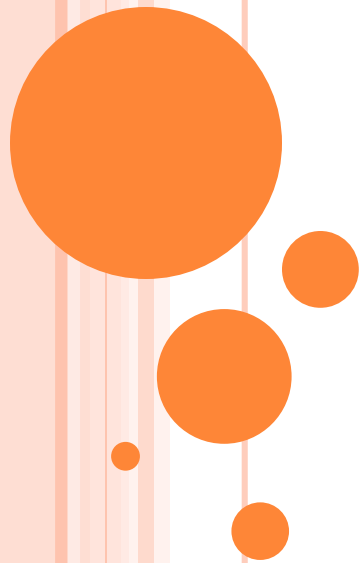


# THE ADOLESCENT BRAIN

## A WORK IN PROGRESS



# BRAIN FACTS

- Brain weighs approximately 3 pounds
- Brain has approximately 100 billion neurons and 1 trillion supporting cells
- Neurons grow and organize themselves into efficient systems that operate a lifetime
- Brain controls ALL activities
- Emotion and cognition are intertwined
- Neurons can re-route circuits
- Brain and environment involved in delicate duet
- Brain never stops adapting and changing



# CAVEATS

- New discoveries — research is still in its infancy
- Do **NOT** over-interpret or interpret too simplistically
- Research is **not** to the point that it can inform causal models
- Behavior is the result of complex interactions among individual, environment, genetics, situation, cultural expectations, and numerous other factors



# Brain is not fully developed until **mid twenties**

- The brain develops from back to front.
- Emotional area of the brain.



# Adolescent Brain

- Most adolescents should have a sign on their heads:

Caution: MIND  
UNDER  
CONSTRUCTION



# PRUNING

- Critical Phases: In utero, 0-3, 10-15
- These 3 critical phases are quickly followed by a process in which the **brain *prunes and organizes its neural pathways***
- ***LEARNING*** is a process of ***creating and strengthening frequently used synapses*** (brain discards unused synapses)
- Brain keeps only the **most efficient and “strong” synapses**
- Children/teens need to understand that they decide which **synapses flourish and which are pruned away** (Geidd, 1999)

# PRUNING

- “**USE IT OR LOSE IT**”— Reading, sports, music, video games, x-box, hanging out—whatever a child/teen is doing— **these are the neural synapses that will be retained**
- How children/teens spend their time is **CRUCIAL** to brain development since their activities guide the structure of the brain (Geidd, 1999)



# BRAIN CIRCUITRY

- **Myelin** is a layer of insulation that progressively insulates these supportive cells and is whitish in color
- **Myelin** makes white matter more efficient—just like insulation on electric wires—contributes to overall cognitive functioning (100x faster)
- **Myelin** affects the speed and quality of brain activity (Paus, et al., 1999)





# Adolescent and Sleep

- Need more sleep(8-10 hours)
- Most get 6-7 hours
- Biological clock, circadian rhythms, is set differently than adults.
- Take longer to shut down for sleep

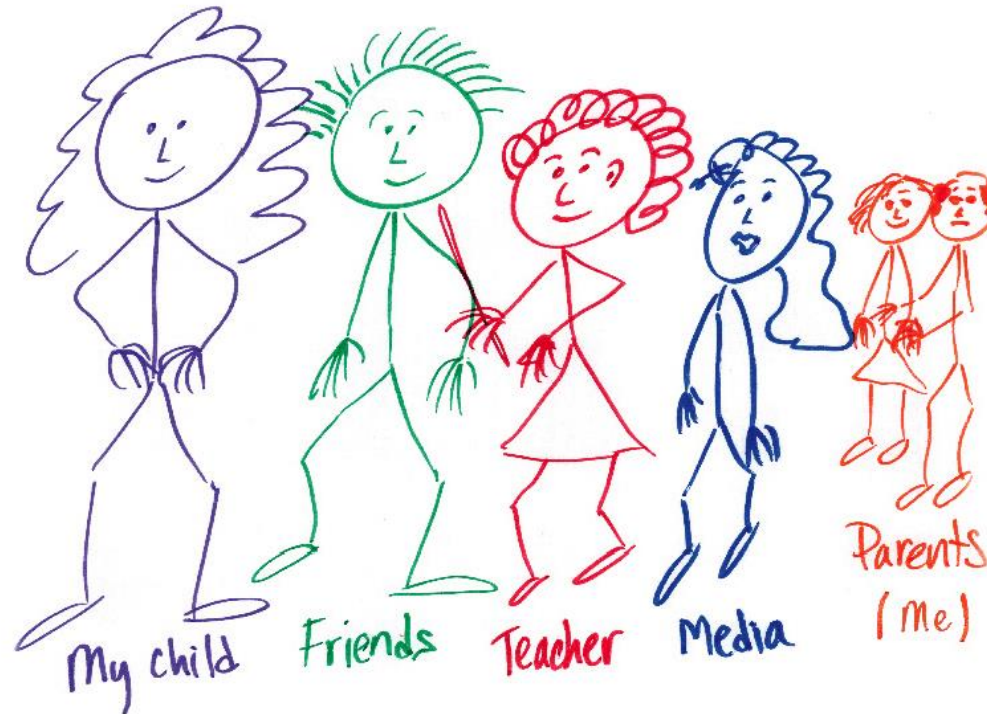
## Brain implication:

- Brain cells replenish during sleep
- Connections are strengthened Myelin coating white matter
- Effect on learning and memory



