

## Which Oral Contraceptive Pill is Best for Me?

Frederick R. Jelovsek MD, MS

*"I am 25 years old. I haven't had a period in about 6 months but I don't want to get pregnant now. I'm overweight and can't lose any, I am always tired, have acne that I can't clear up, and I have excess body hair. I have been put on birth control pills but they haven't helped. What would be the best brand of pills for me to be on for my problem? Also, my pills cost \$30.00 a month. Are there any sources for free pills?"*

-Anonymous

Be sure to give the pills you are currently taking a fair trial of at least 2-3 months. If your pills are switched, also give them 2-3 months trial because it often takes 2 months just for your body to adjust to the estrogen and progestin in an oral contraceptive. Also when we say a pill has certain characteristics because of its estrogen dose and its progestin dose and potency or androgenicity (male hormone effect), every woman responds differently to those components and sometimes the general principles just do not apply.

With your history of infrequent menstruation, you may have a condition of either polycystic ovarian syndrome (PCOS) or a stress-like hypothalamic anovulation. In either case, birth control pills are a good treatment for those conditions if you do not want to get pregnant at present. In the case of hypothalamic anovulation there are often low or low normal estrogen levels and the pill will increase those levels to mid-normal range. In the case of PCOS, the extra estrogens from the pill will result in an increased binding (inactivation) of any excess testosterone from the polycystic ovaries as well as suppress some of the testosterone production from them. With PCOS you would avoid a pill with increased androgenic (testosterone-like) activity and do better with one with higher estrogen levels as far as combating the excess body hair you indicate is present now. In summary, for PCOS, you want less androgenicity and more estrogen (to bind to the free testosterone).

Many experts believe there are no consistent side effect differences between different formulations of birth control pills because all pills have been reduced in dose so much from when older data on higher dose pills was examined. Others agree that those unique side effects have been reduced but they are still manifest in some women. In my experience some women still have side effects according to the different oral contraceptive components and their doses in a given pill formulation.

### **How do the doses of pill components vary by brand of pill?**

Birth control pills now have only one (synthetic) estrogen type, ethinyl estradiol. Therefore the estrogen potency of a given pill is directly related to the number of micrograms of ethinyl estradiol with one exception. Sometimes the specific progestin also has some estrogen activity. For the most part, the estrogen potency of the progestins is small in comparison with ethinyl estradiol so it is not added in to potency tables.

## Estrogen and Progestin Hormone Doses in Combined Birth Control Pills

Estrogen level ethinyl estradiol (micrograms)	Pill Brand Name	Progestin	Dose (mg)
15 mcgm	NuvaRing®	etonogestrel	0.120
20 mcgm	Alesse®; Levlite®; Aviane	levonorgestrel	0.10
	Loestrin 1/20® Fe; Microgestin Fe	norethindrone acetate	1.00
	Mircette®; Kariva	desogestrel	0.15
	YAZ	drospirenone	3.0
	Ortho Evra® (patch)	norelgestromin (norgestimate metabolite)	0.15
25 mcgm	Ortho Tri-Cyclen Lo (triphasic)	norgestimate	0.18/0.215/0.25
	Cyclessa (triphasic)	desogestrel	0.100/0.125/0.150
phasic 20/30/35 mcgm	Estrostep® Fe	norethindrone acetate	1.0/1.0/1.0
30 mcgm	Levlen®; Levora®; Nordette®	levonorgestrel	0.15
	Seasonale® (continuous pill)	levonorgestrel	0.15
	Lo/Ovral®; Low-Ogestrel-28	norgestrel	0.30
	Desogen®; Ortho-Cept®; Apri	desogestrel	0.15
	Loestrin® 1.5/30; Microgestin Fe 1.5/30	norethindrone acetate	1.50
	Yasmin®	drospirenone	3.0
phasic 30/40/30 mcgm	Triphasil®; Tri-Levlen®; Trivora®	levonorgestrel	0.05/0.075/0.125
35 mcgm	Ortho-Cyclen®	norgestimate	0.25
	Ovcon-35®	norethindrone	0.40
	Brevicon®; Modicon®; Necon 0.5/35; Nelova 0.5/35; NEE 0.5/35	norethindrone	0.50
	Necon 1/35®; Nelova 1/35; NEE 1/35; Genora 1/35; Norcept-E 1/35; Norethin 1/35E®; Norinyl® 1/35; Ortho-Novum® 1/35	norethindrone	1.00
	Demulen® 1/35; Zovia®	ethynodiol diacetate	1.00
	Ortho-Novum® 10/11; Jenest®; Necon 10/11; NEE 10/11 (biphasic)	norethindrone	0.50/1.00
	Ortho-Tri-Cyclen® (triphasic)	norgestimate	0.18/0.215/0.25
	Ortho-Novum® 7/7/7 (triphasic)	norethindrone	0.50/0.75/1.00
	Tri-Norinyl® (triphasic)	norethindrone	0.50/1.00/0.50
50 mcgm	Necon® 1/50; Norinyl® 1/50; Ortho-Novum® 1/50; Ovcon-50®	norethindrone	1.00
	Ovral®	norgestrel	0.50
	Demulen® 1/50; Zovia® 1/50E	ethynodiol diacetate	1.00

