Mental Health Info-Sessions for Helping Professionals

Science that Explains People

2022

Mental Health Info-Sessions for Helping Professionals

Polk County Health Services

Children’s Mental Health Services

4 Virtual Sessions on the Zoom Platform

Session 1: Thursday May 5, 2022
Session 2: Thursday May 12, 2022
Session 3: Thursday May 19, 2022
Session 4: Thursday May 26, 2022

All from 10:00 to 11:30 am

Presenter:
Karen Williams
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We will examine the following four (4) topics:

- How Our Human Brain Works & Develops
- How Our Survival Instincts & Temperaments Affect Our Behavior
- The Special Developmental Challenges & Risks for Teens
- The Special Developmental Challenges & Risks for Teens

When adults know how the human brain works and develops - & how different children's and teen's brains are - -
we can protect everyone better.
First, some statistics...

- 75% of MEB disorders in U.S. begin prior to age 24.
- ➢ 50% begin PRIOR TO AGE 14!
- Symptoms show up 2 to 4 years BEFORE reaching the criteria for a disorder!

This 2009 landmark Consensus Study Report is available free at the website below... 592 Pages

NOTE: There are “Report Briefs” - from 4 to 6 pages each.

Now, some definitions...
Mental Health is more than the absence of an illness or disorder. Being mentally healthy during childhood means **reaching developmental and emotional milestones** and learning healthy social skills - and how to **cope** when there are problems, i.e., learning to be **resilient**.

Mental disorders among children are described as serious changes in the way children typically learn, behave, or handle their emotions, which cause distress and problems getting through the day. **Mental Health depends on MANAGING DISTRESS**.

Many children occasionally experience fears and worries or display disruptive behaviors. If these symptoms are serious and persistent - and interfere with school, home, or play activities - the child may be diagnosed with a mental disorder.

**Indicators of Children's Mental Health:**
- Affection/Friendship
- Resilience
- Positivity
- Curiosity
- Persistence
- Self Control
Learning & development depend on a child’s Mental Health.

Teaching children how to:
- Manage distress
- Cope with problems
- & be Resilient

should be our top priority.

Social Emotional Skills mitigate & prevent mental health problems.

Research shows that when we reduce the causes of our children’s distress - - or if we can’t reduce the distress, teach them how to overcome & manage their distress, we can:
- Reduce up to 50% of children’s mental health disorders
- Reduce child abuse
- Increase school success & graduation rates
- Reduce referrals to juvenile justice
- Reduce up to 40% of adult mental health disorders

Mental Health depends on our having a physically healthy brain.

Any injury to our brain can affect our mental health.

Falls, concussions, car crashes, etc., can affect the same nerves that are involved in our mental health.

When assessing a young person’s mental health, we are trained to always look for any medication mis-use or drug use - - or a missed medication....

ALWAYS ask about any potential injury to the brain & neck as well.
There is a bi-directional relationship between sleep and mental health, in which sleeping problems may be both a cause and consequence of mental health problems.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Hours per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborns (0 to 1 month)</td>
<td>14 to 17 hours</td>
</tr>
<tr>
<td>Infants (up to 12 months)</td>
<td>12 to 15 hours</td>
</tr>
<tr>
<td>Toddlers (1 to 2 years)</td>
<td>11 to 14 hours</td>
</tr>
<tr>
<td>Preschoolers (3 to 5 years)</td>
<td>10 to 14 hours</td>
</tr>
<tr>
<td>School-age children (6 to 12)</td>
<td>9 to 12 hours</td>
</tr>
<tr>
<td>Teenagers (13 to 17)</td>
<td>8 to 10 hours</td>
</tr>
</tbody>
</table>

Always determine the amount of sleep (by age) that a child is getting on a routine basis. Include:

- Bed time – routine – reasonable given the age
- Own bed or sharing?
- How many people in the bed?
- Neighborhood noise – gunshots, etc.?
**Systems of the Human Body:**
1. Skeleton
2. Muscular
3. Integumentary/Skin, hair, nails
4. Respiratory/Breathing
5. Cardiovascular/Blood Circulation
6. Digestion/Solid Waste Elimination
7. Urinary/Water Waste Elimination
8. Endocrine/Hormones
9. Hematopoietic/Lymphatic/Inflammation Control
10. Reproduction

**11. Nervous System – Our Neurons & Networks** = communication between & coordination of all the other human body’s systems.
We have many different types of cells in our bodies, but our most important cells are:

**Nerve Cells**

**Neurons** are our communication cells that allow all the other cells in our body to work together.

- **100 Billion** in our **BRAIN**
- **Trillions** in the rest of our body.

