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CONSTITUTIONAL VALIDITY OF AGE
DETERMINATION PROCEDURES UNDER THE
JUVENILE JUSTICE ACT: RECONCILING ARTICLE 21
WITH PRESUMPTION OF INNOCENCE

AUTHORED BY - AKHIL SAJEEV
Assistant Professor, Vels University

CO-AUTHOR - ANUSREE J
Assistant Professor, Vels University

CO-AUTHOR 2 - DR. RATHEESH KUMAR
Associate Professor, Vels University

ABSTRACT

The determination of age in juvenile justice proceedings stands at the intersection of constitutional rights, scientific accuracy, and the foundational principle of benefit of doubt. This paper critically examines the constitutional validity of age determination procedures prescribed under the Juvenile Justice (Care and Protection of Children) Act, 2015, particularly focusing on the reliance upon ossification tests and hierarchical documentary evidence standards. The research analyzes how these procedures impact fundamental rights guaranteed under Article 21 of the Constitution, including the right to life, personal liberty, and fair trial, while exploring the tension between scientific uncertainty inherent in bone ossification tests and the legal presumption of innocence that should favor juveniles in cases of doubt. Through doctrinal analysis of judicial pronouncements, statutory provisions, and constitutional jurisprudence, this paper demonstrates that current age determination practices often fail to adequately protect juvenile rights, particularly when medical tests are accorded undue evidentiary weight despite their established margin of error. The research argues for a paradigmatic shift toward a rights-based approach that prioritizes documentary evidence, recognizes the inherent limitations of medical age estimation, and applies the benefit of doubt principle consistently in favor of juveniles, thereby ensuring that age determination procedures align with constitutional values of justice, dignity, and protection of vulnerable populations.

Keywords: *Juvenile Justice, Age Determination, Ossification Test, Article 21, Presumption of Innocence, Constitutional Rights, Benefit of Doubt, Fundamental Rights, Fair Trial*

I. INTRODUCTION

The determination of chronological age in juvenile justice proceedings represents one of the most consequential decisions in criminal jurisprudence, as it fundamentally determines whether an accused person will be treated as a child deserving reformation and rehabilitation or as an adult subject to punitive criminal sanctions. The Juvenile Justice (Care and Protection of Children) Act, 2015 (hereinafter “JJ Act”) enshrines the principle that any person below eighteen years of age at the time of commission of an offense shall be treated as a juvenile and afforded special protections under the law.¹ This statutory framework reflects India’s constitutional commitment to protecting children and recognizes that juveniles possess diminished culpability and greater capacity for reformation than adult offenders. However, the procedures employed to determine age when documentary evidence is absent or disputed raise profound constitutional questions about the balance between scientific certainty, legal presumptions, and fundamental rights.

The issue of age determination has acquired heightened significance in contemporary Indian jurisprudence, particularly following high-profile cases where the juvenile status of accused persons became central to public discourse and legal proceedings. The brutal 2012 Delhi gang rape case, in which one perpetrator was determined to be just short of eighteen years at the time of the offense, catalyzed intense debate about juvenile justice policies and age determination procedures. The subsequent amendments to the JJ Act, which introduced provisions for trying juveniles aged sixteen to eighteen as adults for heinous offenses, further underscore the critical importance of accurate age determination. When courts decide whether an accused person was seventeen years and eleven months old versus eighteen years and one month old at the time of an alleged offense, they are not merely resolving a factual dispute but determining the entire trajectory of that person’s engagement with the criminal justice system.

The constitutional dimensions of age determination procedures become apparent when we recognize that errors in age assessment can result in children being subjected to adult criminal proceedings, deprived of reformatory opportunities, and exposed to the harsh realities of adult

¹ The Juvenile Justice (Care and Protection of Children) Act, 2015, § 2(35) (India).

incarceration. Article 21 of the Constitution guarantees that no person shall be deprived of life or personal liberty except according to procedure established by law, and the Supreme Court has consistently held that this procedure must be just, fair, and reasonable.² When age determination procedures rely upon scientifically imprecise methods, create insurmountable evidential burdens for marginalized juveniles lacking documentary proof of birth, or fail to apply the benefit of doubt principle in cases of uncertainty, they potentially violate constitutional guarantees of fair trial, due process, and equal protection under law.

