

Understanding Pediatric Non-Melanoma Skin Cancers: A Guide for Patients

Zaim Haq

What are Pediatric Non-Melanoma Skin Cancers?

In pediatric patients, the main forms of non-melanoma skin cancer are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), which start in the top layers of the skin. Other types, such as sebaceous carcinoma, adnexal carcinoma, and dermatofibrosarcoma protuberans (DFSP) are typically not observed in this age group. Overall, NMSCs are rare in children but can occur in patients with certain genetic conditions like xeroderma pigmentosum (XP) or Gorlin syndrome. Early recognition and treatment of these cancers are crucial to prevent their spread or recurrence¹.

Age of Onset and Presentation Variability

NMSC can occur at different ages and may look different from one child to another. Some children might have pearly bumps on their skin (BCC), while others might have rough, red patches (SCC). Keeping an eye on your child's skin and noticing any changes early can make a big difference in treatment^{1,2}.

Special Considerations and Risk Factors

- Genetic Syndromes: Children with genetic syndromes such as Gorlin syndrome, xeroderma pigmentosum, and albinism are at significantly higher risk due to defects in DNA repair mechanisms and increased UV sensitivity^{1,2}.
- Immunosuppression: Immunosuppressed children, including those who have undergone organ transplants, have an elevated risk of NMSC^{1,2}.
- Sun Exposure: Extensive sun exposure or a history of severe sunburns also increases susceptibility to NMSC in children^{1,2}.

How is Pediatric NMSC Diagnosed?

Doctors diagnose skin cancers by examining the skin closely and often taking a biopsy to look under a microscope. If there's a family history of skin cancer or other related conditions, your doctor might also suggest genetic tests. If you notice any unusual skin changes in your child, see a dermatologist as soon as possible³.

Genetic Basis of Pediatric NMSC

Several genetic mutations have been implicated in the development of pediatric NMSC. For instance, mutations in the PTCH1 gene are linked to Gorlin syndrome, while defects in the nucleotide excision repair pathway are characteristic of xeroderma pigmentosum. Genetic testing for Gorlin syndrome and xeroderma pigmentosum are instrumental in confirming the diagnosis¹.

Managing Pediatric NMSC

Effective management of pediatric NMSC may require a multidisciplinary approach, involving dermatologists, oncologists, and geneticists. Treatment options include surgical excision, Mohs micrographic surgery for facial lesions, and topical or systemic therapies in select cases. Regular follow-up is essential to monitor for recurrence and manage long-term outcomes².

Sun Safety for Patients with Pediatric NMSC

Protecting your child's skin from the sun is very important to prevent more skin damage and new cancers. Use sunscreen with at least SPF 30, dress your child in protective clothing, and avoid being in the sun during the middle of the day. Teaching your child about sun safety is a good habit that will help them throughout their life⁵.

Living with Pediatric NMSC

Living with a skin cancer diagnosis involves regular visits to the doctor and making some lifestyle changes. Educating yourself about the condition and getting genetic counseling if needed can help manage the disease and improve your child's quality of life. Support groups and talking to others who have been through similar experiences can also be beneficial.

References

1. Fogel, A. L., Sarin, K. Y., & Teng, J. M. C. (2017). Genetic diseases associated with an increased risk of skin cancer development in childhood. *Current opinion in pediatrics*, 29(4), 426–433.
2. Perez M, Abisaad JA, Rojas KD, Marchetti MA, Jaimes N. Skin cancer: Primary, secondary, and tertiary prevention. Part I. *J Am Acad Dermatol*. 2022;87(2):255-268. doi:10.1016/j.jaad.2021.12.066
3. Turbeville JG, Hand JL. Pediatric Cutaneous Oncology: Genodermatoses and Cancer Syndromes. *Dermatol Clin*. 2023;41(1):175-185. doi:10.1016/j.det.2022.07.013
4. American Academy of Dermatology. Sunscreen stats and facts. AAD website. <https://www.aad.org/media/stats-sunscreen>. Accessed [April, 2024]
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4. American Academy of Dermatology. Sunscreen stats and facts. AAD website. <https://www.aad.org/media/stats-sunscreen>. Accessed [April, 2024]
5. American Cancer Society. (2023). Basal and Squamous Cell Skin Cancer. Retrieved from <https://www.cancer.org/cancer/basal-and-squamous-cell-skin-cancer.html>