

Photoepilation in children and adolescents: safety, efficacy, and clinical considerations for its application.

A narrative review

Fotodepilación en niños y adolescentes: seguridad, eficacia y consideraciones clínicas para su aplicación. Revisión narrativa

Fotodepilação em crianças e adolescentes: segurança, eficácia e considerações clínicas para sua aplicação. Revisão narrativa

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Summary

Objectives: to analyze the available evidence regarding the indications, contraindications, technology, safety, and efficacy of laser photoepilation and intense pulsed light (IPL) in children and adolescents.

Methodology: a narrative literature review was conducted in PubMed/MEDLINE, Embase, and Google Scholar using the search terms: “pediatric laser hair removal”, “children photoepilation”, “adolescent IPL”, and “fotodepilación pediátrica”, without language restrictions, up to December 2025. Clinical trials, cohort studies, case series, systematic reviews and consensus guidelines were included.

Results: photoepilation in children and adolescents is a safe procedure when performed by trained medical professionals. Although the evidence is limited to cohort studies and case series comprising a total of 71 patients in the most recent systematic review, it shows satisfactory hair reduction with mostly transient adverse effects. Evaluated devices include ruby laser (694 nm), alexandrite (755 nm), diode (800–900 nm), long-pulsed Nd:YAG (1064 nm), and intense pulsed light. Primary indications include hypertrichosis, hirsutism, hair hamartomas, recurrent pilonidal sinus disease, and gender-affirming care. The safety profile is comparable across devices. Severe complications are rare and include burns, dyschromia, and paradoxical hypertrichosis (estimated prevalence: 3%).

Conclusions: photoepilation represents a medical intervention that should be performed exclusively by trained professionals, using parameters tailored to the specific characteristics of pediatric skin. Larger comparative studies with bigger sample sizes are required to establish standardized protocols in this population.

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Resumen

Objetivos: analizar la evidencia disponible sobre indicaciones, contraindicaciones, tecnología, seguridad y eficacia de la fotodepilación con láser y luz pulsada intensa (IPL, por su sigla en inglés) en niños y adolescentes.

Metodología: se realizó una revisión narrativa de la literatura en PubMed/MEDLINE, Embase y Google Scholar utilizando los términos: “pediatric laser hair removal”, “children photoepilation”, “adolescent IPL”, “fotodepilación pediátrica”, sin restricción de idioma, hasta diciembre de 2025. Se incluyeron ensayos clínicos, estudios de cohorte, series de casos, revisiones sistemáticas y guías de consenso.

Resultados: la fotodepilación en niños y adolescentes es un procedimiento seguro cuando es realizado por profesionales médicos capacitados. La evidencia, aunque limitada a estudios de cohorte y series de casos con un total de 71 pacientes en la revisión sistemática más reciente, muestra una reducción satisfactoria del vello con efectos adversos mayoritariamente transitorios. Los dispositivos evaluados incluyen láser de rubí (694 nm), alejandrita (755 nm), diodo (800-900 nm), Nd:YAG de pulso largo (1064 nm) y la luz pulsada intensa. Las principales indicaciones son hipertrichosis, hirsutismo, hamartomas pilosos, seno pilonidal recurrente y cuidado afirmativo de género. El perfil de seguridad es comparable entre dispositivos. Las complicaciones graves son infrecuentes e incluyen quemaduras, discromías e hipertrichosis paradójica (prevalencia estimada: 3%).

Conclusiones: la fotodepilación constituye una intervención médica que debe ser realizada exclusivamente por profesionales capacitados, con parámetros ajustados a las particularida-

des de la piel pediátrica. Se requieren estudios comparativos de mayor tamaño muestral para establecer protocolos estandarizados en esta población.

Palabras clave: Tratamiento de Luz Pulsada

Intensa

Terapia por Láser

Pediatría

Adolescente

Hirsutismo

Hipertrichosis

Acoso Escolar

Resumo

Objetivos: analisar a evidência disponível sobre as indicações, contraindicações, tecnologia, segurança e eficácia da fotodepilação a laser e luz intensa pulsada (IPL) em crianças e adolescentes.

