

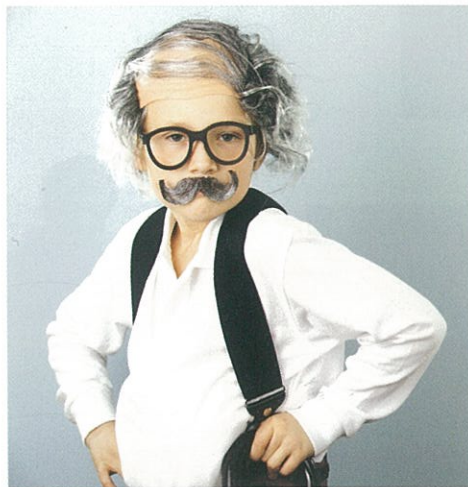
WELLBEING

Treasurer's Joe Hockey's recent comment that somewhere in the world today, it's highly probable a child has been born who will live to be 150, saw opposition leader Bill Shorten accusing him of having a "Sarah Palin moment".

But local anti-ageing experts leapt to the Treasurer's defence. Peter Smith, Dean – Faculty of Medicine at the University of New South Wales, acknowledged that the prospect was scary but advances in stem cell medicine and research had shifted the topic beyond the realms of science fiction. Hal Kendig, Professor of Ageing and Public Policy at the Australian National University, confirmed that there would be plenty of time to adapt if Australians started to live to an age which viewed centenarians as mere whippersnappers.

They were comments that appear restrained when compared to the theories of Dr Bill Andrews, who visited Australia in February to give a week-long series of lectures entitled – "The End of Ageing". The lanky 63-year-old not only runs 160km ultramarathons every month, he also plans to run a seven minute-mile at the age of 130. For the past 20 years, Andrews and the team of scientists at his bio-tech company, Sierra Sciences, have poured US\$33 million into developing super-compounds that "unlock the biological fountain of youth".

Andrews is far from being alone in his quest to cure ageing or die trying. Together with famed English anti-ageing researcher, Aubrey de Grey, he starred in the recent documentary, *The Immortalists*. Shot over two years, it's an unflinching look not only at the scientific obsession of the two men but also their private lives.



FOREVER YOUNG

John von Arnim SPEAKS WITH DR BILL ANDREWS, THE MAN WHO SAYS WE CAN LIVE FOREVER – OR ALMOST.

Andrews clearly believes that he's close to an engineered cure for ageing by marrying for the first time at the age of 60.

History is packed with wacky solutions to ageing. In Shakespeare's time, elderly men were advised to inhale the breath of virgins to restore inner vigour and 19th Century French physician, Charles Brown-Sequard, came up with the idea of injecting monkey glands to hold back the hands of time. But after the decoding of the human genome, a brave new world of genetic modification has delivered breakthroughs over the past decade, notably more advanced cloning and stem cell research.

Andrews' expertise is in telomeres, the strands of DNA at the end of our chromosomes that must be maintained in order for a cell to continue to divide. As we get older, telomeres shorten and finally disappear, drastically slowing cell division and renewal. Researchers first investigated the molecular potential of extending the life of telomeres back in the 1990s and the dominant theory was that the

enzyme telomerase could be used to keep cells dividing indefinitely to prolong the human lifespan.

With 45 US medical patents in telomere research, Andrews believes that he is very close to unlocking the secret of continued cell renewal. "Within three years, I believe we will be able to help people live to be 150. Not only those who have just been born



'I'd love to make Betty White 24 again.'

Dr. Bill Andrews

but also those who are already adults. We tested over 300,000 compounds at Sierra Sciences before developing TAM818 – a telomerase-activating molecule proven to be 200 times more powerful than any previously discovered chemical."

His personal commitment to fitness is an extension of Andrews'

scientific passion. "If you make poor lifestyle choices, extending the life of telomeres won't save you from heart disease or cancer. But a drug based on a compound such as TAM818 will help to slow down the baseline rate at which the body weakens and ages. Basically, the human lifespan is a losing exercise in hanging on to our telomeres."

Andrews refers to the work of Harvard University researcher, Ron de Pinho, who conducted major anti-ageing studies on mice. "He basically turned the rodent equivalent of a grandmother into a young adult again through increasing telomerase production. He also reversed the so-called "death spiral" of late-life ageing that turns a spry 80-year-old into a shadow of their former self within 10 years without the presence of disease."

Mice aren't men, though. And in the fight to cure ageing, Andrews major hurdle is money. "Once we get the crucial level of funding, we will get the result. I'd love to make Betty White 24 again. I'm a big fan of stem cell research and it's second only to telomere research as a means of prolonging human life."

Andrews is aware that many people recoil at the idea of rejuvenation bio-technologies but he is optimistic and dismisses nay-sayers. "When the Wright brothers were only a day away from making the first flight, a leading New York newspaper declared that flying was a pipe dream and wouldn't become a reality for one to 10 million years. Rather than simply slowing ageing down, we are interested in reversing ageing. Taking people who are middle-aged or older and returning them to the same state of health as a young adult." **mo**