

1983

1982-1984.

From a [retrospective study](#) of 412 [thoracolumbar injury](#), [Francis Denis](#) introduced the concept of [middle column](#) or middle osteoligamentous complex between the traditionally recognized posterior [ligamentous complex](#) and the [anterior longitudinal ligament](#) ¹⁾.

[Percutaneous balloon compression trigeminal rhizotomy](#), has been used to treat [trigeminal neuralgia](#) since 1983.

In 1983, as crystal-based neodymium-doped yttrium aluminum garnet Nd:YAG laser was introduced for tissue ablation, and some studies followed of laser ablation for [brain tumors](#) ^{2) 3) 4) 5)}.

The [polymerase chain reaction \(PCR\)](#) is a technology in molecular biology used to amplify a single copy or a few copies of a piece of [DNA](#) across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence.

Developed in 1983 by Kary Mullis, PCR is now a common and often indispensable technique used in medical and biological research labs for a variety of applications.

These include DNA cloning for sequencing, DNA-based phylogeny, or functional analysis of [genes](#); the diagnosis of hereditary diseases; the identification of genetic fingerprints (used in forensic sciences and DNA paternity testing); and the detection and diagnosis of infectious diseases. In 1993, Mullis was awarded the Nobel Prize in Chemistry along with Michael Smith for his work on PCR.

Introduced in 1983, [Cotrel Dubousset Instrumentation](#) is a treatment approach to [scoliosis](#). Unlike [Harrington rods](#), this treatment is more than just an osteodistrraction mechanism and allows correction of some of the features of scoliosis untreatable by Harrington rods, such as rib hump.

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