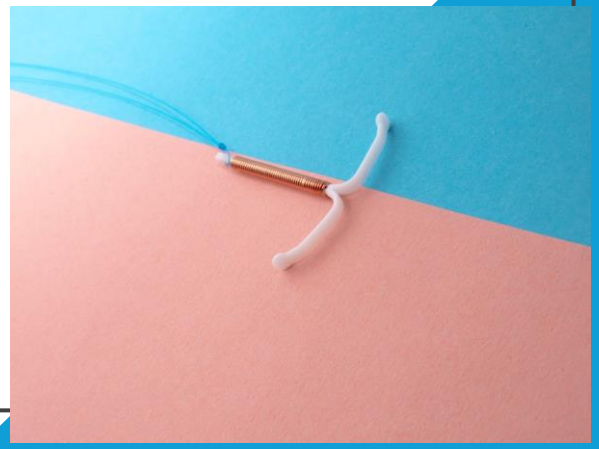
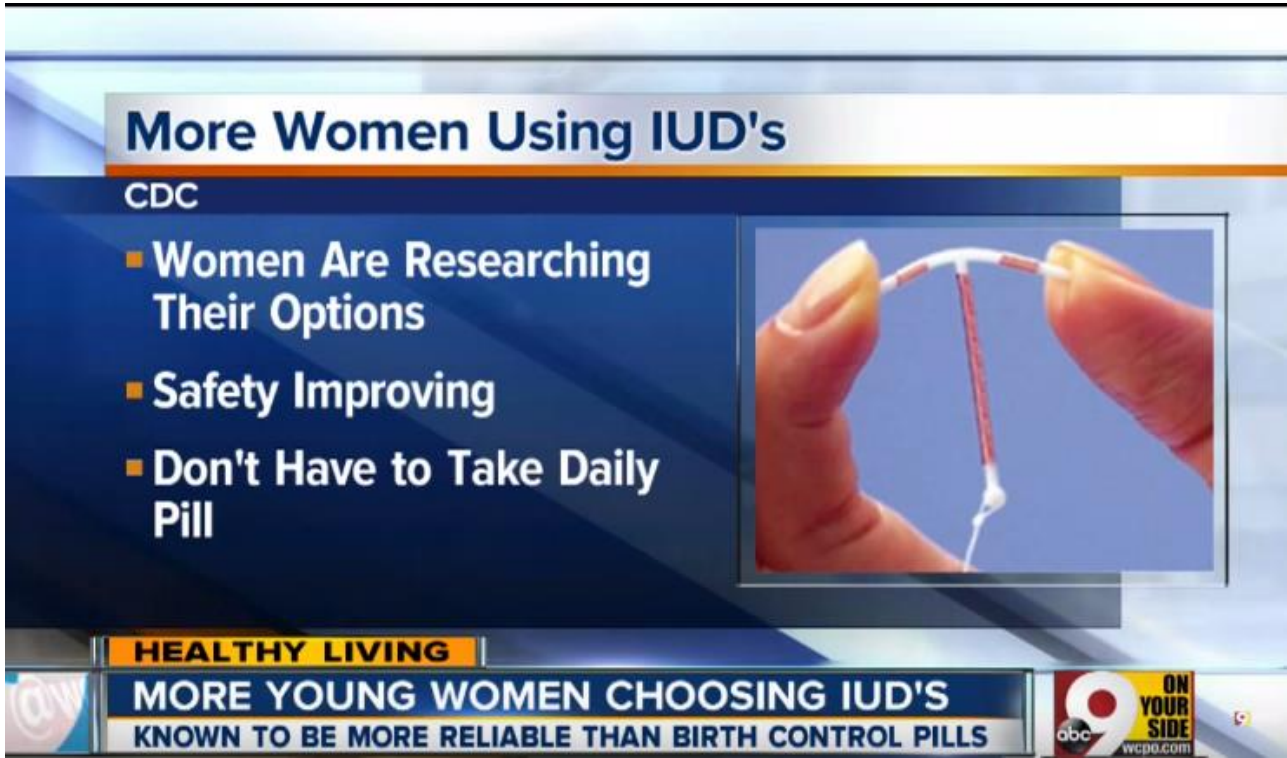
Nitroděložní antikoncepce včera, dnes a zítra

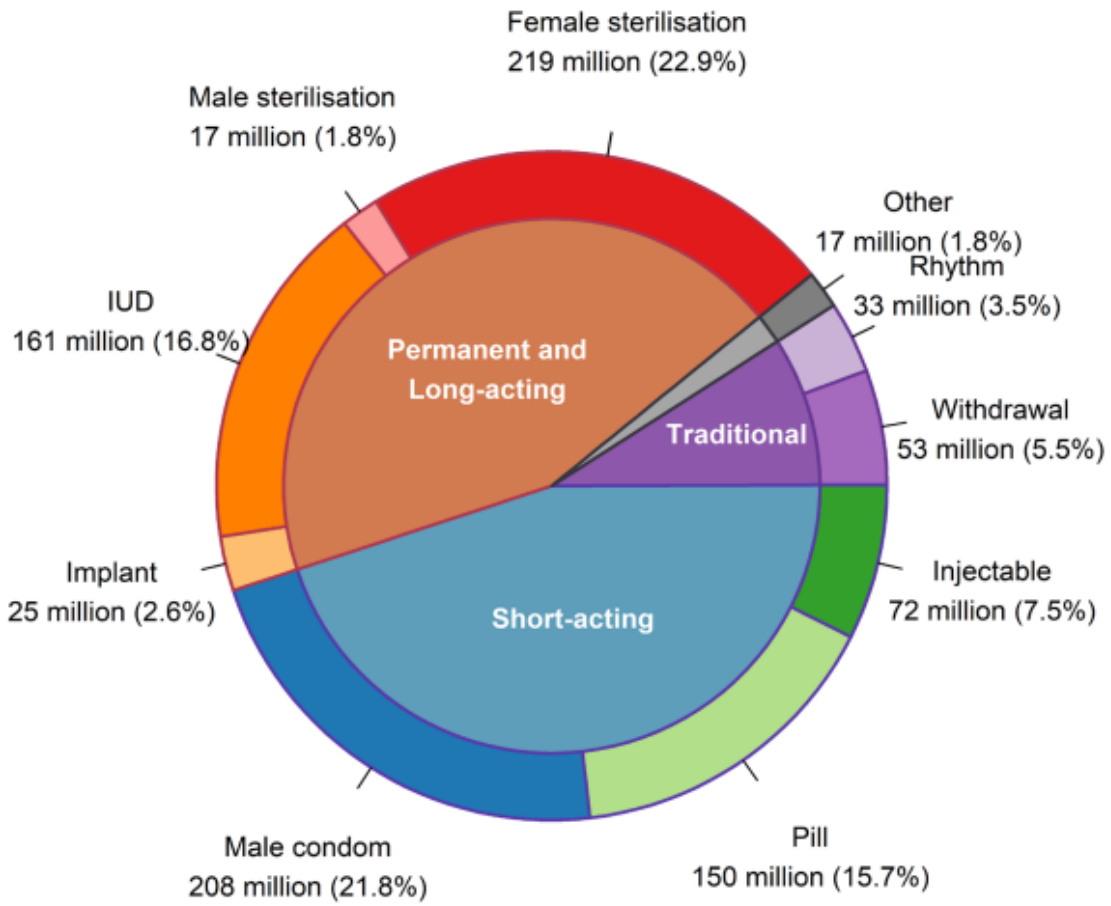
Petr Křepelka, ÚPMD Praha




HEALTHY LIVING
HEALTHY LIVING
MORE YOUNG WOMEN CHOOSING IU
KNOWN TO BE MORE RELIABLE THAN BIRTH CONTR


More Women Using IUD's
CDC
Women Are Researching Their Options
Safety Improving
Don't Have to Take Daily Pill
HEALTHY LIVING
MORE YOUNG WOMEN CHOOSING IUD'S
KNOWN TO BE MORE RELIABLE THAN BIRTH CONTROL PILLS
ON YOUR SIDE
wcpo.com

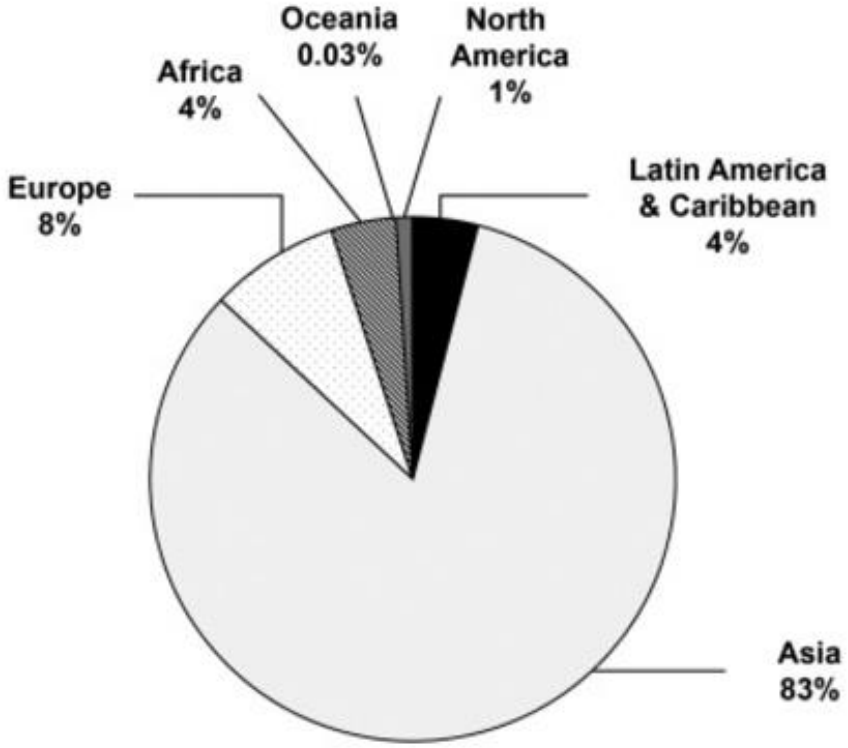
Number of women of reproductive age (15-49 years) using various contraceptive methods, world, 2020 (millions and percentage)



