Lifestyle Medicine and ‘Gaia’s Disease’

Gaia = ‘the personification of the earth’ that keeps it, and life on it, in balance.

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DEFINITIONS

EPIDEMIC: (*epi* = among; *demos* = people) *"Something (not necessarily disease) that affects a large number of people within a community, population or region."*

SYNDEMIC: *"The aggregation of two or more concurrent or sequential epidemics in a population."*

1. Chronic diseases (Obesity, diabetes, COPD etc)

2. Gaia's Disease (Climate change, species extinction, ecological disruption etc)

3. Infectious Diseases (Covid-19 etc.)

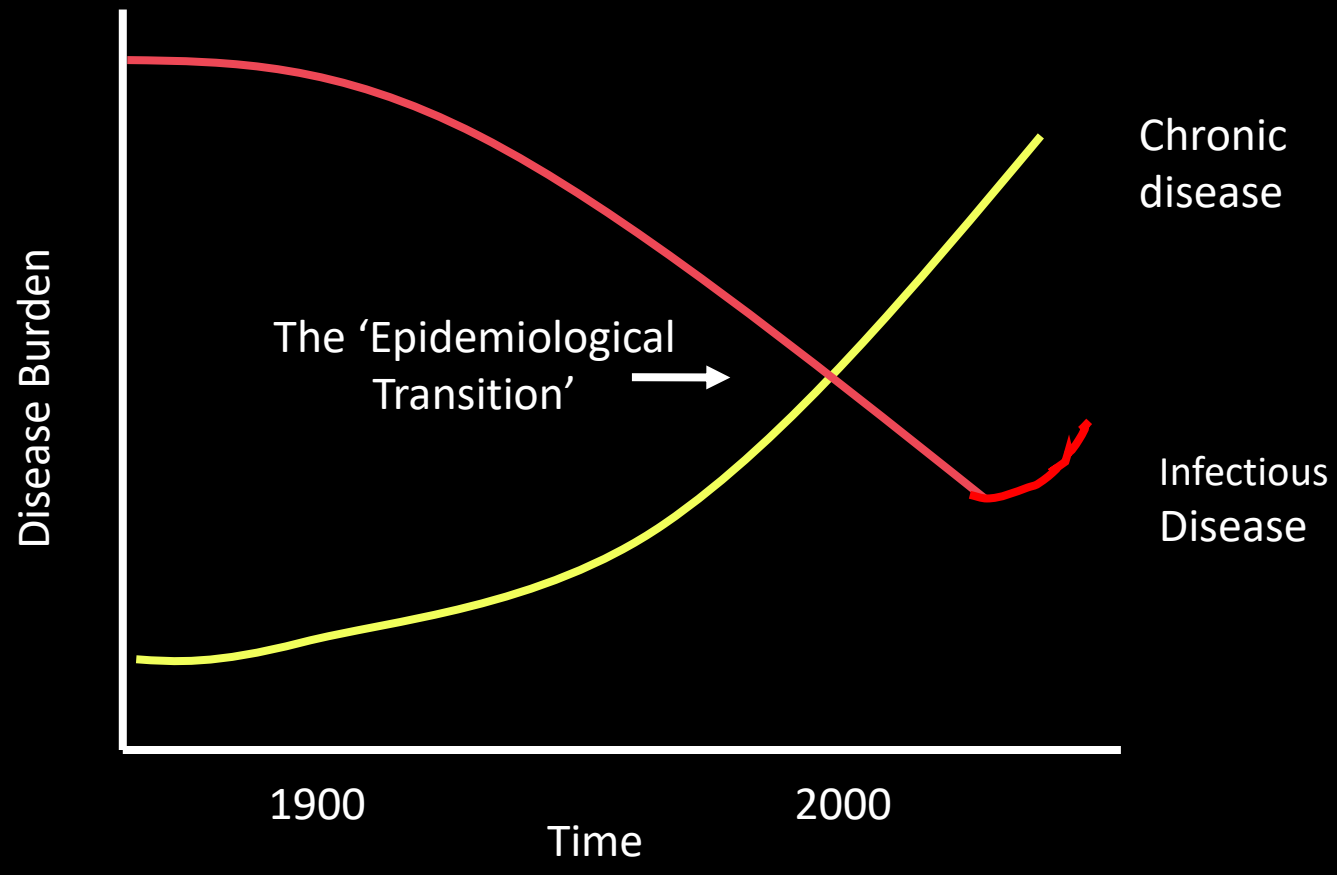
Summary

1. Changes in the burden of disease have led to an increased emphasis on chronic diseases and their ‘drivers’ (causes).

2. While conventional management looks for, and manages, markers & ‘proximal’ drivers of disease, a more comprehensive approach needs to consider more ‘distal’ drivers.

3. ‘Gaia’s disease’ has common distal drivers to chronic disease, and these need to be managed as a ‘Syndemic,’ with lifestyle and environmental ‘treatments’ common to both.

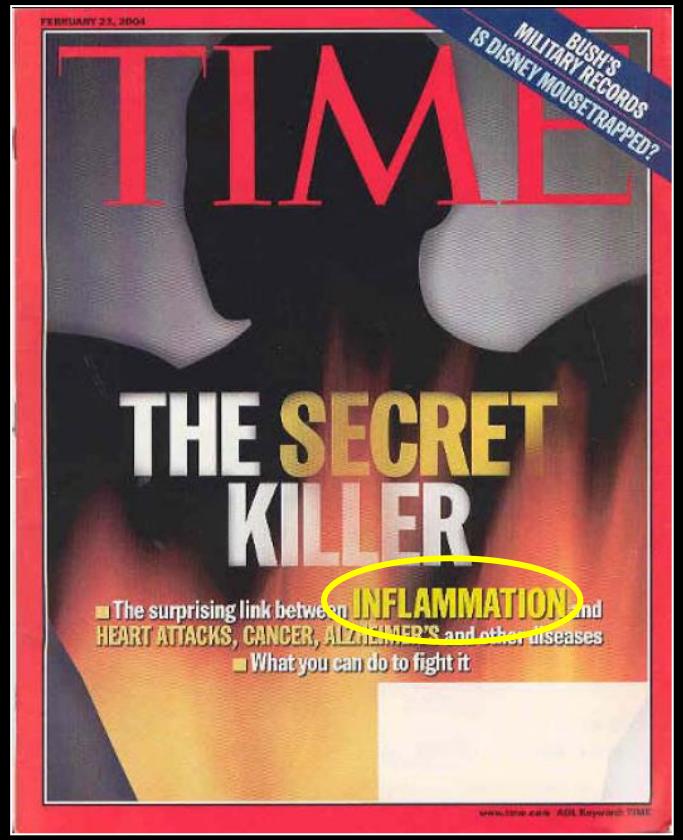
Graphical representation of the changes in the burden of disease categories 1920 - 2020



