Please find below the results of your literature search request.

If you would like the full text of any of the abstracts included, or would like a further search completed on this topic, please let us know.

We’d appreciate feedback on your satisfaction with this literature search. Please visit [http://www.hello.nhs.uk/literature_search_feedback.asp](http://www.hello.nhs.uk/literature_search_feedback.asp) and complete the form.

Thank you

**Literature search results**

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<td>Search required by:</td>
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<td>Search completed on:</td>
<td>10 February 2014</td>
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<tr>
<td>Search completed by:</td>
<td>Marilyn Shaw</td>
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</table>

**Search details**

Subcut Depo-Provera. Arguments for and against the use of this method of contraception from both staff and patients and Information on Depo-Provera and bone mineral density – particularly in women over 40.

**Resources searched**

NHS Evidence; TRIP Database; Cochrane Library; AMED; BNI; CINAHL; EMBASE; HMI; Health Business Elite; MEDLINE; PsychINFO; Google Scholar; Google Advanced Search

**Database search terms:**

**Evidence search string(s):**

**Google search string(s):**

**Summary**

There are a number of articles on Depo-provera and the arguments for and against its use. These arguments have been raging since 1980 when the first use of Depo-Provers is mentioned. Very little – only 3 articles found – specifically on bone mineral density and Depo-provera.

Included are a number of older articles than usual – in order to give some historical perspective.

Interestingly – there were no items coming up on BNI or CINAHL for Depo-subq Provera yet the first item from Google suggests there are lots more available!

**Guidelines and Policy**
Evidence-based reviews

Published research – Databases

1. Improving adherence: the role of long-acting reversible contraception.
Citation: Nurse Prescribing, Dec 2010, vol. 8, no. 12, p. 583-588, 1479-9189 (December 2010)
Author(s): Kipps, S
Abstract: Types of long-acting, reversible contraception and their characteristics. The uses and side effects of progestogen implants (Implanon, Nexplanon), progestogen injections, including Depo Provera, intrauterine devices (IUDs) and intrauterine systems are reviewed. The causes of deliberate and non-intentional non-adherence and strategies for improving compliance are discussed. [BNI unique abstract] 20 references
Source: BNI
Full Text: Available from EBSCOhost in Nurse Prescribing

2. Prescribing LARC: to Depo or not to Depo?
Citation: Nursing in Practice, Sep 2010, no. 56, p. 50-51, 1473-9445 (Sep-Oct 2010)
Author(s): O’Connor, C
Abstract: Mechanisms of the long-term reversible contraceptive Depo-Provera. The possible risks of osteoporosis and use during the menopause are discussed. A case study of a perimenopausal patient is included. [BNI unique abstract] 6 references
Source: BNI

Citation: Community Practitioner, Sep 2009, vol. 82, no. 9, p. 24-27, 1462-2815 (September 2009)
Author(s): Ruddick, C
Abstract: Summary of NICE guidance about long-acting reversible contraception (LARC). The history of contraceptive development is included, and the choices now available including Copper IUDs, IUS (Mirena), Implants (Implanon) and Progestogen-only injection (Depo Provera) are compared. The UK medical eligibility criteria category rating for characteristics and conditions is included. [BNI unique abstract] 13 references
Source: BNI
Full Text: Available from Community Practitioner (was Health Visitor) in Lincoln County Hospital Professional Library; Note: ; Notes: Use the link to request articles from the library. Complete the appropriate online form and press 'Send'. Available from ProQuest in Community Practitioner;

Citation: Practice Nursing, Sep 2008, vol. 19, no. 9, p. 439-448, 0964-9271 (September 2008)
Author(s): Davie, L
Abstract: Advantages and disadvantages of depot medroxyprogesterone acetate (Depo-Provera), with special reference to women over 40 approaching the menopause. The mechanisms and administration of Depo-Provera and criteria for patient suitability are explained and possible side effects or contraindications are reviewed. Its use with lactating women is also discussed. [BNI unique abstract] 61 references
Source: BNI
Full Text: Available from EBSCOhost in Practice Nursing

