

## APPROACH TO ADOLESCENT HEALTH

### Objectives:

1. Define adolescence age according to World health organization.
2. Describe adolescence physiological and behavioral characteristics.
3. Determine adolescence health problems according to physical, psychological and social aspects based on best available evidence in the KSA.
4. Summarize the Comprehensive approach to common adolescent health problems in primary health care
5. Assess the Role of family, school and community in adolescent health care.

**We highly recommend studying from the article summary FIRST  
(it is available in page 7-11)**

Team Leader : Arwa Aljohany , Rawan Mishal  
Members: Leen Altamimi  
Revised : Sondos Alhawamdeh

### Reference

- Doctor's slides
- Recommended article' Screening and Counseling Adolescents and Young Adults: A Framework for Comprehensive Care'

*Important Notes Extra Golden*

Editing file [link](#)

## Adolescence definition:

- Adolescence, the life stage between childhood and adulthood, encompasses the physical, cognitive, and emotional changes of puberty resulting in maturity to reflect the complex biologic growth and social role transitions
- Adolescence is the transitional phase of growth and development between childhood and adulthood.
- **The World Health Organization (WHO) defines an adolescent as any person between ages 10 and 19.** This age range falls within WHO's definition of young people, which refers to individuals between ages 10 and 24.

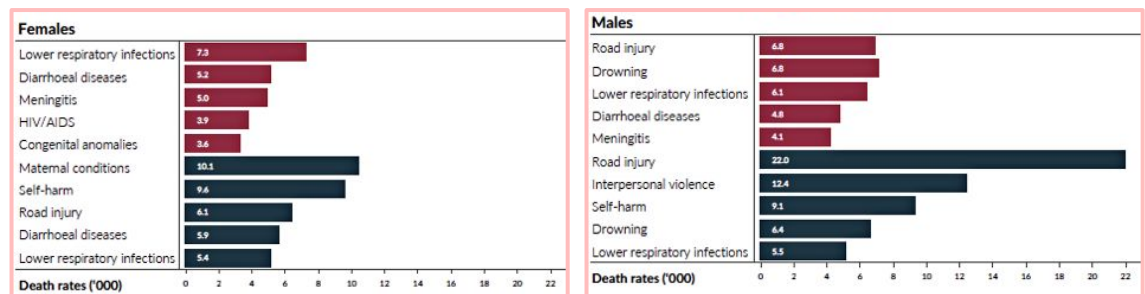
## Adolescence Physical changes:

Reflect progression in changes of the external genitalia and of sexual hair

In girls	In boys
Breast enlargement usually first sign	First sign often go unnoticed
Thelarche (development of breast)	Testicular enlargement (12-13 years)
Menarche usually 2-3 years after breast development	Prepubertal testis - 2 mls diameter
Growth spurt peaks before menarche	Puberty began when volume reaches 4 mls.
Pubic and axillary hair growth: sign of adrenal androgen secretion	Penile and scrotal enlargement occurs approximately 1 year after testicular enlargement
Starts at similar age of apocrine gland sweat production and associated with adult body odour	Pubic hair appears at same time begins of spermatogenesis; androgen secretion

## Risky Health Behaviors Among Adolescent High School Students:

- Poor diet or low physical activity
- Sexual activity
- Substance misuse
- Suicide
- Unintentional injury
- Violence victimization



- Adolescent mortality rate (per 100 000 population) in Saudi Arabia-2015 is 67.39
- Age standardized suicide rate (per 100 000 population) in Saudi Arabia-2016 is 3.4

## Research: Patterns of injuries among children and adolescents in Riyadh Saudi Arabia: a household survey

**Objectives:** To determine the incidence and pattern of injuries among children and adolescents <18 years old in Riyadh city and to identify associated factors.

**Results:** The study included 1650 children and adolescents. Of them, 22.2% reported having had injuries in the previous 12 months. The most common injuries were falls (40.4%), Road Traffic Accidents (RTA) (15%), food intoxication (8.8%). Males were more affected by injuries than females (26% vs. 18%). Males living near playgrounds or public gardens, playing in the street are independent risk factors for occurrence of both falls and RTA injuries.