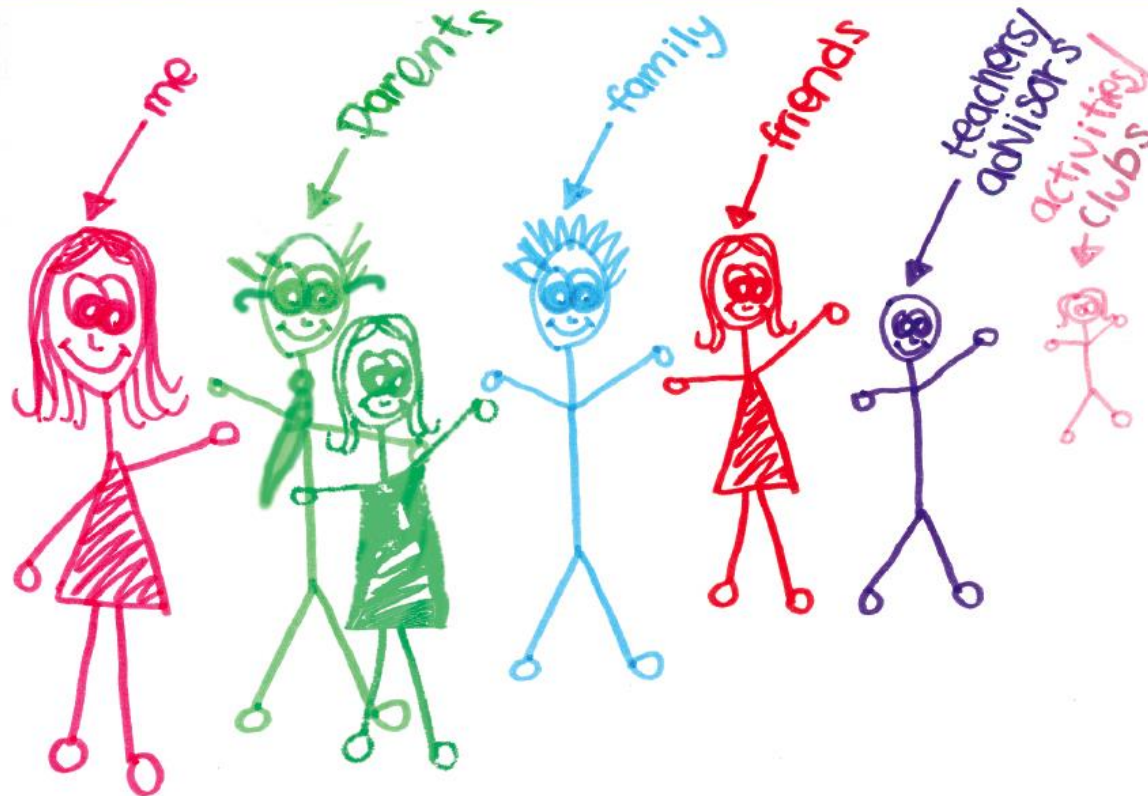
# Who Influences Teens

## Greatest Influences – Parents



# Who Influences Teens

## Greatest Influences – Teens



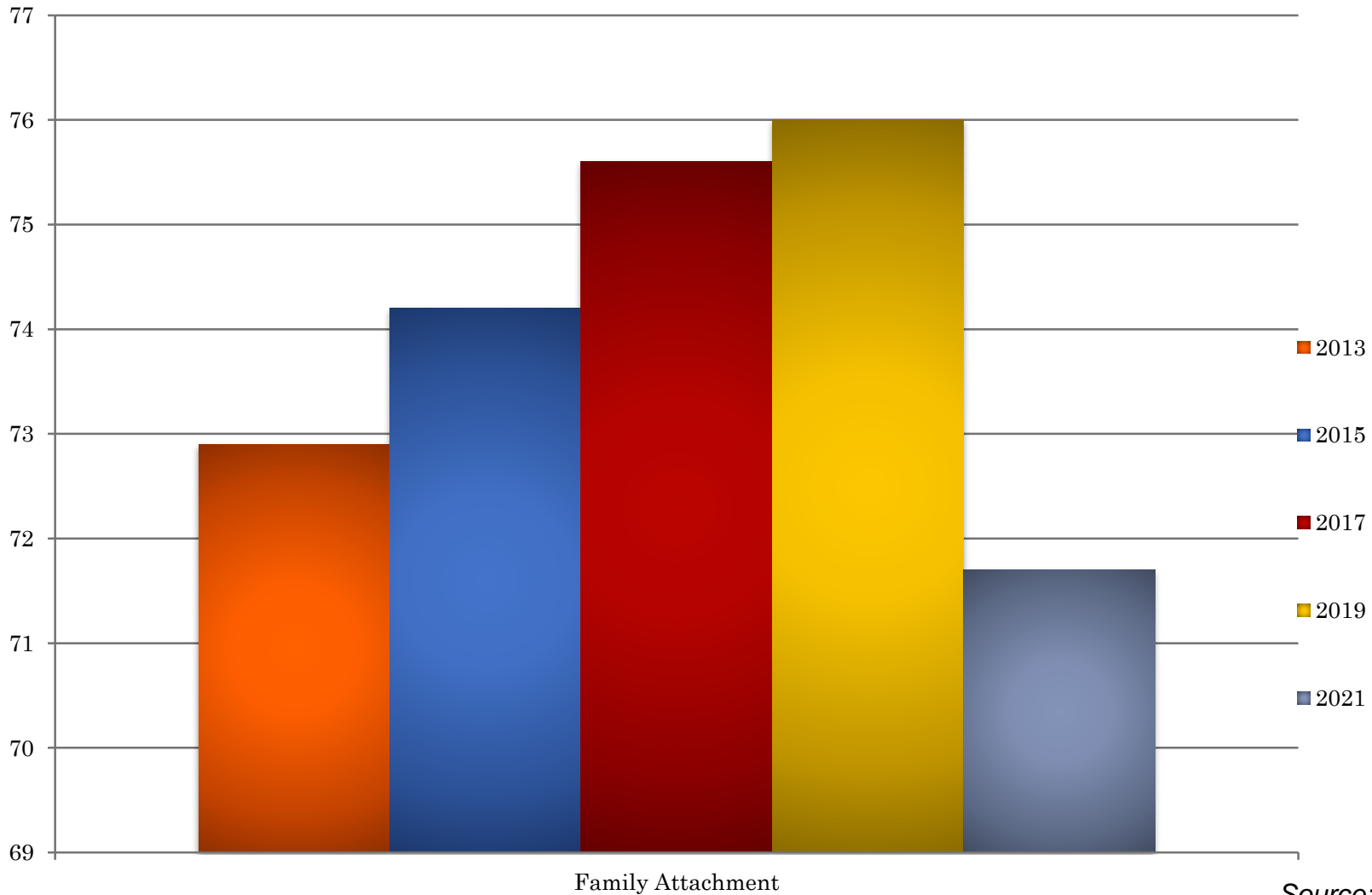
# What factors have the most influence on children?

