

Clinical Nutrition Support, Enteral & Parenteral Nutrition Specialization Course

6 Month Advanced Specialization Course

COURSE POSITIONING

Designed for nutrition and dietetics students, graduates and practicing dietitians who want advanced competence in clinical nutrition support. The specialization develops structured reasoning from malnutrition assessment and route selection through oral support, enteral nutrition, parenteral nutrition, refeeding syndrome, dumping syndrome, critical care, intestinal failure, home nutrition support, transition of care and advanced multidisciplinary practice.

What This Specialization Develops

Area

Clinical Development

Assessment

Identify nutrition risk, malnutrition, gastrointestinal function, fluid status and feeding barriers before choosing a route

Enteral Nutrition

Select access, formula, volume, rate, water provision, administration method and monitoring

Parenteral Nutrition

Understand indications, vascular access, macronutrients, electrolytes, micronutrients, safety and monitoring

Refeeding Syndrome

Recognize risk before feeding and understand cautious initiation, electrolyte monitoring and multidisciplinary management

Dumping Syndrome

Differentiate early and late dumping and apply structured dietary management

Critical Care

Integrate nutrition support with acute illness, mechanical ventilation, fluid balance and daily reassessment

Transition

Know how to step up, step down, modify or discontinue nutrition support safely

Core Learning Pathway

Assess Nutrition Risk → Select the Safest Route → Calculate Requirements → Prescribe and Monitor EN → Recognize Refeeding and Dumping Risks → Understand and Monitor PN → Manage Complex Nutrition Support → Transition and Defend Care

Course Roadmap

Month

Primary Development Area

Participant Development

Month 1

Foundations of Clinical Nutrition Support & Malnutrition

Understand indications, contraindications, assessment, requirements, route selection and multidisciplinary practice

Month 2

Enteral Nutrition, Access, Formula Selection & Feeding Prescription

Develop competence in tube feeding routes, calculations, formulas, administration, hydration and monitoring

Month 3

Parenteral Nutrition, Vascular Access & PN Prescription

Understand PN indications, macronutrients, electrolytes, micronutrients, administration, monitoring and safety

Month 4

Refeeding Syndrome, Dumping Syndrome & Nutrition Support Complications

Develop advanced competence in high risk feeding situations and metabolic or gastrointestinal complications

Month 5

Disease Specific & Critical Care Nutrition Support

Apply nutrition support reasoning to ICU, surgery, oncology, intestinal failure, renal, hepatic and other complex cases

Month 6

Home Nutrition Support, Transition of Care & Advanced Practice

Integrate long term feeding, home care, ethics, ADIME, quality and advanced case defense

Specialization Philosophy

The participant is trained to think beyond feeding calculations. Every nutrition support decision must answer six questions: Why is support required? Why this route? Why this formula or PN composition? Why this amount and rate? How will safety and tolerance be monitored? When and how will the plan be modified or transitioned?

MONTH 1 | Foundations of Clinical Nutrition Support & Malnutrition

Do not start with the formula. Start with the patient.

Week

Focus

Learning Content

Practical Application

Week 1

Understanding Clinical Nutrition Support

Oral, enteral and parenteral nutrition continuum. Indications and contraindications. Nutrition Support Team roles. Prevention and treatment of malnutrition. Goals of care. Dietetic scope and multidisciplinary boundaries.

Decide whether simulated patients need food based intervention, oral supplements, EN, PN or further assessment.

Week 2

Malnutrition, Nutrition Risk & Indications for Support

Unintentional weight loss. Reduced intake. Muscle loss. Disease related inflammation. Functional decline. Dysphagia. GI dysfunction. Surgery. Cancer. Prolonged fasting. Critical illness. Ability to meet requirements safely by mouth.

Prioritize hospital cases according to nutritional urgency and support need.

Week 3

Comprehensive Nutrition Support Assessment

Medical condition. Current intake. Weight and edema. Muscle and

function. GI symptoms and losses. Swallowing. Electrolytes and glucose. Renal and hepatic function. Fluid balance. Medication. Current or potential feeding access.

Complete a nutrition support focused assessment.

Week 4

Energy, Protein, Fluid & Micronutrient Requirements

Energy estimation. Predictive equations and limitations. Indirect calorimetry awareness. Protein requirements according to clinical condition. Fluid requirements. GI losses. Electrolytes. Micronutrients. Disease specific adjustments. Avoid underfeeding and overfeeding.