**Recommendations:** school safety education and environmental modification should be applied in Riyadh.

# Jeeluna جيلنا study database

Jeeluna was a cross-sectional, school-based, nationally representative study conducted in Saudi Arabia. Participants included intermediate and secondary school students, aged 10–19 years from all 13 regions of the country.

## Some examples from Jeeluna database:

- The relationship of bullying and physical violence to mental health and academic performance: A cross-sectional study among adolescents in KSA.

**Table 1**  
Health risk behaviors among adolescents in Saudi Arabia and gender differences

Health risk behaviors	Prevalence			Prevalence by gender						
	n = 12,575 (%) 95% CI			Male n = 6,444 (%) 95% CI		Female n = 6,131 (%) 95% CI				
	Lower	Upper		Lower	Upper	Lower	Upper	Lower	Upper	
<b>Dietary behaviors (daily)</b>										
Breakfast intake (sometimes/daily) <sup>a</sup>	54.8	50.8	58.7	62.3	60.7	64.0	46.3		44.6	48.0
Fruit intake (≥1 servings)	38.1	34.0	42.1	43.6	41.5	45.7	31.8		29.7	33.9
Vegetable intake (≥1 servings)	54.3	50.7	58.0	55.7	53.8	57.7	52.8		50.8	54.8
Carbonated beverage consumption (≥2 drinks)	37.5	34.0	41.1	43.9	41.9	45.9	30.4		28.3	32.5
Energy drinks consumption (≥1 drinks)	21.8	19.7	23.9	25.5	23.8	27.2	17.7		16.1	19.3
<b>Activity</b>										
Physical exercise (daily)	13.7	10.4	16.9	19.0	17.4	20.6	7.7		6.9	8.5
Television viewing (≥2 hours/day)	42.4	41.0	43.9	40.4	38.8	42.1	44.7		42.8	46.6
Video game playing (yes)	55.6	47.7	63.4	68.0	66.4	69.6	41.6		39.3	43.9
Internet use (≥2 hours/day)	44.8	38.4	51.4	56.0	44.3	47.8	44.6		42.5	45.8
Cellular phone (>1 hour/day)	14.8	13.2	16.3	13.2	12.0	14.4	16.6		14.8	18.3
<b>Traffic safety</b>										
Seat belt using (sometimes/always)	13.8	11.4	16.3	17.0	15.3	18.7	10.2		9.0	11.4
Car taking without permission (yes)	17.9	11.7	24.2	28.6	26.8	30.4	5.9		5.1	6.7
<b>Bullying and violence</b>										
Exposure to bullying	25.0	23.0	27.0	27.1	25.1	29.0	22.7		21.3	24.2
Exposure to violence at school <sup>b</sup>	20.8	15.8	25.7	28.9	26.3	31.5	11.7		10.4	12.9
Exposure to violence in community <sup>c</sup>	19.7	17.6	21.8	22.9	21.3	24.5	16.1		14.6	17.6
<b>Tobacco and substance (ever use)</b>										
Cigarette smoking	16.2	12.5	19.9	22.1	20.0	24.2	9.6		8.2	10.9
Sheetsa smoking	10.5	8.4	12.5	13.5	11.8	15.3	7.1		5.7	8.4
Solvents sniffing	16.2	12.7	19.6	11.5	10.3	12.6	21.4		19.7	23.0
Prescription medication use for nonmedical purpose	7.2	5.7	8.7	6.0	5.3	6.8	8.5		7.4	9.6
Alcohol consumption	1.4	1.1	1.8	2.1	1.7	2.5	7		5	10
Stimulants use	1.5	1.1	1.9	1.6	1.3	1.9	1.4		1.0	1.8
Marijuana use	1.0	.6	1.5	1.6	1.2	2.0	.4		.2	6

- Time for an Adolescent Health Surveillance System in Saudi Arabia: Findings From "Jeeluna"

**Original article**  
**Time for an Adolescent Health Surveillance System in Saudi Arabia: Findings From "Jeeluna"**

Fadia S. AlBuhairan, M.D.,<sup>a,b,c,d</sup> Hani Tamim, Ph.D.,<sup>b</sup> Mohammad Al Dubayee, M.D.,<sup>a,b</sup>, Shahla AlDhukair, M.Sc.,<sup>e</sup> Sulaiman Al Shehri, M.D.,<sup>f</sup> Waleed Tammim, Ph.D.,<sup>g</sup> Charbel El Bcheraoui, Ph.D.,<sup>h</sup> Mohi Eldin Magzoub, Ph.D.,<sup>i</sup> Nanne de Vries, Ph.D.,<sup>j</sup> and Ibrahim Al Awan, M.D.,<sup>g</sup>