Metodologia: realizou-se uma revisão narrativa da literatura nas bases PubMed/MEDLINE, Embase e Google Scholar utilizando os termos: “pediatric laser hair removal”, “children photoepilation”, “adolescent IPL”, “fotodepilación pediátrica”, sem restrição de idioma, até dezembro de 2025. Foram incluídos ensaios clínicos, estudos de coorte, séries de casos, revisões sistemáticas e diretrizes de consenso.

Resultados: a fotodepilação em crianças e adolescentes é um procedimento seguro quando realizada por profissionais médicos capacitados. A evidência, embora limitada a estudos de coorte e séries de casos com um total de 71 pacientes na revisão sistemática mais recente, demonstra uma redução satisfatória dos pelos, com efeitos adversos em sua maioria transitórios. Os dispositivos avaliados incluem laser de rubi (694 nm), alexandrita (755 nm), diodo (800-900 nm), Nd:YAG de pulso longo (1064 nm) e luz intensa pulsada. As principais indicações são hipertrichose, hirsutismo, hamartomas pilosos, cisto/seio pilonidal recorrente e cuidado de afirmação de gênero. O perfil de segurança é comparável

entre os dispositivos. Complicações graves são infrequentes e incluem queimaduras, discromias e hipertricose paradoxal (prevalência estimada: 3%).

Conclusões: a fotodepilação constitui uma intervenção médica que deve ser realizada exclusivamente por profissionais capacitados, com parâmetros ajustados às particularidades da pele pediátrica. São necessários estudos comparativos com maior tamanho amostral para estabelecer protocolos padronizados nesta população.

Palavras chave: Terapia de Luz Pulsada Intensa
Terapia a Laser
Pediatria
Adolescente
Hirsutismo
Hipertricose
Bullying

Introduction

The photoepilation technique, which involves the use of specialized light sources such as lasers and intense pulsed light (IPL), aims to destroy the hair follicle. It represents an advanced and increasingly sought-after solution for long-term hair reduction. Although it is a widely used method in adults, its use in children and adolescents presents challenges and specific considerations that significantly differ from its application in adults⁽¹⁻³⁾.

During childhood and adolescence, excessive hair growth can lead to psychological distress, affecting self-esteem and sometimes resulting in bullying, especially in cases of hypertrichosis or hormonal imbalances⁽⁴⁻⁶⁾. The use of photoepilation at these ages is less common than in adults; however, demand for it is on the rise, underscoring the need for careful and specialized care⁽⁶⁾.

The most recent systematic review on pediatric photoepilation (Sharon et al., 2023) identified only two retrospective cohort studies and 11 case series/reports, including a total of 71 patients ranging in age from 9 months to 17 years, reflecting the scarcity of specific evidence in this age group⁽⁶⁾. Sanfilippo et al. (2024) conducted a comprehensive review of hair

removal modalities in pediatric patients, addressing both clinical and ethical considerations, and concluded that all hair removal methods appear to be safe and generally well-tolerated in children, with no age restrictions for any modality⁽⁷⁾.

The purpose of this article is to provide an up-to-date analysis of the indications, contraindications, available laser technology, procedure, complications, and ethical considerations that general practitioners, pediatricians, and dermatologists should consider when prescribing or performing photoepilation safely and effectively in this population.

Methodology

A narrative literature review was conducted. The search strategy was carried out in the PubMed/MEDLINE, Embase, and Google Scholar databases. Search terms included: “pediatric laser hair removal”, “children photoepilation”, “adolescent IPL”, “hair removal children”, “fotodepilación pediátrica,” and combinations using Boolean operators (AND/OR). No language restrictions were applied. The review included randomized clinical trials, cohort studies, case series, systematic reviews, meta-analyses, and consensus guidelines published through December 2025. Single-case reports, letters to the editor without original data, and duplicate articles were excluded. Additionally, a manual search was conducted of the references in the selected articles.