Central to the constitutional critique of current age determination practices is the reliance upon ossification tests, which assess skeletal maturity through radiological examination of bones, typically the clavicle, wrist, or teeth. While these tests can provide rough estimates of biological age, medical literature acknowledges significant margins of error, individual variations based on genetic factors, nutrition, environmental conditions, and socioeconomic status, and the fundamental disconnect between biological maturation and chronological age.³ Courts have increasingly recognized these limitations, yet ossification tests continue to play a determinative role in age assessment, particularly in cases involving juveniles from economically disadvantaged backgrounds who lack birth certificates or other documentary evidence.

The present research undertakes a comprehensive constitutional analysis of age determination procedures under the JJ Act, examining their compatibility with Article 21, the presumption of innocence, and the principle of benefit of doubt that has long been recognized as fundamental to criminal jurisprudence. The paper proceeds through several analytical stages: first, it examines the statutory framework for age determination under the JJ Act and its evolution through successive legislative enactments; second, it analyzes the constitutional foundations of juvenile justice in India, focusing on Article 21 and related fundamental rights; third, it critically evaluates the scientific reliability and legal implications of ossification tests and other age determination methods; fourth, it explores judicial approaches to age determination through analysis of leading Supreme Court and High Court decisions; and finally, it proposes a constitutional framework for age determination that harmonizes scientific evidence with legal principles of fairness, presumption of innocence, and protection of vulnerable populations.

² Maneka Gandhi v. Union of India, (1978) 1 SCC 248 (India).

³ Schmeling, A., et al., "Age Estimation of Living People Undergoing Criminal Proceedings," *The Lancet*, Vol. 358, Issue 9276, 2001, pp. 89-90.

This research contributes to the ongoing discourse on juvenile justice reform by centering constitutional rights in age determination procedures and challenging practices that subordinate legal protections to administrative convenience or public sentiment. The ultimate aim is to ensure that age determination procedures serve their intended purpose of identifying and protecting juveniles while respecting constitutional values that are foundational to India's democratic legal order.

II. STATUTORY FRAMEWORK FOR AGE DETERMINATION

A. Evolution of Legislative Provisions

The legislative treatment of age determination in juvenile justice has evolved significantly across successive enactments, reflecting changing societal attitudes toward juvenile crime and growing recognition of the importance of accurate age assessment. The Juvenile Justice Act, 1986, which preceded the current legislation, provided limited guidance on age determination procedures, generally deferring to medical opinion when documentary evidence was unavailable. This approach proved problematic as it vested excessive discretion in medical practitioners without adequate recognition of scientific limitations or procedural safeguards for juveniles.

The Juvenile Justice (Care and Protection of Children) Act, 2000 introduced more structured age determination provisions, establishing a hierarchy of evidence with documentary proof accorded primacy over medical examination. Section 49 of the 2000 Act specified that age determination should primarily rely upon matriculation certificates, birth certificates, or other documentary evidence, with medical opinion serving only as a supplementary mechanism when documents were unavailable.⁴ This legislative framework represented an important advance in recognizing the superior reliability of documentary evidence and limiting the role of potentially imprecise medical assessments.

The current JJ Act of 2015 further refined age determination procedures through Section 94, which maintains the hierarchical approach to evidence while introducing additional procedural requirements. The provision mandates that the Juvenile Justice Board or Children's Court shall conduct age determination inquiry, with the order recorded in writing and communicated to all stakeholders. The section establishes a clear evidentiary hierarchy: first, the date of birth

⁴ The Juvenile Justice (Care and Protection of Children) Act, 2000, § 49 (India).

certificate from the school attended by the juvenile or birth certificate from the relevant municipality or panchayat; second, in the absence of such certificates, the matriculation or equivalent certificate; and third, only if neither of these documents is available, the medical opinion based on ossification test or any other established medical procedure.⁵

Significantly, Section 94(2) incorporates the principle of benefit of doubt by providing that if multiple documents suggest different ages, the document indicating the higher age shall be accepted, and if the exact age cannot be determined, the court shall record a finding to that effect and proceed on the basis of the higher age. This statutory mandate reflects legislative recognition that in cases of uncertainty, constitutional values favor treating the accused as a juvenile rather than risking erroneous classification as an adult.