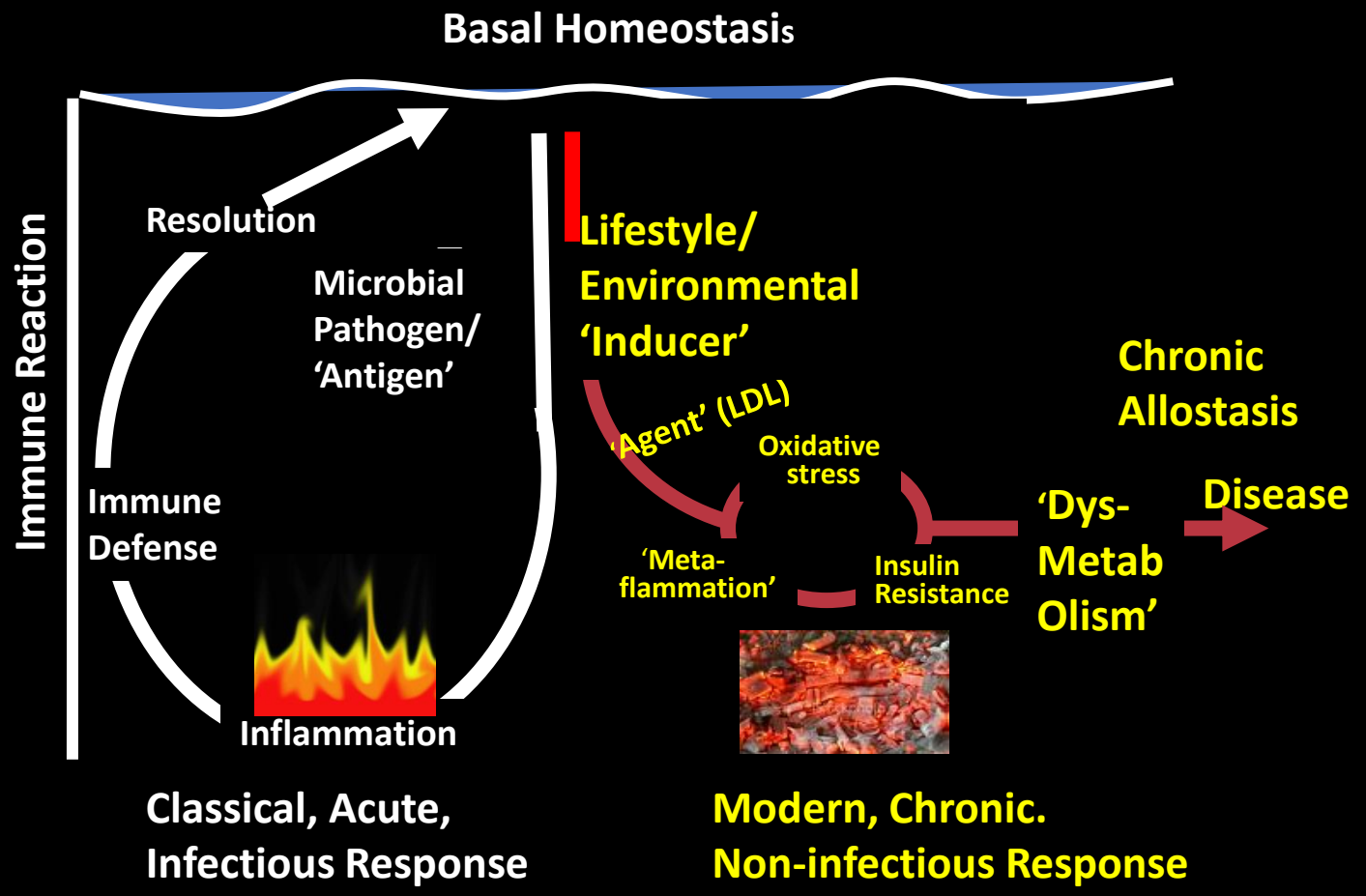
Our inflammatory (internal) environment – ‘metaflammation’

Chronic Disease categories with ‘metaflammatory ‘ links

Cardio and cerebro-vascular disease
Cancers with lifestyle component
Endocrine/metabolic disorders
Gastrointestinal disorders
Kidney disease
Mental/CNS health
Musculoskeletal disorders
Respiratory diseases
Dermatological disorders



Classical Inflammation vs 'Metaflammation'



Ref: Egger G, Dixon J. *Brit J Nutr* 2009;18:1-5

Inflammation:

“ a reaction to… injurious agents

…characterised by disturbed function.”

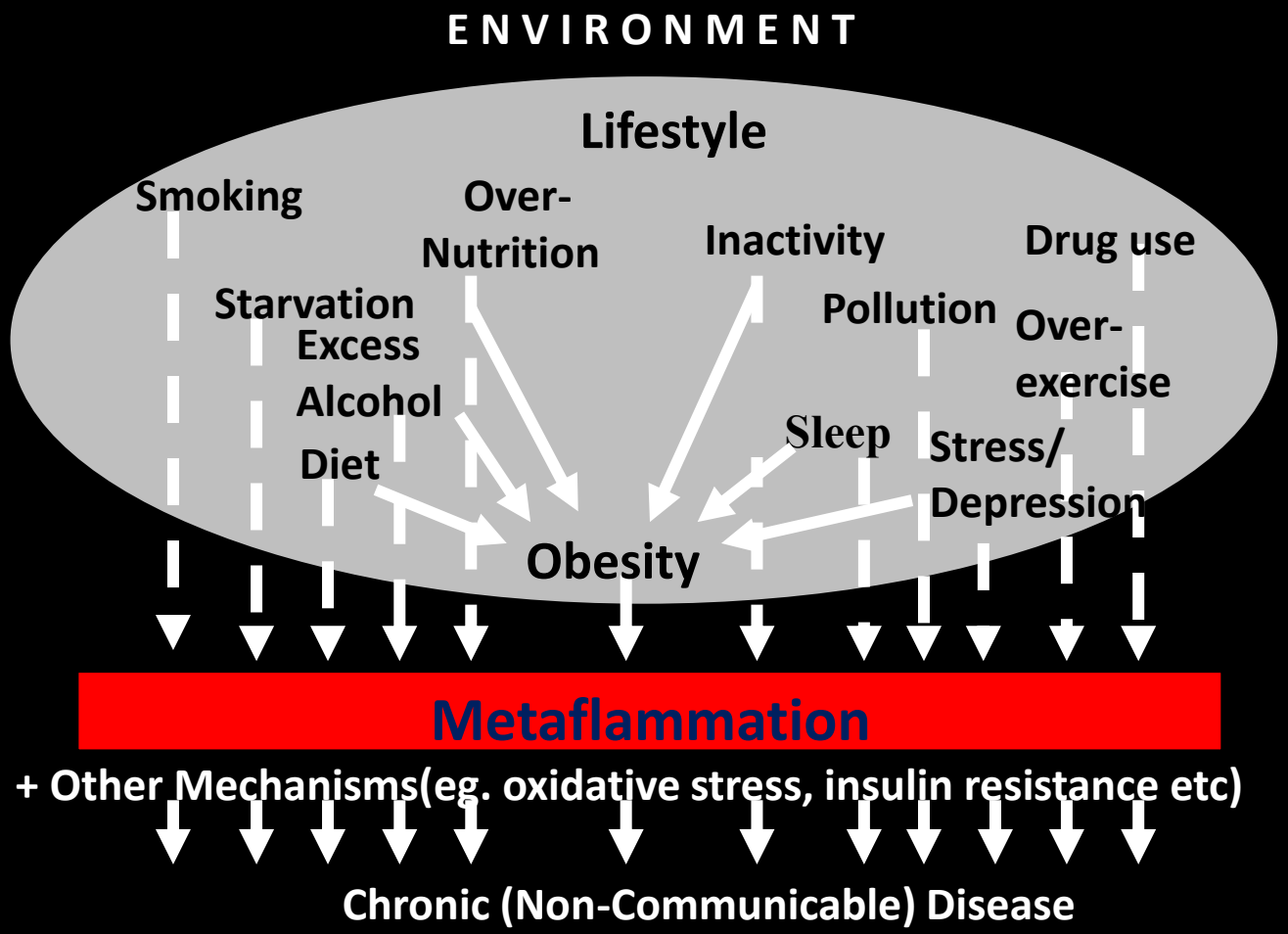
Can be:

- ***biological*** **(‘metaflammation’)**

- ***ecological*** **(‘ecoflammation’)**

Ref: Hotomisligil G .*Nature* Dec. 2006; 444

Inducers of Biological 'Metaflammation'



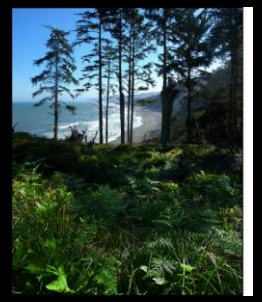
"Anthropogens":

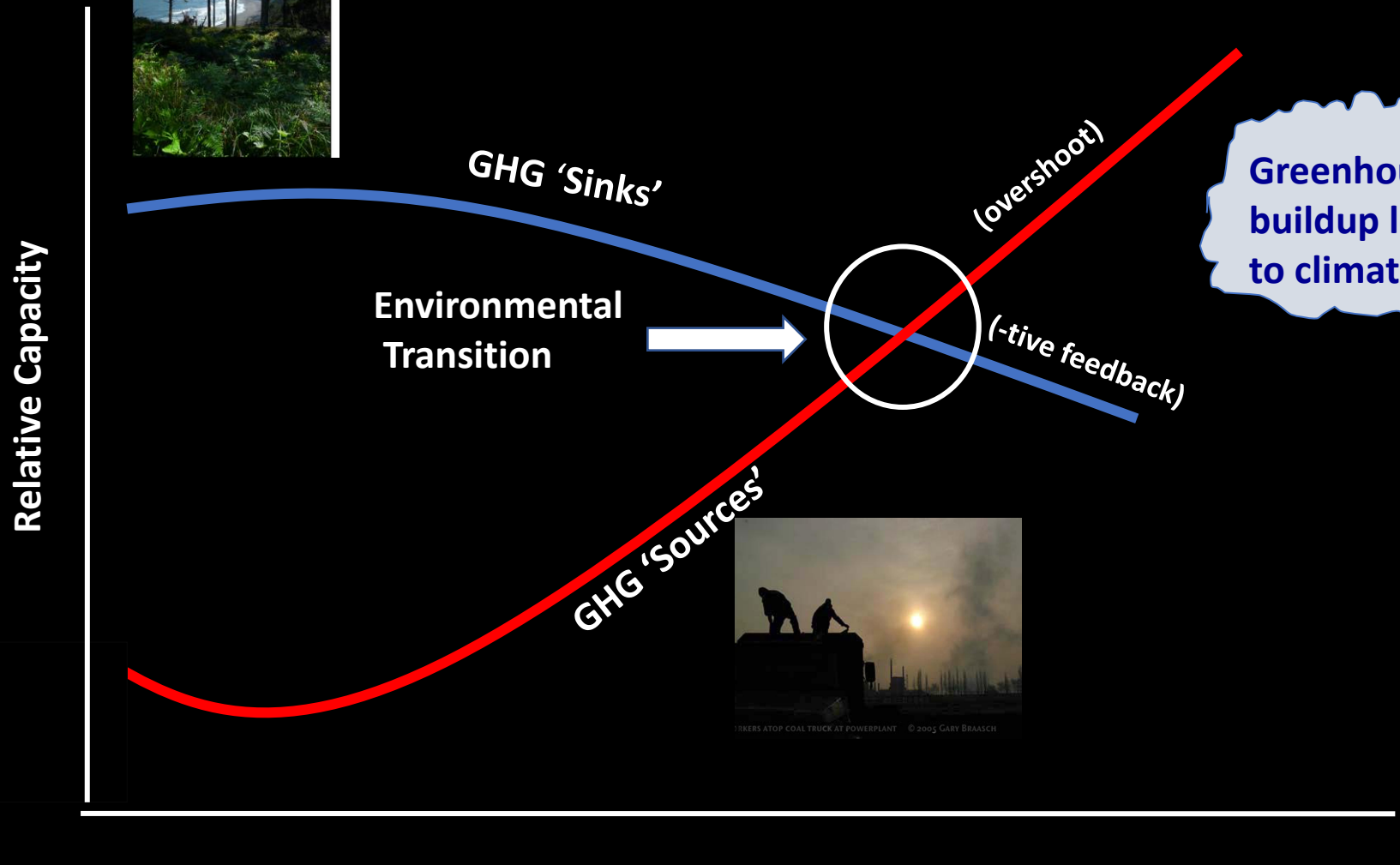
'*Man-made environments, their bi-products and lifestyles encouraged by these, some of which may be detrimental to human health*.'

Ref: Egger G, Dixon J. *Brit J Nutr* 2009;18:1-5

Our ‘Inflammatory’ (External) Environment: ‘Ecoflammation’

Greenhouse gases, the ‘sweet spot’ and climate change - ‘ecoflammation’

