

Lifestyle Medicine for the 21st Century

A Resource Document

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Goals of invited international contributors:

- 1) To describe 'What is Lifestyle Medicine', including where it fits locally, regionally, globally, and the common applications, the 'how to', of Lifestyle Medicine (LM).
 - 2) How LM in the 21st century, as described above, contributes to the evolution of conventional medicine, healthcare, and health equity.
- Both above goals take cognisance of the context of the differing world healthcare systems and cultures.

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1. What is Lifestyle Medicine?

Lifestyle Medicine (LM) is an allopathic evidence-based medical discipline that treats, prevents, and reverses chronic disease using mainly six pillars of active intervention which include eating a whole-food, plant-predominant diet, getting adequate physical activity, promoting restorative sleep, managing stress, avoiding risky substances, and creating positive social connections.

Clinicians certified in lifestyle medicine use evidence-based, prescriptive lifestyle change to address the root causes of chronic conditions such as heart disease, type 2 diabetes, obesity, and other lifestyle related disorders. Intensive lifestyle medicine can often reverse these conditions, reducing or eliminating the need for patients to use medications, surgery, or undergo other procedures.

A wider definition includes the upstream determinants of health such as social, economic, and environmental factors which drive the pandemic of non-communicable diseases. It also refers to the need to develop skills to support behaviour change, and the utilisation of a range of models of care, including health coaching, social prescribing, and health technology.

Value Proposition of Lifestyle Medicine.

A lifestyle medicine approach to population care addresses up to 80% of chronic diseases and can both arrest and slow the progression of the decades-long rise in the incidence and prevalence of such chronic conditions and their burdensome costs. Patient and provider satisfaction often results from a lifestyle medicine approach that strongly aligns the field with the quintuple aim of better health outcomes, lower often affordable cost, improved patient satisfaction, improved provider well-being and advancement of health equity.

Lifestyle medicine is the foundation for a redesigned value-based and equitable healthcare delivery system. As the world's foremost entity representing the field of lifestyle medicine, the World Lifestyle Medicine Organisation is a galvanised force for change; members are united in their desire to identify and eradicate the root causes of chronic disease, with the clinical outcome goal of health restoration. Alongside recognition of the multiple global pandemics, the WLMO promotes lifestyle medicine as the first and optimal treatment option for all people, mitigating much of the non-communicable, chronic disease epidemic.

Summary

- There is evidence that behavioural change techniques to support people to make healthy lifestyle changes can improve health outcomes.
- Simple lifestyle advice alone may not address health inequalities. Lifestyle medicine does not only describe a policy or population level approach, rather it is a specific, personalised, effective tool in the consulting room, shaped by research into wider determinants of health and lifestyle improvements, where some people may require more support than others.
- Health care professionals want to support their patients with behaviour and lifestyle change but receive very little training to do so.
- Health care professionals may find that understanding how healthy lifestyle practices impact their own health could help them to deliver better care.
- Patients are increasingly self-monitoring and seeking advice on how to care for themselves through lifestyle changes. Health technology's place in this needs to be addressed.
- There is a need to provide good quality sources of education, care and information about this approach for both the public and clinicians.
- There is a need to determine new models of care which effectively address psychosocial and cultural differences around the world.
- The World Lifestyle Medicine Organisation has a role in advocating and lobbying decision-makers in policy, industry, education, and other settings to acknowledge and address lifestyle and social determinants of health.

The sustainable goal and focus of LM are to promote healthier living in salutogenic environments and facilitate healthier lifestyle choices. It requires education and training at both professional and public levels but avoiding the *victim blaming* of individuals whose lifestyles are influenced by circumstances beyond their control. These circumstances include the upstream determinants of health such as socio-economic factors, cultural factors, and environmental factors. This will involve genuine cultural partnerships, co-design of lifestyle intervention programmes and shared decision-making.

1.1. Defining Lifestyle Medicine, its width and breadth, and exploring where it fits.

Lifestyle medicine describes how health and well-being can be enhanced with daily habits and health practices (including the six pillars) that include healthy eating, which is plant-predominant and free of ultra processing, adequate physical activity, restorative sleep, stress management, maintaining positive social connections, and avoiding harmful substances.

Lifestyle medicine is a distinct medical discipline. But its principles are foundational for all specialties and transcend prevention to treat, slow progression and reverse chronic disease using the current six pillars, and behaviour-change skill sets that include motivational interviewing, positive psychology, and cognitive behavioural therapy. Lifestyle medicine is an integral part of local health care delivery, regional health systems and networks, and global efforts to develop and adapt evidence-based clinical practice guidelines, for which nearly all diseases and conditions benefit from attention to lifestyle as a first line, or adjuvant, management strategy. The benefits of a biopsychosocial, cultural, and spiritual approach will improve both mental, physical, and social health.

There are several ways to apply lifestyle medicine to managing chronic disease. First, all clinicians should have foundational knowledge and a basic skill set to counsel patients about the six lifestyle medicine pillars.

Every patient encounter should pay attention to the pillars and other determinants of health, with the intent of identifying root causes of chronic conditions and promoting healthy lifestyle behaviours. Clinicians, trained and qualified in lifestyle medicine, may dedicate their practice focus to lifestyle medicine as a platform for behaviour change that promotes evidence-based, lifestyle strategies to promote health, wellness, and longevity. Healthcare professionals with substantial lifestyle medicine experience, often resulting in LM qualification, can reverse chronic diseases like type 2 diabetes or coronary artery disease with lifestyle therapeutic change, working through multidisciplinary clinics or health systems.

The need for lifestyle medicine in the 21st century is more pressing than ever. A study of global disease burden in 195 countries concluded that dietary factors accounted for 11 million deaths in 2017 from non-communicable disease, along with 25 million disability-adjusted life years (DALY's) [i]. The impact of smoking was exceeded by dietary factors, which were responsible for 22% of global deaths observed, with 3 million deaths attributable to excess sodium intake, 3 million to low intake of whole grains, and 2 million to low intake of fruits. Additional research from the same group of 195 countries found that an optimized, whole food plant-predominant diet could increase life expectancy by 11-13 years at age 20 years, 8-9 years at age 60 years, and about 3.5 years at age 80 years [ii]. Within the United States, the CDC estimates that 50 to 80% of all chronic disease is caused by unhealthy nutrition, lack of physical activity, tobacco use, and excess alcohol consumption. Moreover, 60% of US adults have at least one

chronic condition and 40% have two or more, with a rising prevalence of obesity, heart disease, diabetes, stroke, and Alzheimer’s disease.

The COVID-19 pandemic has focused an intense spotlight on how healthy lifestyle behaviours can mitigate adverse outcomes and, conversely, how unhealthy behaviours increase morbidity and mortality. Obesity, for example, increases the risk of adverse outcomes for adults with COVID-19 infection by 2.3 for respiratory failure, 5.0 for ICU admission, and 1.7 for death [iii]. Similarly, mortality from COVID-19 is substantially higher for patients with uncontrolled diabetes, liver disease, respiratory disease, hypertension, and chronic heart disease [iv]. In contrast, eating a plant-based diet reduces both the risk of getting COVID-19, overall, and of developing moderate-to-severe infection [v].

With an increasing global focus on health disparities, lifestyle medicine has assumed relevance for under-represented minority populations and areas with reduced access to healthcare and/or limited resources to support efficient and effective healthcare delivery. The prevalence of many chronic diseases, including obesity, hypertension, type 2 diabetes, and cardiovascular disease, are variable in different settings in various countries of the world, however, are disproportionately higher in minority populations, because of sociocultural and economic factors, including concerns related to accessibility and affordability of healthy whole foods (food deserts, food apartheid). A 2023 WHO report reveals that 86% of all premature deaths from NCDs occur in low-and medium-income countries (LMIC), and of all NCD deaths, 77% are in LMIC countries (vi). Promoting healthy, and culturally acceptable behaviour change through lifestyle medicine in these populations, and in resource-challenged environments, is critical for reducing the incidence and prevalence of chronic disease and for equity in health outcomes.

Lifestyle Medicine has evolved from a grass-roots movement of patients and health care professionals who want to address the underlying causes of ill health.

Lifestyle Medicine describes an approach and offers consultation tools for health care practitioners and professionals to use in the consulting room one-on-one with patients or to use with Group consultation models both in-person and virtually.

References:

[i] Global Burden Disease Study 2017. Lancet 2019; 393:1958-72

[ii] Fadnes LT et al, PLoS Med 2022; 19(2):31003889.

[iii] Rottoli M. Eur J Endocrinol 2020; doi.org/10.1530/EJE-20-0541; online publication 7-1-2020.

[iv] Williamson et al. Open SAFELY: Factors associated with COVID-19 deaths in 17 million patients. Nature, July 2020; and Ejaz et al, J Infect Pub Health 2020; 13:1833-9

[v] Kim H et al, BMJ Nutr Prev Health 2021; doi:10.1136/bmjnp-2021-000272; and Merino J. Gut 2021; 70:2096-104

[vi] (vi) Global Burden of Disease Collaborative Network, Global Burden of Disease Study 2019(GBD 2019) Results (2020, Institute for Health Metrics and Evaluation- IHME) <https://vizhub.healthdata.org/gbd-results/>

Lifestyle Medicine is based on 3 principles:

1. Supporting Improvements in the Socioeconomic Determinants of Health

Lifestyle medicine recognises that health behaviours are heavily influenced by socio-economic factors, therefore, it is not enough to simply give “lifestyle advice”. Although most clinicians have, or may feel they have, little influence on the socio-economic factors affecting their patients, they can use behavioural change methods and some social interventions to support people to make the lifestyle changes they choose. If these methods are tailored to people’s “activation level” for example, through use of Patient Activation Measures (PAM), there is some evidence we can support people to improve their health outcomes despite the inequalities they face [i].

Lifestyle medicine can be used alongside medications and surgical procedures as an additional tool in the consulting room. Clinicians practicing lifestyle medicine can work to support their patients, but they will need policy and public health interventions to shift current focus away from individual responsibility[ii] to address the social, cultural, economic, and environmental factors which impact on individual choice. There is a need for healthcare practitioners to have awareness around the critical role of these factors and that a failure to recognise their impact can lead to a “citizen shift” or “lifestyle drift” in policy and blame in the consulting room[iii].

