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**ФІЗИЧНА РЕАБІЛІТАЦІЯ ТА**  
**ЗДОРОВ'ЯЗБЕРЕЖУВАЛЬНІ ТЕХНОЛОГІЇ:**  
**РЕАЛІЇ ТА ПЕРСПЕКТИВИ**

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## **THE IMPACT OF ORAL CONTRACEPTIVES ON ATHLETIC PERFORMANCE IN FEMALE ATHLETES**

Today, oral contraceptive (OC) use among female athletes is widespread, at a rate comparable to that of the general female population. Female athletes use OCs not only for fertility control but also to manage menstrual symptoms such as dysmenorrheal pain, heavy menstrual bleeding (menorrhagia), and premenstrual syndrome. OCs are often used to prevent the inconvenience of bleeding during competition by using multiple cycles in a row without a seven-day break, thus avoiding “withdrawal bleeding.” These factors make OCs attractive to many athletes who wish to reduce the impact of their menstrual cycle on their training and performance [1].

However, OC use significantly alters the hormonal environment, which can affect performance. In women using OCs, the levels of endogenous hormones such as estradiol and progesterone are significantly reduced, and instead a fixed amount of exogenous estrogen and progestin is constantly provided, which is supplied daily during OC use. This creates a significantly different hormonal background compared to the natural cycle, which is characterized by variability in hormone levels depending on the phase of the cycle. It is believed that it is these natural fluctuations that can positively or negatively affect performance in sports, since hormones affect metabolism, endurance, muscle activation and thermoregulation [2]. Current research provides conflicting results regarding the impact of OC on athletic performance. Some authors indicate a possible decrease in physical endurance and aerobic performance among female athletes using OC compared to those with a natural menstrual cycle. For example, a study by Lebrun et al. [3] demonstrated that the use of three-phase OCs led to a decrease in peak physical performance, as well as a decrease in maximal oxygen consumption. At the same time, other researchers, such as Ekenros et al. [4], found no significant differences between OC users and women without OC regarding such indicators as muscle strength and jumping performance. The differences in the results of these studies can be explained by different research methodologies, the characteristics of the physical parameters that were measured, and the types of OC that were used.

The existing difference in methodology and shortcomings in the evidence base lead to difficulties in formulating unequivocal conclusions regarding the impact of OC on sports performance. Therefore, the question of the expediency of using OC by female athletes and their impact on various aspects of physical activity requires further detailed study.

The purpose of the study. The purpose of the work is to summarize modern scientific data on the influence of oral contraceptives on the sports results of female athletes.

Research methods. The analysis of the scientific literature covered several studies devoted to the use of OC in female athletes and their impact on physical activity. Among them are audits among female athletes, systematic reviews and comparative experiments. The use of oral contraceptives (OC) among female athletes causes a decrease in the concentrations of endogenous sex hormones, particularly estrogen and progesterone, and ensures a stable supply of exogenous estrogen and progestin. This forms a stable hormonal environment, significantly different from the natural cyclical changes of hormones during eumenorrhea. An audit among 430 elite female athletes showed that 213 of them used hormonal contraceptives, which indicates a significant prevalence of their use in the sports field. Alterations in the endocrine profile can affect physiological processes related to endurance and strength through changes in metabolism, muscle function, and thermoregulation. Data on the effect of OC on physical performance remain conflicting. Studies by Lebrun et al have shown that the use of triphasic OCs reduces peak performance and maximal oxygen uptake ( $VO_2$  max), which can be critical in aerobic endurance-dependent female athletes such as runners and cyclists. The decrease in  $VO_2$  max in women using OC may be related to persistently low levels of endogenous estrogen and progesterone, which affects oxygen utilization processes.

At the same time, the study by Ekenros et al found no differences between female athletes who used OCs and those who did not use hormonal contraceptives in terms of strength and jumping test results. The authors suggest that the lack of effect may be due to the use of different types of OC and other types of physical tests that depend more on muscle strength than on endurance. Individual differences in the metabolic response to the use of OC can also affect the results, which indicates the difficulty of predicting the response of each athlete to hormonal changes. Female athletes often use OCs not only for fertility control, but also to manage menstrual cycle symptoms such as dysmenorrhoea pain, heavy menstrual bleeding (menorrhagia), and premenstrual syndrome. Many female athletes strategically use OC to prevent menstruation during important competitions or intense training sessions to avoid possible discomfort and negative impact on performance during bleeding. This provides a certain psychological comfort and the ability to plan your performances more effectively, which is an important factor in sports activities.

Conclusions. The results of research demonstrate the ambiguous effect of oral contraceptives on the physical performance of female athletes. Some data indicate a decrease in endurance, while others indicate no significant change. The effects of OC vary between different studies, which makes it difficult to formulate unequivocal recommendations for the use of OC in female athletes. An individual approach remains the most appropriate when using OC among women, where productivity is a priority.

### *Literature*

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## **НОВІТНІ МЕТОДИ АПАРАТНОГО МАСАЖУ ТА ЇХ ВИКОРИСТАННЯ**

Масаж є важливою частиною гарного самопочуття кожної людини. Протягом існування людства було витворено безліч різних технік масажу, кожна з них так чи інакше вплинула на світ масажу сьогодення. Наразі стає популярним апаратний масаж. Поширюється насамперед серед професійних клінік та салонів з масажу у вигляді LPG-масажу, кавітації та RF-ліфтингу, пресотерапії та вакуумно-роликкових масажерів. Також серед звичайного населення все більш популярним стає купівля звичайного перкусійного масажера для дому.

Наше дослідження насамперед розглядає використання новітніх методів апаратного масажу та поширення цієї тенденції. Поширення методики та її популяризація важливо насамперед через те, що попит на масаж стає дедалі більшим та часто призводить до перенавантаження та як результат травму фахівця від щоденної мануальної праці руками.

Згідно з дослідження, проведеному при спостереженні за 161 терапевтом визначили, що близько 71,4% мали хоча б один ПОРР (професійні опорно рухові розлади) протягом останніх 12 місяців. Поширеність за частинами тіла: пальці або великий палець – 50,3%; плечі – 31,7%; зап'ястя – 28,6%; шия – 25,5%; рука або лікоть – 23,6%; передпліччя – 20,5%; і спина – 19,3% [1].