Fundamentals of photoepilation

Hair removal is a periodic cosmetic practice that has been firmly established in society for several decades⁽¹⁾. It encompasses various methods, including shaving, mechanical removal or waxing, the application of topical products, and the use of light-based therapies⁽⁷⁾.

Photoepilation is a technique that involves the removal of the hair shaft using coherent light sources, such as lasers, or incoherent light, such as IPL. Its primary purpose is to destroy the key elements responsible for hair follicle growth, specifically the dermal papilla and the protuberance, through the targeted application of light energy.

This process is explained by the theory of selective photothermolysis, originally described by Anderson and Parrish in 1983⁽⁸⁾, and subsequently expanded upon by Altshuler et al. in 2001⁽⁹⁾. In the expanded theory, the thermal damage time (TDT) consists of the absorption of energy by a target chromophore (hair melanin) and the diffusion of heat toward a target structure (hair bulb precursor cells).

Depending on skin color and its ability to respond to UV radiation (Fitzpatrick phototypes I–VI) (Table 1), melanin, the primary chromophore in photoepilation, may secondarily absorb laser energy at the epidermal level. This means that higher (darker) phototypes have an increased risk of adverse effects with this procedure⁽¹⁰⁾.

The Food and Drug Administration (FDA) first approved a laser for photoepilation in 1997, and its use has become widespread in clinical settings, where it is considered a safe and effective method compared to other hair removal techniques⁽¹¹⁾. A 2006 Cochrane review acknowledged the lack of comprehensive studies, which implied a lack of conclusive evidence regarding long-term efficacy. Currently, experts recognize that various factors, such as hair color and thickness, the body area, the patient's skin type, and their hormonal status, influence the treatment's effectiveness. Thus, the FDA updated the definition of permanent hair reduction, specifying that the number of hairs that regrow must remain constant for a period exceeding the total duration of the hair follicle growth cycle, which ranges from 4 to 12 months depending on the body area⁽¹⁰⁾.

In adults, the hair growth cycle and skin characteristics are fully developed and relatively stable, making it easier to predict the response to treatment and determine appropriate parameters. Furthermore, the motivation for photoepilation in adults is typically linked to aesthetic preferences or personal comfort^(1–3).

In contrast, in children, the hair growth cycle is still developing and can be influenced by hormonal changes associated with puberty. This means that the response to treatment can vary considerably and that the parameters used must be adjusted with greater caution^(4–6). Another important consideration is that the skin of children and adolescents is more sensitive and prone to adverse reactions, requiring a more conservative approach and the use of lower treatment parameters compared to adults. It is also essential to

consider the psychological impact of treatment on young patients, who may require more detailed communication and support to manage their expectations and experiences during the photoepilation process⁽⁷⁾.

Physiological considerations of children's and adolescents' skin

In children, the skin is notably thinner and more delicate, making it prone to injury and irritation. Additionally, it is less oily and has fewer sweat glands, resulting in greater dryness and sensitivity. Its greater permeability leads to easier absorption of chemicals and irritants⁽¹²⁾. During adolescence, the skin undergoes hormonal changes that increase sebum production, leading to oilier skin and problems such as acne. Melanin production also increases, which can cause spots and changes in skin tone⁽¹²⁾.

As for the pilosebaceous unit, composed of the hair follicle, the arrector pili muscle, and the sebaceous glands, its characteristics vary depending on age, sex, location, and level of specialization (for example, the eyebrows and eyelashes, which protect the eyes). Children have less body hair than adults, and instead of terminal hair, they have vellus hair, which is usually finer and softer. During puberty, increased levels of sex hormones stimulate the production and differentiation of vellus hair into terminal hair, resulting in greater density and the subsequent onset of related pathologies and aesthetic concerns⁽¹²⁾.

