Contraception and weight gain

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Hormonal contraception causes weight gain

Myth or Fact?

• Limited evidence available

• No clear effect of hormonal contraception on weight is evident, with the exception of DMPA

Causal association between hormonal contraception and weight is difficult to assess:
• During adolescence a degree of weight gain is physiological
• Women tend to change weight over time
• Control group is needed, but difficult

The Australian Longitudinal Study on Women's Health – Weight change over time:

Average weight reported over time:

(dotted line = rural/remote women; solid line = urban women)

• A belief by women and healthcare providers that hormonal contraception causes weight gain can deter initiation
• Women may stop their contraception because of perceived weight gain
• Effective, accurate counselling is crucial
Cochrane reviews:

1. Gallo et al 2014 *Combination contraceptives: effects on weight*
   - 49 trials
   - 4 with placebo/no intervention (no evidence for causal association – COC/patch and wt gain)
   - Available evidence insufficient but no large effect evident

RCT - Side-effects attributed to OCs:

- 398 women over 4 cycles (1971)
- Placebo + 4 different COCs (2 X EE 100mcg, 2 X EE 50mcg)
- Wt gain of ≥ 5 lbs in a substantial number of women over 4 cycles
- No statistically significant difference between any group
  (all used vaginal contraceptive foam.
  7 pregnancies – 6 in placebo group)

Effect of OCs on weight and body composition in young female runners:

- 150 ♀, aged 18-26,
- EE30mcg/norgestrel 0.3mg COC, or control, followed for 2yrs
- No weight gain or increased body fat in OC group
- Trend towards reduced weight and body fat loss in OC group
  [Procter-Gray et al. Medicine & Science in Sports & Exercise. 2008]

Weight change with low dose OC:

- ~700 ♀, aged 14-50, EE20mcg/LNG100mcg, followed for 6 mths
- No difference in weight changes between groups
  [Coney et al. Contraception 63. 2001]

Cochrane reviews:

2. Lopez et al. 2016 *Progestin-only contraceptives: effects on weight*
   - 22 studies, 11 450 women
   - Little evidence for weight gain
   - Mean weight gain <2 kg at 6 or 12 mths, and similar to comparison group
   - Small number of studies showed differences for DMPA injection users vs no hormonal method


[Procter-Gray et al. Medicine & Science in Sports & Exercise. 2008]


[Procter-Gray et al. Medicine & Science in Sports & Exercise. 2008]
Weight change at 12 mths:
ENG implant, LNG-IUS, DMPA, Cu-IUD

- 427 ♀, aged 14-45
- Wide variability in all groups
- No statistically significant differences between any groups

Vickery et al. Contraception 88. 2013

Weight variation up to 10 yrs:
DMPA, LNG-IUS, CuIUD

- 2138 ♀, aged 18-40
- Significant weight gained in all groups
- DMPA group gained the most weight
- No significant difference between LNG-IUS and CuIUD groups

Modesto et al. Eur Jnl of Contra and Repro Health Care. 2015

Body composition – LNG-IUS vs CuIUD:

- 76 ♀, aged 18-45
- No significant difference in body weight change at 12 mths
- LNG-IUS: increase in fat mass, decrease in lean mass
- CuIUD: decrease in fat mass, increase in lean mass


DMPA and weight gain

- Association with weight gain in some women
- Especially ♀ < 20 y.o. with initial BMI > 30
- Baseline BMI in other women of no relevance
- 20-25% ♀ will gain > 5% body weight in first 6 mths of use – predicts ongoing weight gain

Risser et al. Jnl Adolesc Health. 1999

Weight gain in obese and nonobese adolescent girls:

- 450 adolescent ♀, aged 12-18
- Wt gain in obese girls on DMPA significantly greater than all other groups


Weight change in adolescents using DMPA and COC:

- Retrospective chart review, 130 adolescent ♀ aged 13-19, using either DMPA or COC
- After 12 months:
  - 56% DMPA users, and 70% COC users lost weight or gained <5% baseline weight
  - 25% DMPA users, and 7% COC users gained >10% baseline weight
  - Subjects who gained >5% baseline weight by 3 mths were at high risk (93%) of gaining further weight by 12 mths

Risser et al. Jnl Adolesc Health. 1999
Early weight gain predicting later weight gain in DMPA users:

- 240 initial DMPA users, aged 16-33
- Most DMPA users who gain excessive weight, experience >5% gain in first 6 mths


Take home messages:

- Women’s weight is variable
- No evidence for significant weight change with any contraceptive method, apart from minority of women on DMPA
- Expectation of weight gain → perceived weight gain → discontinuation of effective contraception
- Accurate counselling is key