A global epidemiological perspective on female and male sterilisation

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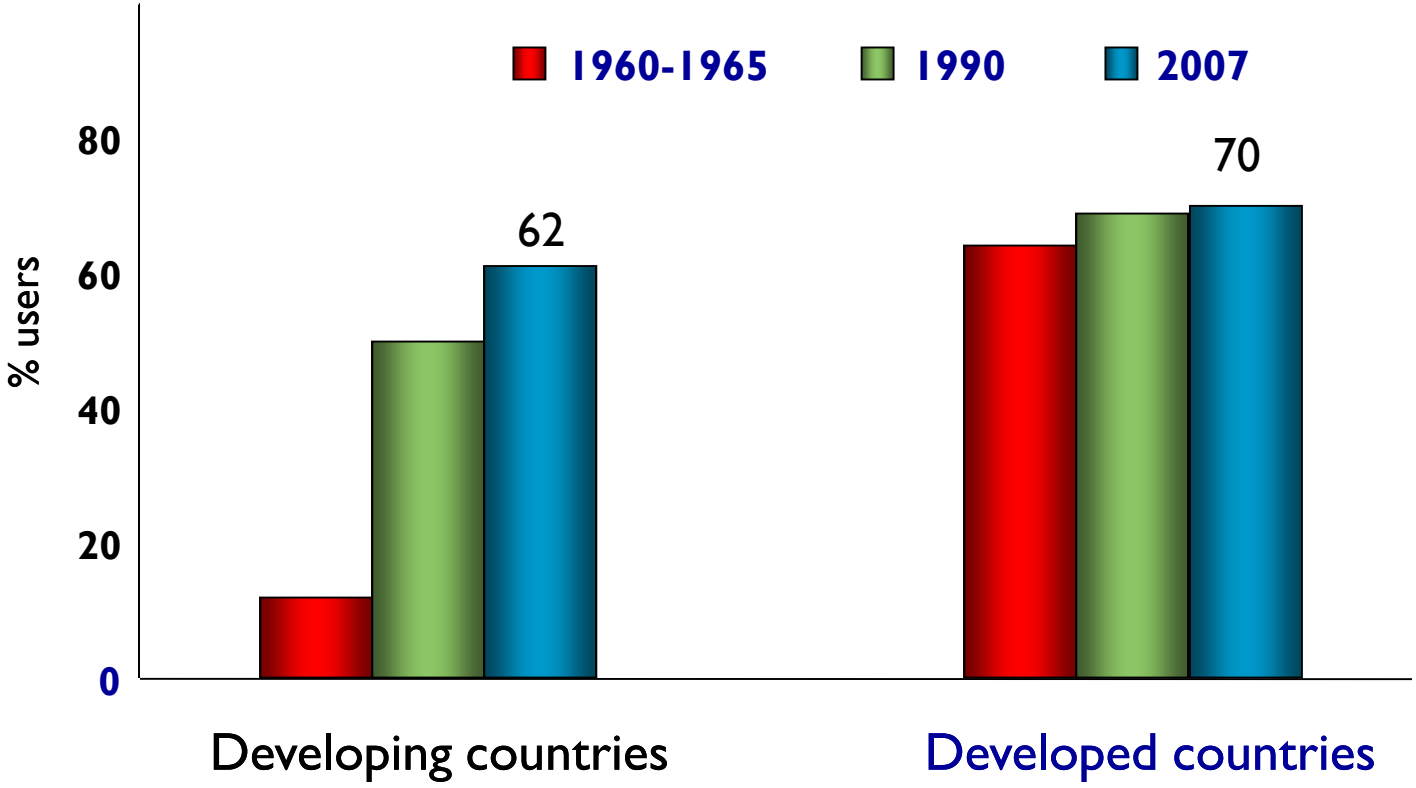
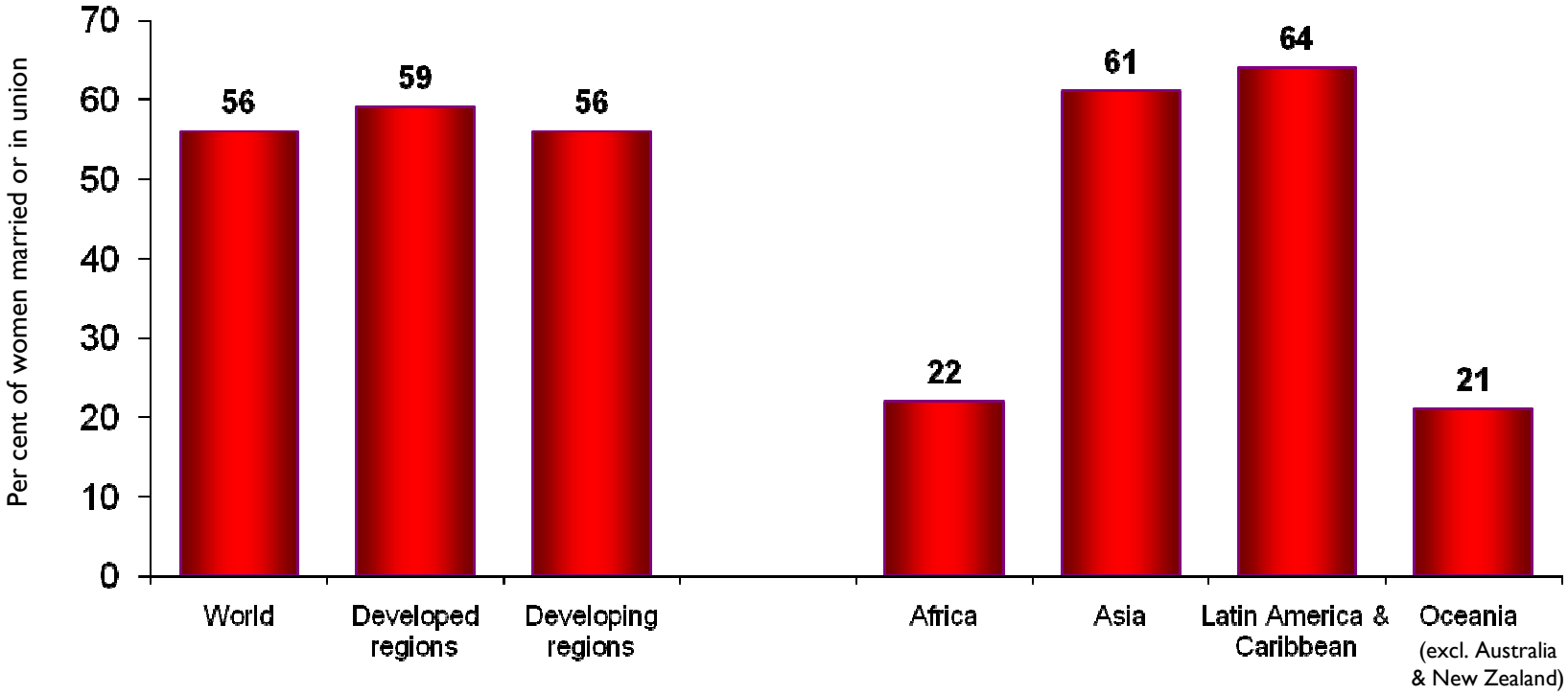
Use of contraception