The Social Ecological Model of Change highlights the need to respond to more than the individual at the clinic visit. That individual is influenced by their own attitudes and beliefs but also their immediate surrounding environment, at work and at home, their neighborhood, the community, the country in which they live, and the rules and regulations in the areas where they work and live. These different influences on the patient need to be addressed.

References:

[i] Judith H. Hibbard and Jessica Greene, (2013), What the Evidence Shows About Patient Activation: Better Health Outcomes and Care Experiences; Fewer Data On Costs, *Health Affairs*, 32:2, 207-214

[ii] Kriznik N, et al, (2018), Moving beyond individual choice in policies to reduce health inequalities: the integration of dynamic with individual explanations, *Journal of Public Health*, 40, 4, 764–775.

[iii] Williams, O. and Fullagar, S. (2018). Lifestyle drift and the phenomenon of ‘citizen shift’ in contemporary UK health policy. *Sociology of Health and Illness*, 41:20-35

2. Skills to use of proven behavioural change techniques to support a healthy lifestyle

Lifestyle medicine calls for a move away from the traditional doctor-patient relationship where the clinician is the expert information provider. This is needed because we now know that giving simple lifestyle advice such as “eat less and move more” is often ineffective and may worsen health inequalities [i] [ii].

To be effective in supporting lifestyle change, lifestyle medicine uses knowledge of behavioural science to work with patients. This way we can work with people and their values to support problem solving and equip them with skills to make the changes they want to make. Some of these techniques have been shown to be at least 80% more effective in supporting behaviour change than traditional advice giving [iii] and include:

- Brief interventions
- Person-centred care
- Motivational interviewing
- Cognitive behavioural therapy techniques
- Health coaching
- Social prescribing
- Group consultations
- Use of Patient Reported Outcome Measures such as the Patient Activation Measure
- Optimisation of the built and lived environment to support behaviour change.

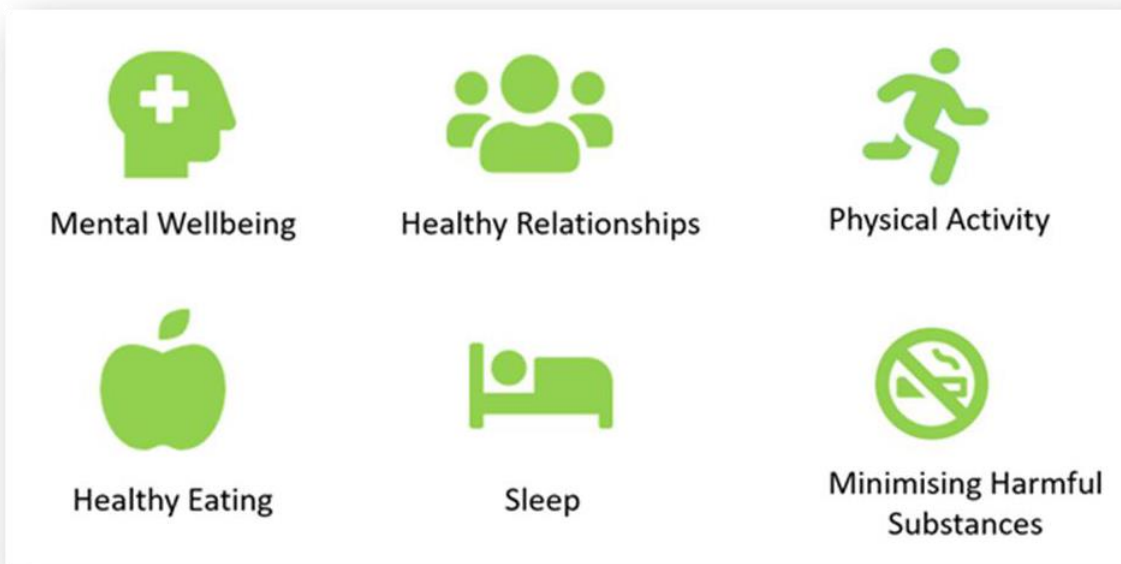
Lifestyle medicine clinicians move from an expert approach of “telling and selling” what is on their agenda for the patient, such as “Quit smoking to prevent a second heart attack”, to collaborating and co-creating with the patient to address what’s on the patient’s agenda such as, “Quit smoking so that my grandchildren will not refuse to get into my car.” Both are powerful motivators to quit smoking. One comes from the patient and speaks to his love and motivation to be connected to his family. A lifestyle medicine clinician needs to understand how to connect with the patient to elicit both the medical and the emotional information which will add to a patient’s motivation to adopt and sustain healthy behaviours.

[i] Kelly MP, Barker M. (2016), Why is changing health-related behaviour so difficult? *Public Health.*, 136, 109-116.

[ii] Melvyn Hillsdon et al, (2002), Advising people to take more exercise is ineffective: a randomized controlled trial of physical activity promotion in primary care, *International Journal of Epidemiology*, 31, 4, 808–815.

[iii] Rubak S et al, (2005), Motivational interviewing: a systematic review and meta-analysis. *Br J Gen Pract*, 55, 305

3. Knowledge of the 6 pillars of Lifestyle Medicine



1.2. Where does LM fit in the practice of medicine today?

Lifestyle medicine is an interdisciplinary field comprised of medicine, social science, public health, epidemiology, sociology, nutrition, sports and exercise medicine, and behavioural science. It shares similarities with other medical specialties, but it is distinct from:

- Public Health
- Preventive Medicine
- Population Health Management
- Rehabilitation Medicine
- Sports and Exercise Medicine
- Behavioural Medicine
- Ecological/sustainable medicine
- Holistic medicine
- Alternative or Complementary medicine
- Integrated medicine
- Functional medicine

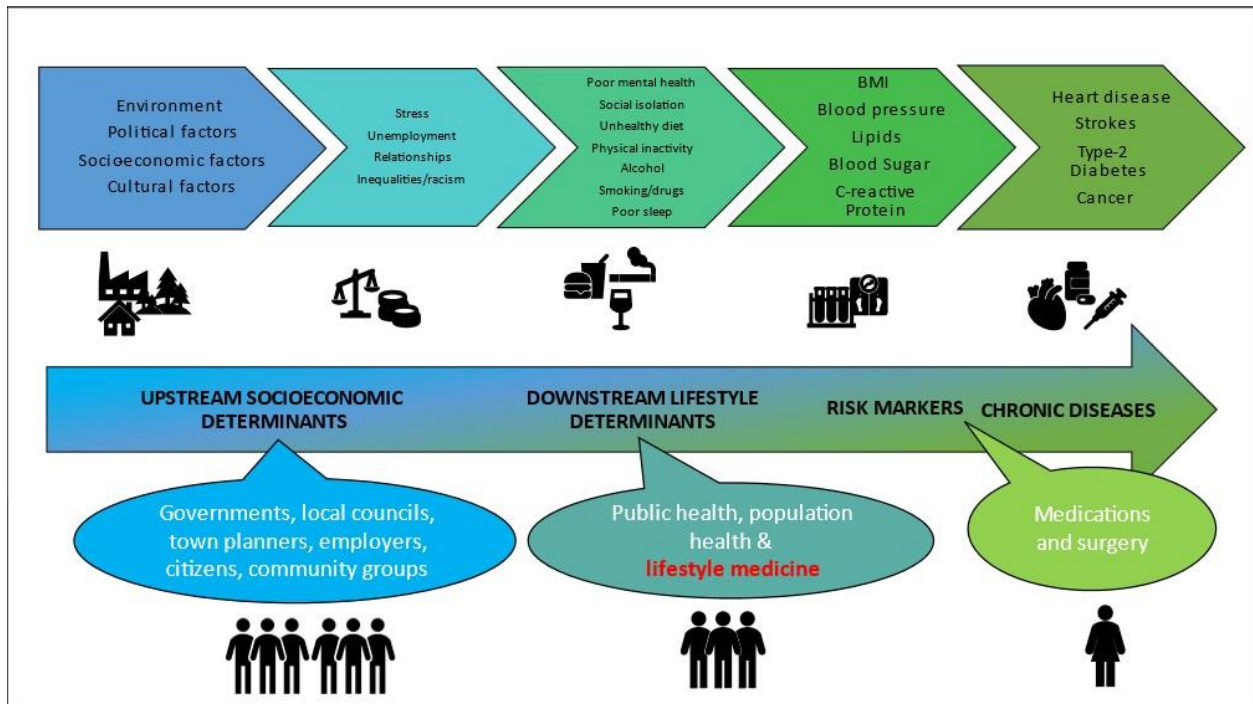
For details on how lifestyle medicine may complement or differ from these approaches see [Appendix 2](#).

In its simplest form, lifestyle medicine describes how health and well-being can be enhanced with daily habits and health practices that include plant-predominant eating, adequate physical activity, restorative sleep, stress management, positive social connections, and avoiding risky substances. Viewed in this context, the principles and practice of lifestyle medicine are an integral part of the foundation of conventional, mainstream medical practice. Rather than disease management, lifestyle

medicine’s clinical outcome goal is health restoration, helping providers find joy and meaning in their clinical practice despite an increasingly stressful healthcare environment, while also enhancing the lives of their patients, friends, colleagues, and families.

One frequent question is how lifestyle medicine differs from preventive medicine. While there is some overlap, preventive medicine focuses on the health of individuals, communities, and defined populations, with a goal of protecting, promoting, and maintaining health and well-being to prevent disease, disability, and death. Similarly, the 6 pillars of healthy behavior that comprise lifestyle medicine can prevent disease and death. Lifestyle medicine goes beyond prevention, however, by emphasizing evidence-based interventions to treat and reverse existing chronic disease, while empowering patients and families to adopt and sustain optimal lifestyle behaviors that also reduce the incidence and severity of future disease.

The graphic below shows where lifestyle medicine’s individual or small group approach works alongside the population level approaches of public health to influence more upstream determinants of health in the consulting room:



1.3. The International perspective – the nuances of LM

Lifestyle medicine now has an international spread. These National organisations all share the goals of researching, teaching, and spreading the practice of lifestyle medicine. However, their vision and approach may vary depending on the country's unique social and cultural context.