Sources: Calculations based on United Nations, Department of Economic and Social Affairs, Population Division (2022). *World Contraceptive Use 2022;* United Nations, Department of Economic and Social Affairs, Population Division (2022). *Estimates and Projections of Family Planning Indicators 2022.*

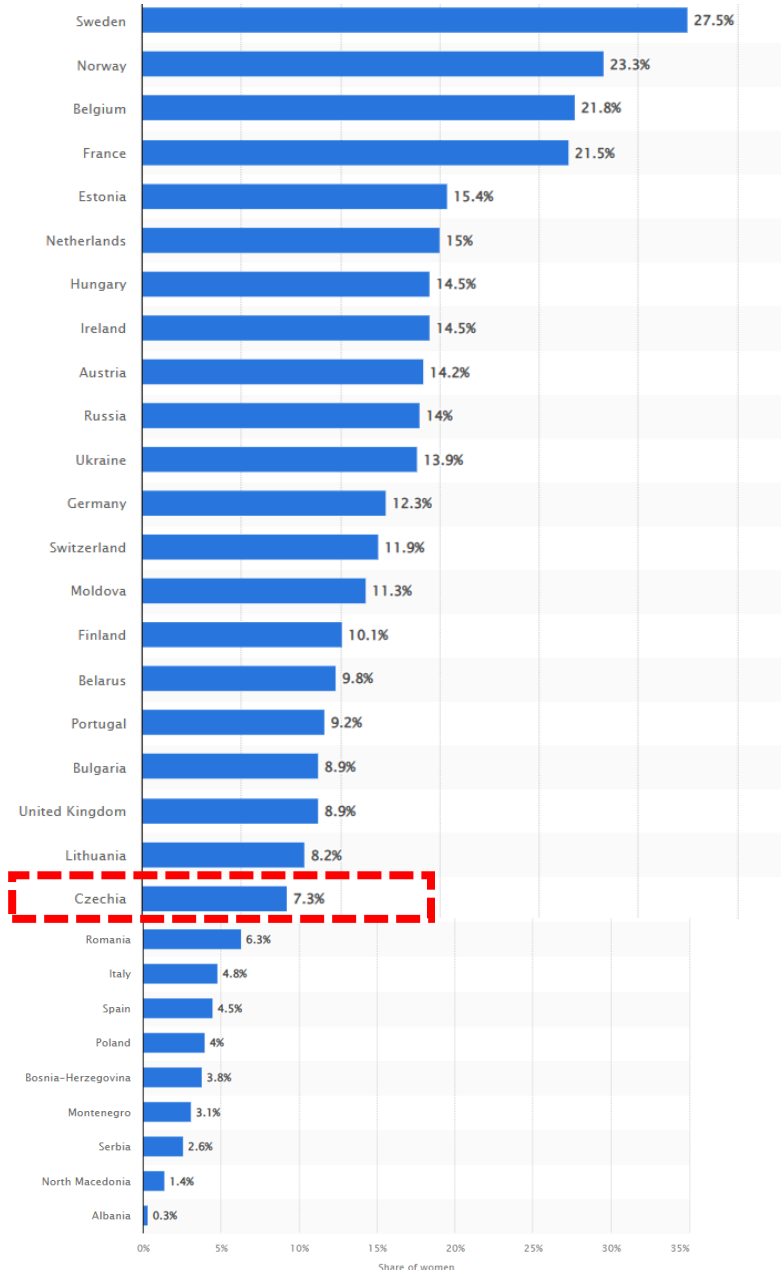
Note: Other methods include female condoms, vaginal barrier methods (including diaphragms, cervical caps, and spermicidal foams, jellies, creams and sponges), lactational amenorrhea method (LAM), emergency contraception, and other modern or traditional methods not presented separately.

Fig. 1. Percentage of contraceptors (the subset of women who are using any form of contraception) aged 15–49years, married or in union, who use IUC [1].



Buhling KJ, Zite NB, Lotke P, Black K. Worldwide use of intrauterine contraception: a review. Contraception. 2014;89(3):162-73.

IUD v Evropě 2022
Ženy fertilního věku



https://www.statista.com/statistics/1063631/iud-contraception-use-in-europe/

Stručná historie IUD

(No Model.)

J. C. PETIT.

WOMB BATTERY.

No. 520,895. Patented June 5, 1894.

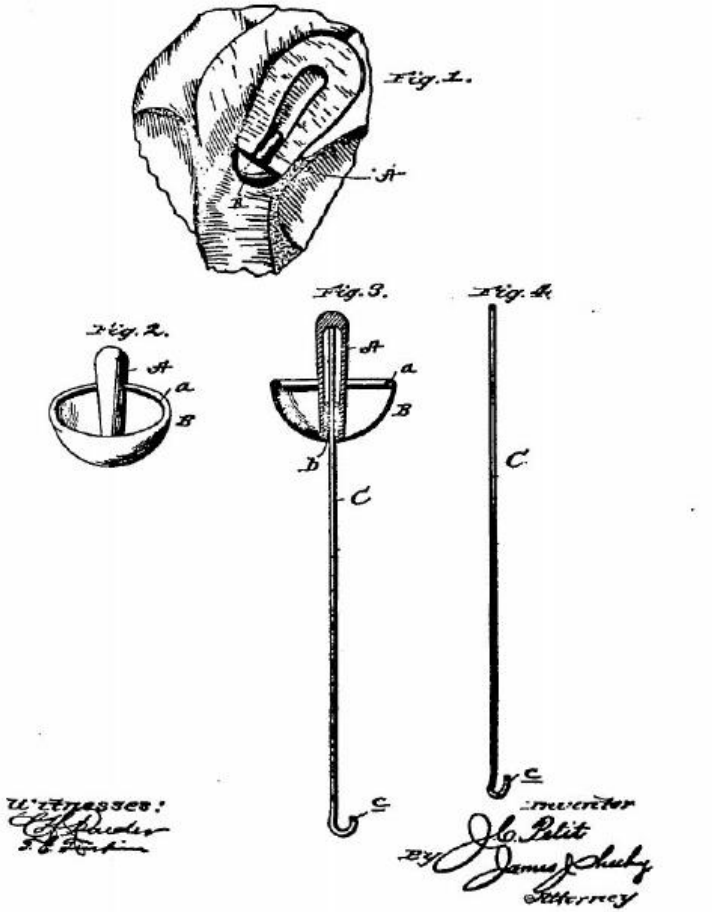
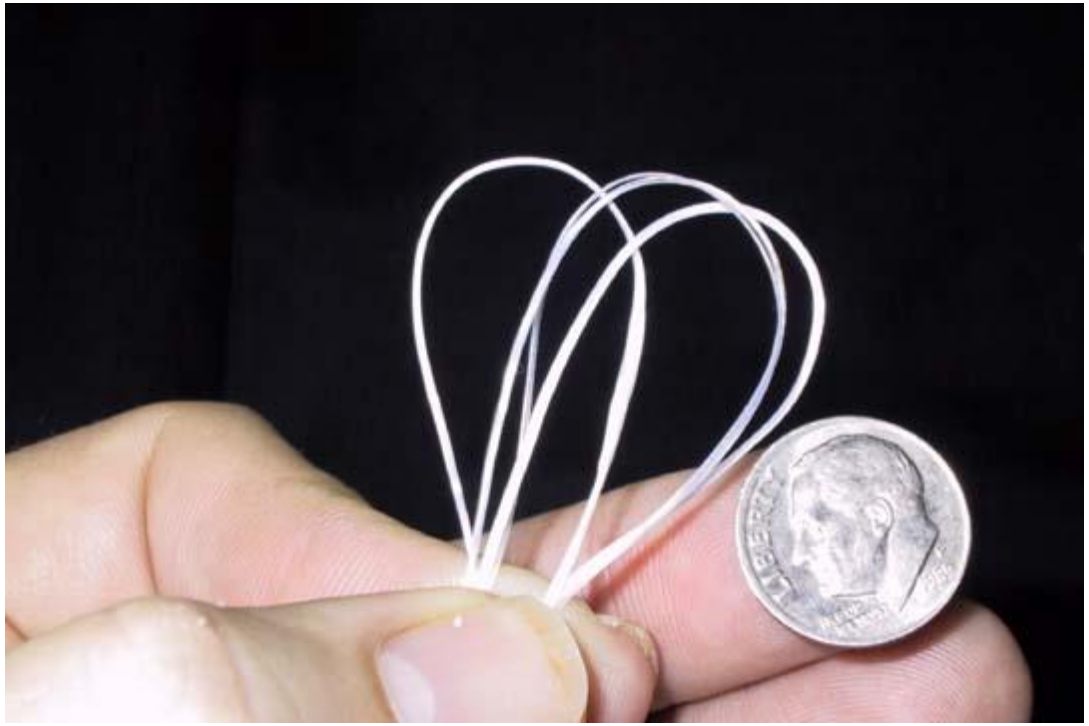


FIG. 2. So-called "Womb Battery" patented by Petit in 1884. According to the galvanic theories of the inventor, this device would electrically stimulate the cervix and "promote the cure of the various diseases peculiar to the female sex." Though obviously designed to function as a cervical cap, no contraceptive action was claimed, probably to evade laws prohibiting the dissemination of birth control information.

Richter R. Ein Mittel zur Verhueturng der Konzeption. Deutsch. Med. Wschr. 35:1525-27, 1909.



Silkworm Gut
Dr. Richter 1909

Richter R. Ein Mittel zur Verhueturng der Konzeption. Deutsch. Med. Wschr. 35:1525-27, 1909.