- *The public health success story of the 20th century* -



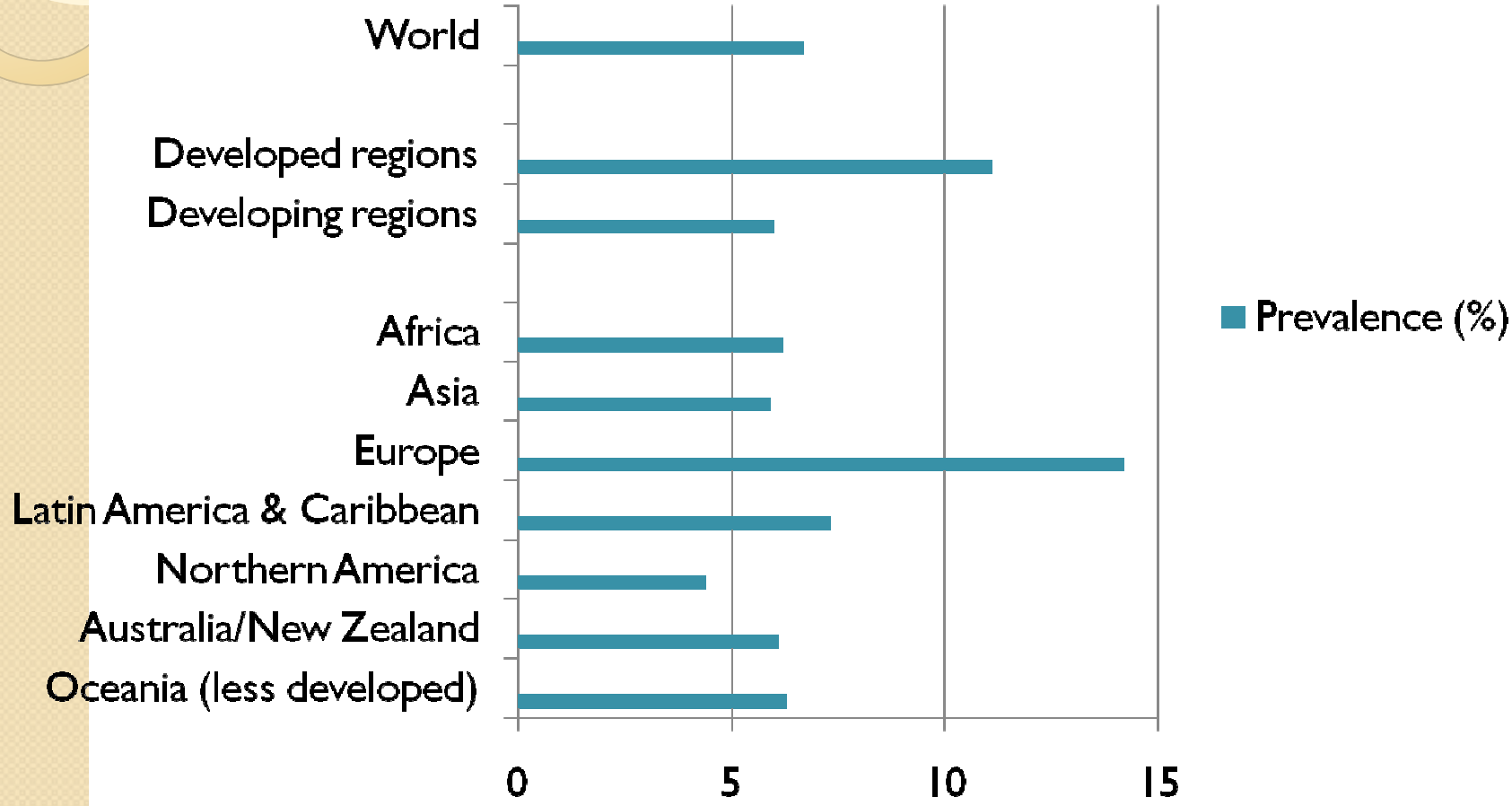
(Source: United Nations, *World Contraceptive Use;* 1991, 1999 and 2009)

Use of modern contraceptive methods, latest data



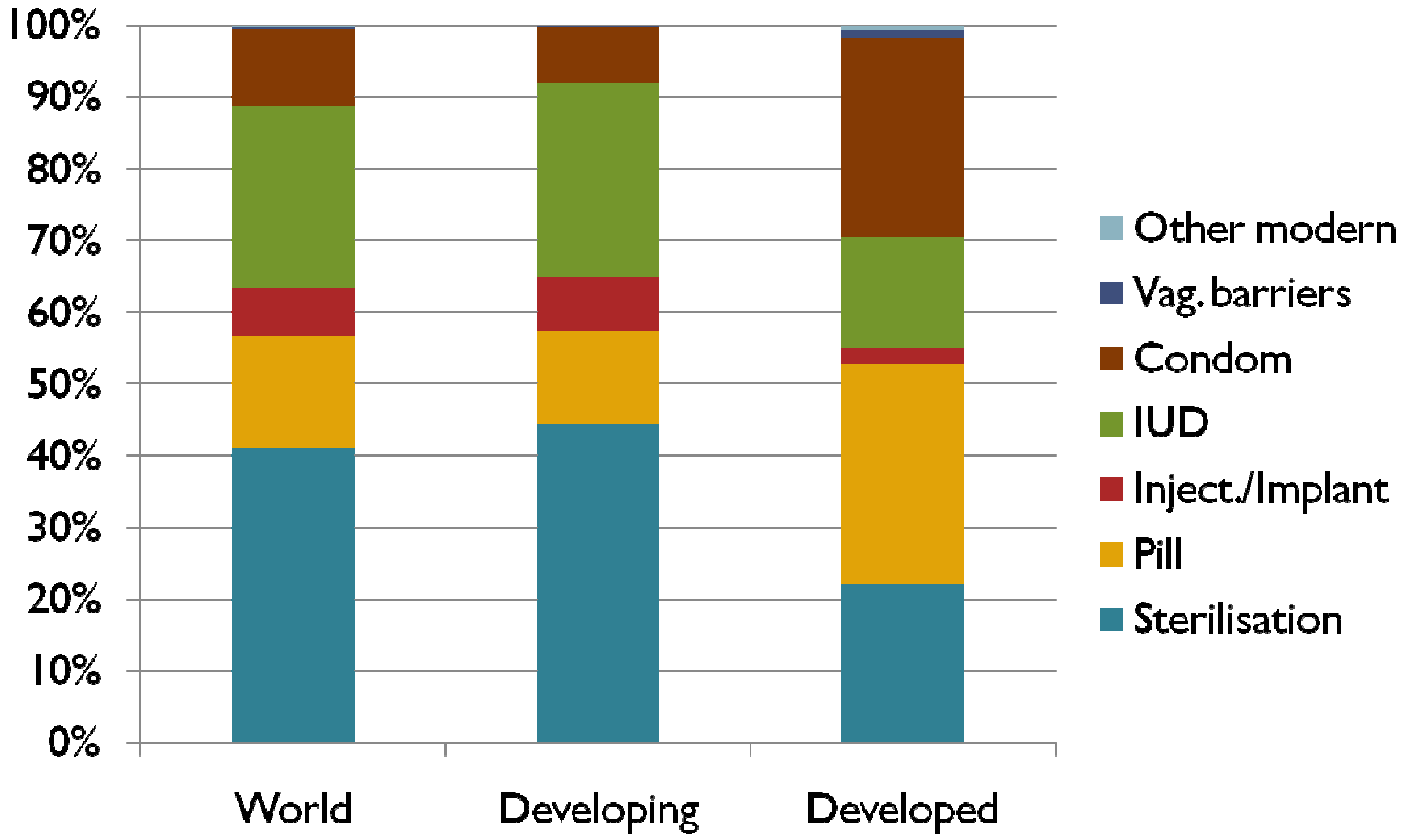
(Source: United Nations, *World Contraceptive Use 2009*)

