Depot medroxyprogesterone acetate (DMPA)

An advanced slide kit complementing the WHO training tool is available from:
www.fptraining.org

Update January 2020

DMPA: Contents

- General characteristics
- Contraindications
- Safety
- Adverse events (bleeding pattern, weight gain, acne, mood changes, BMD, HIV acquisition)
- Reasons for discontinuation
- Summary

General characteristics

- 12 weekly injections of 150 mg i.m. or 104 mg s.c.
- Highly efficient and user-independent
- Protects immediately from pregnancy if started on day 1–7 of the cycle
- Can be started after day 7 if pregnancy is excluded; additional protection is needed (7 days)
- Has no negative impact on lactation or on the baby
- DMPA self-administration can improve contraceptive access, continuation, and autonomy

Ref 1-3

Contraindications (WHO category 3)

- Breastfeeding <6 weeks post partum
- Multiple risk factors for arterial cardiovascular disease
- Untreated severe hypertension (≥160/≥100 mmHg)
- Acute deep vein thrombosis/pulmonary embolism (Use after VTE and in thrombophilia is WHO MEC category 2)
- Unexplained vaginal bleeding (before evaluation)
- Complicated diabetes
- Severe liver disease
- Breast cancer (WHO MEC category 4)

Ref 1

Safety: Metabolic parameters

Parameter	7 months (%)
Cholesterol	Unchanged
Triglycerides	Unchanged
HDL	↓
LDL	↑
Coagulation factors	Limited impact
Insulin level	↑

Small increase in insulin, but overall no significant changes in carbohydrate metabolism or coagulation factors

Lower D-dimer and longer time to peak thrombin generation in new users of DMPA suggest a positive profile against hypercoagulability

No increase in ATE

No increase in VTE: (One study indicated a small increase in risk (*n*=20 patients))

Ref 1-4

Adverse events do not differ between DMPA i.m. and s.c.

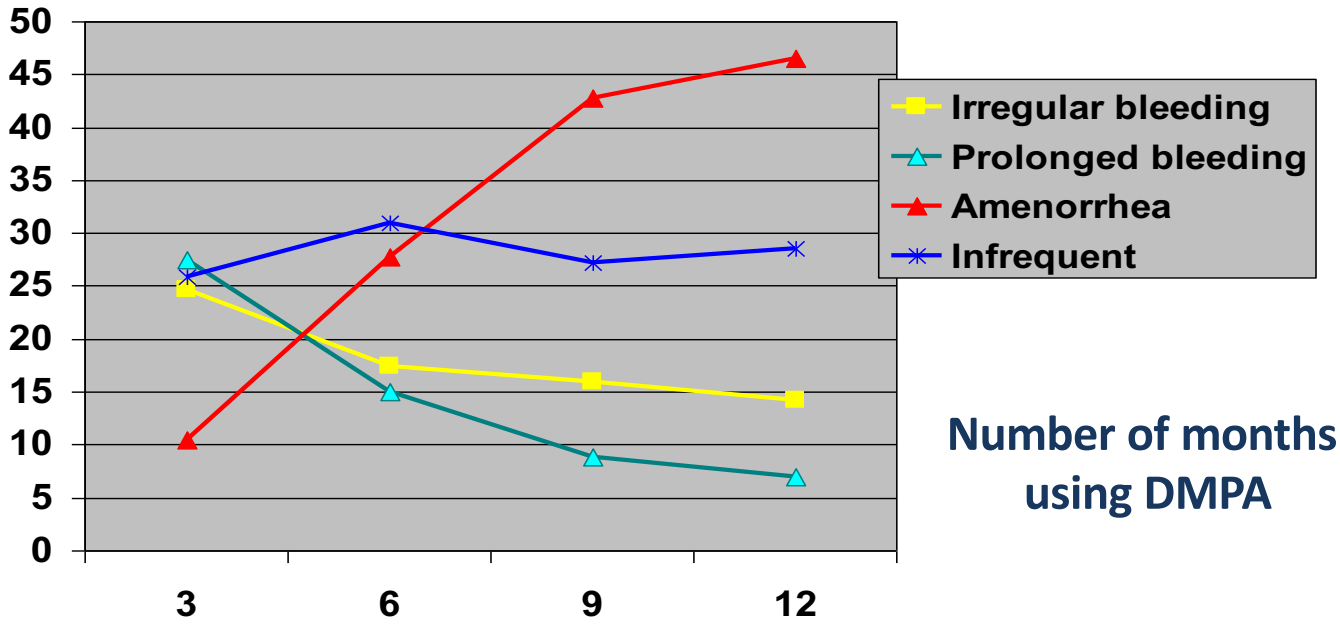
Adverse event occurring in >5%	DMPA i.m. users, n (%) (n=266)	DMPA s.c. users, n (%) (n=263)
Weight increase	**39 (14.7)**	**33 (12.5)**
Headache	**33 (12.4)**	**35 (13.3)**
Nausea	24 (9.0)	15 (5.7)
Acne	**20 (7.5)**	**20 (7.6)**
Depression or mood changes	**19 (7.1)**	**20 (7.6)**
Decreased libido	**16 (6.0)**	**8 (3.0)**
Abdominal pain	16 (6.0)	6 (2.3)
Intermenstrual bleeding	15 (5.6)	15 (5.7)
Abnormal cervical smear	14 (5.3)	9 (3.4)
Injection site reaction	**1 (0.4)**	**21 (8.0)**