**ABSTRACT**

**Purpose:** With the increasing burden of noncommunicable disease, adolescence is viewed as an opportune time to prevent the onset of certain behaviors and promote healthy status. Although adolescents comprise a considerable portion of Saudi Arabia's population, they have received insufficient attention and indicators of their health status, as a first step in a prevention cycle are unavailable. This study was carried out with the aim of identifying the health risk behaviors and health status of adolescents in Saudi Arabia.

**Methods:** This cross-sectional, school-based study was carried out in all 13 regions of Saudi Arabia. Through multistage, cluster, random sampling, intermediate, and secondary school students were invited to participate. Data were collected by means of a self-administered questionnaire addressing health risk behaviors and health status, clinical anthropometric measurements, and laboratory investigations.

**Results:** A total of 12,575 adolescents participated. Various health risk behaviors, including dietary and sedentary behaviors, lack of safety measures, tobacco use, bullying, and violence were highly prevalent. Twenty-eight percent of adolescents reported having a chronic health condition, 14.2% reported having symptoms suggestive of depression, 30.0% were overweight/obese, and 85.6% were vitamin D deficient.

**IMPLICATIONS AND CONTRIBUTION**

Although adolescents constitute a significant portion of Saudi Arabia's population, little is known about their health status. This nationally representative study has identified the high prevalence of health risk behaviors and salient health conditions, which, for the first time, will serve as adolescent health indicators and support policy and program development.

**Table 2**  
Health status among adolescents in Saudi Arabia and gender differences

	Prevalence		Prevalence by gender							
	n = 12,575 (%) 95% CI		Male n = 6,444 (%) 95% CI		Female n = 6,131 (%) 95% CI					
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper		
<b>Self-reported health status</b>										
<b>Chronic illness</b>										
Bronchial asthma	8.4	7.1	9.8	10.8	9.6	11.9	5.8		5.1	6.5
Allergies (not asthma)	4.9	3.5	6.2	4.2	3.5	4.9	5.6		4.7	6.5
Hematological disorder	3.7	2.9	4.6	3.1	2.5	3.7	4.5		3.7	5.2
Skin disorders	3.6	2.6	4.6	3.1	2.6	3.6	4.2		3.4	5.0
Musculoskeletal	1.5	1.0	1.9	1.5	1.0	2.0	1.4		1.0	1.8
Genitourinary	1.2	.7	1.6	.9	.6	1.2	1.4		.9	1.8
Diabetes	.7	.5	1.0	.9	.7	1.2	.6		.3	.8
Others	4.8	3.8	5.4	5.0	4.0	6.0	4.2		3.3	5.0
<b>Mental health</b>										
Sadness/depression	14.3	11.0	17.6	10.1	9.3	11.0	19.0		17.6	20.4
Anxiety	6.7	5.2	8.3	4.6	3.9	5.3	9.1		8.0	10.2
<b>Measured indicators of health status</b>										
<b>BMI<sup>d</sup></b>										
Underweight	15.2	13.7	16.7	17.2	15.3	19.0	13.0		11.8	14.2
Healthy weight	54.8	51.2	58.4	48.8	47.2	50.3	61.5		60.0	63.1
Overweight	14.1	13.4	14.9	13.9	12.8	15.0	14.5		13.4	15.5
Obese	15.9	12.6	19.1	20.2	18.7	21.7	11.0		9.8	12.3

BMI = body mass index; CI = confidence interval.