Use of traditional methods of contraception, by major world region, latest data



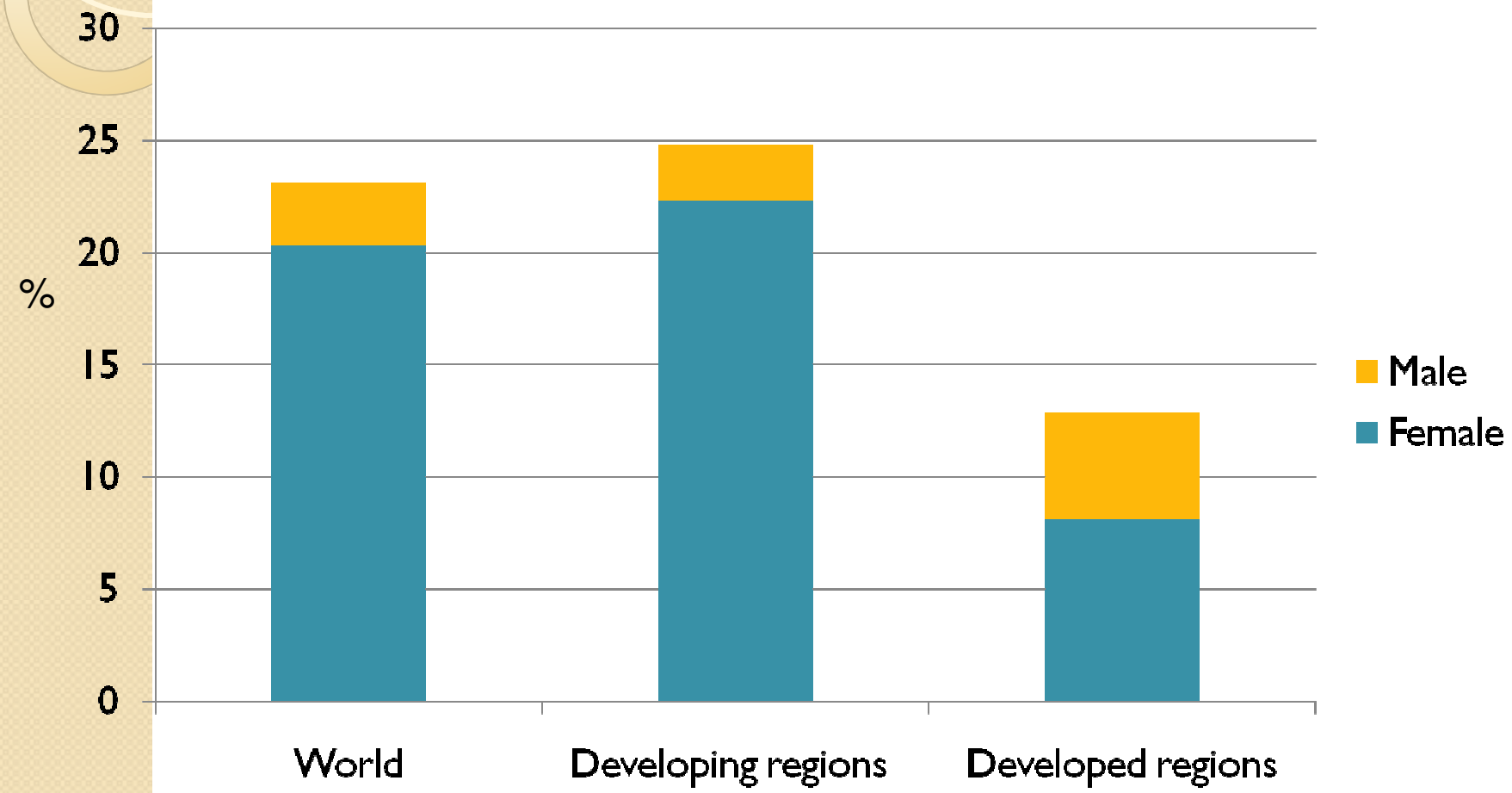
(Source: United Nations, *World Contraceptive Use 2009*)

Proportional distribution of contraceptive method use among users of modern methods



(Source: United Nations, *World Contraceptive Use 2009*)

Prevalence of male and female sterilisation, latest data
(per cent of women of reproductive age – married or in union)



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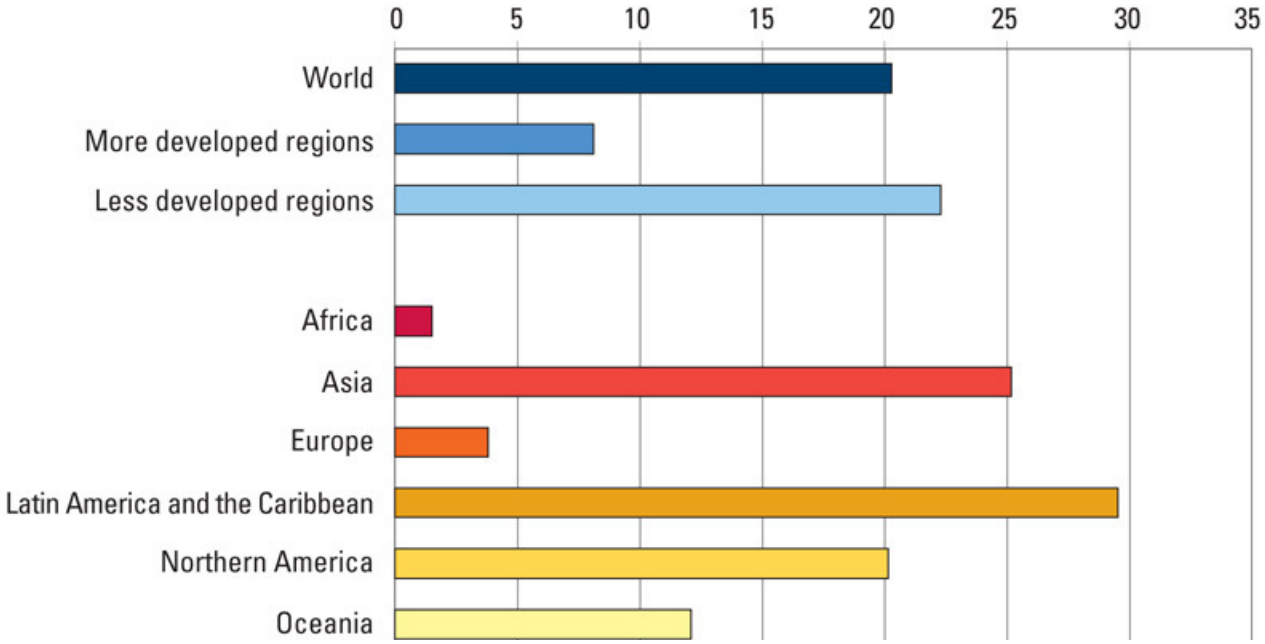
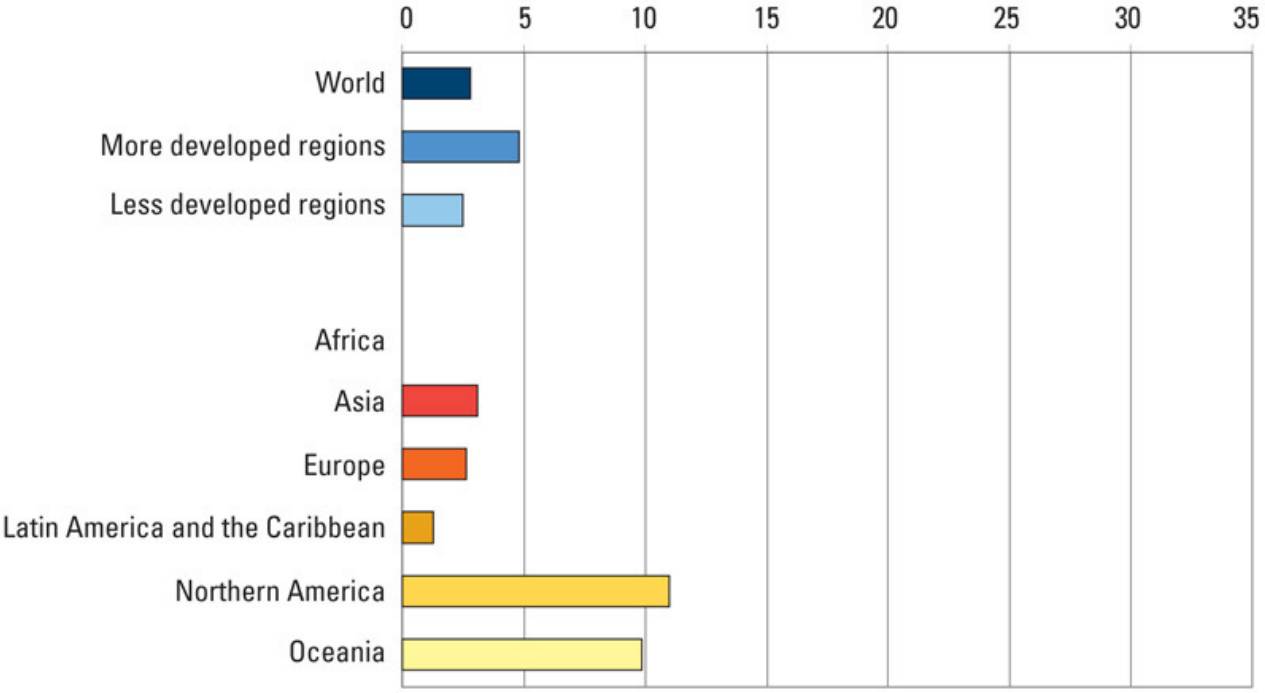
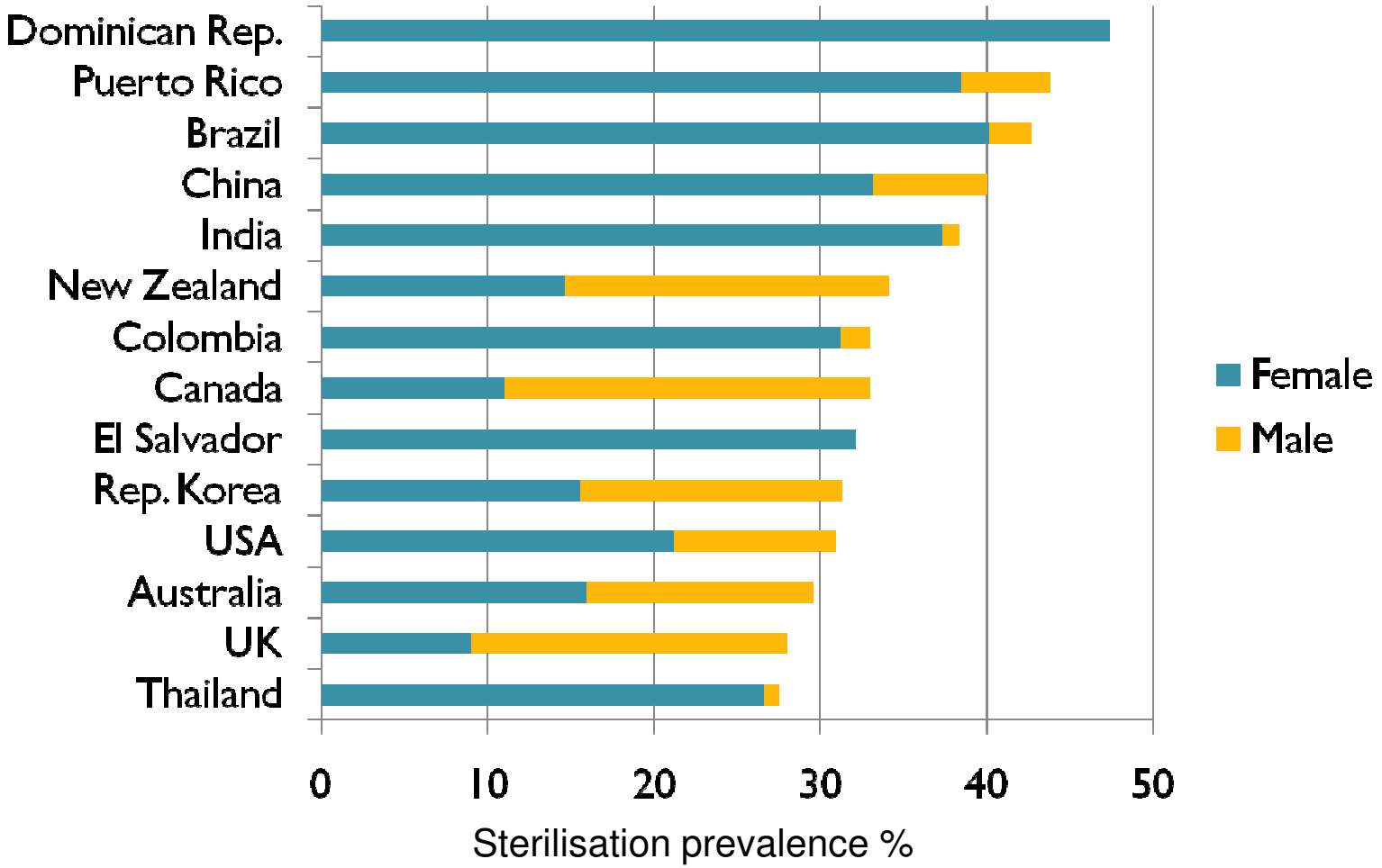


