

NEONATAL AND PEDIATRIC DIETETICS AND CLINICAL NUTRITION SPECIALIZATION COURSE

6 Month Advanced Specialization Course

A structured specialization for nutrition and dietetics students, graduates and practicing dietitians who want to develop advanced competence across the full neonatal and pediatric nutrition continuum, from premature and critically ill newborns in the neonatal intensive care unit through infancy, childhood and adolescence.

Who This Course Is For

Nutrition and dietetics students, graduates and practicing dietitians who want focused training in neonatal nutrition, pediatric growth, infant feeding, pediatric medical nutrition therapy, feeding disorders, nutrition support and complex child nutrition care.

Specialization Approach

The course begins with neonatal physiology, prematurity, neonatal growth and intensive care nutrition before moving into infant feeding, pediatric assessment, medical nutrition therapy, nutrition support, developmental feeding concerns and advanced case management.

Clinical Focus

Participants learn to consider gestational age, birth history, organ maturity, growth trajectory, feeding ability, route of nutrition, disease, developmental stage, family circumstances and multidisciplinary care when making nutrition decisions.

Overall Aim

To develop dietitians who can reason through neonatal and pediatric nutrition problems systematically, contribute safely within multidisciplinary teams, recognize professional boundaries and

defend nutrition decisions using assessment findings rather than relying on generic meal plans.

COURSE ROADMAP

Month

Primary Development Area

What the Participant Should Gain

Month 1

Neonatal Nutrition, Prematurity and Growth

Understand neonatal physiology, gestational maturity, prematurity, neonatal growth and the unique nutrition priorities of term and preterm newborns.

Month 2

Neonatal Intensive Care Nutrition, Human Milk, Enteral and Parenteral Nutrition

Develop structured understanding of human milk, fortification, neonatal enteral nutrition, parenteral nutrition and high risk neonatal care.

Month 3

Infant and Pediatric Growth, Feeding and Nutrition Assessment

Understand transition after neonatal discharge and develop competence in infant feeding, pediatric growth interpretation and comprehensive pediatric assessment.

Month 4

Pediatric Medical Nutrition Therapy

Apply clinical reasoning across gastrointestinal, allergy related, metabolic, endocrine, renal, cardiac, liver and respiratory conditions.

Month 5

Pediatric Nutrition Support, Feeding Disorders and Complex Care

Develop advanced understanding of tube feeding, parenteral nutrition, critical care, feeding disorders, neurodevelopmental conditions and multidisciplinary care.

Month 6

Advanced Neonatal and Pediatric Dietetic Practice

Integrate nutrition assessment, diagnosis, intervention, monitoring, documentation, referral and case defense across neonatal and pediatric practice.

MONTH 1: NEONATAL NUTRITION, PREMATUREITY AND GROWTH

Theme: A newborn is not simply a very small child.

Purpose: To build the physiological and nutrition foundation required before participants move into neonatal intensive care nutrition.

Week

Focus

Learning Content

Practical Application

1

Understanding Neonatal Dietetics

Role of the neonatal dietitian. Neonatal period. Term and preterm birth. Gestational age. Postmenstrual age concepts. Birth weight categories. Small and large for gestational age concepts. Neonatal multidisciplinary team. Neonatal intensive care environment and professional scope.

Participants compare the nutrition priorities of a term newborn, a preterm newborn and a very premature newborn.

2

Neonatal Physiology for Dietitians

Gastrointestinal immaturity. Renal immaturity. Fluid balance. Thermoregulation. Glucose regulation. Protein and energy metabolism. Mineral accretion. Limited nutrient stores and developmental physiology relevant to nutrition.

Participants explain why neonatal requirements and feeding tolerance cannot simply be extrapolated from older children.

3

Neonatal Growth Assessment

Birth weight, length and head circumference. Growth trajectory. Early post birth weight changes. Growth velocity. Gestational age appropriate growth references. Corrected age concepts. Catch up growth and post discharge monitoring.

Participants interpret serial neonatal growth measurements and connect the growth pattern with gestational maturity and nutrition provision.

