

BONE OSSIFICATION TEST

Why in news?

ONE OF the accused in the murder of former Maharashtra MLA Baba Siddique claimed in Mumbai on Sunday that he was 17 years old—and should thus be tried under **the Juvenile Justice Act**.

GS3:
Science &
Tech

- The Mumbai Police Crime Branch, which sought custody of the accused, said an Aadhaar card found on the individual showed his age as 19.
- To determine whether the accused was a minor, the magistrate ordered a bone ossification test, which was carried out at the state-run JJ Hospital.

What is a bone ossification test, and how does it determine the age of a person?

- ✓ Ossification is the natural process of bone formation. This starts from the early developmental stage of the foetus and continues until late adolescence, but differs slightly from individual to individual.
- ✓ Based on the stage of development of the bones, experts can determine the approximate age of the person.
- ✓ In a bone ossification test, **X-rays of a few bones**, such as those of hands and the wrists, are conducted to determine skeletal and biological development.
- ✓ The images may be compared with X-rays of standard development, which can assist in determining the age.
- ✓ The analysis could be also based on a scoring system that looks at individual bones on the hands and wrists and their growth, and compares them with the standard of maturation of bones among a certain population.

Why is age determination significant in the criminal justice system?

- In India, a person who is **below 18 years of age is considered a minor**. The criminal law differentiates between a child and an adult when it comes to procedure, correction and rehabilitation, and punishment.
- Any one below the age of 18 is governed by [the Juvenile Justice \(Care and Protection of Children\) Act, 2015](#).
- A child who is found to be in conflict with the law cannot be sent to a prison meant for adults, and is instead sent to an **observation home**.
- Instead of a court, the child is brought before a **Juvenile Justice Board (JJB)** comprising a **magistrate** and **two social workers** with experience in working with children.

- After an inquiry, the Board may direct the child to be let off with an admonition, community service, or a **maximum of three years in a special home**, among other options.
- Following an **amendment to the JJ Act in 2021**, in cases where “a child above the age of **sixteen years**” has been apprehended for a “**heinous offence**” (for which the minimum punishment is seven years’ imprisonment), the JJB must “conduct a preliminary assessment with regard to his mental and physical capacity to commit such offence, ability to understand the consequences of the offence and the circumstances in which he allegedly committed the offence” before deciding whether the child should be tried as an adult.

What have courts said about the bone ossification test?

- **Under Section 94 of the JJ Act**, “where it is obvious...based on the appearance...that the said person is a child”, the Board can proceed without confirmation of age.
- But if there are “**reasonable grounds for doubt**”, the Board must “undertake the process of age determination”.
- **Evidence** has to be obtained from “**the date of birth certificate from the school**”, or “the matriculation or equivalent certificate from the concerned examination board”.
- If these are not available, a **birth certificate issued by a corporation, municipal authority, or a panchayat** may be considered.
- “Only in the absence of [these], age shall be determined by an ossification test or any other latest medical age determination test conducted on the orders of the **Committee or the Board**.”
- In an order passed in March this year, the Supreme Court also said that tests such as ossification must be the last in the order of priorities to determine age.
- Courts have held that the test cannot override documentary evidence on the age of an accused person.
- In some cases, courts have rejected pleas by accused seeking a test, when documentary evidence is already present.

How reliable are bone ossification tests?

- ✓ Variability in observing the maturation of bones could impact the accuracy of the test.
- ✓ Also, the slight differences in development among individuals leaves some scope for error.
- ✓ Ossification tests give a range—say, 17-19 years. Courts have dealt with the question of margin of error in the range, and considered whether to accept the age at the lower or the upper end of the range.
- ✓ The Delhi High Court said this year that in **POCSO (Protection of Children from Sexual Offences) Act** cases where the age of the victim is determined through an ossification test, the upper age in the test’s reference range should be considered, and a “**margin of error of two years is required to be applied**”.