The Daunting Downside of Depo Provera Injections

The most daunting downside of Depo injections is that Depo users have the **lowest one-year continuation rates** of any modern contraceptive (only 25% to 70%). This **high discontinuation rate** leads to a pregnancy rate in first year Depo users of 6% in typical women. To improve the continuation rate and lower the pregnancy rate, the Mexican program described below by Canto-DeCetina in 2001 developed a structured counseling program.

Structured counseling is the best way to improve Depo-Provera continuation rates. Failure to take this information into account may cause discontinuation, expense and unintended pregnancies.

Structured Counseling for Depo-Provera Patients Works!

- Discontinuation rates for DMPA users at one year are high in the absence of structured counseling: 40.6% in a large U.S. study of 3857 women leading to FDA approval of Depo-Provera (Schwallie, Fertil Steril 1973); 53% in a New York study of low-income women (Polaneczky, 1996); 71% in an urban Texas setting (Sangi-Haghpeykar 1996) .
- Importance of focused, structured, repeated counseling at initiation and follow-up visits can't be overstated.
- Structured counseling may include repetition, having patient repeat back instructions, showing videotapes, providing videotapes, audiotapes and written instructions and asking focused questions such as "What has happened to your pattern of bleeding?", "Have your periods become extremely light?", or "Does your pattern of bleeding bother you?" rather than unfocused questions like "Are you having any problems?"
- Structured counseling in Mexico lowered DMPA discontinuation associated with three bleeding problems: amenorrhea, irregular bleeding and heavy bleeding, from 32% to 8%. Discontinuation from amenorrhea fell from 17% to 3%; from SPT or BTB from 10% to 3%; and from heavy bleeding from 5% to 2%. (Canto-DeCetina, 2001)
- Weight should be taken at each visit and weight control discussed carefully if there has been weight gain.

Structured Counseling

Carefully planned structure counseling may include:

- Repetition of a specific message at the time of the initial visit
- Having the patient repeat back her understanding of a message
- Use of a clear, concise videotape
- Asking the patient if she has questions about the videotape
- Written information and instructions that highlight key messages
- Repetition at each follow-up visit
- Checklist for patient to fill out at each follow-up visit

Example: Structured counseling for Depo-Provera*

- The message: Depo-Provera will change your periods. No woman's periods stay the same as they were before starting Depo-Provera. Ask: "Will you find it acceptable if there are major changes in your periods?" If no, steer clear of DMPA (as well as progestin-only pill, Implanon, Mirena)
- Have the patient repeat back her understanding of the message, particularly the fact that, over time, women stop having periods most months. Women tend to have very irregular menses almost immediately.
- Use of a clear, consise videotape
- Asking the patient if she has questions about the videotape
- Written instructions that clearly highlight the key messages
- Asking at each 3-month visit what has happened to a woman's pattern of bleeding, whether amenorrhea has begun and how she feels about her pattern of bleeding

Checklist for Depo-Provera patient to fill out at each follow-up visit.

Please check yes or no. Tell us if you have/are:

Spotting or irregular vaginal bleeding	☐Yes	☐No
Missed periods or very, very light periods	☐Yes	☐No
Concern over your pattern of vaginal bleeding	☐Yes	☐No
Depression, severe anxiety or mood changes	☐Yes	☐No
Gained 5 pounds or more	☐Yes	☐No
Questions you have about Depo-Provera injections	☐Yes	☐No
Any wrist, hip or other fractures	☐Yes	☐No
Using calcium supplements	☐Yes	☐No
Getting regular exercise	☐Yes	☐No

Summary of other negative aspects of providing Depo Provera:

1.-2. High discontinuation rates & High pregnacy rates in typical users.
3. Requires women to return to a clinic every 3 months
4. Weight gain - particularly in women who are over-weight when they start to receive Depo injections. The average weight gain is 5.4lbs in the first year and 16.5lbs after 5 years. [Schwallie-1973]
5. Irregualar bleeding for the first few months leading to the absence of bleeding in 50% of women at 1 year
6. The final word is not in on bone mineral density and Depo Provera. All women using DMPA including teens should be taking in sufficient calcium in diet or be encouraged to take calcium supplements.
7. **What mistake Bob Hatcher, was the most serious mistake you saw repeated in providing contraceptives over the past several decades?**
   It was the woman who started using Depo-Provera injections just a bit overweight and was then found to have gained 20, 40, 60, 80 or 100 pounds at subsequent visits... Weight gain at any one of these visits might not have led to immediate refusal to provide another injection. However, at each visit, a woman who is gaining weight on Depo-Provera needs to be informed that the weight gain is likely related to her use of Depo-Provera. Weight gain should lead to serious counseling along these lines:

