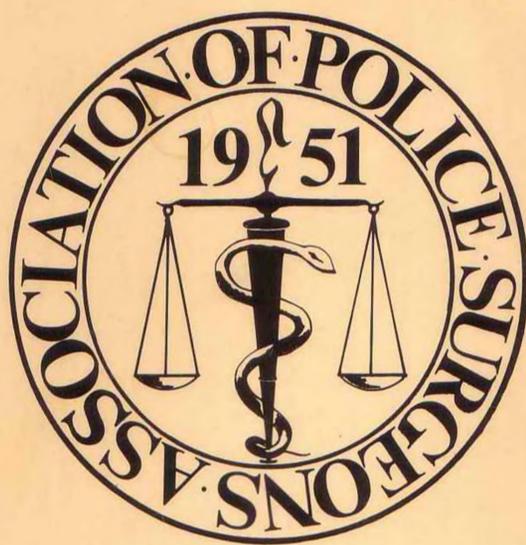


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# Age estimation in the living

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## Introduction

The forensic clinician in the British Isles is rarely asked to decide objectively on the age of a living person. The ubiquitous availability of well-documented and authenticated birth certificates enables the exact chronological age of a person, to be defined accurately and indubitably in all situations in which it may be required. In contrast in the Indian subcontinent, a so-called *Age Estimation Report* is frequently required in medicolegal cases.

## The 'young' offender

To substantiate a charge on the accused, the prosecuting authority has to prove that at the time of the commission of the offence the accused person was above or below a certain age. For instance according to Section 82 of the Indian Penal Code (I.P.C.) a child below the age of 7 years is statutorily incapable of committing any crime. According to Section 83 of the same code, the guilt of a child between the ages of 7-12 years will be decided upon by the examining magistrate or judge. Therefore before there is a case to answer, the prosecution (i.e. the police) would have to prove that the child is above 7 years of age and possibly above 12 years as well.

Juvenile offenders aged 16 years or thereabouts are also frequently examined clinically. In India the jails reserved for children are reasonably comfortable with some facilities for recreation and education, meals which are quite varied and nourishing. On the contrary, the prevailing conditions in the jails for adult prisoners are quite harsh and miserable, with poor meals and no recreational and other facilities. To deliver the full impact of the deterrent effect of a custodial sentence on young lawbreakers, the police will try to lodge children around the age of 16 years who have no direct proof of their age, into adult jails. Some of these children may later on move an application through the courts that they are in fact below the age of 16 years. If this appeal succeeds, they must be removed from the adult prison and be confined in a children's jail. The court refers such children to a medicolegal expert.

## Sexual crimes

In other cases it is the onus of the prosecution to prove that the chronological age of a particular individual is below a certain age. In alleged cases of rape for instance, when the sexual intercourse appears to have been performed with the female's full and uncoerced consent, the prosecution, in order to substantiate the charge of rape, has to prove that the female was below 16 years of age at the time that the offence was committed as in accordance with Section 375 of I.P.C. a female below the age of 16 years is deemed to be legally incapable of giving consent for sexual intercourse and any such 'assumed' consent, is invalid.

Another instance, in which such medicolegal expertise is sought, relates to the situation when a boy and a girl have eloped from their house and have started living as husband and wife away from either of their families. It is

frequently found that in such instances the girl concerned is below the age of 16 years, or even below 15 years. According to the Hindu Marriage Act (1955), a boy below the age of 21 years and a girl below the age of 18 years may not marry legally. But if they have managed to elope and leave their families, and have established a marital relationship, then their marriage may not be dissolved. A fine of 1000 Rupees (equivalent to about £33 i.e. a month's salary) will be levied from them by the Courts. After paying this penalty, the marriage then becomes legally recognized. This law has been so devised, because marriage is considered as a very hallowed institution in India, and a girl who has already consummated her 'marriage' to someone, albeit illegally, is not expected to renounce her 'husband' and to break up this well-established relationship.

In accordance with Section 375 of I.P.C. any act of sexual intercourse, with or without the consent of the female, is considered to be statutory rape if the age of the female is below 16 years. But if the female were to be one's own 'wife', then the prescribed age is 15 years. In other words a person can be found guilty of raping one's own wife i.e. even with her consent, if she were below 15 years of age at the time, unless the marriage has been legalised according to the manner considered above. In cases such as these, it is up to the medical expert to determine whether the female is above or below 15 or 16 years. Obviously the couple have set up home as a married couple and have also honoured the fine due for infringement. In that case if the female is above the age of 15 years the acts of sexual intercourse which have been committed as part of the consummation of such a relationship are not acts of rape but if the female is below 15 years of age they can be technically considered as such.