In the context of photoepilation, it is essential to understand the different growth phases of hair follicles. The anagen phase is the active stage, during which hair growth occurs. This is followed by the catagen phase, a transitional period during which growth stops and the follicle shrinks. Finally, in the telogen phase, the hair enters a resting state and falls out before the cycle begins again⁽¹³⁾. Hair follicles are most responsive to light therapy during the anagen phase, when melanization is at its peak and the concentration

Table 1. Fitzpatrick skin phototypes.

Phototypes	Physical characteristic	Response to UV exposure
I	Light-colored eyes and hair. Very fair skin	Always gets sunburned, never tans
II	Blue or brown eyes. Blonde or red hair. Fair skin	Almost always gets sunburned and sometimes tans
III	Dark European skin, any eye color	Sometimes gets sunburned and usually tans
IV	Dark eyes and hair. Fair or slightly tanned skin	Rarely gets sunburned and always tans
V	Brown skin tone	Rarely gets sunburned, tans very deeply
VI	Very dark skin, dark brown to black	Almost never gets sunburned

of chromophore is highest⁽¹³⁾.

The duration of the anagen phase, as well as the percentage of hairs present in it, varies considerably depending on the body area. For example, on the scalp, this phase can last from 2 to 6 years, involving 85% of the hairs, whereas in areas such as the armpits and pubic region, it lasts approximately 3 to 5 months, with 30% of the hairs available for photoepilation⁽¹⁴⁾. This knowledge is vital for optimizing treatment, allowing for a more precise adjustment of the intervals between sessions and the proper determination of the total number of sessions required.

Indications for photoepilation in children and adolescents

Accurate identification of indications in this patient group is essential. There are medical, psychosocial, and cosmetic indications⁽⁴⁻⁷⁾.

Medical indications

Hypertrichosis: describes excessive hair growth anywhere on the body. It affects both sexes and is independent of androgens. It is classified according to its distribution (generalized or localized), age of onset (congenital or acquired), and hair type (lanugo or terminal hair)⁽⁴⁻⁶⁾.

Hirsutism: characterized by excessive development of terminal hair in a male pattern, exclusively in women, and suggests elevated levels of circulating androgens or increased sensitivity of organs susceptible to these hormones. It usually indicates elevated hormonal activity, primarily of ovarian or adrenal origin. An endocrinological evaluation and appropriate treatment are essential, as they improve the efficacy of laser treatment^(15,16).

Hamartomas: These are tumors that originate in tissues and are composed of normal cells. They can occur in various parts of the body and are often associated with specific genetic syndromes. They are generally benign; most are diagnosed during childhood, and several of them present with disproportionate growth of vellus or terminal hair^(17,18). Congenital melanocytic nevus with associated hypertrichosis is a controversial indication for photoepilation, since hair removal on these nevi produces benign transient changes; the authors recommend evaluating each case individually. Becker's nevus generally appears during adolescence, typically in the scapular or chest region, although it can be located in other parts of the body and is associated with hypertrichosis^(17,18).

Recurrent pilonidal sinus: Minneci et al. (2024) published the first randomized clinical trial (n=302, age 11–21 years) evaluating laser hair removal as an

adjunct to standard treatment for pilonidal sinus. The one-year recurrence rate was significantly lower in the laser group (10.4%) compared with standard treatment alone (33.6%), with an absolute difference of –23.2% (95%CI –33.2 to –13.1; $p<0.001$). No differences in complications or quality of life were observed between the groups. The authors concluded that laser hair removal should be considered a standard treatment for eligible patients with pilonidal disease⁽¹⁹⁾. This study currently represents the highest-quality methodological evidence available on photoepilation in the adolescent population.

Other less common medical indications include recurrent folliculitis, hidradenitis suppurativa, hair removal for flaps, and surgical reconstructions⁽²⁰⁾.

Psychosocial indication

Photoepilation is indicated in cases of school bullying as a therapeutic measure to improve the self-esteem and psychological well-being of children and adolescents who are teased due to excessive or unusual hair growth associated with the medical conditions mentioned above⁽⁴⁻⁷⁾.