B. Procedural Requirements and Evidentiary Hierarchy

The JJ Act's structured approach to age determination creates a clear procedural framework that courts and administrative bodies must follow. The primacy accorded to documentary evidence, particularly birth certificates and educational records, reflects sound policy considerations. Documentary evidence generated contemporaneously with birth or during childhood years provides objectively verifiable proof of age that is not subject to the interpretive uncertainties inherent in medical examinations. Schools, municipalities, and other institutions maintaining such records have no incentive to falsify information and generally follow standardized procedures for record-keeping.

However, the practical application of this evidentiary hierarchy reveals significant challenges, particularly for juveniles from marginalized communities. Many children in India, especially those from economically disadvantaged backgrounds, rural areas, or families experiencing extreme poverty, lack formal birth registration. The Civil Registration System (CRS) in India, while improving, still fails to achieve universal coverage, with birth registration rates varying significantly across states and between urban and rural areas. Children born outside institutional settings, those from migrant families, or those whose births were not registered due to parental illiteracy or administrative barriers may reach adolescence without any documentary proof of age.

⁵ The Juvenile Justice (Care and Protection of Children) Act, 2015, § 94 (India).

Similarly, school certificates may be unavailable for children who did not attend formal educational institutions, dropped out at early ages, or whose families could not afford educational documentation. Street children, those engaged in child labor, or children from conflict-affected regions may have particularly sparse documentary trails. When such juveniles become involved with the criminal justice system, the absence of documentary evidence compels reliance upon medical examination despite the statutory preference for documents.

The question then becomes whether the evidentiary hierarchy adequately protects juvenile rights or whether it creates a two-tier system in which privileged children with documentary evidence receive stronger protections while marginalized children are subjected to potentially unreliable medical assessments. This disparity implicates constitutional principles of equal protection and raises concerns about whether procedural requirements, though facially neutral, operate to disadvantage already vulnerable populations.

III. CONSTITUTIONAL FOUNDATIONS OF JUVENILE JUSTICE

A. Article 21 and the Right to Fair Trial

Article 21 of the Constitution declares that no person shall be deprived of life or personal liberty except according to procedure established by law. The Supreme Court's transformative interpretation of this provision has expanded its scope far beyond protection against arbitrary detention to encompass a constellation of rights essential to human dignity and freedom. In *Maneka Gandhi v. Union of India*, the Court held that procedure established by law must satisfy the twin requirements of being right, just, and fair, and not be arbitrary, fanciful, or oppressive.⁶ This constitutional mandate applies with particular force to juvenile justice proceedings, where the accused are children whose limited maturity, vulnerability to coercion, and developmental needs require special procedural protections.

The right to fair trial, now firmly established as an integral component of Article 21, encompasses multiple dimensions relevant to age determination. Fair trial requires adequate opportunity to present evidence, access to legal representation, protection against self-incrimination, presumption of innocence until proven guilty, and procedures that minimize the risk of erroneous conviction. When age determination procedures fail to meet these standards, they violate fundamental constitutional guarantees regardless of their statutory authorization.

⁶ *Maneka Gandhi v. Union of India*, (1978) 1 SCC 248, ¶ 5 (India).

In the context of age assessment, Article 21 demands that procedures must be sufficiently accurate to prevent misclassification of juveniles as adults, must afford accused persons meaningful opportunity to present evidence of juvenile status, and must resolve uncertainties in favor of juvenile classification consistent with the presumption of innocence. Procedures that accord determinative weight to scientifically imprecise medical tests, that create insurmountable evidentiary burdens for marginalized juveniles, or that fail to apply benefit of doubt principles arguably violate these constitutional requirements.

The Supreme Court has recognized that children possess heightened vulnerability within the criminal justice system and therefore require enhanced procedural protections. In *Pratap Singh v. State of Jharkhand*, the Court emphasized that the JJ Act is a beneficial legislation aimed at reformation and rehabilitation rather than punishment, and its provisions must be interpreted liberally in favor of juveniles.⁷ This interpretive principle extends to age determination procedures, requiring that doubts and ambiguities be resolved in ways that maximize protection of juvenile rights rather than administrative convenience or prosecutorial interests.

B. Presumption of Innocence and Benefit of Doubt

The presumption of innocence stands as a cardinal principle of criminal jurisprudence, recognized both in international human rights law and in the constitutional framework of criminal procedure. Although not explicitly enumerated in the Constitution, the presumption of innocence flows inexorably from Article 21's guarantee of fair trial and Article 20(3)'s prohibition against compelled self-incrimination. The burden of proving guilt beyond reasonable doubt rests upon the prosecution, and any lingering uncertainty must be resolved in favor of the accused. This principle applies not merely to determinations of factual guilt but to all threshold questions that determine how an accused person will be treated within the criminal justice system.

