

BY DAVID PEARCE

TRANSHUMANIST EUGENICS

<https://eugenics.org>

(Un)happiness:

“most people with **Locked-In Syndrome** score as high as those without it”

The problem of suffering is fixable - but only by upgrading our reward circuitry via genome reform.



<https://www.inverse.com/science/locked-in-syndrome>

The Abolitionist Project

DAVID PEARCE

“May all that have life be delivered from suffering”

-Gautama Buddha

(trad. c.566 BC - c.480 BC)

“We advocate the well-being of all sentience, including humans, non-human animals, and any future artificial intellects, modified life forms, or other intelligences to which technological and scientific advance may give rise.”

-The Transhumanist Declaration

(1998, last updated 2009)

www.humanityplus.org/learn/philosophy/transhumanist-declaration

THE CHALLENGE:

Five obstacles to the well-being of all sentient life

1. Physical pain - millions suffer chronic pain, but compare the fate with victims of congenital analgesia
2. Psychological pain – the hedonic treadmill
3. Meat-eating – over 50 billion factory-farmed non-human animals per year
4. Domestic pets (cats, etc) – obligate carnivores
5. Wildlife – the food chain, Nature “red in tooth and claw”

Challenge One: Physical Pain

OPPOSITES

Hundreds of millions of people worldwide suffer from chronic pain. But congenital analgesia can lead to risky behaviour...



Congenital Analgesia

Hundreds of millions of people in the world suffer chronic depression or dysthymia

Why is the heritable “hedonic set-point” of our hedonic treadmill commonly so low?

[en.wikipedia.org/wiki/
Rank_theory_of_depression](https://en.wikipedia.org/wiki/Rank_theory_of_depression)



The Hedonic Treadmill

Challenge Three: Meat-eating

Pigs are as intelligent - and **sentient** - as a two year old human toddler.

Factory-farmed pigs live in crates surrounded by cold metal bars. They spend their whole lives on wet, faeces-caked concrete floors in filthy overcrowded warehouses.

Pigs may first see direct sunlight when they are crammed onto a truck bound for the slaughterhouse.



Meat Production

Challenge Four: Pets

Cats look cute.

But what does it feel like...

to be **eaten alive**?



Obligate Carnivores

CHALLENGE FIVE: WILDLIFE

“The total amount of suffering per year in the natural world is beyond all decent contemplation. During the minute that it takes me to compose this sentence, thousands of animals are being eaten alive, many others are running for their lives, whimpering with fear, others are slowly being devoured from within by rasping parasites, thousands of all kinds are dying of starvation, thirst, and disease. It must be so. If there ever is a time of plenty, this very fact will automatically lead to an increase in the population until the natural state of starvation and misery is restored.”

- Richard Dawkins, “God's Utility Function,”
Scientific American (November, 1995), p. 85