   We are very concerned about your weight gain because it could lead to diabetes, problems with your joints, and heart disease. We want you to switch to another contraceptive immediately. One of the two IUDs might be best. If we can't get you to change your method today or start to lose weight during the next three months, we want you to be thinking seriously about what you might choose to use instead of Depo injections at your next visit. This pattern of weight gain simply is not good for you. It needs to be taken very seriously. I have seen patients gain 100 pounds in just one year of using Depo-Provera.

Presentation for Sandra Counts, residents and faculty at AnMed Health in Anderson, SC, January 31, 2017 *Sorry, Alabama about Jan. 9...* ***Go Tigers!***

The Daunting Downside of Condoms, Pills, and Injections.

Condoms, Pills, and Depo-Provera injections are the three reversible contraceptives most commonly used in the United States. Each of them has failure rates in typical users many, many times higher than the failure rates of implants and IUDs.

Note the absence of decimal points. This chart points out how much more effective Nexplanon is than pills.

Nexplanon has a typical use failure rate of 0.05%. Just what does 0.05% mean? This chart shows you!

*** Estrogen increases risk for stroke, heart attack, and blood clots.**

This ingenious method of explaining the differences in typical use failure rates by placing the number of pregnancies in the first year in 10,000 typical users. It comes to you because of the creative genius of ***Dr. Claude Burnett*** *in Athens, GA. It was derived from* ***James Trussell's*** *table 3-2 on page 50 of Contraceptive Technology, 20th ed. 2011.*

Offer to provide combined pills continously (no hormone-free days) to lower the extremely high failure rate of combined pills in typical users.

WORLD'S BEST BIRTH CONTROL

BIRTH CONTROL EFFECTIVENESS IN 10,000 TYPICAL WOMEN

MORE EFFECTIVE, LESS RISK

Contraceptive Method	Pregnancies in first year
NEXPLANON	5
MALE STERILIZATION	15
MIRENA IUD	20
FEMALE STERILIZATION	50
PARAGARD IUD	80
DEPO SHOT	600
MINIPILL	900
COMBINATION PILLS*	900
CONDOM	1,800
WITHDRAWAL	2,200
NO METHOD	8,500

One of the participants at the November 2016 Contraceptive Technology Conference in Atlanta said that this green chart by Dr. Claude Burnette from James Trussell's data was the most important thing she learned at the 2015 conference. She uses it all the time.

Here are the problems with condoms:

1. They are not on hand when needed
2. "We are not at risk" stops couples from using condoms
3. The 18% failure rate in the next 12 months for typical women depending on condoms is simply too high!
4. In some relationships women are subjected to violence if they strongly request that a condom be used.
5. Given the embarrassment it causes men and women to return repeatedly to clinics, providing them only 3-12 condoms per visit is ineffective and insensitive.
6. 2-3% of American men and women are allergic to latex.
7. The complaint that condoms blunt sensation or feel unnatural is a common reason to stop using condoms.
8. Condom breakage happens during from 1 in 50 to 1 in 100 acts of intercourse.

When we see women and men who have experienced multiple breaks or slippages, we would be wise to encourage them to use 2 condoms.

NOTES

The Daunting Downside of Birth Control Pills

82% of U.S. women who have ever been sexually active have used combined birth control pills. [Mosher, 2010]

By far the most important downside of oral contraceptive pills is that they must be taken every day, but the average woman misses 4.2 pills each month leading to a 9% failure rate in typical women. Consider this: of the 11 million women using pills each year, 1 million become pregnant [Nelson, Swiak, Contraceptive Technology 20th Ed., p249] and 40% of those women choose to have an abortion. If we are to continue using combined pills it becomes the responsibility of all providers and of women using pills to do something about this 9% failure rate. It is analygous of the FBI telling us "if you see something, do something".