Ref 1

Relevant adverse events

- Changes in bleeding pattern
- Weight gain (mean 2.4 kg/12 months); can be much more in some women
- Acne
- Mood changes or depression
- Negative impact on peak bone mass during adolescence
- Decrease in BMD in the early phase of use

Changes in bleeding pattern



Over a 12 month period

Amenorrhoea increases to > 60%

Prolonged bleeding decreases to 6%

Irregular bleeding decreases to 15%

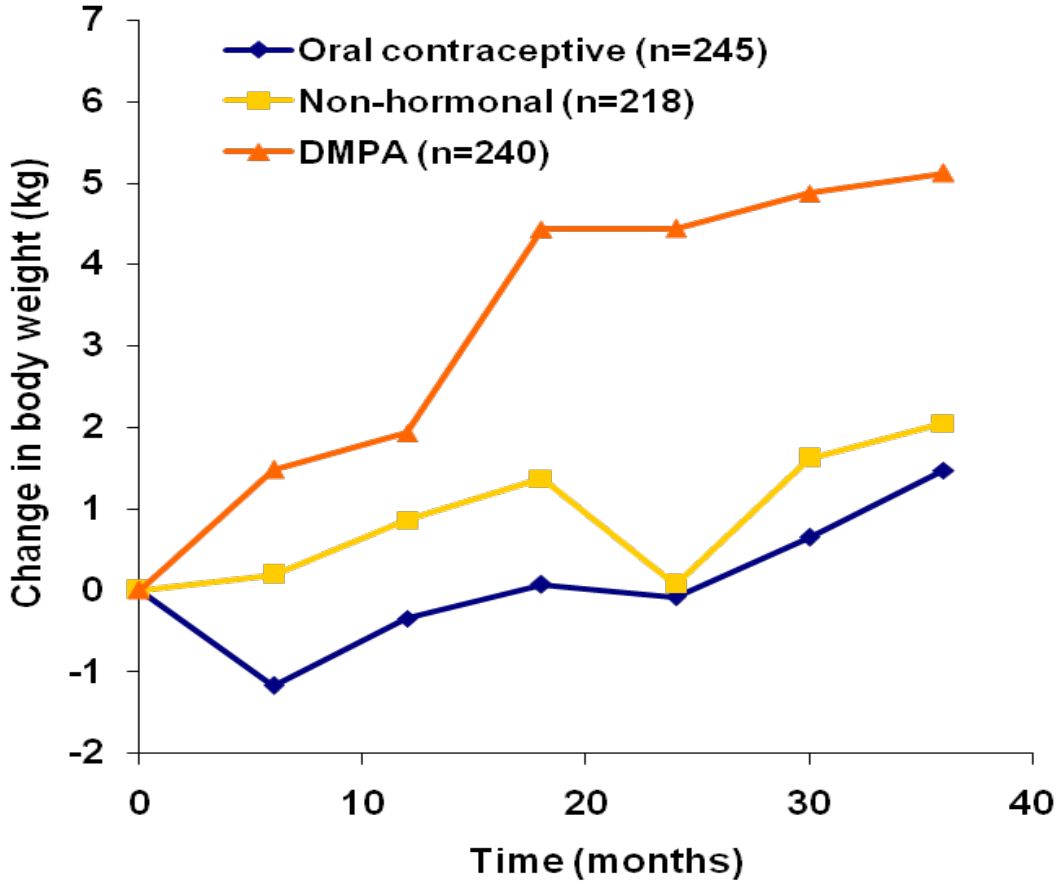
Ref 1,2

Treatment options for prolonged bleeding

- NSAIDs: ibuprofen 500–800 mg twice daily for 5 days
- Mefenamic acid 500 mg twice daily for 5 days
- Doxycycline twice daily for 5 days
- Tranexamic acid 500 mg twice daily for 5 days
- Norethisterone 5 mg 2–3 times daily for 21 days/2–3 cycles
- Estradiol 2 mg for 7 days or estradiol patch 50µg (if endometrium is atrophic) (if not contraindicated)
- CHCs for 21 days, if not contraindicated
- **For DMPA, shorten interval between injections***
- Mifepristone (off-label)
- Ulipristal acetate 5 mg for 5 days (off-label)

Ref 1-4

Weight gain over 3 years in DMPA users in comparison with COC users



Estimated absolute change in body weight from baseline to month 36

Ref 1

Weight gain compared with other contraceptives

Contraceptive method	Weight change (kg)	Percentage of women with particular weight increase
POP DSG (13 months)	No change	
Implant (24 months)	No change (31%) Increase >5 kg (20% W)	10% increase in body weight in 21% of users