Protective Factor: **Family Attachment** (Bonding)  
Most important factor for teens to feel validated was for their **PARENTS TO HUG** them.

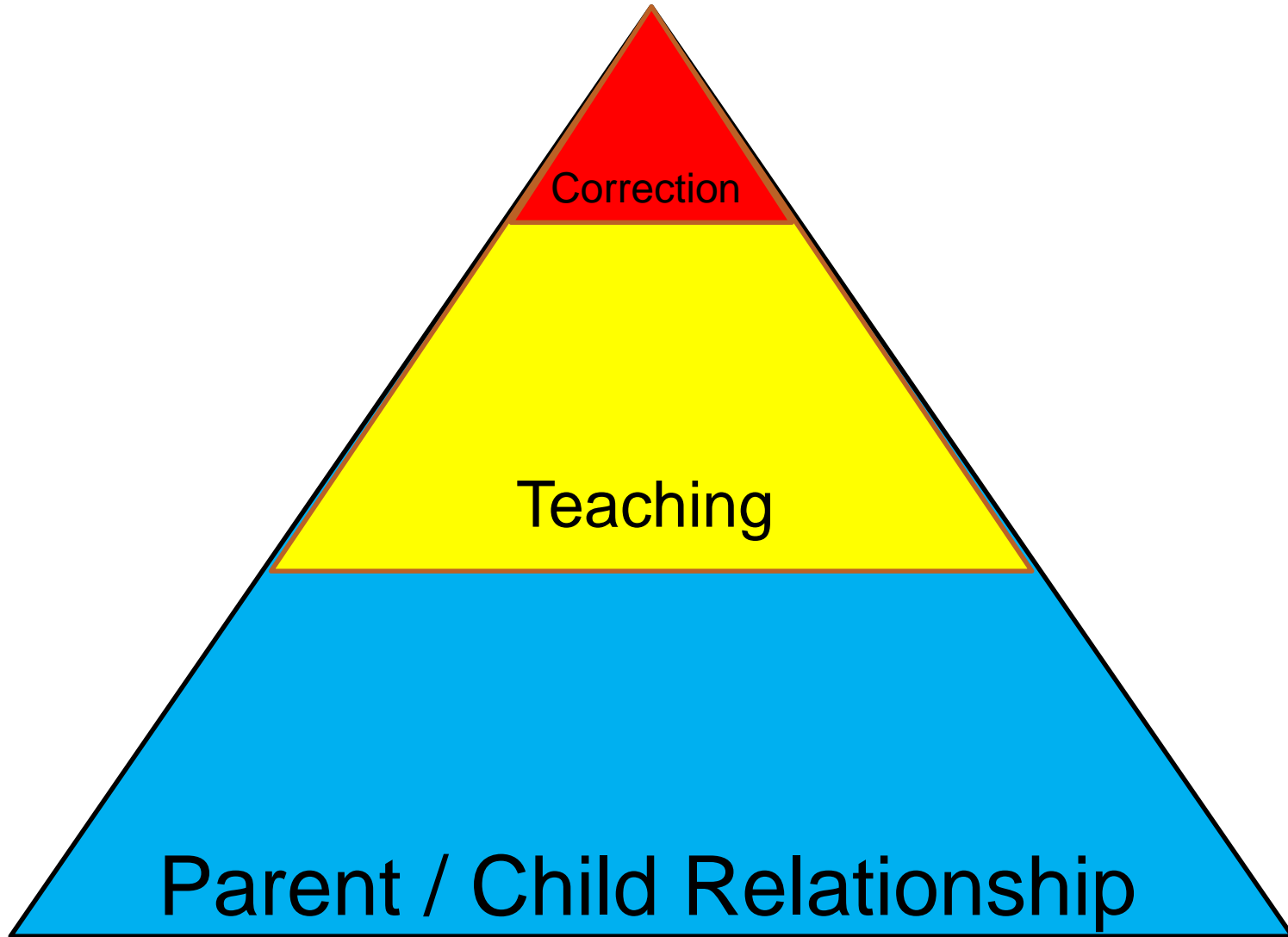
- Listening and talking was the second key to the psychological, physical, and spiritual growth of the child.
- Parents need to show the child love no matter what the child has done.



# Family Attachment



# Bonding



# Bonding Strategy

Make Time For 9:

- 9 meaningful touches
  - Fist bump, high five, hug, etc.
- 9 minutes that matter
  - 3 minutes after waking up
  - 3 minutes after coming home for the day
  - Last 3 minutes before going to bed
- 9 minutes of face-to-face talk time



# Teens in BRHD

- Most teens in our area are making good healthy choices.
- Most of these pre-teens and teens have clear goals and ways to attain these goals.
- Parents have been and continue to be the greatest influence in their decisions, and how to set and obtain these goals.





# SET BOUNDARIES

**Parents need to set clear rules and expectations.**

Boundaries are the rules and expectations that define what parents expect their children to do or not to do. Unclear rules and expectations leave kids vulnerable




# SET BOUNDARIES

- Set rules early
- Be clear and consistent
- Remind kids regularly
- Parental disapproval is the number one reason teens don't drink