Although quite uncommon estrogenic birth control pills may cause **blood clots and pulmonary emboli.** These **may be fatal** if not recognized and treated quickly. **See A-C-H-E-S mneunomic** used to teach the pill danger signals.

DISADVANTAGES [Managing Contraception 2016 Limited Edition, p115-117]

NOTE: Many of the symptoms women complain of after starting pills (nausea, headaches, bloating) occur more frequently during the days a woman is on placebo pills. Therefore, ask women when they have these symptoms. Symptoms occurring primarily during the placebo days may be an indication for continuous or extended use of pills [Sulak-2002]*

"Nocebo" Phenomenon:

- According to David Grimes and Ken Schulz, leading epidemiologists, counseling about side effects from OCPs and including them in the product label, is "unwarranted and probably unethical" since placebo-controlled randomized trials show no difference in side effects. They call this the "nocebo phenomenon:" if women are told to expect noxious side effects, they may occur due to power of suggestion. Or they may reflect prevalence of side effects in the population. [Non-specific side effects of OCPs: nocebo or noise? Grimes DA, Schulz KF; Contraception 83 (2011) 5-9]

Menstrual:

- Spotting, particularly during first few cycles and with inconsistent use
- Scant or missed menses possible, not clinically significant but can cause worry
- Post-pill amenorrhea (lasts up to 6 months). Uncommon and usually in women with history of irregular periods prior to taking pills

Sexual/psychological:

- Decreased libido and anorgasmia ARE possible.
- Mood changes, depression, anxiety, irritability, fatigue may develop while on COCs, but no more frequent than with placebos. Rule out other causes before implicating COCs
- In a longitudinal survey of over 9000 women in Australia, OCP use was not associated with depressive symptoms [Duke-2007]
- Daily pill taking may be stressful (especially if privacy is an issue)

Cervical cancer:

- No consistent increased risk seen for squamous cell cervical carcinoma (85% of all cervical cancer) after controlling for confounding variables, such as number of sex partners, smoking and parity
- Risk of adenocarcinoma, a relatively uncommon type of cervical cancer, is increased 60%, but no extra screening required other than recommended Pap screening
- Hepatocellular adenoma: risk increased among COC users (only in > 50 µg formulations). Risk of hepatic carcinoma not increased, even in populations with high prevalence of hepatitis B

Other:

- No protection against STIs, including HIV.
- Shedding of HIV may be slightly increased with use of some antiretrovirals
- Nausea or vomiting, especially in first few cycles
- Breast tenderness or pain
- Headaches: may increase
- Increased varicosities, chloasma, spider veins
- Daily dosing is difficult for some women
- Average weight gain no different among COC users than in placebo users (see note below)

Most women on antiretrovirals should use condoms since:

1) the meds may decrease the pill effectiveness if the antiretroviral induces cytochrome p 450 metabolism
2) GI side-effects from drugs may decrease OC effectiveness
3) It is important to avoid other infections that may facilitate HIV transmission

***NOTE:** Medical problems and symptom complaints are frequently attributed by patients and providers to COC use. While some women may be particularly sensitive to sex steroids, a recent placebo-controlled study found that the incidence of all of the frequently mentioned hormone-related side effects was not significantly different in the COC group than it was in the placebo group [Redmond, 1999] For example, headaches occurred in 18.4% of women on Ortho Tricyclen and in 20.5% of women in the placebo group. Nausea occurred in 12.7% of women on Ortho Tricyclen and in 9.0 % of women on placebo pills. Weight gain occurred in 2.2% of women on Ortho Tricyclen and in 2.1 % of women on placebo pills. For some women, however, these complaints may actually be related to pill use

COMPLICATIONS

- Venous thromboembolism (VTE)
  - The risk of VTE with COC use is less than with pregnancy:

No COC use	50/100,000 women per year
COC use	100/100,000 women per year
Pregnancy/Postpartum	200/100,000 women per year