**Symbol for a Network of Neurons**

**Nuttin’ works without Neurons!**

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**Individual Neuron**
(Once called a “Brain Tree”)

Individual Neurons work like individual microscopic computers or cell phones.

**Neurons** never work alone. They work in **NETWORKS**.

**NETWORK of Neurons**

Individual Neurons are linked together to form NETWORKS for everything we feel, learn, think, & do.

Different parts of our body – our personal “devices” - are linked, all sharing the same NETWORKS...
Computers and cell phones use electricity and digital code to send each other messages. Each message creates a new or strengthens an existing NETWORK.

Neurons use electricity and bio-chemical code to send each other messages. Each message creates a new or strengthens our existing NETWORK.

Bio-chemicals include neurotransmitters & hormones.

Experience/Stimulation Shape our Neural Architecture*

We arrive with all our neurons, but only 25% have been “pre-wired” (networked).

The other 75% are “waiting” for life to provide the experiences.

*Networks

Experience/Stimulation

Blood Oxygen Energy (BOE)

The neurons that are working gets “fed”.

Everything we do takes energy. So during childhood, we cannot afford to waste any...

Whatever we are doing is getting MOST of OUR BOE!

...worry, fretting, being angry... all of these are WASTING ENERGY.

The neurons/networks that are stimulated by experience i.e., the neurons/networks that are working, get BOE.

Those that are not stimulated, STARVE!

Use it - or lose it!

Learning is the FIRST step in our Development

When we are upset or distressed, our BOE is shifted away from our positive memories to our distressful memories.

Learning + Memory make DEVELOPMENT possible.

Short-Term & Working-Memory

Long-Term Memory

Positive/Calming and Distressful memories are stored separately.

If something is messing with our positive/calming memory, it’s messing with our learning, development, & MENTAL HEALTH!
Humans learn & develop by looking for & finding:  

Repeated & Consistent

- Explore (What’s there?)
- Observe Models (Look/Hear)
- Seek Guided Experience (Show me how...)

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Automatic Way “In”:

Mirror Neurons “Observer Neurons”

What is observed is AUTOMATICALLY STORED in our memory.

Say we were both having an MRI Scan of our brains.

You do an Actual Activity while being scanned = You have an Actual Experience

Me I only Observe you while being scanned = I have a Virtual Experience

Our scans look exactly alike; the same neurons were stimulated & wired/networked in both our brains.

Be careful what you model. It can wire the brain of the observer. & Modeling is the most powerful way to teach!

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Life is like being in the middle of a see-saw that is mounted precariously on a large ball — meaning that the see-saw is shifting unexpectedly all the time — & it is super sensitive to any adjustments we may make.

Our only job is to learn how to keep our balance... so that we can do everything else in life.

The problem is that we can learn, develop, & have Mental Health ONLY WHEN WE ARE in BALANCE.

Balance is also known as Homeostasis.
Or...life is like a moving/mobile **balance beam**.

Our job is to learn how to **mount & dismount safely**, & how to perform on the beam.

To do this, we must learn how to **stay on the beam**.

That is not easy. We are not in charge of the beam. **Life is...**

...and we do not come into this world knowing anything about the beam, our job, or the consequences of not staying on the beam. **That is what life is all about...**


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**“Nature + Nurture”**

DNA/Genes + Fear **Vs.** CALMING **Experiences**

**SURVIVAL** **Vs.** MENTAL HEALTH & DEVELOPMENT

Homeostasis = **BALANCED**

UPSET

*Distressed = Over/Under-Stimulated*

Or...**Overwhelmed = Traumatized**

ALL-SET

**Stressed/Sufficiently Stimulated**

**Resiliency**

Able to be flexible & bounce back

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“Nature + Nurture”
DNA/Genes + CALMING Experiences

SURVIVAL Vs. MENTAL HEALTH & DEVELOPMENT

SURVIVAL IS ALWAYS #1
To survive in life, we must learn to TAME & Manage their impact on us.

The #1 Goal of NATURE/DNA/Genes:

# 1 Job: "OJ"
Overreact & Jump to Conclusions!

Anything we perceive as Challenging/Distressing/Threatening AUTOMATICALLY triggers SURVIVAL INSTINCTS & REFLEXES.

But, when a situation is NOT actually threatening, these reflexes can cause our behavior to appear out of control.

#1 Goal of NURTURE: TAME our SURVIVAL Reflexes

Reward Center

When our needs are met, we are more likely to be CALM, be able to listen, learn, & think clearly & to manage our own mental health & behavior. CALM rescues us!