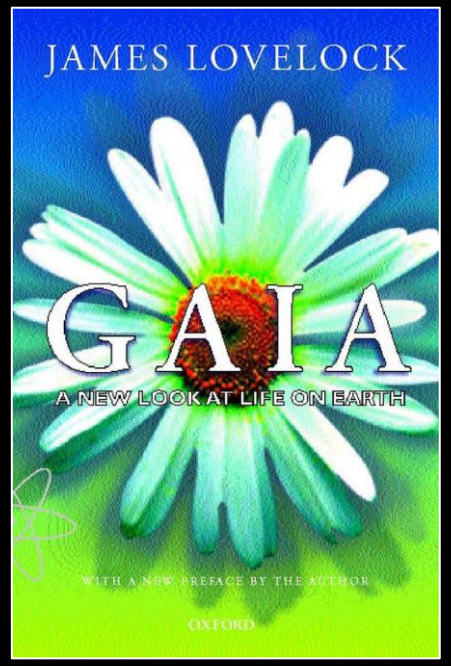


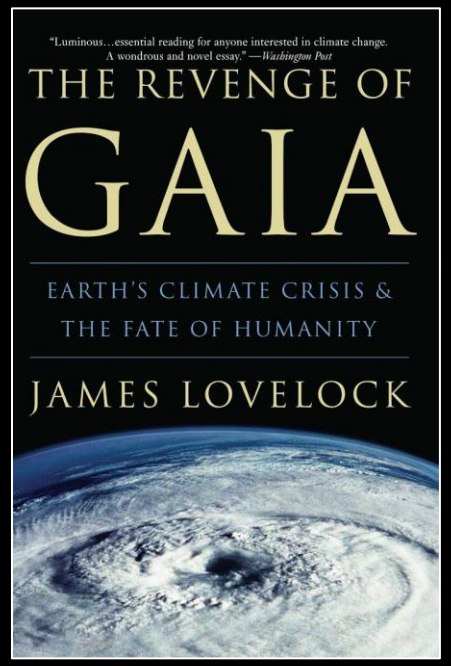


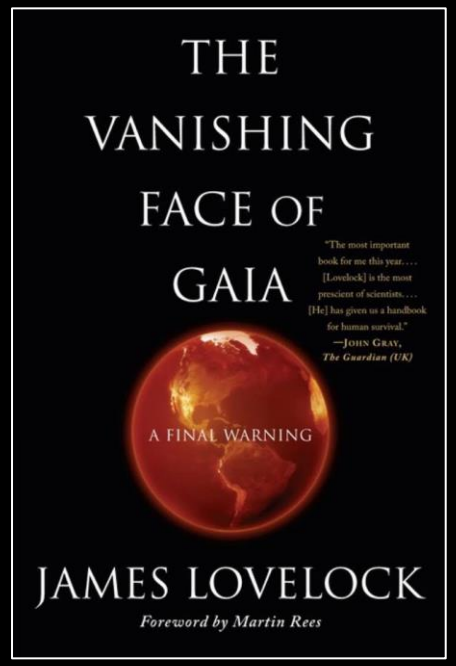
Greenhouse Gas buildup leading to climate change

The Gaia Hypothesis

The ’**Gaia hypothesis’** proposes that living organisms interact with their inorganic surroundings on Earth to form a synergistic and self-regulating, complex system that helps to maintain and perpetuate conditions for life on the planet







Gaia's Disease

'Gaia's Disease' is the temporary disruption of Gaia's synergism resulting in a discordant state that endangers conditions for life on earth

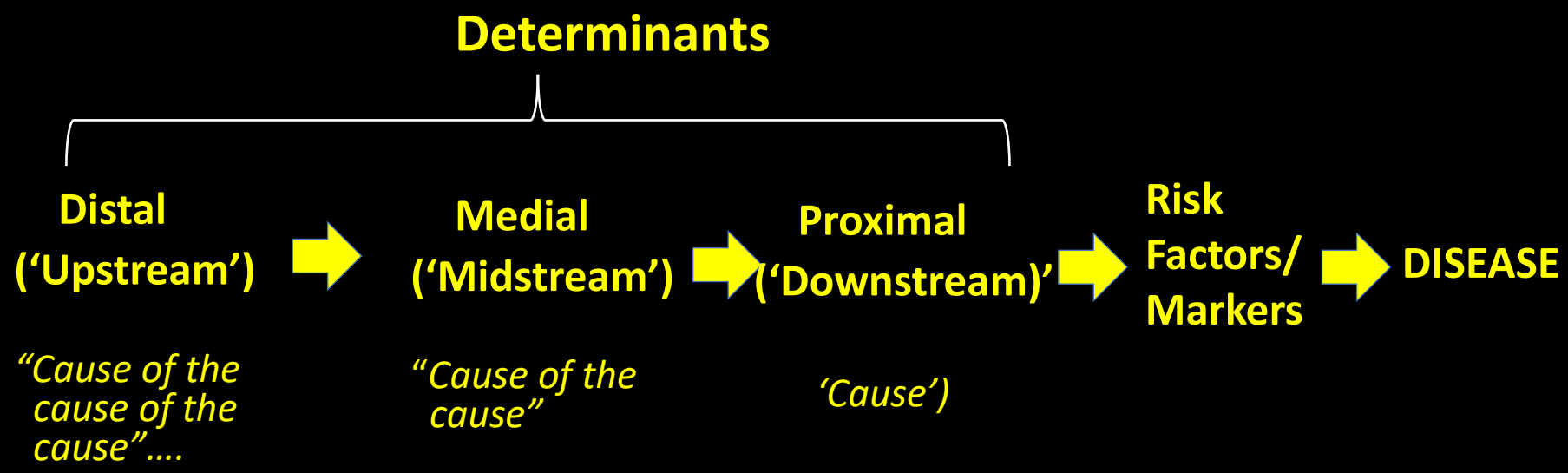
Symptoms

- Ecosystem destruction
- Species Extinction/Biodiversity reduction
- Atmospheric Greenhouse Gas build up
- Forest degradation
- Ocean acidification

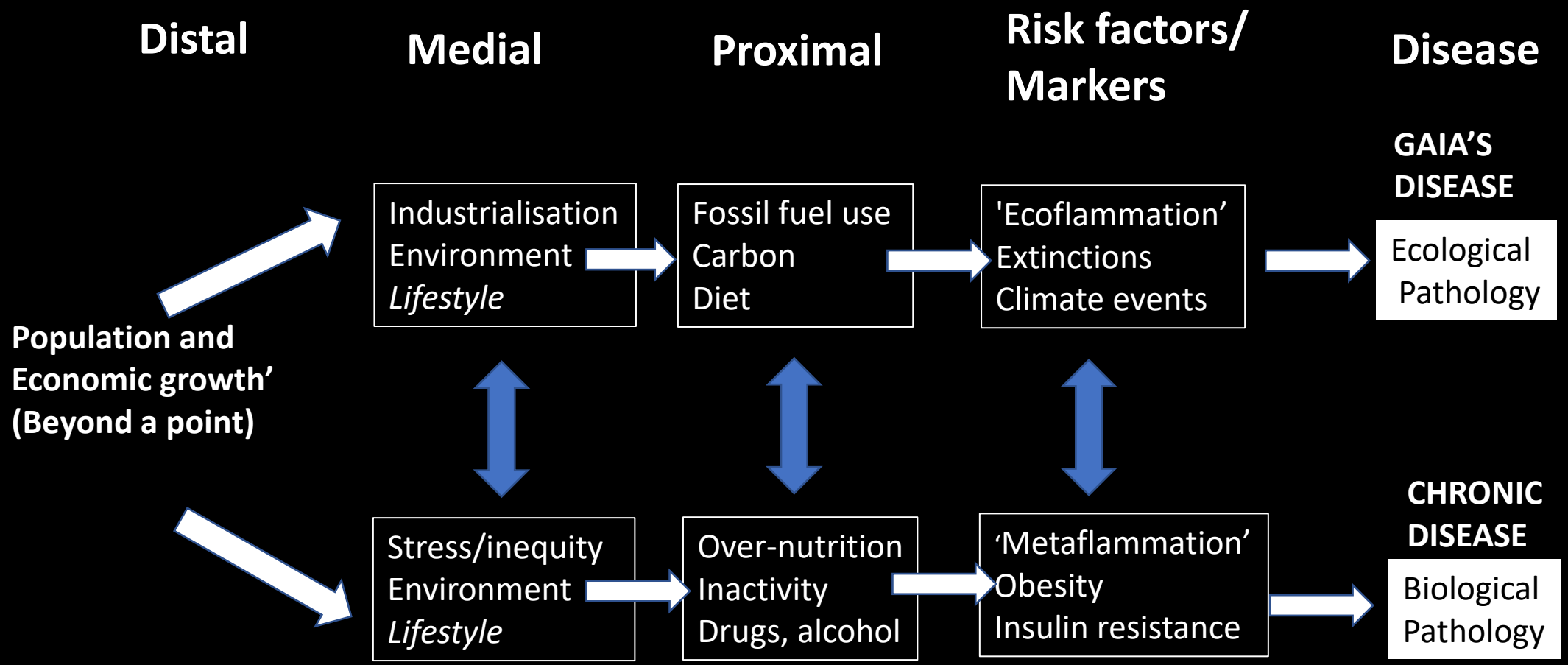
"I am a planetary physician whose patient, the living earth, complains of fever."