Calculate a complete nutrition prescription for several clinical cases.

Month 1 Development Outcome

Move from cannot eat therefore tube feed toward understanding why intake is inadequate, how severe the risk is, whether the GI tract is functional and what the patient actually requires.

MONTH 2 | Enteral Nutrition, Access, Formula Selection & Feeding Prescription

Enteral nutrition is a clinical prescription, not simply calories through a tube.

Week

Focus

Learning Content

Practical Application

Week 5

Enteral Nutrition Indications & Access Routes

Nasogastric, orogastric, nasojejunal, gastrostomy, jejunostomy, PEG and PEJ concepts. Shorter term versus longer term routes. Gastric versus postpyloric feeding. Nutritional appropriateness and procedural boundaries.

Select the most appropriate route for different simulated scenarios.

Week 6

Enteral Formula Selection

Standard polymeric, energy dense, high protein, fiber containing, peptide based, elemental concepts, disease specific formulas, renal, diabetes oriented, pulmonary, semi elemental, specialized and blenderized feeding concepts.

Compare formulas according to requirements, GI function, fluid needs, electrolytes, route, tolerance, cost and availability.

Week 7

Enteral Feeding Calculations & Administration

Daily energy and protein. Formula volume. Feeding rate. Feeding hours. Water provided by formula. Additional water. Flushes. Modular supplementation. Bolus, intermittent, continuous and cyclic feeding.

Convert the same requirement into several clinically appropriate administration schedules.

Week 8

Enteral Nutrition Monitoring & Complications

Nausea, vomiting, diarrhea, constipation, distension, gastric intolerance, high stool output, tube blockage, inadequate delivery, hydration problems, aspiration concern, electrolyte and glucose abnormalities.

Investigate causes before automatically changing the formula.

Month 2 Development Outcome

Stop reacting to symptoms with formula changes and develop systematic troubleshooting based on mechanism and contributing factors.

MONTH 3 | Parenteral Nutrition, Vascular Access & PN Prescription

Parenteral nutrition bypasses the gastrointestinal tract and requires a higher level of safety awareness.

Week

Focus

Learning Content

Practical Application

Week 9

Indications for Parenteral Nutrition

Intestinal failure. Severe malabsorption. Selected obstruction. High output fistula in selected circumstances. Short bowel syndrome. Prolonged inability to use the GI tract. Supplemental PN versus total PN.

Choose oral, EN, supplemental PN or total PN for complex cases.

Week 10

PN Access & Components

Peripheral PN. Central PN. PICC and central venous access concepts. Dextrose, amino acids, lipid injectable emulsion, electrolytes, vitamins, trace elements and water.

Read and interpret a simulated PN order.

Week 11

Building a Parenteral Nutrition Prescription

Energy, protein, dextrose, lipid, fluid, electrolytes, vitamins and trace elements. Insulin related medical context. Renal and hepatic considerations. Critical illness. Gradual advancement where required.

Develop a simulated PN nutrition prescription within an interdisciplinary case.

Week 12

PN Monitoring, Safety & Complications

Hyperglycemia, hypoglycemia, electrolyte abnormalities, hypertriglyceridemia, overfeeding, underfeeding, fluid imbalance, micronutrient abnormalities, liver related complications, metabolic bone concerns, infection awareness, occlusion and thrombosis awareness.

Create a PN monitoring plan and identify situations needing medical, nursing or pharmacy escalation.

Month 3 Development Outcome

Develop competence in PN reasoning while maintaining clear boundaries around compounding, line care and medication prescribing.

MONTH 4 | Refeeding Syndrome, Dumping Syndrome & Nutrition Support Complications

Sometimes feeding itself can create clinical risk.

Week

Focus

Learning Content

Practical Application

Week 13

Refeeding Syndrome: Physiology & Risk Identification

Starvation physiology. Transition from catabolism to anabolism. Insulin response. Intracellular shifts in phosphate, potassium and magnesium. Thiamine. Sodium and fluid changes. Organ dysfunction. High risk clinical contexts.

Identify patients at meaningful risk before calories are substantially increased.

