ALBERTA FAMILY WELLNESS INITIATIVE

BRAIN STORY CERTIFICATION

Course Outline

Alberta family wellness initiative

Palix Foundation

BRAIN STORY CERTIFICATION

ABOUT THE COURSE

Brain Story Certification is an in-depth course for professionals interested in the scientific underpinnings of the Brain Story. The course offers:

- Approximately 30 Hours of instruction time
- Video of over 30 leading experts in neurobiology and mental health
- Certification in Brain Story science

COURSE GOALS

After taking this course learners will be able to:

- Explain how brains develop and how social interactions shape development
- Describe the effects of stress on brain development, and the impact of adverse childhood experiences on physical and mental health outcomes, including addiction
- Identify evidence-based approaches for children in the prevention, intervention, and treatment of childhood adversity
- Describe the basic neurobiology of both substance and process addiction
- Identify evidence-based approaches for adults in the prevention, intervention, and treatment of addiction
- Identify ways to build the foundations of resilience in children and families

EVALUATION (GRADING)

To be certified, learners are required to pass a series of multiple choice evaluation questions at the end of each learning module. The passing grade is 100%, but learners will have the opportunity to correct erroneous answers after reviewing relevant course content.

CERTIFICATION AND ACCREDITATION

Certification

Learners who pass the evaluation questions will receive a certificate in Brain Story science. The certificate is valid for accreditation from numerous professional bodies.

Accreditation

The Alberta Family Wellness Initiative has sought the following accreditation provisions for the Brain Story Certification course. (This course may apply to other professional continuing education organizations worldwide. We encourage you to seek credits from your respective organization.)

The Royal College Of Physicians And Surgeons Of Canada

Psychologists' Association Of Alberta

Alberta College Of Social Workers

Alberta College Of Family Physicians

Alberta College Of Pharmacists

In some cases you are required to apply directly to your professional organization to receive credits. Instructions will be provided at the end of the course.

COURSE OUTLINE

MODULE 1 – INTRODUCTION

By the end of this module, learners will be able to

- Recognize the application of early brain development science as a foundation for improving outcomes for children and families
- Explain why using a common language to share this knowledge is a cornerstone of creating and sustaining change
- Understand how to navigate the online course environment
- Understand the course evaluation and certification process

Faculty

1 Bryan Kolb, PhD, University of Lethbridge

2 Jack Shonkoff, MD, Centre on the Developing Child, Harvard University

3 Nat Kendall-Taylor, PhD, Frameworks Institute

Additional Resources: Palix Video, How Brains Are Built: The Core Story of Brain Development

MODULE 2 – BRAIN ARCHITECTURE: HOW BRAINS DEVELOP

By the end of this module, learners will be able to

- Describe key stages in pre- and postnatal brain development
- Explain how experiences shape the developing brain
- Order developmental ages and stages in terms of their relative plasticity
- Identify the age at which the brain reaches maturity

Faculty

1 Charles Nelson, PhD, Harvard University

2 Bryan Kolb, PhD, University of Lethbridge

3 Judy Cameron, PhD, University of Pittsburgh

4 Tom Boyce, MD, University of California, San Francisco

5 Pat Levitt, University of Southern California

Additional Resources: Palix Video, Brain Architecture

MODULE 3 – GENE SIGNATURES: HOW GENE-ENVIRONMENT INTERACTIONS SHAPE BRAIN ARCHITECTURE AND OUTCOMES

By the end of this module, learners will be able to

- Formulate a basic definition for epigenetic change
- Identify one key developmental experience that produces epigenetic change
- List two outcomes associated with the quality of parental care that are caused by epigenetic changes
- Provide one example of how early experiences can buffer genetic influences

Faculty

1 Tom Boyce, MD, University of California, San Francisco

2 Michael Meaney, PhD, McGill University

3 Stephen Suomi, PhD, National Institute of Child Health and Human Development

MODULE 4 – SERVE AND RETURN: HOW SOCIAL INTERACTIONS SHAPE BRAIN DEVELOPMENT

By the end of this module, learners will be able to

- Recognize the importance of social interactions in healthy brain development
- Explain a prototypical social interaction using the "serve and return metaphor
- Describe how social competencies and temperaments influence child behaviour and outcomes
- List one developmental consequence each of absent social interactions with parents and with peers

Faculty

1 Tom Boyce, MD, University of California, San Francisco

2 Heather Henderson PhD, University of Miami

3 Judy Cameron PhD, University of Pittsburgh

Additional Resources: Palix Video, Serve and Return

MODULE 5 – TOXIC STRESS: HOW EARLY LIFE STRESS SHAPES BRAIN ARCHITECTURE

By the end of this module, learners will be able to

- Identify two brain structures involved in the stress response system
- List two types of stress hormones and describe the roles of each in orchestrating the body's response to threat
- Describe the three different types of stress and classify different types of stressful events into each category
- Describe three ways the brain and body adapt to toxic stress that can produce vulnerability to later health outcomes