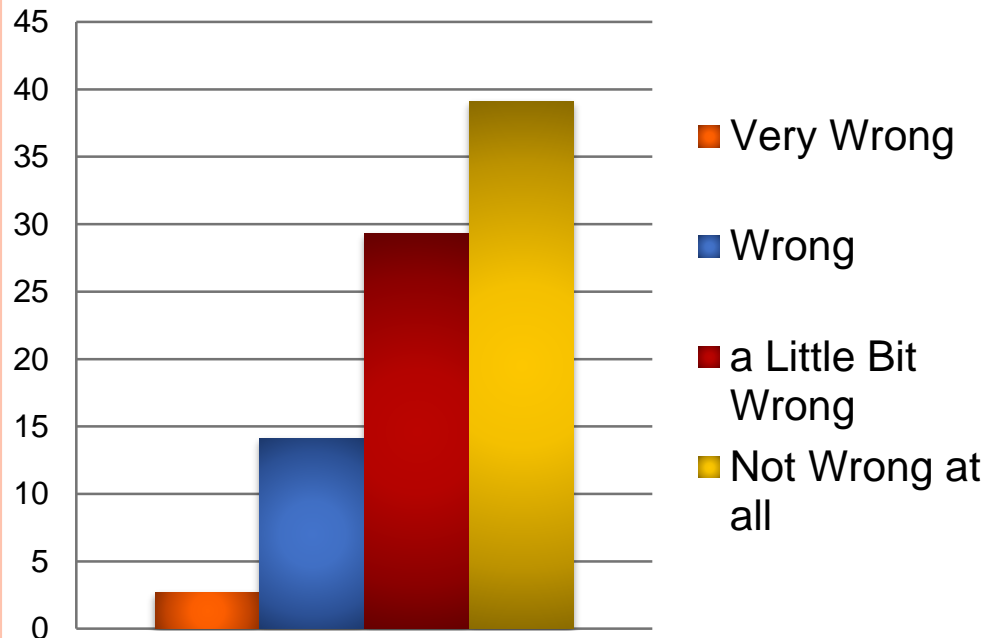


# BRAIN DEVELOPMENT, RULES AND CONNECTION

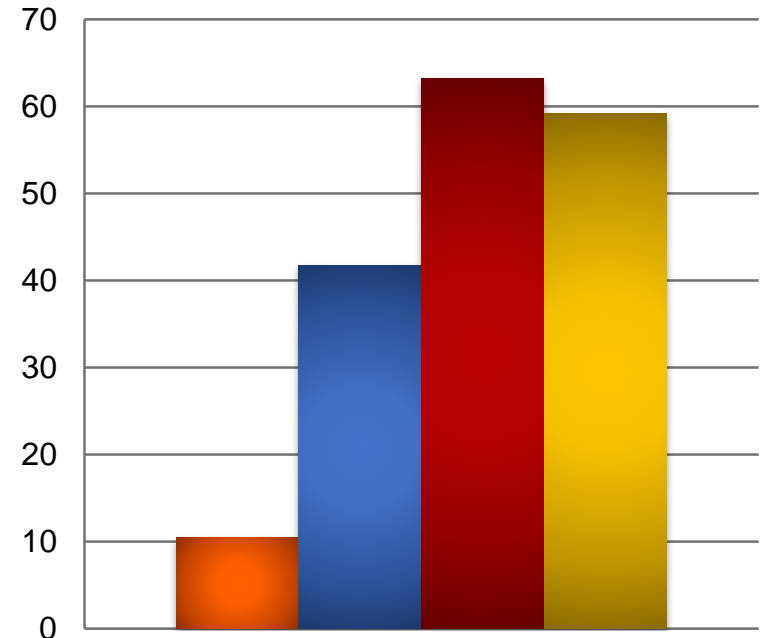
- Parental connection is highly important when setting rules for an adolescent
  - Rules from 0-8—come from adult, because I said so
  - Rules form 8-12—Concrete and apply to everyone, backseat drivers
  - Teens—Question rules, why is this even a rule
- 

# Alcohol Use in Relation to Perceived Parental Acceptability

30-day use based on perceived parental acceptability



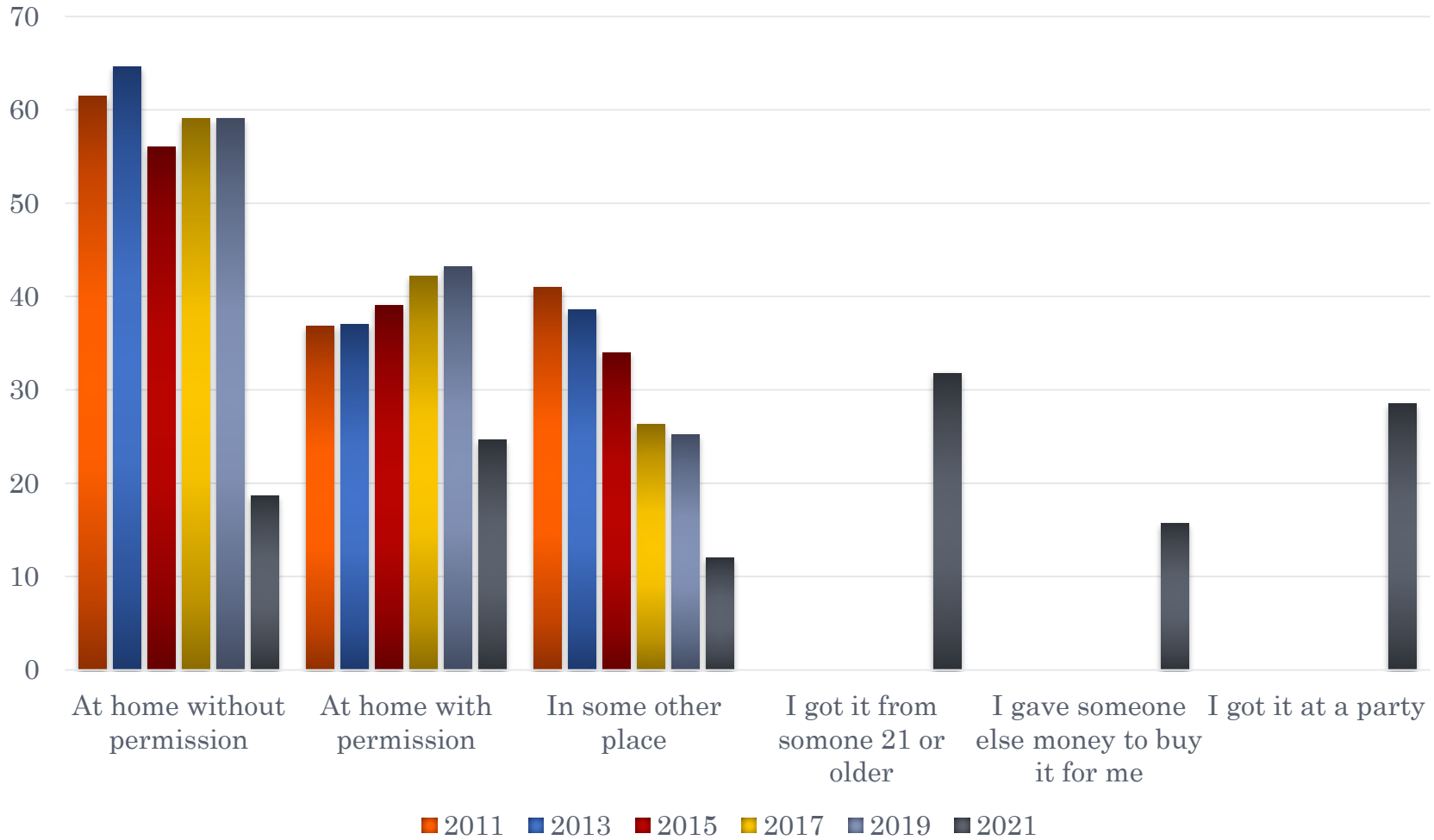
Lifetime use based on perceived parental acceptability



