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TEENs- Sex, ~~Drugs~~, and Rock and Roll... STIs and Birth Control

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Disclosures/Conflicts

- No conflicts of interest
- I will discuss both on and off-label uses of drugs

Objectives

- Be more comfortable with teen contraceptive counseling
- Be aware of non-contraceptive benefits of birth control
- Be aware of STI screening/treatment recommendations

High school students and sexual risk behaviors

- 30% had ever had sexual intercourse
- 48% didn't use condom last time they had sex
- 33% used effective hormonal birth control (birth control pills, an IUD or implant, a shot, a patch, or a birth control ring) the last time they had sex with an opposite-sex partner.
- 10% used effective birth control and condom the last time they had sex
- 8% had been physically forced to have intercourse when they didn't want to

CDC 2023 (Youth Risk Behavior Survey: Data Summary & Trends Report 2021)

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What can we do to help change these statistics?

- Education
- Shared decision making
- Discuss what type of relationships
- Discuss if/when they want to parent
- Find out what is most important to them
- Find out what bothers them the most, what is a dealbreaker

Contraception Options

- Tier 1: Implant, IUD (LARCs)
- Tier 2: injection, pill, patch, ring
- Tier 3: diaphragm, male and female condom, sponge
- Tier 4: fertility awareness method, spermicide, Phexxi

- Progestin IUDs (levonorgestrel)
  - mechanism: thickens cervical mucus

Mirena (FDA approved 8 yrs) 32x32mm. 52 mg LNG.

Liletta (FDA approved 8 yrs) 32x32 mm. 52 mg LNG.

Kyleena (FDA approved 5 yrs) 28x30 mm. 19.5 mg LNG.

Skyla (FDA approved 3 yrs) 28x30 mm. 13.5 mg LNG.

Progestin IUDs

Benefits:	Adverse effects:
– decrease bleeding (Mirena FDA approved for menorrhagia)	- *may worsen acne*
– decrease primary and secondary dysmenorrhea	- *increased ovarian cysts*
– improve PMS and other menstrual symptoms	- *may worsen mood or anxiety*
– decrease risk of hyperplasia and uterine cancer	- *may increase yeast and BV*

Paragard IUD (FDA approved 10 yrs. 32x36 mm)

Mechanism: copper is spermicidal

Benefits: no hormones

Adverse effects: increased bleeding/dysmenorrhea

Complications possible for all IUDs

- Risk of perforation, malposition, or expulsion
- Small risk of infection
- Can get 3-6 months of abnormal bleeding (consider another hormone in the short term); rarely abnormal bleeding continues

IUD insertion/removal preparation

- best during period or at tail end of period
- misoprostol
- ibuprofen and acetaminophen
- benzodiazepine
- lidocaine

Nexplanon

68 mg etonogestrel implant. FDA approved 3 yrs. 4 cm long, 2mm, radiopaque.

Mechanism: inhibits ovulation, thickens cervical mucus

Benefits: decreases amount of bleeding and pain, can improve mittelschmerz, PMS and other menstrual symptoms, can decrease uterine cancer and ovarian cancer risk

Adverse effects: IRREGULAR BLEEDING, mood swings or depression, increased anxiety, headaches, acne, weight gain

Minimal studies in obese women. May be less effective over time with obese women

Depot medroxyprogesterone acetate(DMPA)

- Injection every 12 weeks- 150 mg IM deltoid or gluteus maximus.
- Mechanism: suppression of ovulation, inhibits LH/FSH surge, thickens cervical mucus
- Benefits: decreased bleeding, decreased dysmenorrhea and mittelschmerz, increased amenorrhea over time
- Adverse effects (MAY LAST UP TO 9 MONTHS)): irregular bleeding, headaches, depression/anxiety, weight gain, hair thinning, risk of bone thinning, increased LDL/decreased HDL

Combined Oral Contraceptives (COCs)

Mechanism: suppresses ovulation, inhibits LH/FSH surge, thickens cervical mucus

Hormones: estrogen and progestin (monophasic or triphasic)

Regimens: traditional cyclic regimen 21/7, shortened placebo days, extended active pills, continuous active pills

Combined oral contraceptives estrogens

- Ethinyl estradiol 10mcg, 20 mcg, 30 mcg, 35 mcg

- Estetrol (Nextstellis: estetrol with drosperinone).
  - Estetrol normally produced by human fetal liver
  - NEST (native estrogen with selective action on tissues)

- Estradiol valerate (Natazia: estradiol with dienogest).
  - Indication on label: birth control and for heavy bleeding.