5. Mission control.
Citation: Nursing in the Community, May 2008, vol. 9, no. 3, p. 23-24, 1649-0657 (May-
Author(s): Short, M
Abstract: Review of long-acting reversible contraceptive methods, including injectable contraceptives (Depo-Provera), sub-dermal implants, intra-uterine systems, copper intrauterine devices, contraceptive patches and vaginal rings. [(BNI unique abstract)] 0 references
Source: BNI

Citation: Independent Nurse, Sep 2007, (September 3, 2007), p. 35-36, 1747-9800
(September 3, 2007)
Author(s): Szarewski, A
Abstract: Clinical Focus series. NICE guidance (2005) on long-acting reversible contraception. The use of Mirena (levonorgestrel-releasing) intrauterine systems, Implanon (etonogestrel), Depo-Provera and Evra are described. Other methods, including coils/intrauterine devices (IUDs), are also discussed. [(BNI unique abstract)] 19 references
Source: BNI

7. Extended formulary nurse prescribing within contraceptive services.
Citation: Nurse Prescribing, Feb 2006, vol. 4, no. 1, p. 10-14, 1479-9189 (February 2006)
Author(s): Feehan, J
Abstract: A case study to illustrate the role of the nurse prescriber in helping a patient decide the most appropriate form of contraception. Management of unprotected sexual intercourse and missed pills is discussed, including a description of the Evra transdermal patch and Depo-Provera. [(BNI unique abstract)] 11 references
Source: BNI
Full Text: Available from EBSCOhost in Nurse Prescribing

Citation: Journal of Family Health Care, Jan 2006, vol. 16, no. 2, p. 35-36, 1474-9114 (2006)
Author(s): Szarewski, A
Abstract: Recent developments and changes in hormonal contraceptives. Benefits and unwanted side effects of contraceptives available are discussed, including the Mirena, Depo-Provera, Levonelle-2 and the EVRA patch. [(BNI unique abstract)] 13 references
Source: BNI
Full Text: Available from Journal of Family Health Care (was Professional Care of Mother & Child) in Lincoln County Hospital Professional Library;

Citation: Journal of Family Planning and Reproductive Health Care, Jan 2002, vol. 28, no. 1, p. 7-10, 1471-1893 (January 2002)
Author(s): Gbolade, B
Abstract: Review article on link between long-term use of Depo-Provera and reduced bone mass which may lead to osteoporosis. [(BNI unique abstract)] 51 references
Source: BNI

10. Depot medroxyprogesterone and bone mineral density.
Citation: Journal of Family Planning and Reproductive Health Care, Jan 2002, vol. 28, no. 1, p. 12-15, 1471-1893 (January 2002)
Author(s): Ryan, P; Singh, S; Guillebaud, J
Abstract: Research into possible link between long-term use of injected Depo-Provera and osteoporosis. [(BNI unique abstract)] 26 references
Source: BNI

11. Depo Provera discussion paper on clinical care, effectiveness and side effects.
Citation: British Journal of Family Planning, Jan 2000, vol. 26, no. 1, p. 52-53, 0144-8625 (January 2000)
Author(s): Bigrigg, A; Evans, M; Gbolade, B
Abstract: null 4 references
Source: BNI