Indications for gender-affirming care

Photoepilation is a recognized component of gender-affirming care for transgender and gender-diverse adolescents. The World Professional Association for Transgender Health (WPATH) has recognized in its standards of care that laser hair removal and electrolysis are medically necessary for the treatment of gender dysphoria^(21,22). For transgender women, facial hair removal is a significant source of relief from gender dysphoria, and preoperative hair removal from donor sites is a prerequisite for gender-affirming surgical procedures, such as vaginoplasty^(21,22). This indication is growing, and dermatologists who care for adolescents should be prepared to address it sensitively and based on evidence.

Cosmetic indication

The cosmetic indication for photoepilation before puberty is uncommon and is generally avoided due to risk-benefit considerations. During puberty, hair growth and skin characteristics change significantly, which may positively influence the efficacy and safety of treatment. It is important to consider the patient's emotional maturity and the potential impact of treatment on their development and well-being. In childhood and early adolescence, photoepilation for purely aesthetic reasons raises psychological and ethical implications that must be carefully evaluated (see the Ethical Considerations section)⁽⁷⁾.

Contraindications for photoepilation in children and adolescents

It is essential to conduct a preliminary assessment of any personal history that could affect the treatment and its outcome (Table 2). Herpes simplex infections, especially in those with recurrent episodes, may require chemoprophylaxis^(3–10). It is also important to assess the tendency to develop hyperpigmentation, hypertrophic scars, or keloids. Autoimmune disorders (e.g., dermatomyositis, lupus) that may increase sensitivity to light must be evaluated. A history of epilepsy or light-triggered seizures should be considered⁽¹⁰⁾.

Conditions such as vitiligo or psoriasis, which can trigger the Koebner phenomenon (disease lesions that appear at sites of trauma), are relative contraindications for this treatment. Patients taking photosensitizing medications should be monitored carefully when undergoing this procedure due to the risk of hyperpigmentation^(3–10). Topical retinoids applied to the area where hair removal will be performed should be discontinued 7–10 days before each session.

Regarding oral isotretinoin, the consensus guidelines of the American Society for Dermatologic Surgery (Waldman et al., 2017) and the systematic review by Spring et al. (JAMA Dermatol, 2017) concluded that there is insufficient evidence to delay laser or IPL hair removal during or after treatment with isotretinoin^(23,24). Subsequent studies confirmed the safety of procedures using alexandrite, diode, and Nd:YAG lasers during active isotretinoin treatment⁽²⁵⁾. It is recommended, however, to avoid mechanical hair removal with waxing while using oral or topical retinoids, given the risk of epidermal detachment⁽⁷⁾.

Medications such as cyclosporine, cortisone,

phenytoin, and penicillamine, as well as hormonal changes such as polycystic ovary syndrome, can promote hair growth; therefore, maintenance treatment may be required after conventional sessions⁽³⁾.

Selection of the appropriate laser technology for children and adolescents

The development of laser technology for photoepilation began with the first application of the ruby laser in 1960 by Theodore Maiman⁽²⁶⁾. Initially explored for tattoo removal, it was not until the mid-1990s that it began to be used successfully for long-term hair reduction^(27,28). Subsequently, other types of lasers were developed: long-pulse alexandrite, diode, and Nd:YAG. In the late 1990s, IPL systems were introduced, becoming a common option in hair removal treatments (Table 3)⁽²⁹⁾.

Among short-wavelength devices, the ruby laser is highly effective on fair skin (phototypes I–II). Its use is not recommended for people with phototypes higher than III or who have had recent sun exposure, due to its specificity toward epidermal melanin. These limitations have contributed to its declining use. The alexandrite laser, at 755 nm, allows for deeper penetration and reduces the effect on epidermal melanin compared to the ruby laser; however, it is still not the most suitable option for dark skin⁽³⁰⁾.