Karl Prust 1920

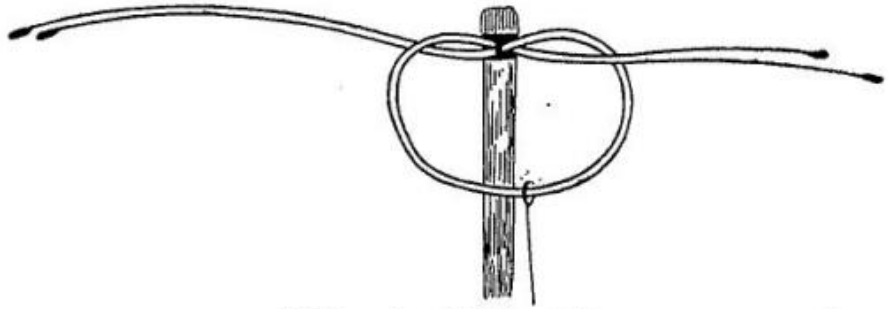
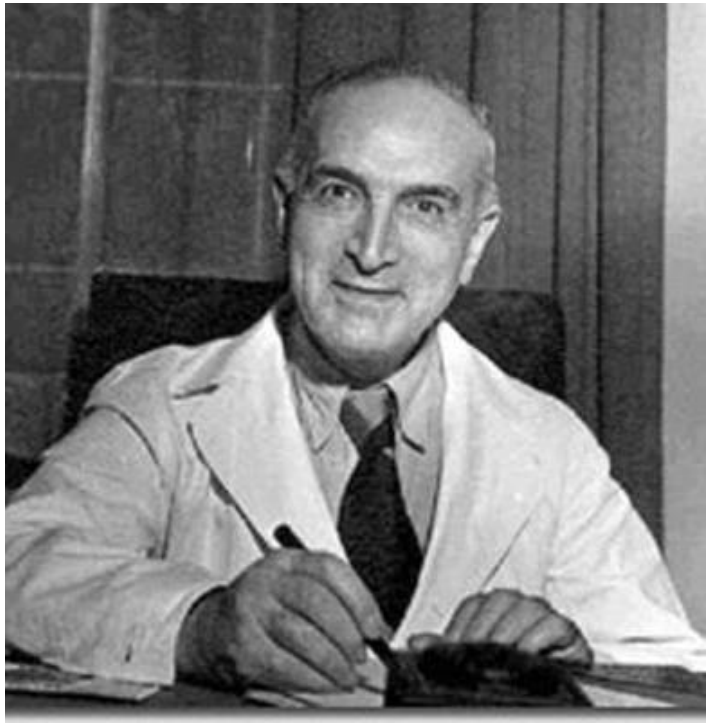


Abbildung in natürlicher Größe.
Die Fäden zu einer einfachen Schlinge geschürzt, in das Auge der Hohlsonde eingeklemmt und durch den Mandrin festgehalten.

FIG. 1. The first intrauterine contraceptive device—a ring formed of silkworm gut suture material—reproduced from Richter's 1909 article announcing the discovery of intrauterine contraception. The device was passed through the cervical canal into the uterine cavity by means of the notched sound, a technic employed for insertion of some types of IUD to the present day.

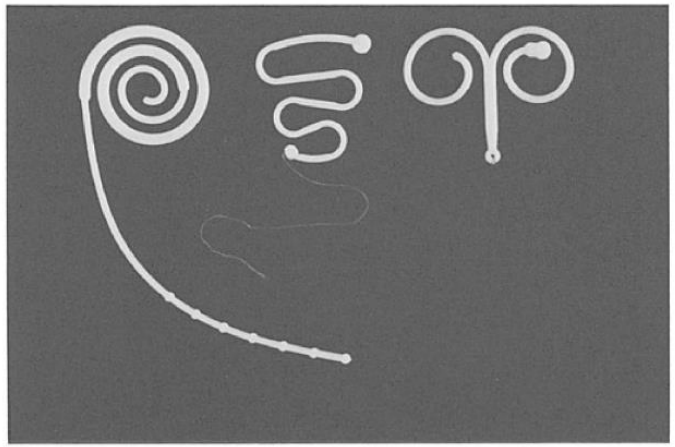
1. Margulies L. History of intrauterine devices. Bull N Y Acad Med. 1975 May;51(5):662-7.
2. Davis HJ. Intrauterine Devices For Contraception. The Williams & Willdns Company, 428 E. Preston Street, Baltimore, Md. 21202, U.S.A. 1971. SBN 683-02391-8



Ernest Gräfenberg

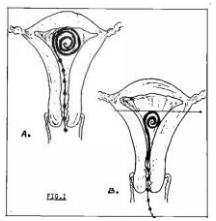
Grafenberg ring 1920

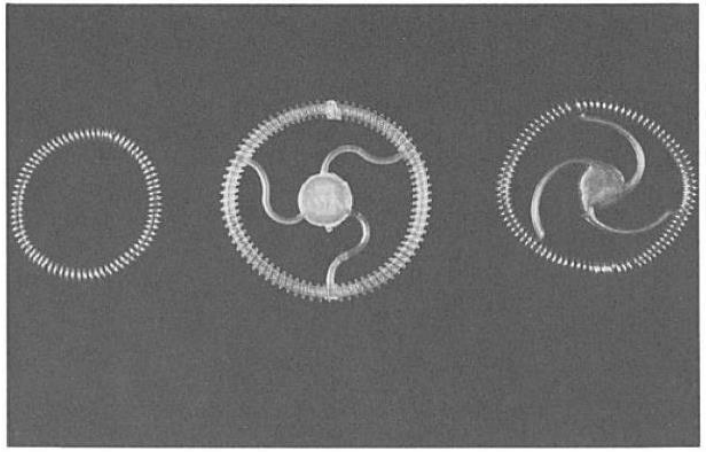
Oppenheimer W. Prevention of pregnancy by the graefenberg ring method: A re-evaluation after 28 years' experience. American Journal of Obstetrics and Gynecology. 1959;78(2):446-54.



Jack Lips 1962

Lazar Margulies 1969





Ishihama Atsumi 1965-1968
Distribuce povolena 1974

Peipert JF. Lippes loop and the first IUDs: lessons from aLippes loop and the first IUDs: lessons from a bygone era. American Journal of Obstetrics & Gynecology. 2018;219(2):127-8.

Ishihama A. Clinical studies on intrauterine contraception, especially the present state of contraception in Japan and the experience in the use of intrauterine rings. Yokohama Med. J.1959;10:89.

DANA

- 1962
  - MUDr. Jiří Šráček I.gyn-por klinika Brno
  - Ing. Stanislav Holánek Vhirana n.p. Brno
    - 1965 DANA Super
    - 1966 DANA Super Fix
    - 1968 DANA Cuprum

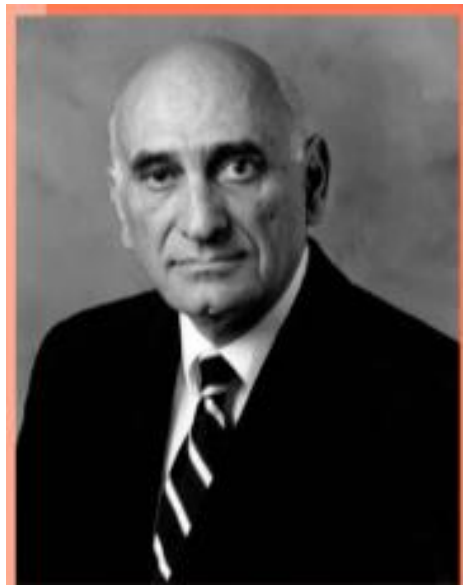
Holánek S, Šrácek J. Vhodné druhy plastických hmot k nitroděložní antikoncepci [Suitable sorts of plastic material for intrauterine devices]. Cesk Gynekol. 1967 Apr;32(3):253-5. Czech. PMID: 6083007.

Cu-IUD 380 mm^2

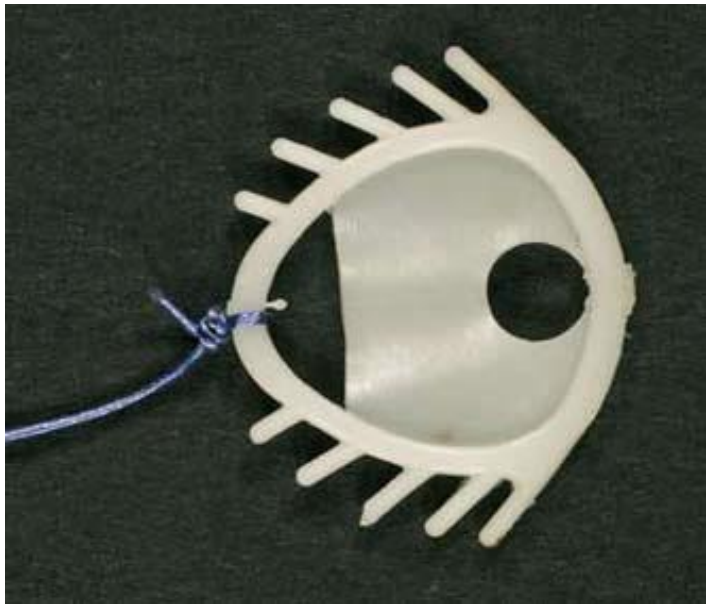
Howard Tatum/Jamie Zipper

1968

Lynch, Catherine M. "History of the IUD".*Contraception Online*. Baylor College of Medicine. Archived from the original on 2006-01-27. Retrieved, 2006-07-09.



Antonio Scommegna 1970



Dalcon Shield

- Konstrukce předcházela vypuzení
- Zvýšená prevalence uživatelek[1, 2]

1. Scott RB. Critical illness and deaths associated with intrauterine devices. Obstet. Gynec. 31:322-27, 1968.
2. Lee NC, Rubin GL, Ory HW, Burkman RT. Type of intrauterine device and the risk of pelvic inflammatory disease. Obstet Gynecol. 1983;62(1):1.

Případ Dalcon Shield

The Fight Against Dalkon Shield IUD's

Dalkon Shield intra-uterine devices became available to women as birth control devices in 1969. They became widely used in a short time. By 1974, A.H. Robins, the manufacturer, withdrew the IUD from further sale in the U.S. because of the high rate of infected miscarriage and death associated with them already. Finally, in 1980 A.H. Robins issued a letter to doctors and health centres stating that all Shields still worn by women should be removed. In 1981, it is suspected that many women are still wearing Dalkon Shields.

The National Women's Health Network has initiated a legal suit in the U.S. against A.H. Robins. As a result of this action, the NWHN hopes that:

-Robins will be forced to admit to having information about dangerous design flaws of the Dalkon Shield before it was marketed
-the company will have to take financial responsibility for a world wide recall of the Shield
-individual women will be inspired to sue Robins for personal damages

JOIN US!