Even a Small Amount of Perceived Parental Acceptability Can Lead to Alcohol Use



# Places of Alcohol Use (All Grades)



# MONITORING

Monitoring is knowing where your children are, who they are with and what they are doing. Because the teen brain has not fully developed impulse control, inadequate monitoring can leave kids at risk for risky behaviors.

- Meet all friends
- Drop by unannounced
- Call or text



So, Mom and Dad, now that you've put a limit on our screen time, we would like to do something "as a family." There was talk of "quality time." Is that gonna happen or what?



9-12 are the prime years for parents to discuss the risky behaviors children see or hear about. BRHD knows this is the time to build  
**Prevention Skills**

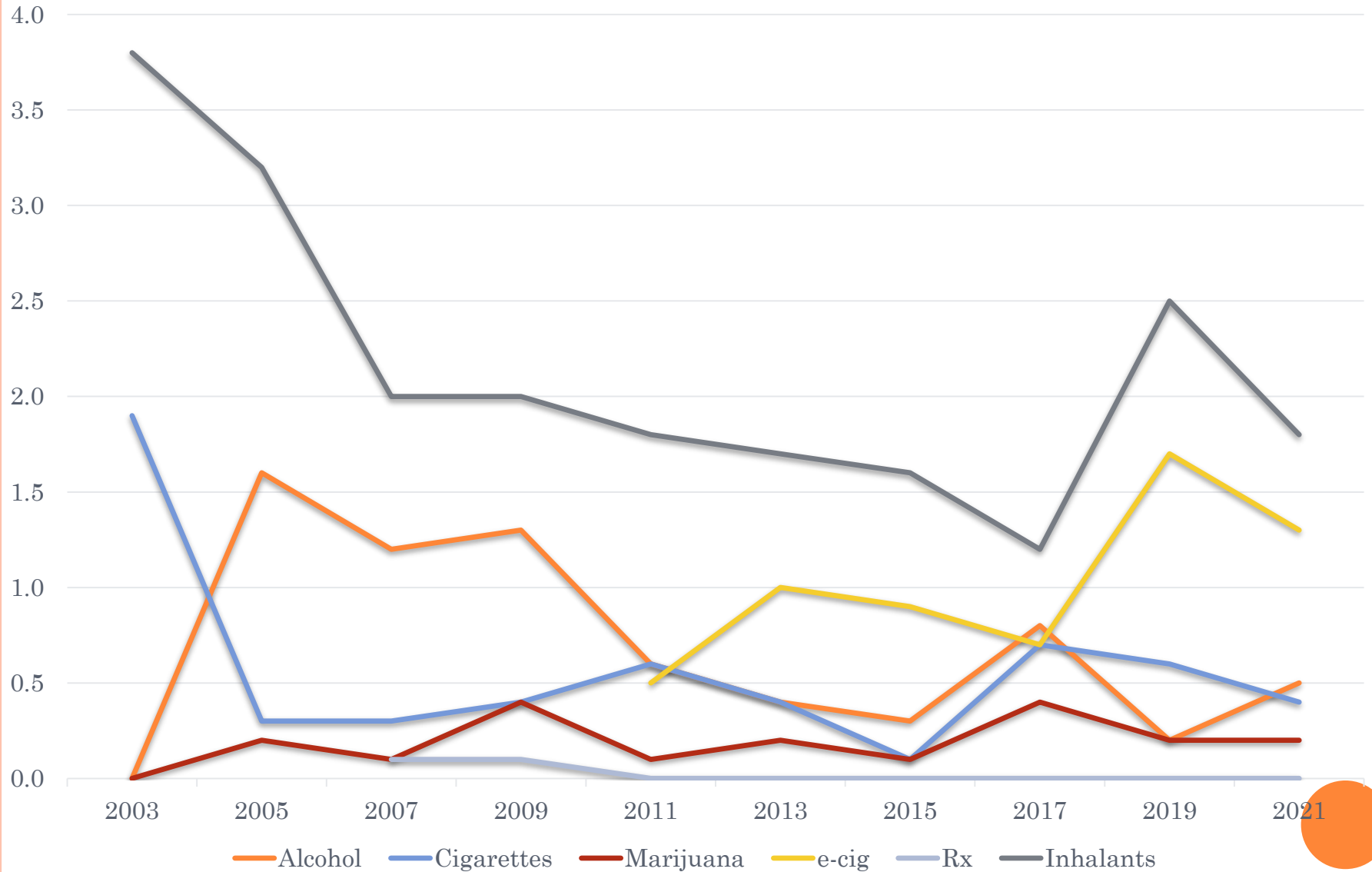
**On average, parents talk to their children two years too late concerning alcohol.**

- Internet
- Cell Phone
- TV
- Music
- Magazines
- Books
- Movies (Kids in Mind)
- Peers Social Media

