Voice Onset Time in Women as a Function of Oral Contraceptive Use

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Ovarian Hormones and Voice

- Ovarian hormone levels can alter the quality of voice
  - Estrogen
  - Progesterone
- Effects of ovarian hormones
  - Mass
  - Acoustics

VOT and Menstrual Cycle

- VOT changes across phases of the menstrual cycle
  - Premenstrual – greater VOT differences between voiced and voiceless phonemes
- Oral contraceptives stabilize hormonal fluctuations – increasing vocal stability

METHOD

Participants

- 20 young women, ages 18-21
  - 10 women using a triphasic oral contraceptive (OC)
  - 10 women not using an oral contraceptive (NOC)
- NOC participants were required to have a regular menstrual cycle between 25 and 35 days
Procedures
• Recorded four times over two months
  – Day 10 (pre-ovulation)
  – Day 20 (pre-menstrual)
• Ten repetitions of
  – Speak /bæ/ to me
  – Speak /pæ/ to me
• Comfortable pitch, loudness, and rate

Statistical Analysis
• Two 2×2 ANOVAs
  – Separate ANOVAs for /bæ/ and /pæ/
  – Between group – contraceptive use
  – Within group – menstrual cycle phase
Conclusions

- Both groups of participants in the present study exhibited no significant differences between the VOTs of the premenstrual and pre-ovulation phases
  - Our hypothesis was not supported

- The significant /pæ/ VOT differences for the two months indicates the need to collect data over more menstrual cycles.