The Shield (as well as other IUD's) caused infections and uterine perforations leading to pain, hysterectomy and infertility. We want to force drug companies to take responsibility for their faulty and dangerous products!
The Women's Health Collective is joining the NWHN's suit in the U.S. on behalf of Canadian women who suffered from the effects of the Dalkon Shield. In Western Canada, women can get involved in action against A.H. Robins (and possibly other IUD manufacturers) by joining with us in the U.S. suit and/or by sending us their old Dalkon Shield IUD to be used as evidence in the hearing. You need not have worn an IUD to get involved!

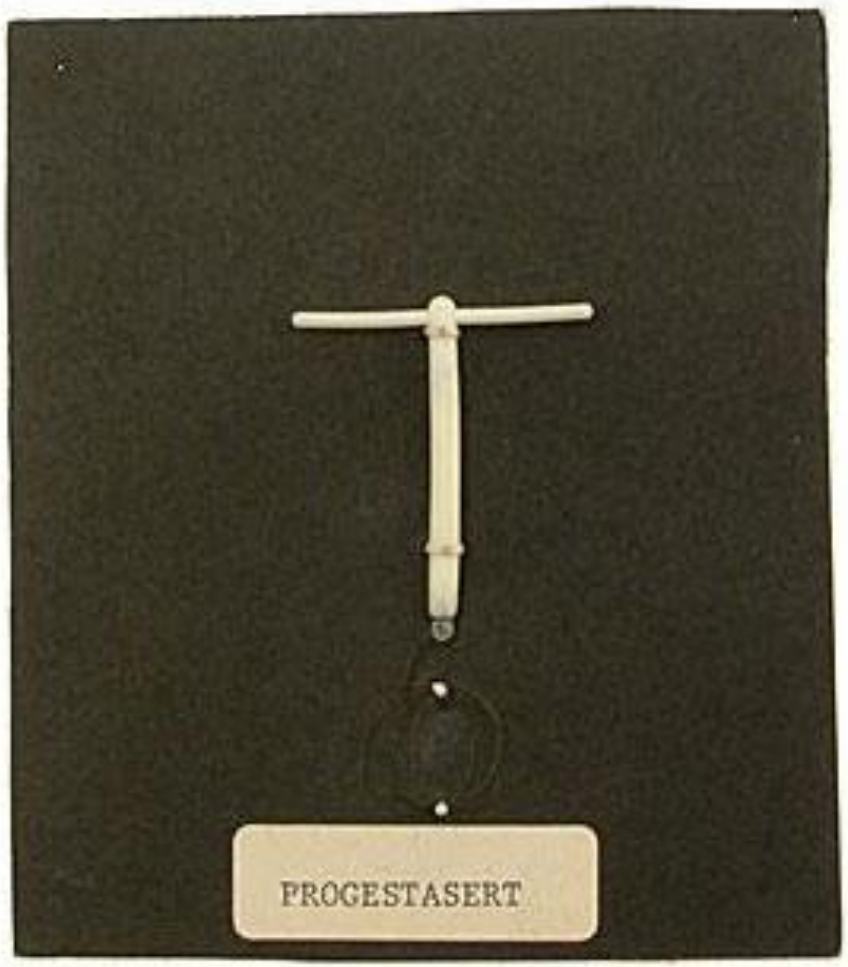
If you would like to join us or get more information, phone or write the Vancouver Women's Health Collective 736-6696 or drop in at 1501 West Broadway, Vancouver.

- Konstrukce předcházela vypuzení
- Zvýšená prevalence uživatelek[1]
- Nárůst počtu komplikací — v 70. letech 13-17 úmrtí[2]
- Náhrady dosáhly 2,5 miliardy USD[3]

1. Scott RB. Critical illness and deaths associated with intrauterine devices. Obstet. Gynec. 31:322-27, 1968.
2. Jennings, Juliet. “Report of safety and efficacy of the Dalkon Shield and other IUDs: prepared by ad-hoc Obstetric-Gynecology Advisory Committee.” *October* (1974): n. pag.
3. Scott RB. A survey of deaths and critical illness in association with the use of intrauterine devices. Int. J. Fert. 1968;13:297-300.

Progestasert 1976

- Antonio Scommegna
- 38 mg progesteronu/denní dávka 65 µg
- Riziko selhání 2 %
- Doba účinnosti 1 rok

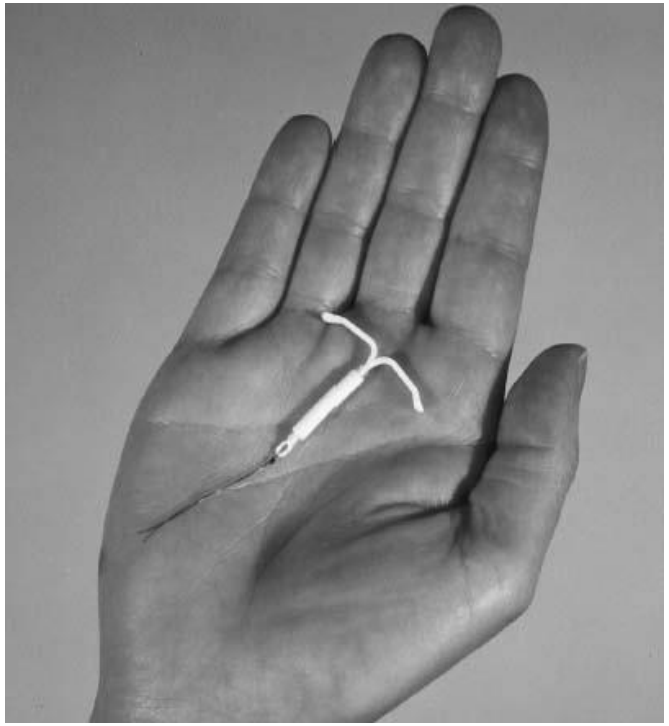


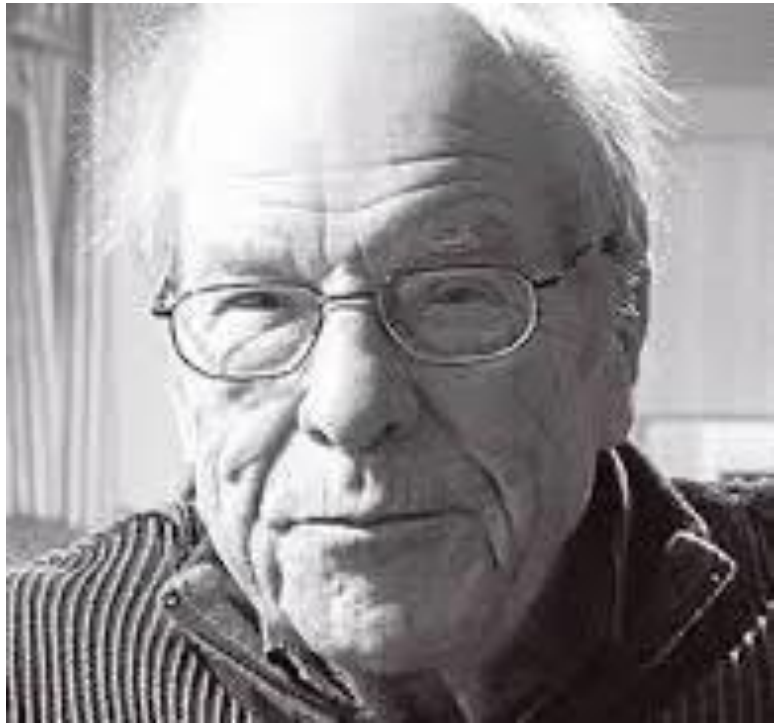
Murad F. Intrauterine devices containing progesterone. Drug Ther (NY). 1977;7(5):119-21.

Konstrukce „frame-less“ - Gynefix

- Dirk Wildemeersch 1985

Cheung VYT. GyneFix: A frameless intrauterine device. Journal of Minimally Invasive Gynecology. 2006;13(5):373-4.





LNG-IUS 1990

- Jouni Valter Tapani Luukkainen
- 1929-2015

Luukkainen T, Lähteenmäki P, Toivonen J. Levonorgestrel-releasing intrauterine device. Ann Med. 1990 Apr;22(2):85-90.

Fibroplant – frameless LNG IUS

- Dirk Wildemeersch 1997

Wildemeersch D, Andrade A, Goldstuck ND, Hasskamp T, Jackers G. Intrauterine levonorgestrel delivery with frameless fibrous delivery system: review of clinical experience. Int J Womens Health. 2017;9:49-58.

IUB – intrauterine ball

Ilan Baram 2014

- Nitinol
- Průměru 12 mm, 15 mm a 18 mm
- 17 kuliček Cu 300 mm^2

Baram I, Weinstein A, Trussell J. The IUB, a newly invented IUD: a brief report. Contraception. 2014 Feb;89(2):139-41.

Cu-IUD

- „T“, „U"
- Obsah mědi 375 – 380 mm^2
- Délka účinnosti: 3, 5, 8, 10 let
- Efektivita: 0,6 % v prvním roce; 1,6 – 2,2 % mezi 8. a 12. rokem
- „Frameless“ IUD – vylepšené výsledky 2 – 8 let po aplikaci

1. Sivin I. Utility and drawbacks of continuous use of a copper T IUD for 20 years. Contraception. 2007;75(6 Suppl):S70.
2. Meirik O, Rowe PJ, Peregoudov A et al. The frameless copper IUD (GyneFix) and the TCu380A IUD: results of an 8-year multicenter randomized comparative trial. Contraception. 2009;80(2):133.

LNG-IUS

- LNG-IUS 20
  - 52 mg/20 µg (po inzerci)...10-14 µg denně ...8 let
  - Plazmatická koncentrace 100-200 pg/ml
  - Riziko selhání 0,1 – 0,2 %[1,2,3]
- LNG-IUS 17
  - 19,5/17,5 µg denně (po inzerci) ...5 let
  - Riziko selhání 0,2-0,4 %
- LNG-IUS 14
  - 13,5 mg/14 µg denně (po inzerci) ...3 roky
  - Riziko selhání 0,41/100 za rok, kumulativní za 3 roky 0,9 %[1,2]

1. Sivin I, Lähteenmäki P, Ranta S et al. Levonorgestrel concentrations during use of levonorgestrel rod (LNG ROD) implants. Contraception. 1997 Feb;55(2):81-5.
2. Sivin I, Stern J. Health during prolonged use of levonorgestrel 20 micrograms/d and the copper TCu 380Ag intrauterine contraceptive devices: a multicenter study. International Committee for Contraception Research (ICCR). Fertil Steril. 1994;61(1):70.
3. Jensen JT, Lukkari-Lax E, Schulze A, Wahdan Y, Serrani M, Kroll R. Contraceptive efficacy and safety of the 52-mg levonorgestrel intrauterine system for up to 8 years: findings from the Mirena Extension Trial. Am J Obstet Gynecol. 2022;227(6):873.e1-.e12.