## Which pills have higher progestin side effects or cause more acne and hair growth?

Each progestin has a different potency, milligram per milligram, in terms of progesterone effect to stop menstrual bleeding or androgen effect to stimulate acne and hair growth. However you must remember that a higher potency progestin may be used in a much smaller milligram dose and thus be equivalent to a larger milligram dose of a less potent progestin. For example, desogestrel is a very potent and androgenic progestin but its usual oral contraceptive dose is 0.15 mg instead of 1.00 mg for norethindrone. Its progestin potency compared to norethindrone would be  $0.15 \times 9.0 = 1.35$  times. For androgenicity, it would be  $0.15 \times 3.4 = .51$  or half as androgenic as a pill containing 1 mg of norethindrone.

### Progestin Potency of Different Oral Contraceptive Progestins\*

Progestin	Progestational Activity (relative to 1 mg of norethindrone)	Androgenic Activity (relative to 1 mg of norethindrone)
norethindrone 1 mg	1.0	1.0
norethindrone acetate 1 mg	1.2	1.6
ethynodiol diacetate 1 mg	1.4	0.6
levonorgestrel 1 mg	5.3	8.3
dl-norgestrel 1 mg	2.6	4.2
norgestimate 1 mg	1.3	1.9
norelgestromin 1 mg**	1.3	1.9
desogestrel 1 mg	9.0	3.4
drospirenone 1 mg	1.5	0.0

\* - From Table 2 in Dickey RP: Individualizing oral contraceptive therapy. OBG Management Supplement October 2000, p 5.

\*\* - The major active metabolite of norgestimate

The pills that are likely to cause worse acne and hair growth side effects are those pills high in androgenicity and low in estrogen content. Such pills might include:

- Loestrin® 1.5/30
- Loestrin® 1/20 Fe
- Estrostep® Fe
- Levlen®
- Alesse®
- Ovral®
- Norlestrin® 1/50

Keep in mind that MOST women on these above pills DO NOT have acne problems, just those that have a tendency toward androgenicity.

### What pills would be better for ...?

In order to classify an oral contraceptive as an estrogen dominant, progestin dominant or androgenic pill, you must multiply the actual dose of the components times the relative potency of that component. Keep in mind that these are relative classification and do not always hold from one woman to another. For different oral contraceptive side effects, you might consider switching to the pills indicated in the table below to minimize those side effects.

