wachsman A, Gong J, Ferrone C, Hendifar AE, Osipov A Enhancing management of pancreatic cancer. impact of a same day multidisciplinary clinic on access to guideline-directed care. HPB (Oxford). 2025 Jul 17:S1365-182X(25)00671-9. doi: 10.1016/j.hpb.2025.07.012. Epub ahead of print. PMID: 40817027; PMCID: PMC12456971.



Our Future Treatment Approach to Pancreatic Cancer





Multimodal Supportive Care Interventions

- Employ early on in Patient's Care
- Pain Management
 - Opioids
 - Celiac Plexus Block
- Biliary Stents
- Anticoagulation
- Emotional support
- Cachexia management





Quality of Life Enhancements

Symptom Relief

Prioritize pain control, nausea management, fatigue, and bowel care.

Nutrition & Function

Support weight maintenance, pancreatic enzyme use, and hydration.

Emotional Support

Screen for anxiety/depression, encourage open communication, and connect to counseling resources.

Family & Caregiver Needs

Recognize caregiver burden, provide education, and encourage respite support.

The End-of-Life & Palliative Focus

Advocate for patient-centered goals, advance care planning, and comfort measures





Clinical Trials in Pancreatic Cancer

- **Access to Innovation**
 - Trials provide patients with cutting-edge therapies not yet widely available.
- Personalized Medicine Genetic and biomarker testing guide eligibility for targeted or immune-based therapies.
- Types of Trials

 New chemotherapy combinations, targeted agents, immunotherapy, and surgical/radiation strategies.
- Earlier Enrollment Matters
 Patients benefit most when considered at diagnosis or early in treatment.
- Nursing Role
 Educate patients/families about options.
 Support informed consent, adherence, and side effect management.





KRAS Inhibitors



KRAS & Pancreatic Cancer

- KRAS mutation is found in ~90–95% of pancreatic ductal adenocarcinomas (PDAC).
- Historically considered "undruggable," but new inhibitors are changing the landscape.

KRAS Inhibitor Therapies

- Early trials target KRAS G12C mutation (less common in pancreatic cancer).
- Research expanding into G12D and other variants, more prevalent in PDAC.



KRAS Inhibitor Clinical Trials

Clinical Trial Insights

- Combination strategies being tested (KRAS inhibitors + chemotherapy, immunotherapy, or other targeted agents).
- Patients often require genomic profiling (NGS) to determine eligibility.

Nursing Role

- Educate patients on the importance of genetic testing.
- Support trial participation by monitoring side effects (GI symptoms, fatigue, skin issues).
- Reinforce adherence and communication with trial teams.

? Key Point

 KRAS inhibitors represent a promising new frontier — still investigational but may soon change standard of care.



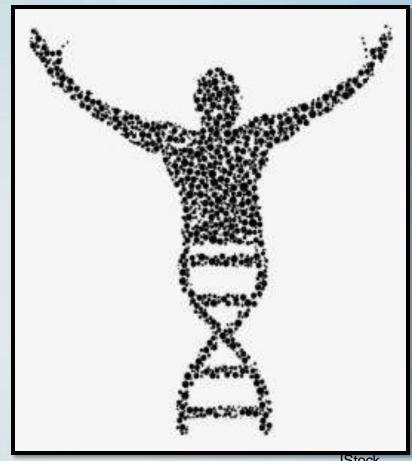
NGS Testing

Why NGS?

 Next-Generation Sequencing (NGS) identifies genetic mutations and biomarkers that drive tumor growth.

Key Findings

- •Detects KRAS, BRCA1/2, PALB2, mismatch repair (MMR), and other actionable alterations.
- Helps determine eligibility for targeted therapies (e.g., PARP inhibitors, immunotherapy).





NGS Testing in Clinical Trials

Impact on Clinical Trials

- NGS is often required for trial enrollment (KRAS inhibitors, novel targeted agents).
- Expands access to precision medicine approaches.

Benefits for Patients

- Informs personalized treatment plans.
- May improve survival, symptom management, and quality of life.

🧡 Nursing Role

- Advocate for testing at diagnosis and progression.
- Educate patients/families about results and treatment implications.
- Support informed decision-making and trial discussions.



Time is of the Essence in Pancreatic Cancer



Ü Aggressive Disease Course

Pancreatic cancer progresses rapidly, limiting treatment opportunities.

Early Testing Matters

 Fast NGS and genetic testing optimize care by identifying targeted therapies and trial options early.

Treatment Access

 Prompt referral to a multidisciplinary clinic ensures coordinated, timely, and optimized interventions.