Combined Oral Contraceptives- progestins

- 1st generation: norethindrone, ethynodiol diacetate
- 2nd generation: levonorgestrel, norgestrel
- 3rd generation: norgestimate, desogestrel
- 4th generation: drospirenone, dienogest

COCs benefits

- Decrease bleeding duration and amount, decrease anemia
- Can regulate bleeding and manipulate timing of bleeding
- Decrease primary and secondary dysmenorrhea
- Decrease mittelschmerz, PMS, menstrual symptoms
- Improve acne, hirsutism
- Decrease menstrual migraines
- Decrease ovarian cysts
- Decrease risk uterine/ovarian cancer

COCs adverse effects

- Breakthrough bleeding
- Nausea, breast tenderness
- Headaches
- Mood, anxiety worsening
- Weight
- Bloating, edema
- Acne
- Decreased libido
- Melasma

Trouble shooting with COCs

- Breakthrough spotting: higher estrogen & progestin
- Breast pain, headaches, nausea: lower estrogen, pm dose
- Depression, anxiety: lower estrogen & progestin
- Weight gain: lower estrogen & progestin
- Bloating, edema: lower estrogen, change progestin
- Acne: higher estrogen, less androgenic or lower progestin
- Libido: lower estrogen/progestin
- Melasma: lower estrogen, avoid the sun, derm treatments

COC risks and concerns

- New hypertension (~ 4-5%) or worse hypertension (~ 16%)
- Venous thrombotic events, especially the first year (3-20/10,000 woman-years over baseline of 1-5/10,000); slt increased stroke risk
- OCP and obesity: increased DVT risk, slightly higher pregnancy rate possible
- Lower systemic levels of hormone if taken with anti-seizure meds (phenytoin, carbamazepine, oxcarbazepine, lamotrigine, barbiturates)
- Can worsen liver disease; associated with rare hepatic adenomas

COCs for medical issues (menstrual suppression)

- Dysmenorrhea
- Abnormal bleeding, bleeding disorders, anemia
- PMS, mittelschmerz, menstrual symptoms
- Challenges with menstrual hygiene
- PCOS
- Acne
- Menstrual migraines
- Recurrent ovarian cysts
- Lifestyle needs
- Medical or psychiatric conditions that worsen with menses

Contraceptive patch

Ethinyl estradiol 35 mcg / norelgestromin 150 mcg

EXPOSED TO 60% MORE ESTROGEN THAN 35 MCG PILL

Labeling notes the patch should not be used if BMI > 30

Ethinyl estradiol 30 mcg / levonorgestrel 120 mcg/day. Labeling notes the patch should not be used if BMI > 30

- Contraceptive vaginal rings

 Ethinyl estradiol 15mcg/d and etonorgestrel 120mcg/d	New ring 3 weeks at a time, leave out one week
 Ethinyl estradiol 15 mcg/d & segesterone acetate 13 mcg/d	Ring for 13 cycles (leave in for 21 d/leave out 7d)

U.S. Medical Eligibility Criteria (MEC)

- 1- no restriction
- 2- advantages generally outweigh risks
- 3- risks usually outweigh advantages
- 4- condition with unacceptable health risk if method is used

Morbidity and Mortality Weekly Report, CDC

OCPs- MEC categories

- 2- BMI > 30
- 4- BP > 160/100
- 4- Antiphospholipid antibodies
- 4- Multiple risk factors atherosclerotic cardiovasc disease
- 4- Migraines with aura

Progestin only birth control pills (POPs)

- Norethindrone pills (daily progestin pill, no placebos)
  - Mechanism: thickens cervical mucus, suppression ovulation in 50%
  - Irregular bleeding, acne, mood changes, ovarian cysts
  - Less effective with seizure medications

- Drospirenone pills (24 tabs with 4mg drospirenone, 4 placebos)
  - Mechanism: suppresses ovulation, thickens cervical mucus
  - Less problems with irregular bleeding, acne, mood changes
  - Less effective with seizure medications
  - Women > 30 BMI included in FDA studies.

- Emergency Contraception (mechanism: delays ovulation)

Copper IUD, Mirena, and Liletta up to 5 days

Ulipristal acetate 30 mg up to 5 days (antiprogesterone)

Levonorgestrel 1.5 mg up to 3 days

Yuzpe method (combination birth control pills) up to 3 days

- Adolescents and sexual risk behaviors, CDC STD surveillance 2020

20% of all new HIV diagnoses were people aged 13-24 in 2020.

More than half of the nearly 20 million new STDs reported in 2020 were among people aged 15-24.