Age determination represents precisely such a threshold question. When uncertainty exists regarding whether an accused person was above or below eighteen years at the time of an offense, that uncertainty must be resolved in favor of juvenile classification, as this interpretation accords the accused the benefit of more protective procedures and recognizes their diminished culpability. The statutory mandate in Section 94(2) of the JJ Act, requiring

⁷ *Pratap Singh v. State of Jharkhand*, (2005) 3 SCC 551 (India).

courts to accept the higher age when documents suggest different ages, codifies this constitutional principle. However, judicial practice does not always honor this mandate, particularly when courts accord excessive weight to medical opinions suggesting adult status despite acknowledged margins of error.

The benefit of doubt principle carries particular significance in age determination because the consequences of error are so severe and irreversible. A juvenile incorrectly classified as an adult loses access to reformative measures, faces adult criminal procedures and penalties, and may be incarcerated in adult facilities where they are vulnerable to violence, abuse, and criminogenic influences. Conversely, an adult incorrectly classified as a juvenile receives more lenient treatment but poses no comparable harm to societal interests, as the juvenile justice system remains capable of holding such individuals accountable while emphasizing rehabilitation. Given this asymmetry of consequences, constitutional principles favor erring on the side of juvenile classification when genuine uncertainty exists.

C. Equality and Protection Against Discrimination

Article 14 of the Constitution guarantees equality before law and equal protection of laws, prohibiting arbitrary discrimination while permitting reasonable classification based on intelligible differentia related to legitimate state objectives. The juvenile justice system itself represents a constitutionally permissible classification, treating persons below eighteen years differently from adults based on the recognition that children possess diminished culpability, greater capacity for reformation, and special vulnerability requiring protective measures. However, within the category of juveniles, age determination procedures must not create arbitrary sub-classifications that deny equal protection to particular groups.

The practical operation of age determination procedures raises equality concerns when marginalized juveniles systematically face greater difficulty establishing juvenile status than their more privileged counterparts. Children from middle-class families typically possess birth certificates, school records, and other documentary evidence that conclusively establishes age. Children from impoverished backgrounds, rural areas, or marginalized communities may lack such documentation through no fault of their own but rather due to systemic failures in birth registration, educational access, and administrative infrastructure. When such children are subjected to medical age assessment while documented children are not, and when courts uncritically accept medical opinions despite scientific limitations, the result is a de facto two-

tier system that discriminates based on socioeconomic status.

This discriminatory impact is compounded by evidence that biological maturation itself varies based on nutrition, healthcare access, and environmental conditions, all of which correlate with socioeconomic status. Children experiencing malnutrition or inadequate healthcare may exhibit delayed skeletal maturation, potentially leading ossification tests to underestimate their age. Conversely, children with adequate nutrition might show advanced skeletal development. The use of age determination methods that systematically disadvantage already marginalized populations raises serious constitutional questions about whether such procedures satisfy Article 14's equality guarantee or instead perpetuate structural discrimination under the guise of neutral scientific assessment.

IV. SCIENTIFIC AND LEGAL CRITIQUE OF OSSIFICATION TESTS

A. Medical Limitations and Margin of Error

Ossification tests, also known as bone age assessment, operate on the premise that skeletal maturity follows predictable developmental patterns that correlate with chronological age. The most common methods include radiological examination of hand and wrist bones, clavicle ossification assessment, and dental age estimation. These techniques compare the observed stage of bone development against standardized atlases or reference populations to estimate the individual's age. However, medical literature consistently acknowledges significant limitations that undermine the reliability of ossification tests for precise age determination in legal proceedings.

First, ossification tests provide estimates of biological age, which may diverge substantially from chronological age due to genetic variation, nutritional status, hormonal factors, chronic illness, and environmental influences. Studies have documented margins of error ranging from eighteen months to three years or more, meaning that an ossification test suggesting an individual is eighteen years old could equally indicate an actual chronological age anywhere from fifteen to twenty-one years.⁸ This margin of error is particularly pronounced during adolescence, precisely the age range where juvenile justice classification is most critical.