See [Appendix 3](#)

The international appeal and relevance of lifestyle medicine as a field of specialisation is apparent from the growing interest in gaining certification through the American Board of Lifestyle Medicine (ABLM), its international arm, the International Board of Lifestyle Medicine (IBLM), the British Society of Lifestyle Medicine (BSLM) Core Accreditation programme and the Australasian LM accreditation programme. Since the ABLM launched the first certification exams in 2017 in the U.S. the number of lifestyle medicine diplomates has grown to 1,850 certified physicians (April 2022), with approximately 400 new diplomates annually. The IBLM has certified 1,375 international physician diplomates (April 2022) from 72 countries, in partnership with ABLM to promote consistent certification standards. Other organisations offer lifestyle medicine certification to diverse clinicians who are not physicians, with the American College of Lifestyle Medicine in the US having certified nearly 2,800 health professionals (January 2022).

In the UK more than 1100 healthcare professionals have qualified in Lifestyle Medicine either through the ABLM/IBLM Certification or more recently the BSLM Core Accreditation which has been adopted and locally adapted by countries around the world.

An international set of standards provides reliability and consistency in the field of lifestyle medicine and hence accreditation of programmes and qualifications around the world is a World Lifestyle Medicine Organisation (WLMO) function.

The World Lifestyle Medicine Organisation represents the convergence of Lifestyle Medicine professional associations from around the world, uniting under one banner for the purpose of collaboration, shared knowledge, and best practices, and to convey the power of the lifestyle medicine story more compellingly—a story of health, hope and healing for one and all. Lifestyle Medicine leaders of all nations are working together to decrease the global pandemic of non-communicable disease.

The World Lifestyle Medicine Organisation is a coalition of worldwide non-profit, legally constituted national and regional Lifestyle Medicine societies which promote evidence-informed approaches to prevention, management, and reversal of non-communicable diseases. It currently has 41 member countries (July 2023) with representation from each continent.

The WLMO promotes Education, Advocacy and Research in the field of Lifestyle Medicine by providing a supportive platform and engagement with appropriately constituted national and regional Lifestyle Medicine organisations.

The WLMO accredits Lifestyle Medicine courses, programmes and qualifications, which are based solely in science and using up-to-date evidence, throughout the world, to ensure that the learning around the principles and pillars of Lifestyle Medicine is standardised, whilst acknowledging cultural, socio-economic and environmental differences.

WLMO believes in shared decision-making, equality of representation, and a celebration of the diversity that makes us so strong as an organisation.

The WLMO vision is of a world with the best possible health outcomes for its diverse citizens.

<https://wlmo.org/>

2. How will Lifestyle Medicine contribute to evolving 21st century science, health, healthcare, and equity challenges?

2.1. Context and epidemiological background

Current evidence for the effectiveness of LM: From Prevention to Remission

Prevention:

The INTERHEART study [i] found that lifestyle factors such as smoking, psychosocial contributors, fruit and vegetable consumption, alcohol consumption and regular physical activity with other conditions such as obesity and type-2 diabetes, accounted for over 90% of the risk of having a first heart attack.

The Million Women study [ii] found that regular consumption of low to moderate amounts of alcohol increases the risk of many cancers leading to the World Cancer Research Programme concluding that “between 30-50% of all cancer cases are estimated to be preventable through healthy lifestyle and avoiding exposure to occupational carcinogens, environmental pollution” [iii].

EPIC [iv] was one of the largest studies of its kind, with 500,000 people followed over 15 years, found that a Mediterranean diet is associated with reduced mortality and incidence of cardiovascular disease and cancer.

The Lyon Diet Heart study [v] found that people had a 50-70% lower risk of further cardiovascular disease if they followed a Mediterranean diet.

The PREDIMED study [vi] found that older people at high risk of heart disease were less likely to have a heart attack if they followed a Mediterranean diet with extra olive oil or nuts.

The Diabetes Prevention Program (DPP) [vii] trial demonstrated that lifestyle modification for at-risk people is cheaper and more effective than metformin. The DPP is the first of its kind and has been rolled out as NHS (UK) pilots [viii].

Treatment

Many NHS hospitals already use lifestyle-based programmes to support treatment of long-term conditions successfully, but they have yet to be scaled-up to their full potential:

· **Pulmonary Rehabilitation** involves health education and exercise training which is successful in improving health outcomes and has been recommended as a key part of treatment for people with lung

conditions.[ix] It has also been found to be effective in improving mood in those with chronic obstructive pulmonary disease.[x] However, is only offered in a minority of hospitals to mainly younger patients likely reflecting a lack of referral [xi].

· **Cardiac Rehabilitation** involves exercise, support with stress management and health education. These have been shown to reduce risk of death, risk of hospital admissions and improve psychological wellbeing and quality of life, however the up take is only between 20-50% [xii]. One of the barriers was the lack of clinicians endorsing cardiac rehab and inviting patients whilst still in hospital.

· **Chronic Pain Rehabilitation** uses exercise and techniques such as cognitive behavioural therapy which have been shown to improve quality of life to support people to live well despite the pain they are in as well as reducing the pain itself [xiii].

Prehabilitation before surgery is being trialed in a few hospitals for example the “Get Set 4 surgery” programme at St Georges NHS Hospital [xiv]. This uses the teachable moment of the need for surgery to support and motivate people to improve their lifestyle. There is growing evidence that this approach will be effective [xv].

[i] Yusuf S, et al. (2004), Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. *Lancet*. 364: 937–952

[ii] <http://www.millionwomenstudy.org/publications/>

[iii] <https://www.wcrf.org/sites/default/files/Summary-of-Third-Expert-Report-2018.pdf>

[iv] Trichopoulou A et al. (2005), Modified Mediterranean diet and survival: EPIC-elderly prospective cohort study. *BMJ*. 30;330, 7498, 991.

[v] de Lorgeril M, et al. (1999), Mediterranean diet, traditional risk factors, and the rate of cardiovascular complications after myocardial infarction: final report of the Lyon Diet Heart Study. *Circulation*; 99:779–785

[vi] Estruch R et al, (2018), Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts, *N Engl J Med*, 378, e34

[vii] Diabetes Prevention Program Research Group, (2009), 10-year follow-up of diabetes incidence and weight loss in the diabetes Prevention Program Outcomes Study, *The Lancet*, 374, 9702, 677-1686

[viii] Barron E, et al (2017), Progress of the Healthier You: NHS Diabetes Prevention Programme: referrals, uptake and participant characteristics. *Diabetic Medicine*, 35, 4, 513-518.

[ix] L Nici, et al., (2006), Thoracic Society/European Respiratory Society Statement on Pulmonary Rehabilitation, *Am J Respir Crit Care Med*, 173, 1390-1413

[x] Peter A. Coventry, Daniel Hind, (2007), Comprehensive pulmonary rehabilitation for anxiety and depression in adults with chronic obstructive pulmonary disease: Systematic review and meta-analysis, *Journal of Psychosomatic Research*, 63, 5, 551-565,

[xi] Yohannes AM, Connolly MJ. (2004), Pulmonary rehabilitation programmes in the UK: a national representative survey. *Clinical Rehabilitation*. 18, 4, 444-449.

[xii] Dalal H et al, (2015), Clinical Review: Cardiac Rehabilitation, *BMJ*, 351, h5000

[xiii] Hooten W et al, (2007), Treatment Outcomes after Multidisciplinary Pain Rehabilitation with Analgesic Medication Withdrawal for Patients with Fibromyalgia, *Pain Medicine*, 8, 1, 8–16,

[xiv] <https://www.stgeorges.nhs.uk/service/prehabilitation/>

[xv] Durrand J, et al. (2019), Prehabilitation. *Clin Med (Lond)*. 9, 6, 458-464.

Most National Health Service (NHS) interventions in the UK involve exercise and simple health education/advice but have not yet incorporated behavioural change techniques to support improvements in the other lifestyle areas of diet, social connections, connection with nature, management of stress improvement of sleep etc. For example, the DASH study found that high fruit and veg diets can be used to treat blood pressure. Appropriate support to improve diet quality has the potential to be used to manage and reverse hypertension in some patients [i].

Intensive Lifestyle medicine interventions are not yet available to NHS patients but have been found to reverse disease processes and result in remission in some studies in specific groups of patients.

[i] Appel LJ et al, (1997), A clinical trial of the effects of dietary patterns on blood pressure. DASH Collaborative Research Group. *N Engl J Med*. 336, 16, 1117-24

Remission

These studies have demonstrated the possibility that intensive lifestyle intervention programmes have the potential to be more than just prevention or an adjunct to treatment but could reverse disease processes to result in remission:

- **The DiRECT study**, [i] demonstrated type 2 diabetes remission for up to 2 years following a dietary intervention (involving meal replacement shakes with a stepwise re-introduction of food. This study lead Professor Taylor to describe Type-2 diabetes as a “bad case of food poisoning” in his book “Life Without Diabetes” [ii].
- **The Lifestyle Heart Trial**, [iii] demonstrated that cardiovascular disease may be reversed using an intensive lifestyle program. The control group, receiving usual care showed progression of their arterial narrowing, resulting in more than twice as many cardiac events as the intervention group whose coronary arterial disease regressed.
- **The SMILES trial**, [iv] demonstrated depression remission through a dietary intervention for moderate to severe depression and that this could be more effective than anti-depressant treatment.

[i] Lean M et al, (2018), Primary care-lead weight management for remission of type-2 diabetes (DiRECT): an open-label, cluster-randomised trial, *The Lancet* 391, 10120, 541

[ii] Life Without Diabetes, Professor Roy Taylor, Short Books

[iii] Ornish D et al, (1998), The Lifestyle Heart Trial, *JAMA* 280, 2001-2007.