Female sterilisation



Male sterilisation

Countries with sterilisation prevalence > 25 %
(n=14 countries)



(Source: United Nations, *World Contraceptive Use 2009*)

Methods of female sterilisation

- Postpartum partial salpingectomy
- Interval partial salpingectomy
- Bipolar coagulation
- Unipolar coagulation
- Silastic band application (e.g Yoon ring)
- Spring clip application (e.g. Wolf or Hulka clip, Filshie clip)
- Intratubal device placement (Essure®)
- Others (e.g. intra-uterine quinacrine)

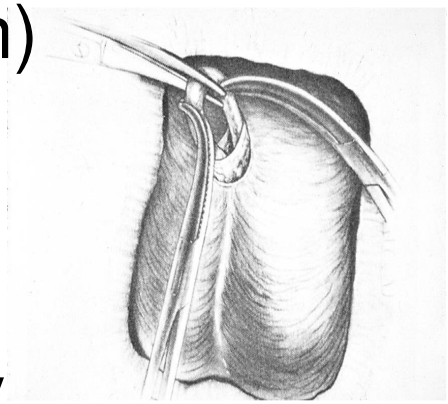
Methods of male sterilisation

Vas isolation methods

- Traditional incision method (midline or bilateral)
- « No scalpel » technique

Vas occlusion techniques

- Excision and ligation (with or without fascial interposition)
- Metal surgical clip
- Thermo- or electro-cautery
- Others (e.g. intravas device, chemical occlusion)



Who is eligible for sterilisation?

WHO's Medical eligibility criteria for contraceptive use

Purpose:

Who can use contraceptive methods?

- first published in 1996
- printed revisions in 2000, 2004, 2010 (in press)
- electronic updates published on the web between printed revisions
- available in 12 languages
- 19 methods of contraception
- over 125 medical conditions

(www.who.int/reproductivehealth/publications/family_planning/)

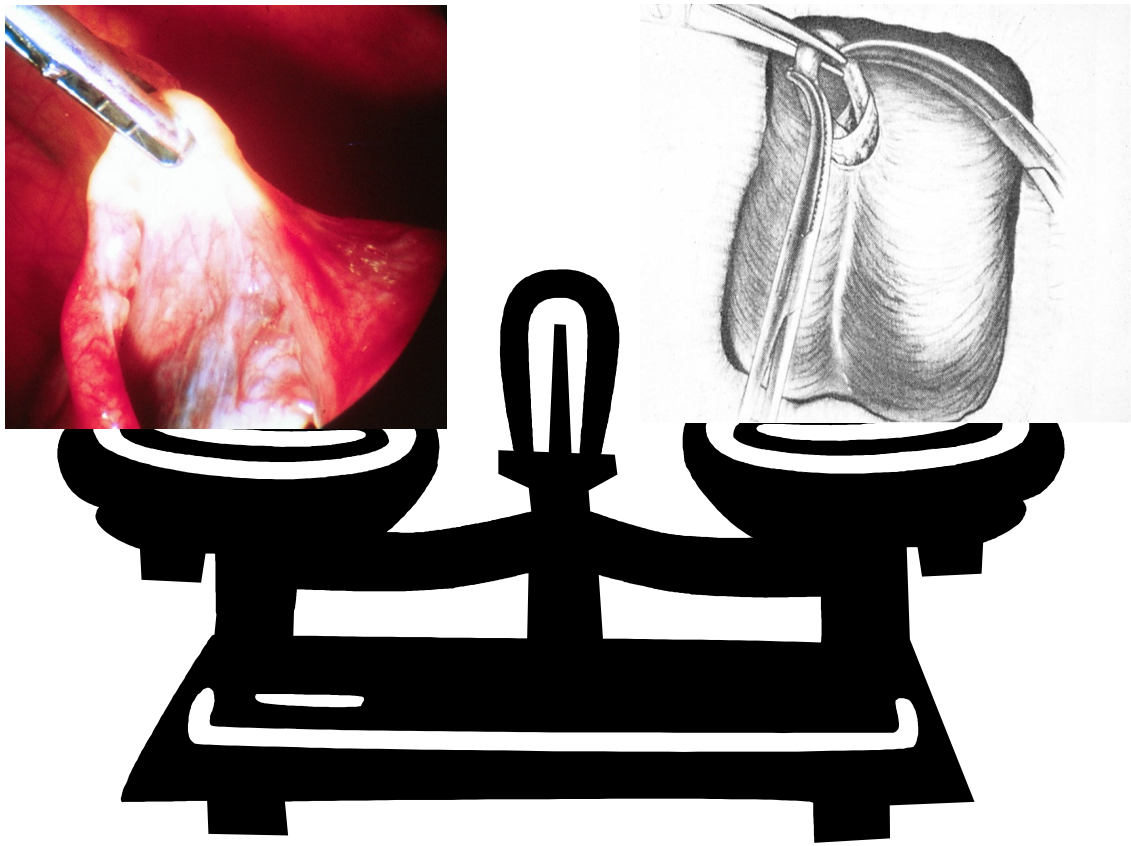
WHO's Medical eligibility criteria for surgical sterilisation