4

Nutrition Requirements of Preterm and Term Neonates

Energy. Protein. Fluids. Carbohydrate. Lipids. Calcium. Phosphorus. Iron. Vitamins and minerals. How requirements change with gestational maturity, clinical status, growth and route of feeding.

Participants compare nutrition priorities across several neonatal cases with different gestational ages and clinical conditions.

Development Outcome: Participants should understand why gestational maturity, organ development, nutrient stores, growth and clinical status must be considered together when planning neonatal nutrition.

MONTH 2: NEONATAL INTENSIVE CARE NUTRITION, HUMAN MILK, ENTERAL AND PARENTERAL NUTRITION

Theme: In neonatal intensive care, every volume matters, but the complete clinical picture matters more.

Purpose: To develop structured competence in neonatal feeding, human milk, fortification, nutrition support and high risk neonatal nutrition care.

Week

Focus

Learning Content

Practical Application

5

Human Milk in Neonatal Care

Mother's own milk. Donor human milk concepts. Colostrum. Human milk composition. Benefits and limitations for preterm nutrition. Lactation collaboration. Human milk handling awareness. Human milk fortification concepts.

Participants evaluate a preterm infant receiving human milk and identify why milk volume alone does not describe nutritional adequacy.

6

Neonatal Enteral Nutrition

Initiation and progression of enteral feeds. Feeding tolerance. Gastric and postpyloric concepts. Bolus and continuous feeding. Human milk fortification. Preterm formula concepts. Energy density. Fluid restriction and concentration considerations.

Participants construct a simulated neonatal feeding progression and monitoring plan.

7

Neonatal Parenteral Nutrition

Indications for parenteral nutrition in preterm and high risk neonates. Amino acids. Glucose. Lipids. Electrolytes. Vitamins. Trace elements. Fluid considerations. Biochemical monitoring. Transition from parenteral toward enteral feeding. Multidisciplinary safety responsibilities.

Participants interpret a simulated neonatal parenteral nutrition case and identify the dietitian's contribution to requirements, monitoring and transition planning.

8

High Risk Neonatal Conditions

Necrotizing enterocolitis concepts. Bronchopulmonary dysplasia. Metabolic bone disease of prematurity. Cholestasis related nutrition considerations. Congenital heart disease. Surgical neonates. Intestinal failure concepts. Sepsis and critical illness related nutrition considerations.

Participants prioritize nutrition concerns across several high risk neonatal cases and identify decisions requiring specialist multidisciplinary management.

Development Outcome: Participants should be able to integrate gestational maturity, fluid allowance, human milk or formula intake, parenteral contribution, feeding tolerance, growth and

biochemical information when reviewing neonatal nutrition.

MONTH 3: INFANT AND PEDIATRIC GROWTH, FEEDING AND NUTRITION ASSESSMENT

Theme: The nutrition journey continues after neonatal discharge.

Purpose: To connect neonatal nutrition with infant and pediatric care while developing competence in growth assessment, feeding development and comprehensive pediatric nutrition assessment.

Week

Focus

Learning Content

Practical Application

9

Neonatal Discharge and Post Discharge Nutrition

Transition from hospital to home. Feeding route. Breast milk fortification or post discharge feeding concepts where clinically used. Micronutrient considerations. Growth surveillance. Corrected age. Follow up services and caregiver education.

Participants design a structured follow up framework for a preterm infant after discharge.

10

Infant Nutrition and Complementary Feeding

Breastfeeding support relevant to dietetic practice. Infant formula fundamentals. Developmental readiness for complementary feeding. Texture progression. Iron rich foods. Dietary diversity. Responsive feeding and food safety.

Participants build age appropriate feeding progression for a term

infant and a former preterm infant.

11

Pediatric Growth Assessment

Weight. Length. Height. Head circumference where appropriate. Weight for length. Body mass index for age. Percentiles. Z scores. Growth velocity. Longitudinal interpretation and age appropriate growth references.

Participants plot and interpret multiple pediatric growth patterns instead of judging nutritional status from a single measurement.