⁸ Cameriere, R., et al., "Accuracy of Three Age Estimation Methods in Children by Measurements of Developing Teeth and Carpals and Epiphyses of the Wrist and Hand," *Forensic Science International*, Vol. 237, 2014, pp. 106-116.

Second, the reference populations upon which ossification standards are based may not be representative of the diverse Indian population. Many ossification atlases were developed using data from Western populations decades ago and may not accurately reflect skeletal maturation patterns in Indian children from various ethnic, regional, and socioeconomic backgrounds. The absence of population-specific norms means that ossification tests applied to Indian juveniles may systematically overestimate or underestimate age for certain groups, introducing bias into age determination processes.

Third, ossification is not a uniform process but exhibits significant individual variation even among persons of identical chronological age. Two sixteen-year-olds may show markedly different degrees of skeletal maturation without any pathology or abnormality, simply reflecting normal biological variation. This inherent variability means that ossification tests cannot determine with certainty whether a specific individual was above or below eighteen years at a particular time, yet legal proceedings often treat medical opinions as dispositive evidence of age.

Fourth, the interpretation of radiological images involves subjective professional judgment, introducing potential for inter-observer variability and error. Different medical practitioners examining the same radiograph may reach different conclusions about skeletal maturity stage, and even the same practitioner may interpret images differently at different times. This subjectivity contrasts sharply with documentary evidence like birth certificates, which provide objective, verifiable proof of age.

B. Constitutional Implications of Scientific Uncertainty

The scientific limitations of ossification tests carry profound constitutional implications when courts accord such evidence determinative weight in age determination proceedings. Constitutional principles demand that procedures depriving individuals of liberty must be accurate, reliable, and minimize risk of error. When age determination relies upon methods acknowledged to have substantial margins of error, the risk of misclassifying juveniles as adults becomes constitutionally problematic.

The Supreme Court of India has recognized these concerns in multiple decisions. In *Jarnail Singh v. State of Haryana*, the Court emphasized that ossification tests provide only an approximate age and should be considered in conjunction with other evidence rather than as

conclusive proof.⁹ The Court noted that when medical opinion conflicts with documentary evidence or when the margin of error in medical assessment could potentially place the accused below eighteen years, courts must resolve doubt in favor of the juvenile. However, this principle is not consistently applied across all judicial forums, with some courts continuing to privilege medical opinion over other evidence or failing to adequately account for margins of error.

The use of scientifically imprecise methods to determine age becomes constitutionally problematic when combined with the severe consequences of misclassification. A juvenile incorrectly determined to be an adult loses fundamental protections guaranteed by the JJ Act, including the right to be treated in a reformatory rather than punitive framework, the right to be segregated from adult offenders, and the right to have their case handled by specialized juvenile justice institutions. These deprivations potentially violate Article 21's guarantee of fair procedure and Article 14's requirement of reasonable classification.

Moreover, the constitutional principle that procedures must be just, fair, and reasonable requires that age determination methods must be the most accurate available given current scientific knowledge, must incorporate appropriate safeguards against error, and must resolve uncertainties in favor of juveniles. Ossification tests, given their acknowledged limitations, should function as supplementary evidence when documentary proof is genuinely unavailable, not as primary determinants of juvenile status. Courts applying ossification test results without critical evaluation of margins of error, without considering alternative evidence, or without applying benefit of doubt principles when scientific uncertainty exists arguably violate constitutional standards of fairness and due process.

V. JUDICIAL INTERPRETATION AND EMERGING JURISPRUDENCE

A. Supreme Court's Approach to Age Determination

The Supreme Court of India has developed nuanced jurisprudence on age determination that generally favors juvenile protection while acknowledging practical challenges in establishing age when documentary evidence is absent. In *Arnit Das v. State of Bihar*, the Court articulated fundamental principles that should govern age determination proceedings.¹⁰ The Court held that once a claim of juvenility is raised, the burden lies on the prosecution to prove beyond

⁹ *Jarnail Singh v. State of Haryana*, (2013) 7 SCC 263 (India).

¹⁰ *Arnit Das v. State of Bihar*, (2000) 5 SCC 488 (India).

reasonable doubt that the accused was not a juvenile at the time of commission of the offense. This allocation of burden reflects the constitutional presumption of innocence and recognizes that juvenility is a beneficial status that should be presumed rather than required to be established by the accused.

