What do Educators of Young Children Need to Know About the Impact of Stress on Brain Development?
Agenda

• Importance of Early Years in Brain Development
• How does stress impact brain development?
• Reducing children’s stress
• What is resilience?
• Supporting children’s resiliency
• Exploration of activities you can use with children
Learning Objectives

• Understand the negative effects of stress on the brain development of young children.
• Identify ways to reduce stress and provide healthy early learning environments.
• Define resiliency.
• Identify practical ideas to support the development of resiliency in young children.
A few questions to warm up
BRAIN DEVELOPMENT BEGINS:

a. At birth
b. When the child begins attending school
c. Approximately 2 weeks after conception
d. Approximately 6 months after conception
Which of the following is detrimental to healthy brain development?

a. Lack of proper nutrition
b. Alcohol exposure
c. Presence of toxins
d. All of the above
How many brain cells is an infant born with?

• A. 100 billion neurons
• B. 100 million neurons
• C. 1 million neurons
• D. 100 thousand neurons
Connections between neurons are called:

a. Axons
b. Synapses
c. Dendrites
d. Branches
True or False

Synapses are both developed and disposed of during the preschool years.

TRUE
True or False

Infants are too young to be negatively affected by stressful environments or situations.

FALSE
Early life experiences are critical!
Sensitive Periods in Early Brain Development

Pre-school years

High

Sensitivity

Low

Years

0 1 2 3 4

School years

Numbers

Peer social skills

Symbol

Language

Habitual ways of responding

Emotional control

Vision

Hearing

saskatchewan.ca

Saskatchewan
700 New Neural Connections Per Second

NEWBORN  6 MONTHS  2 YEARS
The brain identifies stressors (threats) and prepares the body to respond and protect itself.
FIGHT

or

Flight

Stand your ground, defend your position, attack, dig in, persevere!

Give way, retreat, discard, remove yourself, give up, move on.
LET’S TRY IT OUT
Video clip
The body is amazingly efficient

Cortisol - Slows non-essential functions in the body to allow resources to be used for survival.
What if the stress doesn’t go away?

- Anxiety
- Depression
- Digestive Problems
- Heart Disease
- Sleep problems
- Weight Gain
- Memory and Concentration impairment
WHAT MAKES CHILDREN DIFFERENT THAN ADULTS?
Toxic Stress Video

Chocyk et al. (2013)
Hippocampus

Schoenfeld and Gould, (2012)
ACE Study

• Simply stated, physical, psychological, and emotional trauma during childhood can result in damage to multiple brain structures and functions.

• http://www.acestudy.org/yahoo_site_admin/assets/docs/ARV1N4.127153404.pdf
The more categories of trauma experienced in childhood, the greater the likelihood of experiencing:

- alcoholism and alcohol abuse
- chronic obstructive pulmonary disease (COPD)
- depression
- fetal death
- poor health-related quality of life
- illicit drug use
- ischemic heart disease (IHD)
- liver disease
- risk for intimate partner violence
- multiple sexual partners
- sexually transmitted diseases (STDs)
- smoking
- obesity
- suicide attempts
- unintended pregnancies
So...is all stress is harmful?
Identifying Stress

• Brainstorm with others at your table to identify stressors in children’s lives
• Write each item on a separate sticky note
• Decide as a group which stressors are examples of healthy stress and which are harmful and place on the wall under the appropriate heading
Everyone is Unique

• Did you have any difficulty determining whether a stressor was healthy or chronic/toxic?

• Stressors can impact people differently

  Example: homework
Activity- stress and children
Connection between Stress and Self Regulation

• “Self regulation refers to how efficiently and effectively a child deals with a stressor and then recovers.”

Stuart Shanker (2013)
_Calm Alert and Happy_ p22
Stuart Shanker – Sources of Stress

Assist children to transition
Reduce Stress
Observe Carefully
Make Safety a Priority
Children as Competent

- Capable
- Respect
- Worthy
- Strong
- Accept help
- Caring
Quality of Care

• “Results demonstrate clearly that children attending high-quality child care have lower stress levels across the day than do children attending satisfactory or unsatisfactory programs. Poor-quality child care is not good for children.”

Ways to Influence Attachment

Support breast feeding

Infant Feeding

Responsive care

Consistent Daily Routines

Clear Limits
Attachment cont’d

• Educate parents and staff about brain development

• Reinforce with parents there is room for a number of attachments in a child’s life

• Keep ratios low to allow children to develop the trust and confidence necessary to develop an attachment to one or more care givers

• Support children to build resiliency
Video Clip – What is resilience?

- [http://developingchild.harvard.edu/key_concepts/resilience/](http://developingchild.harvard.edu/key_concepts/resilience/)
Resilience

• “A good outcome in the face of adversity”
• “Ability, or set of capacities, or positive adaptation allowing you to keep in balance”
• “Sense of mastery or management of difficulty”
• “Resilience is built over time”
Video Clip - How Resilience is Built

Play with Children
If children have supportive relationships in place to assist them as needed through challenges then they are able to develop resiliency.
Allow Children to Make Choices
Spend Time in Natural Environments
More practical ideas to support the development of resiliency

• Allow children to flow between groups and/or activities - rather than all children doing the same activity at the same time
• Provide opportunities for open ended activities that allow for exploration and different outcomes
• Encourage the development of empathy
• Sense of belonging and value
More practical ideas to support the development of resiliency

• Opportunities to express self in many ways – art, music, dance, words etc.
• Many opportunities to be active, hand on learning and movement
• Pay attention to what children are interested in and build on this
• Genuine conversations with children
Before the Break

• Write down three things that you want to remember from the material we have discussed so far

• Talk with others in the room to fill all the boxes with important ideas – a summary
Take a break.
You deserve it!

Break 3:00-3:30
Opportunity to Explore

• Take time to explore the resources and activities provided
Change the 1st Five Years and You Change Everything Video

- https://www.youtube.com/watch?v=5X2WsAZSp9A

Are you interested in investing?
THANK YOU

DEBBIE.THOMPSON@GOV.SK.CA
References


Center on the Developing Child (2014). Excessive stress disrupts the architecture of the developing brain, Harvard University.