12

Comprehensive Pediatric Nutrition Assessment

Birth and neonatal history. Medical history. Growth history. Feeding history. Dietary intake. Formula and supplements. Medications. Symptoms. Laboratory information. Development. Sleep. Activity. Family circumstances and social determinants.

Participants complete a comprehensive pediatric assessment that incorporates neonatal history where relevant.

Development Outcome: Participants should be able to follow the child from neonatal discharge into infancy and childhood while interpreting growth, feeding and nutritional status within developmental context.

MONTH 4: PEDIATRIC MEDICAL NUTRITION THERAPY

Theme: Treat the nutrition problem within growth, development and disease.

Purpose: To apply pediatric clinical reasoning across common and complex medical conditions without reducing pediatric dietetics to memorized disease diets.

Week

Focus

Learning Content

Practical Application

13

Pediatric Gastrointestinal Nutrition

Reflux. Constipation. Diarrhea. Celiac disease. Malabsorption. Inflammatory bowel disease concepts. Short bowel and intestinal failure introduction. Nutrient losses and dietary restriction risks.

Participants develop nutrition priorities for multiple pediatric gastrointestinal cases.

14

Food Allergy and Intolerance

Food allergy and intolerance concepts. Elimination diets. Nutritional adequacy. Specialized formula concepts. Growth monitoring. Multidisciplinary allergy management. Risk of unnecessary restriction.

Participants evaluate whether a restrictive pediatric diet remains nutritionally adequate for growth.

15

Endocrine, Metabolic and Weight Related Conditions

Type 1 diabetes. Type 2 diabetes in adolescents. Insulin resistance. Pediatric overweight and obesity. Dyslipidemia. Metabolic risk. Family centered behavior change and protection of normal growth.

Participants develop individualized pediatric metabolic nutrition interventions while avoiding unnecessary restriction and weight stigma.

Renal, Cardiac, Liver and Respiratory Conditions

Pediatric renal nutrition. Congenital heart disease. Liver disorders. Cystic fibrosis concepts. Fluid and electrolyte considerations. Increased nutrition requirements. Growth consequences of chronic disease.

Participants compare how nutrition requirements and priorities change across chronic pediatric conditions.

Development Outcome: Participants should understand how disease affects intake, growth, nutrient requirements, feeding ability and nutritional status rather than simply asking for a disease specific meal plan.

MONTH 5: PEDIATRIC NUTRITION SUPPORT, FEEDING DISORDERS AND COMPLEX CARE

Theme: Complex pediatric nutrition requires more than a meal plan.

Purpose: To build advanced understanding of pediatric nutrition support, feeding disorders, critical illness, neurodevelopmental conditions and multidisciplinary care.

Week

Focus

Learning Content

Practical Application

Pediatric Enteral Nutrition

Indications for enteral feeding. Nasogastric, gastrostomy and jejunal routes. Formula selection. Energy density. Protein and fluid

provision. Bolus and continuous regimens. Feeding tolerance. Transition toward oral intake.

Participants develop a pediatric tube feeding plan with monitoring criteria.

18

Pediatric Parenteral Nutrition and Critical Care

Parenteral nutrition fundamentals beyond the neonatal period. Fluid and electrolyte considerations. Monitoring. Critical illness. Pediatric intensive care nutrition. Mechanical ventilation. Burns. Surgical recovery. Refeeding risk awareness.

Participants work through a simulated critically ill pediatric case and identify nutrition priorities.

19

Pediatric Feeding Disorders and Dysphagia Awareness

Feeding skill problems. Sensory difficulties. Oral motor concerns. Restricted intake. Dependence on oral supplements or tube feeding. Dysphagia warning signs. Role of speech therapy, occupational therapy, psychology and medicine.

Participants distinguish nutrition problems from feeding problems that require multidisciplinary assessment.

20

Neurodevelopmental and Complex Conditions

Cerebral palsy. Autism related feeding concerns. Developmental delay. Neurological impairment. Gastrointestinal issues. Energy requirement challenges. Tube feeding. Caregiver burden and quality of life.