| Citation: | British Journal of Family Planning, Jul 1999, vol. 25, no. 2, p. 69-76, 0144-8625 (July 1999) |
| Author(s): | Bigrigg, A; Evans, M; Gbolade, B |
| Abstract: | null 69 references |
| Source: | BNI |
| Author(s): | Cayley, J |
| Abstract: | Editorial. ([BNI unique abstract]) 14 references |
| Source: | BNI |
| 14. Considerations for the use of progestin-only contraceptives. |
| Citation: | Journal of the American Academy of Nurse Practitioners, 01 February 2010, vol./is. 22/2(81-91), 10412972 |
| Author(s): | Freeman S; Shulman LP |
| Abstract: | Purpose: To highlight the characteristics of progestin-only contraceptives (POCs) currently available in the United States, and to explore the potential of these agents as first-line contraceptive options for women seeking health promotion by prevention of an unwanted pregnancy. The progestin-only pills (Micronor and Ovrette), depot medroxyprogesterone acetate (DMPA) injections (Depo-Provera and depo-subQ provera 104), levonorgestrel intrauterine system (IUS) (Mirena), and etonogestrel implant (Implanon) will be reviewed. The use of levonorgestrel (Plan B) as an emergency contraceptive will also be considered briefly. Data sources: Worldwide medical literature and the prescribing information for the specified products. Conclusions: A number of POCs are currently available for routine birth control in the United States, ranging from the daily progestin-only pill to nondaily contraceptive options such as injectable DMPA, the levonorgestrel-releasing IUS, and the etonogestrel-releasing contraceptive implant. Each of these methods has specific advantages, but also specific drawbacks that can result in discontinuation of treatment if users are not given adequate information about what to expect in terms of side effects. It is critical that clinicians provide adequate and accurate information along with detailed counseling to women who are considering using POCs, as well as providing periodic reinforcement of the information at regular clinic visits for those already using POCs. Implications for practice: Given that a large number of pregnancies are unplanned and create a significant impact on social, economic, and health outcomes, it is important for the clinician to have a vast knowledge of contraceptive options. POCs offer significant choices in contraception. By proactively addressing common concerns (such as potential effects on weight, mood, menstrual bleeding patterns, and bone mineral density), clinicians may improve the likelihood of adherence and continuation with POCs for routine birth control. |
| Publication Type: | journal article |
| Source: | CINAHL |
| Full Text: | Available from EBSCOhost in Journal of the American Academy of Nurse Practitioners |
| 15. Shot makes its mark in contraceptive options. |
| Citation: | Contraceptive Technology Update, 01 January 2009, vol./is. 30/1(9-10), 0274726X |
| Abstract: | Many women look to Depo-Provera, the contraceptive injection, for contraception, say respondents to the 2008 Contraception Survey.; * About 91% of survey respondents say they would prescribe the injectable for young teens, up from 2007's 87% statistic.; * Concerns about the effects of the contraceptive injection on bone mineral density should not prevent clinicians from prescribing the method, nor should its use be limited to two years, according to a committee opinion released in 2008 by the American College of Obstetricians and Gynecologists. |
| Publication Type: | journal article |
| Source: | CINAHL |
| Full Text: | Available from EBSCOhost in Contraceptive Technology Update Available from ProQuest in Contraceptive Technology Update; |
| 16. Medroxyprogesterone acetate (Depo-Provera) and bone mineral density loss. |
17. The Long-term Health Implications of Depo-Provera.
Citation: Integrative Medicine: A Clinician's Journal, 01 February 2013, vol./is. 12/1(27-34), 1543953X
Author(s): Spevack, Edra
Publication Type: journal article
Source: CINAHL
Full Text: Available from EBSCOhost in Integrative Medicine: A Clinician's Journal

Citation: Journal of Family Planning & Reproductive Health Care, 01 July 2009, vol./is. 35/3(205-205), 14711893
Author(s): Aung SN; Everett M
Language: English
Publication Type: journal article
Source: CINAHL

Citation: Journal of Family Planning & Reproductive Health Care, 01 April 2009, vol./is. 35/2(130-130), 14711893
Author(s): Bhatheana R
Language: English
Publication Type: journal article
Source: CINAHL

Citation: Journal of Family Planning & Reproductive Health Care, 01 January 2009, vol./is. 35/1(59-60), 14711893
Author(s): Farmer L; Patel E
Language: English
Publication Type: journal article
Source: CINAHL

Citation: Practice Nursing, 01 September 2008, vol./is. 19/9(439-448), 09649271
Author(s): Davie L
Language: English
Publication Type: journal article
Source: CINAHL
Full Text: Available from EBSCOhost in Practice Nursing