"There is no medical condition that would absolutely restrict a person's eligibility for sterilization, although some conditions and circumstances will require that certain precautions are taken, …"

WHO's Medical eligibility criteria for surgical sterilisation

- ***A=Accept:*** There is no medical reason to deny sterilization to a person with this condition. (*e.g. HIV-infected*)
- ***C=Caution:*** The procedure is normally conducted in a routine setting, but with extra preparation and precautions. *(e.g. young age in both sexes)*
- ***D=Delay:*** The procedure is delayed until the condition is evaluated and/or corrected. Alternative temporary methods of contraception should be provided. *(e.g. current PID in women; local genital infection in men)*
- ***S=Special:*** The procedure should be undertaken in a setting with an experienced surgeon and staff, equipment needed to provide general anaesthesia, and other back-up medical support. For these conditions, the capacity to decide on the most appropriate procedure and anaesthesia regimen is also needed. Alternative temporary methods of contraception should be provided, if referral is required or there is otherwise any delay. *(e.g. chronic respiratory diseases in women; inguinal hernia in men)*

How safe is surgical sterilisation?



Male sterilisation is safer than female sterilisation

In:

- the short term

  e.g. procedure-related mortality in AVSC-supported services in 50 countries between 1973-1988 (Khairullah Z *et al.* 1992; *Int J Gynaecol Obstet* **39**:41-50):

  - female sterilisation: 4.7 per 100,000 procedures (n=1,516,478)
  - male sterilisation: 0.5 per 100,000 vasectomies (n=401,856)

- the long term

Long-term safety of surgical female sterilisation

Key questions

- Is it highly effective?
- Is there a post-sterilisation syndrome?
- What is the risk of later regret?

The U.S. Collaborative Review of Sterilisation

- A prospective multicentre cohort study
- Nine centres in 8 U.S. states
- Study duration: enrollment: 1978–1986
  follow-up: 1978–1994
- Number analysed: 10,685 women
- Total number of pregnancies during follow-up: 198

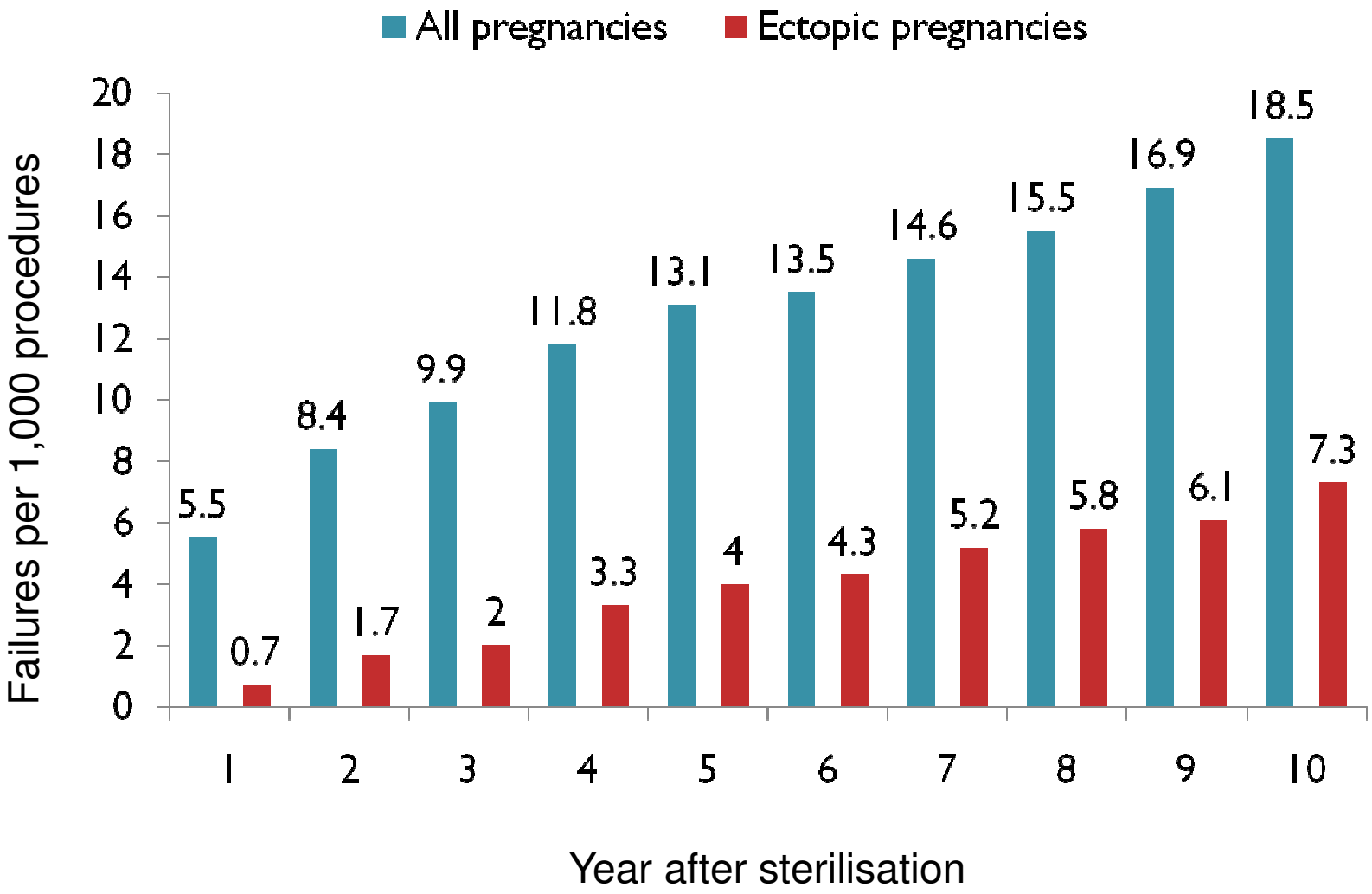
Cause of pregnancies in U.S. Collaborative Review of Sterilisation

True failures	143
Luteal phase pregnancies	34
Post re-anastomosis	16
Unknown	5
Total	198

