Teens & Parenting: Neurodevelopment & Stress Management

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OBJECTIVES:
At the end of this presentation, the participant will be able to...
1. recount the goals of adolescent development & relate them to risk-taking.
2. list factors that contribute to the stress-filled lives of adolescents.
3. recognize that parents need guidance in supporting healthy teen development
4. describe effective parenting strategies related to stress management that can be role-modeled in the medical home.

DISCLOSURE:
- Janet F. Williams, M.D., FAAP, has no relationships with commercial companies to disclose.
- I will not be discussing investigative or unapproved uses of drugs, products or devices.

Synopsis: Growth & Development
- The primary tasks of childhood
- Dynamic processes
- Development directly correlates with growth and maturation of both the Central Nervous System (CNS) & peripheral nervous system.

Early Nervous System Growth & Development
- Gestation week 25: full number of CNS neurons, recognizable electrical activity
- End of 2nd trimester: myelination has started
- Birth: rapid glial cell multiplication, arborization, synapse formation; brain size 1/6 adult size
- 0 - 4 yrs: peak brain growth; rapid myelination
- One year: 2/3 the adult brain size
- Two years: 4/5 the adult brain size
Myelination & brain growth well into late 20s!
- Functional brain connectivity is being refined.
- Brain development progresses inferior to superior & posterior to anterior.
- Sequence: brainstem, cerebellum, then cerebral hemispheres with frontal lobes last!
- EEG, imaging, cerebral glucose metabolism studies all show **later frontal lobe maturation**.

### Brain Areas Mature Asynchronously

- **Cerebellum**: Shows little change between adolescence & adulthood.
- **Physical Coordination**
- **Parietal, temporal & occipital lobes** also change very little.
- **Parietal** – spatial relations, sensory functions
- **Temporal** – auditory & language processing
- **Occipital** – vision

### Brain Maturation = Survival!

- Each cerebral hemisphere is comprised of sensory lobes & a response (frontal) lobe.
  - **Sensory lobes** are more synchronized since a unified perception of surroundings is useful.
  - **Frontal lobes** are less in synch, since useful to view problems from various perspectives.
    - Right develops creative solutions to novel challenges.
    - Left activates established routines to the familiar.

### Immature ‘Brain CEO’ & Teen Behavior

- Frontal lobe/prefrontal cortex mature last, so immaturity means…
  - **Less** response inhibition = less impulse control
  - **Less** abstract thinking, cognitive flexibility, insight, focus, judgment, regulation of emotions
  - **Less** able to anticipate consequences of actions, organize, strategize, problem-solve, plan, multi-task
  - **More** risk-taking, impulsivity, decision-making based on emotions & rewards!
Executive Control Arriving Soon!

- Teen brain = ‘thinking’ from emotions, stressors.
- ‘Everything’ = a threat & leads to strong emotional responses with no ability to name the feelings.
- Teens still developing ability to read social (facial) signals & respond appropriately. Adults use logic.

Stages of Adolescence

- EARLY: Ages 10 - 14
- MIDDLE: Ages 15 - 17
- LATE: Age 17 well into 20s!

GOALS OF ADOLESCENCE

- SELF-IDENTITY
- SEXUAL IDENTITY
- VOCATION
- EMANCIPATION

Processes Used to Achieve the Goals of Adolescence

- Behavioral Experimentation
- Testing Authority
- Rejection of Parental Values
- Struggle for Independence

“Just ignore him. That’s our rebellious young calf. Mathews — he’s into wearing leather clothes just for the shock value.”
Use of alcohol, tobacco and other drugs..... a readily available & certainly unhealthy means to try to fulfill the developmental processes of adolescence & thus transition from complete dependence to AUTONOMY

Additional Vulnerability

The adolescent brain like the young child's brain is still highly susceptible to intensive learning. Substance abuse and addiction employ many of the same systems as normal learning.

In the adolescent using drugs or alcohol, this behavior is learned 'more deeply' than in the adult brain, thereby creating a potential for stronger and longer addiction problems.

Research Evidence Shows...

- Exposure to drugs during adolescence, a time of immaturity & plasticity of brain processes, may permanently change brain structure, chemistry &/or function.

Additional Vulnerability

- a critical period in brain development.
- a critical period in setting adult behavior patterns.
- a time of vulnerability & opportunity.
- a time of risk-taking & consequences.