DMPA (12 months)	2.4 kg	
DMPA (36 months)	5.8 ± (8.7) kg	20% increase >5 kg
DMPA (36 months)	3 kg	
LNG IUS (12 months)	1.03	
Copper IUD (12 months) (36 months)	0.2 0.6 kg	

Some women experience a relevant increase in weight with use of DMPA, which may lead to discontinuation .

Ref 1-6

Weight gain in DMPA users compared with LNG-IUS and Cu-IUD

Years of use	DMPA	LNG-IUS	Cu-IUD
1	1.3 ± 0.15	0.7 ± 0.18	0.2 ± 0.17
3	3.1 ± 0.21	2.4 ± 0.24	1.4 ± 0.23
6	4.6 ± 0.32	2.5 ± 0.53	3.3 ± 0.36
10	6.6 ± 0.61	4.0 ± 0.97	4.9 ± 0.60

The change in weight gain with the CU-IUD over time can serve as a typical reference for the age-related weight increase in women without hormone use.

* Check notes for information related to weight gain in adolescents

Ref 1

Adverse events in users of DMPA and other POCs

Adverse event	POP (%)	Implant (%)	DMPA i.m., s.c. (%)
Headache	7.5	12.7	**13.3**
Weight gain		12.1	**12.5**
Depression		7.3	**7.6**
Libido decrease			**3–6**
Acne	3.1	14.5	**7.6**

- POC cannot be used for treatment of acne (or what patients consider acne)
- DMPA users complain less about skin irritation compared with implant users

Ref 1-3

Acne

- No prospectively conducted studies are available investigating the effect of DMPA on acne
- Especially when changing from a combined pill to a progestin-only method skin problems can appear during the first 3 months
- Skin problems frequently resolve with longer duration of use

