Birth Control Pills and Voice

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The classic literature on voice disorders considers birth-control-pills as a risk factor. This view is based on reports of adverse androgenic effects (i.e., virilization) dated in the 1960's and 1970's. Since then, voice professionals often advise women, and especially professional voice-users, against the use of oral contraceptives. However, a series of recent studies (Amir et al. 2002, 2003a,b) has demonstrated that this traditional view should be re-evaluated. In these studies, modern low-dose monophasic birth-control-pills were shown to have no adverse effect on voice quality. In contrast, voice quality, as reflected by specific acoustic parameters, was found to improve among young women who use the pill.

The purpose of the present study was to extend our knowledge on the effect of oral contraceptives on voice, by comparing different categories of birth-control-pills. Three types of pills were included, arranged according to their progestin content: drospirenone (3mg), desogestrel (0.15mg) and gestodene (0.075mg). Accordingly, three groups of women, with no professional voice background, who use the pill, were compared: a) ten women who use Yasmin®, b) nine women who use Microdiol® or Mercilon®, and c) ten women who use Gynera®, Harmonet®, Meliane® or Minolet®. In addition, a fourth group of nine women who do not use the pill was included, as a control group. All women in each of the three pill-groups were recorded twice. One recording was conducted after ten days of taking the pill, at the time hormones are at a steady state in the plasma ("On" condition). The other recording was conducted during the first three days of menses, when no pills are taken ("Off" condition). The control group was recorded once, in the "Off" condition, since the "On" condition was not applicable for

them. Subjects were recorded while producing the vowels /a/, /i/ and /u/ repeatedly for five seconds. Computerized acoustic analyses evaluated fundamental-frequency (*F0*), three frequency-perturbation measures (*Jitter*, *PPQ* and *RAP*), two amplitude-perturbation measures (*Shimmer* and *APQ*) and two noise-indexes (*NHR* and *VTI*).

Results revealed no significant differences in voice quality among the three groups of pill-users. Additionally, no differences were found between women who do and do not use pills ($P > 0.05$). Marginal group differences ($0.05 < P < 0.10$), however, were observed between the women who use Yasmin® to the other two groups of pill-users. Finally, no significant differences were observed between the "On" and "Off" conditions among the three pill-groups.

The present findings do not reveal any adverse effect of birth control pills on voice quality, supporting recent research and contradicting the traditional view on oral contraceptives as a risk factor for voice. In addition, different categories of pills were found to affect voice quality similarly, with no observed advantage to a specific commercial brand. However, while our previous line of research suggested that modern birth control pills might improve vocal quality due to the elimination of the hormonal fluctuations along the menstrual cycle, the present study suggests differently. This study, which included a significantly larger number of subjects, a wider and more systematic variety of oral contraceptives and a wider age distribution, suggests that modern birth control pills, indeed, have no adverse effect on voice, but neither do they have a favorable effect on voice quality.

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