

# Abnormal uterine bleeding during the COVID-19 pandemic: a national survey

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## Abstract

**Objective** To evaluate and characterize menstrual changes among COVID-19 vaccinated and infected women. **Design** A national survey. **Setting** An online nationwide questionnaire survey, querying about menstrual changes after COVID-19 vaccination or infection. **Population** Reproductive-age non-pregnant women. **Methods** The questionnaire was distributed via an online link through social media and directed the participants to an online anonymous Google questionnaire. **Results** In total, 10,319 women responded, of which 7,904 met the inclusion criteria. Changes in menstrual patterns following the BNT162b2 vaccine were reported by 3,689 (46.7%). Of these, 2,974 women, (80.6%) described excessive bleeding (heavy, prolonged, or intermenstrual) compared with 715 (19.4%) who reported scant bleeding (light, short, or prolonged intervals). Among women who experienced abnormal uterine bleeding (AUB), in most cases (61.1%) it occurred between the vaccination and the ensuing menstrual period. Menstrual disturbances were more common among accurately vaccinated women compared with inaccurately vaccinated by having received a single shot or having undergone a prolonged interval between shots (51% vs 36.6%,  $P < .001$ ). Menstrual disturbances were similar in type and distribution among the vaccinated and infected women. **Conclusions** AUB emerged as a side effect of the BNT162b2 vaccine and a symptom of the COVID-19 infection. It was characterized mainly by excessive bleeding. Although the precise incidence could not be determined in this study, the type of bleeding disturbance, as well as the characterization of women at risk, were well defined. The incidence and the long-term consequences of the BNT162b2 vaccine on uterine bleeding warrant further investigation.

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