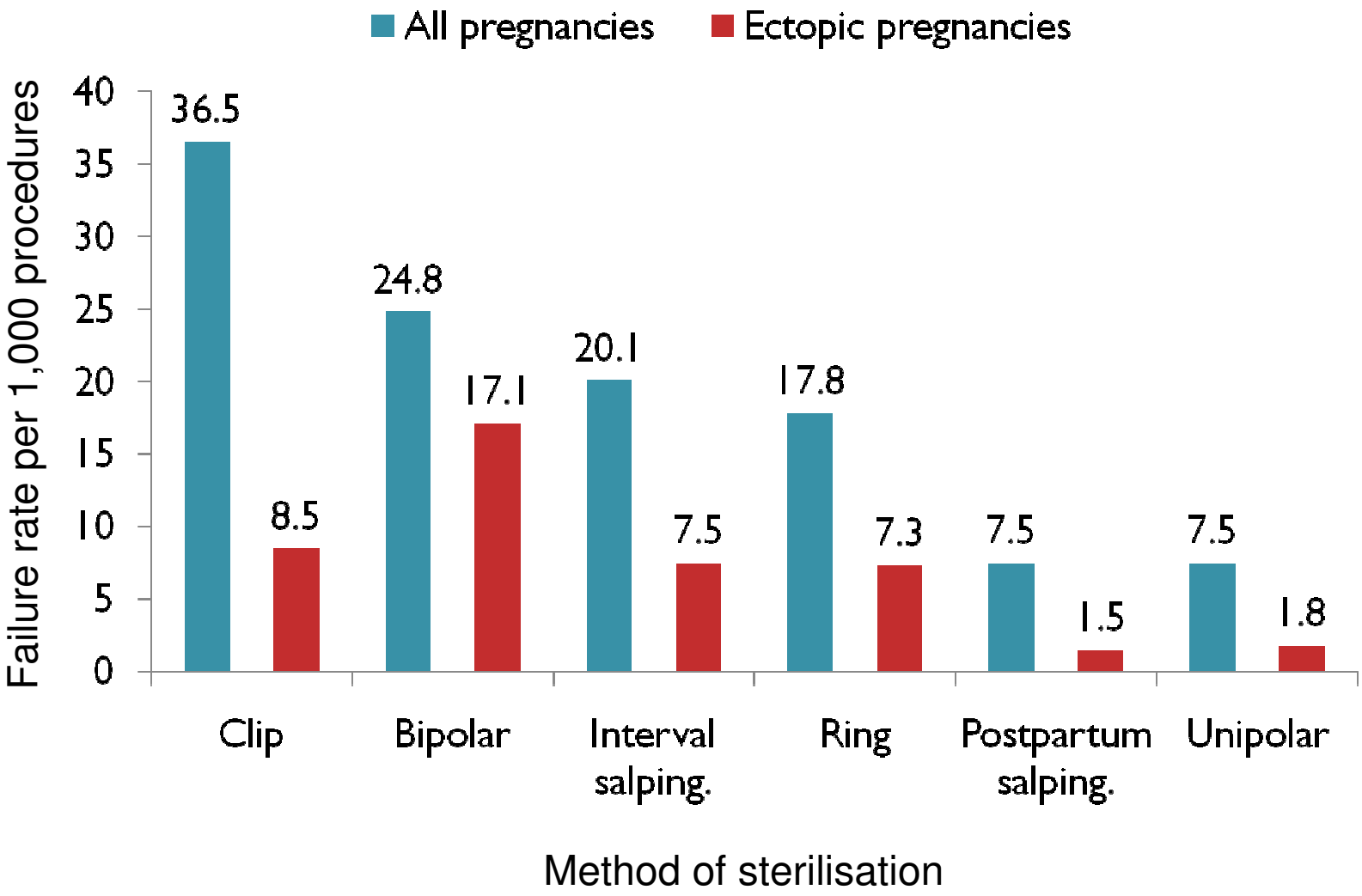
Outcome of pregnancies in U.S. Collaborative Review of Sterilisation

Ectopic pregnancy	33%
Delivery	29%
Induced abortion	18%
Spontaneous abortion	15%
Continuing pregnancy	4%
Unknown outcome	1%

Ten-year cumulative failure rate of female surgical sterilisation, by year since sterilisation, in the U.S. Collaborative Review of Sterilisation

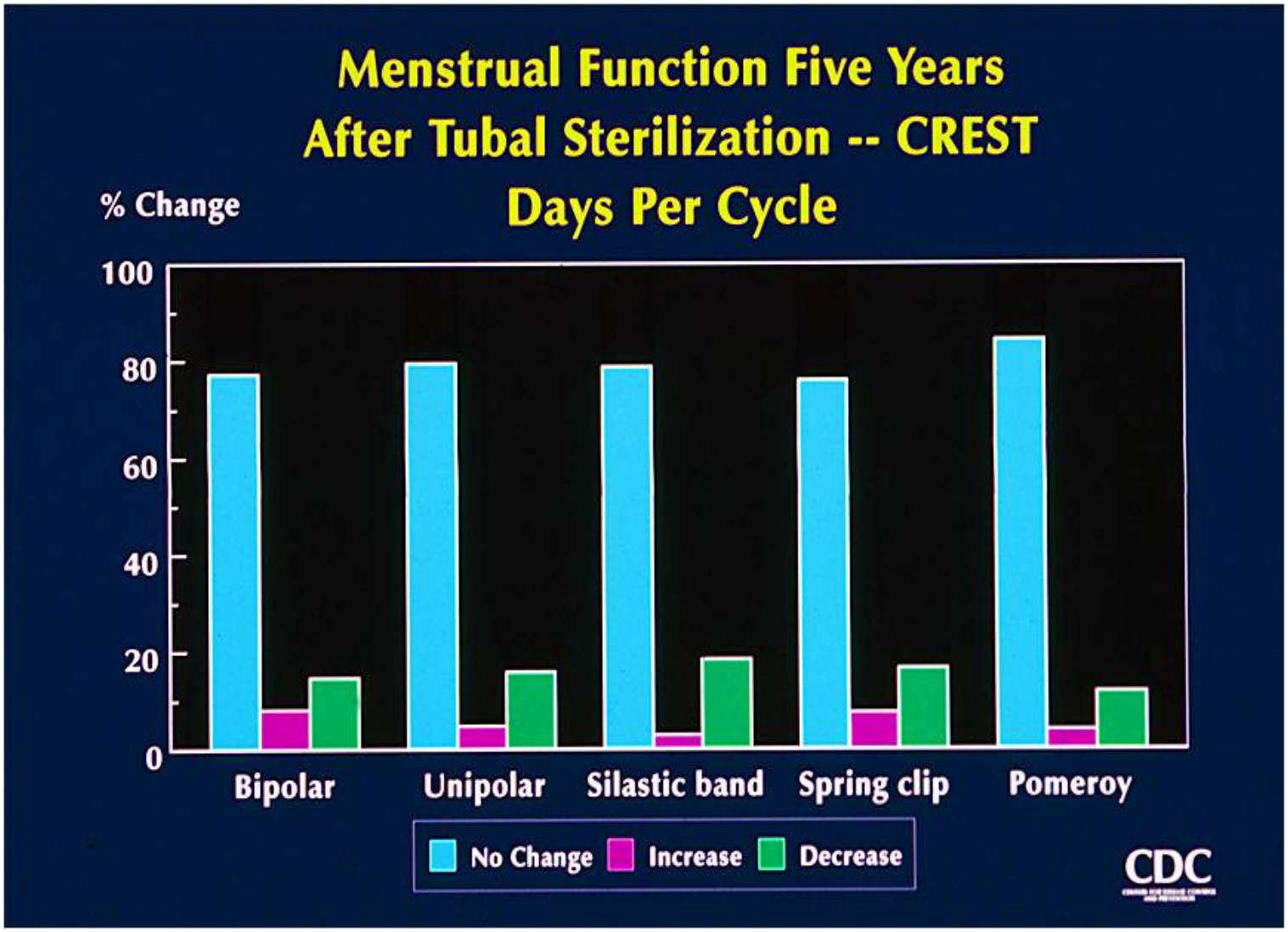


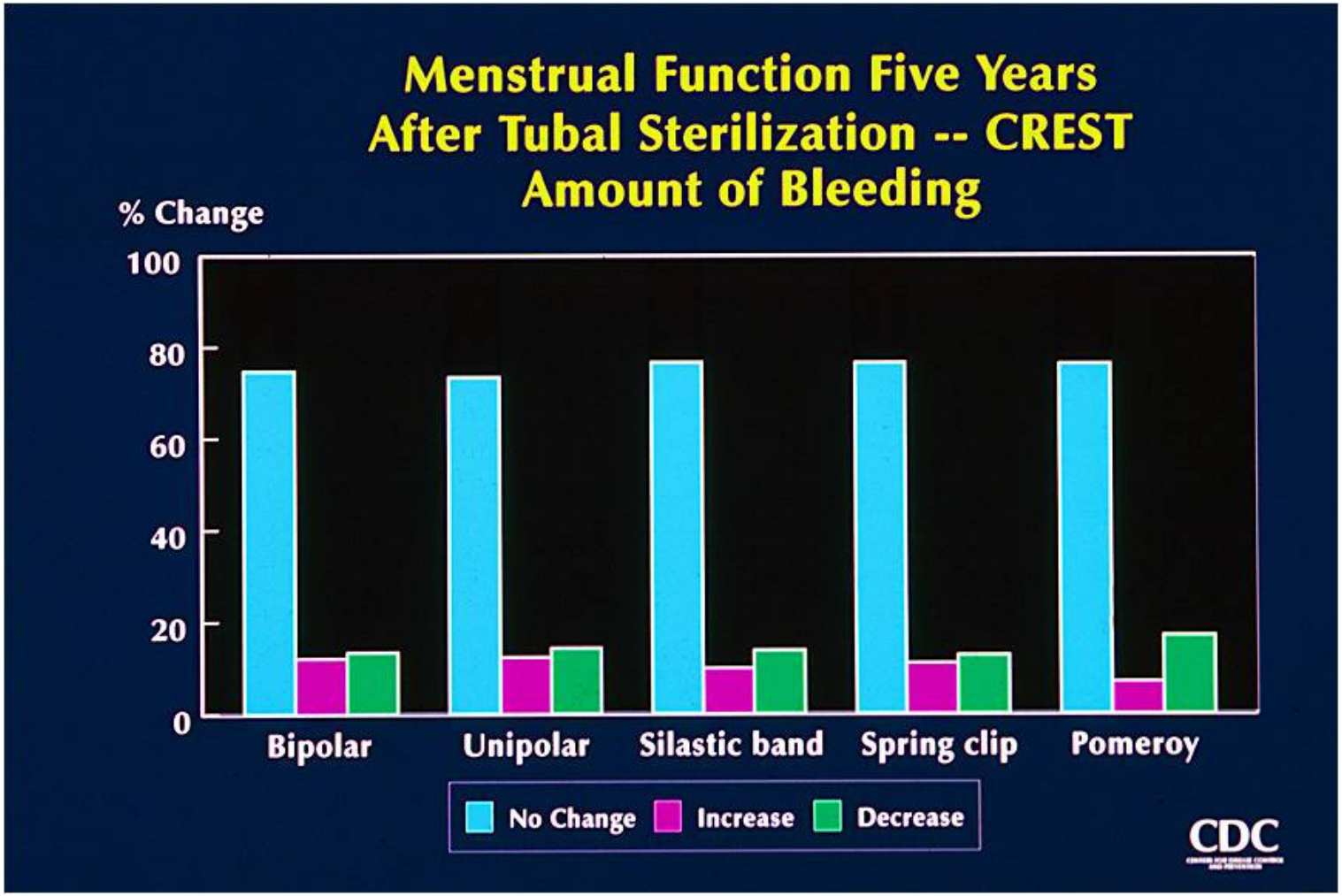
Ten-year cumulative failure rate of female surgical sterilisation, by method of sterilisation, in the U.S. Collaborative Review of Sterilisation