The Court further emphasized that the JJ Act's provisions must be interpreted liberally in favor of juveniles and that any reasonable doubt regarding age must be resolved in favor of juvenile classification. This principle extends beyond cases where evidence is evenly balanced to encompass situations where medical evidence suggests adult status but scientific limitations create inherent uncertainty. The Court recognized that ossification tests provide approximate rather than definitive age assessments and therefore cannot form the sole basis for denying juvenile status when margins of error could place the accused below eighteen years.

In *Hari Ram v. State of Rajasthan*, the Supreme Court addressed the evidentiary hierarchy established by the JJ Act and clarified that documentary evidence must be given primacy over medical opinion.¹¹ The Court held that when school certificates or other reliable documents indicate juvenile status, medical examination results suggesting adult status cannot override such documentary proof. This principle protects juveniles who possess documentary evidence from being subjected to potentially unreliable medical assessments, though it provides less guidance for cases where no documentary evidence exists.

The Court has also recognized that age determination is not merely a factual question but implicates fundamental rights requiring procedural safeguards. In *Dharambir v. State (NCT of Delhi)*, the Court emphasized that age determination proceedings must afford the accused adequate opportunity to present evidence, must provide reasons for findings, and must be subject to appellate review.¹² These procedural requirements flow from Article 21's guarantee of fair trial and ensure that age determination does not become a perfunctory exercise rubber-stamping prosecutorial preferences.

However, Supreme Court jurisprudence also reveals tensions and inconsistencies. Some decisions have upheld reliance on medical evidence despite its limitations, particularly in cases involving heinous offenses where public sentiment favors treating older juveniles as adults.

¹¹ *Hari Ram v. State of Rajasthan*, (2009) 13 SCC 211 (India).

¹² *Dharambir v. State (NCT of Delhi)*, (2010) 5 SCC 344 (India).

The interpretation of what constitutes “reasonable doubt” warranting juvenile classification varies across cases, with some judgments applying rigorous scrutiny to age determination procedures while others defer to trial court findings without adequate examination of underlying evidentiary bases.

B. High Court Decisions and Divergent Approaches

High Courts across India have adopted varying approaches to age determination, reflecting different emphases on documentary evidence, medical opinion, and benefit of doubt principles. Several High Courts have issued progressive decisions emphasizing juvenile rights and constitutional protections. The Delhi High Court has repeatedly held that ossification tests cannot be considered conclusive proof of age and that margins of error must be factored into age determination, with uncertainties resolved in favor of juveniles. Similarly, the Kerala High Court has emphasized that when ossification test results could potentially place an accused below eighteen years when margins of error are considered, juvenile status must be recognized. Other High Courts have been less protective of juvenile rights, according substantial weight to medical opinions despite scientific limitations. Some decisions have treated ossification tests as definitive evidence of age, rejecting juvenile claims based solely on medical reports without adequate consideration of margins of error or alternative evidence. These divergent approaches create uncertainty in age determination law and potentially result in different outcomes for similarly situated juveniles depending on the jurisdiction where their cases are adjudicated.

The practical impact of these jurisprudential variations is significant. Juveniles in states with High Courts that rigorously apply benefit of doubt principles and critically evaluate medical evidence receive stronger protections than juveniles in jurisdictions where courts uncritically accept ossification test results. This geographic disparity in constitutional protections raises concerns about equal treatment under law and suggests the need for clearer, more uniform standards governing age determination across the country.

VI. RECONCILING CONSTITUTIONAL VALUES WITH PRACTICAL REALITIES

A. Proposed Framework for Constitutional Age Determination

Reconciling constitutional imperatives with the practical necessities of age determination requires a comprehensive framework that prioritizes juvenile rights while acknowledging

legitimate institutional needs for accurate age assessment. Such a framework must begin with unwavering commitment to the principle that uncertainties in age determination must be resolved in favor of juvenile classification, as this approach aligns with constitutional presumptions of innocence and the recognition that juveniles deserve special protection.

First, documentary evidence must remain the primary and preferred method of age determination, with all efforts exhausted to locate birth certificates, school records, or other contemporaneous documentation before resorting to medical examination. Courts and juvenile justice boards should be empowered and resourced to conduct thorough documentary searches, including accessing records from multiple educational institutions, municipalities, hospitals, and other potential sources of birth-related documentation. The burden of establishing that documentary evidence is genuinely unavailable rather than merely inconvenient to obtain should rest with parties opposing juvenile classification.

