

CENTRE FOR ADDICTION MEDICINE

NATIONAL INSTITUTE OF MENTAL HEALTH AND NEUROSCIENCES, BANGALORE



Unravelling Risk-Taking in Youth: Pathways to Positive Change

Dr Arun Kandasamy

Professor of Psychiatry

arunnimhans05@gmail.com



INDIA chapter





**NATIONAL INSTITUTE OF
MENTAL HEALTH & NEURO SCIENCES**
Institute of National Importance
Bengaluru



Our Roots - Our Pride

*Platinum
Jubilee Year*
of the establishment of
All India Institute of Mental Health (AIMH)



Disclaimer



Do not have any conflict of interest: I hope



Do not work with alcohol/ tobacco/
Gaming/ Gambling industry: Difficult



Use of pictures only for academic purpose
& no copyright infringement intended:



Personal bias could not be avoided as it is
my perspective



I have taken the assistance of AI to redo
the content



Outline: 2 sections



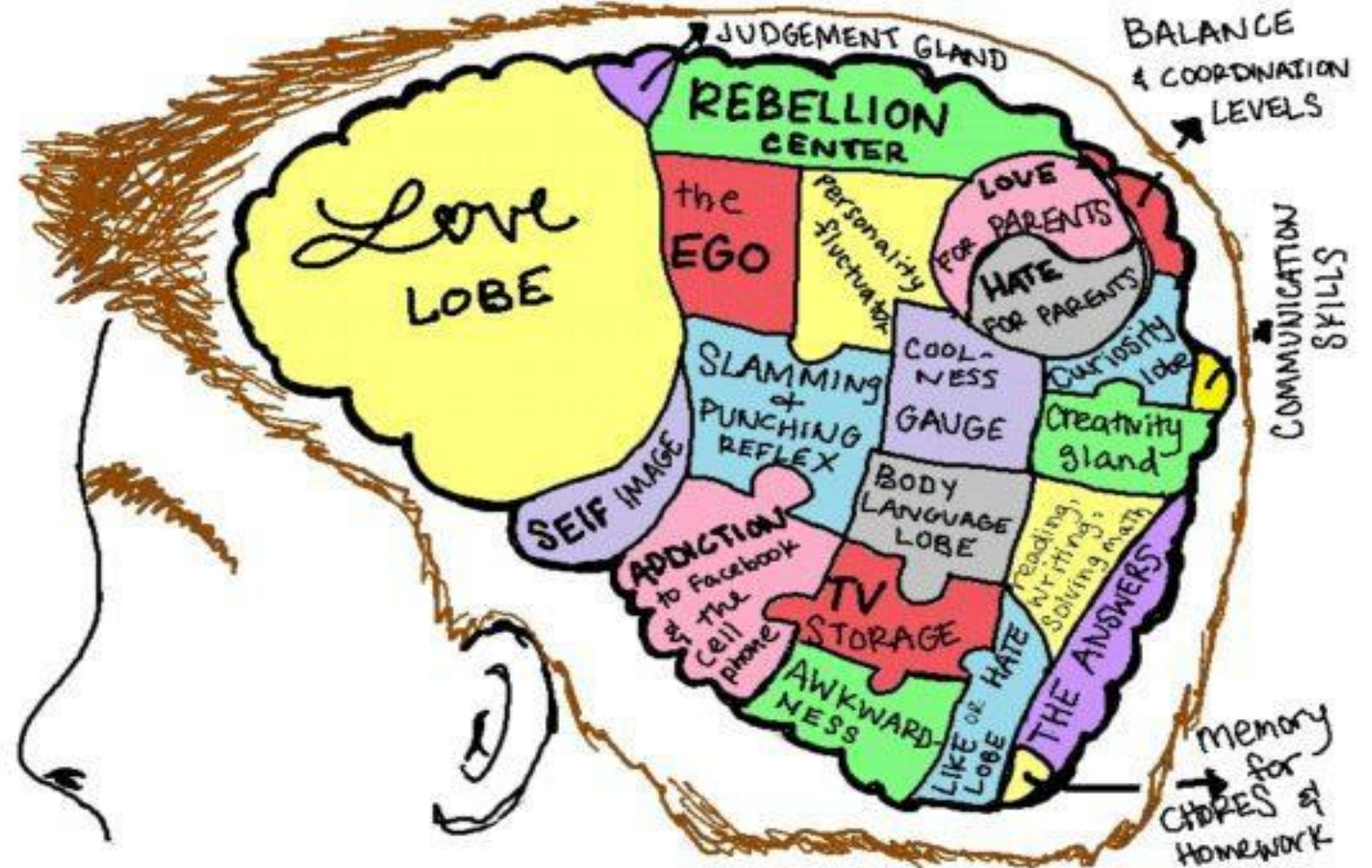
- I. Understanding Adolescents' brain and behaviour
- II. Opportunities in working with them



Section I: Understanding Adolescents' brain and behaviour

What does Adolescence mean to you?

- Cocky Messy
- Bratty Aloof
- Cranky Loopy
- Clumsy Lazy Nasty



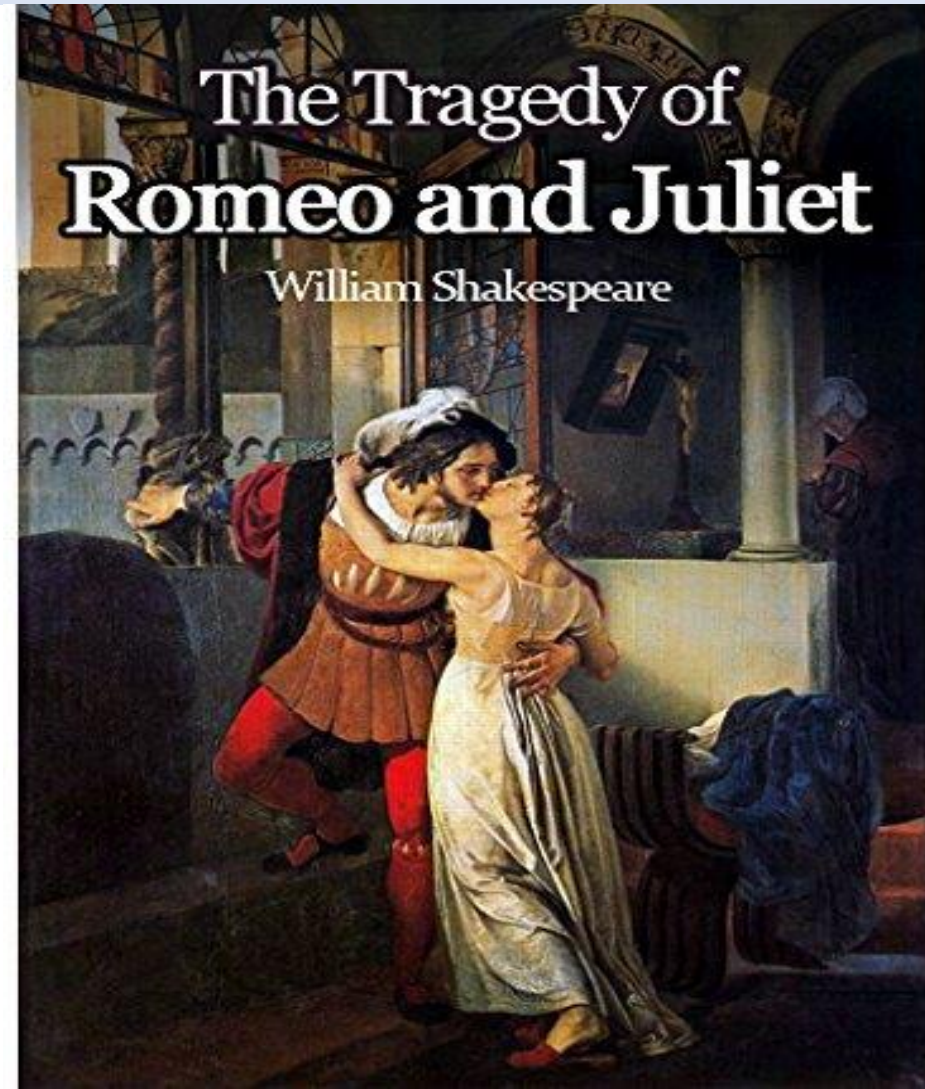
Adolescence



The young are heated by Nature
as drunken men by wine.

~ Aristotle

Adolescence





What have we here? Mercy on's, a bairn! A very pretty bairn! A boy or a child, I wonder? A pretty one, a very pretty one. Sure some scape. Though I am not bookish, yet I can read 'waiting-gentlewoman' in the scape. This has been some stair-work. Some behind-door-work. They were warmer that got this than the poor thing is here. I'll take it up for pity (3.3.66-73).

I would there were no age between ten and three-and-twenty or that youth would sleep out the rest; for there is nothing in the between but getting wenches with child, wronging the ancientry, stealing, fighting - hark you now, would any but these boiled-brains of nineteen and two-and-twenty hunt this weather? They have scared away two of my best sheep, which I fear the wolf will sooner find than the master. If anywhere I have them 'tis by the seaside, browsing of ivy. Good luck, an't be thy will! What have we here? (3.3.57-66)

Now a major film starring
Steve Carell and Timothée Chalamet

'Mandatory reading for every teenager and every parent'
DAILY

David Sheff

Beautiful Boy

A Father's Journey Through
His Son's Addiction



Adolescence

Risky for a spectrum of high-risk behaviors



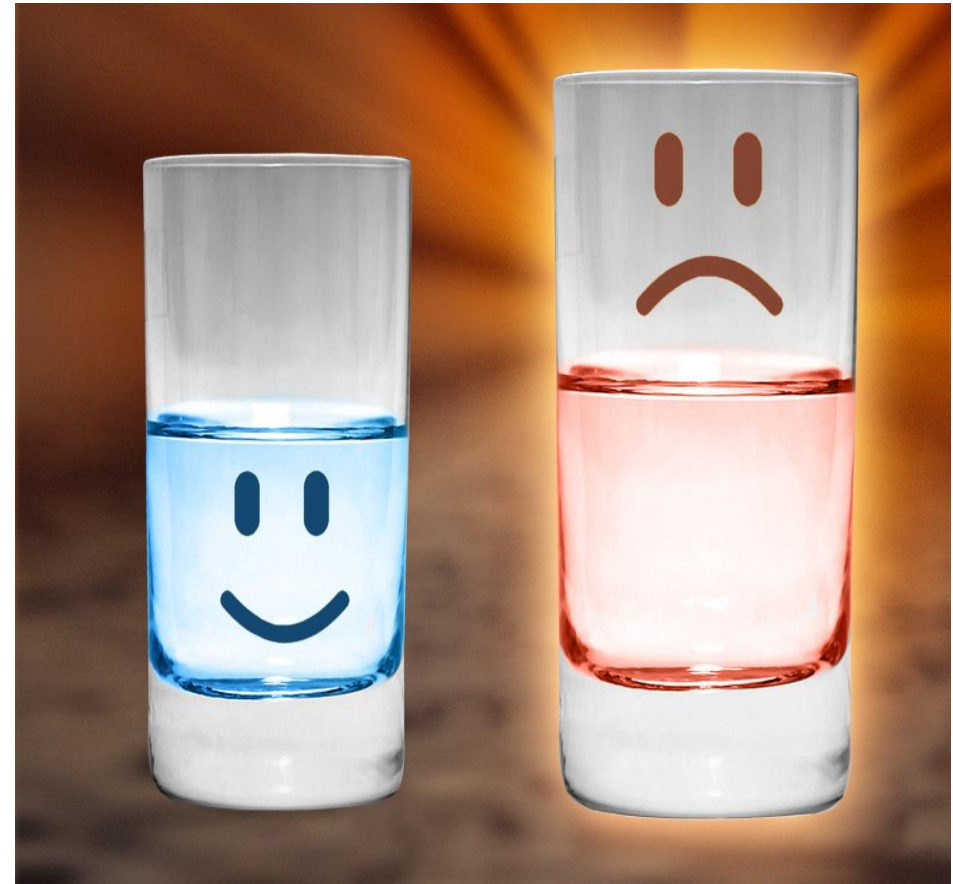
- Violence , risk-taking and accidents
- Low effort/ High excitement activities
- High risk sexual activity, unexpected pregnancy
- Depression, inappropriate anger
& other emotional problems
- Deliberate Self Harm and Suicide
- Oppositional behavior, conduct problems
- Experimenting with substances



Adolescence



- Is this age-old negative evaluation warranted?
- Vulnerability/Risky or Opportunity