22. Controversies in contraception.
Citation: Current Opinion in Pediatrics, 01 August 2008, vol./is. 20/4(383-389), 10408703
Author(s): Pitts SAB; Emans SJ
Abstract: PURPOSE OF REVIEW: New research is constantly being published regarding hormonal contraceptives and bone health, migraine headaches, thrombosis risk, hypertension, weight gain, and obesity, as well as emergency contraception. At times, these studies can be clarifying, but they can also raise new controversies and questions. It is important for providers to be aware of the emerging issues regarding contraceptive care for adolescent patients. RECENT FINDINGS: Research suggests that Depo-Provera (depot...
medroxyprogesterone acetate; Pfizer, New York City, New York, USA) and, perhaps, low-dose oral contraceptive pills can have adverse effects on adolescent bone health, although the data demonstrating reversibility of bone loss after discontinuation of these contraceptives are reassuring. Additionally, estrogen-containing contraceptives pose risks for patients, including the onset of or exacerbation of migraine headaches, venous thromboembolism, and hypertension. Depo-Provera has been implicated in weight gain, especially in girls who are already overweight. Obesity may decrease the efficacy of some hormonal contraceptives. Finally, the mechanism of action of emergency contraception is still unknown, although studies continue to suggest that it has primarily preovulatory, not postovulatory, effects. SUMMARY: Adolescent health providers need to be aware of the new research and controversies in contraceptive care in order to counsel and care for patients effectively.

**Publication Type:** journal article  
**Source:** CINAHL

23. Advisor forum: bone density measurements with Depo-Provera?  
**Citation:** Clinical Advisor for Nurse Practitioners, 01 June 2007, vol./is. 10/6(89-89), 15247317  
**Author(s):** Cline D; Sego S  
**Publication Type:** journal article  
**Source:** CINAHL

**Citation:** Clinical Pediatrics, 01 January 2006, vol./is. 45/1(109-110), 00099228  
**Author(s):** Abell S; Ey JL  
**Publication Type:** journal article  
**Source:** CINAHL  
**Full Text:** Available from EBSCOhost in Clinical Pediatrics

25. DMPA: survey offers snapshot of shot use.  
**Citation:** Contraceptive Technology Update, 01 November 2005, vol./is. 26/11(132-133), 0274726X  
**Abstract:** Rewind to November 2004: the Food and Drug Administration (FDA) announces the addition of a “black box” warning to the labeling for the injectable contraceptive depot medroxyprogesterone acetate (DMPA, Depo-Provera, Pfizer, New York City and MedroxyPROGESTERone Injection, Teva Pharmaceuticals USA, North Wales, PA).  
**Publication Type:** journal article  
**Source:** CINAHL

26. At issue. Depo-Provera: new concerns -- same issues?  
**Citation:** AWHONN Lifelines, 01 June 2005, vol./is. 9/3(214-217), 10915923  
**Author(s):** Robinson K  
**Language:** English  
**Publication Type:** journal article  
**Source:** CINAHL

27. Injectable update: subcutaneous form of Depo-Provera is approved: injectable will be packaged in single-use subcutaneous injection device.  
**Citation:** Contraceptive Technology Update, 01 May 2005, vol./is. 26/5(53-55), 0274726X  
**Abstract:** The Food and Drug Administration has approved Depo-SubQ Provera 104 (DMPA-SC), a low-dose formulation of medroxyprogesterone acetate injectable suspension provided in a pre-filled single-use syringe.; DMPA-SC continues the benefits of highly effective injectable contraception with the additional advantage of a smaller injection volume and a smaller needle size. The drug will be packaged in a single-shot subcutaneous injection device with a passive needle safety unit.; As with DMPA, DMPA-SC’s labeling states that bone loss in women who use Depo-Provera is greater with increased duration of use and may not be completely reversible. The contraceptive injection should be used as a long-term birth control method (longer than two years) only if other birth control methods are inadequate.  
**Publication Type:** journal article  
**Source:** CINAHL

**Citation:** AWHONN Lifelines, 01 December 2002, vol./is. 6/6(491-491), 10915923
29. ...But bone loss in Depo-Provera users is largely reversible.

