

# Personal Immortality Roadmap

2015	2020	2030	2040	2050	2100
------	------	------	------	------	------

## Plan A To Survive until Creation of Strong AI

**Solve Existing Problems**

Psychology

- Create healthy and robust **personality**
- Self-sufficiency**
- Inner resources**
- Socially adequacy**
- The ability of self-motivating

Health

- Cure chronic and neglected **diseases**

Social

- Work
- Social relation
- Build stable relationships

Slowing Aging

Life style

- Physical fitness:** running, dance
- Nutrition:** vegetables, no red meat, calorie restriction, nutrients balance
- Reduce** weight, blood pressure, sugar, and cholesterol
- Do not smoke** or drink
- Close interpersonal relationships;** personal physician
- A **safe** country with long life expectancy
- Risk** aversion — fasten seat belts
- Good **sleep**

Medicine

- Geroprotector** candidates: metformin, aspirin, antidepressants
- Medical insurance** for a quality clinic
- Full check-out** once a year
- Personal medicine:** 23andMe

Increasing Self-Effectiveness

- Focus** on achieving immortality
- Making friends with **bio-scientists**
- Self-education** in the field of biotech, brain science; read "Longevity"
- Positive** and rational attitude
- Gain resources — material, social

Promoting value of life extension

- Be an **example**
- Talk** about the importance of immortality and write texts
- Groups** of like-minded individuals
- Street actions** and art projects
- Parties** and lobbying
- Demonstration of life extension** in animal models

Achieving Negligible Senescence

- Proven medicines** that slow down aging
- Aging vaccines:** delivery of longevity genes
- Participation in **clinical trials** of new aging therapies
- SENS:** Regular correction of accumulated damage
- Scientific approach** to treatment
- Slowing **biological clock**
- Regulation of high level control:** hormones, nerves, brain, mood
- Death prevention**
- Wearable** security and resuscitation systems
- Age-related diseases** become curable: cancer, cardiovascular diseases and Alzheimer's
- Permanent elimination of risk factors:** high blood pressure, obesity, plaques
- Technologies of **resuscitation** and life support
- Elimination of **other risks** of death: infections, accidents, crime, suicide

Research Funding

- Forming **social demand**
- Inclusion in **government programs**
- WHO admits that **aging is a disease**
- Persuasion of **billionaires**
- Crowdfunding** of scientific projects
- Money from **pharmaceutical companies**
- New directions for **technical giants** (Google)
- Startups and invest funds**
- Rebranding** "Aging"
- Military funding** for regeneration and veterans (DARPA)

Rejuvenation

- Enhance **natural reparation** processes: immune, protein-shaping, senescent cells elimination
- Controlled **regeneration** of tissues and organs using growth factors
- Genetically modified **stem cells**
- Non self-replicating nanobots** which delete bad proteins and senescent cells
- Regulating **gene networks**
- Cryoreanimation** after several hours after death

Scientific Experiments

- Biomarkers of aging:** discover and use them to test therapies
- Creating **ageless animals**
- Delivery of **longevity genes**
- Drug screening**
- Management of microbiota**
- Data analysis** using specialized AI (Deep Learning)
- Control of the body on the basis of **genomic networks**
- Creation of a **computer model** of the human organism

A New Body

- Transplanting **cloned organs**
- Artificial organs**
- Growing new body** for transplantation using genetic engineering
- Self-replicating nanobots** for treatment of injuries and cell cyborgization
- Head on life support** for temporal life extension
- Brain in vat** — life support of brain tissues outside the body
- Creation of a cyborg**, most of which body parts are artificial
- Nanotechnological body** - all cells replaced with nanobots

Introduction into Clinical Practice

- Acceleration** of clinical trials and approval of new drugs by the FDA
- Reducing the cost** of introducing drugs
- Lobbying** and participation in **elections**
- Legalization of cloning** and head transplants
- Creation of an **infrastructure** for aging treatment

Cyborgization of the Brain

- Neuro-implants** that serve as a brain-computer interface
- Control of neural** development and behavior
- Nanorobots** in brain tissue
- Bioengineering neurons**
- Backing up** information from the brain
- Gradual transfer** of personality to a digital substrate

Politics

- Political power** acquired by supporters of life extension
- Guarantees** of quick development and accessibility of the life extension
- Prevention of **global risks**
- AI that is capable of self-improvement and reaches superintelligence
- AI managing the development of civilization

