

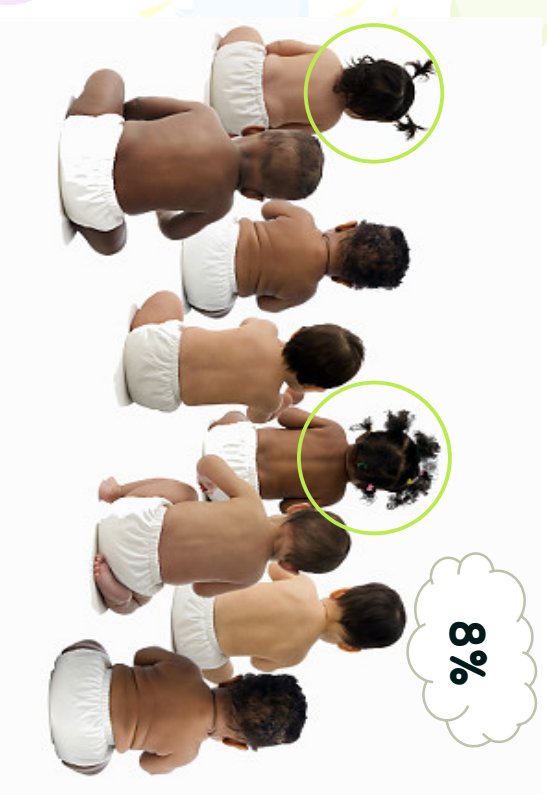
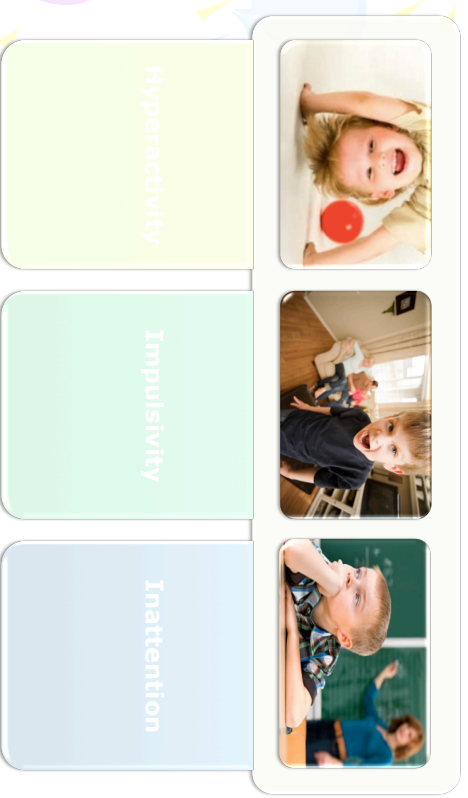
# Adolescent ADHD

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Attention Deficit Hyperactivity Disorder



## Symptoms of ADHD





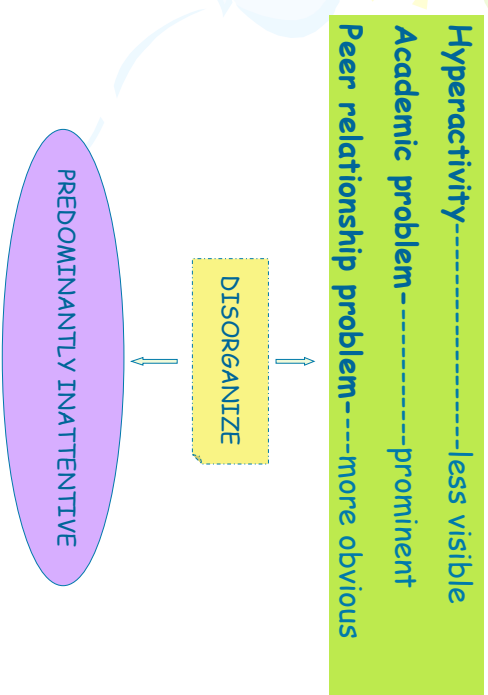
Biederman, 1996

## ADHD impact to quality of life

- Symptom persist
- Develop depression
- Functional impairment
- Lower education achievement
- Juvenile justice



## Clinical picture.....



Carlson C et al, 2003

## Clinical picture...

### Emotional immaturity

- Express -/+ excessive for situation
- Frustrated easily
- Sudden outburst of anger



## Emotional outburst

- poor internal control, disorganize, easily distractibility
- poor peer acceptance
- Social complexity
- Academic underachievement
- Psychological development of adolescent

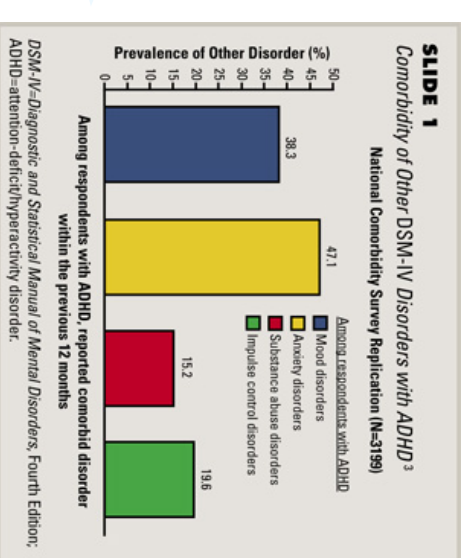
## Clinical picture...