80% have no
problems at all

***Developmental
period of strength
and resilience***



Adolescence

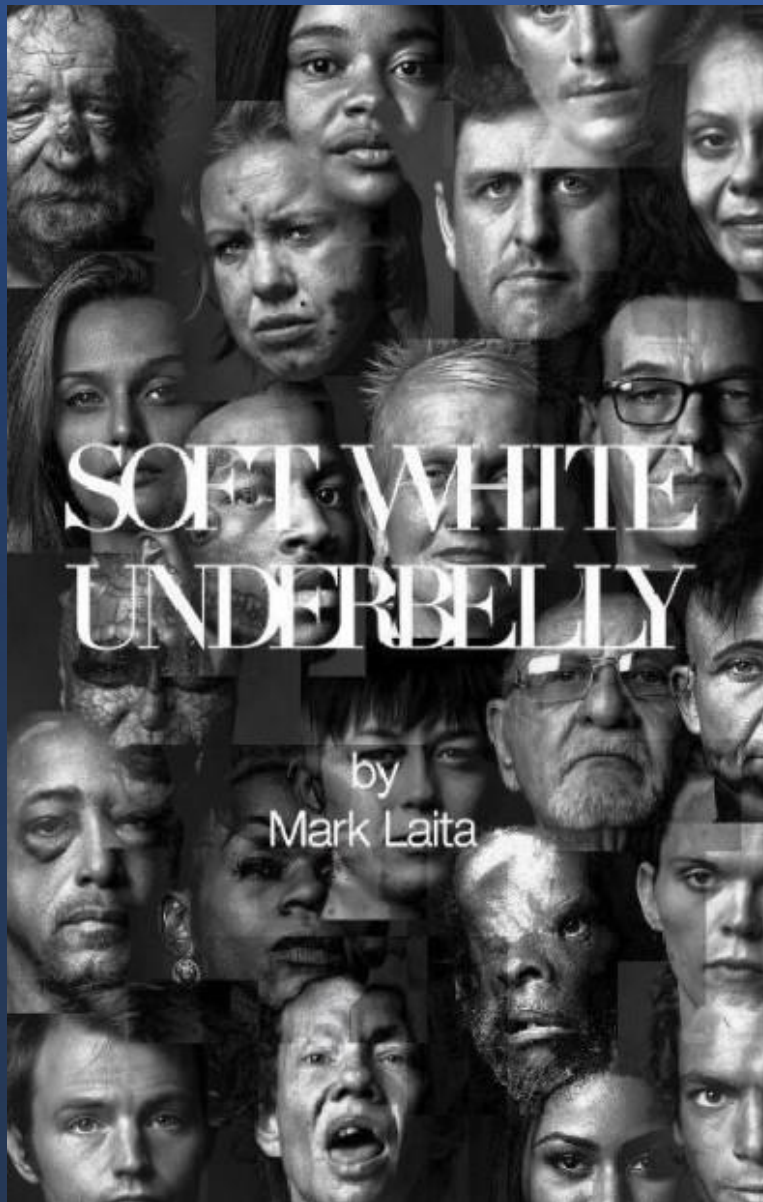


“yes.... **BUT!**”

Adolescence



- *Time when lifelong trajectories are set*
- *Often contains the developmental roots of addiction, poor health habits, relationship difficulties, failure to achieve skills for a productive career*



SOFT WHITE UNDERBELLY

by
Mark Laita



Gang Member interview-
Alfonso

53K views • 2 months ago



Homeless Man interview-
Maurice

112K views • 2 months ago



Crystal Meth Addict
interview-Jamie Lynn

172K views • 2 months ago



Retired Professor interview-
George

225K views • 3 months ago



Fentanyl Addicted Couple -
Crystal and Jason

231K views • 3 months ago



College Student interview-
Ariah

198K views • 3 months ago

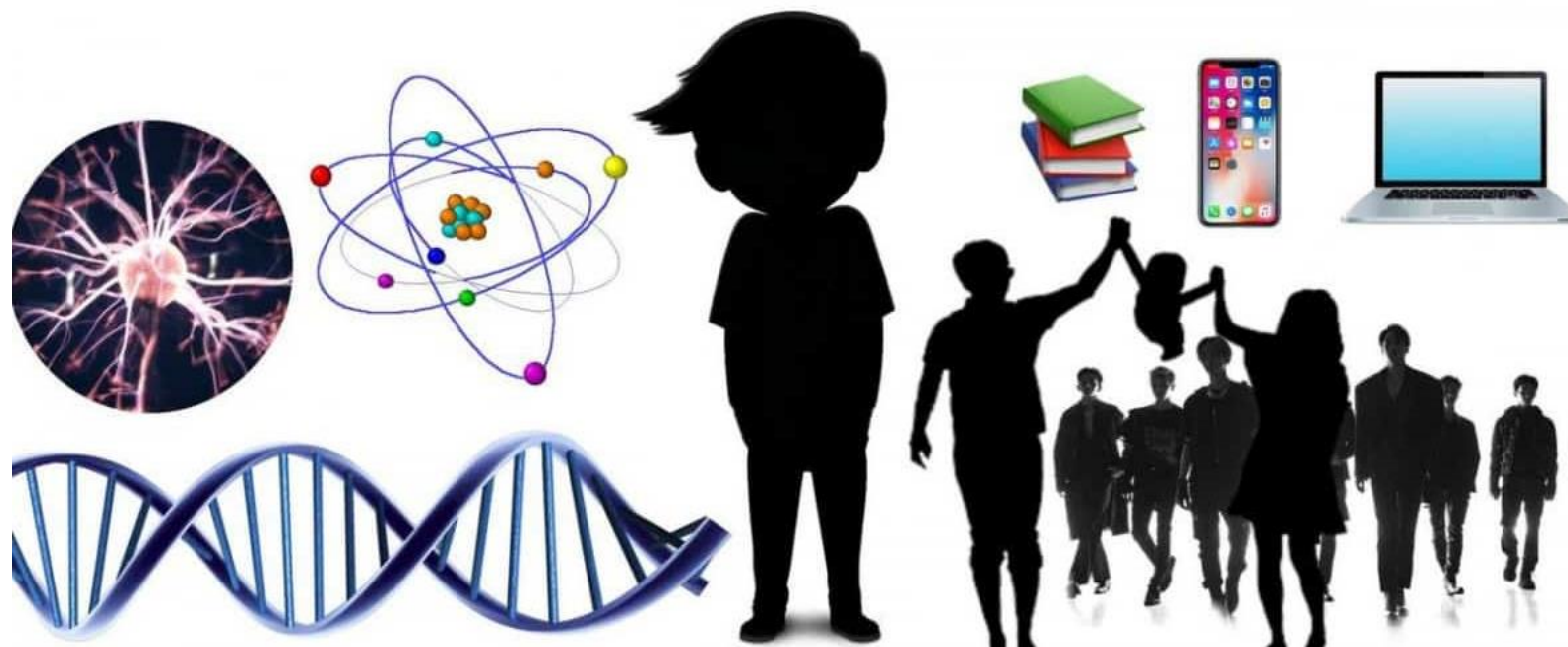
Adolescence: Striking paradox



- 1. 200 % increase in Morbidity and Mortality despite rapid physical growth: Difficulties in control of behaviour and emotions*
- 2. Recklessness despite cognitive maturation*

How adolescence by itself is a vulnerability?

Nature Vs Nurture



Nature

Normal Adolescent Brain

- Adolescent brain – Not a finished product but the work is in progress.

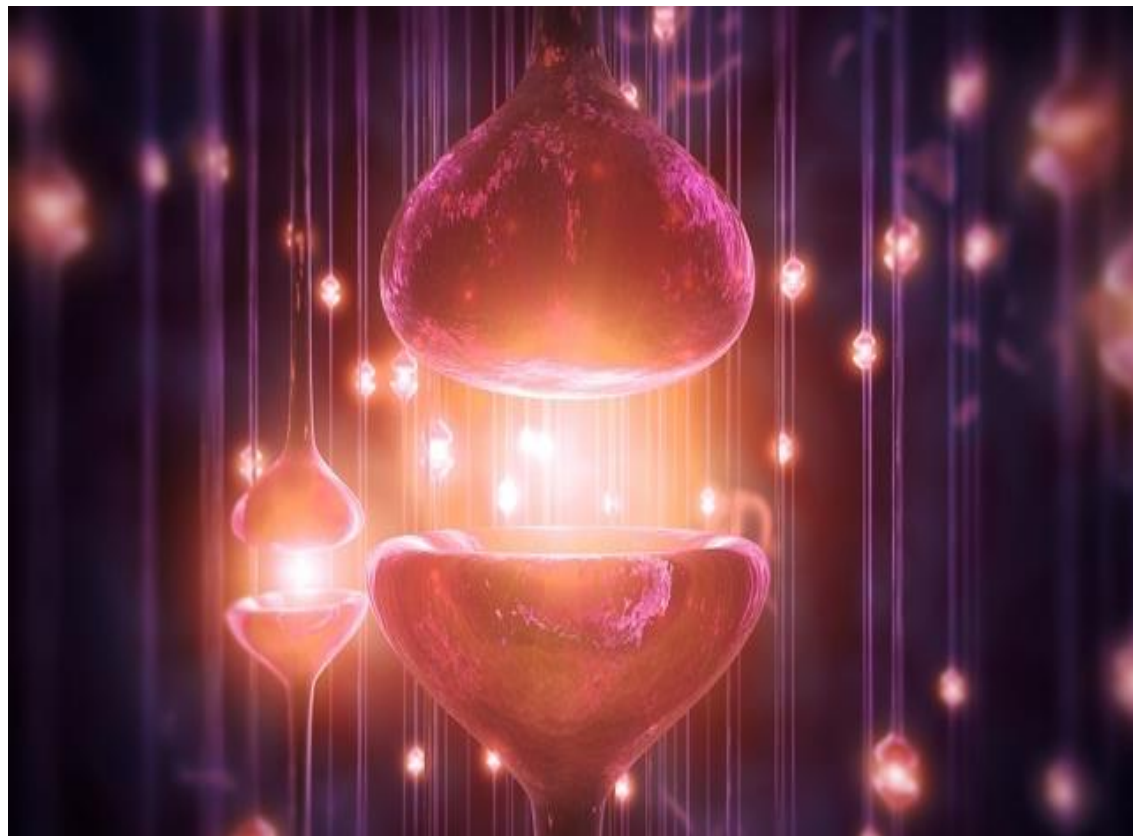


Adolescent Brain-Anatomical Changes



- Improving efficiency and decreasing the metabolic load
 1. Synaptic Pruning
 2. Myelination
 3. Proliferation of projections of white matter tracts across different brain regions

Synaptic pruning

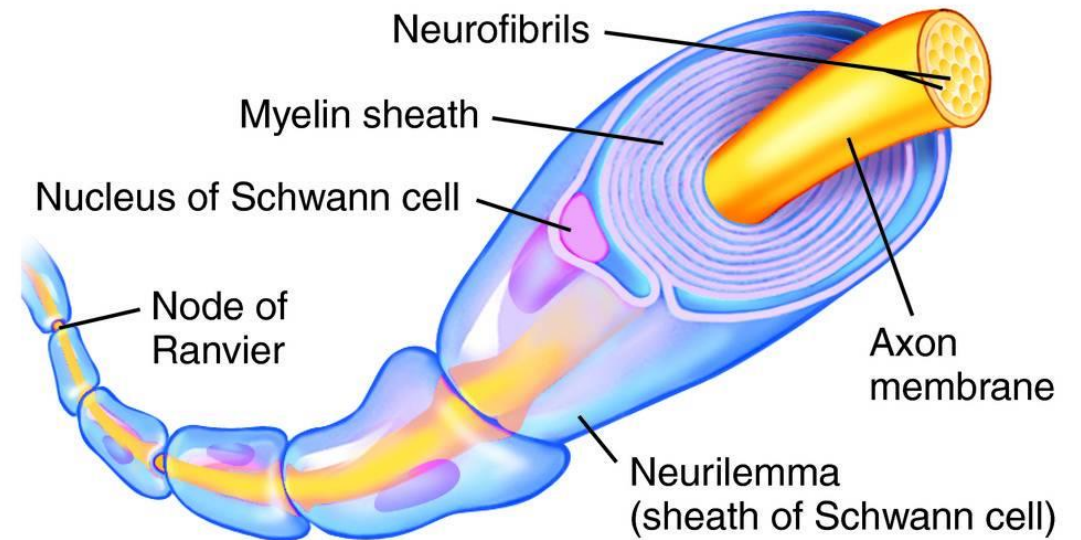
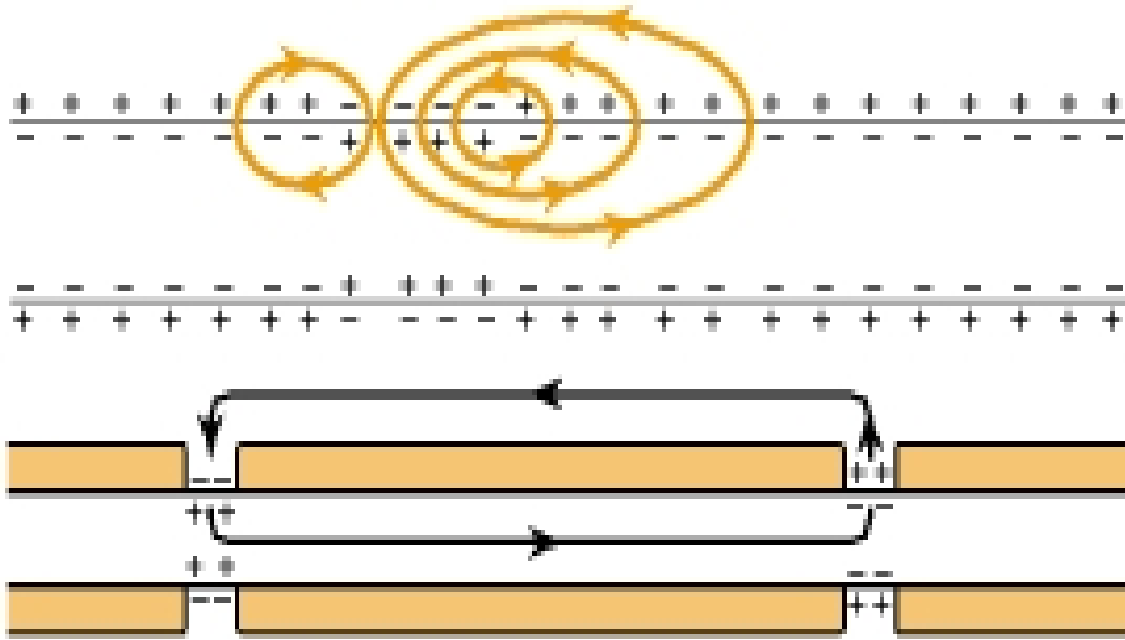


