

Transcript of Stress and the Teenage Brain (from Prezi 5/2/17)

(and girls are more stressed than boys)

teenagers experience stress as more stressful

Remember...

chronic moderate stress or shorter term high stress can be much more harmful to the brain of teens than it is to adults

stress negatively affects the physiology of the teenage brain

In 2013, Johns Hopkins researchers found that elevated levels of the stress hormone cortisol in adolescents triggered genetic changes that, in young adulthood, could result in mental illness in those predisposed to it.

this transition time is riddled with many potential minefields and booby traps and stress can cause a misfire

Prefrontal Cortex

Stress interferes with teen's decision making

the prefrontal cortex helps regulate behavior, problem-solve, plan ahead and understand future consequences of one's actions

Impact of Stress on the Developing Brain

high levels of stress increase poor decision making

Teenagers show more activation in the reward system than adults when making risky choices, thus, they make more risky choices than adults.

Adolescents find it more difficult to interrupt an action under way, think before acting, and choose between safer and riskier alternatives

restructuring of the teenage brain

During early and mid-adolescence the brain undergoes considerable neural growth and pruning which create changes in connectivity within and between various brain regions

an equivalent to the physical awkwardness teens display while mastering their growing bodies

"neural gawkiness"

front of the frontal lobe

in early adolescence the prefrontal cortex begins to more fully and effectively communicate with other parts of the brain; however, this area is immature in teenagers and doesn't completely develop until the age of 25

Prevalence

a teen is less a rough draft and more an exquisitely sensitive, highly adaptable creature wired almost perfectly for the job of moving from the safety of home into the complicated world outside

It's exactly what you'd need to do the things you have to do in that time of your life.

How can we help?

foster a supportive classroom

develop a relationship

provide specific feedback

positive reinforcement

teach through their strengths

give more breaks

break up large assignments

develop rituals (consistency)

the fact is, some degree of stress is very therapeutic and an appropriate amount of stress is what helps us become strong

the hard part is determining what's appropriate

creativity/novelty

help them identify & tolerate emotions

What stressors do teenagers face?

To help teens while the prefrontal

cortex is still developing.....

Give simple instructions, verbally & in writing. (Being asked to multi-task or follow complex directions can overwhelm an adolescent whose brain is just learning how to sort and prioritize)

Help teens create systems to manage their time, organize tasks & identify priorities (calendars, planners, electronic reminders)

Provide varied opportunities to get involved in new hobbies & discover their interests. The teenage brain needs lots of stimulation

Teens & Sleep

Sleep deprivation can mimic or exacerbate other disorders like ADHD, increase depression, cause difficulty in regulating emotions & make them more vulnerable to stress.

Impacts of Stress

on the Body & Brain

STRESS

When a child is young and his brain is still developing, if he is repeatedly thrust into a state of fight or flight, this chronic stress state causes chemicals to disable the genes that regulate stress response-preventing the brain from properly regulating its response for the rest of his life.

They can no longer distinguish between real danger and perceived stress

so what about a brain that's already been pruned from stress?

early adversity changes the shape & size of the brain

Stress causes neurons and synapses to be pruned away

When a child faces emotional adversity or stressors, cells in the brain release a hormone that actually shrinks the size of the brain's developing hippocampus-altering his or her ability to process emotion and manage stress

predictable vs unpredictable stress

Chronic unpredictable stress causes more changes to the receptors in the hippocampus-area associated with emotion that would help put the brakes on feelings of stress and anxiety

When stress is predictable, even if it is more traumatic, the brain doesn't create these exact same brain changes.

Brain can tolerate severely stressful events if they are predictable, but you cannot tolerate even mild stressful events if they are very unpredictable

University of Maryland School of Medicine (Reich, Taylor & McCarthy)

Stress is tolerable when they are temporary, limited in duration and are buffered by relationships with adults who help a child learn to adapt.

Having supportive, responsive relationships with caring adults as early in life as possible makes a profound difference

don't underestimate

the power

of one

RELIABLE ADULT

Teens need substantially more sleep than do adults (at least 9 hours)

Starting in puberty, melatonin is released two hours later & stays in the brain later into the morning compared to the brain of a child

The deepest form of sleep, slow wave sleep, will decrease as much as 40%- causing problems such as insomnia and narcolepsy

don't confuse rigor and load

block or trimester schedule

later start time

practice mindfulness in the classroom

formative assessments

simplify their schedule

eliminate or reduce homework