The diode laser has a high affinity for hair melanin, offering versatility and safety for different skin and hair types⁽³¹⁾. IPL, which emits polychromatic light, must be filtered to wavelengths suitable for melanin absorption. These devices are the most widely used in hair removal centers and are available in at-home versions. IPL is safe for most skin tones; however, it

Tabla 2. Contraindicaciones de la fotodepilación.		
Absolutas	Relativas	Consideraciones
Infección activa en la zona a tratar	Psoriasis/vitiligo por fenómeno de Koebner	Suspender retinoides tópicos 7-10 días previos
Bronceado reciente	Uso de fármacos fotosensibilizantes	Isotretinoína oral: fotodepilación láser/IPL segura según consenso ASDS 2017. Evitar depilación con cera
Crisis convulsivas desencadenadas por la luz	Cicatrices hipertróficas o queloides	No utilizar métodos depilatorios de tracción en las últimas cuatro semanas
	Enfermedades autoinmunes	No fotodepilar la zona con el pelo largo
	Trastorno dismórfico corporal (BDD) no diagnosticado/no tratado	Evitar tratar áreas de tatuajes o nevos sin evaluación dermatológica
	Pelo cano o rubio (baja eficacia)	

Table 3. Laser/IPL devices and their basic specifications.				
Device	nm	Specifications	Common adverse effects	Brand names
Ruby	694	First laser for hair removal. Safe for skin types I–III. Minimum of 3 sessions	1st- and 2nd-degree burns. Hypopigmentation in higher skin phototypes	VarioPulse®
Alexandrite	755	Greater penetration and affinity for melanin than Ruby. Contraindicated for skin phototypes IV and above	Pain, burns, crusts, hypo/hyperpigmentation	GentlePro®
Diode	800-900	Versatility for higher skin phototypes with low fluences and long pulses. Use with caution on skin phototypes V–VI	Pain, burns, hypo/hyperpigmentation	Primelase®, Soprano®
IPL	515-1200	Large spots for large areas. Lower selectivity. Greater number of sessions	Hyperpigmentation	Harmony®, Nordlys®
Nd:YAG	1064	Lower absorption of epidermal melanin. Safe for all skin phototypes. Less effective	Pain, burns, dyschromia	Cutera® Fotona® Candela®
Nd:YAG Q-Sw	1064-qs	Short pulse. High affinity for melanin. Low EA rate. Ideal for lightening hair	Hypo/hyperpigmentation	Spectra® AlmaQ®
Hybrids	Multiple	Combine wavelengths. Greater efficacy and adaptability. Shorter session time	Hypo/hyperpigmentation	Soprano Titanium®

has lower specificity and efficacy compared to lasers and generally requires a greater number of sessions⁽³²⁾. There are IPL and diode devices with associated monopolar or bipolar radiofrequency that may help achieve better results⁽³³⁾.

Long-wavelength devices, such as the Nd:YAG laser, are particularly safe for dark skin (phototypes IV–VI) due to their lower absorption of epidermal melanin and good dermal penetration⁽³⁴⁾. Recent advances in Nd:YAG technology have improved its clinical efficacy for hair removal⁽³⁵⁾.

Hybrid devices, which combine different wavelengths in a single session, represent a significant advancement. This innovation allows for more efficient treatment of various skin and hair types, as each wavelength penetrates to different depths, thereby optimizing results. One example is the Soprano Titanium (Alma Lasers), which integrates multiple wavelengths, reducing session time and improving the experience for both patients and those performing the procedure⁽³⁶⁾.

All the devices mentioned feature epidermal cooling systems either contact-based or using cryogenic gas that protect the skin by lowering its temperature, minimizing burns, and improving treatment tolerance.

Photodepilation procedure in children and adolescents

Before performing the procedure, it is essential that both patients and their families clearly understand the technique in order to ensure their cooperation⁽⁷⁾.

Laser hair removal in children is a delicate and specialized procedure, requiring a series of careful steps to ensure efficacy and safety (Table 4). The process begins with a thorough cleansing of the skin, which can be performed using a cleansing toner or alcohol-based chlorhexidine, to remove makeup, residue, or dirt that could interfere with the treatment’s effectiveness. Any hair removal method involving traction should be avoided during the four weeks prior to treatment to preserve the chromophore in the hair follicles. It is recommended to shave the hair or use depilatory creams 48 hours before treatment to prevent superficial burns⁽¹⁰⁾.