William’s “Hierarchy of Needs Restated.” 2015. williamsgroup@cableone.net

Maslow’s Hierarchy (Ranking) of Needs, 1943

When our Needs ARE NOT MET, we fear for our wellbeing & we are distressed.

When life throws us a curve ball...

...we can be overwhelmed, lose our balance, be knocked off life’s see-saw, and be flat on our back on the ground.

We are mentally, emotionally & sometimes socially overwhelmed - - and guess what?

Being overwhelmed is the definition of **psychological trauma**!

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**Psychological TRAUMA**

*is defined as...*

“a level of mental, emotional, or social distress that exceeds & **overwhelms** one’s coping skills & habits.”

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We all respond differently to anything challenging or threatening, i.e., adversity.

The same situation can be mildly inconvenient to one person & absolutely devastating to another.

Some people need far more support than others to overcome & recover.
Please remember - anything that is **psychologically overwhelming**, i.e., psychologically traumatizing, is likely to “knock us down”.

That’s normal for everyone.

It’s how we face that situation afterwards that defines our level of **resilience**.

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**Psychological Resilience** is defined as the ability to rise to & **meet** challenges & setbacks, to **adapt** to change, to **keep going** in the face of adversity, and to **recover**...bounce back.

A layman’s definition:

**Psychological Resilience:**

They both require:
- Flexibility
- Strength
- Stamina
- Endurance

= HARDINESS
There are very few of us who cannot be overwhelmed i.e., knocked-down by something adverse…

We all overcome adversity differently…

Some of us take our own unique route…

Most of us need help...

For many, any form of adversity is overwhelming…

The longer we are UPSET, the stronger our ALARM SYSTEM networks get.

…and the weaker our cognitive development & Mental Health networks get.

Children need CALMING habits & lots of adult support

Starving Networks Change Brain Architecture

Normal Networks

Starved Networks

In charge of COGNITIVE DEVELOPMENT

Prefrontal Cortex and Hippocampus

When we are UPSET, our blood, oxygen and energy are diverted away from our PFC & Hippocampus to feed our ALARM SYSTEM.
The Value of Being

CALM

Everything Depends on our Neurons & their Bio-Chemistry

Our neural bio-chemistry makes it possible for us to:

Move at Will, Listen, Focus, Concentrate, Remember, Contribute,
Think Rationally, Self-Regulate, Be Patient & Courteous;
Have Compassion & Empathy; Recover from Psychological Trauma/
Behavioral Health Problems, Stay Physically & Psychologically Healthy - -
& Be RESILIENT & RECOVER from Injury...

...BUT...ONLY when we can

FIRST feel

CALM.
And...

NEVER . . . in the history of calming down has anyone ever calmed down by being told to calm down.

Unknown

Not everyone has experienced being calm...

ATTENTION: Not everyone has PRACTICED getting & staying CALM.

Do I know what it feels like to be CALM?
What does CALM look like? Sound like?
Can I produce a feeling of CALM at will?
Do I value being CALM - do I want to be CALM?
The first and most important question for children when it comes to mental health is:

“Do I know how to calm myself in all situations, can I do it “neked & alone”, and have I practiced it until it has become a habit – like walking and talking?”
Diaphragmatic BREATHING can change everything.
It changes our bio-chemistry, CALMs us (relaxes us)
directs our blood, oxygen, & energy toward
development, & strengthens our immune system...

Our diaphragm is our primary breathing pump*. (Belly Breathing)
Taking air IN is operated by our spinal nerves (in charge of our survival);
& letting air OUT is operated by our vagal nerves (called our
“compassionate” nerves.

*Also the pump for our lymphatic system, in charge of our lymph nodes, cleaning our blood of
toxins, controlling inflammation, etc.

NOTE: When we breathe OUT longer than we breathe in, we CALM ourselves & all our health improves.

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Have you ever been in the middle of a see-saw?
That’s where the power is - - right in the middle.
You can shift your weight to favor either side.

We can only RECOVER when we are balanced, i.e.,
when we are CALM, i.e., we are in “homeostasis”.

CALM Resilient

The single most important habit
we can build is being able to

UPSET

We need to know what do when our INTERNAL ALARMS go off!

We can REDIRECT our Blood, Oxygen & Energy (BOE)!

RESET

CALM = BIO-CHEMICALLY BALANCED.
How reliably we can find CALM = BALANCE is our state of resilience.

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Do I know what to do when I get upset?
Can I CALM myself?
Is it my HABIT?
Do I have people around me to help me?

ALL-SET

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We can learn to CALM ourselves by managing our Behavior Bio-chemistry.

Our Bio-Chemistry

OUR BIO-CHEMISTRY REFERS TO THE SETS OF CHEMICALS WE MAKE INSIDE OUR OWN BODIES.