Second, when medical examination becomes necessary due to genuine absence of documentary evidence, courts must recognize and account for the inherent limitations and margins of error in ossification tests. Medical reports should be required to explicitly state margins of error, acknowledge scientific limitations, and refrain from conclusive determinations that an individual is definitively above or below eighteen years. When the margin of error in a medical assessment could potentially place an accused below eighteen years, juvenile status must be recognized as a matter of constitutional necessity rather than judicial discretion.

Third, the benefit of doubt principle must be applied rigorously and consistently. This requires that courts reject the notion that medical evidence suggesting adult status by a few months can overcome claims of juvenility when scientific uncertainty exists. Instead, courts should adopt a presumptive approach: unless evidence establishes beyond reasonable doubt that an accused was above eighteen years at the time of offense, juvenile status should be recognized. This standard aligns with criminal law's general requirement of proof beyond reasonable doubt and ensures that age determination procedures do not create a lower evidentiary threshold that disadvantages juveniles.

Fourth, procedural safeguards must be strengthened to ensure fairness in age determination proceedings. Accused persons claiming juvenile status should have access to legal representation throughout age determination processes, with appointed counsel provided for

those unable to afford private attorneys. Age determination orders must include detailed reasoning explaining the basis for findings, particularly when medical evidence is accorded weight despite its limitations. Appellate courts should apply de novo review to age determination findings rather than deferential standards, given the fundamental rights implications of such determinations.

B. Legislative and Policy Reforms

Implementing a constitutional framework for age determination requires legislative amendments to the JJ Act and complementary policy reforms at institutional levels. The Act should be amended to explicitly codify principles that courts have recognized but that are not always consistently applied. Specifically, legislation should mandate that margins of error in medical age assessments must be disclosed and factored into age determination findings, that medical evidence alone cannot support a finding of adult status when its margin of error encompasses ages below eighteen years, and that appellate review of age determination is available as of right rather than discretionary.

Policy reforms should address the root causes of documentary evidence unavailability by strengthening birth registration systems, ensuring universal coverage, and creating retroactive mechanisms for late registration without onerous requirements. Educational institutions should be encouraged to maintain comprehensive records and to preserve such records for extended periods, recognizing their potential significance in future legal proceedings. Government agencies should establish centralized databases that facilitate documentary searches across multiple jurisdictions and institutions.

Training programs for judges, juvenile justice board members, and other stakeholders should emphasize the constitutional dimensions of age determination, the scientific limitations of medical evidence, and the imperative of applying benefit of doubt principles consistently. Medical professionals conducting age assessments should receive specialized training in forensic age estimation, including ethical obligations to acknowledge uncertainty and avoid overclaiming the precision of their conclusions.

VII. CONCLUSION

The constitutional validity of age determination procedures under the Juvenile Justice Act hinges upon whether such procedures adequately protect fundamental rights while serving legitimate institutional interests in accurate classification. This analysis demonstrates that current practices often fall short of constitutional requirements, particularly when ossification tests are accorded excessive evidentiary weight despite acknowledged scientific limitations, when benefit of doubt principles are inconsistently applied, and when procedural safeguards prove inadequate to protect juvenile rights.

Article 21's guarantee of fair procedure demands that age determination methods must be accurate, must incorporate appropriate safeguards against error, and must resolve uncertainties in favor of juveniles. The presumption of innocence requires that burden of proof rests upon those asserting adult status rather than upon juveniles claiming protective classification. Equality principles mandate that age determination procedures must not systematically disadvantage marginalized juveniles who lack documentary evidence through no fault of their own.

Achieving constitutional compliance requires a paradigmatic shift in age determination practices: prioritizing documentary evidence, critically evaluating medical evidence with full recognition of its limitations, rigorously applying benefit of doubt principles, and strengthening procedural protections. Only through such reforms can India's juvenile justice system honor its constitutional commitments while ensuring that age determination serves its intended purpose of identifying and protecting children who deserve reformation rather than punishment.

The ultimate measure of a juvenile justice system lies not in its severity toward young offenders but in its fidelity to constitutional values of fairness, dignity, and protection of vulnerable populations. Age determination procedures that fail to meet these standards undermine not only individual rights but the constitutional foundations upon which India's democratic legal order rests. Reform is not merely desirable but constitutionally imperative.