- Predictors of adolescents' mental health problems in Saudi Arabia: finding from Jeeluna national study

Abou Abbas and AlBuhairan  
Child Adolesc Psychiatry Ment Health 2017, 11:52  
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Child and Adolescent Psychiatry  
and Mental Health

RESEARCH ARTICLE Open Access

**Predictors of adolescents' mental health problems in Saudi Arabia: findings from the Jeeluna® national study**

Oraynab Abou Abbas<sup>1</sup> and Fadla AlBuhairan<sup>1,2,3\*</sup>

**Abstract**  
**Background:** Depression and anxiety among adolescents require further attention as they have profound harmful implications on several aspects of adolescents' wellbeing and can be associated with life threatening risk behaviors such as suicide.  
**Objective:** To examine the underlying risk factors for feeling so sad or hopeless and for feeling worried among adolescents in Saudi Arabia.  
**Methods:** Data from Jeeluna® national survey was used. A cross-sectional, multi-stage, stratified, cluster random sampling technique was applied among a sample of students aged 10–19 years attending intermediate and secondary schools in Saudi Arabia. A self-administered questionnaire assessing several domains, including feeling so sad or hopeless and worried, was used to collect data. Logistic regression models were fitted to determine the different factors associated with mental health.  
**Results:** A sample of 12,121 students was included in this study. Feeling so sad or hopeless and feeling worried were significantly more prevalent among females and older adolescents ( $p < 0.0001$ ). The results showed that poor relationship with parents, negative body image, and chronic illness to be significantly associated with feeling so sad or hopeless and worried.  
**Conclusions:** Symptoms suggestive of mental health problems among adolescents in Saudi Arabia are prevalent and deserve special attention. Adopting effective strategies, including regular screening and intervention programs are highly needed to better address, detect, and control early signs of these problems.  
**Keywords:** Adolescents, School, Mental health, Sadness, Hopelessness, Worrysome, Saudi Arabia

## A Framework for Comprehensive Care

- CONFIDENTIALITY
- STRENGTH-BASED INTERVIEWING
- **SSHADNESS** (strengths, school, home, activities, drugs, emotions/eating, sexuality, safety)
- **HEEADSSS** (home, education/employment, eating, activities, drugs, sexuality, suicide/depression, safety) video: <https://youtu.be/FjVcTGnGQk8>

## Recommendations in screening and counselling

TABLE 2

**Select U.S. Preventive Services Task Force Recommendations for Screening and Counseling in Adolescents**

Screening/ counseling	Recommendation	Grade; year
<b>Cancer</b>		
Cervical	Screen every three years with cervical cytology alone in women 21 to 29 years of age Screening women < 21 years is not recommended	Grade A; 2018 Grade D; 2018
Skin: behavioral	Counsel young adults and adolescents with fair skin types about minimizing exposure to ultraviolet radiation	Grade B; 2018
Testicular	Screening is not recommended	Grade D; 2011
<b>Cardiovascular health</b>		
Blood pressure (hypertension)	Insufficient evidence to assess the balance of benefits and harms of screening asymptomatic adolescents to prevent cardiovascular disease in childhood or adulthood	Grade I; 2013



## Social media

Traditional and social media, interactive video games, and other digital content can improve adolescents' social support and access to diverse information but...

may **negatively affect health** (e.g., sleep, attention, learning, mood, weight, driving safety), compromise personal privacy, and reveal inaccurate content and unsafe contacts.

## Substance use

- CRAFFT scoring is a screening tool, it is sensitive for identifying problematic substance use.
- CRAFFT+N (car, relax, alone, forget, family/friends, trouble, nicotine)
- Give one point for every positive response
- An overall score of 2 or more warrants further diagnostic attention.
- If screening indicated a high likelihood of an SUD, the interview should progress to a diagnostic evaluation. More info (<https://craftt.org/>).
- **Energy drinks contain unregulated ingredients and stimulants, have no therapeutic benefit, and may cause toxicity; screening for use provides opportunities for education**

## Obesity and eating disorder

Eating disorders have high lifetime mortality because of disease complications and risk of suicide

## Mental health

The U.S. Preventive Services Task Force recommends that clinicians screen adolescents starting at age 12 and adults for major depressive disorder when systems are in place to ensure accurate diagnosis, treatment, and follow-up.