Keep an Open Mind!

Risk-Taking in Adolescence

“It should come as no surprise to discover that the how-to-do-it capabilities mature before the whether-to-do-it capabilities. Therefore, many adolescents can successfully do things that they shouldn’t.”

Robert Sylwester
The Adolescent Brain: Reaching for Autonomy

Who Took Risks as a Teen?

- What were teen risks then?
  - ????
- What are (a few of the) teen risks now?
  - Sexual risks; ‘newer’ STIs
  - ‘Pharming’
  - Distracted driving; car surfing
  - Urban free-running; parkour
  - Violence, assault weaponry
  - Online exposure
Parents & Adults UNDERESTIMATE

- Number of adolescents using alcohol, tobacco & all sorts of drugs (Rx, OTC, MJ, 'hard')
- Ease of access, particularly from the home
- How early drinking begins (< age 13)
- Amount consumed
- Associated risks
- Nature & extent of consequences to both drinkers & nondrinkers
- Stress in adolescent lives today.

Risk-Taking Connection to Stress

- Substance use
- Sex & Sexual risks
- Cutting, Piercing, Tattoos, Mutilation
- Eating disorders
- Running away
- Truancy
- Isolation
- Crime
- Sexting
- Bullying
- Fighting
- Violence
- Gangs
- Depression

What Is Stress?

STRESS = ‘the bodily and mental state arising from physical, chemical and emotional factors causing tensions that alter the existent equilibrium’

= the uncomfortable feeling (a teen) experiences when worried, scared, overwhelmed, frustrated, angry, etc.
What Causes Stress?

- Parents
- Self
- Peers
- School
- Surroundings

Stress from Parents & Family

- Responsibilities, Expectations
- Roles & Role-modeling
- Respect, Communication
  - Listening
- Demands, discord
- Domestic violence
- Siblings:
  - Younger, Older
  - 'It's all Relative(s)!

Stress from SELF

- My development
- My body; my appearance
- My independence
- My expectations
- My abilities, my actions & achievements
- My relationships: emotions, sexuality
- My desires; my guilt
- My time; my sleep
Sleep Deprived vs. Immature Brain

- Teens need at least 9 hours of sleep nightly.
- Achieved by less than 15% U.S. teens.
- Brain immaturity favors later circadian cycle:
  - Chemically, not ready for sleep until 11 p.m. or later.
- Sleep-deprived, means:
  - More irritable, cranky, aggressive, aloof
  - Less listening, memory, concentration, learning

Stress from Peers

- Peer pressures, expectations
- Communication, media
- Relationships:
  - Teams, competition
  - Socializing, cliques, BFF
  - Bullying, fights
  - Sexuality, sex

Stress from SURROUNDINGS

- School:
  - Teacher respect
  - Homework, Tests; Academic achievement
  - Future: College, Job/Career/Profession
  - Extracurriculars, Sports

Stress from SURROUNDINGS

- Home
- Media
- Neighborhood
  - Relationships
  - Safety
  - Community
- Work
- World
Messages to SELF ➔ Stress?
- Body & Mind respond to:
  - Brain & nervous system
  - Hormones

How Might Stress Be Expressed?

Can Stress Be a Good Thing?
- Fight or Flight response
- Crisis reaction
- Survival

'Stressed' Backwards Is Desserts!

Find a Balance: Harness 'Productive' Stress

Transformers: Toddlers to Teens
- Parents & parenting
  - Discipline = Teaching
  - Role-modeling
  - Monitoring
- Pediatric medical home
  - Surveillance
  - Growth & Development
  - Health & Safety
  - Teaching or Guidance
  - Parent/Child/Adolescent
  - Role-modeling
PARENT ROLE

- Love, respect, trust.
  - Teach & live - Respect self & others!
- Encourage play/creativity.
  - Get out of the way, so child can learn from each new experience.
  - Natural and logical consequences
  - Healthy risk-taking
  - Engender love of reading
  - Don’t over-schedule
  - Learn to explore, relax, entertain self, do nothing!

PARENT ROLE

  - Parents/caregivers’ role: Agree about, set and uphold firm yet fair & safe rules and limits.
- Role of a NORMAL child: Test all boundaries!
  - Parents’ role: Uphold boundaries; Guide gently. Restate the rule & react with remind, redirect, remove; let natural & logical consequences occur without ‘saving’ the child.