An interesting theoretical variation may arise if the fiscal penalty is not paid. In such cases the marriage may not be recognized and the age in question would then increase to 16 years. Naturally the prosecution authority (the police) expects a very accurate report from the doctor in such cases.

According to Section 361 of I.P.C. a further charge of kidnapping would be levied on the involved male if the girl were to be below 18 years of age. The taking away a girl below the age of 18 years from the lawful guardianship of her parents is considered to be kidnapping and a serious crime punishable by a custodial sentence.

Another frequent case is that of a couple who decide to marry according to the traditional Hindu system—by taking seven steps together before the Sacred Fire in the presence of a Hindu priest. If they choose to marry by this method, no one would probably ask them to prove their ages in an official way, but if they also want to have their marriage registered legally in a court of law, they would then be definitely asked to tender proof of their ages. This problem also falls within the remit of the medicolegal expert. Indeed several couples pre-empt this by contacting a medicolegal practitioner in the first instance prior to

arranging their wedding so as to ensure that matters progress in accordance with court registration procedures.

### **Retirement from the Civil Service**

At the other end of the age spectrum, certain other interesting cases also need to be dealt with clinically. The legally prescribed age for retirement in India is 58 years. There are however several civil servants who have been appointed to government departments without tendering sufficient proof of their age on joining the service. When they were inducted into the civil service, they merely substantiate their ages by such tenuous documents as horoscopes compiled by priests and astrologers as no person below the age of 25 years can join the civil service in India. When it comes to the retirement age, civil servants who require to stay longer in employment to enable their family to continue to subsist on a regular income, will challenge their own horoscopes, stating that they had been compiled by an incompetent priest. Frequently they claim to be 5 to 10 years younger than what the original records actually state. Such cases are also referred to a medicolegal expert.

### **The medical examiners**

Such examinations are usually carried out by a medically qualified practitioner in a Department of Forensic Medicine. In places where there is no medical school or college, such examinations may be carried out by a General Duty Medical Officer (colloquially known as G.D.M.O.s) as the law does not prescribe any age, experience or qualification for doctors which enables them to conduct such examinations. As far as the law is concerned the examining doctor must merely hold a medical degree.

At various centres, the heads of Departments of Forensic Medicine have laid down their own intra-departmental instructions as to who would be asked to conduct such examinations. For instance at the Maulana Azad Medical College in New Delhi only a doctor, holding an appointment of an Assistant Professor and above, is allowed to carry out such examinations. This is to maintain a reasonably high and consistent standard in such age reports. In other places, even quite junior residents may conduct such examinations.

An Assistant Professor would have been through a minimal period of 6 years practice and experience in Forensic Medicine. After obtaining the basic medical degree, one has to complete a 3 year course leading to an M.D. in Forensic Medicine to become a medicolegal expert. This period is known as the Junior Residency. After the M.D. is acquired, one has to work for another 3 years as a Senior Resident in a Department of Forensic Medicine before he would be eligible to apply for the post of Assistant Professor of Forensic Medicine. So at least theoretically, an Assistant Professor would have a minimum of 6 years' experience in Forensic Medicine, although practically and almost invariably, he would have spent about 7 to 8 years in Forensic Medicine, as the posts of Assistant Professor are not very abundant and one frequently finds that he has to continue in Forensic Medicine as a 'pool officer', (as he is not allowed to retain the post as a Senior Resident) for another year or two before he may find a suitable post of Assistant Professor.

### **The examination**

These reports indicating the chronological age of the person examined go to the investigating authority (the

Police) who then attach the report in their 'challagn'. The challagn is a collection of all relevant papers proving the guilt of an accused and these papers have to be submitted in a court of law before proceedings of a case can begin in that court.

While the doctor is examining the accused, the police personnel accompanying the accused frequently wait outside the doctor's examining room. If the accused is considered to be a dangerous and violent criminal, the accompanying law officers are permitted to remain in the examination room, but invariably any chains or handcuffs are removed before the examination commences. In all cases—even during the examination of dangerous criminals—the police personnel are not allowed in during history taking. This is done to ensure that the examinee does not conceal any material facts from the medical examiner for fear of the police. No attacks on doctors by criminals have been reported, even when the police have been asked to wait outside. By and large criminals—even terrorists—still continue to have a certain respect for the medical profession and its impartiality.

### **Consent to examination**

Any patient above 12 years of age, is legally entitled to consent to his own examination. Below this age the consent has to be given by the parents or by the persons in *loco parentis*. If there is dispute in the age group, the parents are always contacted.