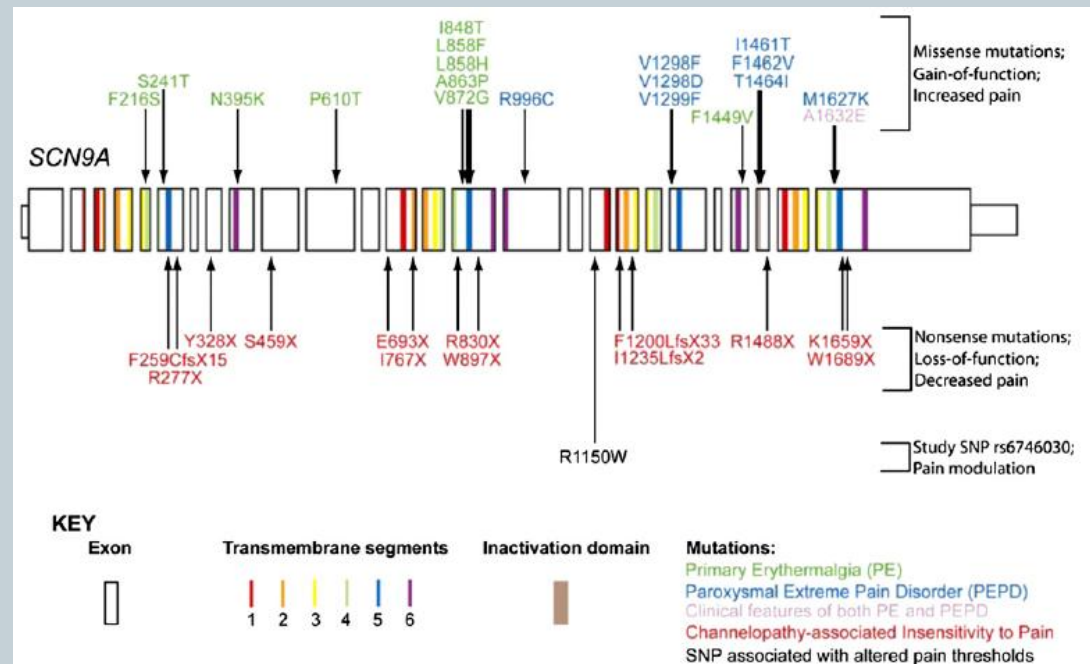


CHALLENGE ONE: PHYSICAL PAIN

CASE STUDY - *SCN9A* GENE

- A single gene plays the dominant role in our level of pain-sensitivity
- Variant alleles of the gene *SCN9A* code for the α -subunit of the voltage-gated sodium channel Nav1.7 in nociceptive neurons
- Activating mutations in *SCN9A* lead to rare conditions such as “man on fire” syndrome - relentless, searing pain
- Inactivating mutations cause a complete absence of pain
- Other alleles cause unusually high, or *unusually low*, pain sensitivity

Reimann *et al*, Pain perception is altered by a nucleotide polymorphism in *SCN9A*, *Proc Natl Acad Sci. USA.* 2010 Mar 16; 107(11):5148-53.



CHALLENGE ONE: PHYSICAL PAIN THE REPRODUCTIVE REVOLUTION

- Imminent reproductive revolution of “designer babies”
- Pre-implantation diagnosis will shortly become routine

Question:

Which allele of SCN9A - i.e. what level of pain sensitivity - would you choose for your future children?

Prediction:

Intense selection pressure against the nastier variants of SCN9A gene

CHALLENGE ONE: PHYSICAL PAIN

LONG-TERM PROSPECTS

- Is abolition of phenomenal pain feasible? Or merely a reduction in pain sensitivity?

Options For A World With Nociception But No Phenomenal Pain:

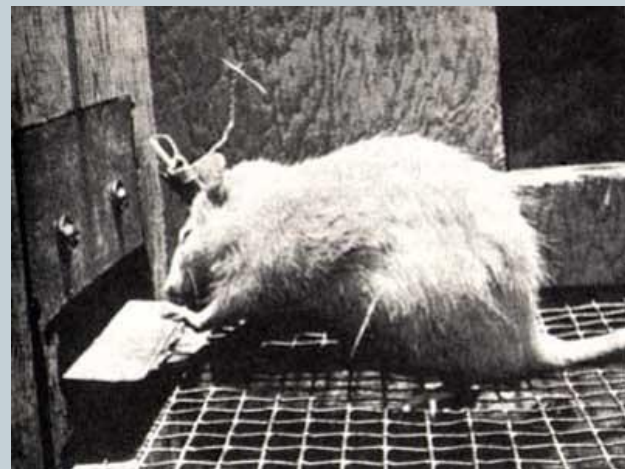
1. Information-bearing gradients of pleasure? (functional analogues of pain - information-bearing dips of extreme bodily well-being without the nasty raw feels. *cf.* pain asymbolia)
2. Smart prostheses with a manual override (*cf.* silicon etc robots)