	T Cu 380A IUD	LNG-IUS (52 mg/20 µg)
Doba trvání antikoncepčního účinku v rocích	**12**	**8**
Doporučená doba zavedení v rocích	**až 10**	**8**
Riziko selhání při optimálním užití v prvním roce po aplikaci %	**0,6**	**0,1**
Riziko selhání při typickém užití v prvním roce po aplikaci v %	**0,5-0,8**	**0,1-0,2**
Kumulativní riziko selhání za 5 let užití v %	**<0,5**	**0,3-0,6%**
Kumulativní riziko selhání za 7 let užití v %	**1,6**	**1,1**
Kumulativní riziko selhání za 10 let užití v %	**2,2**	**Nejsou data**

1. Thonneau PF, Almont T, Almont TE. Contraceptive efficacy of intrauterine devices. Am J Obstet Gynecol. 2008;198(3):248
2. Jensen JT, Lukkari-Lax E, Schulze A, Wahdan Y, Serrani M, Kroll R. Contraceptive efficacy and safety of the 52-mg levonorgestrel intrauterine system for up to 8 years: findings from the Mirena Extension Trial. Am J Obstet Gynecol. 2022;227(6):873.e1-.e12.

Cu-IUD nebo LNG-IUS

Cu-IUD

- Kontraindikace exogenních steroidů (karcinom prsu)
- Negativní vedlejší účinky progestinů

LNG-IUS

- Preference amenorey

Nilsson, Carl Gustaf et al. “Clinical performance of a new levonorgestrel-releasing intrauterine device. A randomized comparison with a nova-T-copper device.” *Contraception* 25 4 (1982): 345-56 .

Mechanismus účinku

- Inhibice procesu impregnace[1]
- Změny cervikálního hlenu – inhibice transportu spermií
- Pseudoinflamatorní změny endometria – humorální (cytotoxické peptidy a lytické enzymy) i buněčné - inhibice implantace
- Cu – inhibice akrosomální reakce spermií[2]

1. Ortiz ME, Croxatto HB. Copper-T intrauterine device and levonorgestrel intrauterine system: biological bases of their mechanism of action. Contraception. 2007;75(6 Suppl):S16.
2. Tetrault AM, Richman SM, Fei X, Taylor HS. Decreased endometrial HOXA10 expression associated with use of the copper intrauterine device. Fertil Steril. 2009;92(6):1820.

Mechanismus účinku

- LNG
  - Atrofie žláz endometria
  - Viskozita cervikálního hlenu
- Ovicidní efekt je pravděpodobný

Cameron, Iain T.. “The levonorgestrel intrauterine system: the benefits of reduced bleeding.” *The European journal of contraception & reproductive health care : the official journal of the European Society of Contraception* 6 Suppl 1 (2001): 27-32 .

Mechanismus účinku

- Argumenty podporující neabortivní mechanismus účinku IUD
  - Není vyšší výskyt hCG pozitivity[1]
  - Uživatelky IUD mají proti neuživatelkám nižší výskyt intra- i extra-uterinních gravidit[2]
  - Analýza vejcovodů – neobsahují spermie ani fertilizované oocyty[3]

1. Wilcox AJ, Weinberg CR, Armstrong EG, Canfield RE. Urinary human chorionic gonadotropin among intrauterine device users: detection with a highly specific and sensitive assay. Fertil Steril. 1987;47(2):265.
2. Sivin I, Stern J. Health during prolonged use of levonorgestrel 20 micrograms/d and the copper TCu 380Ag intrauterine contraceptive devices: a multicenter study. International Committee for Contraception Research (ICCR). Fertil Steril. 1994;61(1):70.
3. Alvarez F, Brache V, Fernandez E, Guerrero B, Guiloff E, Hess R, Salvatierra AM, Zacharias S. New insights on the mode of action of intrauterine contraceptive devices in women. Fertil Steril. 1988;49(5):768.

Vhodná uživatelka

- Preference dlouhodobě působící reverzibilní, vysoce spolehlivé antikoncepce
- Nezávislost na opatření před pohlavním stykem
- Rychlá reverzibilita plodnosti
- Není vystaveny vyššímu riziku STD
- Vyloučení anamnestického pánevního zánětu

Jensen JT, Nelson AL, Costales AC. Subject and clinician experience with the levonorgestrel-releasing intrauterine system. Contraception. 2008;77(1):22.

Nekontracepční benefity

- Redukce rizika karcinomu – oba typy
  - endometria (OR 0,6; 95% CI 0,4-0,7)[1]
  - děložního hrdla (OR 0,55; 95% CI 0,42-0,70)[2]
- LNG-IUS
  - Redukce intenzity děložního krvácení (funkční i organické poruchy, poruchy koagulace, antikoagulační léčba)[3]

1. Nelson AL. Contraindications to IUD and IUS use. Contraception. 2007;75(6 Suppl):S76.
2. Castellsagué X, Díaz M, Vaccarella S et al. Intrauterine device use, cervical infection with human papillomavirus, and risk of cervical cancer: a pooled analysis of 26 epidemiological studies. Lancet Oncol. 2011;12(11):1023.
3. Marjoribanks J, Lethaby A, Farquhar C. Surgery versus medical therapy for heavy menstrual bleeding. Cochrane Database of Systematic Reviews 2006, Issue 2. Art. No.: CD003855.

Nekontracepční benefity

- Redukce pánevní bolesti (endometriosa)[1]
- Redukce rizika pánevního zánětu[2]

1. Kronemyer B, editor Reducing endometriosis pain with LARC2020.
2. Toivonen J. Intrauterine contraceptive device and pelvic inflammatory disease. Ann Med. 1993;25(2):171.

Inzerce IUD

- Asepticky
- Profylaxe ATB nezlepšuje výsledky
- Vyloučení gravidity
- Po porodu je riziko perforace nejvyšší > 48 hodin < 4 týdny
- Cu-IUD do 48 hodin… > 4 týdny
- LNG-IUS… > 6 týdnů

Lopez, Laureen M. et al. “Immediate postpartum insertion of intrauterine device for contraception.” *The Cochrane database of systematic reviews* 6 (2015): CD003036 .

Perforace dělohy

- Perforace dělohy 0,4/1000 prodaných tělísek s proporcionálním výskytem u Cu-IUD a LNG-IUS
- Vyšší riziko po porodu a u kojících[1]
- Cu-IUD – infiltráty v dutině břišní[2]

1. Boyon C, Giraudet G, Guérin Du Masgenêt B et al. Diagnosis and management of uterine perforations after intrauterine device insertion: A report of 11 cases. Gynecol Obstet Fertil. 2012 Jul 18. [Epub ahead of print]
2. Zeino MY, Wietfeldt ED, Advani V et al. Laparoscopic removal of a copper intrauterine device from the sigmoid colon. JSLS. 2011;15(4):568-7.