In this connection several interesting cases were encountered. In almost all cases of young couples eloping away from their homes, the female will refuse to give consent for her medical examination often because she knows that she is below 15 years of age and that her husband/lover would be accused of rape if her age were to be proved conclusively. In such cases if the female has not been arrested and in police custody, the doctor cannot legally examine her, even with parental consent. According to Section 53 of Criminal Procedure Code of India, a doctor may use 'reasonable force' to examine an arrested individual.

In such cases the doctor may ask the police to formally arrest the girl and can then be in a legal position enabling him to proceed to examine the girl without her consent. Often the police find themselves unable to effect such an arrest as no charge can be proffered against that person. Such cases are usually resolved by the arrival of the girl's parents on the scene who exert their influence on the girl to submit to such examination. If the girl refuses even under those circumstances then the police would have to request the court to compel such an examination if they are not in a position to arrest her.

### **Identification of the examinee**

The patients are formally identified to the doctor by the police personnel bringing in the patient. The names of the police officers are entered on the official forms as the names of persons identifying the patient. In addition two personal identification marks (such as moles, naevi, scars, tattoos) are noted on the examinee and also entered into the 'Age Report Form'. A photograph of the patient is glued to the top right hand corner of the form which is attested to by the doctor with the words 'True likeness of Mr./Mrs./Miss . . .' and initialling on the bottom of the photograph.

On all X-ray forms requesting radiographs, a similar photograph is pasted and information is included about all

the identification marks selected. The radiologist should personally check these identification marks, match the photograph with the person, and only then carry out the X-rays requested. Such an elaborate system has been evolved because there have been cases of fraudulent impersonation at the original medical examination, and also of persons being switched around on their way to the radiologist. Indeed in cases where there is dubiety or deviation from this procedure the radiologist returns the patient to the examining doctor if this procedure had not been followed to the letter.

The full format of the examination is self evident from the age report form (a copy of which is attached). It consists of three parts, the 'preliminaries', the main body of the report and the opinion. The preliminaries include information regarding the patient, details about the referral, the medical history, consent and two marks of identification. Main body of the report is further divided in four parts—the general physical examination, systematic examination, dental examination and radiological examination. The opinion at the end of the report is based on the findings on all these. The report is then signed by the examining doctor and dated.

The reports from the radiologists may take a couple of days to be returned and the final report is withheld till that time.

### Investigations

About the only special investigations that are carried out are radiographs of various joints. As a matter of principle it has been decided to X-ray right-sided joints, though there is no good scientific reason why left-sided X-rays should not serve equally well. On the basis of research carried out as part of M.D. theses specific data have been collated for about 25–30 bony centres of ossification.

As a rough guide this formula is followed:

<i>Age suspected</i>	<i>Radiograph Requested</i>
(i) 16 years	Elbow
(ii) 17 years	Hip and ankle
(iii) 18 years	Shoulder and knee
(iv) 19 years	Wrist

On average the joint(s) mentioned against the respective ages should be completely ossified by that age. If the joint is not completely ossified, then it is considered to be highly probable that the person is below that age.

It is not usual to opine that the person is of a very specific age, but to give a range of one year. Therefore, instead of saying that the person is fifteen and a half years of age it is stated that the person is between fifteen and sixteen years i.e. definitely below sixteen and probably above fifteen years.

### Dental studies

The other major investigation carried out is a full odontological assessment. This is also carried out by the Forensic medical practitioner. On occasions this is supplemented by X-rays of jaws to evaluate non-eruption of molars and calcification of roots. The consensus of radiologists and medicolegal experts is that an X-ray of the jaw when it is partially opened and tilted at 30 degrees to the right gives a standard view of all four arches. It is generally difficult to recognize individual teeth and more often the roots are examined irrespective of which arch they belong to. It has been suggested that in the North

Indian population, right sided teeth erupt earlier and their roots calcify earlier.

The radiologists insist that not more than five X-rays are requested in any single patient as a matter of routine. These usually suffice for the medicolegal purposes for which they are requested.

### The middle aged

Some doctors have advised the necessity for radiographs of the femur and humerus using very specific voltage and amperage so as to identify the trabecular pattern of the head and neck of the long bones in the middle aged. The trabecular pattern changes after the age of fifty. These X-rays are however rather hard to interpret.

In a few cases I have personally asked for radiographs of thyroid cartilage to estimate its calcification. If most of thyroid cartilage is calcified, then probably one can safely say that the person is above 58 years of age.

These reports carry a great deal of weight in the courts and are greatly respected and esteemed by the legal profession. They are usually admitted as written expert evidence and are rarely challenged by the defence.