**PHQ-2\* and PHQ-9 for Adolescents: Screening Instruments for Depression**

\*Patient Health Questionnaire (PHQ)

'End of doctor's slides'





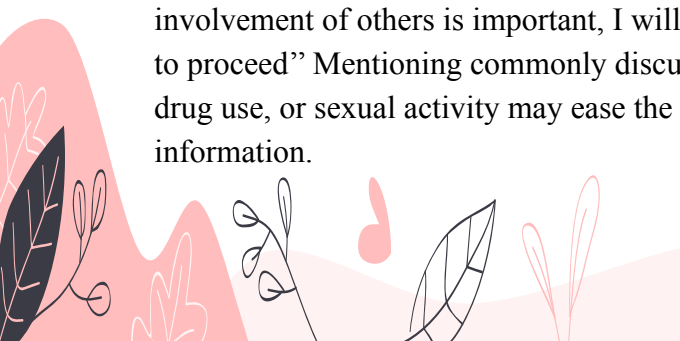



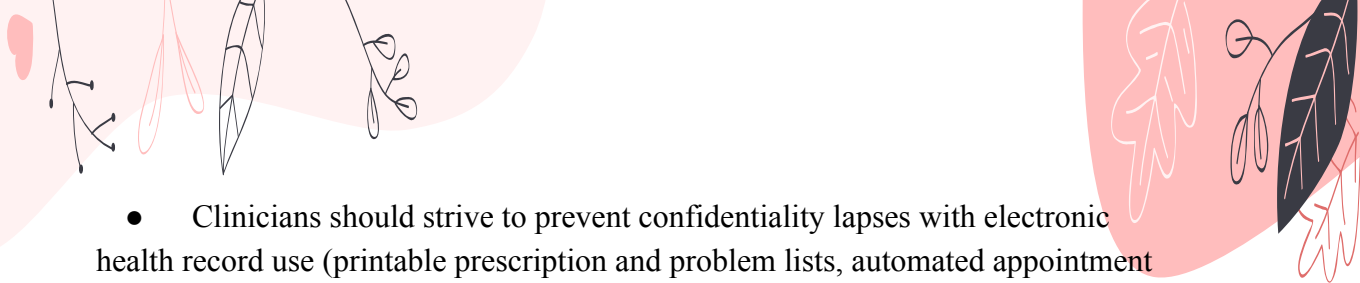
## Summary of ‘Screening and Counseling Adolescents and Young Adults: A Framework for Comprehensive Care’

- Adolescence, the life stage between childhood and adulthood, encompasses the physical, cognitive, and emotional changes of puberty resulting in maturity.
- Adolescence refer to an expanded age range inclusive of what may be traditionally defined as young adulthood (e.g., 10 to 24 years) to reflect the complex biologic growth and social role transitions that occur during this period.
- Threats to the well-being of adolescents typically result from experimentation and psychosocial stressors.
- Causes of death among people 10 to 24 years of age in the United States include motor vehicle crashes, other unintentional injuries, suicide, and homicide. Furthermore, morbidity involving sexuality, substance misuse, social media, eating, and other stressors is widespread.
- Adolescents typically present to care for acute complaints and some adolescents are exposed to health care only during sports preparticipation examinations.
- Adolescents seek health-related information from online and unverified sources, clinicians have a unique opportunity to provide accurate information and administer preventive care at all visits through trusted clinician-patient relationships.