Citation: Formulary, 01 October 2002, vol./is. 37/10(502-502), 1082801X

Author(s): Cockey CD
Publication Type: journal article
Source: CINAHL
Full Text: Available from EBSCOhost in Formulary
Available from ProQuest in Formulary;

30. Bone loss in adolescents using Depo-Provera.

Citation: Journal of the Society of Pediatric Nurses, 01 January 2001, vol./is. 6/1(21-31), 1088145X

Author(s): Kass-Wolff JH
Abstract: ISSUES AND PURPOSE. Contraceptive methods that decrease bone density in a population already deficient in calcium are a rising concern in women's health.

CONCLUSIONS. Use of Depo-Provera (DMPA) significantly decreases bone mass density (BMD) in normal adolescents up to the age of 21. DMPA is often used in adolescents with disabilities who may already be at high risk for osteoporosis. The effects are likely to be similar to that in able-bodied adolescents, but research is limited.

PRACTICE IMPLICATIONS. Through early identification of risk factors in able-bodied and disabled adolescents, primary care providers considering the use of DMPA in adolescents can optimize BMD by providing adequate nutritional assessment, counseling on nutritional sources of calcium, calcium supplementation, guidance on exercise, and alcohol and smoking prevention or cessation.

Publication Type: journal article
Source: CINAHL
Full Text: Available from EBSCOhost in Journal of the Society of Pediatric Nurses


Citation: Clinical Advisor for Nurse Practitioners, 25 August 2000, vol./is. 3/7/8(66-66), 15247317

Author(s): Crosby H; MacDonald CF
Publication Type: journal article
Source: CINAHL

32. Pharmacokinetics of subcutaneous depot medroxyprogesterone acetate injected in the upper arm

Halpern V, Combes SL, Dorflinger LJ et al
Contraception, 2014, 89 (1) 31-5

Abstract: BACKGROUND: The abdomen and thigh are recommended injection sites in the label for Depo-SubQ Provera 104. We evaluated the pharmacokinetic profile of medroxyprogesterone acetate (MPA) following injection of Depo-SubQ Provera 104 in the upper arm, a preferred injection site in developing countries.

STUDY DESIGN: Twenty-six women in Norfolk, VA, received a single injection of Depo-SubQ Provera 104 in the upper arm in this prospective noncomparative study. We measured MPA serum concentrations prior to injection (day 1) and 11 times postinjection (days 2, 4, 8, 14, 30, 44, 60, 74, 91, 104 and 120).

RESULTS: Serum MPA levels peaked at 0.953 ng/mL 2-14 days (interquartile range; median=8) after dosing. Mean AUC0-91 was 45.1 ngday/mL. Mean MPA levels at days 91, 104 and 120 were 0.427, 0.367 and 0.327 ng/mL, respectively. A total of 15 individual measurements of MPA were below 0.2 ng/mL. All women but one had MPA levels above 0.1 ng/mL on day 91.

CONCLUSIONS: Injection of Depo-SubQ Provera 104 in the upper arm provided sufficient MPA levels for contraceptive protection for 3 months (13 weeks). The uptake and metabolism of MPA when injected in the upper arm may be different from the abdomen and thigh.

