INTRODUCTION

- Bone density increases with the age and it is highest around 20 years of age and declines thereafter.
- In this age, a lot of women take contraceptives; we don’t know the effects of this in bone mass peak during current use or after the discontinuation. Or if there is any effect in the fracture risk after the menopause.
- Effect of hormonal contraceptives on BMD. FDA included a warning in the package of DMPA.
- Hypo-estrogenism: important cause.
- Despite hypo-estrogenism observed during use DMPA, WHO established that there is no restriction to the use of DMPA from 18 to 45 years.

OBJECTIVE

- To compare BMD between users of two kinds of once-a-month combined injectable contraceptives (CIC) and controls.
- To compare BMD among users of two kinds of CIC using for three or less years or for more than three years.

MATERIALS AND METHODS

- Human Reproduction Unit
- Department of Obstetrics and Gynaecology
- School of Medicine
- Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil
**MATERIALS AND METHODS**

- Ninety-seven women in reproductive age
- 64 women 25 mg of medroxyprogesterone acetate and 5 mg of estradiol cypionate MPA/oE2Cyp (Cyclofemina®)
- 33 women 50 mg of norethindrone enanthate and 5 mg of estradiol valerate NET-EN/oE2Val (Mesigyna®)
- Use of the CIC for at least one year
- Routine follow-up visit BMD

**RESULTS**

- Duration of CIC use was 26.4 ± 2.9 months for the Cyclofem’s group and 27.1 ± 2.6 months for the Mesygyna’s group
- Only 36 out of 64 Cyclofem’s users maintained a normal bleeding pattern, while the others were in amenorrhea. In contrast, none of the users of the Mesigyna were amenorrheic

**Bone Mineral Density Measurement**

- was measured at the nondominant forearm
- using double X-ray absorptiometry (DXA)
- 2 measurements: at the midshaft of the ulna (where cortical bone predominates ~ 8 mm from the ulna) and at the distal radius near the articulation with the bones of the carpus (where trabecular bone predominates)
- Trabecular bone is more sensitive to metabolic effects
- The normal mean value of BMD in pre-menopausal women is 0.481 g/cm²

**Statistical Analysis**

- Student’s t-test for matched samples
- Wilcoxon test
- All data is presented as mean ± standard error of the mean (SEM)
RESULTS

Almost 70% women were caucasian, and the frequency of smokers ranged from 15% to 20% in the four groups.

Almost 80% of women in the four groups stated that they did not practice any form of physical activity.

Although almost 50% of women stated that they wash their clothes at home by hand.

Bone mineral density according to type of once-a-month injectable contraceptive and section of the forearm

<table>
<thead>
<tr>
<th>Variables</th>
<th>MPA</th>
<th>Cyp*</th>
<th>NET</th>
<th>(n = 64)</th>
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<tr>
<td>Hip (g/cm²)</td>
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<td>Height (cm)</td>
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Bone mineral density according to type of once-a-month injectable contraceptive, duration of use and section of the forearm

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CONCLUSION

Women current users of either of the two kind of CIC evaluated in this study presented BMD similar to that of controls.

Also BMD was similar in women who used each CIC for less or more than three years.