We have two sets that operate our BEHAVIOR:
1. A set that operates our Survival Instincts/Reflexes (these are our ALARMS).
2. A set that CALMS & rescues us...
Humans have 2 Basic Sets of BEHAVIOR Bio-Chemicals:

**Alarming**

- SPEED us up...
- Norepinephrine
- Adrenaline
- Epinephrine
- & Cortisol... released AUTOMATICALLY,
  for operating/healing our body &/or
  when we feel threatened or UPSET.

**Calming**

- Those that CALM us down...
- “Fabulous 5”...
  released when our needs are met,
  OR when we use our CALMING Habits.

*“nor” = neurotransmitter

Our #1 Alarm Bio-chemical

- Released along with Adrenaline.

CORTISOL

- is a hormone that is a vital part of our SURVIVAL SYSTEM.
- It is one of our ALARM BIO-CHEMICALS.
- Most of the time it is our friend, but too much can be dangerous.

Anytime we perceive a situation or condition to be threatening/upsetting both adrenaline and our biochemical steroid, called CORTISOL are released into our blood stream, immediately & automatically.

*CORTISOL: is an anti-inflammatory steroid.

**Short Term: Helpful**
- **Prepares** our body to handle - and heal from - injury.
- **It SPEEDS us up** - it increases our blood sugar & races our heart...

**Long Term: Harmful**
- We all know what being on outside steroids can do...
- Our natural steroid (cortisol) can be just as damaging.

*Medication based on cortisol = hydrocortisone

Teen under the same Upset/Distress as adults get a dose of our Distress Hormone Cortisol that is **2 to 5 times MORE than that of adults & it stays 2 to 5 times LONGER!**

This helps explain why being upset/distressed can be so damaging to Teen Brains, and why they have trouble “calming down” after an upsetting/distressful episode.

Dr. Russell Romeo, Rockefeller University
Tense Muscles

Heighten Stimulation of the Long-Term SURVIVAL Memory

Decrease Sensitivity to PAIN

Increase Heart Rate

Increase Blood Pressure

Increase Blood Sugar

Sharp Intake of Air (Gasp), Rapid, Shallow Breathing or Holding Breath

Disrupts Digestion & Elimination & Mfg. of Serotonin, Oxytocin & Dopamine

Disrupts Immune System & HEALING

Disrupts Cognitive Development & HEALING

Long-Term Cortisol INCREASES our RISKS.

BTW:
When our breathing is short or we are holding our breath, we are creating more & more cortisol.
Cortisol is made by our adrenal glands – which rest on top of our kidneys.

Our CALMING Bio-chemicals...

The “Fabulous Five”
“Dr. Dopa” Dopamine: CALM, PLEASURE, & MOTIVATION, PLUS...

“Ananda” – Anandamide: (Body’s THC) CALM, PEACE & BLISS

“Endora”- Endorphins: (Body’s Morphine) PAIN RELIEF & EUPHORIA

CORTISOL Out: Nora IN!
Norepinephrine Interest & Focus

“Dr. Dopa” Dopamine

“Ananda” Anandamide “Bliss” (THC)

“Endora” Endorphins (Morphine) Pain Relief

“Oxy-T” Oxytocin

Protective Skills/HABITS

“Oxy-T” Oxytocin

Belly Breathing

HOMEOSTASIS = Chemical Balance

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The morphine molecule **mimics** our body’s natural **Endorphin**.

Our **endorphins** are psychological & physical **pain killers**.

We can build **endorphins on demand** when we are active and moving, exercising, laughing heartily, & deep, slow belly breathing, & breathing out slowly.

Marijuana’s THC molecule **mimics** our natural **Anandamide**.

**Anandamide** produces a feeling of calm, wellbeing, and “bliss”.

It works with **Serotonin** to help our bodies regulate functions ranging from appetite, sleep, mood regulation, neuro-protection, immune function, pain management, and even fertility.

We can build **Anandamide on-demand** by Belly Breathing, Deep, Slow Breathing OUT, Smiling, Laughing, Music, Gratitude, Generosity, etc.
**Endorphin & Anandamide Deficiencies**

Because you must have Dopamine present before you can have access to Endorphins and Anandamide.

When you have a dopamine deficiency you have endorphin and anandamide deficiencies.

Physical and psychological pain become more intense & less manageable, we cannot find calm or comfort, we are distressed, and more CORTISOL is released.

NIH, 2017

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Hangs out & is Best Friends with Cortisol.

Ghrelin is made in our stomachs & gut stimulates the feeling of starvation & the production of fat.

NIH, 2015

Leptin Full & Satisfied!