Completed by Mid- Adolescence

- Removal of excess, unhelpful connections (synapses) between neurons

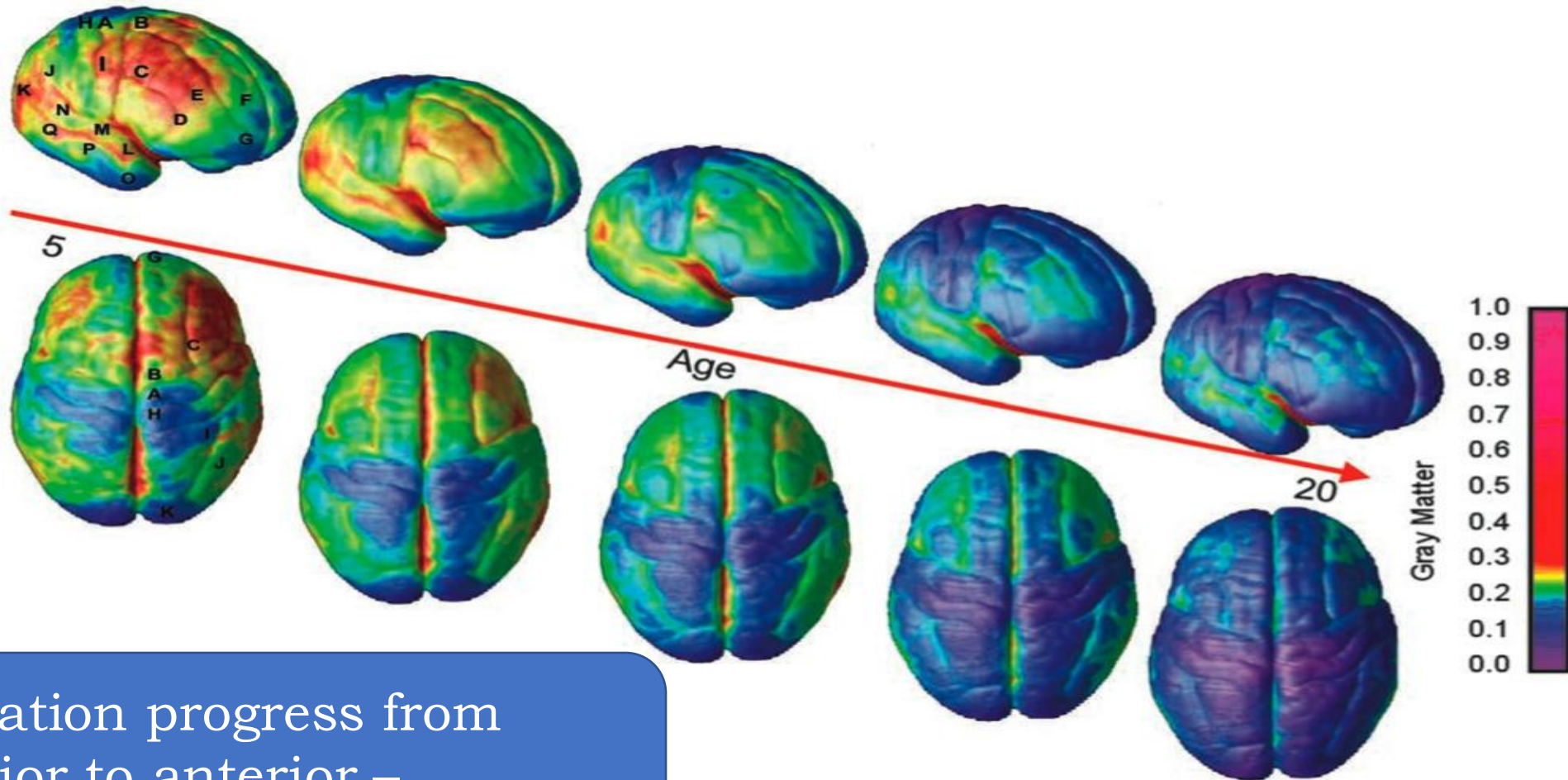
In a growing city, the road frequently travelled will be strengthened and the least travelled will be left uncared

Myelination



Like providing a growing city with a fast and integrated communication system

Gray : White matter ratio changes- extends into 2nd decade



Maturation progress from posterior to anterior – Brainstem to Prefrontal Cortex

Proliferation of projections of white matter



- *Increase in connections among cortical areas and between cortical and subcortical areas*

(Between the prefrontal regions and the limbic and paralimbic areas, including the amygdala, nucleus accumbens, and hippocampus) ([Eluvathingal, Hasan, Kramer, Fletcher, & Ewing-Cobbs, 2007](#)).

Proliferation of projections of white matter

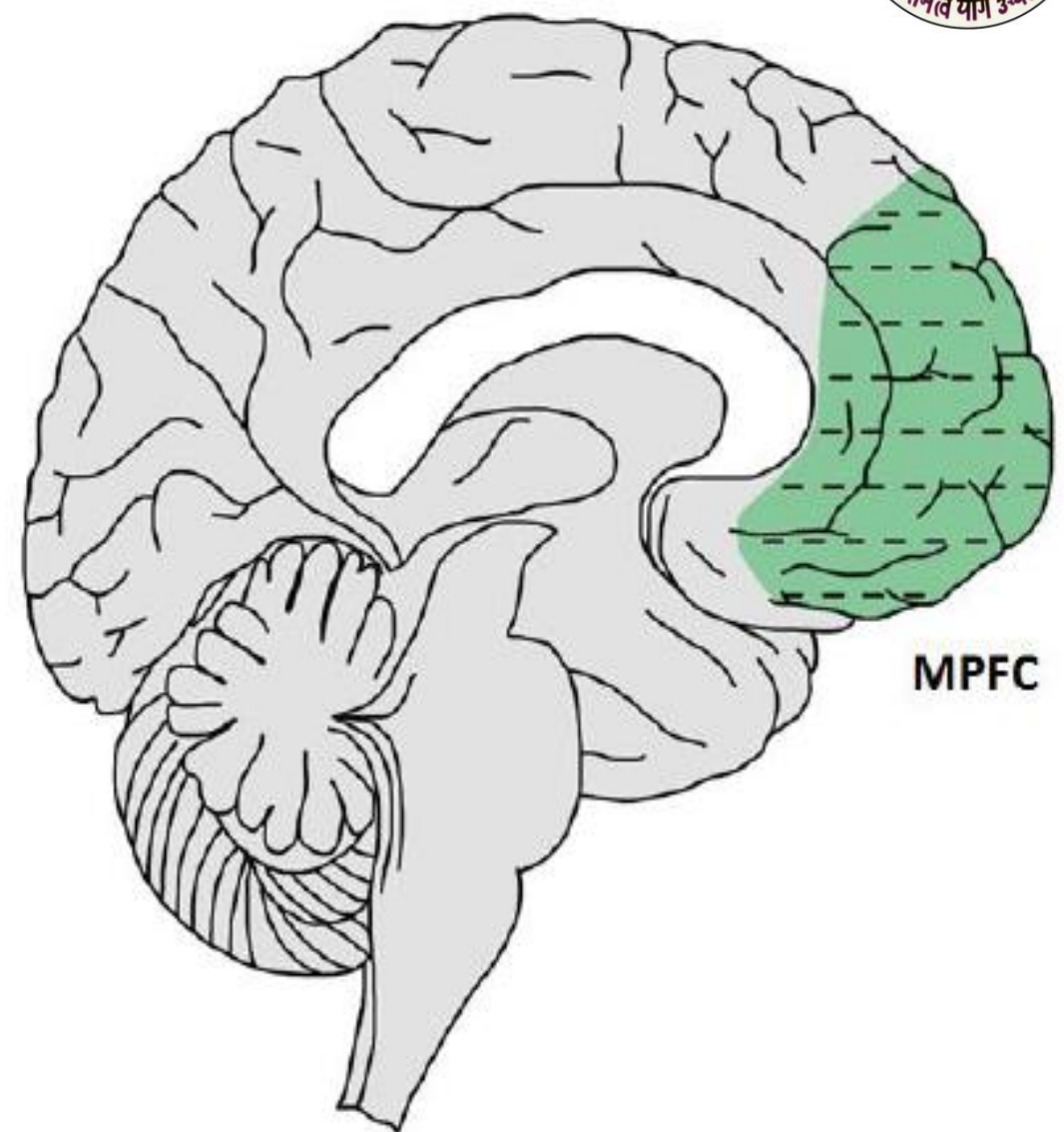
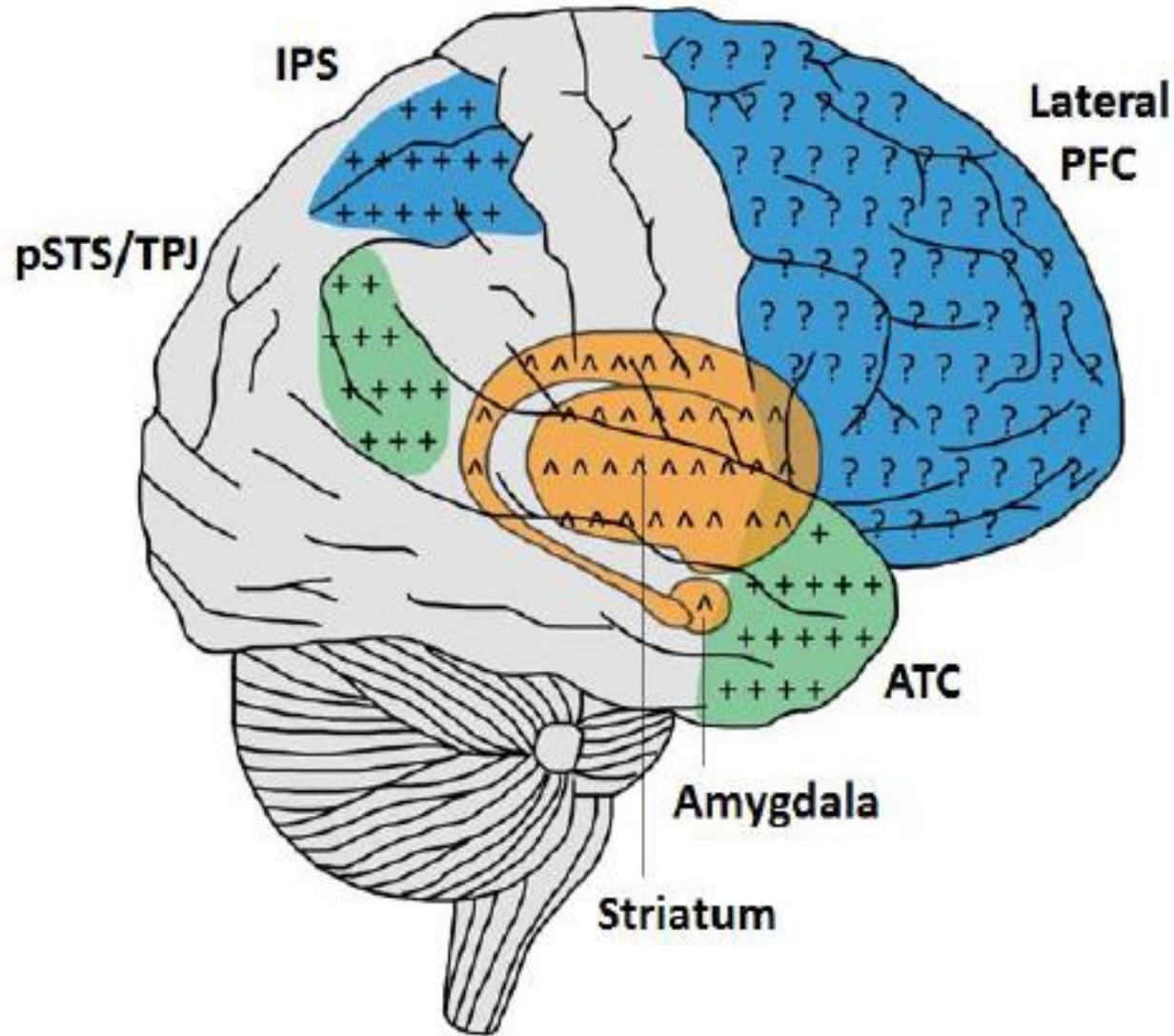


- **Improved coordination of affect and cognition: Improved emotion regulation**, facilitated by *increased connectivity of regions important in the processing of emotional and social information* (e.g., the amygdala, ventral striatum, orbitofrontal cortex, medial prefrontal cortex, and superior temporal sulcus) *and regions important in cognitive control processes* (e.g., the dorsolateral prefrontal cortex, anterior and posterior cingulate, and temporo-parietal cortices). - increase in self-reported impulse control through the mid-20s.