James Lovelock; *The Revenge of Gaia*, 2005

Hierarchy of Disease Determinants



The Epidemiology of 'Gaia's Disease'



The Epidemiology of Chronic Disease

"We scientists don't know how to do that"

"I used to think the top environmental problems were biodiversity loss, ecosystem collapse and climate change.

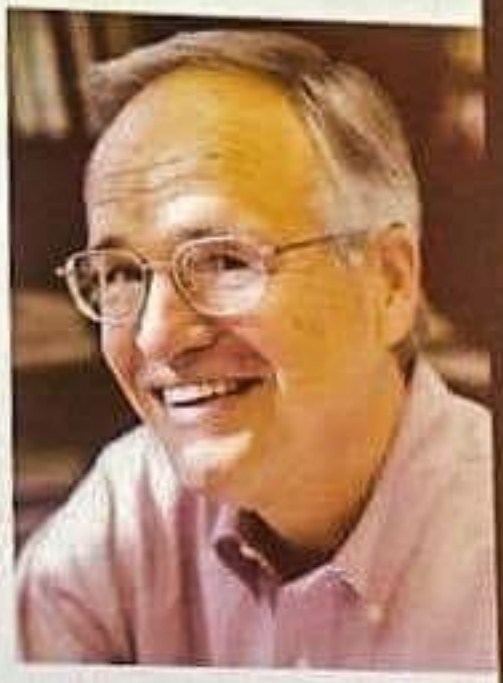
I thought that with 30 years of good science we could address those problems.

But I was wrong.
The top environmental problems are selfishness, greed and apathy…

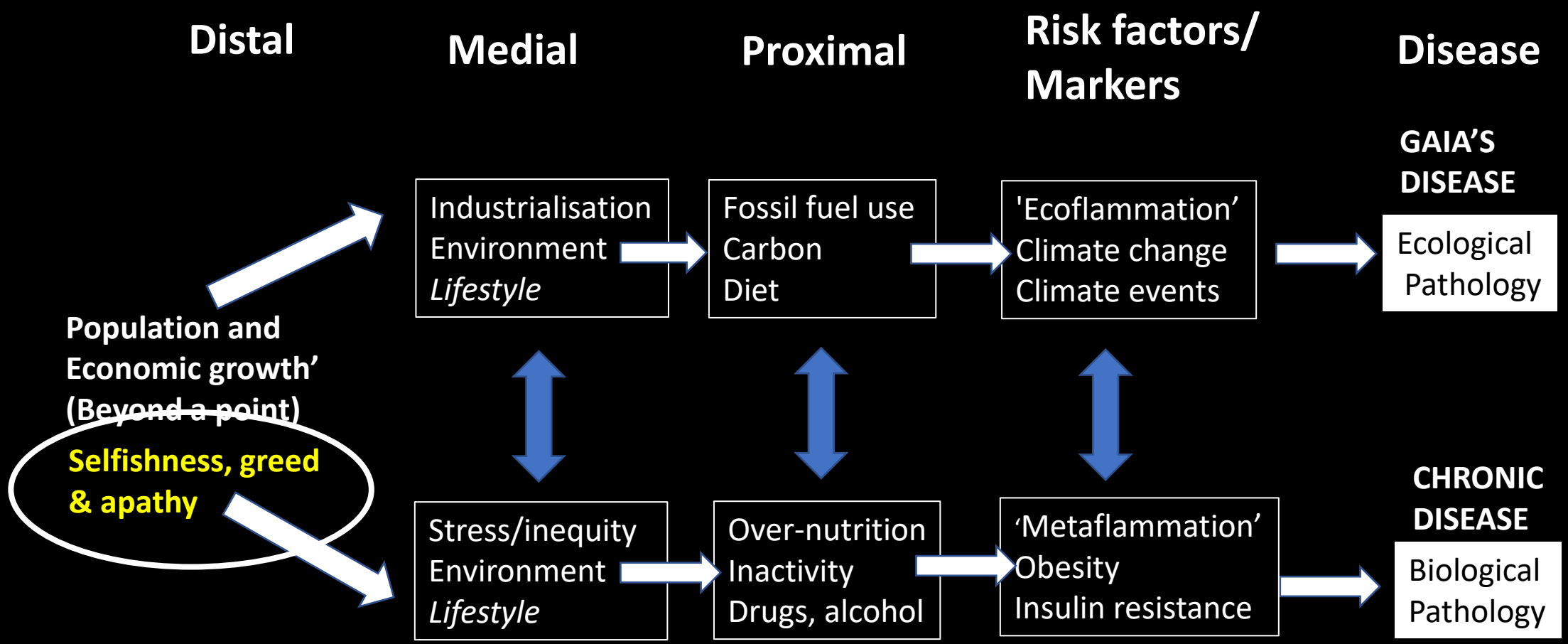
…and to deal with those we need a spiritual and cultural transformation

- and we scientists don't know how to do that."

Gus Speth



The Epidemiology of 'Gaia's Disease'

