



## Enuresis and Quarantine in the Context of the COVID-19 Pandemic in Argentina

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### Abstract

Enuresis is a problem that affects a significant percentage of pediatric population from 5 to 16 years of age, and even young adults, having multifactorial causes both from the point of view of its origin and its perpetuity over time. Covid-19 Pandemic motivates social isolation as a control tool and, in certain countries, a quarantine that affects boys and girls general habits, producing circadian rhythm lack of control, based on time dysregulation and anxiety in high school. This undoubtedly threatens enuresis favorable evolution and, as quarantine continues, it is worse. In Argentina, quarantine exceeded 100 days, especially in the geographic region with highest population density, without being able to measure the impact in terms of enuresis. That is why we propose tools to try to reduce the isolation effects and quarantine in order not to deepen the problem or avoid relapses.

**Keywords:** Enuresis; quarantine; COVID-19; Pandemic

### Introduction

The medical term "enuresis" comes from the scientific Latin (enuresis) and refers to the circumstance of a person who is unable to voluntarily control the emission of urine at night. Many times this situation is also called "involuntary urination." It is essential to define the types of evacuation habits and the presence of concomitant daytime symptoms to discriminate non-monosymptomatic enuresis from monosymptomatic enuresis. Nocturnal enuresis or Monosymptomatic Enuresis (MS) is involuntary urination that generally occurs at night, during the hours of sleep, in children older than 5 - 6 years, after the age when they should be able to voluntarily control the bladder [1,2].

The term primary MS refers to every child older than 5 years who only has intermittent urinary incontinence or urination/ is involuntary/s during sleep and who has not been able to stay dry for 6 consecutive months and is not accompanied by another urinary symptom. The designation of secondary MS is applied to

children older than 5 years who have had previous dry periods of more than 6 months [2].

### What is enuresis?

Most of us think that bedwetting is something that happens to young children, when it actually affects about 15 - 20% of children over 5 and 2% of young adults. However, this problem can affect between 1 and 2 of every 100 adolescents [3].

Traditionally, three pathophysiological mechanisms that are involved in the development of MS are recognized: nocturnal polyuria, functional bladder disorders, and increased excitation threshold upon awakening. Although nocturnal polyuria is common in children with MS, not all patients with MS are deficient in the antidiuretic hormone/arginine-vasopressin [4].

Alterations in the intrinsic renal circadian rhythm also appear to play a pathophysiological role for enuresis, particularly in children with desmopressin-resistant polyuria at night. Hypotheti-

cally, these alterations could cause an increase in nocturnal blood pressure due to alterations in the autonomic nervous system with the subsequent suppression of vasopressin and sodium regulatory hormones, as well as an increase in renal glomerular filtration, resulting in an increase in renal excretion of solutes and water [5-7].

Given that up to now it has not been possible to detect the sole direct responsibility for MS for nighttime polyuria and functional bladder disorders, attention has been focused on sleep mechanisms and disorders as possible additional causes. Enuretic children have a strong association with sleep disturbances, such as sleep-disordered breathing and parasomnias [8-10].

Enuresis is a frequent condition that, although it is transient and spontaneously resolved, can be very annoying for family life and harmful to the child's social sphere.

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Comorbid conditions may be the cause of resistance to initial MS therapy and, among the most important, constipation and sleep and behavioral disorders should be identified [8-10].

Initial general behaviors have been shown to be effective as adjuncts to first-line option therapies, alarms, and desmopressin [10]. In enuretic children refractory to the first-line therapy, it is necessary to reevaluate the presence of daytime symptoms and comorbidities, which gives rise to the urologist or nephrologist to deepen the approach in the second and third levels of care [8-10].

### Enuresis in Argentina and pandemic COVID-19

In Argentina, a survey on the prevalence of MS was carried out, in which parents of children who visited different hospitals in the Federal Capital for non-urological conditions were questioned. 3952 parents of children over 5 years of age (mean of 9 years) were surveyed and it was possible to extract from the recorded data that 8.14% (n: 322) of the respondents wet the bed at an average age of 5, 5 years and 3.7% (n: 147) had secondary enuresis. Of this population that wet the bed, only 21.7% (n: 70) had received any intervention for enuresis [2]. This geographical region of the country, added to the so-called Buenos Aires suburbs (AMBA), which involves 40 municipalities, it had 14,839,026 inhabitants, according to the 2010 Census, and is the one that constitutes the largest

urban concentration in Argentina, it is the second in South America (behind San Pablo, Brazil), and the third in Latin America (behind Mexico, DF and San Pablo), the fifth in America, and the twentieth agglomeration worldwide [11].