**COGNITIVE CONTROL
(EXECUTIVE) NETWORK**

**SOCIAL (MENTALISING)
NETWORK**

**SUBCORTICAL (EMOTION
AND REWARD) NETWORK**





So what?

Behavioural Equivalents



Cognitive control

- Prefrontal activity
- Impulsivity and risk taking



Need for reward

- Ventral striatum
- Sensation seeking and experimentation

Poor executive function is associated with increased risk-taking behaviour.



Adolescence: Social neuroscience

- Adolescents may generally attain less positive impact from stimuli with moderate to low incentive value
- Pursue new appetitive reinforcers through increase in risk taking/novelty seeking and via engaging in deviant behaviors such as drug use: mini-‘reward deficiency syndrome’

Adolescence: Social neuroscience



- Greater inclination to seek experiences that create high intensity feelings (Sex, drugs, loud music, horror and slasher movies and other high adrenaline activities)
- They have less appetitive value from a variety of stimuli relative to individuals of other ages

Adolescence: Social neuroscience - Peer influence



Proliferation of oxytocin receptors

Increase in the salience of peer relations

Increase in the salience of peers plays a role in encouraging risky behaviour

Adolescence: Social neuroscience - Peer influence



- *One of the hallmarks of adolescent risk-taking is that it is far more likely than that of adults to occur in groups.*
- The degree to which adolescent's peers use alcohol or drugs is one of the strongest predictor of that adolescent's own substance use ([Chassin et al., 2004](#)).
- Research on automobile accidents indicates that the presence of same-aged passengers in a car driven by an adolescent driver significantly increases the risk of a serious accident ([Simons-Morton, Lerner, & Springer, 2005](#)).

Adolescence: Social neuroscience - Peer influence



- Adolescents are more likely to be sexually active when their peers are ([DiBlasio & Benda, 1992](#); [East, Felice, & Morgan, 1993](#); [Udry, 1987](#)) and when they *believe* that their friends are sexually active, whether or not their friends actually are ([Babalola, 2004](#); [Brooks-Gunn & Furstenberg, 1989](#); [DiIorio et al., 2001](#); [Prinstein, Meade, & Cohen, 2003](#)).



Temperament as a Mediator

Internalizing pathway – Krueger et al.1998

- Distress expressed internally
- Low self esteem
- Depression and Anxiety
- Passivity/ Passive- aggressive
- Procrastination/ Avoidance
- Poor communication skills

Externalizing pathway – Krueger et al.1998, Chan et al 2008

- Distress expressed outwards
- Deviant behaviours
- ASPD, CD, ODD, ADHD
- Emotional instability
- High novelty seeking/ Low harm avoidance

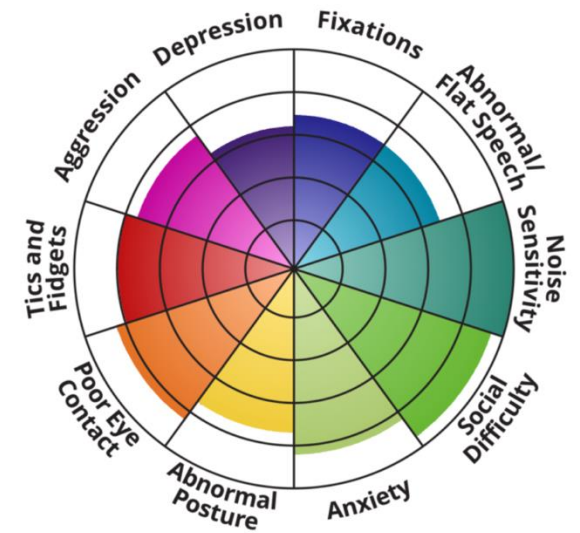
These 2 are not mutually exclusive syndromes.

Temperament as a Mediator

Broad Autistic Phenotypic Spectrum

- Aloof
- Poor social skills
- Poor emotional recognition
- Splinter skills
- Stereotypic behaviours

Autism Spectrum Test



Adolescence



Adolescent-typical features may have been adaptive evolutionarily in helping adolescents to disperse from the natal unit and to negotiate with success the developmental transition from dependence to independence

Nurture



Nurture

LEVON HELM
DIRT FARMER



*Feelin' good, feelin'
good
All the money in the
world spent on feelin'
good*

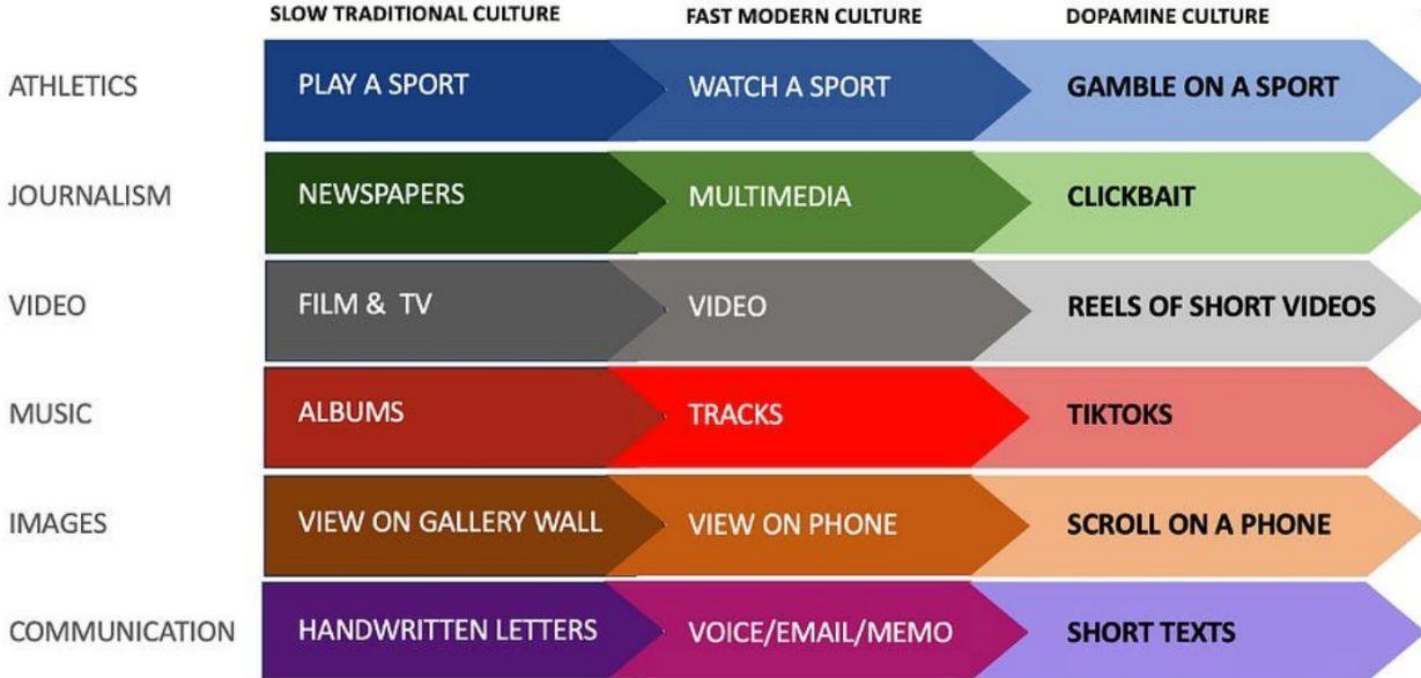


What's happening in the current era?

*Era of Abundance & Infinite
Access*

*“Compulsive
Overconsumption”*

The Rise of Dopamine Culture



WHAT IS NEXT
??????





Contemporary Socio-cultural Milieu

.....Pain in any form is (now) considered dangerous, not just because it hurts but also because it's thought to kindle the brain for future pain by leaving a neurological wound that never heals.....

- (Nettis and Pariante, 2020; Murphy et al., 2021; Troubat et al., 2021)

So what are
we doing?

"The smartphone is the modern-day
hypodermic needle, delivering

digital dopamine

24/7 for a wired generation."

ANNA LEMBKE

Stanford University addiction researcher



dopamine

Finding
Balance in
the Age of
Indulgence

nation

ANNA LEMBKE, MD



- *It's pretty exhausting avoiding oneself all the time.*
- *The reason we're all so miserable may be because we're working so hard to avoid being miserable.*

Specific problems of current generation



- Highly competitive environment
- Everything in abundance
- Self victimization
- Effects of technology, social media and virtual life
- Lower distress tolerance



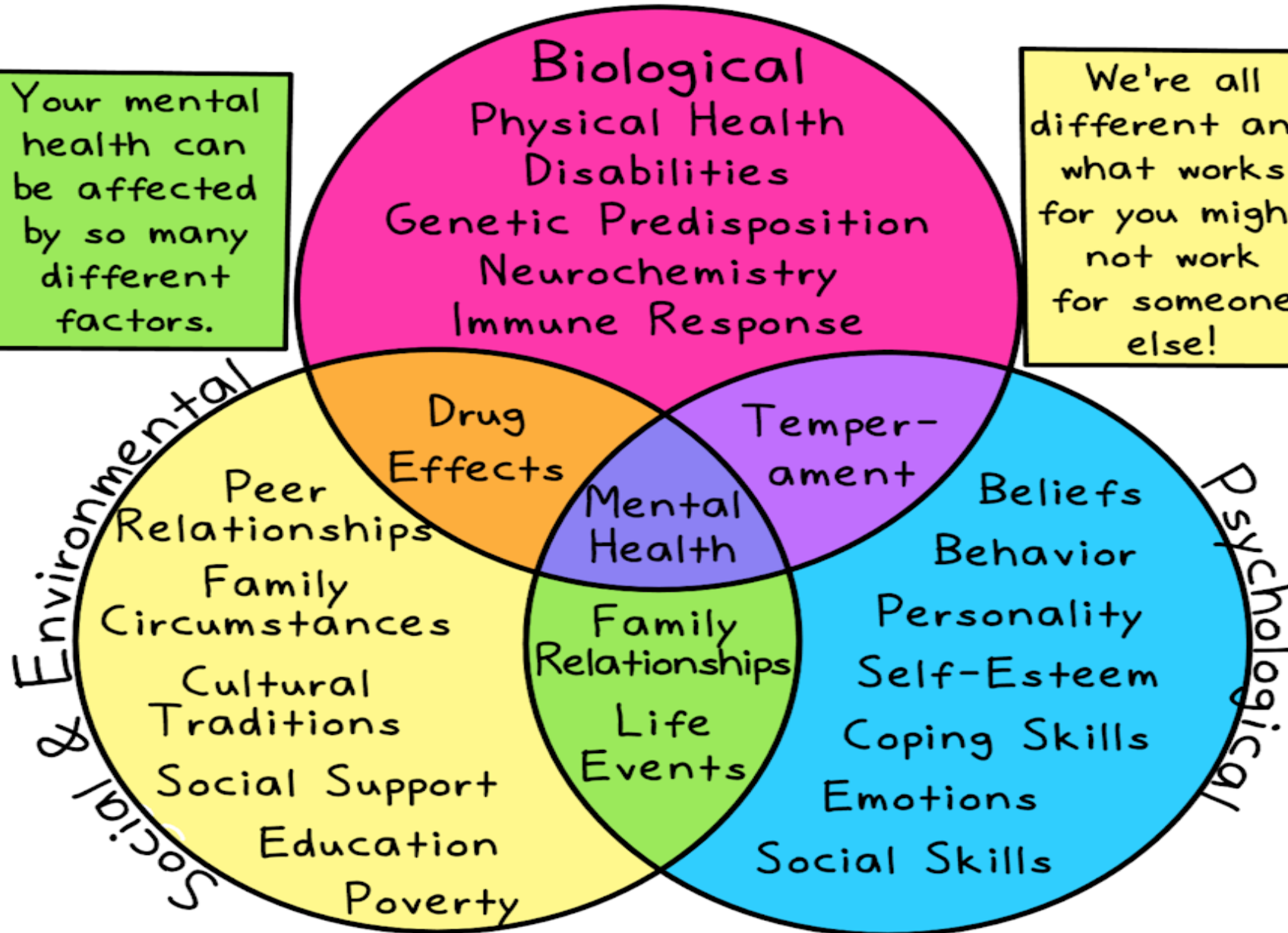
So how mental health issues develop in young people?