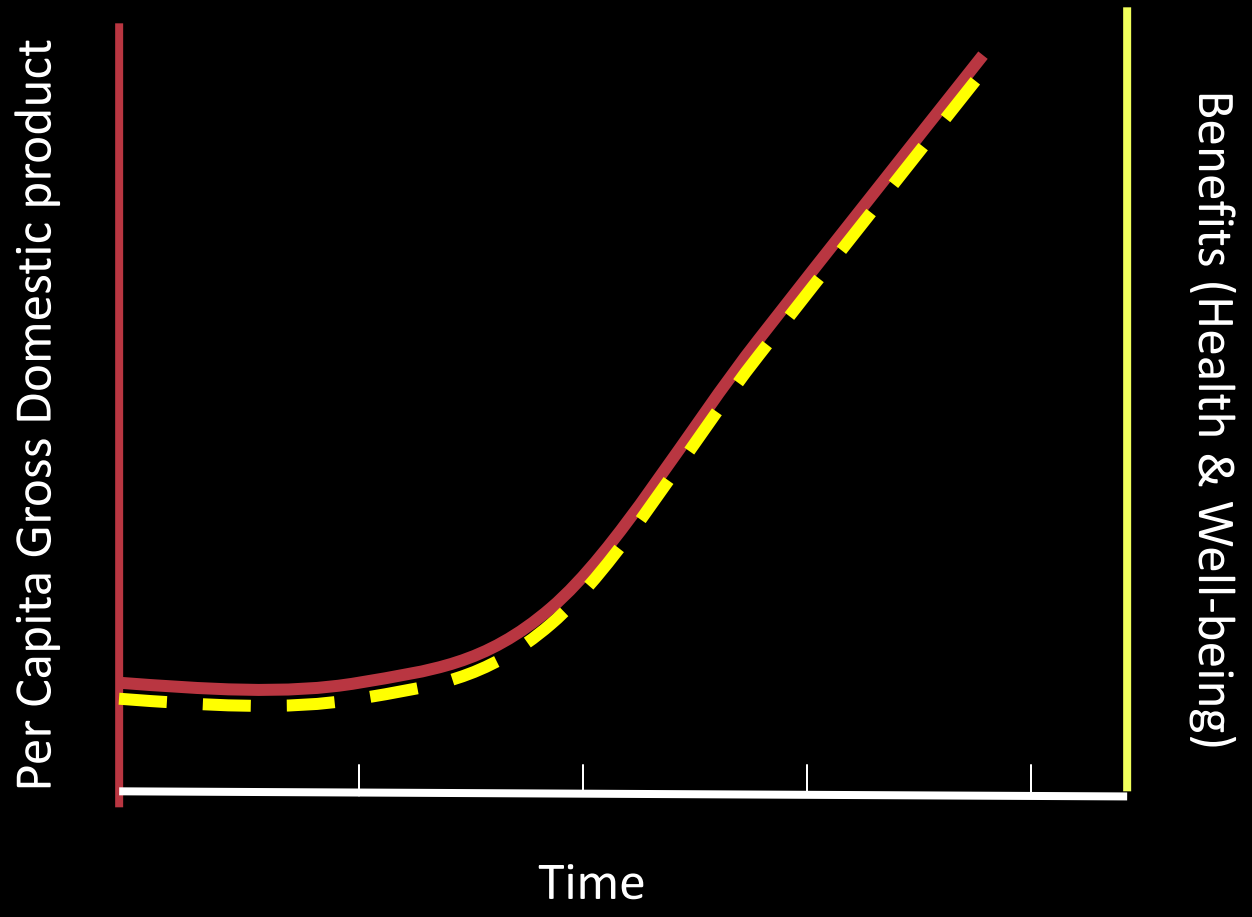


The Epidemiology of Chronic Disease'

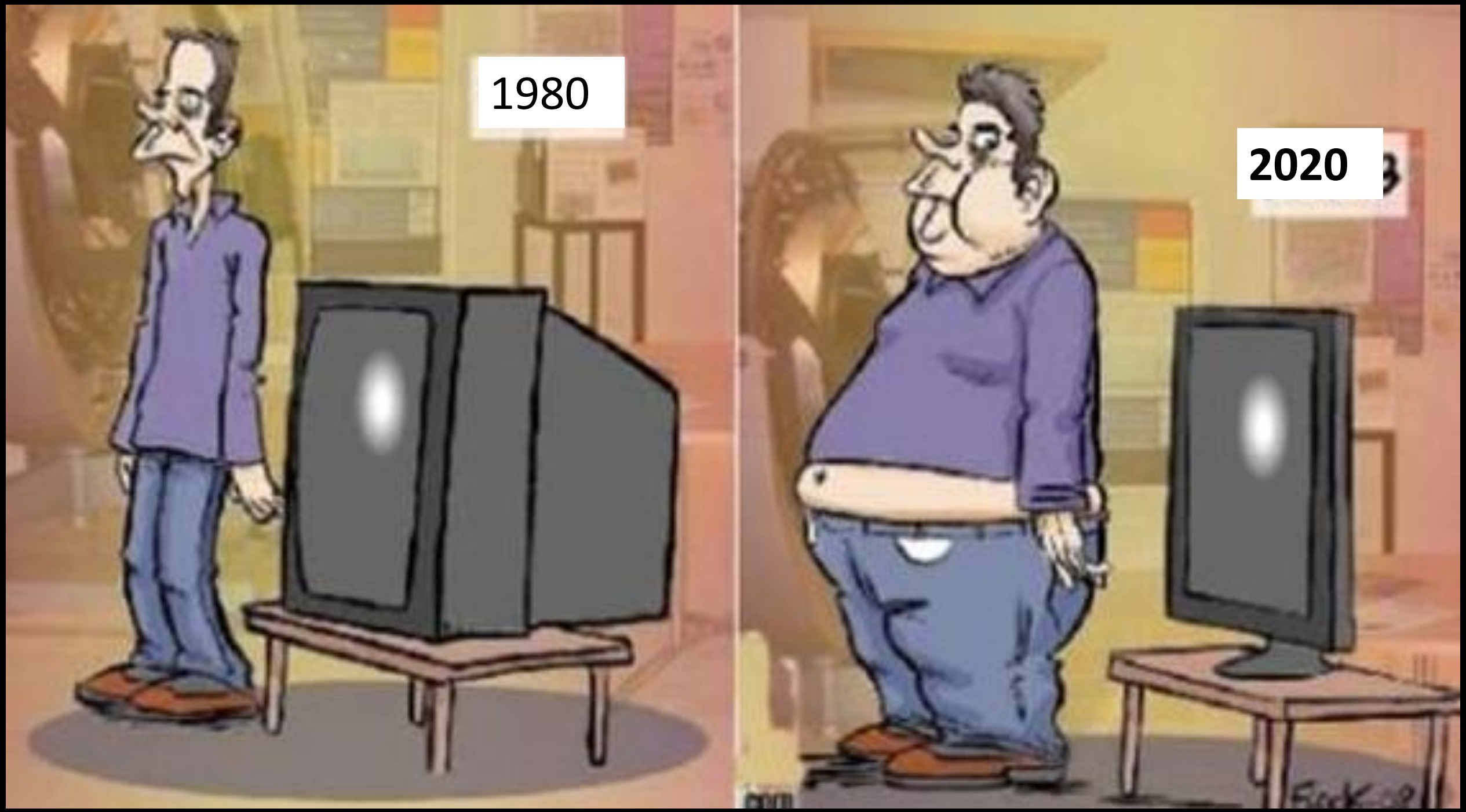
An ‘inflamed’ body in an ‘inflamed’ environment: Part of the same syndrome?