The Pandemic generated by COVID-19 is an unusual and unknown situation, of an uncertain nature and that generates stress in the entire population. Fear and anxiety about an unknown disease with a high contagion rate can be overwhelming and cause intense emotions in adults, adolescents, and children. The responses to stress do not manifest themselves in the same way in the different age groups. Some common changes to consider include repeating behaviors that have already been overcome over time (e.g. evacuation accidents or bedwetting).

Since March 20, 2020, Argentina was quarantined. The current situation of isolation caused by the COVID-19 Pandemic has eliminated our usual social "synchronizers". The absence of school hours that involve getting up early in the morning, as well as face-to-face social contact with classmates and teachers, school dining hours, etc. cause the rhythm of our children's "internal clock" to be affected. The quantity and quality of sleep is essential for children to sleep well and have a restful rest.

We still do not know how this situation affects enuretic patients or those who had already overcome the problem, since we have not finished the quarantine period, in the area of highest population density in Argentina.

### Management tools

Following some time routines helps our children to have correct sleep patterns. For this reason, the Spanish Dream Society (SES) encourages families to use these long days of social confinement, where they will spend so much time at home living with their children, "to learn together to organize better. our times" [12].

In the particular case of Argentina, the quarantine has been the longest in time, exceeding 100 days, causing all causes of stress and alterations in the normal circadian rhythm or biological clock to be even more pronounced.

The biological clock, sleep and mood of our children will benefit if we are able to work with them to achieve three complementary objectives:

1. The first is to maintain the same routines regarding sleep schedules (especially when waking up), meals, physical activity, moments dedicated to school work and leisure. Also, in the situation where there is no set rigid school entrance schedule, sleep schedules may be slightly adapted to your children's natural tendencies (to fall asleep earlier or later depending on whether they have a lark or owl chronotype), always maintaining a stable and reasonable schedule every day of the week.
2. The second objective is to enhance the contrast between daytime activities and night rest. The batteries of the biological clock are charged with night rest to optimize energy during daytime activity. In this sense it is convenient:
  - a) Reserve a time for night sleep according to what the child needs; the average sleep time is usually 11 - 14 hours for children between 1 and 2 years old, 10 - 13 hours for those between 3 and 5 years old, 9 - 12 hours for those between 6 and 12 years old and 8 - 10 hours for teens.
  - b) Exposure to natural light for at least two hours a day (for example, eating breakfast or playing by a well-lit window).
  - c) During the day, especially in the early hours of the morning, avoid passive tasks (watch TV, use the mobile). In these hours it is much better to activate the body by promoting activities that require intellectual activation (doing tasks, reading or hobbies) or shared leisure and movement.
  - d) At least an hour before bedtime, it is convenient to create a relaxing routine to "disconnect from the day" (tell a story, shared relaxation exercises) in a low light and noise environment.
  - e) It is essential to have breakfast and avoid eating between meals, drinks and exciting foods such as chocolate or cola, especially in the night hours close to going to sleep.
3. The third objective must be oriented to the synchronization of their schedules with the day in natural light. We can achieve this with very simple measures, such as:
  - a) Sleep in the dark: A while before awakening it is recommended that we raise the blinds in the room so that they can dawn with the natural light of day.
  - b) Naps: In children 2 - 4 years old we will continue with the routine they had in the nursery or school, which is reduced to a nap after eating. It is important that both the duration and the time in which such a nap is carried out are always the same, due to the importance already mentioned, of maintaining routines and sleep schedules. However, in adolescents as well as in adults, we do not recommend taking a nap after eating and if it is done it will be short (maximum 30 minutes) and never beyond 17 hours.

### Conclusion

The current situation of Pandemic and confinement, the extension of the quarantine, added to the socio-economic situation in Argentina, is by far an exceptional situation and not easy to handle due to the different contingencies and family contexts. The number of hours we spend at home, together with our children, may help us to learn to better organize our times and thus ensure that COVID-19 does not harm the situation of children with enuresis or prevent relapses.

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