PARENT ROLE

- Communicate: Listen & create rapport
  - Teach & learn: “Use your words!”
  - Explain rules & limits at child’s developmental level: be reasonable + logical + consistent
  - Notice ‘the good.’ Reinforce strengths.
  - Praise the effort/process, not the product.
  - Offer tools & consistent constructive critique of behavior to change.
  - Listen!
PARENTS as TEACHERS

- Set up all choice options to be a ‘correct’ choice. The ultimate boundary is safety, but good sense helps, too.
  - “I don’t want the shot!”
  - “We don’t always get everything we want.”
  - “Your choice is to get the shot in your right arm or your left.” ….. “You calmed down. You picked the arm and got your choice. You were brave!”

Parenting across Adolescence

Welcome to being a parent of a teenager: Prepare for a large amount of eye rolling, emotional outbursts, & thoughts of running away. And that’s just the parents!

Actions Speak Louder than Words!

- Parents must learn:
  - how & when to speak with & not just to or at their adolescent.
  - their role-modeling is the most powerful influence.
- Adolescents:
  - want their parents’ attention, too.
  - want their point of view valued, not just corrected.
  - live up (or down) to parent expectations.
  - treat others how their parents treat them.

PARENT ROLE

- Role modeling & mentoring in:
  - Making healthy choices & safe decisions, like…
    - NOT using alcohol or medications as the only means to express every emotion or life event
    - Practicing rewarding stress relief & coping habits
  - Seeking, finding & pursuing one’s own passion
  - Connections with ‘community’
  - Media literacy – How to…
    - Sift through messages, manipulations, motives
    - Gain control of own opinions & self-image
With Adolescents (& Their Parents)...

Always remember, use and teach the #1 parenting rule of ‘Notice the good!’ Look for what is STRONG with the teen and not just what is WRONG with the teen.

Role of the Medical Home

- Confidential, holistic patient care
- Continuity of care
- Psychosocial support
- Anticipatory guidance; prevention
- Risk prevention: SBIRT – substance use screening, brief intervention, refer to treatment
- Parenting guidance & role-modeling
- Enhancing patient and family’s motivation for health promotion & behavior change.

Teens: Smooth Sailing on ‘the Seven Seas’

Consistent Limits are Key!

- Restrict Cash/Credit card
- Suspend Car use
- Limit Cell phone
- Monitor Computer use
- Set Curfew

The Medical Home & Parenting Teens

- Concepts of confidentiality & transition to autonomy
- Rapport building
- Educate - Promote:
  - Literacy & Media Literacy
  - Correct any wrong beliefs.
  - Family meals, traditions, limits, communication
  - Expressing feelings/emotions; Stress management
- Role play risk scenarios & safety plans
  - SADD Contract for Life: www.sadd.org
- Motivational Enhancement
  - Promote strengths
  - Reinforce & encourage healthy choices

Dealing with Stress – An ‘S’ in SHADESS?

Positive Coping Strategies: You feel awful 😞

Negative Coping Strategies: You feel better for a short time.

You feel better for a long time.
PERSONAL Stress Management
4 Steps from Distress to De-stress

1. Tackle the problem
2. Take care of my body
3. Deal with emotions
4. Make the world better

PERSONAL Stress Management Plan

- **Tackle the Problem:**
  - Identify & then address the problem
  - Avoid stress when possible
  - Let some things go

- **Take care of my body:**
  - Exercise
  - Active relaxation
  - Healthy eating
  - Sleep well

- **Deal with emotions:**
  - Instant ‘vacation’ thru ingrained de-stress tools:
    - Visualize, read, walk in park, hobby, hot bath, etc.
    - CALM conflict resolution: Calm down-Avoid-Listen-Move On
  - Release emotional tension:
    - Journal, create, talk, pray, laugh, cry, meditate

- **Make the world better:**
  - Contribute to the world:
    - Join, help, volunteer

PARTING CONTEMPLATION....

- What would it take for all schools to ‘normalize’ mental health?
  - Integrate into teaching about & promoting physical health
  - Start from the beginning grades and continue

- What if stress management skills were taught and practiced as a part of every-day learning?

- A few schools are on this cutting edge....