Table 4. Laser hair removal procedure.	
Skin cleansing and preparation	
Topical anesthesia (if necessary; adhere to pediatric dosage limits)	
Eye protection (patient, accompanying person, and operator)	
Laser/IPL programming and calibration	
Test run	
Cooling of the epidermis	
Avoid immediate occlusion	
Moisturizing/anti-inflammatory cream	
SPF >30 sunscreen on exposed areas	

Topical anesthesia may be necessary to minimize discomfort during the procedure, depending on the child's sensitivity and the area to be treated. Creams containing low concentrations of lidocaine and prilocaine may be used. In pediatric patients, the application of these anesthetic creams must strictly adhere to dosage limits and application area guidelines based on the patient's age, given the risk of methemoglobinemia, particularly in infants younger than three months and when applied to large areas⁽⁷⁾.

Eye protection is essential for the child, the accompanying adult, and the laser operator. Specially filtered lenses are used to prevent eye damage. Laser programming and calibration are essential technical steps: parameters are adjusted according to skin type, hair color, and the area to be treated to maximize effectiveness and minimize risks. In the pediatric population, it is recommended to start with reduced fluences (10%–20% lower than those used in adults), longer pulses, and larger spot sizes whenever possible, with mandatory epidermal cooling^(6,7,37).

Before proceeding with the full session, a test is performed to assess how the patient's skin reacts and whether the laser settings are appropriate. During the procedure, it is important to monitor the response, observing signs such as hair vaporization and the appearance of erythema or perifollicular edema, or both. If these reactions occur, the parameters should be adjusted gradually⁽³⁷⁾.

During and after treatment, it is essential to cool the epidermis with local cooling to reduce any discomfort and prevent potential side effects. It is important to avoid immediately covering the treated area to allow the skin to decongest and recover naturally⁽³⁷⁾.

Finally, a moisturizing gel or cream may be applied. In cases of erythema or in patients with a history of recurrent folliculitis, a low- or medium-potency corticosteroid cream may be applied. It is mandatory to apply sunscreen with an SPF >30 to treated areas exposed to the sun to prevent post-inflammatory hyperpigmentation⁽³⁷⁾.

Complications and side effects

Photodepilation is a safe procedure with a very low rate of adverse effects when performed by trained professionals. No significant differences in the development of complications or in the safety profile have been documented when comparing laser or IPL treatments in children^(6–10).

We must distinguish between two types of adverse effects. On the one hand, there are transient and benign events (pruritus, pain, erythema, and/or perifollicular edema) that resolve with local measures such as

the use of emollient or moisturizing creams in the first hours following the procedure. On the other hand, there are acute, potentially serious events that can lead to chronic complications: first- and second-degree burns and herpes virus reactivation. Late complications requiring follow-up and further treatment include scarring, dyschromia, and paradoxical hypertrichosis^(1,6,10).

Paradoxical hypertrichosis

Paradoxical hypertrichosis (PH) consists of the unexpected growth of terminal hair in areas treated or adjacent to the photoepilation site. A recent meta-analysis (Snast et al., 2021; 9,733 patients, 22 studies) reported a combined prevalence of 3% (95%CI 1–6%), with a significant association with facial and cervical locations (only 0.08% in non-facial/non-cervical areas).

Inoue et al. (2024; n = 7,381) found a prevalence of 0.34%, identifying a significant association with the use of an alexandrite laser versus a diode laser in SHR mode ($p < 0.01$) and with the absence of a daily sunscreen routine (OR = 0.41; $p < 0.05$), independent of phototype⁽³⁹⁾. Proposed mechanisms include the effect of inflammatory mediators and subtherapeutic thermal damage with induction of the hair growth cycle. Montecinos et al. (2025) reviewed current trends, and Moriguchi et al. (2025) described sex disparities in incidence.