CDC STI screening recommendations, 2021

- Minors can consent for their own STI services
- Annual screening for chlamydia (females < 25 yrs)
- Annual screening for gonorrhea (females < 25 yrs)
- HIV screening discussed & offered to all adolescents
- HPV vaccination recommended

CDC STI treatment recommendations, 2021

- Offer STI testing if positive chlamydia, gonorrhea, or trich
- Offer partner services with positive test
  - Unless prohibited by law, medical providers should routinely offer expedited partner therapy (EPT) to patients with chlamydia when the provider can't ensure that the patient's partners will seek timely treatment.
  - Prescriptions should be accompanied by education materials, treatment instructions, and warnings about taking the medication
- Offer repeat test in 3 months (test for re-infection)

C trachomatis CDC STI treatment guidelines, 2021

Recommended regimen: doxycycline 100mg bid x 7 days

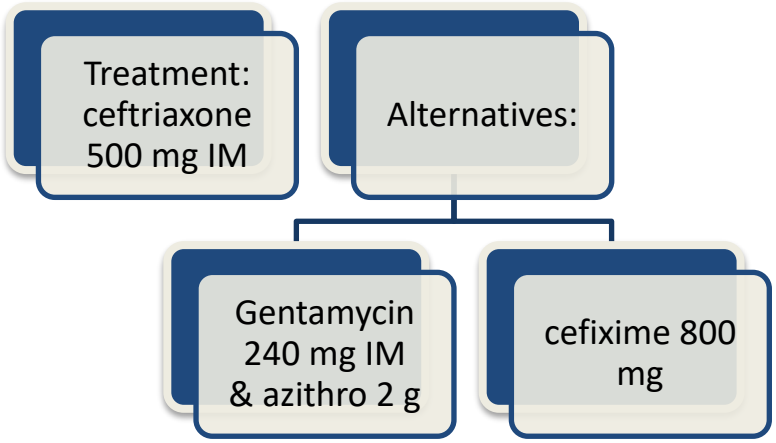
Alternative regimen: azithromycin 1 g

Alternative regimen: levofloxacin 500mg daily x 7 days

Abstain from sexual activity for at least 7 days

Should get retested in 3 month (eval for reinfection)

N gonorrhoeae CDC STI treatment guidelines, 2021

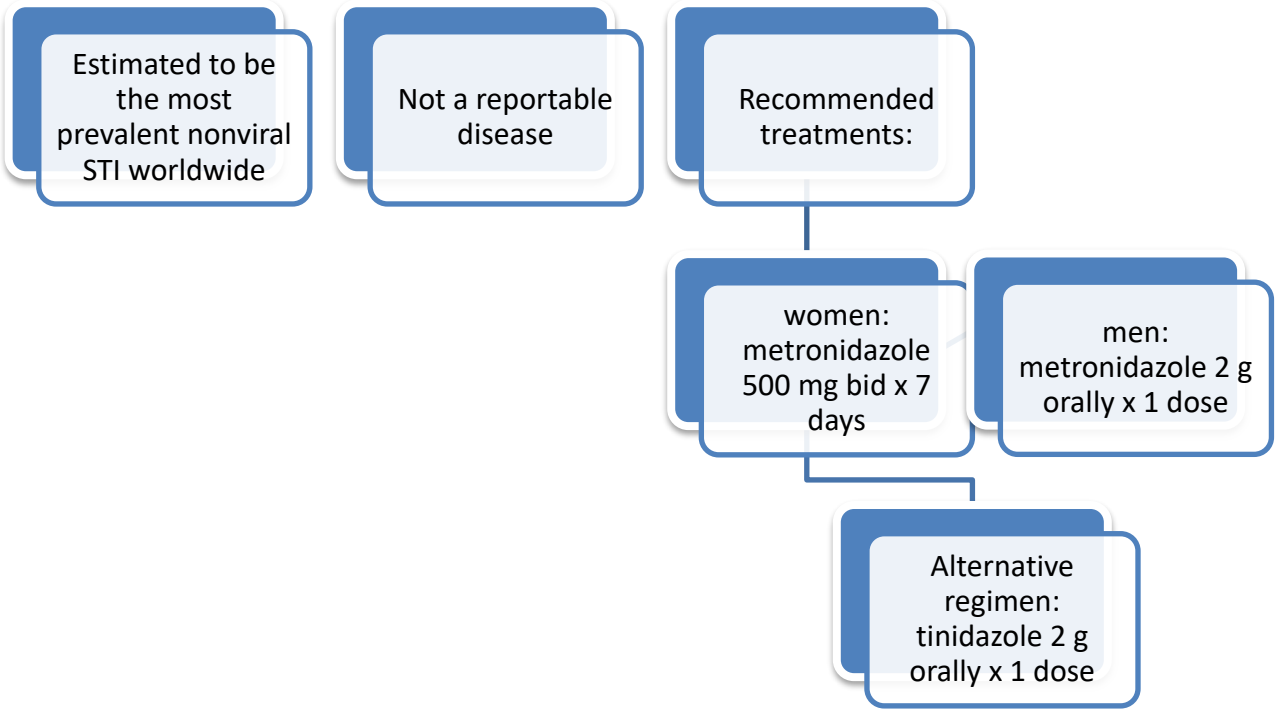


- Treat for chlamydia if unknown status
- Wait at least one week after treatment for sexual activity
- Testing for reinfection should be in 3 months
- Test of cure in 7-14 days recommended if pharyngeal infection

