

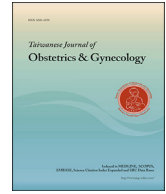


Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Taiwanese Journal of Obstetrics & Gynecology

journal homepage: www.tjog-online.com

Correspondence

Alliance of COVID 19 with pandemic of sedentary lifestyle & physical inactivity: Impact on reproductive health



Dear Editor,

The self-isolations and quarantine requirements inflicted to the society by the ongoing COVID-19 pandemic, reduced opportunities to remain physically active. At the same time physical inactivity (PI) and sedentary behaviour (SB) remains as a major cause of various health issues and is designated as a pandemic since 2012 [1].

Sustained physical inactivity and sedentary behaviour are found to be associated with poor physical and mental health and increased disease-specific morbidity and mortality risk. Even a short period of exposure to such type of life style can be dangerous. It has been seen that reduction in daily steps from ~10,000 to ~1500 steps for a mere 2-week period is associated with consequences like impaired insulin sensitivity and lipid metabolism, increased visceral fat and decreased fat-free mass and cardiovascular fitness in healthy adults. It is interesting to note that, even episodes of exercises of moderate-intensity cannot counteract the ill effects of 4 days of inactivity [2].

In men, moderate physical activity has been positively associated with semen quality. Moderate physical activity has been found to be associated with increased fecundity parameters and live birth rates, regardless of body mass index (BMI)—even during assisted reproductive treatment [3,4]. It has been seen that 1.5 h or more of aerobic physical activity per week resulted in a higher likelihood of live birth in women undergoing IVF compared to inactive women [5]. Palomba et al. performed a retrospective cohort study involving obese infertile women undergoing IVF/ICSI (216 cycles). They found a significantly higher pregnancy rates and live birth rate in the group that was engaged in regular physical activity (41 cycles), with a 3.71 relative risk of live birth [3]. Sedentary behaviour has been associated with the increased secretion of leptin, which can decrease fertility and pregnancy rates through the down regulation of the hypothalamic-pituitary-ovarian (HPO) axis. Interrupting the amount of time spent sitting was related to decrease visceral adiposity and BMI.

Measures taken to combat COVID19 pandemic may promote sedentary life style and there by exacerbating another established

global pandemic known as physical inactivity. With a little awareness of the above fact we can prevent a significant impact of this pandemic on reproductive health. Clinicians can help out their patients in promoting and proposing a lifestyle supportive care. Even if we need to restrict ourselves indoor, care must be taken to spend more time in indoor physical activity and less time in sitting.

Declaration of Competing Interest

There is no conflict of interest for this article.

Funding

None.

References

- [1] Pratt M, Ramirez Varela A, Salvo D, Kohl III HW, Ding D. Attacking the pandemic of physical inactivity: what is holding us back? *Br J Sports Med* 2020;54(13): 760–2. <https://doi.org/10.1136/bjsports-2019-101392>.
- [2] Akins J, Crawford C, Burton H, Wolfe A, Vardarli E, Coyle E. Inactivity induces resistance to the metabolic benefits following acute exercise. *J Appl Physiol* 2019;126(4):1088–94.
- [3] Palomba S, Falbo A, Valli B, Morini D, Villani MT, Nicoli A, et al. Physical activity before IVF and ICSI cycles in infertile obese women: an observational cohort study. *Reprod Biomed Online* 2014;29:72–9. <https://doi.org/10.1016/j.rbmo.2014.03.006> PMID: 24813759.
- [4] Wise LA, Rothman KJ, Mikkelsen EM, Sorensen HT, Riis AH, Hatch EE. A prospective cohort study of physical activity and time to pregnancy. *Fertil Steril* 2012;97:1136,42 e1–4.
- [5] Gaskins AJ, Williams PL, Keller MG, Souter I, Hauser R, Chavarro JE, EARTH Study Team. Maternal physical and sedentary activities in relation to reproductive outcomes following IVF. *Reprod Biomed Online* 2016;33:513–21. <https://doi.org/10.1016/j.rbmo.2016.07.002> PMID: 27474489.

Soumya Ranjan Panda

Department of Obstetrics and Gynecology, AIIMS, Mangalagiri,
Andhra Pradesh, India

E-mail address: drsoumya4141@gmail.com.