TOPIC : DMPA

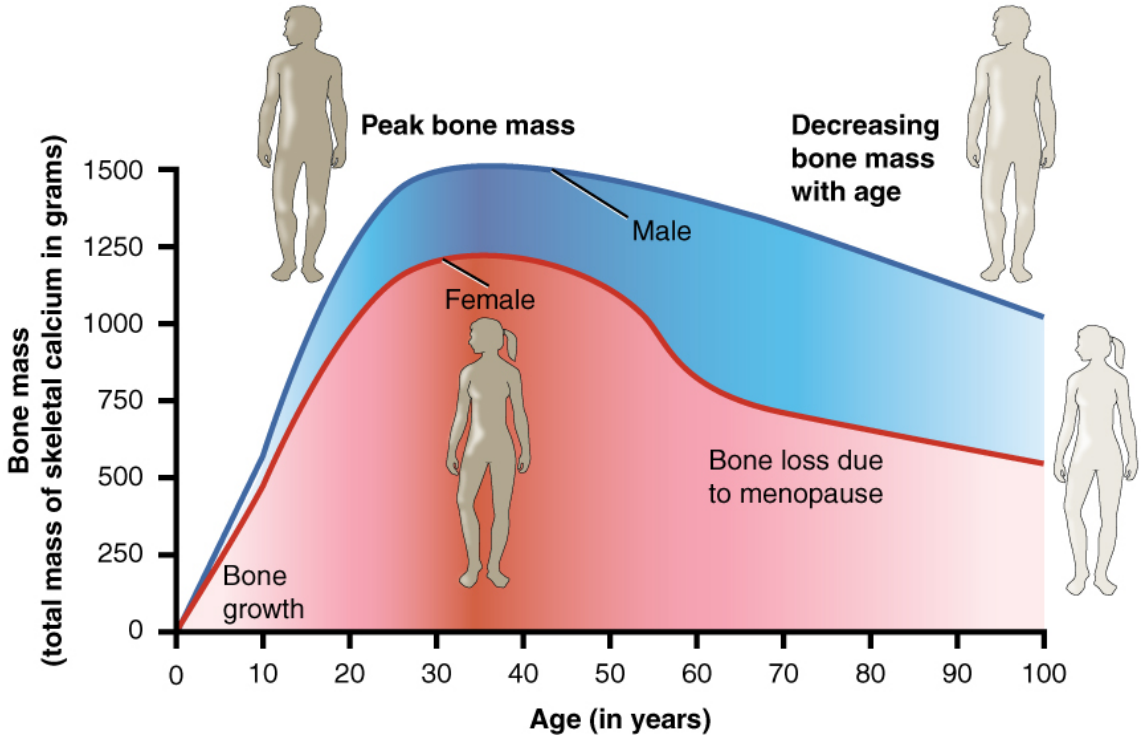
Mood changes, depression

For DMPA evidence is lacking; therefore recommendations are based on clinical observations with all POC:

- POC very rarely initiate depression in predisposed women (clinical reports)
- POC and progestin-releasing devices should not be initiated in women suffering from depression (copper IUD might be a better alternative)
- If a woman complains of developing depressed mood while using POC, stop the method
- If women have a history of depression and no other option is available, inform the patient that mood can worsen and she should come back immediately if this happens (start a method which can easily be stopped)

Ref 1-3

Bone mass from adolescence to menopause



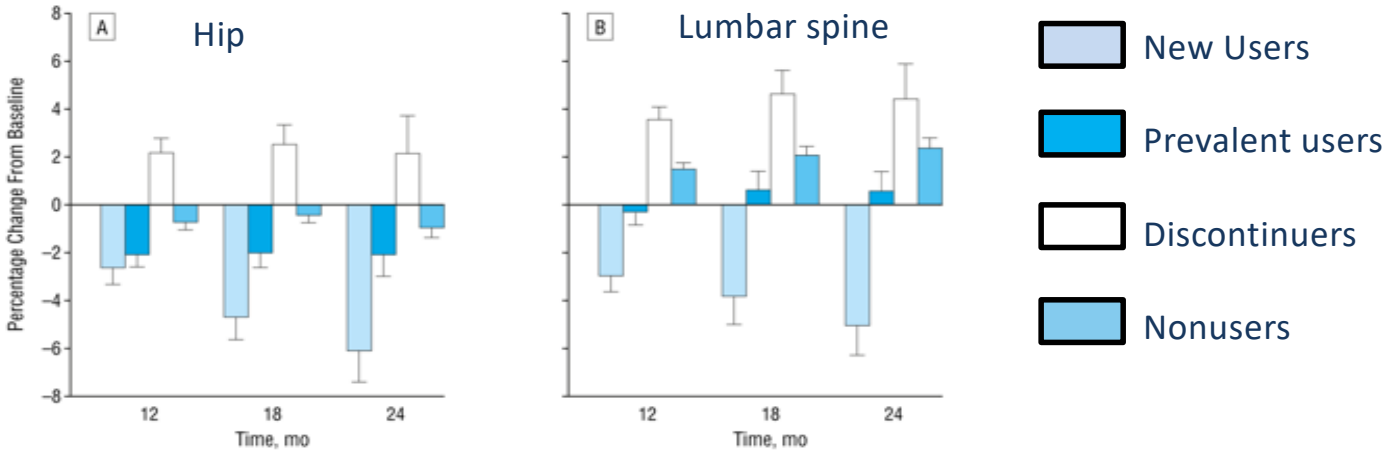
- Women should achieve peak bone density during adolescence
- The strongest increase in bone density occurs during the first 2 years after menarche