Biopsychosocial Model for Mental Health

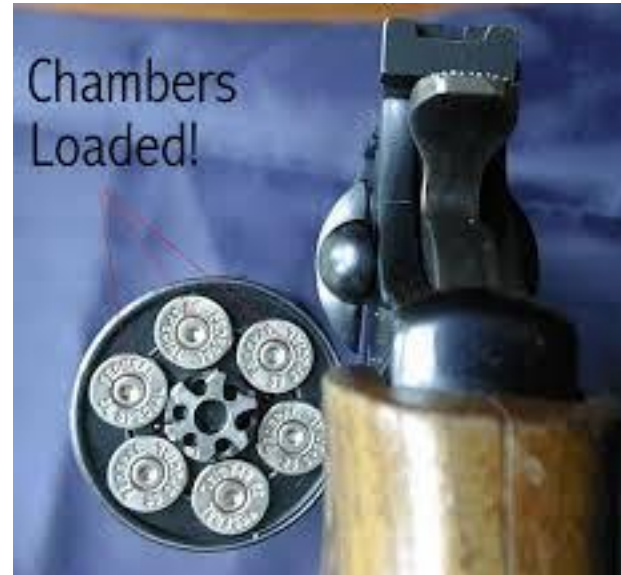


Your mental health can be affected by so many different factors.

We're all different and what works for you might not work for someone else!



Understanding Adolescent risky behaviour



Biological
Vulnerabilities

Environmental/
Psychosocial
Vulnerabilities



Expression of the Adolescent risky behaviour



Understanding the Evolution



Consequences

- Complications of high-risk behaviour

Psychopathology

- Addictive behaviours
- Other high-risk behaviours
- Comorbidity

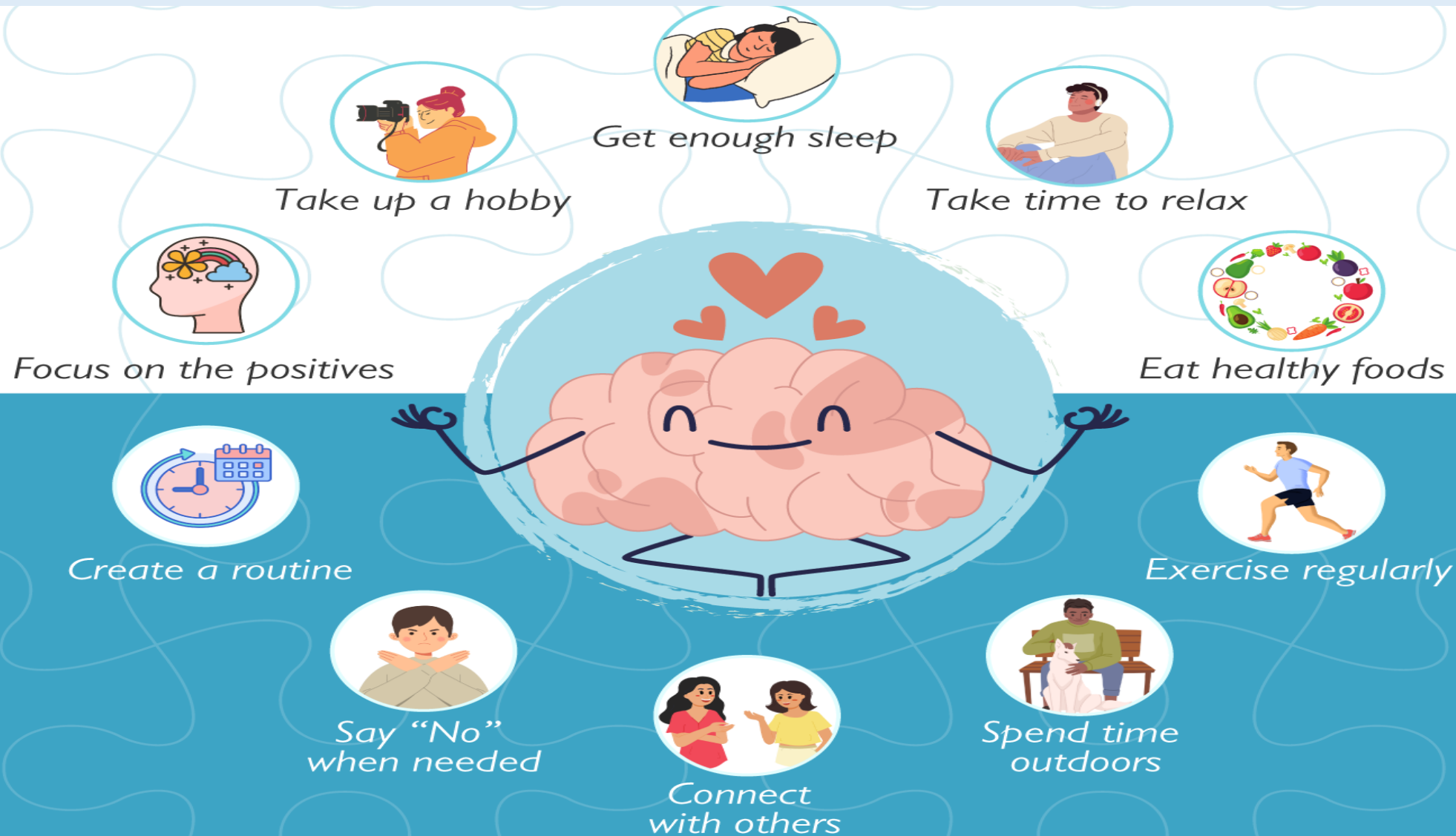
Proximal Antecedents

- Bio-Psycho-Social events
- Infinite Access

Vulnerability

- Family history +ve
- Developmental stressors
- Temperament

Nurture Informal Mental Health Care



Complexity: Optimism Vs Pessimism



Optimism

- Better understanding of the process of adolescence through neurobehavioural Research

Pessimism

- Changing demands of the environment
- Poor interdisciplinary coordination

*The Stakes
are high, and
problems are*

.....



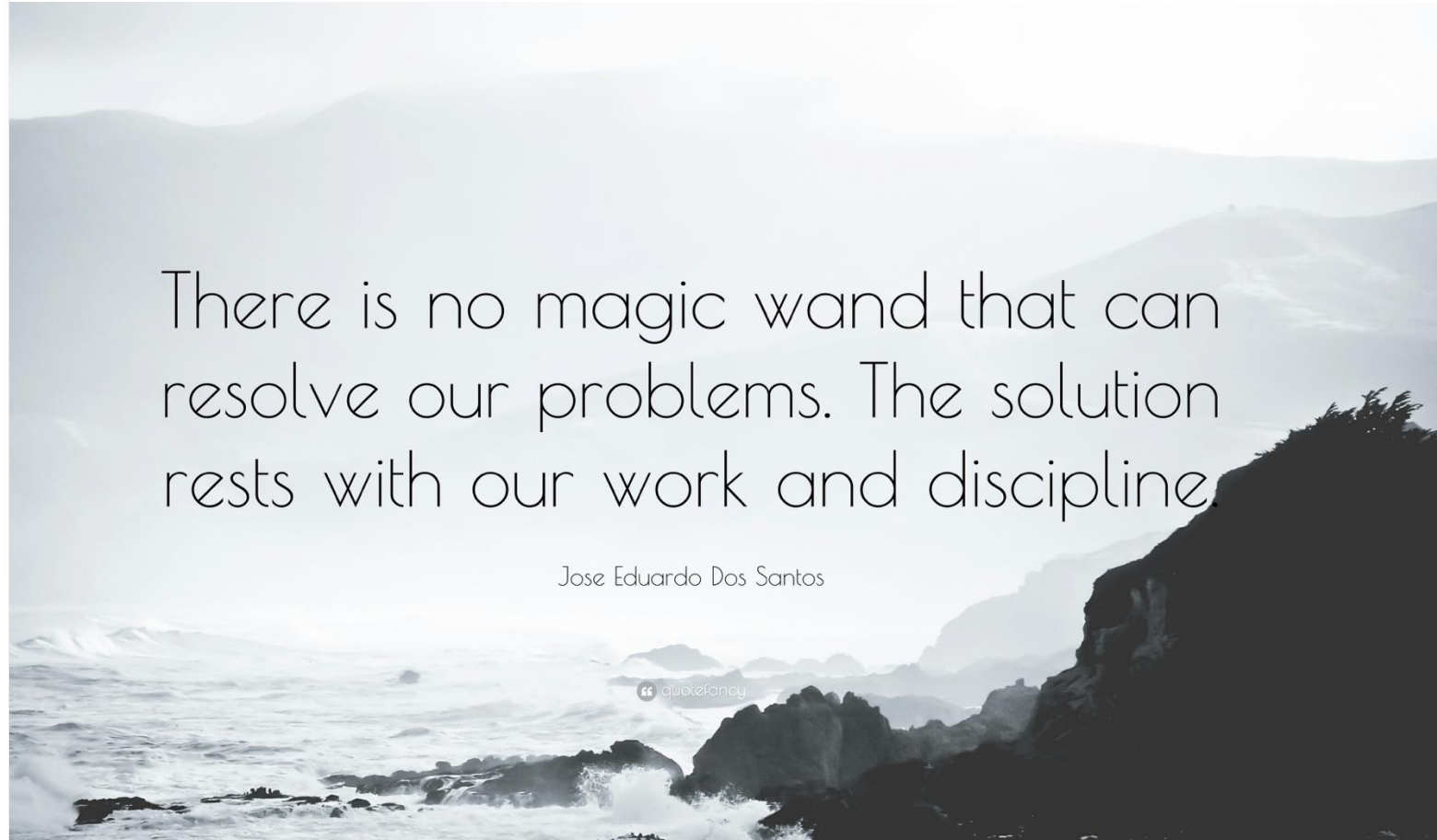
NO MAGIC WAND



There is no magic wand that can resolve our problems. The solution rests with our work and discipline.

Jose Eduardo Dos Santos

quote fancy



opportunities

—★—
DON'T HAPPEN

YOU

create them



Section II: Opportunities in working with them

Ground rules:

1. No single group can deliver it
2. No magic wand
3. Be willing to go beyond your traditional approaches

Role of Mental health Professionals



.....mental health professionals have the scientific, ethical, and moral responsibility to indicate the direction to all social, political, and other health care bodies involved in the process of meeting mental health needs during youth years.....

Understanding intervention aspects



Consequences

- Complications of high-risk behaviour

Psychopathology

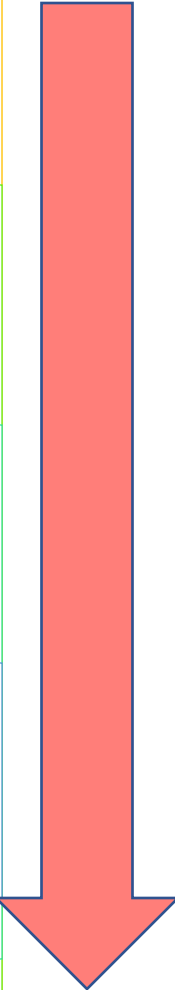
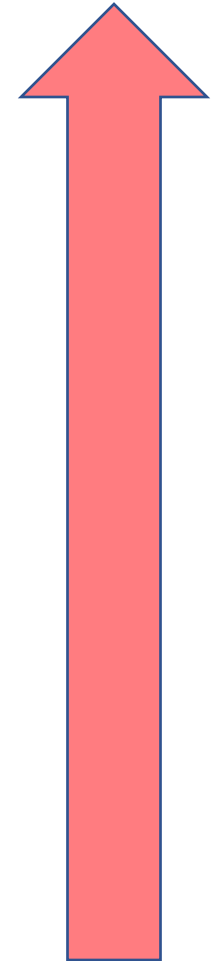
- Addictive behaviours
- Other high-risk behaviours
- Comorbidity