Is there a post-sterilisation syndrome?

NO


Menstrual Function Five Years
After Tubal Sterilization -- CREST
Days Per Cycle
% Change
100
80
60
40
20
0
Bipolar
Unipolar
Silastic band
Spring clip
Pomeroy
No Change
Increase
Decrease
CDC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Amount of Bleeding
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100
80
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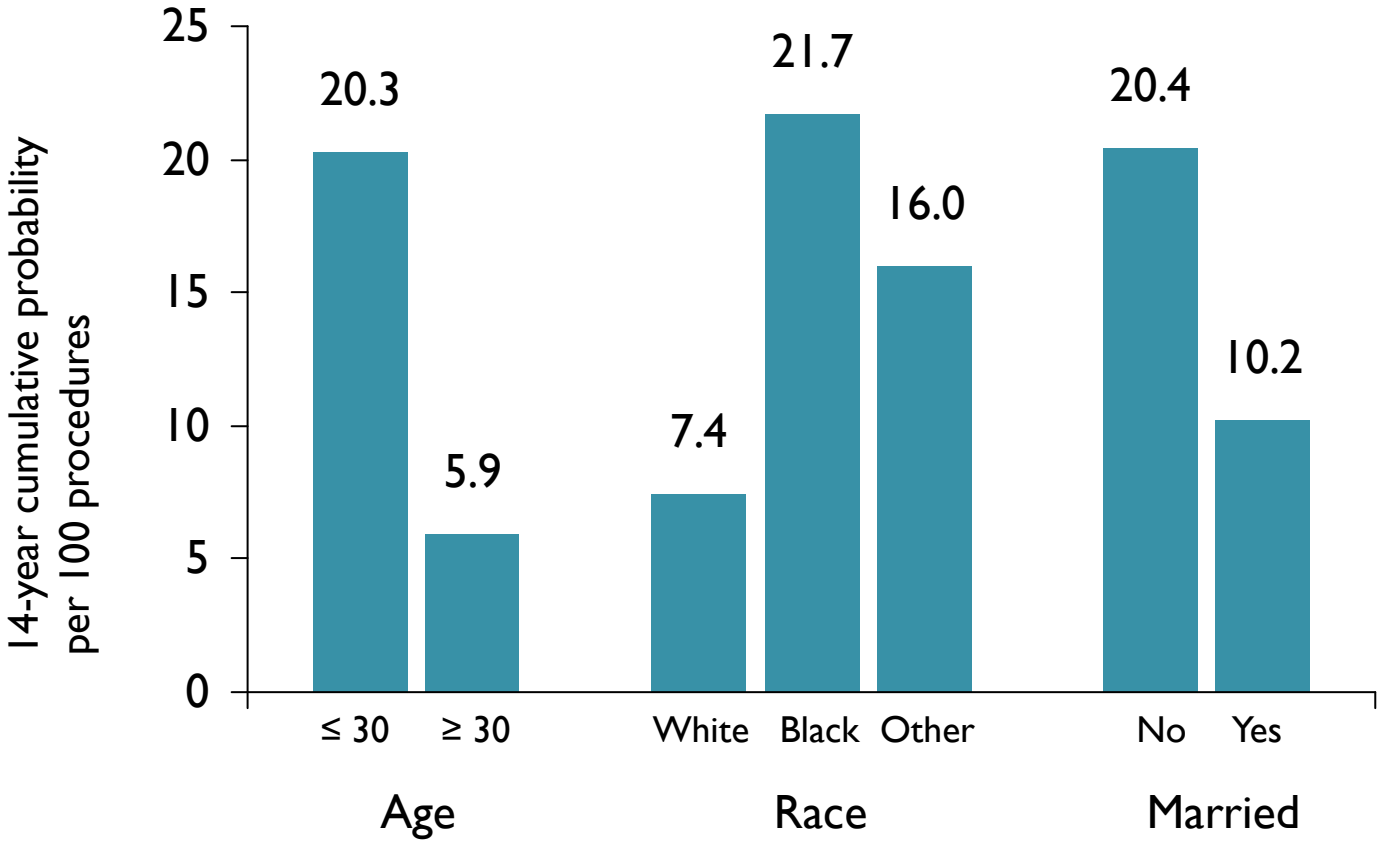
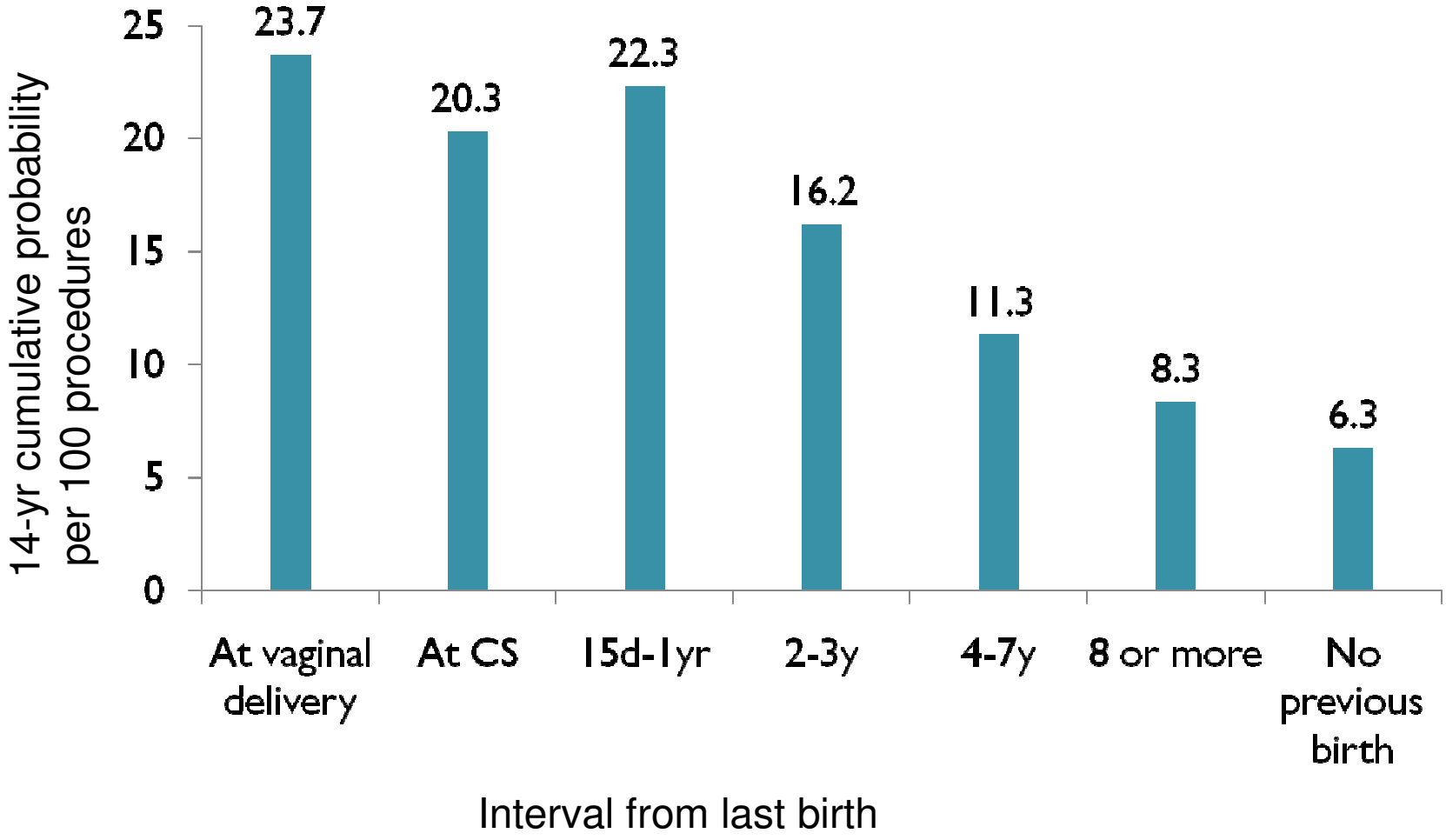
No Change
Increase
Decrease
CDC