DMPA and Bone Mineral Density (BMD)

- Women initiating DMPA loose BMD (up to −3% lumbar spine/first year)
- There is some evidence of a dose-response relationship between DMPA and BMD loss
- Adolescent DMPA users do not gain as much bone mass as non-users in this crucial phase for BMD in future life.
- After discontinuation of DMPA, BMD recovers to some extent
- Be careful when prescribing DMPA in women with other risk factors for osteoporosis such as corticoid therapy
- There is limited evidence from studies that long-term DMPA exposure might be associated with increased fracture risk

Ref 1-7

DMPA and BMD in adolescents

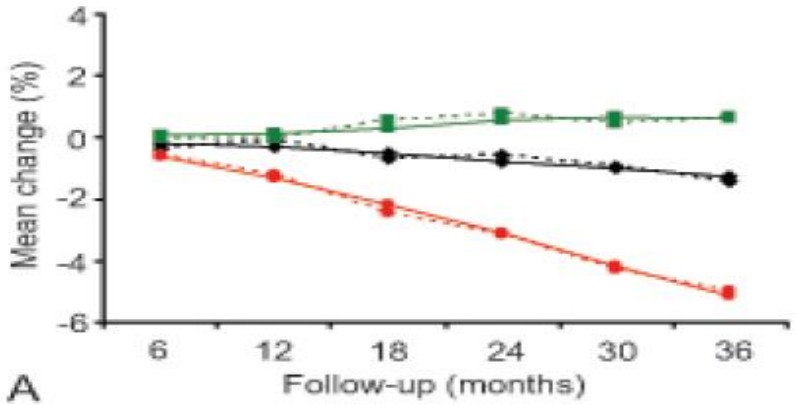


- These data based on a small number of patients indicate that adolescents regain some BMD after discontinuation of DMPA; whether they regain the complete amount lost is not known
- DMPA use may be considered an option for younger adolescents, after weighing its use against the theoretical risk of fracture later in life; however, with regard to BMD another form of POC is preferable