Week 14

Refeeding Syndrome Prevention, Feeding & Monitoring

Baseline clinical and electrolyte review. Thiamine and electrolyte coordination. Cautious initiation when indicated. Stepwise advancement. Phosphate, potassium and magnesium monitoring. Glucose and fluid balance. Recognition of deterioration. Oral, EN and PN routes.

Follow a severely malnourished patient through the first several days of nutrition restoration.

Week 15

Dumping Syndrome

Relevant gastric and esophageal surgery. Early dumping with GI and vasomotor symptoms. Late dumping with postprandial hypoglycemia. Smaller meals. Rapidly absorbable carbohydrate exposure. Protein adequacy. Fluid timing. Fiber and food structure.

Differentiate early and late dumping and create individualized nutrition strategies.

Week 16

Enteral & Parenteral Nutrition Complication Lab

Feeding intolerance. Diarrhea. Constipation. Vomiting. Aspiration concern. High gastric output. High ostomy output. Dehydration. Electrolyte depletion. Hyperglycemia. Overfeeding. Refeeding syndrome. Dumping syndrome. Tube blockage. Feed interruption. PN related complications.

Work through structured complication scenarios and justify each modification.

Month 4 Development Outcome

Move from single cause assumptions toward mechanism based investigation, safe feeding and multidisciplinary escalation.

MONTH 5 | Disease Specific & Critical Care Nutrition Support

The feeding route may be the same, but the prescription is not.

Week

Focus

Learning Content

Practical Application

Week 17

ICU & Mechanically Ventilated Patients

Critical illness metabolism. Hemodynamic stability as clinical context. Early enteral nutrition concepts. Energy and protein. Indirect calorimetry awareness. Mechanical ventilation. Sedation related calories. Propofol awareness. Fluid, glycemia, vasopressor context and feeding intolerance.

Build a daily reassessment plan for a ventilated ICU patient.

Week 18

Surgery & Gastrointestinal Nutrition Support

Major GI surgery. Gastrectomy and dumping. Bowel resection. Pancreatic surgery. High output ostomy. Enterocutaneous fistula. Postoperative anatomy and feeding tolerance.

Select feeding strategy according to postoperative anatomy and GI function.

Week 19

Short Bowel Syndrome & Intestinal Failure

Remaining bowel anatomy. Colon continuity. Absorptive capacity. Fluid and sodium losses. High output. Oral rehydration concepts. Enteral stimulation of adaptation. Supplemental PN. Long term PN. Intestinal rehabilitation.

Develop an anatomy informed nutrition support strategy.

Week 20

Nutrition Support Across Complex Clinical Conditions

Oncology, renal, hepatic, pulmonary, neurological and geriatric nutrition support. Disease specific energy, protein, electrolyte, fluid, swallowing and route considerations.

Compare identical feeding routes in several diseases and explain why the prescriptions differ.

Month 5 Development Outcome

Apply the same support principles differently according to disease physiology, treatment and nutritional status.

MONTH 6 | Home Nutrition Support, Transition of Care & Advanced Practice

The goal is not simply to start nutrition support. The dietitian must know how to monitor, modify, transition and sometimes stop it.

Week

Focus

Learning Content

Practical Application

Week 21

Home Enteral Nutrition

Patient selection. Caregiver education. Formula storage. Feeding schedules. Tube care awareness. Water flushes. Medication administration awareness. Weight, hydration, bowel function, troubleshooting, supplies, follow up and quality of life.

Design a practical home EN plan and education pathway.

Week 22

Home Parenteral Nutrition

Chronic intestinal failure. Patient selection. Vascular access awareness. Cyclic PN. Fluid and electrolyte monitoring. Laboratory follow up. Catheter complication awareness. Long term micronutrient monitoring. Home infusion coordination and quality of life.

Develop a specialist home PN monitoring framework.

Week 23

Transition Between Nutrition Routes, Ethics & ADIME

PN to EN. PN to oral. EN to oral. Continuous to cyclic EN. Hospital

to home. Patient autonomy. Capacity. Goals of care. Palliative care. Nutrition support ADIME. Prescribed versus delivered intake. Transition planning.

Build a safe transition plan and document it professionally.

Week 24

Advanced Nutrition Support Case Defense

Integrate diagnosis, malnutrition, intake, GI function, swallowing, fluid, electrolytes, glucose, renal and hepatic function, refeeding risk, route, formula, energy, protein, water, rate, PN components, tolerance, complications, nutrition diagnosis and transition.