[Unsolved Mystery: Why do organic robots like us sometimes suffer, whereas our silicon (etc) robots don't undergo phenomenal pain in response to noxious stimuli? *cf.* The "Hard Problem" of Consciousness; the "explanatory gap"; "zombies"; etc]

CHALLENGE TWO: PSYCHOLOGICAL PAIN

THE HEDONIC TREADMILL - ABOLITION VERSUS RECALIBRATION

- Wireheading? Intracranial self-stimulation of the reward centres of the brain (www.wireheading.com)
 - Delivers uniform motivated bliss; no physiological tolerance
 - BUT:
 - not evolutionarily stable - selection pressure against wireheads. Wireheads wouldn't want to raise baby wireheads
 - not sociologically plausible
 - a recipe for stasis
 - Complication: pure bliss (activation of the mu opioid receptors) and motivation / anticipated reward (activation of mesolimbic dopamine receptors) are intimately linked in the brain; but dissociable
- M.L. Kringelbach & K.C. Berridge (Eds.), *Pleasures of the Brain*. Oxford: Oxford University Press, 2010.
- Induction of pure bliss - permanent stimulation of upregulated mu opioid receptors - without dopamine-driven desire = Buddhist nirvana. But is nirvana evolutionarily stable?!





CHALLENGE TWO: PSYCHOLOGICAL PAIN DESIGNER DRUGS



Drug-induced pleasure can be:
shallow, amoral, one-dimensional and hedonistic
-OR-
deep, empathetic, multi-dimensional and life-enriching

Current recreational drugs...	activate the brain's negative feedback mechanisms
Current clinical drugs...	mediocre; designed to minimise "abuse potential"
Future wonderdrugs...	"Super Soma"?

PROS: reversible and fine-grained control of mood, emotion, motivation, empathy, aesthetic sense, introspection, spirituality.

DOWNSIDE: Do we really want to medicate our children from birth?

So...

Could post-genomic reproductive medicine deliver genetically preprogrammed:
invincible physical superhealth?

-AND-

invincible mental superhealth?



CHALLENGE TWO: PSYCHOLOGICAL PAIN THE REPRODUCTIVE REVOLUTION

Question:

Prospective Parents:

What genetic setting of your future child's "hedonic set-point" would you choose?

Would you choose *any* predisposition to anxiety disorders or depression?

Prediction:

Intense selection pressure **in favour of happier children** as transition to "designer babies" gathers pace

www.reproductive-revolution.com

CHALLENGE THREE: MEAT EATING
OVERCOMING ANTHROPOCENTRIC BIAS
SHOULD ALL TRANSHUMANISTS ADOPT A CRUELTY-FREE VEGAN LIFESTYLE?

Factory-farmed
meat

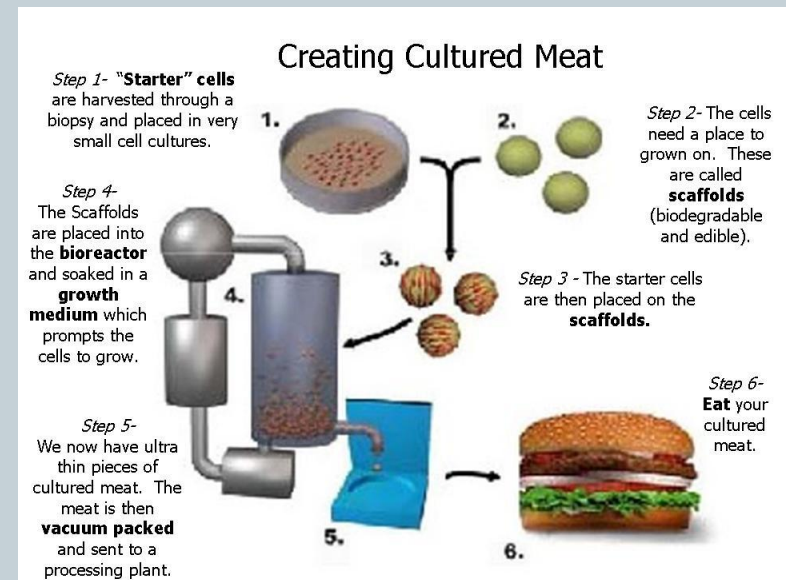
VS

Mass-produced
in vitro meat

- Can moral argument alone trump self-serving bias?
- Maybe not.