Participants develop nutrition priorities for a child with neurological impairment and feeding limitations.

Development Outcome: Participants should be able to recognize when nutrition support, developmental feeding assessment, medical treatment and family centered care need to operate together.

MONTH 6: ADVANCED NEONATAL AND PEDIATRIC DIETETIC PRACTICE

Theme: Manage the full nutrition journey from neonatal intensive care to adolescence.

Purpose: To integrate neonatal and pediatric assessment, nutrition diagnosis, intervention, monitoring, documentation, referral and multidisciplinary case management.

Week

Focus

Learning Content

Practical Application

21

Neonatal and Pediatric Nutrition Diagnosis

Converting assessment findings into appropriate nutrition diagnoses. Malnutrition. Inadequate intake. Increased requirements. Feeding related intake problems. Growth related nutrition problems. Primary and secondary priorities. PES statements.

Participants develop nutrition diagnoses and defend their priorities for neonatal and pediatric cases.

22

Intervention and Monitoring

Nutrition prescription. Oral feeding. Human milk and formula strategies. Fortification concepts. Enteral and parenteral support. Education. Counseling. Growth monitoring. Intake. Biochemical

data. Clinical outcomes and feeding progression.

Participants build complete interventions linked directly to identified nutrition problems and define measurable monitoring indicators.

23

Documentation and Multidisciplinary Practice

Neonatal documentation. Pediatric ADIME. Neonatal intensive care rounds. Communication with neonatologists, pediatricians, nurses, pharmacists, lactation professionals, speech therapists, occupational therapists and other healthcare professionals. Discharge and continuity of care.

Participants complete a neonatal nutrition note, a pediatric ADIME note and a multidisciplinary communication exercise.

24

Advanced Neonatal and Pediatric Case Defense

Integration of gestational age, birth history, growth, disease, feeding route, nutrition intake, biochemical findings, development, family factors, intervention and monitoring.

Participants present and defend one complete neonatal case and one advanced pediatric case, explaining the reason behind every major nutrition decision.

Development Outcome: Participants should finish the specialization able to reason across the full neonatal and pediatric continuum while recognizing when specialist medical, feeding, developmental or multidisciplinary input is required.

NEONATAL SPECIALIZATION CASE PORTFOLIO

Case Area

Practical Competency

Preterm Infant

Interpret gestational maturity, nutrition requirements, feeding route and growth.

Very Low Birth Weight Infant

Develop structured nutrition priorities and monitoring within specialist neonatal care.

Human Milk and Fortification

Evaluate human milk provision and the rationale for fortification within neonatal practice.

Neonatal Enteral Feeding

Plan and monitor a simulated enteral nutrition strategy.

Neonatal Parenteral Nutrition

Understand parenteral contribution, biochemical monitoring and transition toward enteral feeding.

Feeding Intolerance

Interpret intake and tolerance within the wider neonatal clinical picture.

Necrotizing Enterocolitis Related Case

Understand nutrition implications and multidisciplinary management.

Bronchopulmonary Dysplasia Case

Integrate respiratory condition, fluid considerations, nutrition provision and growth.

Metabolic Bone Disease Risk

Recognize nutrition related mineral concerns and appropriate monitoring.

Surgical Neonate

Prioritize route, requirements and nutrition support with specialist teams.

Neonatal Intensive Care Discharge

Develop transition, caregiver education and follow up priorities.

Former Preterm Infant

Monitor corrected age, feeding progression and growth after discharge.

PEDIATRIC SPECIALIZATION CASE PORTFOLIO

Case Area

Practical Competency

Infant Feeding Case

Assess milk intake, growth, feeding tolerance and developmental progression.

Complementary Feeding Case

Develop developmentally appropriate feeding progression and caregiver education.

Growth Faltering

Investigate nutrition, disease, feeding and social contributors.

Food Allergy

Maintain nutrient adequacy during medically necessary restriction.

Selective Eating

Distinguish common picky eating from complex feeding concerns.