Defend one advanced EN case, one PN case, one refeeding case and one dumping or complex GI support case.

Month 6 Development Outcome

Be able to justify why this route, this formula or PN composition, this amount, this rate, this monitoring plan and this transition strategy are appropriate.

Dedicated Refeeding Syndrome Competency Portfolio

Competency

Expected Skill

Risk Identification

Recognize patients at meaningful risk before feeding

Physiology

Explain carbohydrate, insulin and electrolyte shifts

Electrolytes

Understand phosphorus, potassium and magnesium relevance

Thiamine

Recognize its role within refeeding prevention protocols

Nutrition Initiation

Understand cautious initiation in high risk patients

Advancement

Adjust according to biochemical and clinical response

Monitoring

Build an appropriate early monitoring framework

Route Awareness

Recognize that refeeding can occur after oral, EN or PN feeding

Clinical Deterioration

Escalate concerning biochemical or clinical changes appropriately

Case Defense

Justify feeding initiation and progression

Dedicated Dumping Syndrome Competency Portfolio

Competency

Expected Skill

Early Dumping

Understand timing, gastrointestinal and vasomotor symptom patterns

Late Dumping

Understand postprandial hypoglycemia mechanisms

Surgery History

Recognize relevant gastric and esophageal surgical history

Meal Size

Apply smaller meal strategies when appropriate

Carbohydrates

Address rapidly absorbable carbohydrate exposure

Protein

Preserve nutritional adequacy

Fluid Timing

Understand its possible role in symptom management

Food Structure

Maintain nutritional adequacy while modifying symptoms

Medical Referral

Recognize persistent or severe symptoms requiring specialist management

Case Defense

Differentiate and manage early versus late dumping nutrition

Nutrition Support Case Portfolio | Part One

Case Area

Practical Competency

Severe Malnutrition

Determine support route and requirements

Dysphagia

Develop nutrition provision within swallowing recommendations

Nasogastric Feeding

Calculate complete tube feeding

PEG Feeding

Develop long term feeding and hydration plan

Jejunal Feeding

Adapt formula and administration strategy

Formula Intolerance

Investigate rather than automatically change feed

High Protein Feeding

Calculate requirements and appropriate formula volume

Fluid Restricted Feeding

Integrate concentrated formula and water management

Refeeding Syndrome Risk

Plan cautious nutrition initiation and monitoring

Refeeding Syndrome

Recognize biochemical and clinical deterioration

Early Dumping Syndrome

Develop symptom specific nutrition management

Late Dumping Syndrome

Manage meal composition within medical care

Critical Care

Develop ICU feeding plan

Nutrition Support Case Portfolio | Part Two

Case Area

Practical Competency

Mechanical Ventilation

Integrate energy, protein and fluid considerations

Surgical Patient

Transition from perioperative support to oral intake

High Output Ileostomy

Integrate fluid, sodium and nutrition support

Short Bowel Syndrome

Develop anatomy informed nutrition strategy

Intestinal Failure

Determine EN and PN roles

Oncology

Manage nutrition support through treatment

Renal Disease

Modify nutrition support according to renal status

Hepatic Disease

Modify nutrition support according to hepatic complications

Home EN

Develop safe long term support plan

Home PN

Understand specialist monitoring framework

Transition Case

Move safely from PN or EN toward oral intake

Final Case Defense

Defend complete clinical nutrition support care

Professional Scope Integration

Situation

Nutrition Support Dietitian Role

Malnutrition

Conduct nutrition assessment, establish nutrition diagnosis and develop intervention

Route Selection

Recommend nutritionally appropriate route within multidisciplinary care

Enteral Prescription

Calculate requirements, formula, volume, schedule, water and monitoring according to competence and local policy

Tube Placement

Provide nutrition input while procedural placement remains with trained medical teams

Dysphagia

Maintain nutrition within swallowing recommendations established by appropriate specialists

PN

Participate in prescription and monitoring according to professional scope and institutional policy

PN Compounding

Pharmacy responsibility

Central Line Care

Nursing and medical responsibilities within clinical protocols

Refeeding Syndrome

Identify nutritional risk, support cautious feeding and monitor within multidisciplinary medical management

Severe Electrolyte Disturbance

Escalate promptly rather than independently treating medically unstable abnormalities

Dumping Syndrome

Provide dietary management while diagnostic and pharmacological treatment remains medical