[iv] Jacka et al, (2017), A randomised controlled trial of dietary improvement for adults with major depression (the SMILES trial), *BMC Medicine*, 15:23

A Paradigm Change for Medicine: Epigenetics and “Metaflammation”

When James Watson co-discovered the DNA double helix, he stated “now we know in large measure our fate is in our genes” The Human Genome Project [i] lead Francis Collins stated that by 2020 we would have new gene-based “designer drugs for diabetes, hypertension, mental illnessevery tumour will have a precise molecular fingerprint ...”, we are no longer awaiting such drugs but are moving away from this “genetic determinism”. Advances in basic science suggest that Watson was wrong; our fate is not entirely in our genes. We have discovered that our genes can be switched on and off by our lifestyle through “epigenetic” factors which are mainly lifestyle factors. Similarly, “telomere” DNA areas discovered by the Nobel prize winner Dr Elizabeth Blackburn, shorten with each cell division, and determine how fast cells age and when they die. They shorten faster with stress, poor sleep, poor diet, and inactivity [ii]. Dr Blackburn’s team has discovered that telomeres can lengthen too if lifestyle factors are improved [iii.]

The mechanisms behind how lifestyle switches on and off genes are starting to become clearer. “Immunometabolism” is an emerging field that investigates this process by studying the way that energy generating processes in the body affect the immune system. It is hypothesised that lifestyle factors can cause “metaflammation” which causes long-lasting metabolic and epigenetic cellular reprogramming [iv].

[i] <https://www.genome.gov/human-genome-project>

[ii] Blasco, M. (2005), Telomeres and human disease: ageing, cancer and beyond. *Nat Rev Genet* 6, 611–622

[iii] Lin J et al, (2012), Telomeres and lifestyle factors: Roles in Cellular Aging. *Mutation Research*, 730, 1-2, 85-89

[iv] Christ, A., Latz, E, (2019), The Western lifestyle has lasting effects on metaflammation. *Nat Rev Immunol* 19, 267–268

2.2. Too much medicine, overdiagnosis

The British Medical Journal's (BMJ) **Too Much Medicine** initiative aims to highlight the threat to human health posed by **overdiagnosis** and the waste of resources on unnecessary care.

[Focusing on overdiagnosis as a driver of too much medicine](#)

<https://www.bmj.com › content › bmj>

'Too much medicine' is a broad term, encompassing the concepts of over-diagnosis, over-detection, over-treatment, over-utilisation, disease mongering, medicalisation, false positives, misdiagnosis, and diagnosis creep.

<https://www.racgp.org.au/download/Documents/Policies/Clinical/Too-much-medicine.pdf>

Overdiagnosis is the diagnosis of "disease" that will never cause symptoms or death during a patient's ordinarily expected lifetime. Overdiagnosis is a side effect of screening for early forms of disease.

Lifestyle medicine addresses chronic medical conditions which have as their common aetiology, a disruption of everyday lifestyle behaviours that interfere with prevention and effective treatment of underlying pathophysiologic processes of disease. Despite this common disrupting mechanism, lifestyle-related conditions have been largely approached through pharmaceutical and procedural treatments rather than lifestyle behavioral treatments owing to a variety of factors.

With older and ageing populations, patients often experience multiple chronic diseases at the same time, many of them lifestyle related. Individual chronic disease guidelines often recommend pharmaceutical interventions as a key treatment, resulting in patients being prescribed multiple regular medications for their different diseases [i]. For example, it would not be uncommon to see a patient with heart failure, T2 Diabetes Melitus, and breast cancer treated with medication prescriptions according to the guidelines of each [ii] even though lifestyle behavioural treatments in exercise and nutrition prescriptions can greatly alter, in common, the course of all conditions. Guidelines may arise out of research, controlling for co-factors thereby selecting out coexisting chronic conditions, but when put into practice in patients with multiple co-existing conditions, can easily result in polypharmacy, unexpected drug interactions, and multiple side effects. The problem with polypharmacy and overtreatment has reached a level of awareness in older patients with a reported prevalence of polypharmacy ranging from 4% to 57% depending upon the definition used. It is high in elderly people but was also non-negligible in younger subjects such as the middle-aged [i]. Shared decision-making between patients and clinicians has been proposed as means to mitigate overtreatment and polypharmacy; yet when professionals and patients wish to do less rather than more pharmaceutical or procedural treatments, or to apply a common lifestyle treatment, the system within which care is delivered and received, can make this challenging to achieve [iii].

An additional challenge is the growth of the pharmaceutical and medical device industries. The global pharmaceutical manufacturing market size was valued at USD 405.52 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 11.34% from 2021 to 2028 [iv]. Furthermore,

according to Precedence Research, the global medical devices market size is expected to hit around US\$ 671.49 with a CAGR of 5.2% from 2020 to 2027 [v].

The global rise of these markets is in part due to a thirst for innovation and technology by providers and consumers alike as well as by provider time restraints, insufficient lifestyle medicine training, and direct-to-consumer advertising. In effect, lifestyle treatment has been supplanted at great cost by a next step approach with pharmaceuticals and procedures.

To effectively tackle the network of conditions associated with lifestyles it is crucial for healthcare systems, providers, and patients to adopt a new approach known as lifestyle medicine. This approach empowers individuals by emphasising education and supporting changes and sustainable modifications to their lifestyles. By fostering an environment that promotes shared decision making and aligning healthcare practices with evidence-based lifestyle interventions we can pave the way for a healthier future. This future would prioritise addressing the causes of diseases while reducing reliance on pharmaceuticals and medical procedures.

[i] Guillot, J. *Therapie*. Sep-Oct 2020;75(5):407-416.

[ii] Umesh, T. *J Clin Epidemiol*. 2019 Feb;106:98-107

[iii] Armstrong, N. *Sociol Health Illn* 2021 Jan;43(1):58-64

[iv] <https://www.statista.com/statistics/263102/pharmaceutical-market-worldwide-revenue-since-2001/>

[v] <https://www.globenewswire.com/news-release/2021/06/30/2255807/0/en/Medical-Devices-Market-Size-to-Hit-Around-US-671-49-Bn-by-2027.html>

The Future Healthcare Landscape

The future of lifestyle medicine appears promising and holds great potential in shaping the healthcare landscape. Here are some potential developments and trends that may influence the future of lifestyle medicine.

Integration into Mainstream Healthcare: As the evidence supporting lifestyle interventions continues to grow, lifestyle medicine is likely to become more integrated into mainstream healthcare. Healthcare providers may incorporate lifestyle medicine principles into their practices to prevent, manage, and treat chronic diseases.

Personalised Lifestyle Medicine: Advancements in genetics, gene sequencing, CRISPR (Clustered Regularly Spaced Short Palindromic Repeats), digital health technologies, and data analytics may lead to the development of personalised lifestyle medicine approaches. Tailoring interventions to individual genetic profiles, lifestyle habits, and health conditions can optimise outcomes and improve patient adherence.

Expansion of Digital Health Solutions: The rise of digital health platforms, mobile apps, and wearable devices will likely continue to support lifestyle behaviour changes. These technologies can offer personalised coaching, real-time monitoring, and feedback to empower individuals in managing their health.

Increasing Awareness and Education: With growing awareness of the impact of lifestyle on health, there will likely be increased emphasis on educating healthcare professionals, the public, and policymakers about lifestyle medicine approaches and their benefits.

Collaboration between Disciplines: Lifestyle medicine's holistic approach encourages collaboration between various healthcare disciplines, including physicians, dietitians, pharmacists, exercise physiologists, psychologists, and public health experts. Interdisciplinary teams will work together to address lifestyle-related health issues comprehensively.

Healthcare Policy and Insurance Incentives: As evidence accumulates on the cost-effectiveness of lifestyle medicine interventions, policymakers and insurance companies may incentivise and support lifestyle-based preventive strategies.

Focus on Mental Health and Well-being: Lifestyle medicine will likely place greater emphasis on mental health and well-being, recognising the strong interplay between mental and physical health. Stress reduction, mindfulness, and behavioural health interventions may gain more attention.

Community-Based Initiatives: Community-based lifestyle medicine programs and initiatives may gain traction, promoting healthy behaviours in local communities and encouraging social support networks. Already Social Prescribing is being adopted more widely in the UK. There will be a more joined-up approach to our community assets.

Research Advancements: As intimated earlier in this document ongoing research in lifestyle medicine will continue to explore new areas, refine existing interventions, and identify novel strategies to address emerging health challenges. Growth of LM research into emerging areas such as intensive LM programmes for severe diseases. For example, fasting mimicking diets in oncology and ketogenic diets in schizophrenia.

Integration in Medical Education: Medical schools and other healthcare training programs may incorporate comprehensive lifestyle medicine education into their curriculum, equipping future healthcare professionals with the knowledge and skills to promote lifestyle-based care.

Preventive Approach in Chronic Disease Management: Lifestyle medicine's preventive approach may play a significant role in managing chronic diseases, reducing the need for intensive medical interventions and hospitalisations.

New models of care: in workplaces, schools, community.

Collaborative initiatives globally: Overall, the future of lifestyle medicine looks promising as more attention is directed toward preventive healthcare and addressing the root causes of chronic diseases. Emphasizing the importance of lifestyle interventions in improving health outcomes can lead to a healthier population, reduced healthcare costs, and an improved quality of life for many individuals. The World Lifestyle Medicine Organization (WLMO) is a driving force which plays a key role in leading these

endeavours. By working in collaboration with healthcare experts, researchers, policymakers and individuals who have the power to make improvements, our global health and overall wellbeing will be addressed.

2.3. The Socio-economic determinants of health and LM benefits

<https://www.gov.uk/government/publications/health-profile-for-england/chapter-6-social-determinants-of-health>

Socioeconomic determinants of health: Health inequalities: relative or absolute material standards?

<https://www.bmj.com/content/314/7080/591>

That mortality in developed countries is affected more by relative than absolute living standards is shown by three pieces of evidence. Firstly, mortality is related more closely to relative income within countries than to differences in absolute income between them. Secondly, national mortality rates tend to be lowest in countries that have smaller income differences and thus have lower levels of relative deprivation. Thirdly, most of the long-term rise in life expectancy seems unrelated to long term economic growth rates. Although both material and social influences contribute to inequalities in health, the importance of relative standards implies that psychosocial pathways may be particularly influential. During the 1980s income differences widened more rapidly in Britain than in other countries; almost a quarter of the population now lives in relative poverty. The effects of higher levels of relative deprivation and lower social cohesion may already be visible in mortality trends among young adults. The existence of wide and widening socioeconomic differences in health shows how extraordinarily sensitive health remains to socioeconomic circumstances. Twofold, threefold, or even fourfold differences in mortality have been reported within Britain, depending largely on the social classification used. This series will illustrate some of the most important mechanisms involved in the generation of these differences.