### Sleep disturbance

- Adolescent is a developmental period of sleep disturbance
- Stimulant can disrupt sleep
- Establish baseline of sleep before initial stimulant

Stein D, 2002

## Comorbidity



*The National Comorbidity Survey Replication (NCS-R, 2006)*

## Oppositional Defiance Disorder

- More argumentative, negative, defiant
- Significant problem...school, social relationship
- Impair in ability to modulate & cope with routine frustration of daily life
- Chronic

## Anxiety disorder

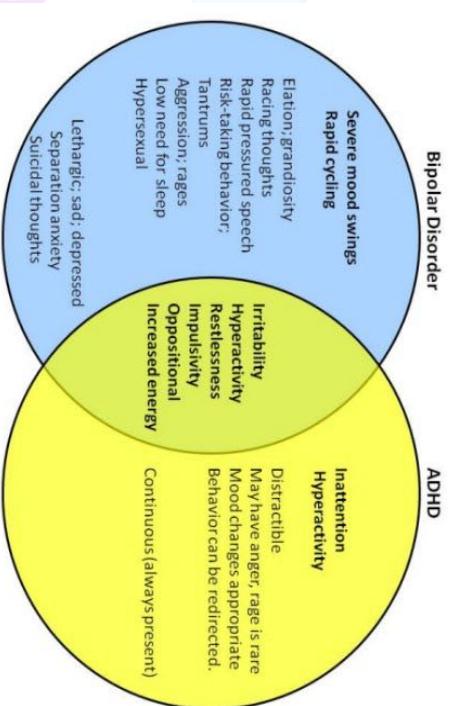
### ADHD + Anxiety disorder

- Complicate clinical picture
- Think too little + Think too much

## Mood disorder

- Mostly Dysthymia
- Sometime : ADHD+ODD+Anxiety+Dysthymia
- Effective Rx ADHD...Dysthymia symptoms alleviate
- Potential life-threatening comorbid condition

## Bipolar disorder



Metzger

## Bipolar disorder

- Clinical overlap
- Core symptoms are different:  
elevated mood, grandiosity, flight of idea, decrease need of sleep



## Substance Use Disorder

- 15-25% of adults SUD have ADHD
- Risk for SUD in life span of ADHD = twice of normal
- Start smoking at younger age
- Stimulant Rx can prevent SUD in later life

*Wilens, 2003*



## Diagnosis

- Limitation of parents report
- Parent-teacher agreement 74%
- Adolescent underreport their level of impairment
- Data : combination of many sources of information
- Assess both core symptoms & sequelae



## Substance Use Disorder

- Alcohol, cannabis effect on attention & cognitive impairment
- Best to reassess at least 1 mth after quit the drug

*Parrot A, 2003*



## Management

- Education & adherence
- Medication
- Psychosocial intervention





## Education & adherence

- Long term F/U psychoactive medication usage decrease precipitously throughout adolescent
- Age was a significant moderator of adherence



## Education & adherence

Important factors promoting adherence

- Self concept
- Family stability
- Internal locus of control
- Increase motivation
- Simplified medication regimens
- Lack of adverse effect
- Doctor-patient relationship



## Medication



### Stimulant

- Effective rate around 70%
- Dose dependent manner
- Male=female
- Immediate release—methylphenidate  
extended release—concerta



## Medication



### Stimulant-adverse effect

- Short term ..appetite suppress  
..sleep disturbance  
..abdominal pain
- Long term..controversial  
..weak associate with Tics  
..variation regarding to WT/HT





## Medication

### Diversion of Stimulant

- Abuse orally
- Nasal insufflation
- Divert to peer for favor/financial



## Medication

### Atomoxetine-adverse effect

- Same as younger age
- Sedate, poor appetite, headache
- Indication : unresponsive to stimulant
  - : prefer non-stimulant
  - : risk for abuse by Pt/Fm



## Medication

### Atomoxetine

- Highly specific noradrenergic reuptake inhibitor
- Effective for ADHD+Anxiety, Tics, Depress
- Efficacy/tolerability: adolescent=school age
- Long term data effective with normal growth



## Medication

### Antidepressant

- 2<sup>nd</sup> line drug
- Control behavior problem + improve cognitive impairment
- Indication: stimulant fail
  - : atomoxetine fail
  - : behavior intervention fail



## Medication

### Atomoxetine

- Highly specific noradrenergic reuptake inhibitor
- Effective for ADHD+Anxiety, Tics, Depress
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## Medication

- Bupropion
- Antihypertensive agent
- SSRI
- Monoamine Oxidase Inhibitor



## Psychosocial intervention

- School problem
- Substance Use Disorder
- Family stress
- Social impairment
- driving



## School problem

- Poor performance on test
- Missing assignment
- Careless work
- Poor writing

- 
- Target\*organize, note taking, planning\*





## Substance Use Disorder

- Prominent issue among adolescent
- Random drug screening?? .....
- Parents need to know what to do if the result is positive
- Avoid false positive/negative



## Family stress

- Cumulative of chronic stress i=of raising a child with moderate/severe ADHD
- Assess parents stress & coping
- Parent training & family therapy are not effective for adolescent as child



## Social impairment

- Impact to adolescent more than child
- Traditional social skill intervention fail to generalize to natural stting



## driving

- At that time medication has benefit more than psychosocial intervention
- Risks are increase significantly if adolescent is experimenting with drugs or alcohol.

# 10 steps to deal with ADHD teen

- Minimize guilt & fear
- Maintain realistic goal
- Let the child make some mistakes
- Respect child's need of privacy
- Don't try to choose child's friend
- Monitor the child selectively
- Increase privileges judiciously
- Encourage & support independence
- Don't mistake mild rebellion for disrespect
- Pick your battles carefully

