ORTHOPAEDIC ONCOLOGY · PATIENT GUIDE

Non-Ossifying Fibroma in Children: Does It Need Treatment?

Making sense of an unexpected X-ray finding, from the diagnosis to decisions about follow-up and sport.

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A non-ossifying fibroma (NOF) is a benign area of fibrous tissue in bone, often found by chance in children. Most need no operation. The practical concern is whether the affected bone remains strong enough.[1]

An unexpected finding can leave you with two worries: whether the diagnosis is certain, and whether your child needs treatment. Those are separate questions. The explanation should also make clear whether the NOF accounts for the problem that brought your child to the clinic.

What does the X-ray tell us?

NOFs have a characteristic appearance on plain X-rays. Their outline, position within the bone and changing appearance as they mature help the doctor recognise them.[2]

A typical NOF can often be diagnosed without MRI or biopsy. If the appearance is uncertain, or the child's symptoms are not adequately explained, further assessment is appropriate. Reassurance depends on a confident diagnosis.[4]

CT or MRI may be useful in selected cases to examine the remaining bone or clarify an unusual finding. These scans answer specific questions; they are not routine requirements for every child with an NOF.[3]

Why might observation be enough?

As a child finishes growing, an NOF usually stops enlarging and gradually fills with bone. A healed area can leave a visible mark on later X-rays.[1]

Follow-up should reflect the child's age, symptoms, lesion size and location. A small, typical incidental finding and a larger lesion that weakens the bone may need different review plans. There is no single schedule appropriate for every NOF.[3]

> **What the observation plan should explain.** Whether another X-ray is needed, who will arrange it and which changes should prompt an earlier appointment. If routine follow-up is ending, the team should explain why.

How is fracture risk assessed?

The assessment considers how much bone the lesion occupies, the thickness of the remaining outer shell and its location. Pain during weight-bearing or activity also matters. The measurement printed on a report is only part of this assessment.[3]

Size alone does not automatically mean surgery is necessary. The measurements need to be interpreted in the context of the whole bone and the child, alongside the lesion’s stage on X-ray.[2]

More about the evidence

In a 2016 retrospective study, fractures occurred in larger lesions within a particular X-ray stage, before substantial filling with bone. Follow-up was incomplete, and the findings cannot calculate an individual child's chance of fracture. They support considering the lesion's stage alongside its size.[2]

The same paper discusses earlier series in which many large NOFs did not fracture.[2]

Can my child keep playing sport?

An NOF does not automatically require a blanket ban on sport. Advice should follow assessment of the diagnosis, symptoms, imaging, size and location. Persistent pain or structural weakening warrants further evaluation before an activity plan is agreed.[4]

> **Dr. Vishnu's perspective**
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> Before advising about sport, I need to understand the bone's strength, any pain and whether there has been a fracture.[1] I would ask your child as well as you what they want to return to. Walking into a classroom and playing a football match are different demands; the plan needs to address the activity that matters to them.

The sports literature is limited and includes many case reports. It does not provide a validated clearance rule for every child. A general statement that NOFs are benign cannot replace an assessment of this child's bone.[4]

Written guidance helps the school or coach understand any restrictions. It should include when the advice will be reviewed, so the family knows what happens next.

When might an operation be considered?

Surgery may be considered for a large lesion, pain with activity or a previous fracture through the NOF. These are reasons to discuss an operation, not a rule that every child with one of these features must have surgery.[1]

When surgery is needed, curettage removes the lesion from inside the bone. The cavity can be filled with bone graft or a substitute. Additional fixation may be used where structural support is necessary.[3]

A fracture through an NOF does not invariably require removal of the lesion. Selected fractures can heal without an operation; the fracture and the NOF both need assessment to decide the appropriate treatment.[3]

After surgery, return to activity depends on factors such as the lesion's size, the procedure and healing. Obtain an individual recovery plan rather than adopting another child's timetable.[1]

Useful questions to take home

- Is the X-ray appearance typical enough to confirm NOF?
- Does the lesion explain my child's symptoms?
- Is the bone structurally weakened?
- Which activities are appropriate now?
- What would change the decision between observation and surgery?

Frequently Asked Questions

Can a non-ossifying fibroma turn into cancer?

A correctly diagnosed non-ossifying fibroma does not become cancer. Treatment decisions concern symptoms and the strength of the affected bone. [1]

Does every child with an NOF need MRI or a biopsy?

No. A typical NOF can often be diagnosed without either. Uncertain imaging or unexplained symptoms may need further assessment before that reassurance applies. [4]

Can my child continue playing sport?

Often, but clearance depends on symptoms, imaging and the lesion's size and location. Ask for advice about your child's actual sport and level of activity. [4]

Will an NOF disappear as my child grows?

Most gradually fill with bone as growth finishes. A residual mark may remain visible on an X-ray, even after the lesion has healed. [1]

Your consultation

Questions about your child's non-ossifying fibroma

You can book a consultation with Dr. Vishnu Baburaj at Aster MIMS Kannur to discuss your child's non-ossifying fibroma and questions about observation, follow-up or activities.

Book a consultation Plan your visit

The evidence behind this article

1. American Academy of Orthopaedic Surgeons. *Nonossifying Fibroma.* OrthoInfo. Undated; accessed 20 October 2026. Patient information.
2. Herget GW, Mauer D, Krauß T, El Tayeh A, Uhl M, Südkamp NP, Hauschild O. *Non-ossifying fibroma: natural history with an emphasis on a stage-related growth, fracture risk and the need for follow-up.* BMC Musculoskeletal Disorders. 2016;17:147. Full observational study.
3. Walker K, Smith JB, Todi N, Brown D, Randall RL. *Non-Ossifying Fibromas: A 2025 Review.* Journal of Clinical Medicine. 2025;14(18):6428. Full review.
4. Kafchinski LA, Crawford AE, Stolzenberg L, Gould SJ. *Common Benign Bone Lesions and Return to Sports: A Case Report and Scoping Review.* American Journal of Sports Medicine. 2025;53(1):234-242. Full review.

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