Fundamental to understanding the causes of these differences in health is the distinction between the effects of relative and absolute living standards. Socioeconomic gradients in health are simultaneously an association with social position and with different material circumstances, both of which have implications for health - but which is more important in terms of causality? Is the health disadvantage of the least well-off part of the population mainly a reflection of the direct physiological effects of lower absolute material standards (of bad housing, poor diets, inadequate heating, and air pollution), or is it more a matter of the direct and indirect effects of differences in psychosocial circumstances associated with social position-of where you stand in relation to others? The indirect effects of psychosocial circumstances here include increased exposure to behavioural risks resulting from psychosocial stress, including any stress related to smoking, drinking alcoholic beverages, eating “for comfort,” and so on. Most of the direct effects are likely to centre on the physiological effects of chronic mental and emotional stress.

Evidence from three sources suggests that the psychosocial effects of social position account for the larger part of health inequalities. If valid, this perspective would have fundamental implications for public policy and for our understanding of the pathways through which socioeconomic differences have an impact on human biology.

2.4. Successes and challenges in the spread of Lifestyle Medicine approaches

1. To provide clinicians with Lifestyle Medicine skills and knowledge:

Lifestyle approaches are advised in all major healthcare guidance. Health care professionals want to know more but current medical training provides little teaching in this area. LM can redress this balance.

“There is a lack of knowledge and understanding of the basic evidence for the impact of nutrition and physical activity on health among the overwhelming majority of doctors. This has its roots in the lack of early formal training.”

Letter to the Medical Schools Council and General Medical Council from doctors including Dr David Haslam (Chairman of the National Obesity Forum) and Sir Richard Thompson (past president of the Royal College of Physicians).

A “lifestyle first” approach is advised in major UK national guidelines:

- NICE Cardiovascular disease guidelines: “discuss the benefit of lifestyle modifications” *before* offering statin medication treatment for primary prevention.
- NICE + European Society of Cardiology guidelines: lifestyle modification is the first step in management of type-2 diabetes and blood pressure[i].
- SIGN asthma guidelines: advise improvement in physical training, smoking cessation, healthy eating and weight loss.
- NICE behavioural change guidelines: recommend the use of these interventions to support lifestyle change for those with obesity, type-2 diabetes and cardiovascular disease[ii].
- World Health Organisation guidelines for prevention of dementia: advise addressing “lifestyle-related risk factors, such as physical inactivity, tobacco use, unhealthy diets and harmful use of alcohol” [iii].

Doctors’ demand for lifestyle medicine is growing. In 2004, over half of clinicians surveyed said they would give advice about diet, 40% would give advice about smoking but still less than 8% would talk about relaxation or physical exercise.[iv] GPs in 2017, agreed that physical activity promotion was part of their role but over half didn’t know the UK recommended activity guidance.[v] Over 90% of medical students and doctors felt that nutrition was important in health and that doctors had a key role in nutritional care[vi] but when dietary counselling occurred, it was of poor quality[vii] and 36% of clinicians were not aware of any lifestyle guidelines for cancer survivors.[viii] A survey carried out among >2000 European GPs in 2005 suggested that despite a strong feeling that they should advise patients about lifestyle, GPs’ knowledge and practice of the evidence-based recommendations for lifestyle interventions was lacking[ix].

Hospital medical teams are starting to realise the potential of lifestyle interventions in the emerging practice of “prehabilitation” where patients are supported to make lifestyle changes prior to surgery [x].

Nurses lack confidence to give lifestyle advice and support, particularly regarding lifestyle for cancer patients[xi] with less than 6% of patients recalling any discussion of lifestyle factors with their primary care nurses [xii].

Health coaches and social prescribing link workers are being introduced into NHS primary care as part of the new Primary Care Network roles in England to help deliver person-centred supported self-care [xiii]. These new roles will need training in the skills to support people with lifestyle changes as well as knowledge about the effectiveness of particular lifestyle changes.

Medical schools currently provide little lifestyle medicine education despite student demand. Only 56% of medical schools teach about the guidance for physical activity[xiv] and final year medical students significantly underestimate the health benefits of physical activity [xv]. Similarly, over 70% of surveyed doctors and students reported less than 2 hours of nutrition training in their medical education with only a quarter of doctors feeling that they were confident in their knowledge [xvi].

Lifestyle Medicine Interest Groups (LMIGs) started in the US at Harvard Medical School in 2008 and formalised in 2009 provide an effective way to introduce the pillars of lifestyle medicine to medical students without interrupting or interfering with the core curriculum. The LMIGs meet at lunchtime or in the evening, which offers a great opportunity to share a whole food plant-based meal with the students. There are “Taste of Lifestyle Medicine” micro-grants offered through American College of Lifestyle Medicine that provide \$500 of funding for a healthy meal for these LMIG events. The LMIG are led by students and a faculty advisor. They follow a parallel curriculum which offers the foundational evidence and guidelines for the lifestyle medicine pillars [xvii]. Research demonstrates that these one-hour lectures can have a significant impact. After one LMIG presentation on behavior change including basics in motivational interviewing and transtheoretical model of change, students not only increased their knowledge but also their confidence in counseling about lifestyle related topics [xviii]. Time spent with medical students on lifestyle medicine principles and practice is time well spent. The core curriculum in medical schools is already packed with information on pharmacology, physiology, biochemistry, anatomy, histology, and other pre-clinical courses required to pass the licensure examinations to practice medicine in the US. To retrofit the curriculum to include lifestyle medicine, faculty members are collaborating to incorporate the pillars in the courses that already exist. For example, faculty can add information about exercise prescription to a case study of a patient with heart disease or diabetes. Many medical schools are working to thread lifestyle medicine throughout all four years of medical school. American College of Lifestyle Medicine’s Medical Education Task Force created a credentialing system for medical schools to adhere to and encourage more schools to teach lifestyle medicine principles and practices to their students [xix]. There are many residency programs in the US that are adopting ACLM’s Lifestyle Medicine Residency Curriculum, and there is one fellowship program in the US currently.

The time to learn about lifestyle medicine is as early as possible. There are colleges in the US that teach lifestyle medicine courses, and some have lifestyle medicine tracks for Bachelor’s Degrees. To help faculty members teach lifestyle medicine to pre-medical students, nursing students, and others in

healthcare professional training, ACLM has created a Lifestyle Medicine 101 Curriculum to be freely available and downloaded to any faculty worldwide who is interested. It is available on the website at <https://www.lifestylemedicine.org/lm101>. There have been over 200 faculty downloads from 25 different countries indicating the worldwide interest in lifestyle medicine. Other resources that can help faculty to teach lifestyle medicine include both the *Culinary Medicine Syllabus* and the *Introduction to Lifestyle Medicine Syllabus* which have been downloaded over 5,000 times each and have spread to many countries.

The rapid growth in the LM Community since its foundation, growing conference attendances and demand for qualifications, reflect demand for education and skills in lifestyle medicine. We need to deliver a range of educational options to suit both undergraduate medicine and clinicians delivering health care. As lifestyle medicine is a team-orientated discipline, there are physicians, nurses, advanced practice providers, nutrition specialists, pharmacists, exercise specialists, health coaches, therapists, and many other allied healthcare providers who are seeking training in lifestyle medicine.

[i] Cosentino F et al, (2019), GESC Guidelines on diabetes, pre-diabetes, and cardiovascular disease developed in collaboration with the EASD, *European Heart Journal*, 1-69

[ii] <https://www.nice.org.uk/guidance/ph49>

[iii] <https://apps.who.int/iris/bitstream/handle/10665/312180/9789241550543-eng.pdf?ua=1>

[iv] Arber S et al, (2004); Influence of patient characteristics on doctors' questioning and lifestyle advice for coronary heart disease: a UK/US video experiment, *British Journal of General Practice*, 54, 506, 673-678.

[v] Wheeler, P. et al, (2017), Primary care knowledge and beliefs about physical activity and health: a survey of primary healthcare team members. *British Journal of General Practice Open*, 1 (2).

[vi] Macaninch E, Buckner L, Amin P, et al, (2020), Time for nutrition in medical education, *BMJ Nutrition, Prevention & Health*, 3

[vii] Phillips K et al, Counselling patients about behaviour change: the challenge of talking about diet. *Br J Gen Pract.* (2012), 62, e13–21.

[viii] Williams K, et al. (2015), Health professionals' provision of lifestyle advice in the oncology context in the United Kingdom. *Eur J Cancer Care* 24:522–30.

[ix] Brotons C, et al. (2005), Prevention and health promotion in clinical practice: the views of general practitioners in Europe, *Prev Med*, 40, 595-601

[x] Wynter-Blyth Venetia, Moorthy Krishna. (2017), Prehabilitation: preparing patients for surgery *BMJ* 358: j3702

[xi] Murphy, J.L. and Girot, E.A, (2013), The importance of nutrition, diet and lifestyle advice for cancer survivors – the role of nursing staff and interprofessional workers. *J Clin Nurs*, 22: 1539-1549.

[xii] Duaso MJ, Cheung P. (2002), Health promotion and lifestyle advice in general practice: what do patients think? *J Adv Nurs*. 39, 5, 472-9.

[xiii] <https://www.england.nhs.uk/wp-content/uploads/2020/03/health-coaching-implementation-and-quality-summary-guide.pdf>

[xiv] Weiler R et al. (2012), Physical activity education in the undergraduate curricula of all UK medical schools: are tomorrow's doctors equipped to follow clinical guidelines? *Br J Sports Med* 46, 14, 1024–1026. 0

[xv] Dunlop M, Murray AD. (2013), Major limitations in knowledge of physical activity guidelines among UK medical students revealed: implications for the undergraduate medical curriculum. *Br J Sports Med* 47, 11, 718–720

[xvi] Macaninch E, et al, (2020), Time for nutrition in medical education, *BMJ Nutrition, Prevention & Health; bmjnph-2019-000049*. doi: 10.1136/bmjnph-2019-000049

[xvii] Pojednic R, Frates E. A parallel curriculum in lifestyle medicine. *Clin Teach*. 2017 Feb;14(1):27-31.

