Social prescribing – innovative responses to Covid 19
Green Prescriptions
If we take an hour to equal 1,000 years, then four days is 100,000 years – the time from the origin of mankind to today.

- 80 seconds ago
- Technology
- Industrialisation
- Civilisation
- Agriculture
- Hunter gatherers
- 10,000 years ago
- 10 hours ago
- 4 hours ago
- 4 days ago
- 100,000 years ago
Our factory setting is to be in a sociable group, supportive environment and have a purpose

People

Place

Purpose

Sociable

Nature

Autonomy

Connect

Take Notice

Be Active, Give, Keep Learning

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Stressful events can lead to strong resilience through:

- **People**: Strong social networks
- **Place**: Feeling safe and secure
- **Purpose**: Connection to Neighbourhood, Sense of purpose & worth, Sense of control

This resilience can then support:

- **Satisfaction Happiness**
- **Active Lifestyle**
- **Healthy Diet**
Human Mismatch Hypothesis

Ideal Environment

Human Mismatch Hypothesis

Ideal Environment

New Environment

Area of Mismatch

People

Place

Purpose

Loneliness

Hostile

Lack of control

Fear and Chronic Stress
Stressful events

People
Loneliness
Place
Hostile no nature
Purpose
No value or control

Weak Resilience

Stress Hormones
Catecholamines
Glucocorticoids

Chronic Stress

Addictions  Inactivity  Poor Diet  Sleep

IMMUNESYSTEM
Chronic Inflammation

Metabolic
Heart
Brain
Skin
Bone Muscle
GUT
Lung
Ageing
Inactivity and chronic stress

“Chronic psychosocial stress, increases the risk of physical inactivity and contributes to the epidemic of disease”

Obesity and chronic stress

- Increase Calorie Intake
  - Increase Carbohydrate Utilisation
  - Decrease Fat Utilisation

- Ghrelin
- Increase Weight and Visceral Fat
Chronic Stress Loneliness

Inactivity Poor diet Obesity Smoking
Mitochondria as a key component of the stress response. Manoli et al. Trends in Endocrinology and Metabolism Vol 18 No 5 2007

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Inflammation: The cause of Causes

Chronic Inflammation
Starts in children as young as 6 years old

- Diabetes
- Anxiety and Depression
- Obesity
- Dementia
- Cardiovascular disease
- Cancers
- Arthritis
Inside a healthy cell

Chromosomes keep dividing

Immune system is switched off until needed

Mitochondria, healthy and active. Providing lots of energy
Sedentary, Inflammatory diet and stress

Mitochondria

Oxidative Phosphorylation

Reactive Oxidative Species

Anti-Oxidants

Mitochondrial DNA

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Telomeres get shorter


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“Green exercise is associated with better cell-ageing profiles with increased telomerase compared to indoor gym-based activity”

Children aged 5-7yrs: Longer time spent in public green spaces was associated with longer telomeres.

The Hippocampus enlarges with exercise by 20% in both children and elderly.
Rural children have a larger Hippocampus

Kühn, et al 2020. Brain structure and habitat: Do the brains of our children tell us where they have been brought up?. NeuroImage, 222, p.117225.
How does nature benefit health?

(a) Less stressed,
(b) More exercise,
(c) More positive social interactions and
(d) Better quality environment for health promotion (i.e. has lower levels of air pollution)

Green Space Reduces Feeling Lonely

After adjustment for socio-economic and demographic characteristics, less green space in people's living environment coincided with feelings of loneliness and with perceived shortage of social support.

Green Space improves perceived Health

People with more green space within 1km feel healthier, have less health complaints and have better mental health.

Boosts Natural Killer Cells
Simultaneous and interwoven health of people, places and communities.
Green Gym Vs Aerobics

Comparison of heart-rate response during two sessions of activity

Heart Rate

Time Minutes

Green Gym
Step aerobics

Resilience
People
Strong social networks
Place
Feeling safe and secure
Connection to Neighbourhood
Purpose
Sense of purpose & worth
Sense of control

V Reynolds 1999 OCHRAD
Oxford Textbook of
Nature and Public Health
The role of nature in improving the health of a population

Edited by
Matilda van den Bosch
William Bird

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Building Active Communities

William.bird@intelligenthealth.co.uk