Ref: Egger G. *Obes Rev* 2008;9:456-463

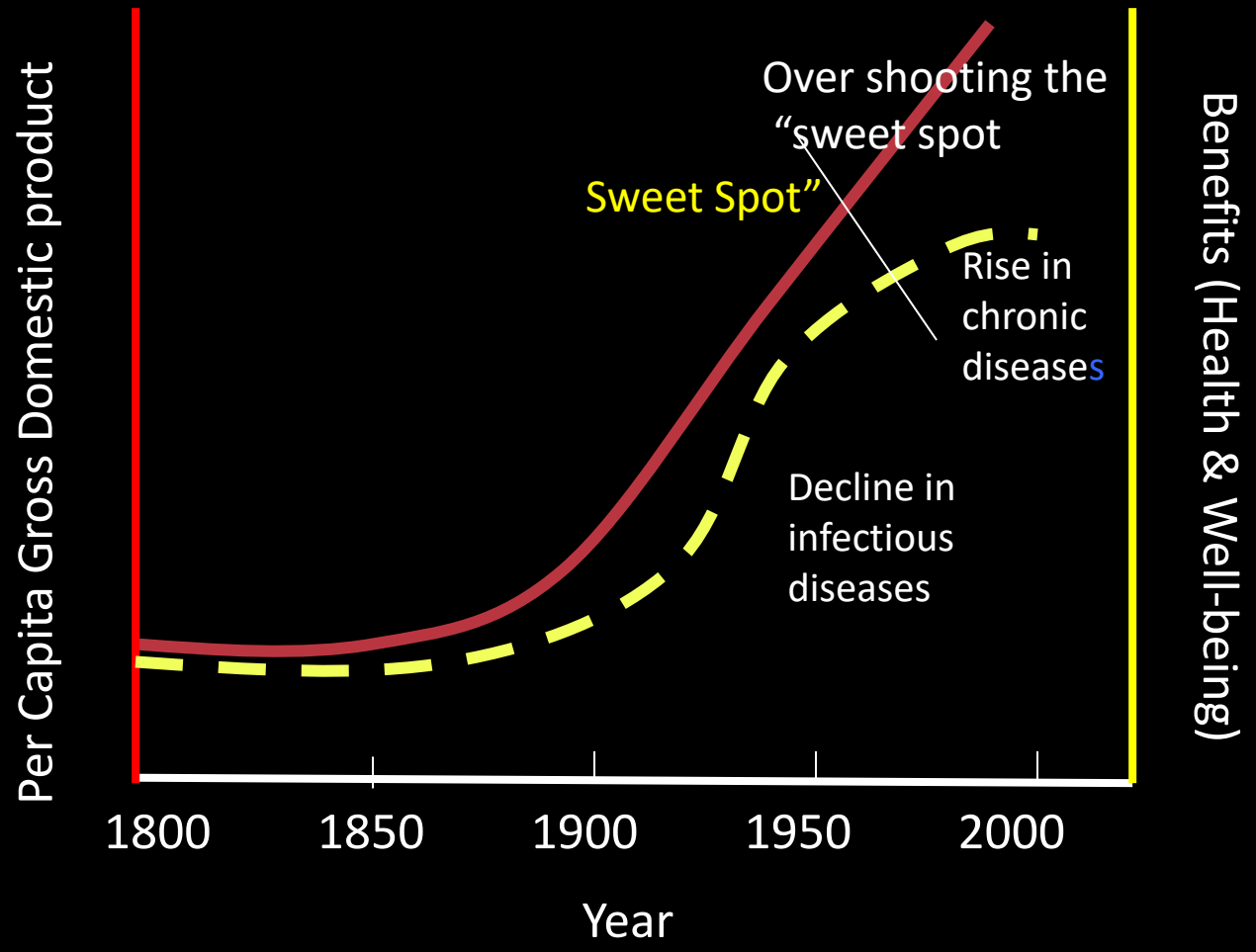
Association between economic growth & health (proposed)



Ref: Egger G. *Am J Prev Med*., 2009; 37(1):78-83


1980
2020

Association between economic growth & health (actual)



Ref: Egger G. *Am J Prev Med*., 2009; 37(1):78-83

VIACOM
Childhood obesity.
Don't take it lightly.
Food Stamps can help. Call 1-88-8-328-3483 to see if you qualify.
4151
VIACOM
I'm lovin' it
my kinda
shoppin'
spree
Dollar Menu
1152

Exponential….

"From birth to puberty a hamster doubles its weight each week. If, then, instead of leveling-off in maturity as animals do, the hamster continued to double its weight each week, on its first birthday we would be facing a nine billion tonne hamster……. There is a reason that in nature things do not grow indefinitely."

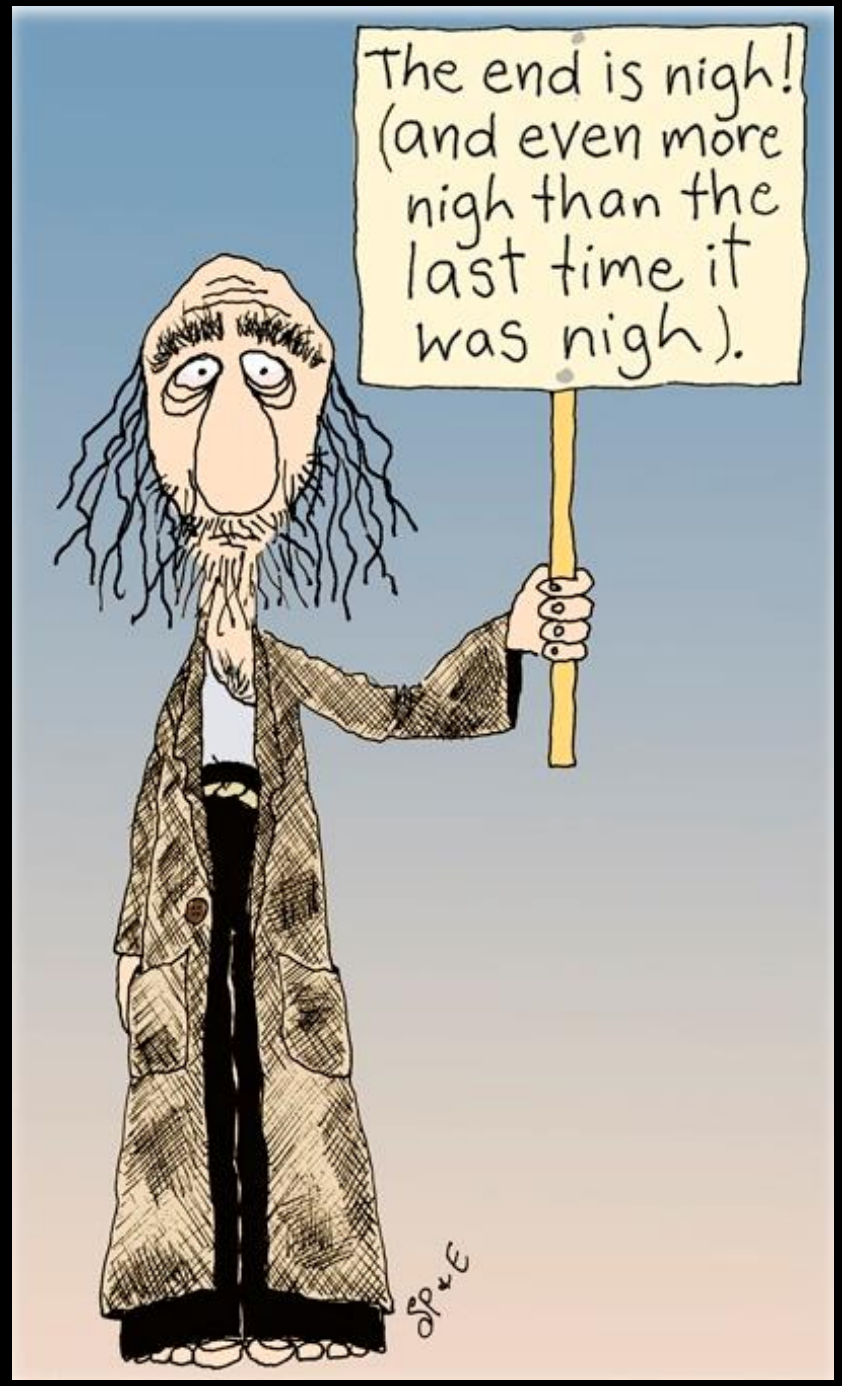
New Economics Foundation, London, 2009

"Anyone who believes exponential growth can go on forever in a finite world is either a madman or an economist."

