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Science Briefs

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Cherub gene found

Researchers from the Harvard School of Dental Medicine and The Forsyth Institute joint Department of Oral Biology in Boston have discovered a genetic mutation that causes cherubism.

The disease, as the name might suggest, can cause children to develop chubby cheeks and upward-looking eyes like those of cherubs depicted in Baroque or Renaissance artwork. While the exact details of what goes on in cherubism are still under study, the disease seems to involve errors in the critical phases of bone degradation and restructuring as children grow. The finding is especially exciting as it involves regulation of both destruction and growth of bone and may lead to a better understanding of other bone disease such as osteoporosis, where bone disappears, and its opposite, osteopetrosis, where excessive bone growth takes place.

go to effect repairs, such as for prosthetics inside the body, or devices launched into space.

ref: Chemistry in Britain, April 2001 and Nature, Feb. 15, 2001.

The spin on spintronics

Spintronics, an extension of electronics using not just the charge on electrons but also their spin to carry information, has gotten another boost. Vincent LaBella and colleagues at the University of Arkansas have managed to inject a stream of electrons with identical spins into a semiconductor, retaining 92 percent of them in their spin-aligned state. They also managed to show that enormous losses in spin information can take place at the interfaces between materials, pointing out clearly where more effort has to be expended in order to make spintronics a practical technology.

ref: Science, May 25, 2001.