Proximal Antecedents

- Bio-Psycho-Social events
- Infinite access

Vulnerability

- Family history +ve
- Developmental stressors
- Temperament

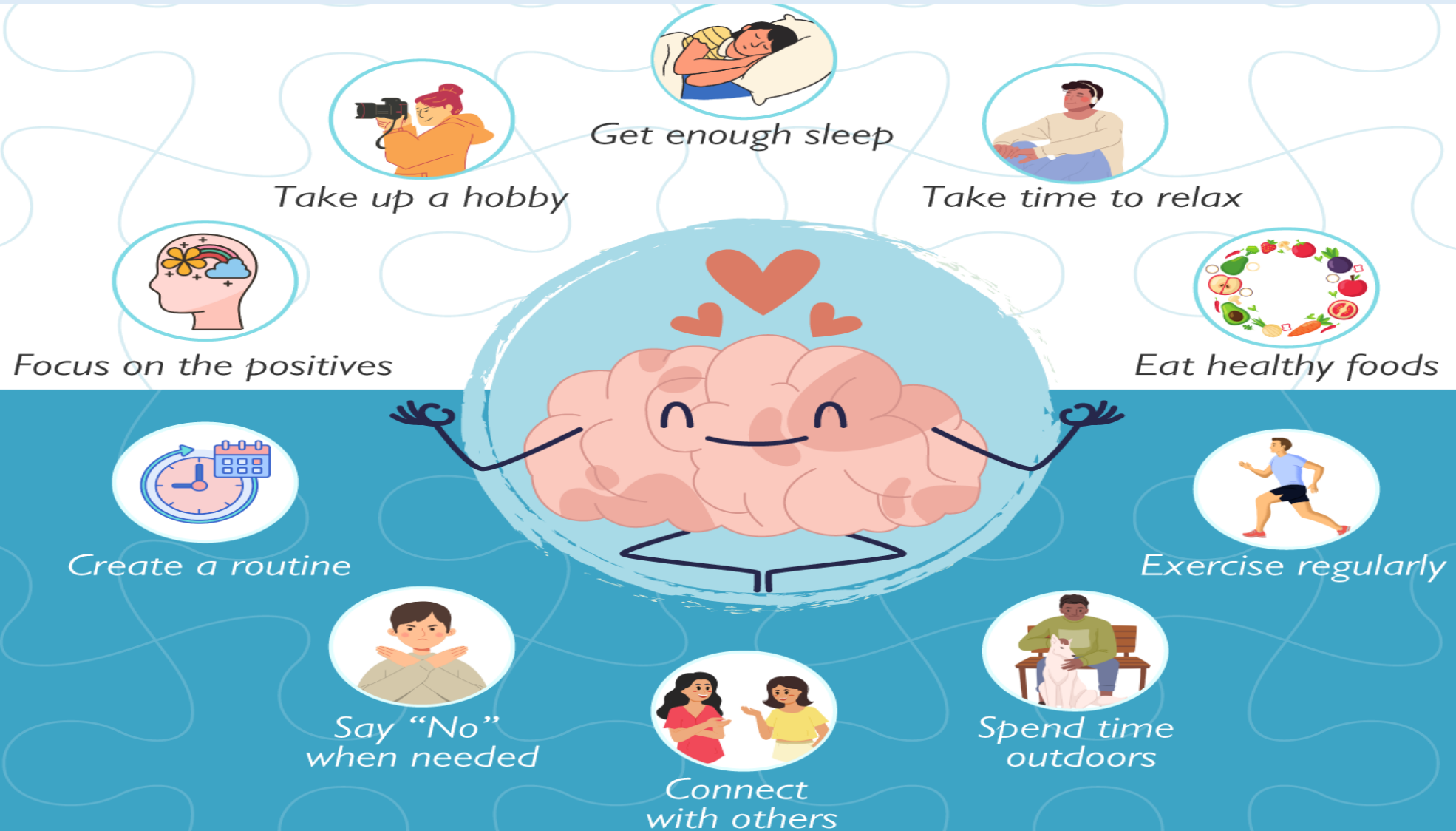


Opportunities



Early identification and treating the temperamental/
concurrent illness

Absence of Informal mental Health care



Formal mental Health care





*Combination of
pharmacological and
psychosocial
interventions - essential*





Transdiagnostic Interventions for externalizing spectrum disorders

- **Nutritional interventions:** n-3 polyunsaturated fatty acids, micronutrient supplementation such as iron, zinc and selenium
- **Stimulants**
- **Cognitive retraining**
- **Brain stimulation interventions:** rTMS, tDCS
- **CBT** - training in time management, prioritization, organization, problem solving, motivation, and emotional regulation.
- **Yoga, mindfulness, and meditation-based interventions**

Interventions for Internalizing spectrum disorders



- Antidepressants
- CBT
- Yoga
- Mindfulness, and meditation-based interventions

Interventions for Broad Autistic spectrum disorders

One of the toughest group to intervene

1. Treat the comorbidity
2. Breaking down tasks
3. Finding rewards for the to do contingency management



Generic Prevention strategies



- Interventions appropriate to developmental stages
- Targets skill building which is not specific to Addiction/ disorders
- Needs to be a multipronged strategy
- Involving all the stakeholders (family members, teacher, Peer group)
- Enhancement of protective factors

Tough to evaluate the effectiveness

Opportunities



Life course approach need to be adapted



UNODC

United Nations Office on Drugs and Crime



World Health Organization



International Standards on Drug Use Prevention

Second updated edition



Drug prevention interventions and policies

A. Infancy and Early Childhood

- Perinatal and Infancy visits
- Interventions Targeting Pregnant women
- Early childhood education supporting social and cognitive development

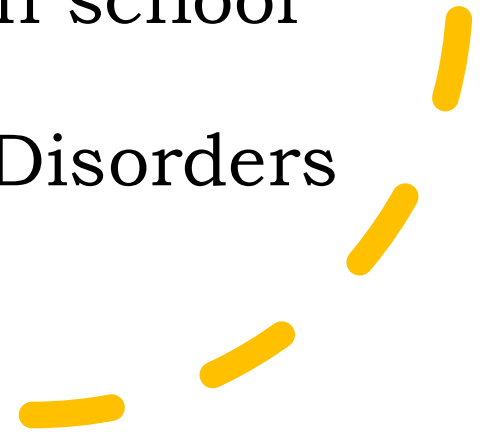




Drug prevention interventions and policies

B. Middle childhood

- Parenting skill programme
- Personal and social skills education
- Classroom environment improvement programmes
- Policies to retain children in school
- Addressing Mental Health Disorders





Drug prevention interventions and policies

C. Early Adolescence

- Prevention education based on social competence and influence
- School policies on substance use
- School-wide programmes to enhance school attachment
- Addressing individual psychological vulnerabilities
- Mentoring





Drug prevention interventions and policies

D. Adolescence and adulthood

- Brief interventions
- Workplace prevention programmes
- Tobacco & Alcohol policies
- Community-based multi-component initiatives
- Media campaigns
- Entertainment venues



Opportunities: Transdiagnostic Therapies



Early identification and treatment of transdiagnostic targets

Transdiagnostic Targets

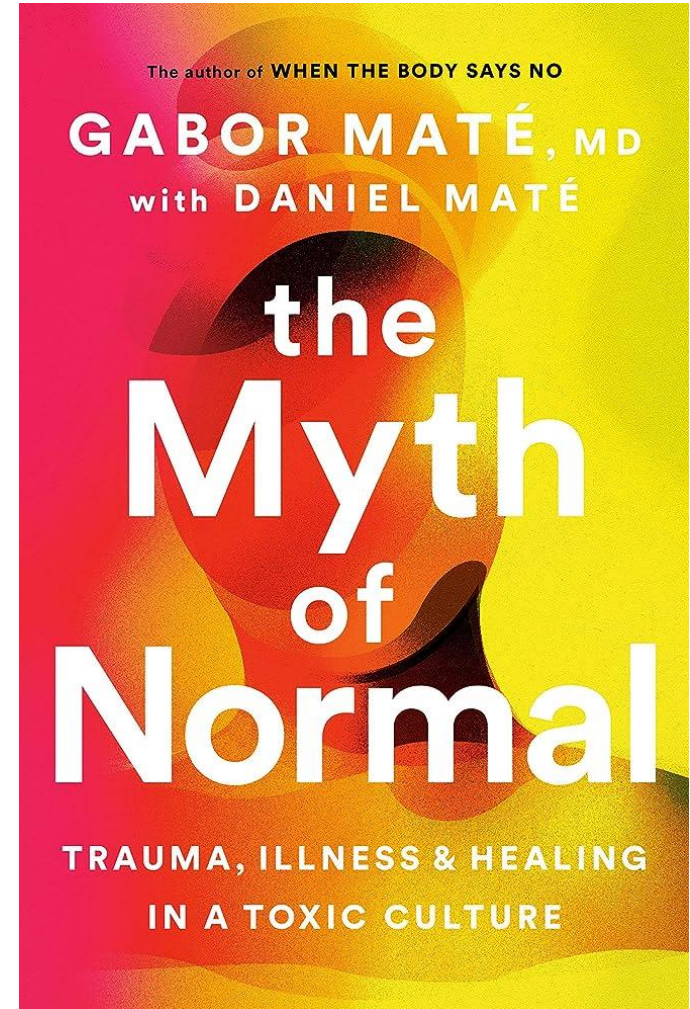
- Procrastination
- Perfectionism
- Social Anxiety
- Self esteem
- Distress intolerance
- Body image issues
- Interpersonal Sensitivity
- Self compassion



Opportunities



Handle developmental stressors
appropriately





Developmental stressors

- **Adverse Childhood Experiences**

- Physical/emotional/sexual abuses
- Victims /exposure to violence/
- Poverty/ Malnourishment
- Exposure to toxic chemicals/ drugs
- Loss of significant other
- Peer deviancy





Interventions to developmental stressors

Trauma
focused
therapies

Life skills
training

Mentoring for
the high-risk
kids

Assertiveness/
problem
solving skills

Money
management
skills

Peer group-
based
interventions

Opportunities



Relook into the
opportunities of Peer
influence



Peer Influence

Adolescents are particularly susceptible to peer influence for several reasons.

1. **They look to their peers to understand social norms.** They align their behaviour over time with the norms of their group or the group they want to belong to
2. They may find it particularly **rewarding to gain social status**, a potential outcome of aligning with peers.
3. They tend to be **hypersensitive to the negative effects of social exclusion**. They may conform to a group norm to avoid this unpleasant social outcome.





AACAP tips for the younger ones

Stay
away

Stay away from peers who pressure you to do things that seem wrong or dangerous.

Learn

Learn how to say "no," and practice how to avoid or get out of situations which feel unsafe or uncomfortable.

Spent

Spend time with other kids who resist peer pressure. It helps to have at least one friend who is also willing to say "no."

Talk

If you have problems with peer pressure, talk to a grown up you trust, like a parent, teacher, or school counselor.



AACAP tips for the Parents

- **Encourage open and honest communication.** Let kids know they can come to you if they're feeling pressure to do things that seem wrong or risky.
- Teach your child **to be assertive and to resist** getting involved in dangerous or inappropriate situations or activities.
- **Get to know your child's friends.** If issues or problems arise, share your concerns with their parents.
- Communicate openly about **safe internet and social media use.**
- **Help your child develop self-confidence.** Kids who feel good about themselves are less vulnerable to peer pressure.
- **Develop backup plans** to help kids get out of uncomfortable or dangerous situations.

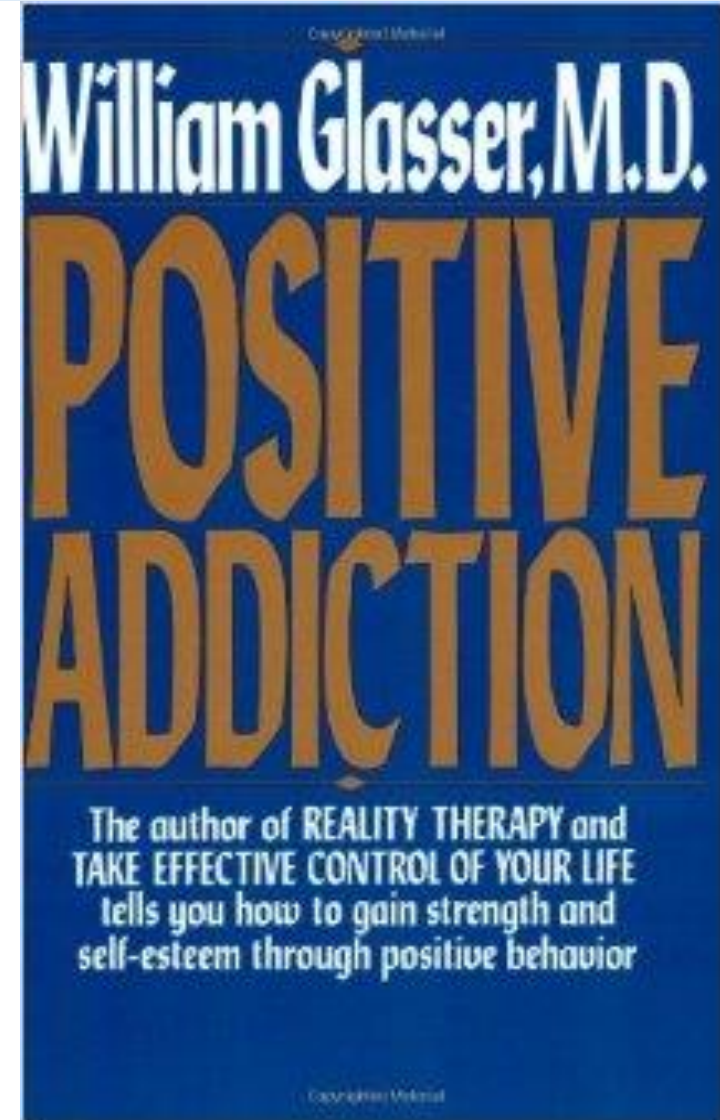
Encourage Skill building through group risk taking



Positive Addiction / Alternative behaviour



- William Glasser (1965) believed there are other addictive activities that give us strength
- Encourage your client to have a positive addiction which he/ she is passionate about