Delays Impact Outcomes

 Waiting weeks can mean loss of surgical candidacy, reduced treatment effectiveness, or missed trial enrollment.

Nursing Role

- Advocate for timely testing, referrals, and supportive care.
- Guide patients and families to optimize care pathways while addressing urgent needs.



Benefits of Second Opinions at Academic Institutions

Multidisciplinary Expertise

Access to specialists in oncology, surgery, radiation, genetics, and supportive care.

Access to Research & Trials

 Larger centers often have clinical trials and investigational therapies not available locally.

Advanced Diagnostics

•Expanded use of NGS, molecular profiling, and precision medicine tools to guide treatment.

Optimized Treatment Planning

 Second opinions can confirm, refine, or change treatment plans, improving quality and outcomes.

Patient Confidence & Support

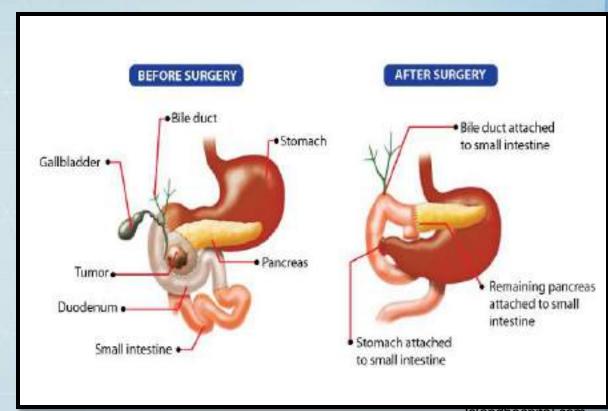
 Provides reassurance, helps patients feel informed, and may open opportunities not previously considered.



Whipple: Pre-Surgical Care

Pre-Surgical Care

- Optimize nutrition & hydration prior to surgery.
- Manage neoadjuvant chemo and side effects when applicable.
- Patient/family education on procedure, recovery expectations, drains, and lifestyle changes.
- Assess comorbidities (diabetes, cardiac, pulmonary) and optimize status.
- Provide emotional support and address anxiety about surgery.



Islandhospital.com



Whipple: Nursing Considerations

Long-Term Recovery

- Nutrition management: pancreatic enzyme replacement, small frequent meals.
- Blood glucose monitoring (new or worsened diabetes is common).
- Support gradual activity increase and rehabilitation.
- Immunization support

Nursing Role

- Provide education, advocacy, and psychosocial support.
- Coordinate care with dietitians, endocrinology, and supportive care teams.
- Reinforce adherence to follow-up and surveillance plans.



Nursing Takeaways

Symptom Management

- Monitor and manage pain, fatigue, anorexia, cachexia, and nausea/vomiting.
- Support bowel regimen, hydration, and nutritional needs.

Nutritional Support

- Assess weight loss and appetite.
- Collaborate with dietitians to optimize caloric intake and pancreatic enzyme replacement.

Education & Advocacy

- Educate patients/families about treatment plans, side effects, and home care.
- Reinforce the importance of genetic testing, clinical trials, and follow-up.

Psychosocial & Emotional Support

- Screen for depression and anxiety.
- Provide resources for coping, counseling, and caregiver support.

Coordination of Care

- Serve as patient navigator between specialties (oncology, surgery, palliative care).
- Ensure timely follow-up and continuity across the multidisciplinary team.

What is the minimal number of calories a patient should consume a day when going through treatment to maintain their body weight?

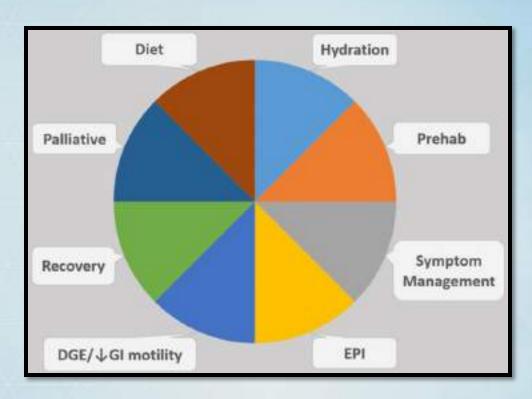
- a. 2500
- b. 1500
- c. 1800
- d. 2000



Nutrition and Pancreatic Cancer

Key Considerations:

- Consult a registered dietitian
- Address patient performance and quality of life
- Adjust strategies for resectable vs. unresectable disease
- Incorporate symptom management
- Address malabsorption/EPI
- Prepare for surgery
- Recover from surgery
- Multifaceted approach





Prehabilitation

What is prehabilitation, aka prehab?

