

## Indian Academy of Pediatrics (IAP)



# nRICH

**N**ewer **R**esearch and recommendations **I**n **C**hild **H**ealth

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**Dear fellow IAPans,**

**nRICH**

**Newer Research and recommendations In Child Health**-aims to bring you the abstracts of some of the breakthrough developments in pediatrics, carefully selected from reputed journals published worldwide.

Expert commentaries will evaluate the importance and relevance of the article and discuss its application in Indian settings. nRICH will cover all the different subspecialties of pediatrics from neonatology, gastroenterology, hematology, adolescent medicine, allergy and immunology, to urology, neurology, vaccinology etc. Each issue will begin with a concise abstract and will represent the main points and ideas found in the originals. It will then be followed by the thoughtful and erudite commentary of Indian experts from various subspecialties who will give an insight on way to read and analyze these articles.

I'm sure students, practitioners and all those interested in knowing about the latest research and recommendations in child health will be immensely benefitted by this endeavor which will be published online on every Monday.

Happy reading!

*Upendra Kinjawadekar*  
*National President 2023*  
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# Rising incidence of Precocious Puberty during Covid-19 Pandemic

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## BASED ON ARTICLE

Based on article- Choi KH and Park SC (2022) An increasing tendency of precocious puberty among Korean children from the perspective of COVID-19 pandemic effect. *Front. Pediatr.* 10:968511. doi: 10.3389/fped.2022.968511

## SUMMARY

The authors of this study aimed to observe the trends of the annual and monthly number of patients with precocious puberty and their medical expenses in Korea from 2016 to 2021. With the help of the national statistical portal (Korean Statistical Information Service, KSIS), a healthcare big data hub was investigated and the number of children with precocious puberty and the insurance treatment cost were also assessed. It is observed that though the number population in youth decreased from 19.32% of the total population in 2016 to 16.41% in 2021 the number of precocious puberty children diagnosed went significantly high, from 86,352 to 166,521. The number of male patients with precocious puberty went up 3.43 folds whereas female patients increased by 1.78 folds. The majority of male patients were in the 10-14 y of age and female patients were between the 5-9 y age group. The increase was observed in all the regions of South Korea. During the COVID pandemic, there was a jump of 1.5 times in April 2020 (41,255 cases), the number increased 1.5-fold compared to the previous March 2020 (35,951 cases) and in March 2021 the number of patients diagnosed with precocious puberty was 56,914. Over these 5 years, the cost of insurance expenses for the treatment of precocious puberty doubled from 43.6 billion KRW to 86.8 billion KRW.

The authors hence concluded that there is an increasing number of Korean patients diagnosed with PP. There is rapid increase in the number of cases since April 2020 appears to be a result of the COVID-19 pandemic which is a nationwide phenomenon in Korea. The incidence of PP in males appears to be due to an increased awareness of the phenomenon.

## COMMENTARY

A child is considered to have Precocious Puberty when the secondary sexual characters appear before the age of 8 years in girls and 9 years in boys. There is a secular trend in the onset of puberty which is of almost 0.2 yrs every decade, globally (1). After the World War 2, industrialization in the world increased tremendously, availability of food improved and so did the incidence of overweight and obesity. Perhaps related to improved nutrition and lifestyle changes, world witnessed reduction in the

age of menarche due to earlier onset of puberty in girls however similar change in boys was not seen until recently; in some parts of the world marginally earlier puberty is being reported in boys as well (2).

The interesting observation made by the authors in the Korean study is the increase in the number of patients with precocious puberty during Covid-19 pandemic. In the Korean study another interesting observation is the higher incidence of boys with precocious puberty (3.43 vs 1.78 folds in girls). Rising trend of precocity during Covid-19 pandemic were reported from Italy, Turkey, China, the United States, Spain & India as well, however in most studies increase in the incidence in males was not reported (3-6)

COVID-19 has been a major landmark in the history of human civilization just like the plague and Spanish flu. Things changed drastically and people adapted to the virtual world with the increase in screen usage, decreased physical activity, changes in eating habits, and an increase in the incidence of overweight & obesity. Rising incidence of precocious puberty seen during covid seems multifactorial. There is a link between increased screen usage and stimulation of the hypothalamic-pituitary function via melatonin pathway. Similarly increased incidence of obesity and overweight, social isolation, anxiety and psychological problems during Covid-19 have also contributed. Many Endocrine disrupting chemicals (EDCs) have been implicated in the causation of precocious puberty including triclosan used in the sanitizers which were used in large amounts during the pandemic. It was also noted that along with the rising incidence of precocity there was an increase in the rapidly progressive cases in Indian study as well.

Now that the pandemic seems to be slowly abating and the world is creeping towards normalcy, it remains to be seen whether the incidence and pattern of precocity reduces.

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