## Current Pill Problems and Choice of Pill to Switch To

Side Effect/Problem	Principal	Pill Suggestions
Acne	higher estrogen, lower androgen potency	Yasmin®, Demulen® 1/50, Othro-Tri Cyclen®, Ortho-Cyclen®, Yasmin®, Brevicon®, Modicon®, Necon®, Ortho Evra®, Mircette®
Break-through bleeding	higher estrogen, higher progestin potency, lower androgen potency	Yasmin®, Demulen® 1/50, Zovia® 1/50E, Ovcon® 50, Desogen®, Ortho-Cept®, Estrostep® Fe, Loestrin® 1/20
Absent or too light menstrual flow	higher estrogen, lower progestin potency	Ortho-Cyclen®, Ovcon® 35, Brevicon®, Modicon®, Necon® 1/50, Norinyl® 1/50, Ortho-Novum® 1/50, Necon® 1/35, Norinyl® 1/35, Ortho-Novum® 1/35
Depression, moodiness or irritability**	lower progestin potency	Ortho Evra patch®, Ovcon® 35, Ortho-TriCyclen®, Othro-Cyclen®, Brevicon®, Modicon®, Necon® 1/35, Alesse®, Levlite®, Tri-Levlen®, Triphasil®, Trivora®
Headaches (not menstrual migraines)	lower estrogen, lower progestin potency	Ortho Evra®, Alesse®, Levlite®
Breast soreness	lower estrogen, lower progestin potency	Yasmin®*, Ortho Evra®, Alesse®, Levlite®, Loestrin® 1/20 Fe, any lower estrogen pill than currently on
Weight gain	lower estrogen, lower progestin potency	Yasmin®*, Ortho Evra®, Alesse®, Levlite®, Loestrin® 1/20 Fe, any lower estrogen pill than currently on
Severe menstrual cramps	higher progestin potency	Yasmin®, Desogen®, Ortho-Cept®, Mircette®, Loestrin® 1.5/30, Demulen® 1/35, Zovia® 1/35E, Demulen® 1/50, Zovia® 1/50E
Endometriosis or endometriosis prevention	lower estrogen, higher progestin potency, higher androgen potency	Loestrin® 1.5/30, Loestrin® 1/20 Fe, LoOvral®, Levlen®, Levora®, Nordette®, Demulen® 1/35, Zovia® 1/35, (used either continuously with zero days of placebo pills or with only 4 days of placebo pills for prevention)

\* - The progestin has anti-water retention properties

\*\* - Women are sensitive to hormones in different ways – some to the progestin, some to the amount and some to the hormonal fluctuation. Seasonale, or any monophasic oral contraceptive pill (OCP) taken continuously (having only 1 period every 3 months) can also help stabilize mood. Of note, YAZ® is the only OCP given an indication for PMDD. However, it has a high progestin potency and may not be ideal for every woman. YAZ shortens the placebo week from the regular 7 days to 4 days – to minimize the time of hormonal fluctuation. Women who are sensitive to hormonal fluctuation should avoid triphasic OCP's. Bottom line: Treatment needs to be individualized for each patient and trial and error may be necessary. It takes about 2 cycles to see if a certain OCP will work for a woman or not. Evidence based studies comparing one OCP to another are lacking.

### Where can I get free or discounted birth control pills?

Planned Parenthood organizations and your local county Public Health Department often provide birth control pills on an ability to pay discounted scale. If you qualify, they may even be free. Look up in the yellow pages phone directory for the Planned Parenthood or Public Health Department for the county you live in. Give them a call and ask about the costs of pills. If you are in college either full or part time, you may also be qualified to use the Student Health Facility and often they provide oral contraceptives at cost or a discount.

When your doctor prescribes a given oral contraceptive, most of the time they indicate it can be filled with a generic equivalent. If not, ask the doctor to please do that or ask the nurse to have a prescription rewritten for a generic equivalent. There are sources on the internet that will accept mailed-in prescriptions and the cost of a generic equivalent is often in the \$12-15 range. You may want to check out Hocks Drugs or use a search engine to look for "discount birth control".

•Handout adapted from webpage <http://www.wdxcyber.com/ncontr13.htm>