Faculty

1 Matthew Hill, PhD, University of Calgary

2 Judy Cameron, PhD, University of Pittsburgh

3 Megan Gunnar, PhD, University of Minnesota

Additional Resources: Palix Video, Toxic Stress

MODULE 6 – AIR TRAFFIC CONTROL: THE IMPORTANCE OF BUILDING EXECUTIVE FUNCTION

By the end of this module, learners will be able to

- List three key skills involved in executive function and provide a behavioural example of each
- Explain how serve and return interactions help build executive function skills
- Explain how toxic stress interferes with the development of executive function skills
- List three activities and interventions that help build executive function skills

Faculty

1 Deborah Phillips, PhD, Georgetown University

Additional Resources: Palix Video, Air Traffic Control

MODULE 7 – CHILDHOOD INTERVENTIONS: ADDRESSING MALTREATMENT AND NEGLECT

By the end of this module, learners will be able to

- List key sources of toxic stress and maltreatment in children
- Identify three biological outcomes common to children in foster care
- Describe the key elements of the Nurse Family Partnership, an evidence based home visitation program
- Describe the key elements of Child-Parent Psychotherapy, a two generation intervention for maltreated children

Faculty

1 Patricia Van Horn, JD, PhD, University of California, San Francisco

2 Judy Cameron, PhD, University of Pittsburgh

3 Philip Fisher, PhD, University of Oregon

4 Harriet MacMillan, MD, McMaster University, Offord Centre for Child Studies

MODULE 8 – CHILDREN'S MENTAL HEALTH PART A: THE INFLUENCE OF BEHAVIOURAL INHIBITION, ATTENTION, AND IMPULSIVITY

By the end of this module, learners will be able to

- List two brain circuits that mediate behavioural inhibition and anxiety disorders
- Explain how behavioural inhibition can lead to anxiety disorders in some children
- Identify the key features of Attention Deficit Hyperactivity Disorder (ADHD)
- List two brain circuits that mediate inattention and impulsivity
- Describe how ADHD increases vulnerability to adolescent and young adult psychopathology

Faculty

1 Nathan Fox, PhD, University of Maryland

2 Stephen Hinshaw, PhD, University of California, Berkeley

MODULE 9 – CHILDREN'S MENTAL HEALTH PART B: IMPROVING SERVICES

By the end of this module, learners will be able to

- Define an evidence-based practice and give three examples currently being used in children's mental health services
- Identify two challenges of applying evidence-based practices in real world clinical settings
- Describe two ways to overcome these challenges
- Describe a theory of change and how it can be used to inform the development of new interventions

Faculty

1 John Weisz, PhD, ABPP, Judge Baker Children's Center, Harvard University

2 Melanie Berry, PhD, University of Oregon and Oregon Social Learning Center

MODULE 10 – ACES PART A: THE IMPACT OF ADVERSE CHILDHOOD EXPERIENCES ON A RANGE OF ADULT HEALTH OUTCOMES

By the end of this module, learners will be able to

- List ten different types of common adverse childhood experiences (ACEs)
- List five different health and social outcomes that are associated with the presence of ACEs
- Explain one possible pathway to adult heart disease that is mediated by the presence of ACEs
- Explain one possible pathway to addictive disorders that is mediated by the presence of ACEs
- Describe two ways to ask patients about ACEs in health care settings
- Describe the key elements of the Healthy Steps Program

Faculty

1 Vincent Felitti, MD, Kaiser Permanente

2 Robert Anda, MD, MS, ACE Interface, LLC

3 Andrea Danese, MD, PhD, King's College London

4 Rahil Briggs, PsyD, Albert Einstein College of Medicine and Montefiore Medical Group

MODULE 11 – ACES PART B: THE IMPACT OF ADVERSE CHILDHOOD EXPERIENCES ON PTSD AND DEPRESSION

By the end of this module, learners will be able to

- Explain how ACEs contribute to posttraumatic stress disorder (PTSD) in adulthood
- Identify two key brain areas involved in PTSD
- Describe the effects of dysregulated social emotions and sense of self that commonly accompany PTSD
- Identify key brain structures involved in depression
- Describe the link between depression and other physical health problems