GC, Chl, PID with IUD in place CDC STI Treatment Guidelines, 2021

- Treat with the same antibiotics
- Ok to leave the IUD in place initially
- Consider removal at 48-72 hours if no improvement

Trichomoniasis (T vaginalis) CDC STI treatment guidelines, 2021



Herpes 1 & 2, CDC STI Treatment Guidelines, 2021

- 11.9% of people 14-49 yrs are estimated to have HSV-2 but HSV-1 cases are rising especially among young women
- The majority of people with HSV-2 haven't been diagnosed but they still shed the virus intermittently
- Recurrences and subclinical shedding more common with HSV-2
- If lesions are present, do type-specific testing from the lesions
- Treatment can be suppressive therapy or episodic therapy (acyclovir, famciclovir, valacyclovir)

Resources

- NASPAG
- ACOG
- CDC
- SAHM

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Thank you.

Questions???

Bacterial vaginosis (BV) Amsel criteria

- Homogenous thin discharge that smoothly coats the walls
- Clue cells (vaginal epithelial cells studded with bacteria)
- PH of vaginal fluid > 4.5
- Fishy odor of vaginal discharge before or with 10% KOH

Bacterial vaginosis recommended treatment

- Metronidazole 500mg bid x 7 days
- Metronidazole gel 0.75% one applitorful (5g) qhs x 5 days
- Clindamycin cream 2% one applicatorful (5g) qhs x 7 days

Bacterial vaginosis alternative treatments

- Clindamycin 300 mg orally bid x 7 days
- Clindamycin ovules 100mg vaginally qhs x 3 days
- Secnidazole 2 g oral granules x 1 day
- Tinidazole 2 g orally daily x 2 days
- Tinidazole 1 g orally daily x 5 days

Vulvovaginal candidiasis regimens, CDC 2021

- OTC: Clotrimazole cream, Miconazole cream/suppository, Tioconazole ointment
- Rx: Butoconazole cream, Terconazole cream/suppository, oral Fluconazole

Human papilloma virus (HPV) prevention

- Abstaining from sexual activity
- Limiting sexual partners
- Condoms
- HPV vaccine

Human papilloma virus (HPV) vaccine

- Gardasil 9 (types 9,11,16,18, 31,33,45, 52,and 58)
- Routine vaccination at 11-12 yrs (ok to start at 9yrs)

- 2 dose vaccine if < 15 yrs (0 and 6-12 months)
- 3 dose vaccine if >15 yrs (0, 1-2 months, 6 months)

HPV- anogenital warts treatment

- Imiquimod cream 5% (3x/wk up to 16 wks)
- Podofilox 0.5% solution or gel (bid x 3 days, rest 4 days-up to 4 cycles)
- Sinecatechins 15% ointment (tid up to 16 wks)
- Cryotherapy, trichloroacetic acid, or excision in the clinic
- Excision, laser in the operating room

Pelvic Inflammatory Disease (PID)

- Spectrum of inflammatory disorders of upper genital tract (endometritis, salpingitis, tubo-ovarian abscess, peritonitis)
- C trachomatis and N gonorrhoeae are often implicated but many other bacteria may be associated with PID.
- Presumptive treatment should be initiated if pelvic/lower abdominal pain or if cervical motion tenderness, uterine tenderness, or adnexal tenderness and signs of lower genital tract inflammation (predominance of leukocytes in vaginal secretions, cervical discharge, or cervical friability).
- Additional criteria can support PID diagnosis: fever, cervical mucopurulent discharge, abundant WBCs of vaginal fluid, elevated ESR, elevated CRP

PID – Outpatient treatment

- Ceftriaxone 500 mg IM + doxycycline 100mg bid x 14 days + metronidazole 500 mg bid x 14 days
- Cefoxitin 2 g IM and probenecid 1 g orally + doxycycline 100 mg bid x 14 days + metronidazole 500 mg bid x14 days

- Should be improving by 72 hours after treatment started (optimal to get followup appointment at 48-72 hours)
- Repeat testing in 3 months

PID- Inpatient treatment recommended if:

- Tubo-ovarian abscess
- Pregnancy
- Severe illness, nausea/vomiting, fever > 101.
- Unable to follow or tolerate outpatient regimen
- No clinical response to outpatient regimen