

Drug to reverse ageing likely by 2020

A drug that reverses ageing could be on the market by 2020, scientists have said. Researchers working with two biotech firms hope to begin testing the treatment on clinical trial patients in the next six months. In early experiments the drug, nicotinamide mononucleotide (NMN), had a dramatic rejuvenating effect on ageing mice.

Lead scientist professor David Sinclair, from the University of South Wales (USW) in Australia and Harvard Medical School in the US, said: "The cells of the old mice we

re indistinguishable from the young mice, after just one week of treatment. This is the closest we are to a safe and effective anti-ageing drug that's perhaps only three to five years away from being on the market if the trials go well." NMN boosts levels of NAD+, the oxidised form of the chemical nicotinamide adenine dinucleotide, which is naturally present in every cell of the body and helps regulate protein interactions that control DNA repair.

Accumulated DNA dama-

YOUNG AGAIN

ge is believed to be a major driver of natural ageing and a primary cause of cancer. Levels of NAD+, a "co-enzyme" or "helper" chemical that assists essential proteins, decline with age. Recent work highlighting the chemical's potential anti-ageing properties has led to an influx of NAD+ supplements available online.

However there is no hard evidence that the low-dose supplements really can keep ageing at bay. The new research, reported in the journal *Science*, showed that NAD+

boosts the activity of a well-known DNA repair enzyme called PARP1. Reduced levels of NAD+ with age were thought to reduce the ability of PARP1 to repair damaged DNA. The work has attracted the interest of Nasa, which is looking for ways of shielding astronauts from the effects of radiation on the long voyage to Mars. High levels of cosmic radiation can up cancer risk in astronauts by 100%.

The first clinical trial is expected to get under way at Brigham and Women's Hospital in Boston this year. *DAILY MIRROR*