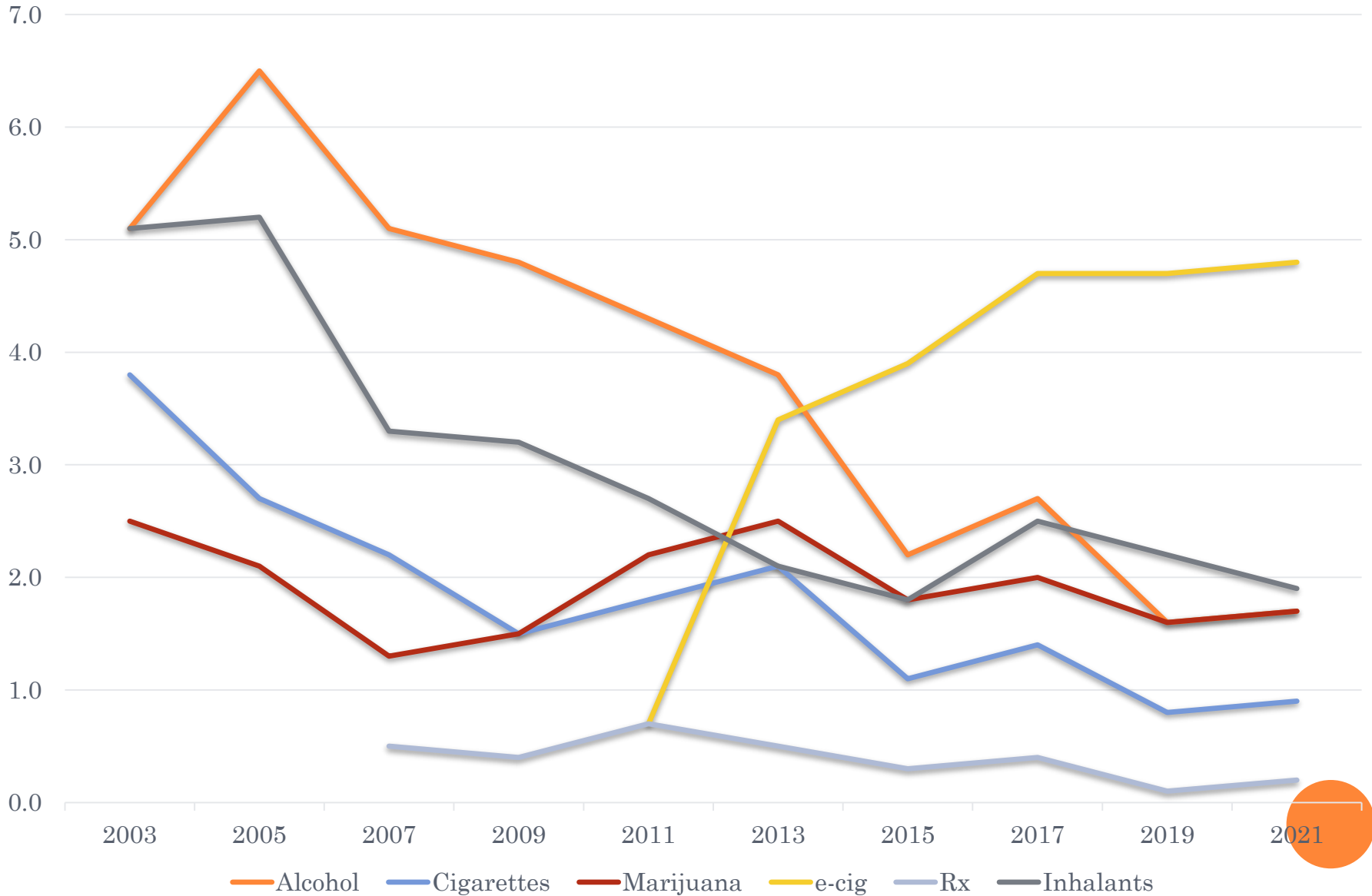




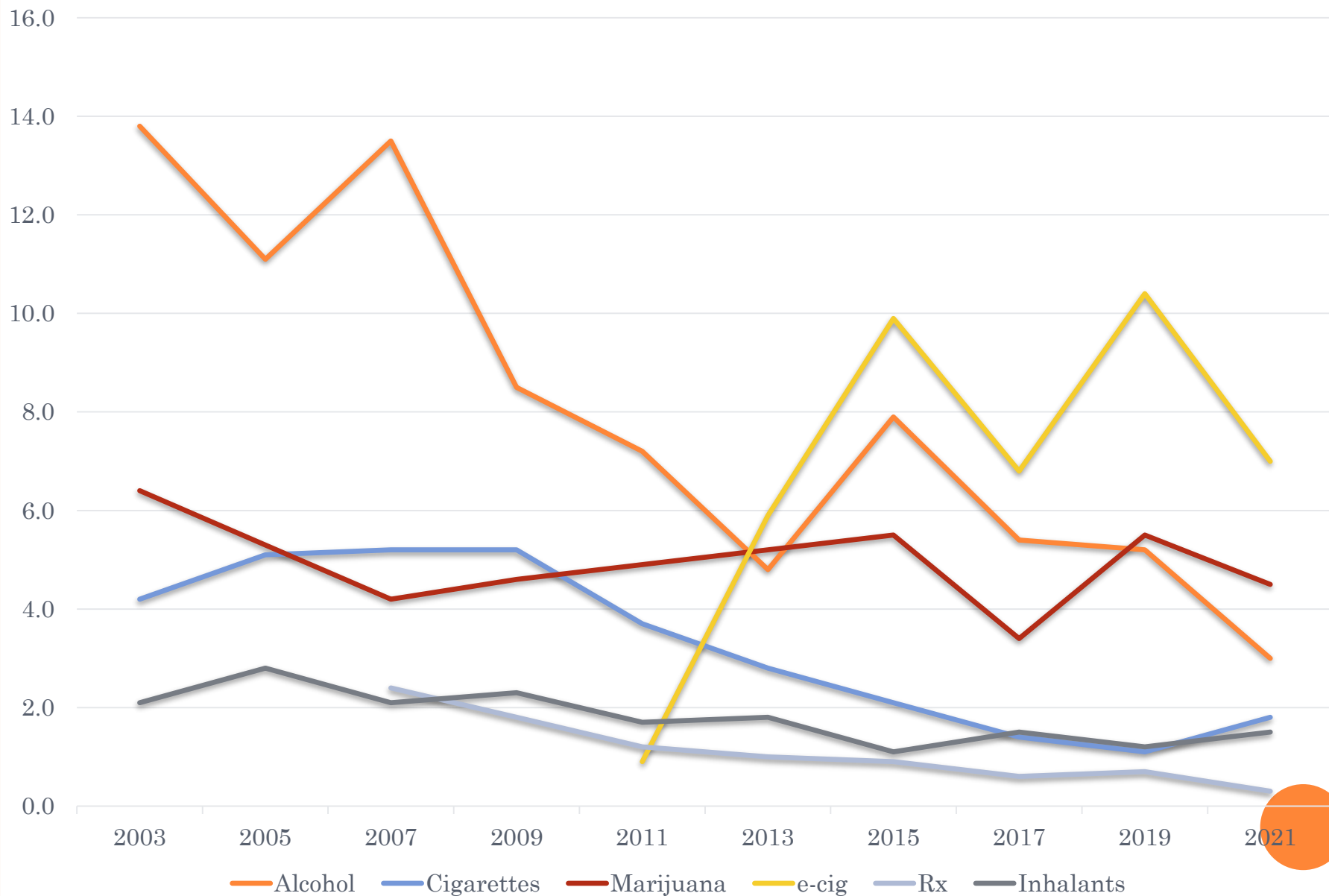
# 6th Grade 30-day Use



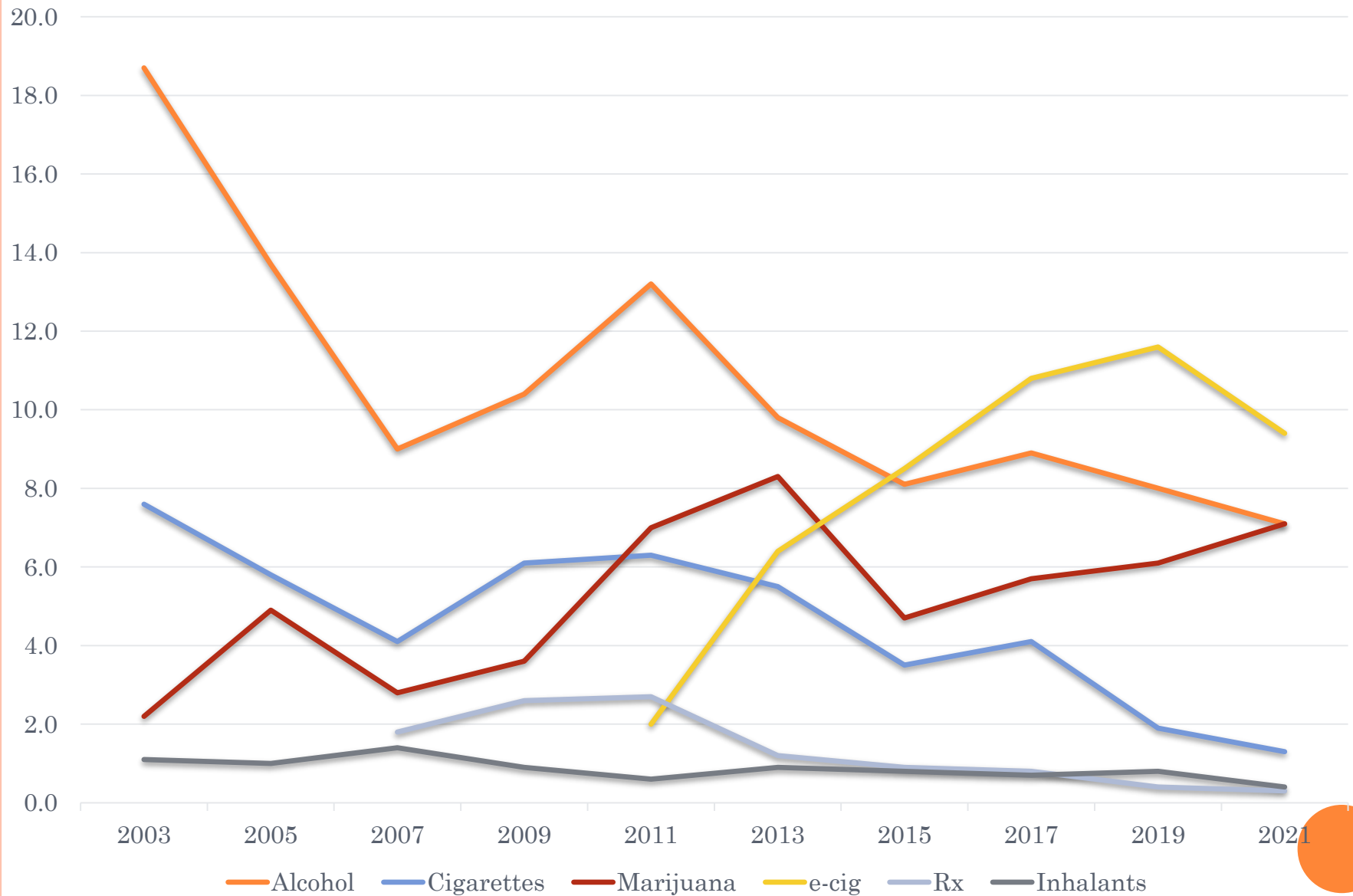
# 8th Grade 30-day Use



# 10th Grade 30-day Use



# 12th Grade 30-day Use



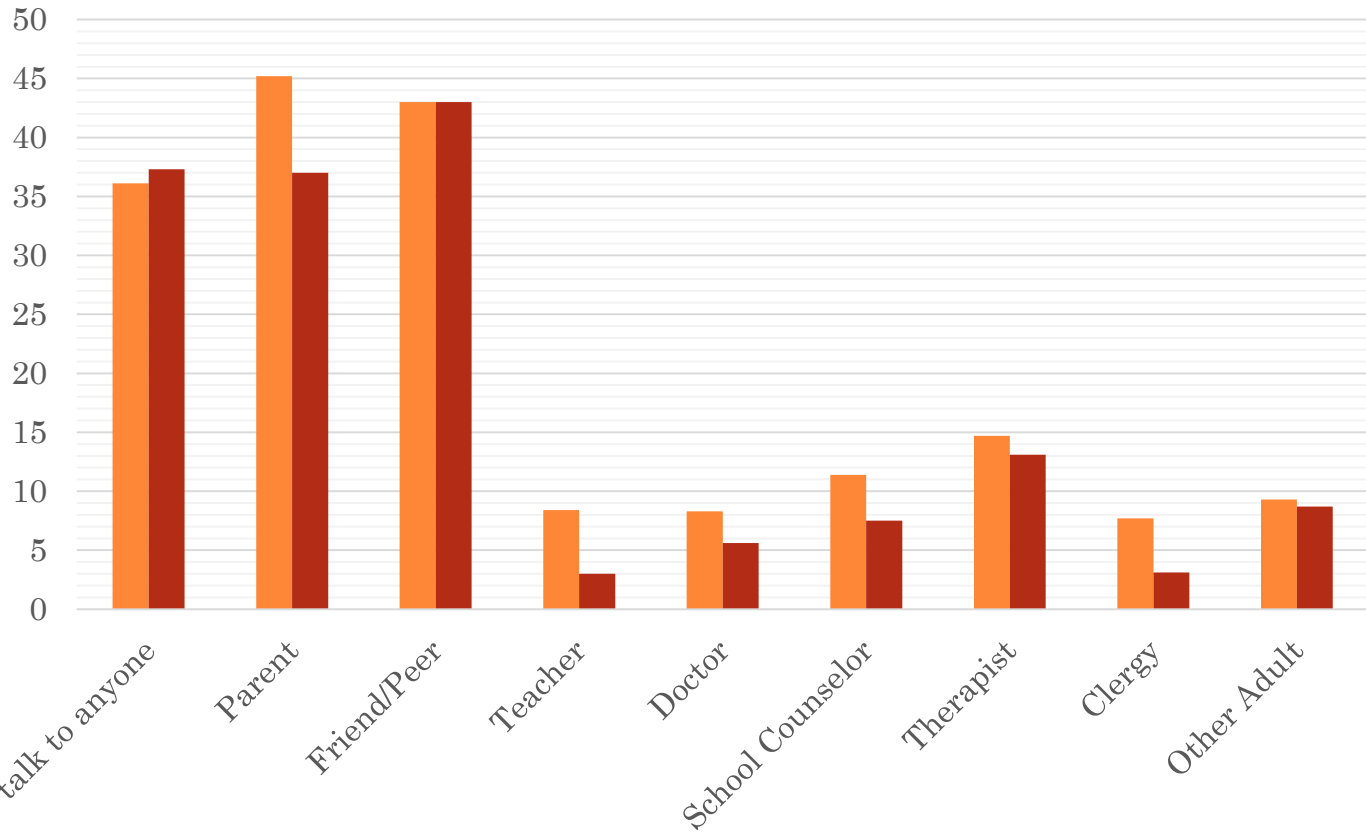






# In the last 30 days, who do teens talk to when feeling very sad, hopeless, or suicidal?

