

## BOOK REVIEWS

Chapter 5 is valuable and important since it reveals the principles of treatment. The author has stated with clarity the principle of appropriateness level of activity relating to the present developmental level of the child for a particular function and not to the chronological age factor as a major consideration.

Incorporating the child's own activity is another principle which creates intervention in a natural tone, more normal so coordination becomes possible and the child gets motivated. Thus sensory experience is provided in a normal day-today situation, e.g. play as an important principle for treatment is well-specified.

Treatment principles for children with severe spasticity, moderate spasticity, choreoathetosis, dystonic athetosis, ataxia, hypotonia and mixed CP are provided with specified treatment procedures for each condition. The author has reminded the user that no two CP children can be alike even if they are ataxic, diplegic, etc. So the treatment procedures have to be custom-designed but cannot deviate from fundamental principles.

Chapter 6 on family-therapist partnership is highly relevant to societies in India and other developing countries. The points to consider in building this partnership from the important framework of this chapter. The author's view on family co-operation, involvement and willingness to get empowered plays a major role in the success of the rehabilitation for the child with CP. Mere professional inputs will not be adequate in achieving the goals. Multiple roles of a therapist in centres in developing countries as a medical social worker, teacher, trainer and a therapist are inevitable. The therapist's versatility contributes to the success of the programme in partnership with the families. The challenges of delivering the expertise to persons with CP has been the centre of discussion in this chapter and includes introduction to various models practised in the community, with a special mention to balance models by WHO, and the author also provides guideline techniques in building a rapport, connectivity and collaboration with the families. The main point to be noted in this chapter is to consider the parent as the main stakeholder and never to underestimate the parent's wisdom and wanting to be participatory in the approach to rehabilitation. Home interventions are well illustrated.

Chapter 7 on equipment is complete with illustrations and instructions on the

use of the equipment. The selection guide for the equipment both for the centre-based as well as home-based rehabilitation is a rich resource reference and guide. The clear-cut illustrations make it easy to design and put them together, making them functional for various locations. Major attention is given to the cost-factor; the raw materials chosen are easily available even in a small-town shopping centre. In conclusion, one must admit the information is practically oriented for countries like India, whose numbers with disabilities are large and resources to meet the needs modest.

The author's contribution to rehabilitation intervention processes has several highlights and one of the major contribution is the chapter on sensory integration. It is among the well-written texts, comprehensive, precise and provides a functional format in its content. From the definition of what is sensory integration to use of sensory integrative techniques for hyposensitivity on the one hand to hypersensitivity on the other are well described and recorded. Highlights in the chapter are activity ideas to improve vestibular, proprioceptive and tactile processing problems. Sensory processing problems specific to athetoid CP/spasticity are well focussed and are sure to provide guidance to therapists. Some of the causes are also documented. Tables on specific observations to assess sensory integration problems can be enough reason to access the manual. Principles of treatment and case studies provide a wealth of knowledge to anyone who would like to use sensory integration as a vital part of therapy for children with CP. Overall, this chapter is a well-referenced compilation of information.

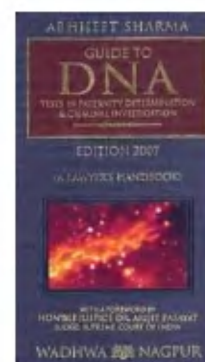
The last chapter on assessment and management of eating and drinking difficulties is a much needed aspect of the holistic approach to rehabilitation, dealing with nutrition and oral hygiene along with understanding of the problems of drinking and eating in children with CP. The author has well integrated the developmental stages and phases in normal children and the specific problems encountered by children with CP in the very areas, so relevant to physical well-being and emotional satisfaction. Assessment guidelines lay useful foundation for planning management strategies. How to manage the problems of eating, drinking and swallowing in CP children has been well explained with illustrations, helpful

to practical training in this particular area while dealing with training and demonstration with parents becomes purposeful and encouraging. A well-compiled text with usable tables and communicative visual graphics, and references of value are noteworthy features of this book.

The appendices and glossary add value to the manual. Every institution dealing with problems of CP and neurological impairment would gain by having a copy of this manual on their library shelves. Therapists should have a copy in their 'tool box', as a ready reference.

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**Guide to DNA Test in Paternity Determination and Criminal Investigation (A Lawyers Handbook).** Abhijeet Sharma. Wadhwa and Company, Nagpur. 2007. 1141 pp. Price: Rs 1495.

Many of the monumental discoveries in the world have been accidental and development of DNA fingerprinting technology in 1985 is no exception. When a British professor Alec John Jeffreys, working on the human myoglobin gene, noticed that a genome-derived probe from the intronic sequences uncovers multilocus polymorphic band profile, he lost no time to realize that he had hit the jackpot of the millennium in the treasure trove of biology. He refined the technique that was eventually used to nail down many criminals and exonerate the innocent ones. DNA fingerprint, also known as DNA profiling or genome individualization, has found applications in

several areas of biology, medicine and forensic science.