[xviii] Frates EP, Xiao RC, Simeon K, McCargo T, Guo M, Stern TA. Increasing Knowledge and Confidence in Behavioral Change: A Pilot Study. *Prim Care Companion CNS Disord*. 2016 Nov 24;18(6).

[xix] Trilk JL, Worthman S, Shetty P, et al. Undergraduate Medical Education: Lifestyle Medicine Curriculum Implementation Standards. *American Journal of Lifestyle Medicine*. 2021;15(5):526-530.

2. To support health care systems:

Lifestyle Medicine can help relieve the healthcare workforce crisis by providing health care professionals with education about self-care and a more sustainable way to practice medicine that has the potential to reach for remission of long-term conditions.

- A healthy workforce has been found to deliver better care.
- Lifestyle Medicine teaches techniques that make it easier for clinicians to work with their patients.
- For decades research has demonstrated that providers preach what they practice. If physicians exercise, they are more likely to counsel on exercise. If they do aerobic exercise, they are more likely to counsel on aerobic exercise, and if they don't do strength training, they usually don't counsel on it [i].

Lifestyle medicine is cost-effective and can be delivered in real-life practice. It helps patients and providers alike.

It is well known that staff health and well-being significantly impact the effectiveness of care. [ii] The latest workforce survey in England suggests almost half of doctors were suffering poor mental health made worse by their work [iii]. Clinicians with an understanding of the evidence behind lifestyle medicine will not only raise awareness of the importance of their own self-care but will encourage a more supported self-care approach with patients. One of the strongest predictors of healthy lifestyle discussions in a consultation is that the clinician themselves practices healthy behaviours [iv] [v].

[i] Abramson S, Stein J, Schaufele M, Frates E, Rogan S. Personal exercise habits and counseling practices of primary care physicians: a national survey. *Clin J Sport Med*. 2000 Jan;10(1):40-8.

[ii] <https://www.workforcevision.scot.nhs.uk/wp-content/uploads/2013/06/NHS-Staff-HWB-Review-Final-Report-VFinal-20-11-09.pdf>

[iii] www.bma.org.uk/media/5620/20220141-bma-covid-review-report-2-the-impact-of-the-pandemic-on-the-medical-profession-final.pdf

[iv] Vickers K et al, (2007), Health behaviour counselling in primary care: provider-reported rate and confidence. *Fam Med.* 39(10):730-5.

[v] Frank E et al, (2000), Physician disclosure of healthy personal behaviours improves credibility and ability to motivate, *Arch Fam Med.* 9, 3, 287-90.

Group Consultations have been in existence since the early 20th century. The origins of group consultations began in the history of Medicine as far back as 1905, when Joseph Pratt, widely regarded as the forerunner in this modality of patient care, started group psychotherapy sessions for his poor tuberculosis patients (i)

Dr Edward Noffsinger introduced Group Consultations, one of lifestyle medicine's key tools, to improve the practice of medicine for both clinicians and patients. Following his experiences as a patient, he felt that his clinicians *"were as tired out, pushed and victimized by the system as I was. They tried to do the best they could for me; yet it seemed that the healthcare system itself was somehow broken, so that it was serving neither my physicians nor myself very well."* [x]

When people play a more collaborative role in managing their health through lifestyle medicine practices such as supported self-care and person-centred care, they are more likely to stick to their treatment plans and less likely to use emergency hospital services.[ii] Lifestyle medicine tools can be practiced using cost-effective tools such as group consultations allow for up to 15 patients to be seen in an hour and have been shown to be better than 1:1 care for type-2 diabetes [ii] and have been shown to deliver cost-efficiencies [iii]. Lifestyle medicine approaches are often cheaper than their pharmaceutical or surgical alternatives. For example, a lifestyle intervention in the Diabetes Prevention Program cost almost \$1000 less when compared to the use of metformin in preventing diabetes over 10 years. [iv] The cost of delivering type 2 diabetes remission in the DiRECT meal replacement trial was clearly cost-effective at a one-off £1,223, compared to £2,564 per patient per year for a lifetime of type-2 diabetes care in the NHS [v].

Group interventions in lifestyle medicine have been utilised for almost a decade. Progress has been noted in increased steps per day, increased servings of fruits and vegetables per day and quitting smoking after a four-week lifestyle medicine group intervention[vii]. Some US group interventions are paid out of pocket and are in the \$20 per session range with 8-12 patients in a group at a time. Others are funded by philanthropy and are provided free for patients. With COVID 19, these lifestyle medicine group interventions have moved from in person to online and preliminary reports reveal the sessions are effective, well-attended, and patients report high satisfaction [viii].

The growth of Group Consultations in the UK is fast and effective – and the introduction of virtual Group Consultations is increasingly recognised as a powerful tool of Lifestyle Medicine.

The demands of practice can mean that clinicians are often rushed and feel they don't have the time to use a lifestyle medicine approach. It is possible to deliver training that can improve real-life practice as has been seen with the Making Every Contact Count training in delivering brief behavioural change [vi].

Using tools such as person-centred care and group consultations will mean that this approach can be not just cost-effective but realistic and practical for busy clinicians.

[i] Joseph Hersey Pratt (1951) Pioneers in Group Psychotherapy, *International Journal of Group Psychotherapy*, 1:2, 95-99, DOI:10.1080/00207284.1951.11507845

[ii] <https://www.health.org.uk/sites/default/files/PersonCentredCareMadeSimple.pdf>

[iii] Burke RE et al (2010), The effectiveness of group medical visits on type 2 diabetes mellitus specific outcomes in adults: A systematic review, *JBI Database of Systematic Reviews and Implementation Reports* 8, 34

[iv] Clancy D et al, (2008), Do diabetes group visits lead to lower medical care charges? *Am J Manag Care*. 14:39–44.

[v] Diabetes Prevention Program Research Group. (2012), The 10-year cost-effectiveness of lifestyle intervention or metformin for diabetes prevention: an intent-to-treat analysis of the DPP/DPPOS. *Diabetes Care*. 35, 4, 723-30.

[vi] Xin Y et al, (2019), Within-trial cost and 1-year cost-effectiveness of the DiRECT/Counterweight-Plus weight management programme to achieve remission of type 2 diabetes, *The Lancet Diabetes and Endocrinology*, 7, 3, 169-172

[vii] Lawrence W, et al. (2016), 'Making every contact count': Evaluation of the impact of an intervention to train health and social care practitioners in skills to support health behaviour change. *J Health Psychol*. 21(2):138-151.

[viii] Armstrong C, Wolever RQ, Manning L, et al. Group health coaching: strengths, challenges, and next steps. *Glob Adv Health Med*. 2013;2(3):95-102.

[ix] Comander A, Frates B, Tollefson M. PAVING the Path to Wellness for Breast Cancer Survivors: Lifestyle Medicine Education and Group Interventions. *Am J Lifestyle Med*. 2021 Jan 29;15(3):242-248.

[x] Noffsinger E, *Running Group Visits in your practice*, Springer.2009

3. To reduce the impact of COVID-19:

The pandemic has brought a new urgency to the link between lifestyle and poor health. The LM Community will provide education for new and more effective leaders in modern medicine who can support patients with lifestyle changes.

“Unhealthy lifestyle behaviours in combination accounted for up to 51% of the population attributable fraction of severe Covid-19. Adopting simple lifestyle changes could lower the risk of severe Covid-19 infection.”

Hamer et al, Lifestyle risk factors, Inflammatory mechanisms, and Covid-19 hospitalisation: a community-based cohort study of 387,109 adults in the UK, *Brain Behaviour and Immunity*, (2020) 87, 184-187

Covid-19 has occurred on the backdrop of a pandemic of chronic disease which reflects the global burden of disease that puts smoking and diet amongst the top 3 risks (see table 1 below). 460 people die a day of cardiovascular disease in the UK and almost all these deaths are thought to be premature and preventable [i]. These “two pandemics” [ii], or syndemic, come together for those with obesity, diabetes and cardiovascular disease to increase the risk of contracting coronavirus and suffering poor outcomes. [iii] [iv] [v]. Supporting people to make lifestyle changes can reduce their risks.

Efforts to reduce the spread of Covid-19 have increased stress, social isolation, inactivity, and consumption of processed food [vi]. This increases the risk of adverse outcomes of Covid-19 and can contribute to worsening chronic diseases. The UK is currently seeing some of the highest Covid-19 related mortality rates in Europe [vii]. UK health care needs more than ever to embrace a lifestyle medicine approach that addresses the root causes of ill health.

The COVID pandemic may bring people in contemplation into preparation about managing their weight as it has been demonstrated that obesity significantly increases the risk of both hospitalisation and death from COVID 19 [viii]. Adopting and sustaining healthy habits including routine exercise, nutritious whole food plant-based eating, sound sleep, social connections, stress resiliency, and quitting smoking all have benefits to our immune system’s functioning [ix].

[i] <https://www.bhf.org.uk/what-we-do/news-from-the-bhf/contact-the-press-office/facts-and-figures#:~:text=Heart%20and%20circulatory%20diseases%20cause,three%20minutes%20in%20the%20UK.>

[ii] Hall G et al, A tale of two pandemics: How will COVID-19 and global trends in physical inactivity and sedentary behaviour affect one another? [published online ahead of print, 2020 Apr 8]. *Prog Cardiovasc Dis.* 2020, S0033-0620(20)30077-3

[iii] Jing Yang et al, (2020), Prevalence of comorbidities and its effects in coronavirus disease 2019 patients: A systematic review and meta-analysis, *International Journal of Infectious Diseases*, 94

[iv] Bornstein *et al.* (2020), Endocrine and metabolic link to coronavirus infection. *Nat Rev Endocrinol* 16, 297-298 9

[v] Zhou F et al. (2020), Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet.* 28;395(10229):1054-1062.