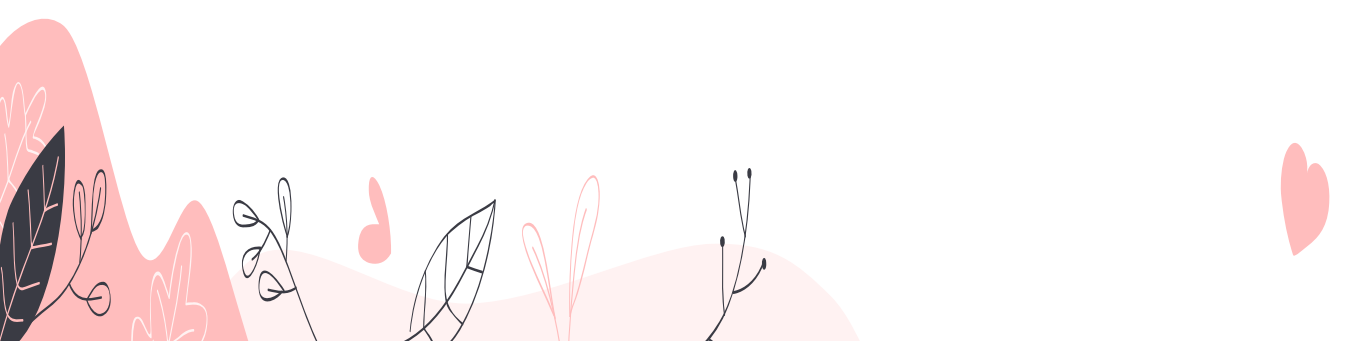
### Approach to Visits

#### CONFIDENTIALITY

- Adolescents are more likely to access health care, have a more favorable attitude about their clinicians, and share sensitive information. However, approximately 60% do not get time alone with their clinician for confidential discussion despite patient and parental preferences
  - Once alone, clinicians can set the stage for a trustworthy relationship by reiterating the purpose of privacy (e.g., to ensure success by discussing positive aspects of life and psychosocial stressors without judgment) and limitations to privacy according to applicable minor consent laws. Clinicians may consider stating, “Everything we talk about is private (e.g., protected by law) unless I’m particularly worried about your safety, meaning you ending your life or someone else’s life or that someone is abusing you. If involvement of others is important, I will tell you, and together we will discuss the way to proceed” Mentioning commonly discussed protected topics such as mental health, drug use, or sexual activity may ease the patient’s fear about disclosing sensitive information.
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- Clinicians should strive to prevent confidentiality lapses with electronic health record use (printable prescription and problem lists, automated appointment reminders, test results mailed or visible on patient portals), local pharmacy practices, and billing information.

### **STRENGTH-BASED INTERVIEWING**

- Clinicians may use motivational interviewing and shared decision-making to help adolescents build confidence for behavioral change
  - **SSHADESS** (strengths, school, home, activities, drugs, emotions/eating, sexuality, safety) is a mnemonic to facilitate collection of a psychosocial history of critical life dimensions Based on the traditional **HEEADSSS** (home, education/employment, eating, activities, drugs, sexuality, suicide/ depression, safety) model, this approach emphasizes identifying strengths within a youth's life experience while assessing risks, which in isolation can provoke feelings of shame.
  - The patient's history should be tailored to each patient's personal context (including any adverse childhood or marginalization experiences that may be disclosed as trust is built) instead of a rigid checklist approach
  - Clinicians may request permission before inquiring about sensitive topics and should limit yes-or-no questions, which can hinder response depth. Questions should generally progress from impersonal to personal
  - When limited for time, clinicians may prioritize a therapeutic history over thoroughness. In such circumstances, a brief psychosocial screen may include current stressors, availability of a confidant when needed, and school or work experience as a proxy for well-being
  - Privacy may be warranted at every visit because adolescents may present with a hidden agenda. For example, one study showed approximately 50% of youth who completed suicide visited a primary care setting in the preceding month
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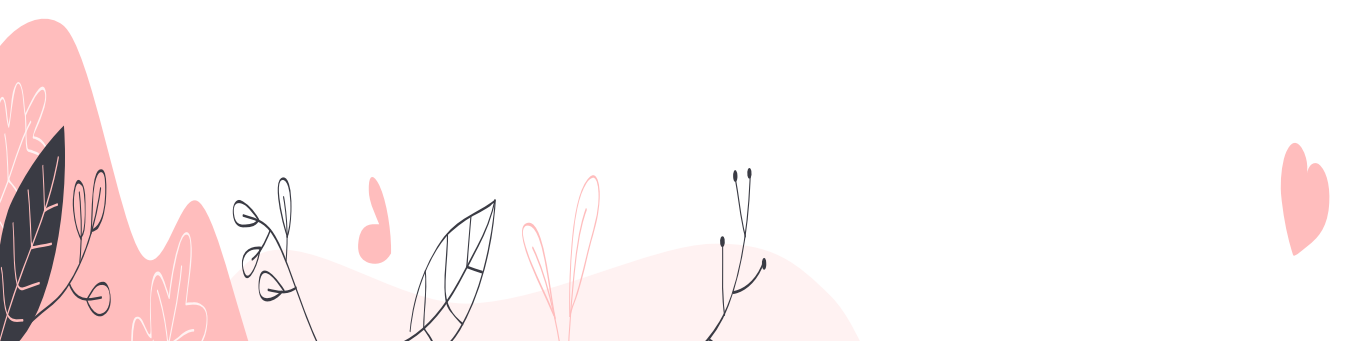


## Recommendations

### SOCIAL MEDIA

- Traditional and social media, interactive video games, and other digital content can improve adolescents' social support and access to diverse information but may negatively affect health (e.g., sleep, attention, learning, mood, weight, driving safety), compromise personal privacy, and reveal inaccurate content and unsafe contacts.
- Clinicians should ask about media exposure and educate families about digital literacy, open family communication, and boundary setting on content and display of personal information.