RIC 5-9/GYN
MI 0.5
7359170214 iud ve stene
5.4cm / 24Hz
TIs 0.1
11/26/2008
12:41:58
Uterus
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Pwr 100
Gn -3
C6 / M5
P3 / E1
SRI II 3
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iud
Cine 372
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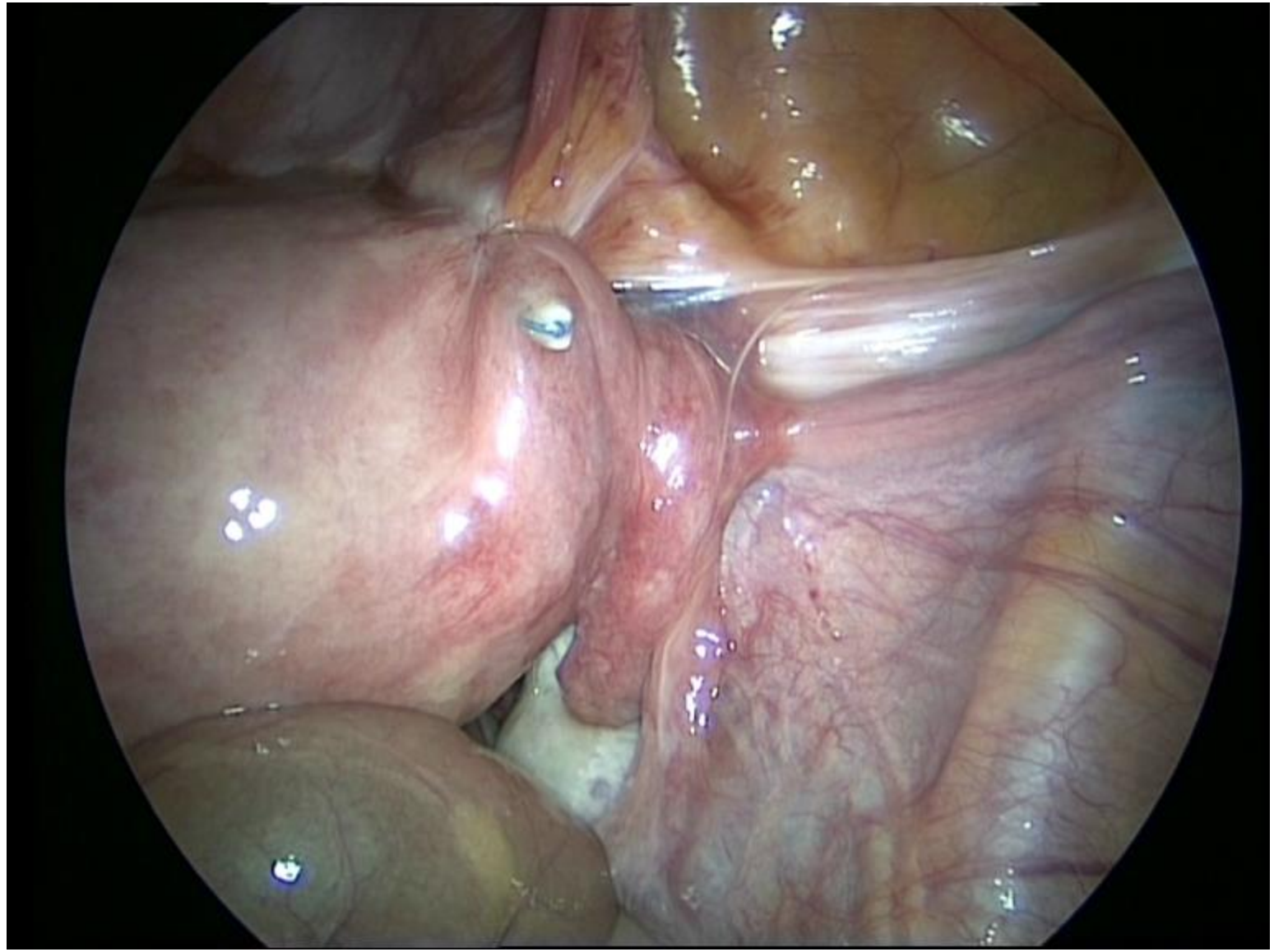
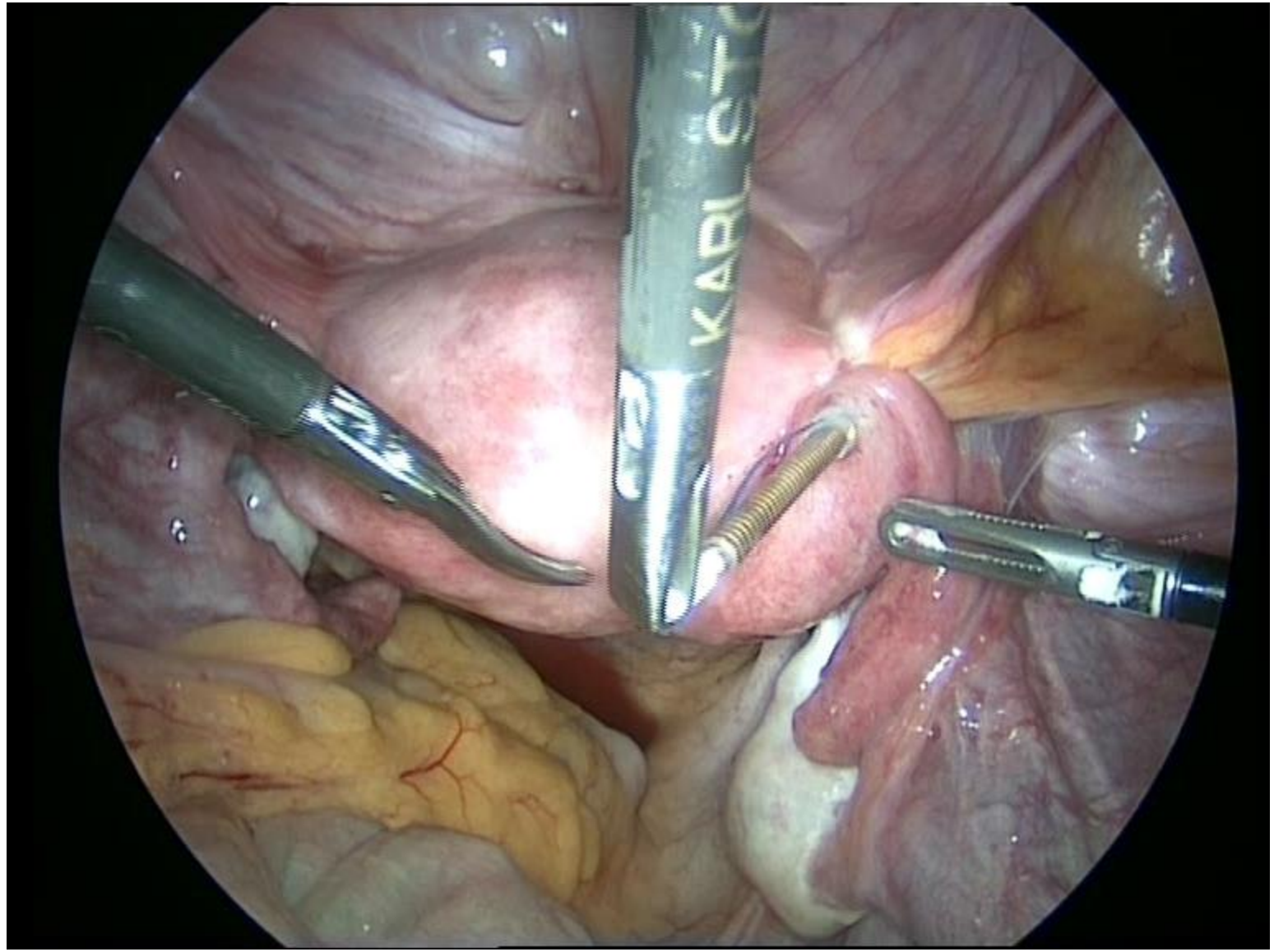




Hluboký pánevní zánět

- Bakteriální ascenze[1]
- 1 – 10 případů/1000 inzercí
- Vyšší riziko do 20 dnů po inzerci[2]

1. Grimes DA.Intrauterine device and upper-genital-tract infection. Lancet. 2000;356(9234):1013.
2. Farley TM, Rosenberg MJ, Rowe PJ et al. Intrauterine devices and pelvic inflammatory disease: an international perspective. Lancet. 1992;339(8796):785.

Expulze

- V prvním roce 3 – 10 % Cu-IUD a 6 % LNG-IUS[1]
- Symptomy – bolest v podbřišku, krvácení, výtok, dyspareunie
- Rizikové faktory[2]
  - Nuliparita
  - Menoragie
  - Dysmenorea

1. Rivera R, Chen-Mok M, McMullen S. Analysis of client characteristics that may affect early discontinuation of the TCu-380A IUD. Contraception. 1999;60(3):155.
2. Bahamondes L, Díaz J, Marchi NM et al. Performance of copper intrauterine devices when inserted after an expulsion. Hum Reprod. 1995;10(11):2917.

Expulze

- Expulze předchozího tělíska
- Věk < 20 let
- Inzerce bezprostředně po potratu ve druhém trimestru, nebo po porodu
- Nejčastěji do 3 měsíců po inzerci[1]
- Rekurentní expulze 21,7 – 31,4/100 inzercí[2]

1. Rivera R, Chen-Mok M, McMullen S. Analysis of client characteristics that may affect early discontinuation of the TCu-380A IUD. Contraception. 1999;60(3):155.
2. Bahamondes L, Díaz J, Marchi NM et al. Performance of copper intrauterine devices when inserted after an expulsion. Hum Reprod. 1995;10(11):2917.

Bolest v podbřišku

- Náhle vzniklá bolest – PID, GEU, Abort
- Bolest při inzerci – perforace
- Dysmenorea – zhoršení první cykly po inzerci
- Dysmenorea+neplánované krvácení – důvod extrakce 0,1 – 2,4 % případů

Baveja R, Bichille LK, Coyaji KJ et al. Randomized clinical trial with intrauterine devices (levonorgestrel intrauterine device (LNG), CuT 380Ag, CuT 220C and CuT 200B). A 36-month study. Indian Council of Medical Research Task Force on IUD. Contraception. 1989;39(1):37.

Změna profilu děložního krvácení

- Epizody neplánovaného krvácení
- Cu-IUD – zvýšení intenzity cyklického krvácení
- LNG-IUS – snížení intenzity cyklického krvácení až amenorea
- Náhle vzniklé krvácení – dislokace
- Zvýšení intenzity – pokles Hb – extrakce

Milsom I, Andersson K, Jonasson K et al. The influence of the Gyne-T 380S IUD on menstrual blood loss and iron status. Contraception. 1995;52(3):175.

Abnormální cytologie

- Dlaždicobuněčná metaplázie+chronická zánětlivá reakce
- Aktinomycety+grampozitivní anaerobní bakterie
- 7 % uživatelek IUD – aktinomycetám podobné mikroorganizmy[1]
- Nález není indikací k ATB terapii[2]

1. Persson E, Holmberg K, Dahlgren S et al. Actinomyces israelii in the genital tract of women with and without intra-uterine contraceptive devices. Acta Obstet Gynecol Scand. 1983;62(6):563.
2. Westhoff C. IUDs and colonization or infection with Actinomyces. Contraception. 2007;75(6 Suppl):S48.

Vaginální fluor

- Rozdíl výskytu bakteriální vaginózy, kandidózy a trichomoniázy u uživatelek a neuživatelek IUD není signifikantní[1]
- Vyšší výskyt bakteriální vaginózy[2]
- Leukorea[3]

1. Shobeiri F, Nazari M. Vaginitis in Intrauterine Contraceptive Device Users. Health [Internet]. 2014;06(11):1218–23.
2. Aleixo Neto, A et al. "[A comparative study of the incidence of Gardnerella vaginalis in users of IUD and oral contraceptives]." *Jornal brasileiro de ginecologia* 97 7 (1987): 315-6 .
3. Speroff L, Darney P. A Clinical Guide for Contraception, 5.vydání, Lippincott Williams & Wilkins, Philadelphia 2010. ISBN 1608316106, s.432.

Nitroděložní antikoncepce ve specifických klinických situacích

Adolescentní ženy

- Parita
- Těhotenská anamnéza
- Rizika přenosu STD
- Předchozí antikoncepční metody
- Vyšší stupeň adherence
- Screening *chlamydia trachomatis, neisseria gonorrhoea* v zemích s vysokou prevalenci
- LNG-IUS – nižší riziko PID
- <20 let – vyšší riziko expulse

Committee on Adolescent Health Care Long-Acting Reversible Contraception Working Group, The American College of Obstetricians and Gynecologists. Committee opinion no. 539: adolescents and long-acting reversible contraception: implants and intrauterine devices. Obstet Gynecol. 2012;120(4):983.