■ LSAA 2019 ■ LSAA 2021



I felt this way but did not talk to anyone

Parent

Friend/Peer

Teacher

Doctor

School Counselor

Therapist

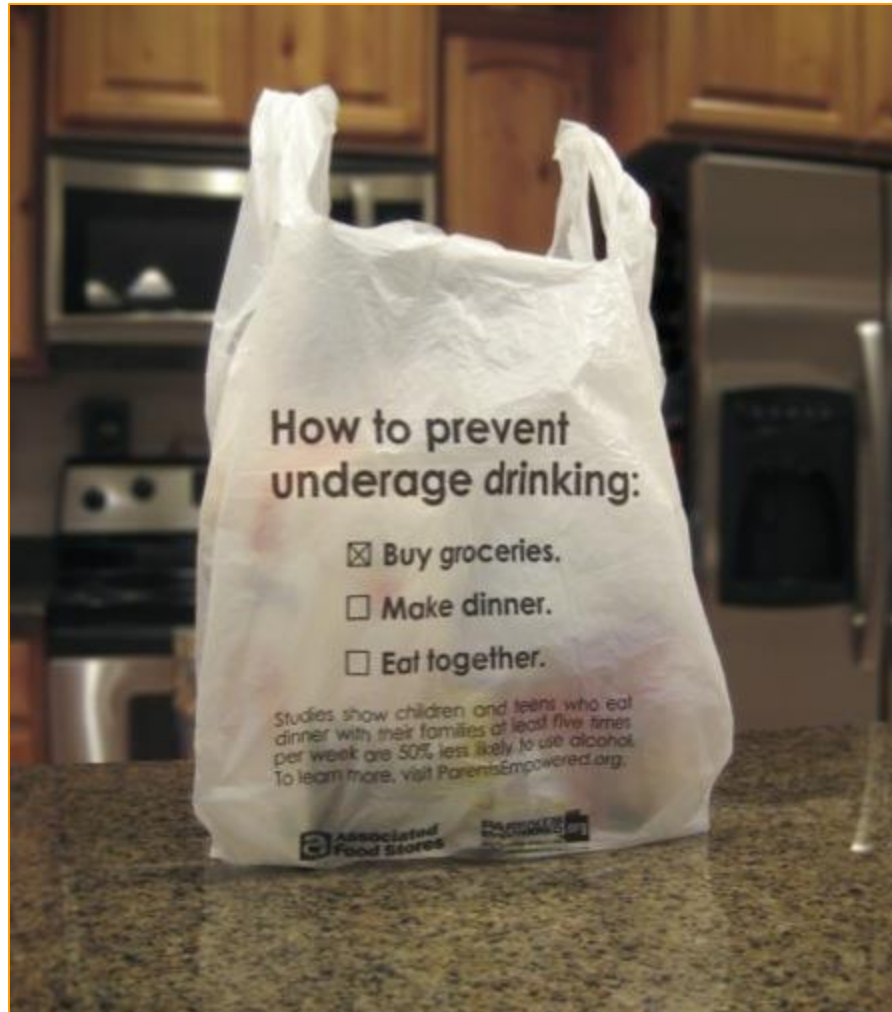
Clergy

Other Adult



# Eat Dinner Together

Research indicates families who eat dinner together 4-5 times a week, have teens 33% less likely to use alcohol!





# Hang in There

- Every child is worth the effort to assist them to be a happy well rounded adult and citizen.
- A wise person once expressed this thought.  
“Every parent must remember their grandchildren are their reward for not killing their kids.”



# BEAR RIVER HEALTH DEPARTMENT LINK

- <http://www.brhd.org/>