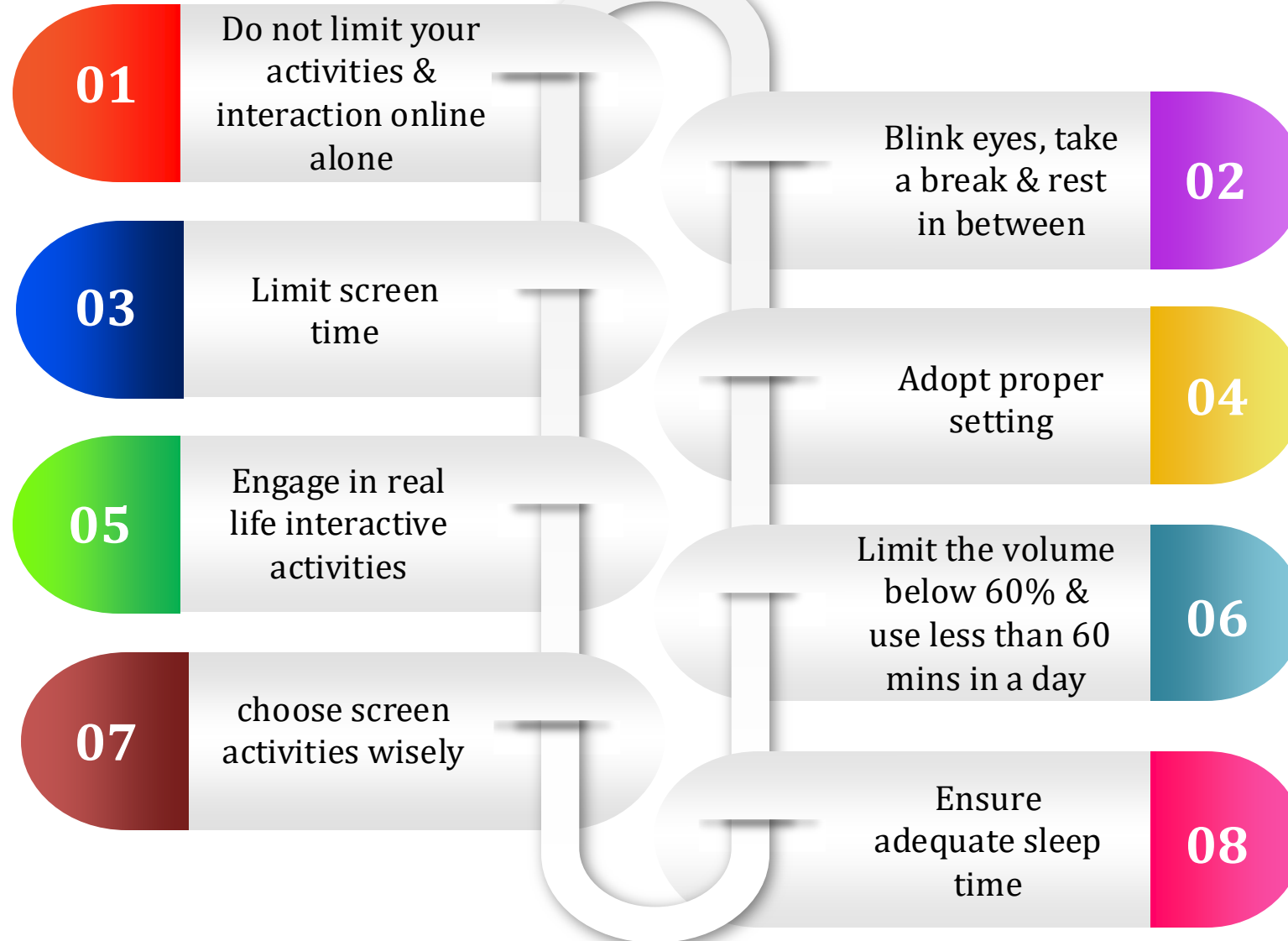


Opportunities

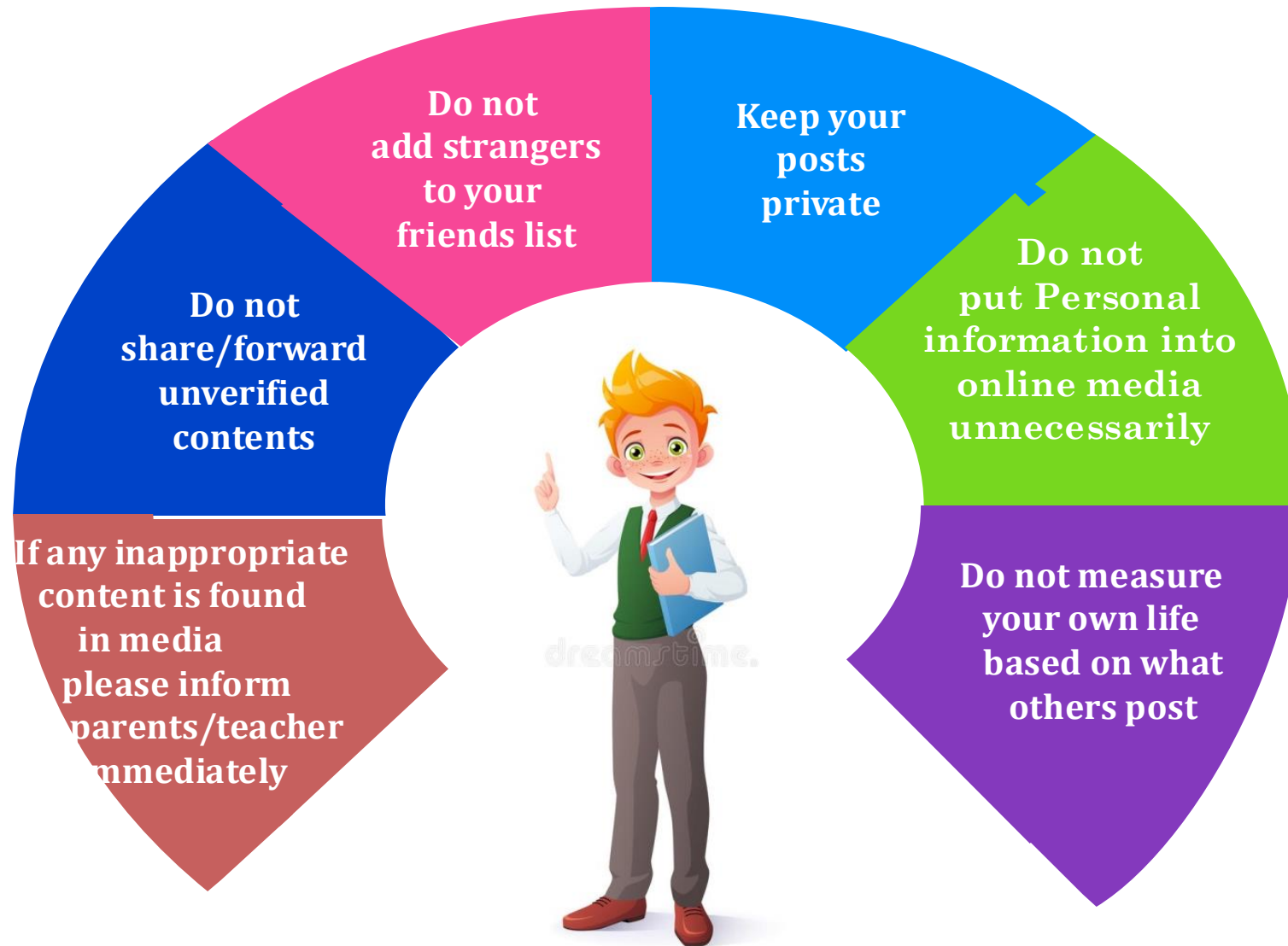


Teach values early

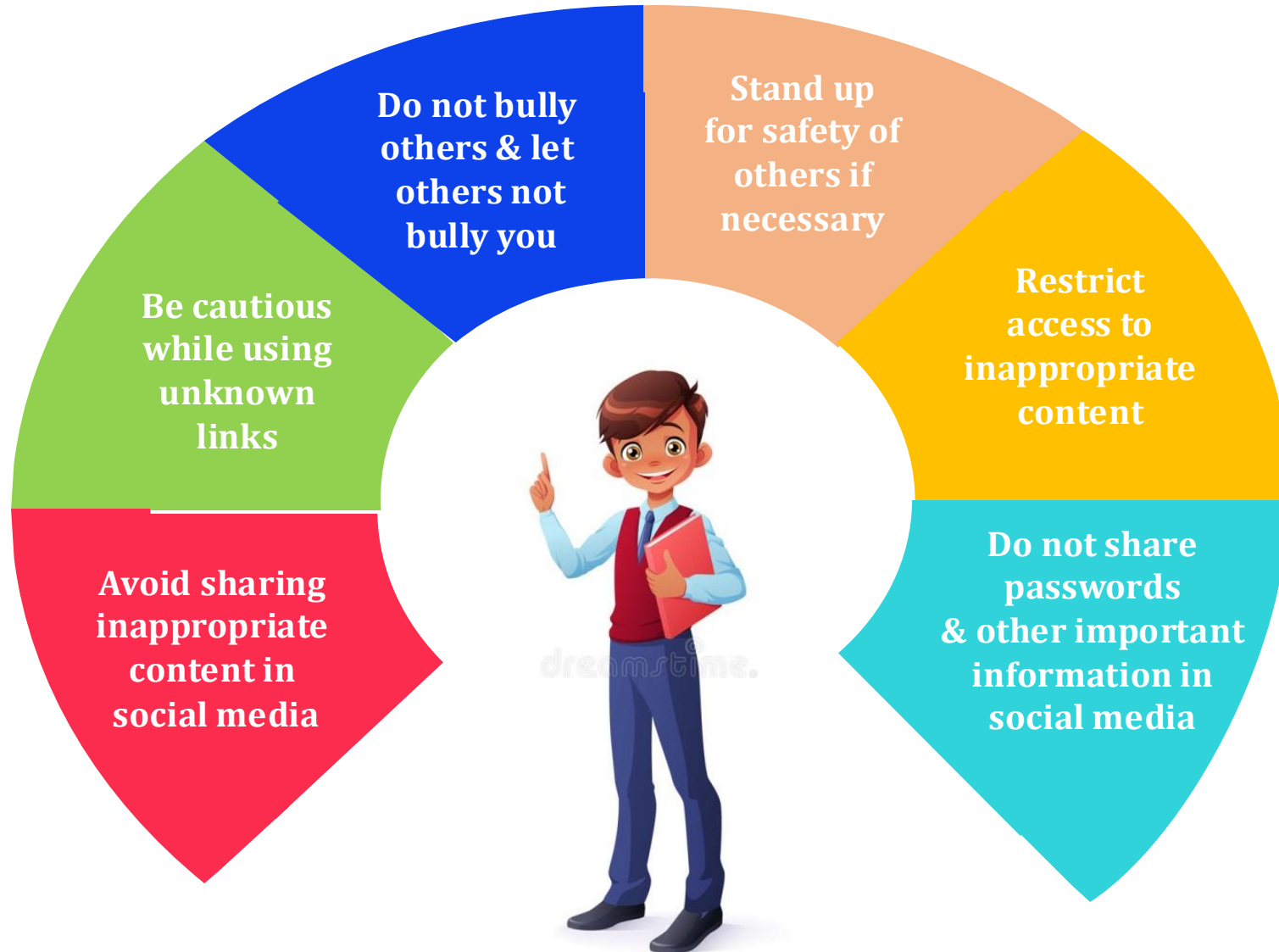
Healthy ways to use Gadgets



Healthy ways to use Internet



Cont.....



Sleep Hygiene Tips



Maintain a regular sleep routine



Avoid daytime naps if possible



Don't stay in bed awake for more than 15-20 minutes



Avoid stimulating substances that interfere with sleep



Bed is for sleeping only and not for any other activities



Exercise regularly

Cont...



Have a comfortable pre-bedtime routine



Making sure that the sleep environment is pleasant



No clock-watching



Eat appropriately



Keep daytime routine the same



Avoid electronic gadgets as they may stimulate you before bed

Opportunities



Work with Parents

.....“Welcome to parenthood. Feeling like you don’t know what you’re doing, or feeling like you’re failing, is part of the package. The important thing is whether or not you’re trying.”.....



Parenting & Family factors

Family History of Substance Abuse/ Mental Illness (Chasin 2002, King and Chasin 2007, Maalouf, 2010)

Parent-Parent interaction (Amato, 2000, Hayathbakhsh et al, 2006, Elite, 2006)

Single parent family/ Parental neglect

Parent-Child interaction (Brook et al 1990 & 2009, King and Chasin 2004)

Interaction with siblings

Socio economic & cultural factors

Poor support system

Child headed house and situations - (Meghdapour et al, 2012)

Aggression in family/ neighbourhood

Adolescent employment (Kaestner et al, 2013)