[vi] Hall G, A tale of two pandemics: How will COVID-19 and global trends in physical inactivity and sedentary behavior affect one another? [published online ahead of print, 2020 Apr 8]. *Prog Cardiovasc Dis.* 2020; S0033-0620(20)30077-3. doi: 10.1016/j.pcad.2020.04.005

[vii] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf

[viii] Katz, Kushner, Frates, Hensrud. *Alternative and Complementary Therapies* Vol. 27, No. 2

[ix] Frates EP, Rifai T. Making the Case for “COVID-19 Prophylaxis” With Lifestyle Medicine. *American Journal of Health Promotion.* 2020;34(6):689-691.

Risk associated with deaths (millions) worldwide (M+F, all ages)

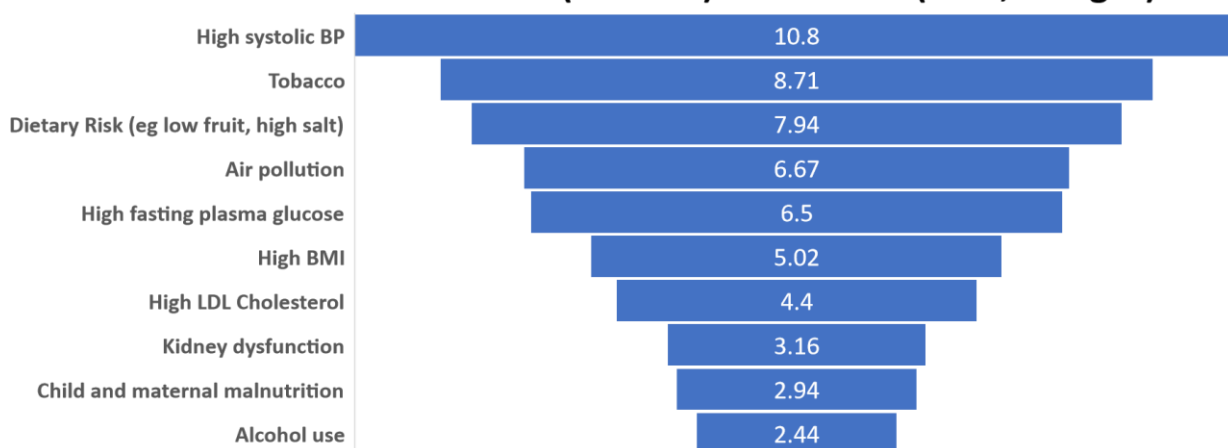


Table 1 Global burden of Disease 2019. Lancet.

4. To respond to patient demand for support to lead a healthy lifestyle:

Patients want less paternalistic and more person-centred health care. The LM Community can provide education and a trusted source of knowledge for patients who want to know what they can do to live healthier lives without relying on burdensome medication regimes.

Patients want to improve their health through lifestyle changes. [i]

Patient generated health data is being used more often to inform and guide lifestyle change.

Patients are not often given the option to discuss lifestyle change in detail or asked about their own goals.

When patients are given lifestyle support in a medical consultation, it is often of poor quality.

Patients often find they need to use less trusted resources for advice about lifestyle.

Patients want a more compassionate, holistic health care service that listens to their needs.

When given a choice, patients often want support to use lifestyle as a way of managing their health. In one study, patients were presented with a choice between a preventive medication or lifestyle change, 90% expressed preference for lifestyle change [i]. Similarly, another study found that patients were found to be well motivated to follow advice on diet and lifestyle, but “many felt they had received insufficient information about their disease and prescribed treatments.” And that the “reasons behind the lifestyle and dietary advice had not been adequately explained, and that dietary advice was vague” [ii].

Patients trust health care professionals and want this support and advice from their clinicians. For example, cancer patients in particular, say they would welcome lifestyle advice from their health care

professionals. [iii], [iv], [v]. As far back as 1987, over 60,000 patients were asked if their General Practitioner (GP) should ask about lifestyle factors, the majority agreed they should, and GPs were seen as a credible source of this lifestyle advice.[vi] Patients prefer to get their lifestyle advice from clinicians, but most often have to turn to the internet, friends, family or magazines.[vii] For example, the most googled health question in 2019 was “how to lower blood pressure?”[viii]. There are risks with using the internet as a source of lifestyle advice, with over 70,000 websites providing health information back in

2001, a significant amount of poor-quality information has been found [ix]. However, online health information has been found to improve eating habits and increase exercise and relaxation and is more often used by the wealthy and IT literate [x]. The LM Community will work to ensure that this information is not just available to the wealthy and will form a trusted resource to which the public can turn.

The use of patient generated health data, for example from home blood sugar monitoring or smart phones is growing, suggesting that patients find it useful to have control over their health data. For the best health outcomes, this data should be used with behaviour change techniques [xi] as suggested in a lifestyle medicine approach. As this technology enables people to self-monitor and self-treat, people are looking for trusted advice about the options available to them, rather than being told what to do or have a professional do something to them[xii]. However, less than 50% of people with diabetes for example, were given the opportunity to discuss their own goals for self-management in their medical consultations [xiii].

Patients are coming together to push for a more holistic and compassionate health care system. They are asking that we move from a reductionist medical care approach, so that we consider the wider issues that ill health effects such as stress, mood, social connection, meaning and purpose. For example, National Voices, a coalition of charities that “stands for people being in control of their health and care,” [xiv] has published several papers asking for more work on prevention, supported self-care and person-centred care [xv]. Professor Eric Topol has described the democratisation of healthcare that is now overdue, in his book “The Patient Will See You Now” [xvi].

Holistic Patient-Centred Care: Likewise, Victor Montori of “The Patient Revolution” [xvii] describes that “industrial healthcare sees patients as a way to achieve business goals resulting in accidental cruelty, burn out and an absence of care” and we must move to support patient goals in a more holistic way. The LM Community will provide training for clinicians to provide a more holistic health care system.

Patients' Advocacy for Holistic Healthcare: In recent times, there has been a notable shift in patients' perspectives towards healthcare, advocating for a more holistic and compassionate approach. Rather than adhering solely to a reductionist medical care model, patients are highlighting the importance of considering broader aspects of well-being that are affected by illness. This paradigm shift encompasses factors like stress, mood, social connections, and finding meaning and purpose in one's health journey.

Collective Movement for Change: A noteworthy example of this collective movement for change is the initiative led by National Voices, a coalition of charitable organisations that stands for empowering individuals in controlling their health and care decisions. Their advocacy emphasises the need for a stronger focus on prevention, supported self-care, and person-centered care. This shift aims to acknowledge that health is not just about treating specific medical conditions but also about promoting overall well-being.

The Role of Lifestyle Medicine (LM) Community: Within this evolving landscape, the Lifestyle Medicine community has a pivotal role to play. Lifestyle Medicine recognises the importance of addressing all dimensions of health, incorporating not just the physical aspects but also psychological, social, and emotional well-being. As part of this movement, the LM community is committed to providing training for clinicians to adopt a more comprehensive approach to healthcare. This training equips healthcare

professionals with the tools and knowledge to deliver holistic care, emphasising the interconnectedness of various health determinants.

In conclusion, the advocacy of patients and the broader healthcare community for a holistic and compassionate healthcare system signifies a transformative shift in healthcare philosophy. This movement aligns well with the principles of Lifestyle Medicine, and as this approach gains prominence, it has the potential to reshape healthcare practices and policies, resulting in a more patient-centered, compassionate, and effective system. The LM community's dedication to training healthcare professionals in this paradigm further underscores the commitment to delivering healthcare that addresses the full spectrum of patient well-being.

[i] Jarbøl DE, et al. (2017), Determinants of preferences for lifestyle changes versus medication and beliefs in ability to maintain lifestyle changes. A population-based survey. *Prev Med Rep.* 6, 66-73.

[ii] Fransden KB et al, (2002), Diet and lifestyle in type 2 diabetes: the patient's perspective, *Practical diabetes.* 19, 3, 77-80

[iii] Beeken RJ, et al. (2001), "What about diet?" A qualitative study of cancer survivors' views on diet and cancer and their sources of information. *Eur J Cancer Care* 25, 774–83.

[iv] Koutoukidis DA, et al. (2017), Attitudes, challenges, and needs about diet and physical activity in endometrial cancer survivors: a qualitative study. *Eur J Cancer Care* 26

[v] Smith L, et al. (2017), Cancer survivors' attitudes towards and knowledge of physical activity, sources of information, and barriers and facilitators of engagement: a qualitative study. *Eur J Cancer Care* ;26

[vi] Wallace PG, Brennan PJ, Haines AP. (1987) , Are general practitioners doing enough to promote healthy lifestyle? Findings of the Medical Research Council's general practice research framework study on lifestyle and health. *BMJ* 294: 940-942

[vii] Cash T, et al. (2015), Utilization and preference of nutrition information sources in Australia. *Health Expect* 18:2288–95.

[viii] <https://www.obesityaction.org/community/news/community-news/googles-most-searched-health-topics-in-2019-what-the-trends-tell-us/> NOT FOUND <https://www.obesityaction.org/community/news/community-news>.

