

## Effect of xylitol with various concentration and duration on the growth of candida albicans (in vitro study)

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### Abstrak

#### <b>ABSTRAK</b><br><br>

The growth of *C. albicans* is influenced by glucose intake. Xylitol is commonly used as sugar substitute. Reported effective concentrations of xylitol in reducing *C. albicans* growth in vitro were varied, 1%, 5%, and 10%. Objectives: Investigate the effect of different concentration and duration of xylitol exposure in inhibiting *C. albicans* growth in vitro. Method: Identification of *C. albicans* from oral swab of a male candidiasis patient was conducted using CHROMagar, confirmed by germ tube test. *C. albicans* suspension (10<sup>8</sup> cells/μl) were inoculated in SDB contained 1%, 5%, 10% xylitol, and without xylitol (as control), for 3 and 7 days, then incubated in 37°C on SDA and counted for their CFU after 48 hours. The *C. albicans* ATCC 10231 strain was used as a comparison. Results: After 3 days, increased concentration of xylitol (1%, 5%, 10%) lead to decrease growth of *C. albicans*, both the ATCC 10231 (125%; 51%; 14% respectively) and the clinical isolate (103%; 81%; 42%),  $p = 0.044$ . Significant lower growth of *C. albicans* compared to control were only seen in those exposed to 10% xylitol ( $p = 0.024$ ). After 7 days, exposure of 1%, 5%, 10% xylitol did not significantly affect the growth of *C. albicans* ( $p = 0.396$ ). Conclusion: The growth of *C. albicans* could be inhibited by 10% xylitol for 3 days.