### SUBSTANCE USE

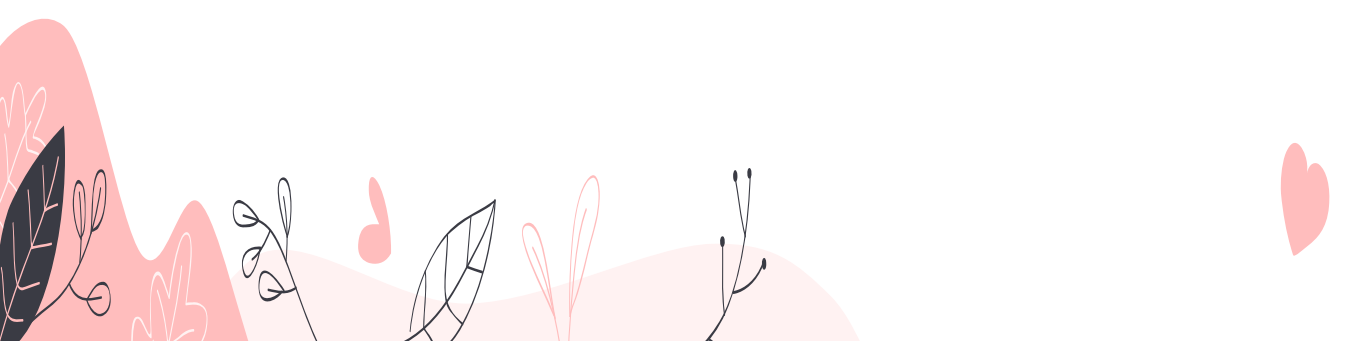
- The CRAFFT+N (car, relax, alone, forget, family/friends, trouble, nicotine) screening tool is sensitive for identifying problematic substance use (<https://crafft.org/>).
  - Electronic cigarette users are more likely than nonusers to use combustible cigarettes, and users of nicotine or tobacco products are more likely than nonusers to use marijuana
  - Nicotine products may disproportionately affect neural pathways involving attention, cognition, addiction, and mood if used in adolescence
  - Clinicians should counsel adolescents to prevent initiation of, or stop, nicotine or tobacco use.
  - Marijuana use by adolescents has been associated with abnormal neural development and may increase the risk of depression and suicidality in adulthood
  - Buprenorphine is approved to treat opioid-addicted adolescents 16 years and older
  - Energy drinks contain unregulated ingredients and stimulants, have no therapeutic benefit, and may cause toxicity; screening for use provides opportunities for education
- 



## **SEXUAL HEALTH**

- Adolescent pregnancy, a risk factor for adverse fetal and maternal outcomes. Clinicians should counsel adolescents on pregnancy risk, healthy relationships, and contraception, including long-acting reversible contraception as a first-line option and availability of emergency contraception.
- Discussions about menstruation and bleeding patterns should be conducted regularly
- Approximately one-half of new sexually transmitted infections (chlamydia, gonorrhea, and syphilis) occur in adolescents 15 to 24 years of age
- clinicians should assess sexual behaviors, including number of partners, barrier contraceptive use, and a history of sexually transmitted infections.
- Clinicians should annually screen for gonorrhea and chlamydia in sexually active females 24 years or younger. Adolescents who are at high risk for these infections may benefit from testing every three to six months. Age- and risk-specific immunizations should be provided.