### Discussion

When registered and documented certificates of birth are unobtainable in Third World countries, the judiciary and the legal profession often call on medical practitioners to pronounce on the age of the accused and their victims. The scope for such a practice is the better administration of justice and a facilitation of the decision-making processes of proving guilt and meting out appropriate sentences. In this context doctors are requested to provide a certificate declaring in an 'expert' manner the chronological age of a particular victim (complainer) or accused (plaintiff). The medical profession, by and large has traditionally delegated this task to the forensic physician. In return for taking on this onerous task, the Courts have endowed the forensic clinicians with a mantle of respectability and attributed to them near infallibility in the compilation of such reports which formally declare the age of a particular person. Indeed this 'expert' evidence is rarely challenged, or contested in court with a second opinion from another doctor. The degree of acceptance of such uncorroborated decisions is perhaps unique in medico-legal circles.

The forensic practitioner has to come to his conclusion about age after an interview with the examinee, a general physical examination including an inspection of the teeth, and the examination of radiographs of a few major joints assessing fusion of ossification centres. The obvious assumption made by the courts is that the relevant information is collected accurately and conscientiously, and that comparisons are then made with predetermined standards which are sufficiently specific, accurate and immutable as to allow little scope for divergence of opinion and diverse interpretation of the findings. For the latter premise to be correct, the data from which the standards have been compiled originally need to be able to stand up to statistical and other scientific scrutiny. They must have been collected critically, and from a sufficiently large and representative 'normal' population of the appropriate ethnic background. Any inherent degree of variability that exists should be sufficiently minimal to allow for definite decisions to be taken confidently and with very small possible margins of error. Only then will the forensic 'expert' be able to stand by them in a court of

law to the extent that his reputation is at stake on each and every occasion that such a clinical judgement is made by him.

In this respect it appears to have been assumed that socio-economic changes and upheavals have had no material bearing on these discriminatory criteria, otherwise it would be mandatory to alter these parameters every few years to take such aspects and others into account. Changes in the age of onset of puberty, changes in life style with urbanization, industrialization and improved housing, decreased family size, and improved nutrition and increasing consumption of refined foods may all have a substantial impact on the criteria collected some years previously. If such demographical and social factors can be demonstrated to affect to any significant degree the parameters on which such age assessment is based, this would then shake the very foundations on which this system of age estimation is based.

Just as it is the task of the Departments of Forensic Medicine to deliver the evidence on which such Solomonic judgements are pronounced, should it not also be their task, in the interest of fair play and justice, to ensure that the data base for such age assessments are scrutinized closely on a regular and recurring basis?

## Maulana Azad Medical College: New Delhi

### Department of Forensic Medicine

#### Age estimation report

No. FM/ ..... Conducted by .....  
 Date ..... Time .....  
 Name ..... S/O .....  
 ..... R/O .....  
 .....  
 Age (as told by patient) ..... Sex .....  
 Brought by .....  
 Referred by .....  
 Alleged history of .....  
 .....  
 .....

#### Consent:

- I ..... S/O, D/O, W/O .....  
 R/O .....

give freely my consent for a complete medical examination and other relevant investigations for the purpose of making an age report. The nature and consequences of such an examination have been explained to me by Dr ..... in token thereof I subscribe my signature/thumb impression herewith.

.....  
 (Signature of witness)

.....  
 (Signature/thumb impression)

#### Marks of Identification:

- 1.
- 2.

#### (I) General Physical Examination:

Built-Good/Average/Poor; Height ..... Cms:  
 Weight ..... Kgm:  
 Conscious/Unconscious: Pulse .....  
 B.P. .... mm of Hg:  
 Axillary Hair .....  
 Pubic hair .....  
 Beard .....  
 Breast Development .....  
 Chest measurement-Expanded ..... Cms:  
 Chest measurement Unexpanded ..... Cms:  
 Genital development .....

#### (II) Systematic Examination:

Respiratory System  
 Cardio-Vascular System  
 G.I. Tract  
 Central Nervous System

#### (III) Dental Examination:

Oro-dental hygiene .....  
 Dental formula:  
 .....

S—space behind 2nd molar; O—indicates tooth erupted and fallen;  
 X—indicates tooth not erupted or space not present.

Referred for radiological examination on (date) .....

#### (IV) Radiological Examination findings:

Received ..... X-ray plates-nos .....  
 Findings .....

#### OPINION:

In my opinion based on physical, dental and radiological findings, when taken together, the age of the person examined is between ..... and ..... years.

(Signature of M.O.)