But could the mass-production of *inexpensive, delicious cultured meat* products lead to *global veganism*?

- en.wikipedia.org/wiki/In_vitro_meat
- www.new-harvest.org



CHALLENGE FOUR: PETS

CASE STUDY

- 500 million domestic cats worldwide kill billions of birds and small rodents each year in gruesome ways
- Stopgap remedy: e.g. mass-produced catnip-laced *in vitro* mincemeat?
- Genetic tweaking
- Long-term solution: comprehensive genomic rewrites



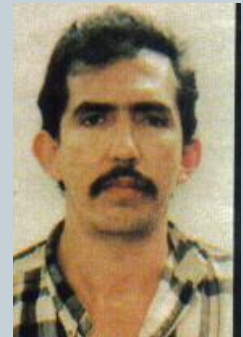
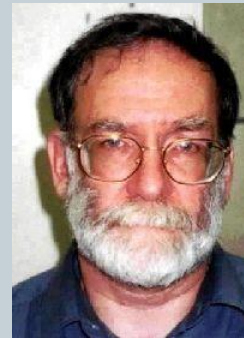
CHALLENGE FIVE: WILDLIFE SERIAL KILLERS COMPARED

Spot the difference

These predators all prey on the weak, the old, the innocent, the vulnerable...



Should we revise our double standards?



CHALLENGE FIVE: WILDLIFE

LION AND LAMB - DO WE WANT TO CONSERVE WILD ANIMALS?

- If we do, what kinds of non-human animals do we want in our wildlife parks?
- Is it ethical to perpetuate “predators” and “prey” - a living world full of disembowelment, suffocation, being eaten alive, starvation, dying of thirst?

ALTERNATIVES TO DARWINIAN LIFE

- Ecosystem redesign
- Immunocontraception for population control
- Reprogramming predators
- Remote-controlled neuroimplants for behavioural modification
- Genomic rewrites
- GPS tracking and surveillance of terrestrial vertebrates
- Nanobots to manage the oceans and aquatic ecosystems

“Homo sapiens, the first truly free species, is about to decommission natural selection, the force that made us.... Soon we must look deep within ourselves and decide what we wish to become.”

-Edward O. Wilson
Consilience, The Unity of Knowledge (1998)

ULTIMATELY...

A PAN-SPECIES WELFARE STATE?