What is the risk of later regret?

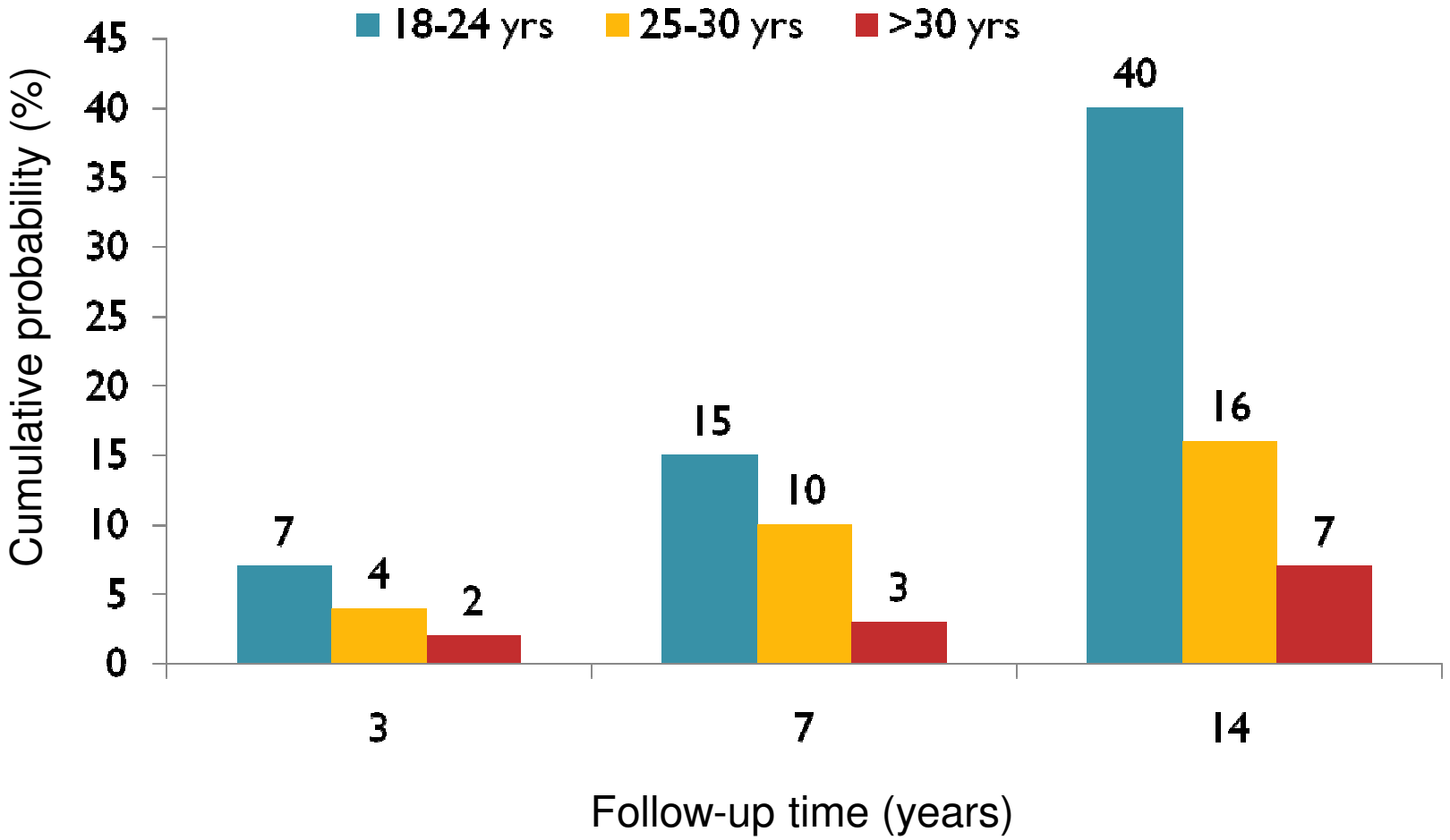
Risk of regret after female sterilisation in the U.S. Collaborative Review of Sterilisation



Risk of regret for women sterilised at age ≤30 years, by time of sterilisation



Cumulative probability of request for sterilisation reversal, by age at time of sterilisation and follow-up time



Long-term safety of surgical male sterilisation

Key questions (1)

- Is it highly effective?

  YES (2-4 pregnancies per 1,000 users)

- Does it cause heart disease (related to immune complexes)?

  NO

Long-term safety of surgical male sterilisation

Key questions (2)

- Does it cause immunological or other diseases due to the formation of antisperm antibodies?

  NO

- Does it cause cancer (prostate or testicular)?

  NO

Long-term safety of surgical male sterilisation

Key questions (3)

- What is the risk of later regret?

Risk factors:

- unstable marriage
- younger than 31 years
- with no children or very young children
- time of financial crisis
- reasons related to a pregnancy

Conclusions (1)

- Sterilisation is the most common method of family planning, being used by some 40% of couples worlwide
- Globally, female sterilisation is some 7 times more prevalent than vasectomy (some 9 times in developing regions but less than 2 times in developed regions)
- There is no medical condition that would absolutely restrict a person's eligibility for sterilization, although some conditions and circumstances will require that certain precautions are taken

Conclusions (2)

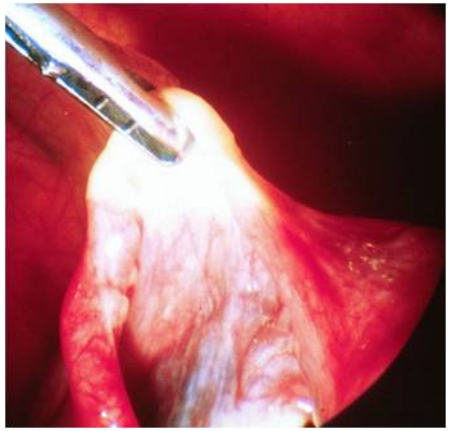
- Both male and female sterilisation are associated with very low mortality and few complications but vasectomy is easier and quicker to perform and does not require general anaesthesia
- Cumulative probability of pregnancy after female sterilisation increases with time after the procedure and is dependent on the method used
- About one third of pregnancies occurring after female sterilisation are ectopic; this proportion is dependent on the method used

Conclusions (3)

- There is no evidence that female sterilisation has an effect on the menstrual cycle (length, bleeding pattern)
- Regret after female sterilisation is influenced by age, married status, race, and time when the procedure was done in relation to previous delivery
- Vasectomy is more effective than female sterilisation
- Vasectomy has been shown not to be associated with long-term sequelae (cardiovascular disease; testicular and prostate cancer; immunological disorders)

Conclusions (4)

- Regret after vasectomy is influenced by age, number of children, marital and financial stability, and partner's pregnancy status at the time of the operation



Thank you