Feeding Intolerance

Investigate nutrition related contributors and collaborate on medical causes

Intestinal Failure

Work within specialist gastroenterology and nutrition support teams

Home Nutrition Support

Provide education, prescription monitoring and nutrition follow up within coordinated home care

Advanced Illness

Align nutrition support with goals of care and patient preferences

Complex Nutrition Support

Collaborate with medicine, gastroenterology, surgery, pharmacy, nursing, speech therapy and other specialists

Final Specialization Portfolio

Portfolio Component

Final Output

Nutrition Support Assessment

Complete specialized assessment framework

Route Selection Tool

Oral, EN and PN clinical decision framework

Requirements Workbook

Energy, protein and fluid calculations

Enteral Formula Comparison

Structured formula selection framework

Tube Feeding Calculation

Complete volume, rate, water and administration plan

Enteral Monitoring Tool

Tolerance and delivery monitoring

PN Case

Macronutrient, fluid and electrolyte reasoning

PN Monitoring Tool

Structured biochemical and clinical monitoring

Refeeding Risk Tool

Clinical risk screening framework

Refeeding Syndrome Case

Initiation, advancement and monitoring plan

Dumping Syndrome Case

Early and late dumping nutrition framework

ICU Case

Critical care feeding plan

Short Bowel Case

Anatomy based nutrition support strategy

Intestinal Failure Case

EN and PN integration

Home EN Plan

Patient and caregiver support pathway

Home PN Plan

Specialist monitoring and transition framework

Nutrition Support ADIME

Complete clinical documentation portfolio

Complication Management Tool

Structured troubleshooting pathway

Transition Plan

EN or PN toward oral nutrition

Referral Framework

Medicine, gastroenterology, surgery, pharmacy, nursing and swallowing care

Final Case Defense

Advanced nutrition support presentation

Expected Specialization Transformation

At Entry

At Completion

If someone cannot eat, give tube feeding

I assess nutrition risk, GI function, swallowing and clinical condition before selecting a route

Tube feeding means calculate calories

I calculate formula, protein, volume, rate, water, administration and monitoring

Diarrhea means change the formula

I investigate medication, infection, delivery rate, malabsorption and other causes before modifying formula

PN is IV calories

I understand PN as a complete intravenous nutrition prescription requiring macronutrient, electrolyte, micronutrient, fluid and safety management

Very malnourished patients need aggressive feeding immediately

I recognize refeeding risk and understand controlled nutrition restoration and close monitoring

Refeeding syndrome only happens with tube feeding

I understand that it may occur after oral, enteral or parenteral refeeding

Low phosphate means refeeding syndrome

I interpret electrolyte change within timing, nutrition exposure and the complete clinical picture

Dumping means avoid sugar

I distinguish early and late dumping and use structured meal composition and timing strategies

Tube feeding should continue until discharge

I continuously reassess whether oral intake can safely replace part or all of nutrition support

Nutrition support is a feeding formula

I can conduct, prescribe within scope, monitor, troubleshoot, transition and defend a complete clinical nutrition support process

Final Learning Pathway

Learning Step

Learning Step

Identify Nutrition Risk

Diagnose Malnutrition

Conduct Complete Nutrition Support Assessment

Calculate Energy, Protein & Fluid

Determine Oral, Enteral or Parenteral Route

Select Enteral Access

Select Appropriate Formula

Calculate Volume, Rate & Water

Monitor Enteral Feeding

Recognize Feeding Intolerance

Assess Refeeding Syndrome Risk

Initiate & Advance Nutrition Safely

Manage Dumping Syndrome Nutrition

Understand PN Components

Develop PN Nutrition Prescription

Monitor PN

Manage Critical Care Nutrition

Manage Surgical & GI Nutrition Support

Understand Short Bowel & Intestinal Failure

Manage Home EN & PN

Transition Between Nutrition Routes

Apply ADIME

Work Within the Nutrition Support Team

Defend Advanced Nutrition Support Cases

In One Line

This specialization develops dietitians who can provide structured and evidence informed clinical nutrition support from malnutrition assessment and oral supplementation through enteral and parenteral nutrition, refeeding syndrome, dumping syndrome, critical care, intestinal failure and home nutrition support while safely calculating, monitoring, troubleshooting and transitioning nutrition therapy within multidisciplinary clinical practice.