www.abolitionist.com/reprogramming

THE FATE OF THE MEAT WORLD

MIND UPLOADING/WHOLE BRAIN EMULATION

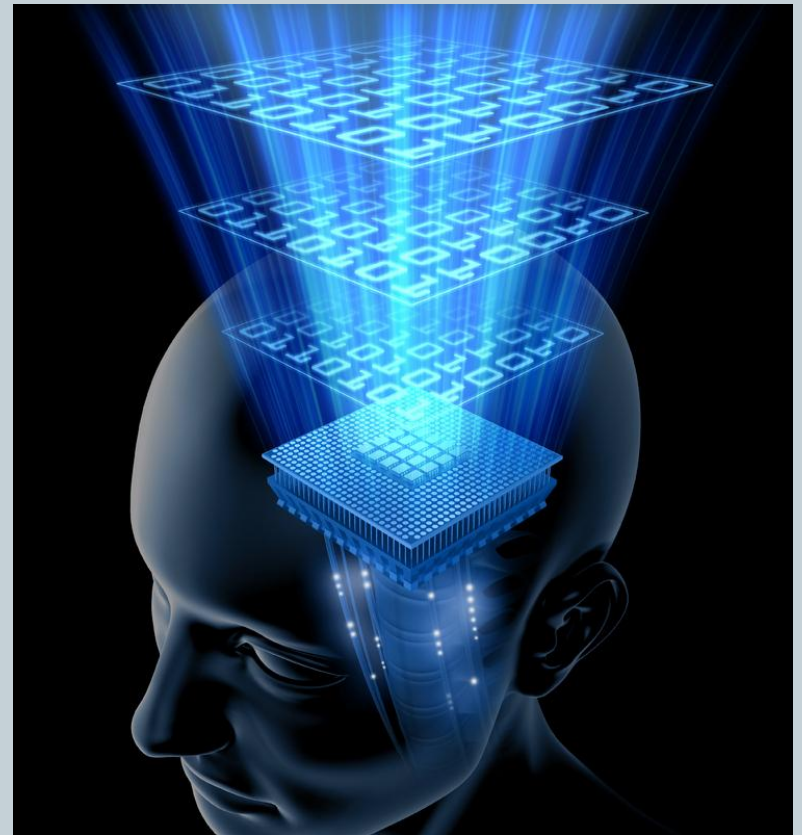
- Is it feasible to scan and digitise biological mind/brains and copy their state into a supercomputer system?
(en.wikipedia.org/wiki/Mind_uploading)

Maybe.

BUT: consider the meat-world selection pressure against “destructive uploading”
(Will sceptics hand out Darwin Awards?)

So... Primordial life in the Basement goes on.

Therefore...



PREDICTION FOR PRIMORDIAL ORGANIC LIFE

“The limits of pleasures are as yet neither known nor fixed, and we have no idea what degree of bodily bliss we are capable of attaining.”

-Jean Anthelme Brillat-Savarin
[Physiologie du Goût (1826)]
(1755 - 1826)



THE FUTURE:

- *Genetically preprogrammed well-being of all sentience*
- *Animation by gradients of life-long intelligent bliss*
- *Everyday well-being orders of magnitude richer than today’s “peak experiences”*

“MIGHTY MOUSE”

- **MIGHTY MUSCLES:** normal mouse (left) and mouse that lacks myostatin and overproduces another protein, resulting in four times as much muscle.

Credit: Se-Jin Lee, Johns Hopkins University School of Medicine

SOURCE: *Technology Review*; October 18, 2007

- **CONJECTURE:** Analogous insertion of multiple extra copies of the mu opioid receptor and regulatory promoters into the twin “hedonic hotspots” of the brain can deliver superhuman capacity for pleasure in the richest sense
- Dopaminergic enhancements can deliver superhuman motivation
- Can oxytocin enrichment deliver superhuman empathy?



LONG TERM: “re-encephalisation of emotion”?

www.superhappiness.com

“Whatever was the beginning of this world, the end will be glorious and paradisiacal, beyond what our imagination can conceive.”

-Joseph Priestley
(1733 – 1804)

ABOLITIONIST.COM



Action Plan

What should be done?

"We advocate the well-being of all sentience, including humans, non-human animals, and any future artificial intellects, modified life forms, or other intelligences to which technological and scientific advance may give rise."

The Transhumanist Declaration (1998, 2009)



I The Cultured Meat Revolution

- Accelerate the development and commercialisation of cultured meat.
- Close factory-farms and slaughterhouses.
- Rehabilitate the surviving victims.



II Hedonic Uplift

- Genetically raise pain-tolerance
- Genetically recalibrate the hedonic treadmill
- Key Targets: FAAH, FAAH-OUT, SCN9A, COMT, ACKR3 genes



III Designer Babies for All

Offer CRISPR gene-therapy and preimplantation genetic screening and counselling to all prospective parents



IV Hedonic Gene Therapy

Trials of intravenous CRISPR infusions for existing human and nonhuman animals
"a vaccine for mental health"



V Reprogramming the Biosphere

- Trials of self-contained "happy biospheres"
- Spread low-pain "happy genes" across the biosphere with CRISPR-based synthetic gene drives that cheat the naïvely immutable "laws" of Mendelian inheritance.