## Plan B Cryonics

Signing of a Cryocontract

- Signing** and payment of the contract
- Wearing a **cryotank**
- Persuading **relatives** that cryonics is necessary

Starting a Cryocompany

- Cryonics **promotion**
- Investment** in cryo-business and cryobiology
- Demonstrating **proof** of cryonics on animals

Successful Cryopreservation

- Living **near** a cryofirm
- Trustees**
- Cryonics crew on **standby**
- Heart rate monitors** that automatically phone people if your heart stops

Legalization of Cryonics

- Law** about cryonics which declares right to be cryopreserved
- Legalization of **euthanasia** with subsequent cryopreservation
- State support**
- Guarantee** of long-term storage

Long-term Storage

- Financial, legal, and organizational **stability**
- Storage technology without complex **maintenance**

Scientific Studies

- Development of **cryoprotectants**
- Reversible freezing** of animals, human organs and tissues of the brain
- Cryo-reanimation** of the wounded
- Chemical** fixation

Revival from Cryonic Storage

- Controlled defrosting with **damage correction**
- Transfer of information** from the brain to the computer
- Correction of errors** using lifelog data

Revival Technologies

- Scanning** and mapping the brain
- Nano-robots** for the restoration of cells
- Defrost** and recovery of neural activity

## Plan C Digital Immortality

Gathering Information

- Continuous **video recording**
- Special questionnaires:** diaries, memoirs, drawings, complex creative objects
- Brain data:** collecting EEGs
- DNA:** samples, 23andMe

Backup

- Cloud services**
- Durable** optical discs (eternal M disks)
- Create digital **"hoards"** in internet and underground hoards

Improving

- Encourage** other people to invest in digital immortality
- Digital footprint** in social networks and servant-avatar, exo-self
- Study **brain science** and uploading technologies

Reconstruction of the Identity of the Deceased

- Using AI** to analyze information
- Construction of a **accurate model** of personality
- Solving the problem of **identical copies**

## Plan D Small Chances that Immortality already Exists

Quantum immortality

- Everett** interpretation is true
- Universe is **actually infinite** and uncountable number of my copies exist in it
- Cryonics** more likely to work if quantum immortality is true

Personality reconstruction by the future AI

- Live an **interesting** and important life
- The stronger the AI, the less **information** it needs to accurately resurrect
- Investing** in creating Friendly AI
- Future AI may find **new ways** to return people to life

Technological Singularity

- The emergence of superintelligence in **our lifetime**
- The **sharp acceleration** of progress
- New ideas** of life extension

Simulation with Immortality

- Perhaps we live in a **computer simulation**
- Some simulations model immortality (the **after-life**) or are **avatar-games** for simulators
- Quantum immortality** rises share of such avatar-simulations

Reading Information from the Past

- Access to the past thanks to the discovery of **new physical effects** (quantum teleportation, worm holes)
- Restoring the individual** on the basis of this information

Immortality of Qualia and other Theories of Self

- Qualia** are eternal
- Shift of **identity** on eternal things
- Consciousness as a **center of actualization** in the multiverse
- Soul proved** to exist by scientific method and is eternal

Immortality with help of Strong AI

- Mind uploading** becomes possible
- Unlimited lifespan** using digital backup and AI protection
- Upgrade:** increased intelligence, adding new capabilities
- Expanding** the scope of **possible experiences**, qualitative new experiences, and hedonic enhancement
- Creation of detailed, **realistic simulations** and artificial life within them
- Detailed reconstruction of human past and people lived before
- The **colonisation** of the solar system
- Colonisation of the **Galaxy**
- Exploring the **Universe**, solving the question of the end the Universe

Explanation: Each plan comes into play in the event of the failure of the previous. If pursuit of indefinite life extension fails, for instance, then it is necessary to opt for cryonics or digital backup. Each of the three primary plans (A, B, and C) needs to be pursued simultaneously in case one of the others fails. If they fail, all we have to fall back on is one of the wild cards in part D. This map is a simplification created for ease of use. A more complete description can be found in the book "Immortality", by Alexey Turchin. Titles are marked with blue for personal efforts and green for public, which can be realized only in the group. Yellow highlights hypothetical possibilities that do not depend on our actions. This map was created with the assistance of Michael Batin and Michael Anissimov, supported by Dmitry Kamensky in 2012-2015. © Alexey Turchin, 2015, GNU-like license. Free copying and design editing, discuss major updates with Alexey Turchin. <http://immortality-roadmap.com/> - last updated version here Proofreading and advise: Michael Anissimov