Prehab is physical therapy before surgery.

Prehab = Impairment prevention.





Prehab Basics

- Standard of care in the management of resectable disease
- Prehab initiatives should be concurrent with neoadjuvant treatment (NT)
- Tailored to the patient's specific needs but at minimum should include:
 - Nutrition counseling (PO +/- alternative nutrition)
 - o Physical therapy
 - Psychosocial support





Prehab Process

Initiate prehab at diagnosis

Proactive > Reactive

Re-evaluate patient performance every 1-2 weeks throughout neoadjuvant treatment

 Consider a standard questionnaire with suggested actions based on patient responses

Prepare to add and adjust prehab initiatives at every follow-up:

- Symptom management (reflux, N/V, DGE, irregular bowel function)
- Hydration (supplemental IV fluids)
- Nutrition support
- Formal PT program





Prehab Quality Goals

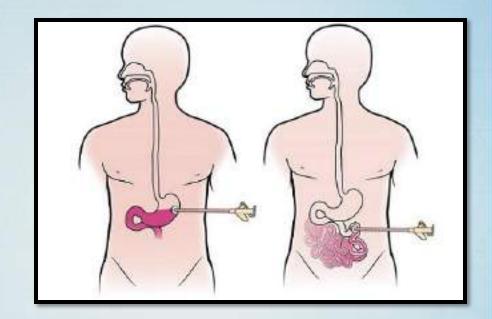
- <10% weight loss during NT
- Acceptable physical performance
 - Defined as the ability to comfortably walk ≥2.0 MPH for ≥25 min without stopping +/- maintain
 - Improve upon all ADLs
 - Formal PT program
- Adequate nutrition
 - >1800 calories per day
- Adequate hydration: >64 fl oz per day
 - "Hydrating" liquids
- Socioeconomic support
- Patient self-motivation for upcoming surgery





Prehab Nutrition

- Weight Maintenance
 - Initiate nutrition support if wt. loss >10%
 - ↓performance
 - Sometimes the scale is just a number.
- G tube vs J tube vs TPN
 - Consider GI toxicity from NT
 - o G tube vs J tube
 - TPN considerations malabsorption, too frail for surgery, requires central IV access, can be cycled off for chemo infusion



Probiotics – benefits and research



Indications for High Potency Probiotics

- High dose chemotherapy
- Long term chemotherapy
- Prehabilitation (>30 days of probiotic use recommended before major abdominal surgery)
- Abnormal post-op stools
- Frequent diarrhea, frequent stools, and/or GI distress
- Current or recent c-diff infection (continue probiotic for minimum 6 months following positive c diff culture)



Probiotics Research

Nutrients. 2021 Dec; 13(12): 4425.

Published online 2021 Dec 10. doi: 10.3390/nu13124425

PMCID: PMC8709322

PMID: 34959977

Pancreatic Cancer and Gut Microbiome-Related Aspects: A Comprehensive Review and Dietary Recommendations

Bartosz Kamil Sobocki, 1,* Karolina Kaźmierczak-Siedlecka, 2,* Marcin Folwarski, 3 Viktoria Hawryłkowicz, 4
Woiciech Makarewicz, 2 and Ewa Stachowska4

"...we should not treat the microbiome like a static population closed in different, separate compartments, but rather like dynamic and able to migrate population interacting with tumor microenvironment and microbiome in other locations."

"Ferrichrome is a molecule received from probiotics that suppressed the growth of refractory pancreatic cancer cells. Its mechanism is based on the inhibition of cancer cells progression and cell cycle dysregulation by activating p53 [51]. Ferrichrome is derived from probiotic strain *Lactobacillus casei* ATCC334 [52] and may act against not only pancreatic cancer, but also gastric as well as colon cancer [52,53]."



Perioperative Probiotics

Randomized Controlled Trial > Hepatogastroenterology, 2007 Apr-May;54(75):661-3.