It is just a chance that during the development the DNA fingerprinting technology in 1985, another powerful technique for continuous duplication of DNA molecules outside the cell system was born. Known as polymerase chain reaction (PCR), this has now emerged in many avatars. PCR has made DNA fingerprinting even more robust and flexible by allowing a highly variable region of the genome to be amplified followed by its direct sequencing, leaving no room for error. Thus, the initial version of DNA fingerprinting based on the generation of multilocus polymorphic bands has been complemented by the short tandem repeats (STRs), also referred to as 'variable number tandem repeat' (VNTR) loci. A set of 18 STRs are available for DNA profiling of humans, accepted globally by all the law enforcement agencies. The power of each set of STRs is rather staggering. Combining all of them together in a multiplex reaction, the likelihood of two unrelated individuals having similar band profiles is negligible. The success of such a marker system is related to the uniqueness of the band profiles uncovered by these highly polymorphic STRs. Thus, even if one or more sets of STRs uncover some additional band(s) owing to sporadic mutation(s) in a sample, the unlikelihood of the similarity of the band profile would still remain high, conforming safely to the concept of genome individualization.

Forensic application of DNA fingerprinting takes into consideration the fact that 'let no single innocent be punished even though 99.9% guilty may get exonerated'. Thus, the technology has to be employed and implemented with all possible cautions to meet the high expectations of the society in general and judiciary in particular.

In India, DNA fingerprinting has gained momentum. Nonetheless, its desired impact on the criminal justice system has remained largely unrealized. This was partly because of the lack of inadequate manpower, logistic constraints, non-availability of sufficient number of state-of-the-art laboratories and much desired regulatory guidelines. Accordingly then, not a single comprehensive book was available to enlighten members of the judiciary, help the legal fraternity, assist the law enforcement agents, guide the scientists engaged in forensic DNA

fingerprinting and help prosecutors interpret the test result. Fortunately, this scenario has changed now with this book under review, authored by a practicing lawyer. The book contains nine chapters followed by a comprehensive table of cases encompassing a total of 1141 pages. The layout is more like a hook on judiciary, but the pages inside do complete justice to both legal as well as biological issues.

It has been a highly enriching experience for a pure molecular biologist like me to go through this monumental work and in the process learn several aspects of criminal laws. The easy to comprehend text coupled with appropriate examples make the book truly 'unputdownable'. The subject matter 'DNA', was introduced in the most dramatic manner, ensuring that it remains comprehensible both for experts as well as novices. The discovery of DNA fingerprinting by Alec John Jeffreys in 1985, followed by its successful use in cases of rape and murder in Leicester and then in other parts of the world, find systematic descriptions. The basis of the generation of multilocus polymorphic bands starting from the isolation of genomic DNA from a variety of un(certain) forensic sources to its quantitation, agarose gel electrophoresis, transfer of the same onto the nylon membrane followed by its hybridization with radiolabel DNA probe encompassing its working principle have all been well presented. Often, I was under the impression that the book has been authored by a successful molecular biologist and not by an advocate. This book also provides in-depth historical perspectives on the laws of inheritance, structure of double-helix DNA, genes, concepts of alleles and multiallelism. Subsequent chapters deal with more advanced technical aspects of DNA fingerprinting.

The chapters have been divided equally systematically, dealing first with thought-provoking questions as to what a lawyer must know about the science of DNA testing, to its other aspects in subsequent chapters such as admissibility of DNA test, statistical calculation, DNA testing constitutional concern, DNA test in paternity disputes, post-conviction DNA testing and time for statutory response to advancement in DNA technology. In addition, appendices, glossary and table of cases have been added to enhance the academic brilliance of the book. In chapter 2, one of the most fascinating parts

that I found was the systematic enacting of a 'court scene', where a scientist is cross-examined in the court of law to ensure that all the loop-holes are sealed. The text gives a feel that one is present within the premises of the court, witnessing the entire proceedings. Successful creation of a virtual court scenario by the author helps understand the working of the judicial system.

The author has been highly successful in introducing the concept of DNA fingerprinting to non-scientists, members of the legal fraternity as well as the law enforcement agents. He has been equally successful to appraise laymen with a substantial quantum of criminal laws in a simple and lucid manner. I was delighted to see that the text was free from scientific inaccuracies. On the contrary, several biological aspects were covered in a simple descriptive manner, proving to be a blessing for many biologists and researchers. The author's innate quality to retain the attention of readers of any background is his true grit.

While going through the book, I found some avoidable omissions that I am sure would be removed in the forthcoming edition.

The symbol for micro litre ( $\mu$ l) should have been used in the text instead of (.). The word 'Critique' should be replaced by 'criticize' (p. 61, line 10). Likewise, the statement 'DNA structure does not change in the life time of a person' (p. 63, answer to the last question), is not true. On an average, a person passes on 30 new mutations to the next generation. Besides, environmental factors tend to enhance the rate of mutation. DNA fingerprinting technology does take these aspects into consideration. Similarly, a chapter is devoted to deal with the human genome project and this seems to be out of context.

Barring these omissions, on the whole I found this hook well conceived and well presented. This is the first book of its kind which would be useful to lawyers, legal experts, researchers, students, science teachers, biologists and biotechnologists as a rich and reliable source of reference material, all in one volume.

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