Published Research - Google Scholar

From 1st fifty results:

Search term used:- depo-subq provera 104 AND Sayana press
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<tr>
<td>Detailed 28 page document which suggests women may lose significant bone mineral density</td>
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<td>This article is distributed by drug company Pharmacia &amp; Upjohn, 2010</td>
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<td>Also warns of loss of bone mineral density</td>
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<th>3. Keith, Bonnie</th>
<th>Home-based administration of depo-subQ provera 104 in the Uniject injection system: A literature review</th>
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<tr>
<th>4. Patient information about depo-subQ provera</th>
<th>Published by Pharmacia &amp; Upjohn, 2006 (3 pages)</th>
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<th>5. The acceptability of Sayana Press (Depo subQ in Uniject)</th>
<th><a href="http://www.xcdsystem.com/ICFP2013/abstract/panels/3_1.pdf">http://www.xcdsystem.com/ICFP2013/abstract/panels/3_1.pdf</a></th>
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<td>This is a powerpoint presentation given in November 2013</td>
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<th>6. New product review</th>
<th>Faculty of Sexual and Reproductive Health, June 2013 (14 references – some UK)</th>
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<tr>
<td><a href="http://www.fsrh.org/pdfs/CEUProductReviewSayana.pdf">http://www.fsrh.org/pdfs/CEUProductReviewSayana.pdf</a></td>
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This looks quite useful.

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<tr>
<th>7. Longitudinal study of depot medroxyprogesterone acetate (Depo-Provera® effects on bone health in adolescents: study design, population characteristics and baseline bone mineral density</th>
<th>Contraception, 2008 (From TRIP database)</th>
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<td><a href="http://www.tripdatabase.com/search?categoryid=&amp;criteria=%28depo-subq+provera+104%29+from%3A2005+to%3A2014">http://www.tripdatabase.com/search?categoryid=&amp;criteria=%28depo-subq+provera+104%29+from%3A2005+to%3A2014</a></td>
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<th>8. Depo-Provera and skeletal health: a survey of Florida obstetrics and gynaecologist physicians</th>
<th>Contraception, 2008 (From TRIP database)</th>
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<th>9. Is it safe for a 42 year old woman who has used Depo-Provera for 8 years to continue use, after recently being diagnosed with a vitamin D deficiency for which she is taking supplements but has no other risk factors for osteoporosis?</th>
<th>FSRH, 2010 (From TRIP database)</th>
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<td><a href="http://www.fsrh.org/pdfs/No%203351.pdf">http://www.fsrh.org/pdfs/No%203351.pdf</a></td>
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<td>Contraception, 2005, 72 (1), 14 – 18</td>
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**Abstract** Depo-Provera (depot medroxyprogesterone acetate, or DMPA) is an important contraceptive option for women worldwide. Currently, it is only available in intramuscular form requiring regular quarterly routine attendance at a health facility. A new subcutaneous preparation has been developed. This is self-administrable and could potentially reduce need for routine attendance to an annual visit. In a questionnaire survey of 176 women
currently using DMPA, 67% would prefer to self-administer. Of the 33% who did not wish to self-administer, the most common reasons were a fear of needles (62%) and concern regarding incorrect administration (43%). In a second survey of 313 women not currently using DMPA, 64% of women said they would prefer to attend less often for contraceptive supplies. Twenty-six percent of women who had never used DMPA and 40% of ex-users would seriously consider DMPA if self-administration were possible. Our findings would suggest that the advent of subcutaneous self-administrable Depo-Provera with appropriate training and reminder system is likely to be beneficial and popular with many women.

11. Walsh JS, Eastell R, Peel NF

Effects of Depot medoxyprogesterone on bone density and bone metabolism before and after peak bone mass: a case-control study

J Clin Endocrinol metab, 2008 93 (4) 1317 – 1323

OBJECTIVES: This case-control matched study aims to eliminate potential confounding factors, identify whether the effect of DMPA on the skeleton is age specific, and determine the effects of DMPA

RESULTS: DMPA use was associated with a 5% bone density deficit at the lumbar spine and hip in women who started DMPA use before age 20 yr but not after age 34 yr. Bone turnover was increased in DMPA users in both age groups. DMPA users had lower estradiol and higher IGF-I than controls, and younger DMPA users had higher dehydroepiandrosterone sulfate than controls. In a multiple regression model, estradiol and IGF-I were associated with bone turnover, but addition of DMPA to the model made the association with estradiol nonsignificant.