The recommended treatment consists of re-treating the affected area with optimized parameters (fluences appropriate for the phototype). In the pediatric population, where the fluences used tend to be more conservative, the theoretical risk of subtherapeutic fluences could be higher, although there is no direct evidence in this age group. It is recommended to inform patients and families about this possibility as part of the informed consent process.

Ethical and legal considerations

In Uruguay, Law No. 18,335 and Decree No. 274/010 emphasize the importance of informed consent for any medical procedure. It is crucial that guardians and the patient be fully informed about the risks, benefits, and alternatives of the procedure, thereby ensuring a conscious and responsible decision^(38–42).

Assent by minors

Although informed consent is provided by parents or legal guardians, current ethical standards require that children and adolescents actively participate in the decision-making process. Sanfilippo et al. (2024) emphasize that minors must be able to give their assent in

a manner that is understandable and age-appropriate. It is important for adolescents to actively participate in the discussion about the procedure, its risks, benefits, and alternatives, particularly because they cannot be physically restrained during the procedure and their cooperation is essential for safety.

Progressive autonomy of adolescents

For adolescents with sufficient cognitive and emotional maturity, the decision to undergo photoepilation should be made jointly by the patient, their guardians, and the medical team. The clinician must actively assess whether the request for the procedure comes from the patient themselves or exclusively from the parents and act accordingly.

Cosmetic indications in minors

Sanfilippo et al. (2024) caution that performing cosmetic hair removal procedures on a child who does not express discomfort with their body hair may constitute a violation of their autonomy. In such cases, clinicians should decline the request and educate parents about less invasive temporary alternatives. Photoepilation for purely aesthetic purposes in early childhood raises significant ethical questions that must be evaluated on a case-by-case basis with an approach centered on the best interests of the child.

Conclusiones

Photoepilation in children and adolescents is a procedure that should be performed exclusively by physicians trained and specialized in the use of lasers or light-based devices. The available evidence, although limited, supports the safety of the procedure in this age group, with no significant differences between laser and IPL devices⁽⁶⁾.

This patient group has unique physiological characteristics, which mean that treatment must be personalized and tailored to their specific needs. Medical indications are well established (hypertrichosis, hirsutism, hamartomas, pilonidal sinus), and emerging indications such as gender-affirming care for transgender adolescents are recognized^(7,22).

Paradoxical hypertrichosis, with an estimated prevalence of 3%, is a complication that must be disclosed as part of the informed consent process, particularly for facial and cervical treatments⁽³⁸⁾. Post-procedure photoprotection is essential to reduce the incidence of dyschromia.

The need for prospective comparative studies with larger sample sizes to establish standardized treatment protocols in the pediatric population is emphasized (Table 5).

Table 5. Practical recommendations.	
1	Photoepilation should be performed only when medically indicated; it is not a treatment that can be applied indiscriminately for cosmetic reasons in minors.
2	Educating and informing parents/guardians and the child about the procedure, realistic expectations, and the need for multiple sessions is a key factor.
3	If the patient has not yet reached puberty, the hormonal stimulation will cause increased hair growth, which means additional sessions will be necessary.
4	Photoepilation on nevi requires that the indication, evaluation, and treatment be conducted by an experienced dermatologist.
5	The choice of laser or IPL type and its parameters must be tailored to the Fitzpatrick skin phototype, as well as the location, thickness, and color of the hair. Start with conservative settings.
6	It is preferable to use devices with epidermal cooling systems; if these are not available, use a cooling gel.
7	An interval of 2–3 months between sessions is recommended for children, preferably during the winter months for exposed areas.
8	Oral isotretinoin is not a contraindication for laser/IPL hair removal, according to the current consensus.
9	Treatment is only moderately effective on blond hair, and gray hair does not respond to treatment due to a lack of melanin.
10	Seek out state-of-the-art technology that is properly licensed and regulated by the relevant health authority.

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Data availability

The dataset supporting the results of this study is NOT available in open-access repositories.

Authors' contributions - CRediT

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