The Future of Sentience

Towards a "Triple S"
transhumanist civilization:

- SUPERINTELLIGENCE
- SUPERLONGEVITY
- SUPERHAPPNESS

<https://www.biointelligence-explosion.com/>

<https://www.supercentenarian.com/>

<https://www.superhappiness.com/>

The End

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Paradise Engineering?

“The limits of pleasures are as yet neither known nor fixed, and we have no idea what degree of bodily bliss we are capable of attaining.”

- Jean Anthelme Brillat-Savarin

Learn More:
hedweb.com



"You want, if possible - and there is no more insane "if possible" - to abolish suffering. And we? It really seems that we would rather have it higher and worse than ever. Well-being as you understand it - that is no goal, that seems to us an end, a state that soon makes man ridiculous and contemptible - that makes his destruction desirable. The discipline of suffering, of great suffering - do you not know that only this discipline has created all enhancements of man so far?"

(Nietzsche, *Beyond Good and Evil*, 1886, p 225)
ref: <https://www.nietzsche.com/nietzschelink.html>

Health:

"a state of complete physical, mental and social wellbeing"

Constitution of the World Health Organization (1948)

ref:

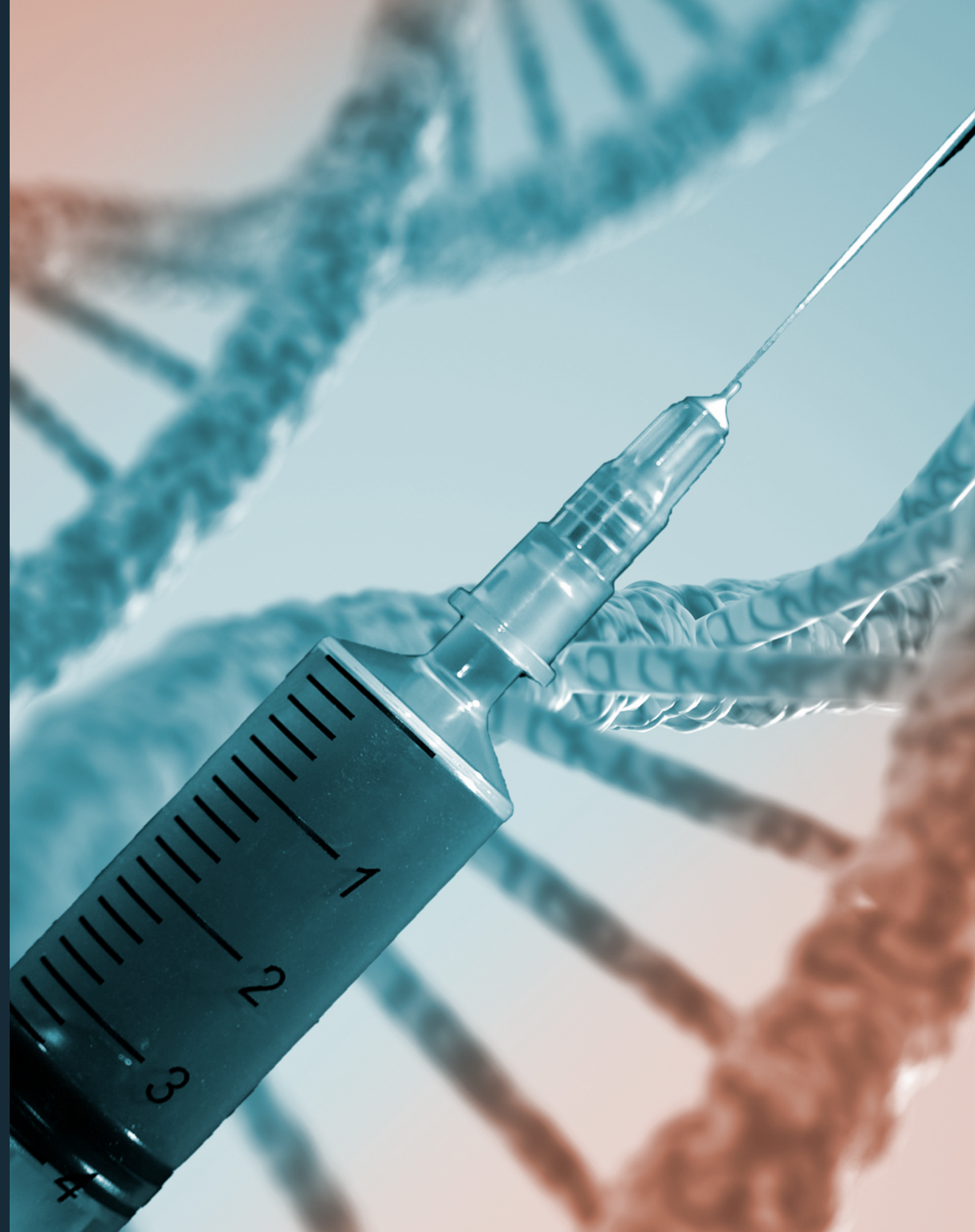
https://www.who.int/governance/eb/who_constitution_en.pdf