Nuliparita

- Bezpečná metoda[1,2]
- Nároky na inzerci – vyšší bolestivost[3]
- Vyšší míra ochoty pokračovat v metodě[4]

1. Hubacher D. Copper intrauterine device use by nulliparous women: review of side effects. Contraception. 2007;75(6 Suppl):S8.
2. Prager S, Darney PD. The levonorgestrel intrauterine system in nulliparous women. Contraception. 2007;75(6 Suppl):S12.
3. Hubacher D, Reyes V, Lillo S et al. Pain from copper intrauterine device insertion: randomized trial of prophylactic ibuprofen. Am J Obstet Gynecol. 2006;195(5):1272-7.
4. Suhonen S, Haukkamaa M, Jakobsson T et al. Clinical performance of a levonorgestrel-releasing intrauterine system and oral contraceptives in young nulliparous women: a comparative study. Contraception. 2004;69(5):407-12.

Nitroděložní antikoncepce a ektopická gravidita

- IUD chrání před intrauterinní i ektopickou graviditou
- Při selhání IUD – vyšší riziko ektopické nidace
- LNG-IUS 1GEU/2 gravidity
- Cu-IUD 1GEU/6
- Bez antikoncepce 1GEU/50

1. Sivin I. Dose- and age-dependent ectopic pregnancy risks with intrauterine contraception. Obstet Gynecol. 1991;78(2):291.
2. Furlong LA. Ectopic pregnancy risk when contraception fails. A review. J Reprod Med. 2002;47(11):881.
3. Backman T, Rauramo I, Huhtala et al. Pregnancy during the use of levonorgestrel intrauterine system. Am J Obstet Gynecol. 2004;190(1):50.

Chlopenní srdeční vady

- IUD nezvyšuje riziko bakteriemie
- LNG-IUS – vhodné u antikoagulační léčby při chlopenních náhradách

Kilic S, Yuksel B, Doganay M et al. The effect of levonorgestrel-releasing intrauterine device on menorrhagia in women taking anticoagulant medication after cardiac valve replacement. Contraception. 2009;80(2):152.

Hemoragické diatézy

- LNG-IUS – léčebná modalita hemoragií u žen s poruchami krevní srážlivosti

Kingman CE, Kadir RA, Lee CA et al. The use of levonorgestrel-releasing intrauterine system for treatment of menorrhagia in women with inherited bleeding disorders. BJOG. 2004;111(12):1425.

Komplikující gynekologická onemocnění

- Stavy po SC
- Děložní myomy bez deformity dutiny[1]
- Po terapeutické embolisaci v léčbě myomů – interval 3 – 6 měsíců[2]

1. Zapata LB, Whiteman MK, Tepper NK et al. Intrauterine device use among women with uterine fibroids: a systematic review. Contraception. 2010;82(1):41.
2. Xiao B, Wu SC, Chong J et al. Therapeutic effects of the levonorgestrel-releasing intrauterine system in the treatment of idiopathic menorrhagia. Fertil Steril. 2003;79(4):963

Postkoitální nitroděložní antikoncepce

- Cu-IUD
  - Efektivní do 120 hodin po nechráněném pohlavním styku[1]
- LNG-IUS – podobný efekt[2]

1. Kumari S, Sarkar A, Kulshreshtha A, Zangmo R, Roy KK. Exploring the Role of Levonorgestrel Intrauterine System (LNG-IUS) as a Method of Emergency Contraception (EC). Cureus. 2022;14.
2. Ramanadhan S, Goldstuck ND, Henderson JT, Che Y, Cleland K, Dodge LE, et al. Progestin intrauterine devices versus copper intrauterine devices for emergency contraception. The Cochrane database of systematic reviews. 2023;2:CD013744.

Nitroděložní antikoncepce a infekce virem lidské imunodeficience (HIV)

- IUD nezvyšuje riziko infekce virem HIV[1]
- Pozitivní ženy – potřeba spolehlivé antikoncepce + kondom
- Vhodnější LNG-IUS – riziko dalších STD[2]

1. Stringer EM, Kaseba C, Levy J et al. A randomized trial of the intrauterine contraceptive device vs hormonal contraception in women who are infected with the human immunodeficiency virus. Am J Obstet Gynecol. 2007;197(2):144.e1.
2. Castaño PM. Use of intrauterine devices and systems by HIV-infected women. Contraception. 2007;75(6 Suppl):S51.

Nitroděložní antikoncepce a infekce virem lidské imunodeficience (HIV)

- Zvýšené riziko PID ?[1]
- IUD neinterferuje s antiretrovirovou terapií
- Analogicky platí i pro jiné stavy imunosuprese[2]

1. Heikinheimo O, Lehtovirta P, Aho I et al. The levonorgestrel-releasing intrauterine system in human immunodeficiency virus-infected women: a 5-year follow-up study. Am J Obstet Gynecol. 2011;204(2):126.e1.
2. Heikinheimo O, Lehtovirta P, Suni J et al. The levonorgestrel-releasing intrauterine system (LNG-IUS) in HIV-infected women--effects on bleeding patterns, ovarian function and genital shedding of HIV. Hum Reprod. 2006;21(11):2857.

Menopauzální ženy

- Vysoká spolehlivost
- LNG-IUS – prevence menoragií
- LNG-IUS – kombinace s estrogenní terapií klimakterického syndromu[2]

1. Bahamondes MV, Monteiro I, Castro S et al. Prospective study of the forearm bone mineral density of long-term users of the levonorgestrel-releasing intrauterine system. Hum Reprod. 2010;25(5):1158-64.
2. ACOG Committee on Practice Bulletins-Gynecology. SO ACOG practice bulletin. Clinical management guidelines for obstetrician-gynecologists. Number 59, January 2005. Intrauterine device. Obstet Gynecol. 2005;105(1):223.

Menopauzální ženy a ukončení metody

- LNG-IUS – negativně neovlivňuje kostní denzitu[1]
- Ukončení
  - Cu-IUD – 1 rok po menopauze
  - LNG-IUS – 1 rok po menopauze při absenci estrogenní terapie, je-li amenorea – extrakce ve věku 51 – 52 let[2]

1. Bahamondes MV, Monteiro I, Castro S et al. Prospective study of the forearm bone mineral density of long-term users of the levonorgestrel-releasing intrauterine system. Hum Reprod. 2010;25(5):1158-64.
2. ACOG Committee on Practice Bulletins-Gynecology. SO ACOG practice bulletin. Clinical management guidelines for obstetrician-gynecologists. Number 59, January 2005. Intrauterine device. Obstet Gynecol. 2005;105(1):223.

Perspektivy nitroděložní antikoncepce

- Studie bezpečnosti IUD
- Modulátory progesteronových receptorů ve formě IUS

Chabbert-Buffet N, Ouzounian S, Kairis AP et al. Contraceptive applications of progesterone receptor modulators. Eur J Contracept Reprod Health Care 2008; 13: 222-30

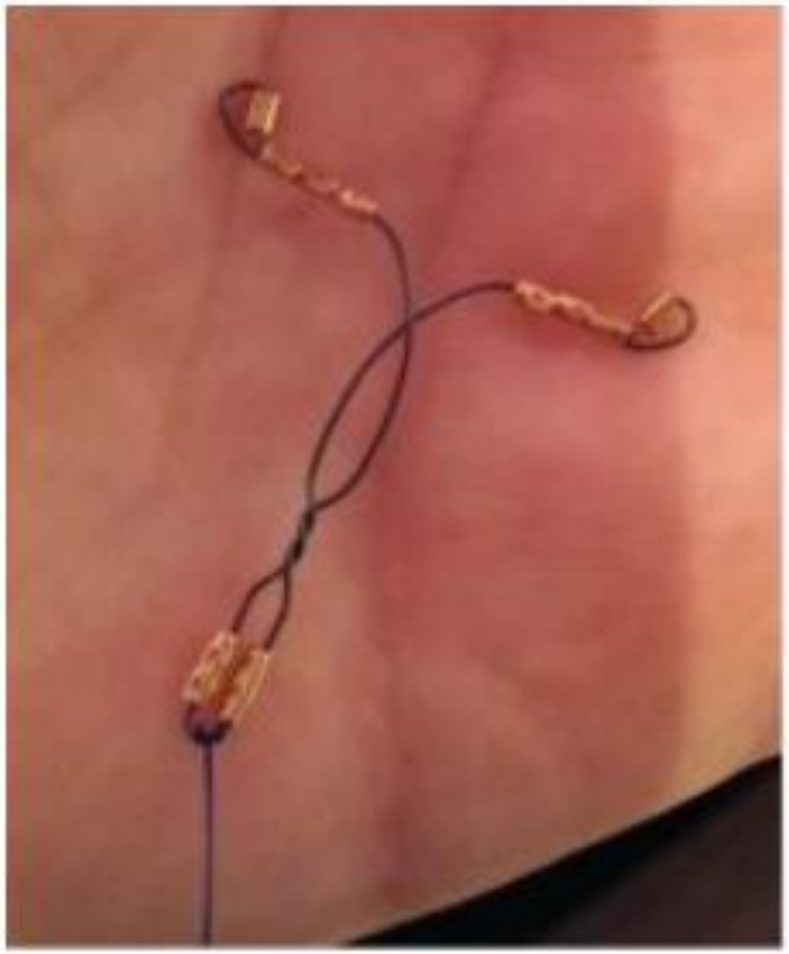
Nitroděložní antikoncepce Ni+Ti

- Nitinol – Ni+Ti
  - Tvarová paměť
  - Biokompatibilita
  - Pseudoelasticita
  - Odolnost

Turok DK, Nelson AL, Dart C, Schreiber CA, Peters K, Schreifels MJ, Katz B; VeraCept Phase 2 Clinical Investigator Group. Efficacy, Safety, and Tolerability of a New Low-Dose Copper and Nitinol Intrauterine Device: Phase 2 Data to 36 Months. Obstet Gynecol. 2020 Apr;135(4):840-847.