- DVT risk is associated with the dose of estrogen; the risk of VTE in 50 µg pills is greater than in 20-35 µg pills. The type of progestin may slightly influence DVT risk. A meta-analysis by Hennessy et al (2001) included 12 observational studies and found a summary relative risk of 1.7 (1.3) - 2.1; heterogenerty p = 0.09) but could not rule out confounding given nature of observational studies. If read, the excess risk was 11 per 100,000 women per year. The current labeling for desogestrel pills states that "several epidemiologic studies indicate that third generation OCs, including those containing desogestrel, are associated with a higher risk of venous thromboembolism than certain second generation OCs. In general, these studies indicate an approximate 2-fold increased risk. However, data from additional studies have not shown this 2-fold increase in risk." Neither the FDA nor ACOG recommends switching current users of desogestrel containing pills to other products. Underlying blood dyscrasias such as Factor VLeiden mutation and Protein S or C abnormalities increase risk of VTE significantly. However, in the absence of strong family history (see boxed message on p. 99), screening is not necessary. A very large well-designed prospective study of the risk of VTE with drospirenone found no relative increase in risk with the use of DRSP compared with LNG pills (Dinger). Three recent large studies (one case-control, and one retrospective cohort and one claims based) did find small increases in risk with the use of DRSP pills compared with LNG pills (Lidegaard, A van Hylckand, Sidney). A debate about whether these studies adequately controlled for confounding factors is ongoing.

Estrogenic contraceptives can lead to serious complications and even to death. Teaching women the early warning signals may save the life of a women using pills, patches or rings.

Women using estrogenic birth control pills, patches or rings should know the "A – C – H – E – S" warning signals. These are the first letters of the symptoms she should watch out for.

Pill, Patch and Ring Warning Signals

Abdominal pain - Blood clot in pelvis, liver or mesentric vein

Chest pain - Blood clot in lungs, cough, cough up blood, shoulder pain or pain down arm, fatigue, shortness of breath, flu-like symptoms or heart attack

Headaches - Severe pain, visual problems, numbness or weakness in an extremity

Eye problems - retinal vein thrombosis, tunnel vision, partial or complete loss of vision

Severe leg pain - Swelling, heat, redness or tenderness in lower leg or thigh

Return quickly to your doctor or nurse practitioner if you develop one of these!

Whenever seen by a doctor or nurse practitioner be sure to tell her or him what contraceptive you are using.

- *Myocardial infarction (MI) and stroke*
  - There is no increased risk of MI or stroke for young women who are using low-dose COCs who do not smoke, do not have hypertension and do not have migraine headaches with neurological findings
  - Women at risk:
    - Smokers over 35 shouldn't use COCs; all smokers should be encouraged to stop smoking. Smokers over 35 have MI rate of 396 per million COC users per year vs. 88 per million non-COC users per year
    - Women with hypertension, diabetes, hyperlipidemia or obesity
    - Women with migraine with aura (only stroke risk increases)
- *Hypertension:* 1% of users develop hypertension which (usually) is reversible within 1-3 months of discontinuing COCs. Most users have a very small increase if any in blood pressure
- *Neoplasia:* COC users using early high dose pills are at higher risk of developing adenocarcinoma (rare) of the cervix and hepatic adenomas (rare). See boxed message on Page 114 of *Managing Contraception* for an answer to the question: Do birth control pills cause breast cancer? ***"Many years after stopping oral contraceptive use, the main effect may be against medistatic disease."*** [Speroff and Darney-2001][World Health Organization Collaborative Group, Lancet-1996]
- *Cholelithiasis/cholecystitis:* higher dose formulations were associated with increased risk of symptomatic gallbladder disease
  - Sub-50 mcg formulations may be neutral or have a slightly increased risk
  - Use COCs with caution in women with known gallstones. Asymptomatic (US MEC:2), treated by cholecystectomy (US MEC:2), symptomatic and being treated medically (US MEC:3), current and symptomatic (US MEC:3)
- *Visual changes:* Rare cases of retinal thrombosis (must stop pills). Contact lens users may have dry eyes. May need to recommend eye drops or need to switch methods.

NOTES

Robert A. Hatcher MD, MPH, Emeritus Professor of Gynecology and Obstretics, Emory University School of Medicine, Atlanta, Georgia – January 10, 2017