## **OBESITY AND EATING DISORDERS**

- Screening for obesity in adolescents is recommended using body mass index percentile.
  - For obesity prevention, clinicians may recommend 60 minutes of moderate to vigorous physical activity daily and optimization of sleep habits; however, exercise interventions alone may not improve body mass index or health outcomes. Clinicians may discuss healthy eating patterns.
  - If an eating disorder is diagnosed, clinicians should recommend evidence-based treatments (e.g., family-based therapy) and arrange for multidisciplinary care.
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## MENTAL HEALTH

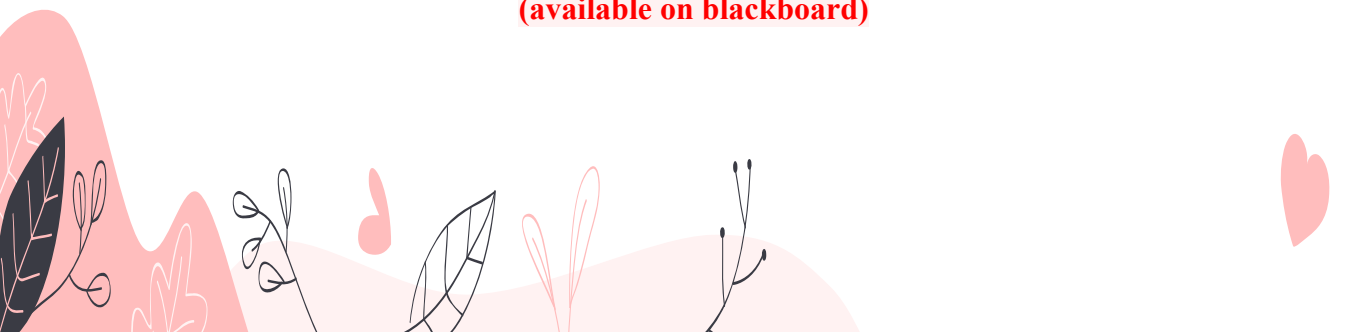
- Clinicians should screen adolescents starting at age 12 and adults for major depressive disorder when systems are in place to ensure accurate diagnosis, treatment, and follow-up
- Clinicians should interview individuals privately about depressive symptoms and formulate individualized plans if depression, self-harm, or suicidality is identified
- The Patient Health Questionnaire (PHQ-2 and PHQ-9) has been validated for Adolescents as a Screening Instruments for Depression.
- Self-injury among adolescents may be related to poor coping skills and difficulty managing emotions; the risk of subsequent suicide is substantially higher among those who use violent methods
- Adolescents diagnosed with mild depressive symptoms may be supported and monitored for approximately eight weeks before treatment; those with moderate to severe symptoms should be offered treatment or referral for treatment
- Combining a selective serotonin reuptake inhibitor and psychotherapy is likely more effective and safer than a single modality
- When prescribing psychotropics, clinicians should establish a safety plan and short-interval follow-up.

## SAFETY

- Clinicians should encourage seatbelt use, adherence to graduated driver's licensing laws (e.g., nighttime, passenger restrictions), and avoidance of distracted or impaired driving.
- Clinicians should inquire about patients' risk of violence (e.g., history of abuse, gang involvement, low school commitment, fear of assault, use of weapons). Interventions may focus on connecting adolescents with positive adult role models, community programs, and mental health services to develop coping skills and healthy relationships.



**We recommend checking the TABLES in the original article  
(available on blackboard)**





# QUESTIONS

**1- Adolescence (traditionally defined as young adulthood) refer to which age range:**

- A. 9-18 years
- B. 10-24 years
- C. 8-18 years
- D. 9-25 years

**2- SSHADESS is a mnemonic to facilitate collection of a psychosocial history of critical life dimensions. The letters H,A,D refer to which of the following:**

- A. Health, Activity, Diet
- B. Hobbies, Aims, Dreams
- C. Home, Activities, Drugs
- D. Health, Attitude, Drugs

**3- What is the best way to determine adolescent obesity?**

- A. Body Mass Index Percentile.
- B. Waist hip ratio
- C. waist circumference
- D. Body Mass Index (BMI)

**4- CRAFFT+N is a screening tool, sensitive for identifying which of the following:**

- A. Social media addiction
- B. Sexual abuse
- C. Obesity risk
- D. substance use

**5- Patient Health Questionnaire (PHQ-2 and PHQ-9) is a screening instrument for Adolescents. What is it used for?**

- A. Anxiety
- B. Safety
- C. Depression
- D. Sexual health

Answers: 1(B), 2(C), 3(A), 4(D), 5(C)