Ref 1-5

BMD over 3 years in DMPA and COC users

Femoral neck BMD

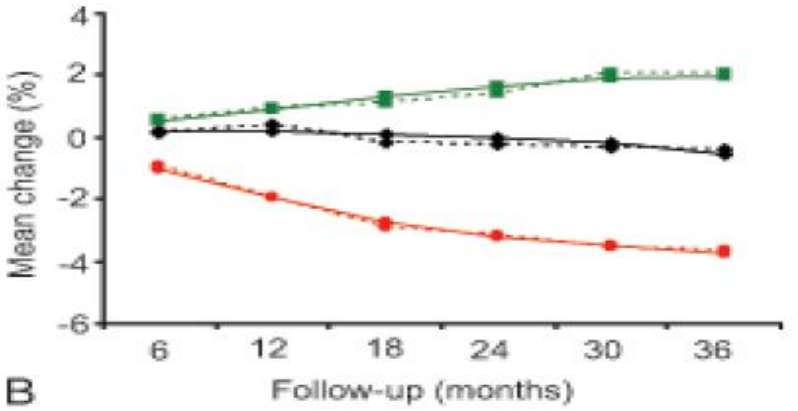


Non-hormonal users

COC

DMPA

Spine BMD



Non-hormonal users

COC

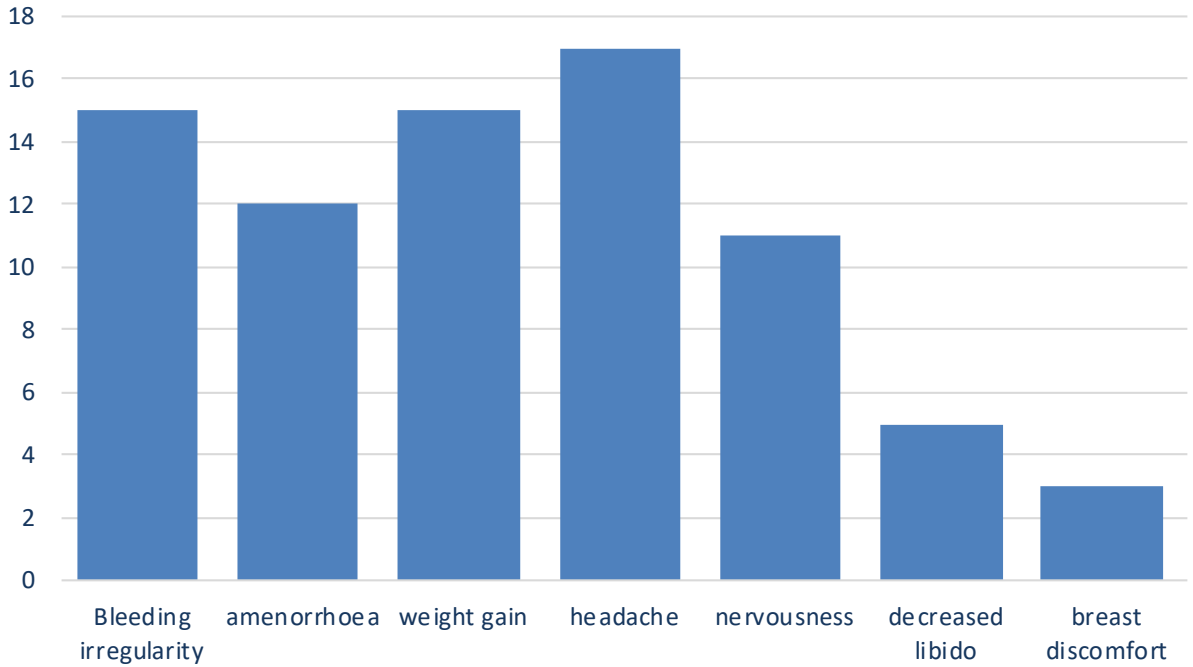
DMPA

DMPA users lose BMD during the early phase of use. Fracture risk is not increased in these women and they can regain some BMD after stopping DMPA

Ref 1,2

DMPA continuation and discontinuation rates

Reason for discontinuation of DMPA (% of discontinuers) in 12 months



Rate of DMPA continuation

- 1st year of use 59%
- 2nd year of use 42%
- 3rd year of use 30%

Discontinuation after 24 months is high (58%).

Main reasons relate to bleeding pattern and weight gain.

Counselling could improve continuation rate.

Ref 1,2

DMPA and HIV acquisition

- Previous data from observational studies provided inconsistent evidence about the association between use of DMPA and increased risk of HIV acquisition
- Impairment of cervico-vaginal mucosal integrity in response to DMPA administration was suggested to be an important mechanism contributing to this potential increased risk
- New data, however, from a high-quality RCT found **no** statistically significant differences in HIV acquisition among DMPA users compared with LNG implant users or Cu-IUD users
- Moreover, observational data continue to suggest no association between other hormonal contraception methods and HIV acquisition
- In women with multiple sexual partners, additional protection with condoms is recommended, especially in regions of high HIV prevalence

- N.B. New evidence is supportive of a significantly increased risk of HSV-2 infection among DMPA-users

Ref 1-6

DMPA: Myths

- Can stop monthly bleeding, but this is not harmful
  - Blood is not building up inside the woman
  - It is similar to not having menses during pregnancy
  - Usually not a sign of pregnancy
- Does not cause an abortion/disrupt an existing pregnancy
- Does not make women infertile

DMPA: Summary

- Safe, highly effective and easy to use
- Not associated with increased risk for VTE and PE
- Can be started immediately after birth, or 6 weeks after birth in lactating women
- Bleeding irregularity may be a concern for some women and needs appropriate counselling
- Weight gain may be a concern
- Take care in case of severe depression
- Consider impact on peak bone mass in adolescents
- Can be provided in both clinical and non-clinical settings
- The current consensus guidelines do not impose a restriction on the use of DMPA after bariatric surgery

Ref 1