Probiotics reduce infectious complications after pancreaticoduodenectomy

Tatsuya Nomura ¹, Yoshiaki Tsuchiya, Atsushi Nashimoto, Hiroshi Yabusaki, Yasumasa Takii, Satoru Nakagawa, Nobuaki Sato, Chizuko Kanbayashi, Otsuo Tanaka

Affiliations + expand

PMID: 17591036

- Randomized prior to pancreaticoduodenectomy: perioperative probiotic group vs control
- Control = 34, Experimental = 30, Total = 64
- Probiotics started 3-15 days pre-op and resumed POD 2 and continued until hospital discharge
- Infectious complications in probiotic group (23%, 7/30) and control group (53%, 18/34), p = 0.02
- Study originated in Asia, utilizing a probiotic called Bio-Three
- Live strains: Clostridium butyricum, Enterococcus faecalis, and Bacillus mesentericus



Nutrition for Unresectable Disease

- Balanced diet, adequate protein
- Focus on symptom management
 - o EPI, N/V/C/D, reflux, DGE
 - Medication recommendations
- Address poor appetite and early satiety
 - o 2-hour rule
 - o Liquids between meals
 - o Shakes, smoothies, ONSs
- Encourage activity throughout the day
 - o 5-10 minute walks, minimum 4 per day
- Consider nutrition support only if in line with goals of care



Nutrition Summary

- Work closely with a registered dietitian
- Nutrition initiatives should focus on improving patient performance and quality of life
- Nutrition recommendations should include symptom management and microbiome enhancement
- Consider aggressive nutrition support for patients with resectable disease
- Consider prophylactic use of high potency probiotics and/or a formal probiotic protocol.

QUESTION 5

Which patient is appropriate for survivorship?

- a. Patient who has stage IV pancreatic cancer
- b. Patient who had NED on their last scan
- c. Patient who had curative WHIPPLE procedure
- d. All of the above



Survivorship in Pancreatic Cancer

Survivorship definition:

An individual is considered a cancer survivor from diagnosis, through the balance of life. This includes survivors living with cancer and those free of cancer. (Anyone with a history of cancer)

- Includes those on treatment, in remission, or living with metastatic disease
- Not all individuals with a history of cancer identify with the term "survivor"
- NCCN guidelines focus on the vast and persistent impact both the diagnosis and treatment of cancer have on adult survivors
- Includes the impact on physical and mental states, health behaviors, professional and personal identity, sexuality/sexual health, and financial standing.
- Includes all survivors across the continuum of cancer care, including those with metastatic disease
- As the population of "survivors" or "thrivers" grows, more specific guidelines on survivorship will develop; including those for people living with long-term metastatic disease



Gaps in Survivorship Care

- No guidelines for pancreatic cancer survivors
- No research focused on survivorship in this patient population
- Lack of dedicated survivorship programs in healthcare institutions
- Inadequate patient education that these services are available
- Poor provider knowledge of surveillance guidelines
- Disparities in available programs
- Social disparities in accessing programs
- Minimal psychosocial services
- Financial toxicity
- Loss of care coordination
- Lack of resources to transition back into community
- Poor management of long-term or late stage side effects





Bridging the Gap

- Advocate for survivorship programs within your organizations
- Enhance education provided to staff and patients
- Have prominent placement in underserved areas
- Collaborate with multiple care providers
- Having a dedicated survivorship navigator to be the point person in coordinating care



Supportive Care & Important Referrals

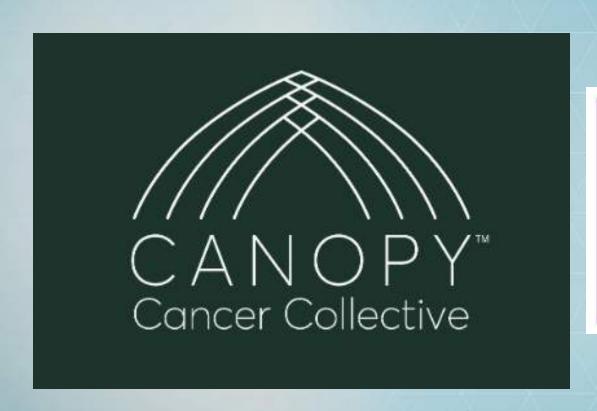


- Primary care
- 2nd opinion visit (clinical trials)
- Palliative care (11i-PCST)
- Pain management
- Nutrition (MST)
- Diabetic educator/endocrinology
- Psychology/psychology (PHQ2/9, GAD-70
- Spiritual counselor/chaplain
- Social work
- Financial advisors
- Nurse navigator/lay-navigator

- Genetics
- Support groups
- Interventional radiology
- GI/motility specialist
- Integrative medicine
- Neurology
- Physical therapy/occupational therapy
- Survivorship Clinic
- Medical aid in dying team
- Eventually, hospice

Resources





PANCREATIC CANCER ACTION NETWORK

FACING PANCREATIC CANCER

Canopy Cancer Collective. Canopy Cancer Collective. https://canopycancer.org/. Published 2025. Accessed September 17, 2025.

QUESTION & ANSWER

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RBNFM1