Gastrointestinal Case

Integrate symptoms, growth and nutritional status.

Pediatric Diabetes

Apply individualized nutrition care while protecting growth and family participation.

Pediatric Malnutrition

Identify and document nutrition related growth problems.

Enteral Nutrition

Design and monitor a pediatric tube feeding strategy.

Critical Care

Prioritize nutrition during complex hospitalization.

Neurodevelopmental Case

Integrate feeding ability, growth, nutrition support and caregiver context.

Adolescent Case

Apply age appropriate assessment, counseling and nutrition intervention.

PROFESSIONAL SCOPE INTEGRATION

Situation

Neonatal and Pediatric Dietitian Role

Prematurity

Assess nutrition requirements, feeding provision and growth within the neonatal multidisciplinary team.

Human Milk Feeding

Evaluate nutritional provision while collaborating with lactation and medical teams.

Fortification

Contribute according to neonatal nutrition protocols, clinical needs, institutional policy and professional competence.

Neonatal Parenteral Nutrition

Participate within appropriately trained neonatal nutrition support teams.

Critical Neonatal Illness

Manage nutrition considerations collaboratively rather than treating the medical condition independently.

Growth Concerns

Interpret longitudinal growth and assess nutrition related contributors.

Feeding Difficulty

Assess nutritional impact and refer oral motor, swallowing, sensory, developmental or behavioral concerns appropriately.

Pediatric Disease

Provide medical nutrition therapy within dietetic competence and multidisciplinary care.

Tube Feeding

Develop and monitor nutrition strategy within the wider care plan.

Developmental Concerns

Recognize nutrition implications and refer for appropriate developmental assessment.

Family Barriers

Adapt nutrition care to practical, cultural, social and financial circumstances.

Complex Cases

Work within neonatal and pediatric specialist teams and recognize the limits of individual competence.

EXPECTED SPECIALIZATION TRANSFORMATION

At Entry

At Completion

Pediatric nutrition starts after infancy.

I understand nutrition care from the neonatal period through adolescence.

A preterm infant is just a smaller newborn.

I understand how gestational maturity changes physiology, nutrition requirements, feeding tolerance and monitoring.

Human milk automatically meets every preterm infant's complete nutrition needs.

I understand the central role of human milk while recognizing when individualized fortification and monitoring may be required.

Tube feeding mainly means calculating formula volume.

I understand route, composition, delivery, tolerance, hydration, growth and monitoring as one nutrition support system.

Pediatric growth means checking body weight.

I interpret growth trajectory using age appropriate measures, longitudinal data and clinical context.

Neonatal and pediatric nutrition are basically the same.

I understand the distinct clinical reasoning required in neonatal intensive care and how nutrition priorities change across infancy and childhood.

I know children's meal plans.

I can reason through neonatal and pediatric nutrition cases within a structured multidisciplinary care process.

FINAL LEARNING PATHWAY

Stage

Learning Progression

Stage 1

Understand neonatal physiology and gestational maturity.

Stage 2

Understand prematurity and neonatal growth.

Stage 3

Assess human milk, formula and fortification needs within neonatal care.

Stage 4

Understand neonatal enteral and parenteral nutrition.

Stage 5

Manage high risk neonatal nutrition within multidisciplinary care.

Stage 6

Plan neonatal discharge and post discharge follow up.

Stage 7

Assess infant and pediatric growth.

Stage 8

Understand feeding development and complementary feeding.

Stage 9

Apply pediatric medical nutrition therapy.

Stage 10

Provide pediatric nutrition support.

Stage 11

Recognize feeding, developmental and neurological concerns.

Stage 12

Work with families and multidisciplinary teams.

Stage 13

Document, monitor and defend advanced neonatal and pediatric nutrition care.

COURSE PHILOSOPHY

This specialization is designed to develop neonatal and pediatric dietetic thinking rather than provide a collection of infant and child meal plans. Participants learn to connect gestational age, birth history, physiology, growth, feeding route, developmental stage, disease, family circumstances and clinical monitoring so that nutrition care is individualized, safe and professionally defensible.