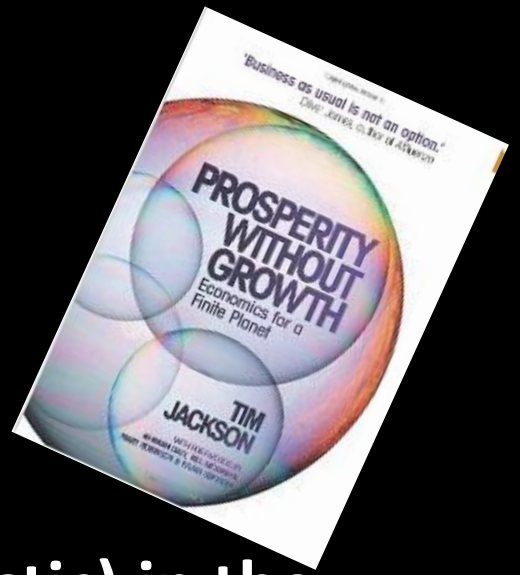
Kenneth E. Boulding Economist and co-founder of General Systems Theory

So what can be done?

Or is it all doom and gloom?



Making Corrections – at the Macro Level (some suggestions)



- 'De-couple' progress and growth
(With the ultimate goal of a 'steady state' economy)

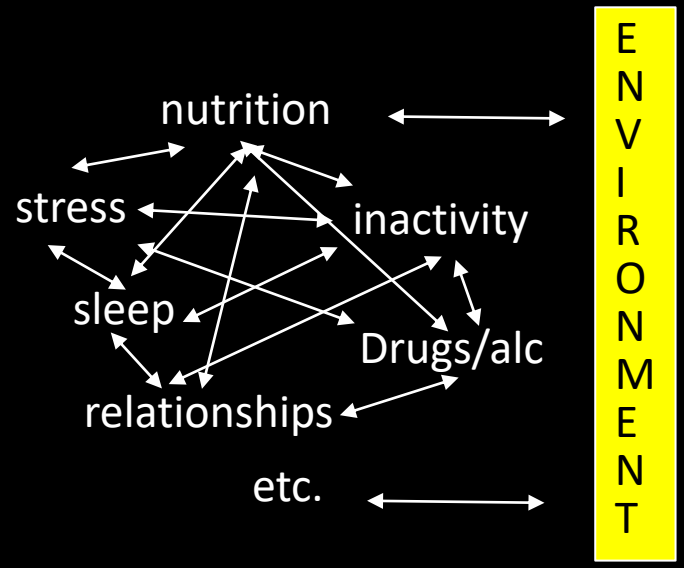
- Publically fund election campaigns

- Properly cost externalities (eg. carbon; plastic) in the corporate bottom line

- Eliminate the concept of 'limited liability'

- Bring the debate about population & economic growth into the ambit of Lifestyle Medicine

Making Corrections – at the Micro Level (some suggestions)



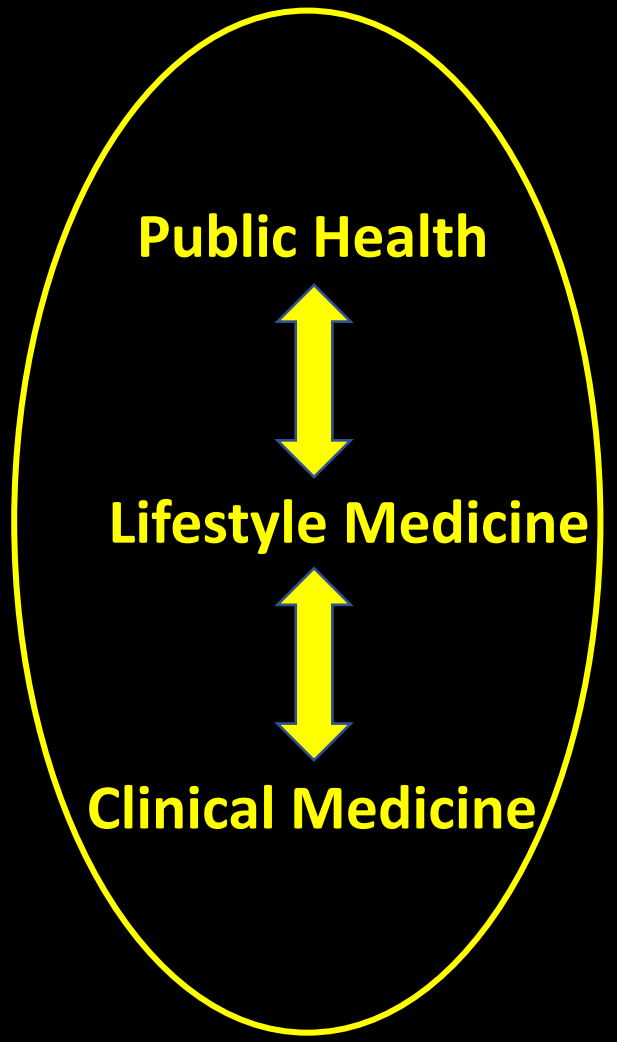
- Manage lifestyle as a ‘systems’ problem
- Divest non-ethical investments
- Utilize ‘appropriate’ clinical procedures (eg. shared medical appointments; social prescription, eduventures ….. etc.)
- Take advantage of multi-disciplinary management

An Expanded Role for Lifestyle Medicine

"Legislate, Regulate and Instigate
where you can …

Educate, Motivate and Advocate
where you can't …"

If all else fails:
'Medicate and Palliate'



...and economic

Health inequalities and the social determinants of health are not a footnote to the determinants of health. They are the main issue.

— Michael Marmot —

AZ QUOTES

Summing up

- The '…*cause of the cause of the cause*…' of chronic disease and Gaia's disease is unfettered growth – economic and population – beyond a 'sweet spot'.

- There are things we can do to palliate the problem, but a major shift in (mainly economic) thinking eg. towards a 'steady state economy - will be necessary for a cure.

- Chronic disease will need to be managed at all levels of 'causality', for most of which Lifestyle Medicine is appropriate. Giaia's disease will require bigger, more drastic steps.

- But don't worry…… Gaia is self-correcting. Gaia will save herself.

….. "It's humanity that needs saving" (James Lovelock; 'Gaia')

Thank You