Faculty

1 Ruth Lanius, MD, PhD, University of Western Ontario

2 Glenda MacQueen, MD, PhD, FRCPC, University of Calgary

MODULE 12 – ADDICTION AND THE BRAIN PART A: A NEUROBIOLOGICAL PERSPECTIVE

By the end of this module, learners will be able to

- Describe a conceptual model of addiction that can be applied to both drugs of abuse and behaviours
- Identify the key brain structures and functions involved in the binge intoxication cycle
- Identify the key brain structures and functions involved in the withdrawal negative affect cycle
- Identify the key brain structures and functions involved in the preoccupation-anticipation cycle
- Recognize that drugs of abuse act on discrete brain systems but share a common neurochemical effect on the reward system

Faculty

1 George Koob, PhD, National Institute on Alcohol Abuse and Alcoholism

2 Mark Gold, MD, University of Florida

MODULE 13 – ADDICTION AND THE BRAIN PART B: PROCESS ADDICTIONS

By the end of this module, learners will be able to

- Explain the similarities between the brain changes associated with compulsive drug use, obesity, and problematic sexual behaviour
- Describe key ways in which eating and sexual behaviour have changed in the past 30 years that might make individuals more susceptible to these addictions
- Describe three ways that multiple addictions interact with each other
- Explain the role of trauma in addiction interactions

Faculty

1 Mark Gold, MD, University of Florida

2 Patrick Carnes, PhD, Founder, International Institute for Trauma and Addiction Professionals (IITAP); The Meadows Treatment Center

3 James Montgomery, MD, Pine Grove Behavioral Health and Addiction Services

MODULE 14 – ADDICTION AND THE BRAIN PART C: THE EFFECTS OF TOXIC STRESS, ADDICTION, AND DEPRESSION ON PARENTING

By the end of this module, learners will be able to

- Explain the roles of the reward and executive function systems in producing appropriate, supportive, parental behaviour
- Describe three changes that occur in the reward and/or executive function systems as a result of becoming a parent
- Explain how maternal depression interferes with normal parenting behaviour
- Explain how maternal addiction interferes with normal parenting behaviour
- Identify the key element of two interventions for depressed and substance abusing mothers that can improve parent-child attachment

Faculty

1 Linda Mayes, MD, Yale School of Medicine

MODULE 15 – ADDICTION TREATMENT PART A: FAMILY-BASED APPROACHES

By the end of this module, learners will be able to

- Explain how addiction affects a family system
- Describe how parents and spouses change their behaviour to support an addicted family
- Describe how children change their behaviour to support an addicted family and how this influences their developmental outcomes and trajectories
- Describe the significant milestones of family reorganization that occur after the addict stops

Faculty

1 Claudia Black, PhD, The Meadows Treatment Center

2 Ariella Goodwine Fisher, MFT, The Addictions Institute

MODULE 16 – ADDICTION TREATMENT PART B: SPECIALIZED APPROACHES FOR WOMEN AND INDIGENOUS POPULATIONS

By the end of this module, learners will be able to

- List four elements that should be present in comprehensive treatment for women
- Define trauma-informed services and
- Describe the major difference between how men and women experience trauma in childhood, adolescence, and adulthood
- Explain how the residential school system affected parenting in indigenous communities
- Define historical trauma
- Explain how key aspects of the Wellbriety movement can be used to support whole community healing

Faculty

1 Stephanie Covington, PhD, LCSW, Center for Gender and Justice

2 Don Coyhis, White Bison Inc.

MODULE 17 – ADDICTION TREATMENT PART C: IMPROVING SERVICES AND PROCESSES

By the end of this module, learners will be able to

- Define effectiveness, performance, and quality measures as they relate to addiction treatment services
- Describe the basic differences in services provided for addiction compared to other chronic diseases
- Describe key aspects of Physician Health Program (PHP) treatment model
- Identify three ways in which PHPs apply chronic disease management principles in their addiction treatment services
- Identify five key steps in the NIATx process improvement model

Faculty

1 Thomas McLellan, PhD, Treatment Research Institute

2 Michael Kaufmann, MD, Ontario Medical Association, Physician Health Program

3 Dianne Maier, Alberta Medical Association, Physician Health Program

4 David Gustafson, PhD, University of Wisconsin-Madison

MODULE 18 – RESILIENCE: HELPING FAMILIES BUILD THE FOUNDATIONS OF LIFELONG HEALTH

By the end of this module, learners will be able to

- Explain how building adult skills can lead to better outcomes for children
- Describe why it is important to provide prevention programs for children of parents with depression
- Identify three key elements of successful prevention programs
- Describe three ways in which integrating substance use screening in primary care will improve health outcomes

Faculty

1 Jack Shonkoff, MD, Centre on the Developing Child, Harvard University

2 William Beardslee, MD, Judge Baker Children's Centre, Harvard University

3 Thomas McLellan, PhD, Treatment Research Institute