Hangs out & is Best Friends with Serotonin.

Leptin is made by our fat cells & stimulates contentment, relaxation & restfulness.

Yale University, 2019
Too much CORTISOL & too little DOPAMINE for too long results in an increased risk of anxiety, followed by depression, lack of anger control, sleep abnormalities, craving of starches and sweets, mood swings, and in the extreme, suicidal thoughts.

Where are our CALMING bio-chemicals made?
Mostly In our
2 Brains.
Everything is C-O-N-N-E-C-T-E-D

BRAIN and GUTS

They are connected...

Your Mood → Your Gut Bacteria
Our Gut is Our “SECOND BRAIN”

➢ Has 500 Million Neurons that are in constant contact with the neurons in our “First/Big Brain”.

➢ Job: To produce hundreds of chemicals our brain and the rest of our body use to function.

➢ Produces:
  ▪ 85-95% of Serotonin
  ▪ 40-50% of Dopamine
  ▪ 40-50% of Oxytocin

➢ Houses and programs:
  • 50%+ of our Immune System, that protects us from illness & disease.

 Feeling Distressed SLOWS IT DOWN!

When distress SLOWS/DISRUPTS our gut, it leads to:

• Digestive & Elimination Problems - Acid Reflux, Indigestion, IBS, Constipation, Colitis, Crohn’s
• Metabolism Problems, Gall Bladder, etc.
• Weight Gain, Obesity
• Diabetes (Type 2)
• High Cholesterol, Blood Pressure
• Heart Disease
• Slower Healing
• Inflammations and Allergies
• Infections
• Anxiety & Depression

OUR GUT’S JOBS: Digestion, Elimination, Metabolism, Immune System, Mfg. of Serotonin, Dopamine, & Oxytocin
When assessing a child’s mental health, ask “gut” questions; the answers can identify early warning signs.

Our Vagal Nerves transport the bio-chemicals we make in our gut (2\textsuperscript{nd} Brain) throughout our body — especially to our FIRST brain.
Vagus Nerves (left/right) OR Vagal Nervous System:

- Cranial Nerve X (No. 10)
- Para-sympathetic System
- Exits the Brain Stem, splits into 2 sides & “wanders” throughout the thorax and abdomen
- Called the “compassion” nerves because when we give compassion to others, or when we receive it from others, we stimulate the nerves, and they “grow” stronger connections & the nerves get bigger.

Breathing OUT stimulates our Vagal Nerves.

Spinal Cord

Vagus Nerves

UPSET Accelerator

- Dilates Pupils
- Inhibits Saliva
- Speeds Heart Beat
- **BREATHING IN**
- Inhibits Digestion
- Slows/Dis-regulates Elimination

Our DNA has pre-set us on “GO” -- all the time - - unless we apply the **BRAKES** so we can take life’s turns.

Breathing shallowly & rapidly - or holding our breath – ADDS CORTISOL & SPEEDS US UP MORE.

RESET BRAKES

- Constricts Pupils
- Stimulates Saliva
- Slows Heart Beat
- **BREATHING OUT**
- Stimulates Digestion
- Regulates Elimination

BREATHING OUT LONGER THAN WE BREATHE IN CALMS US DOWN (APPLIES THE BRAKES)

Steer & Shift

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Positive Distress Management Habits & Resilience are built/formed like we teach sports and fundamental motor skills – by consistent, repeated modeling, coaching, and practice of skill sets.

FIRST, we build a skill... or a set of skills...

Then we practice it or them until we don’t have to think about it...
Learning a New Skill Requires:

1. CALM Demonstration/Modeling
2. CALM Explicit Instruction
3. CALM Coaching, PRACTICE...
4. CALM Positive Feedback
5. CALM Support, Encouragement

Repeat....repeat....repeat....repeat....
Practice.... practice...practice...
Until it is a HABIT!

Our “HABITS” wire/re-wire us!

A HABIT is a learned attitude or behavior or skill - which through regular, consistent repetition & practice - becomes automatic, i.e., it is accomplished WITHOUT THINKING.

A Habit is a “Learned Reflex”

Like walking/talking.

It’s a S-L-O-W process.

The average time to reach automaticity* is 66 days with a range of 18–254 days.

Lally et.al. (2010)

*Done without thinking...
In addition to your Children’s Mental Health Initiative:

- The Iowa Department of Education is providing grants to school districts to help them meet mental health needs and provide wraparound services for students and families.

- In addition, the Iowa Department of Education is partnering with the University of Iowa’s Baker Teacher Leader Center to establish a new Center for School Mental Health that will provide training and professional development to both student teachers and practicing teachers.
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