Family therapy



Defining the
problem



Handling
expectations



Handling
Interpersonal issues



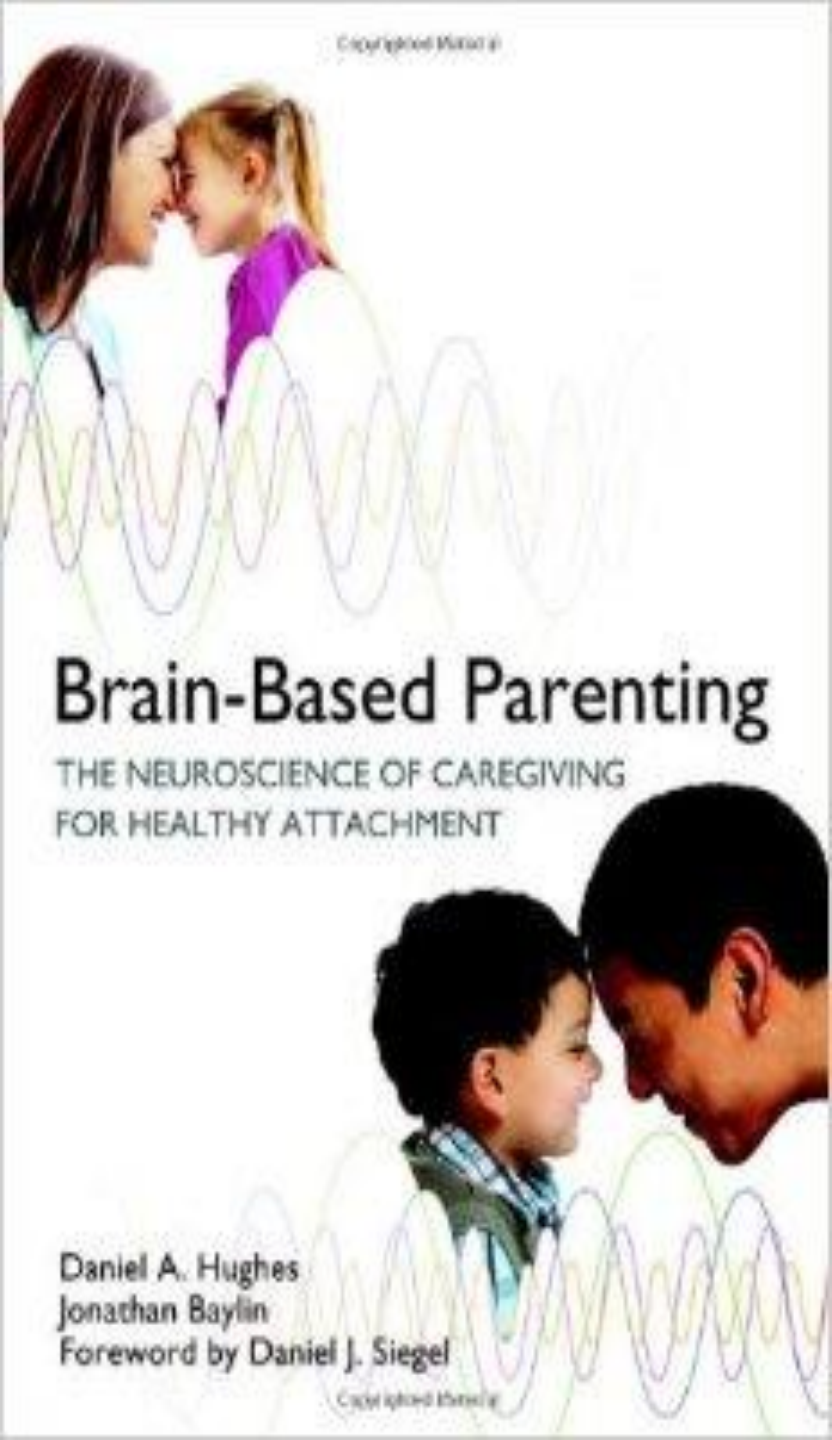
Finding surrogate
therapists



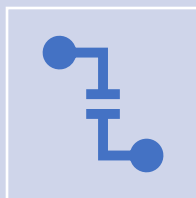
Handling lapses and
relapses



Commitment to the
treatment process



Communicate early and often:
Teen Brain Wants to “Connect”

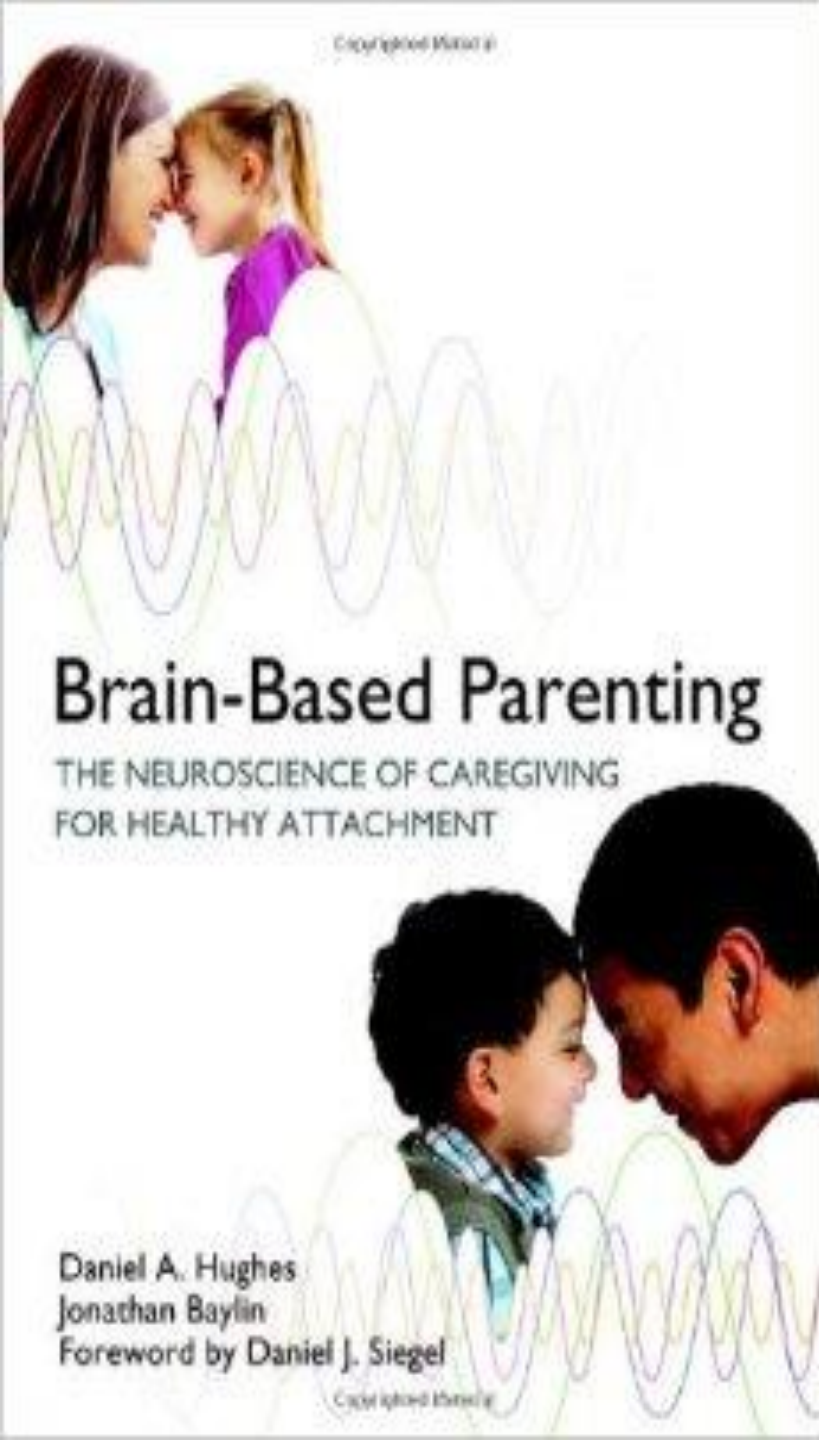


Model desired behaviors: Neural
circuits that are reinforced
become hard-wired



Function as your child’s surrogate
frontal cortex: You are the CEO(s)
Share Control when possible; take
control when necessary





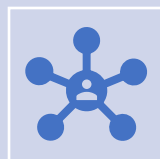
Monitor sleep, stress, and behavior patterns: The teen brain is vulnerable



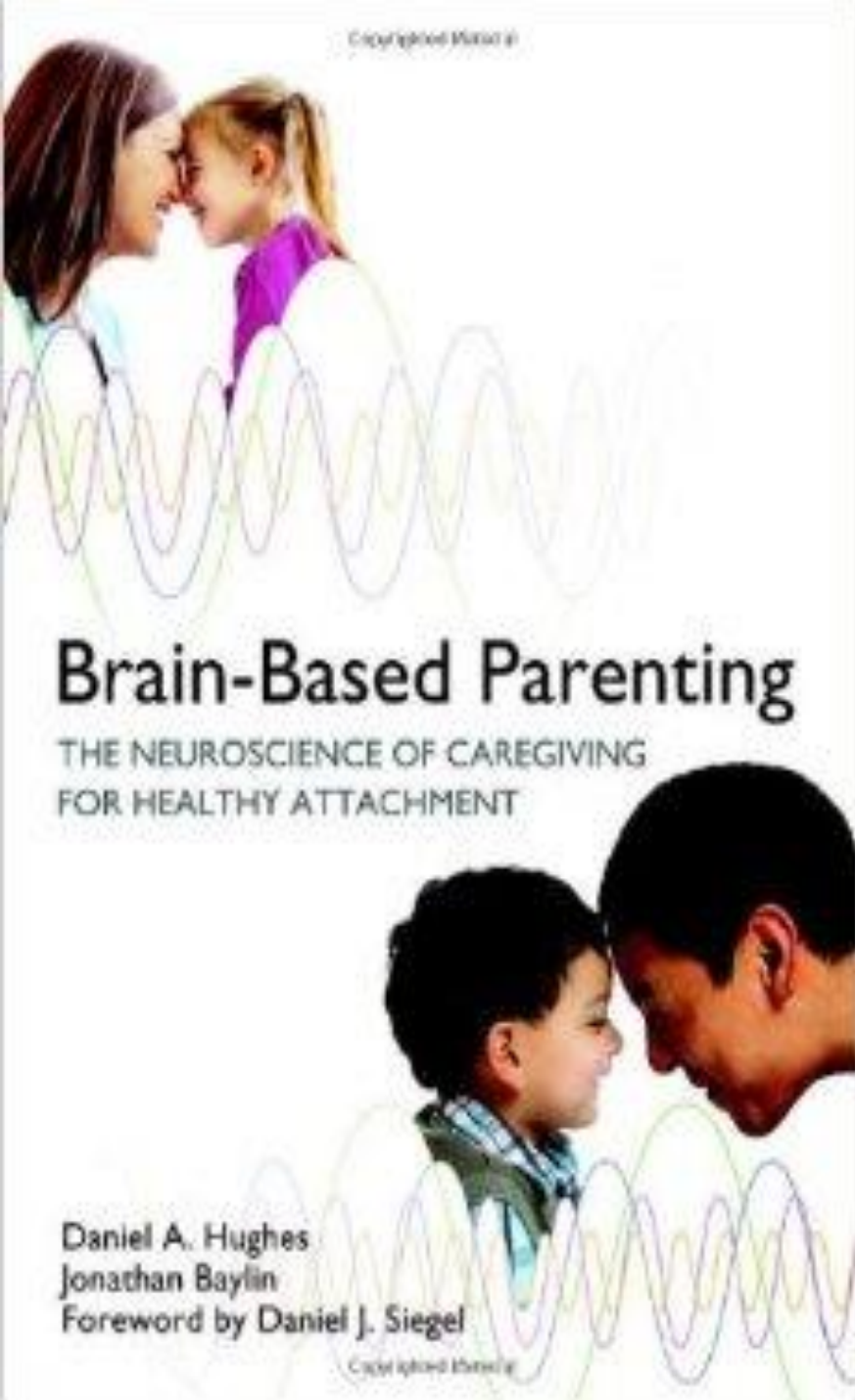
Risk taking is necessary and normal; encourage positive risk taking



Role play/discuss risky situations. Reverse roles: The Teen brain needs rehearsal.



Don't go it alone: Build networks...Social connectedness = happiness



Know

Know where your kids are, whom they are with, and what they are doing

Return

Return to the Basics: Family Meals, Spirituality, Nutrition, Exercise, Outdoors

Learn

Learn together and Play together: Ex. Ping Pong..... Be Tech Savvy and teach Teens healthy tech habits

Community based Intervention



Community Involvement



Caring neighborhood and communities	involvement with neighbors. If the neighborhood a child lives in is dangerous, you can turn to support from other communities where the child is a participant; such as religious organizations; cultural groups; or special interest groups such as sport or performing arts clubs.
Community that values youth	Youth benefit from knowing that a community supports the health and well-being of young people. When parents and other adults are active in a community's youth activities, it shows that they value youth.
Youth gives service to others	Encourage child to contribute to other people. Giving an hour or two each week to help out with a project contributes to personal satisfaction and a sense of community membership.
Creative activities	Regular involvement in artistic activities, such as art, music, theater, etc., can help your child acquire skills and can encourage them to use their free time in positive ways.
Sports and Youth programs	Regular involvement in organized group activities that are supervised by adults promote asset-building
Religious community	If consistent with your values, promote your child's participation



ON HELM
T FARMER

Red, yellow, black or tan

Makes no difference: a man's a man

They oughta live together now if they could

Then the whole wide world would be feelin'

good

Feelin' good, feelin' good

All the money in the world spent on feelin' good

Feelin' good, feelin' good

All the money in the world spent on feelin' good

**“Connectedness is the
biohack”**



Conclusions

- **Adolescence: An Age of Potential**

Adolescents are capable, resilient, and adaptive—despite the risks, this phase is a period of remarkable growth and strength.

- **Opportunities for Positive Development**

This is a critical window for nurturing healthy habits, building coping skills, and fostering a sense of identity and purpose.



Conclusions

- **Empowering Adolescents Through Support**

With guidance, positive role models, and supportive environments, adolescents can channel risk-taking into growth, exploration, and learning.

- **Investing in Adolescents, Shaping the Future**

Harnessing their potential now can lead to healthier, more successful adults who contribute positively to society.

Takeaway Message



Let's transform the challenges of adolescence into pathways for resilience, empowerment, and lifelong well-being.

Thank you



Department of Psychiatry, NIMHANS, Bangalore ~ Estd. 1953~

arunnimhans05@gmail.com / **9008977699**