VeraCept© - Ni+Ti/Cu

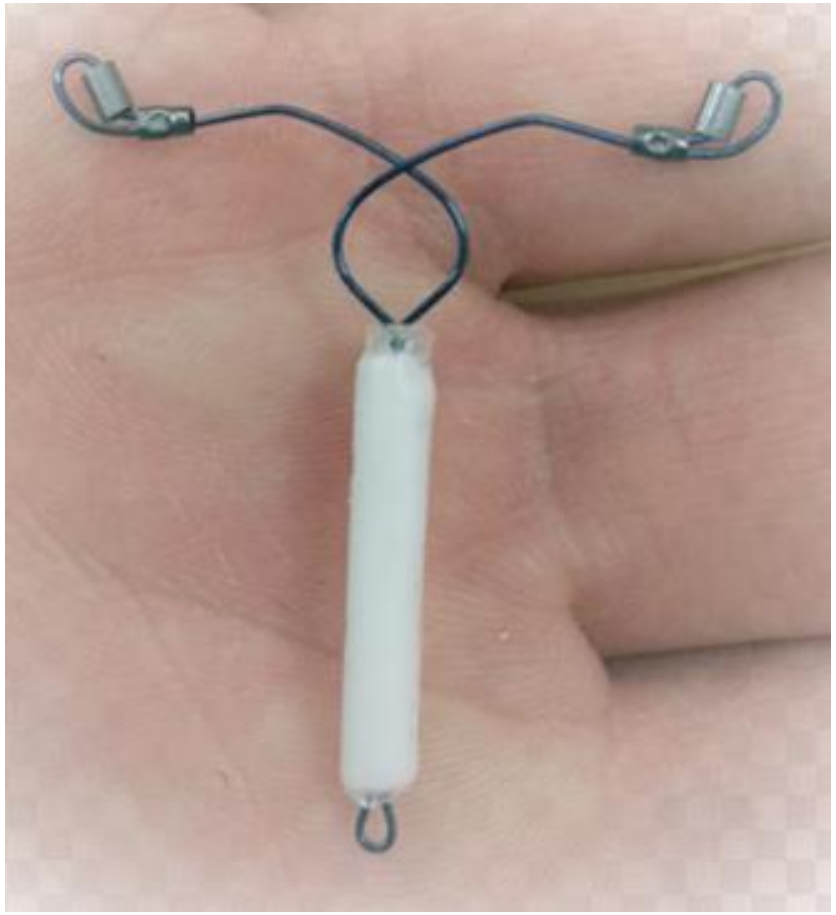
175 mm^2 Cu



Turok DK, Nelson AL, Dart C, Schreiber CA, Peters K, Schreifels MJ, et al. Efficacy, Safety, and Tolerability of a New Low-Dose Copper and Nitinol Intrauterine Device: Phase 2 Data to 36 Months. Obstet Gynecol. 2020;135(4):840-7.

LevoCept© - Ni+Ti/LNG

52 mg LNG

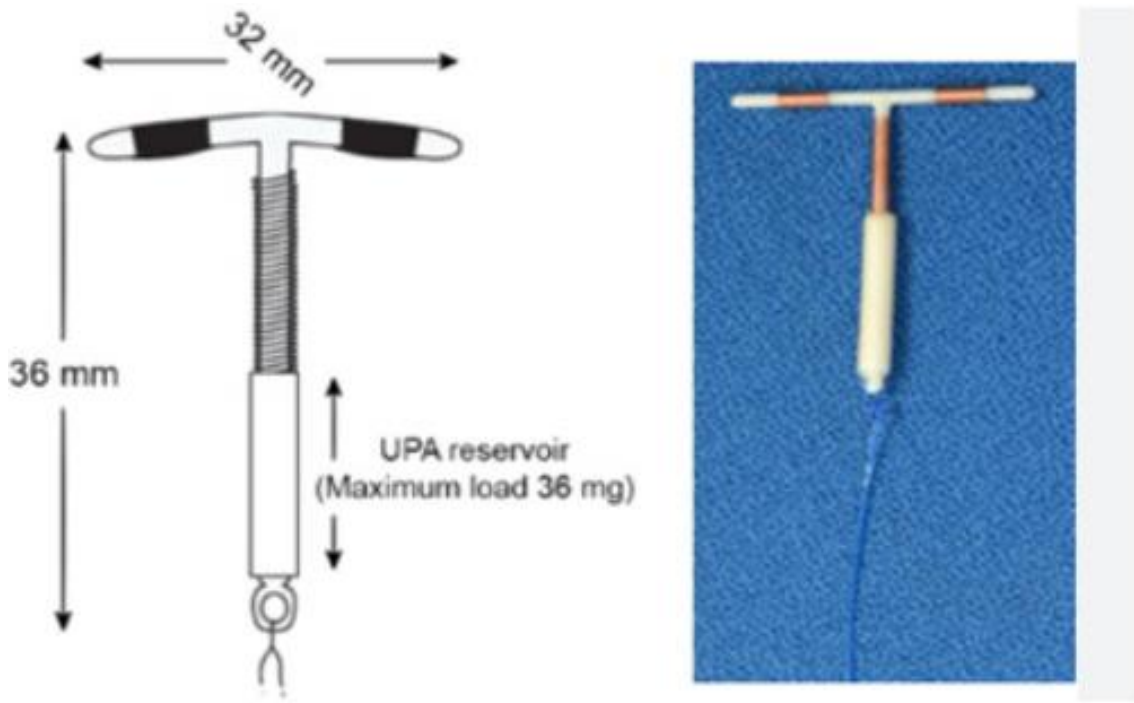


ClinicalTrials.gov. Evaluation of the Efficacy, Safety and Tolerability of VeraCept IUD. Updated August 24, 2023. Accessed December 9, 2024. https://clinicaltrials.gov/ct2/show/NCT03633799

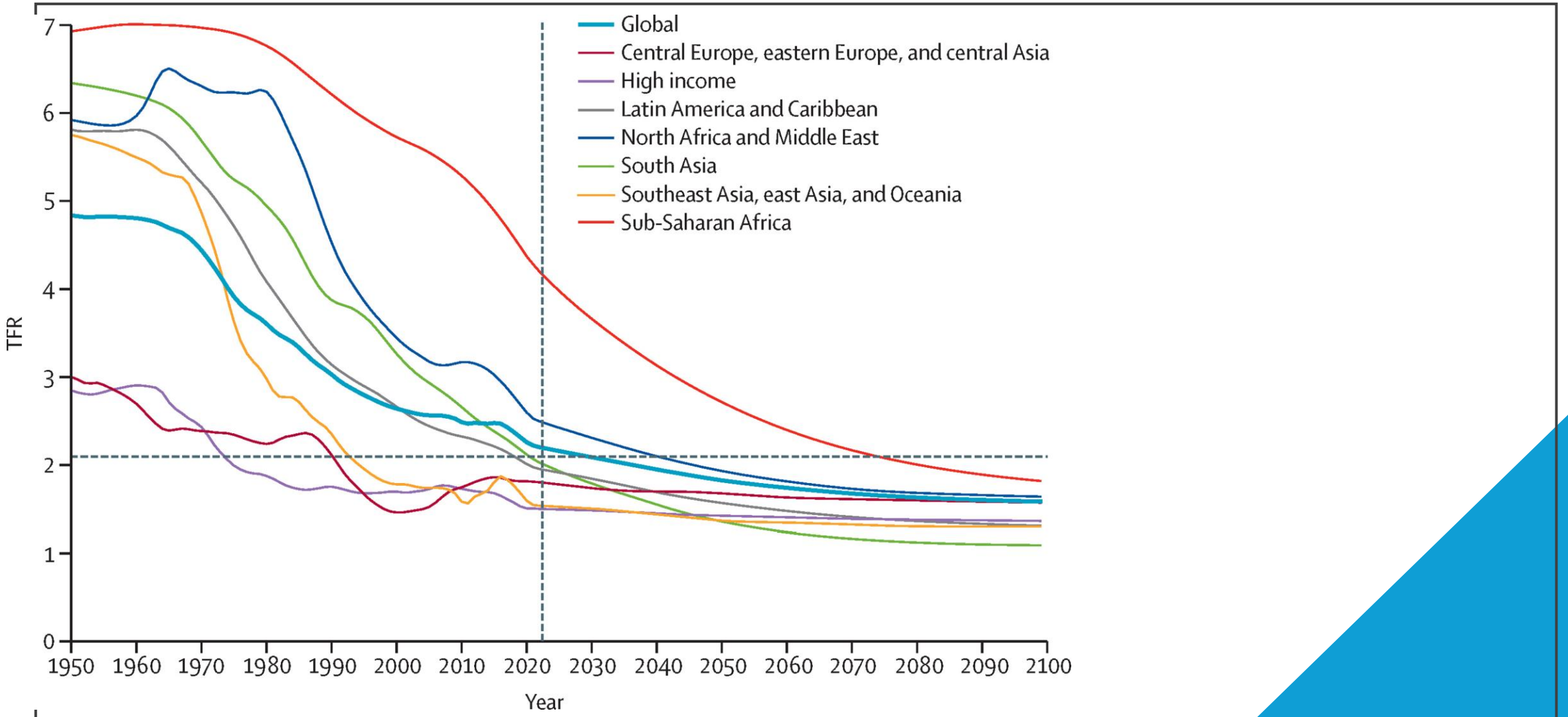
ClinicalTrials.gov. Evaluation of the Efficacy, Safety, and Tolerability of LevoCept. Updated March 5, 2024. Accessed December 9, 2024. https://clinicaltrials.gov/ct2/show/NCT04457076

Cooper-UPA-IUS-designe

- 200 mm^2 Cu
- 5, 20, 40 µg ulipristal-acetátu



Brache V, Vieira CS, Plagianos M, Lansiaux M, Merkatz R, Sussman H, Cochon L, Tejada AS, Kumar N, Loeven D, Blithe DL, Aprem AS, Williams AR, Kannan A, Bagchi IC, Sitruk-Ware R. Pharmacodynamics and pharmacokinetics of a copper intrauterine contraceptive system releasing ulipristal acetate: A randomized proof-of-concept study. Contraception. 2021 Oct;104(4):327-336. doi: 10.1016/j.contraception.2021.06.010. Epub 2021 Jun 19. PMID: 34157312; PMCID: PMC8434982.



Bhattacharjee NV, Schumacher AE, Aali A, Abate YH, Abbasgholizadeh R, Abbasian M, et al. Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100: a comprehensive demographic analysis for the Global Burden of Disease Study 2021. The Lancet. 2024;403(10440):2057-99.

...děkuji za pozornost
petr.krepelka@upmd.eu