**World Health
Organization**

How intravenous
CRISPR infusion could
revolutionise mental
health

A universal one-shot
genetic vaccine against
mental and physical
pain?



“

Intravenous gene therapy:

“a critical first step in being able to inactivate, repair, or replace any gene that causes disease, anywhere in the body.”

(Jennifer Doudna, the co-founder of Intellia Therapeutics who shared a Nobel Prize for developing the gene-editor CRISPR from a bacterial immune system)



Intravenous Gene Therapy for Transthyretin Amyloidosis

CRISPR-Cas9 is a scissors-like tool that can cut and edit DNA.

Treatment involves (1) lipid nanoparticles that carry a payload of CRISPR machinery (2) a strand of guide ribonucleic acid; and (3) a sequence of messenger ribonucleic acid (mRNA).

1. Billions of the CRISPR-carrying nanoparticles are infused into the bloodstream. The nanoparticles make their way to the liver, the source of the dysfunctional protein.
2. The mRNA instructs the cells to produce the Cas9 protein (CRISPR's genetic "scissors"). The Cas9 protein then links up with the guide RNA, seeks out the target gene, and snips it.
3. The cell repairs the DNA at the site of the break, but imperfectly. Imperfect repair switches off the gene and shuts down production of the misfolded protein.

ref: CRISPR-Cas9 In Vivo Gene Editing for Transthyretin Amyloidosis

<https://www.nejm.org/doi/full/10.1056/NEJMoa2107454>

Intravenous Gene Therapy for Anandamide Deficiency Disorder (ADD)

HIGH ON LIFE

Case Study

Jo Cameron, vegan retired Scottish school teacher never anxious, never depressed, never stressed, never in pain

exceptional FAAH and FAAH OUT genes
elevated anandamide
ananda = "joy, bliss, delight (Sanskrit)

ref: A World Without Pain Does hurting make us human?

<https://www.newyorker.com/magazine/2020/01/13/a-world-without-pain>



Blissful but not Blissed Out?

Transhumanism: a new architecture of mind

Life should be based on information-sensitive gradients of intelligent bliss.

refs:

<https://www.abolitionist.com>

<https://www.transhumanism.com>

PITFALLS:

How can information-sensitivity best be conserved?

How can the functional counterpart of depressive realism best be conserved?

ref: <https://www.gradients.com>





THE END

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