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New clues on aging muscles

University of California Berkeley scientists are one step closer to understanding one of the mysteries of aging: why muscle cells readily repair themselves when we are young but are slower to do so as we grow older.

They tweaked biochemical signals in lab mice to boost the ability of the animal's stem cells to repair damaged muscle tissue. The research is years away from practical therapies for human beings. But this latest work, published online by the journal Nature, provides insight into how scientists are dissecting the processes that govern how stem cells work.

A goal of such research is to find ways to intervene and control these molecular switches - to improve healing and perhaps slow the effects of aging.

About 2 percent of cells in muscle tissue are "satellite" cells. These tiny powerhouses are adult stem cells, which uniquely can be coaxed into producing new muscle fibers with the right set of chemical signals.

Rik Derynck, co-director of the Institute for Regeneration Medicine at University of California, San Francisco, who is conducting similar studies in his lab, is skeptical the work will have much impact in slowing the aging process, but he said he believes the approach could lead, within five to 10 years, to novel therapies against degenerative diseases such as muscular dystrophy.