[ix] R. J. W. Cline, K. M. Haynes, (2001), Consumer health information seeking on the Internet: the state of the art, *Health Education Research*, 16, 6, December 2001, 671–692,

[x] Joseph-Shehu EM, et al. (2019), The use of information and communication technologies to promote healthy lifestyle behaviour: a systematic scoping review. *BMJ Open*, 9, 102

[xi] Noah, B et al, (2018), Impact of Remote Patient monitoring on clinical Outcomes: an updated meta-analysis of randomised controlled trials, *Nature Digital Medicine*, 1, 20172

[xii] <https://www.kingsfund.org.uk/sites/default/files/Engaging-Patients-in-their-Health-How-the-NHS-needs-to-change-Anna-Dixon-Kings-Fund-October-2008.pdf>

[xiii] https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Richmond-group-from-vision-to-action-april-2012-1.pdf

[xiv] <https://www.nationalvoices.org.uk/about-us>

[xv] https://www.nationalvoices.org.uk/sites/default/files/public/publications/promoting_prevention.pdf

[xvi] *The Patient Will See You Now*, Eric Topol, Basic Books.2016

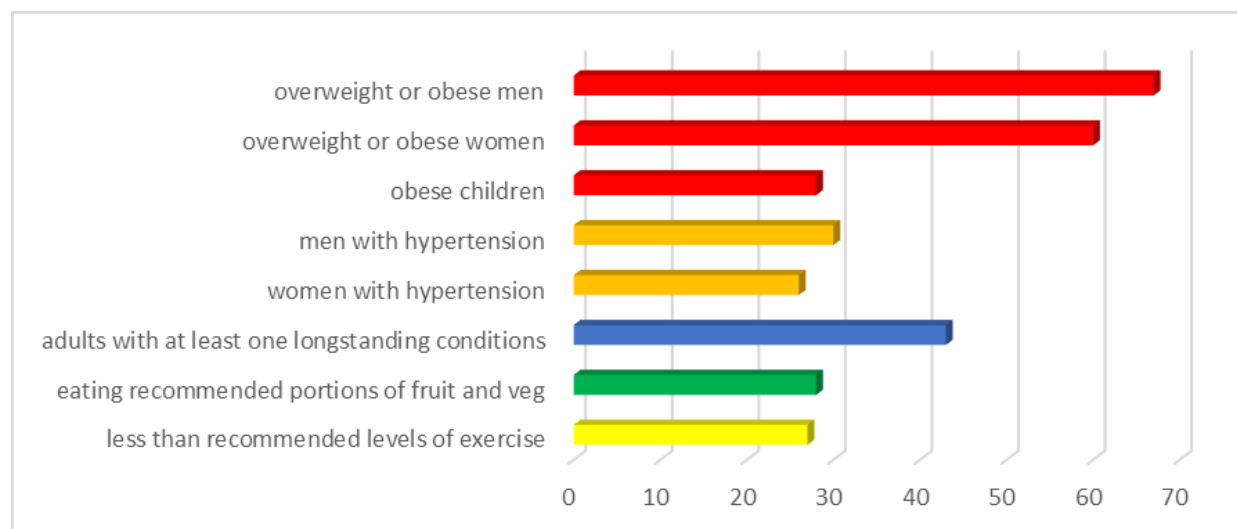
[xvii] <https://patientrevolution.org/>

5. To turn the tide of long-term conditions and health inequalities:

This rise in long-term conditions follows rising health inequality. The LM Community can teach clinicians to support patients to prevent, treat and reverse long-term conditions, despite the inequalities they face. There is an epidemic of chronic disease in the world. These are strongly associated with lifestyle factors. A population health approach can target lifestyle medicine to address health inequalities.

5.1 Tackling the epidemic of chronic disease.

Chronic diseases are on the rise around the world and strongly associated with lifestyle factors such as inactivity, poor diet, stress, and smoking. Unhealthy diets, physical inactivity, and obesity contribute the most to the amount of time spent living with ill health. (See figure below for some key UK statistics). Simple lifestyle advice in public health campaigns often only reaches or can be acted upon by those who least need it, risking worsening health inequalities [i]. Those who are socioeconomically deprived are likely to face far greater barriers to healthy behaviours such as living in a “food desert”, being far from any safe green space or suffering stress and isolation. Lifestyle medicine can be used in a personalised approach that collaborates with people to improve their health despite the inequalities they may face.



Key health statistics from the UK 2018

5.2 Health inequalities and socioeconomic barriers.

We need to address health inequalities by targeting lifestyle medicine with a population health approach and tools such as Patient Activation Measures (PAM).

5.3 Behavioural support for healthier lives.

A lifestyle medicine approach teaches the use of proven behavioural support tools such as group consultations, health coaching, and person-centred care which can support people despite these challenges. Lifestyle medicine should be used with a population health approach which uses data to target support where it is most needed to tailor solutions for people and their communities.

5.4 Population health approach and tools.

Patient Activation Measures can help to tailor the support people require. It measures how much confidence and knowledge someone has about their health as well as the relevance and importance they give it along with the control they feel they may have over it. Is not just a reflection of a person's income, culture, or age^[ii] and is a much better predictor of health outcomes than known socio-demographic factors ^[iii].

5.5 Role of Policy and Government integration.

The challenges of tackling population health require a shift in Governments' approach, principally by integrating equity and health in all policies and shifting to a wellbeing economy ^[iv].

5.6 Cultural sensitivity and local context

Globally diverse cultural landscape requires an approach to lifestyle medicine that is sensitive to local contexts and practices. Customising interventions to resonate with cultural norms and traditions can enhance their effectiveness and acceptability among various populations.

In conclusion, the adoption of lifestyle medicine principles in the world holds immense potential to address the rising tide of chronic diseases and health inequalities. By considering socioeconomic barriers, utilising population health strategies, and aligning with policy shifts towards a wellbeing economy, lifestyle medicine can contribute significantly to a healthier and more equitable various societies across the world.

Solutions.

1 Equity.

Investment in the wellbeing of populations (eg low income families, caregivers, people with disabilities). 'Sure Start' centres in the UK, child tax credit expansion in the US, 'Everyone In' policy for rough sleepers, universal credit. Invest in primary and social care to address unmet healthcare needs.

2 Adopt a “health in all policies” approach.

To include housing, employment, energy, social security, transport, justice. Health professionals working with policy makers in public, private and third sector institutions at geographical levels. Examples include provision of public transport and improved infrastructure for walking and cycling.

3 Create a new economic model.

A radical solution is creating a wellbeing economy - equitable distribution of benefits and resources within planetary boundaries. This means prioritising human and ecological wellbeing over economic growth. We need to identify, investigate, and evaluate alternative economic models.

4. Adopt a public education lifestyle medicine curriculum that teaches teens in middle school and high school about the powers of exercise, nutrition, sleep, stress reduction, social connection and the avoidance of risky substances. Teach students from all cultures, socioeconomic backgrounds, races, and religions in all schools, public and private, a course in health and wellness that focuses on the principles and practices of lifestyle medicine with a specific focus on the needs, desires, and interests of teens. The American College of Lifestyle Medicine has collaborated with paediatricians, lifestyle medicine experts, and teens to publish a Teen Lifestyle Medicine Handbook. They have also co-created a full curriculum that is downloadable through the ACLM website. With tools like this, the hope is that schools can adopt this curriculum in an elective or a core course immediately. The material has been piloted and has been proven to be feasible, engaging and well received by teens [v].

[i] Thomson H et al, (2018), The effects of public health policies on health inequalities in high-income countries: an umbrella review, *BMI Public Health* 18: 869

[ii] Judith H. Hibbard and Jessica Greene, (2013), What the Evidence Shows About Patient Activation: Better Health Outcomes and Care Experiences; Fewer Data on Costs, *Health Affairs* 32:2, 207-214

[iii] Smith S et al, (2013), Skillset or mind set: Associations between health literacy, patient activation, and health, *PLoSone*, 8, 9

[iv] BMJ2021;375: e066232

[v] Wolferz R Jr, Arjani S, Bolze A, Frates EP. Students Teaching Students: Bringing Lifestyle Medicine Education to Middle and High Schools Through Student-Led Community Outreach Programs. *Am J Lifestyle Med.* 2019;13(4):371-373. Published 2019 Mar 24.

6. To reduce the harm from a focus on pharmaceutical treatments:

The LM Community can provide clinicians and patients with additional options to medicines and procedures for long term conditions.

“The absolute benefit made by each additional medicine is likely to reduce when a person is taking multiple preventative medicines; often referred to as the ‘law of diminishing returns’. Conversely, the risk of harms is likely to increase the more medicines a person takes.”

National Institute of Health and Care Excellence UK

The number of prescriptions for each person in England has increased by over 50% in a decade [i] with almost a quarter of 70-year-olds taking over 5 medications [ii]. The Academy of Medical Royal Colleges have set up “Choosing Wisely” [iii] to prevent the harms of too much medicine. Likewise, NHS England medical director, Sir Bruce Keogh suggested that as many as 1 in 7 operations and medical treatment in the NHS were unnecessary and may not have improved the health of patients [iv].

In the US over the past 40 years, mortality from heart disease fell >40%, almost half of the reduction can be attributed to reduction in lifestyle risk factors [v] rather than pharmaceutical or surgical interventions. However, most doctors are not aware of this contribution and over-estimate the benefits of medications [vi]. Patients make similar over-estimations. For example, those who started medications for blood pressure and cholesterol were more likely to gain weight, eat more calories/fatty food and be less physically active than those who did not start medications [vii], [viii]. There is a concern that “the more we push drug solutions the further we get from effective sustainable treatment of long-term conditions” [ix]. Some pharmaceutical companies have come to the same conclusion; that the answers to long-term conditions are not always drug interventions. With a 99% failure rate for new Alzheimer’s medications for example [x], Pfizer pulled out of the race to find drug candidates in 2018 [xi] which was followed in 2019 by *The US Alzheimer’s Association International Conference* stating that “lifestyle factors are the best and only bet now for reducing dementia risk” [xii]. Similarly, there is concern that the emergence of concepts such as precision medicine and use of expensive genomics are “headed down the wrong road” and distract us from what already works. [xiii]

The LM Community will redress the balance of health care knowledge of the benefits and harms of medications and surgery and compare these with those of a more holistic lifestyle medicine approach. There are many other organisations (“Deprescribing,” [xiv] “Too much medicine,” [xv] “Sustainable healthcare” [xvi]) who are calling for a move away from this “focus on pathology, clinical states or markers of disease rather than quality of life or wellbeing” [xvii] as stated by the “Rethinking Medicine” team who are supported by NHS England and the Royal College of General Practitioners.

[i] https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/polypharmacy-and-medicines-optimisation-kingsfund-nov13.pdf

[ii] Rawle MJ, et al. (2018), The prevalence and determinants of polypharmacy at age 69: a British birth cohort study. *BMC Geriatr.* 18, 1, 118. 2

[iii] <https://www.choosingwisely.org/>

[iv] <https://www.telegraph.co.uk/news/health/news/11733871/One-in-seven-treatments-not-necessary-warns-NHS-chief.html>

[v] Ford ES, et al, (2007), Explaining the decrease in U.S. deaths from coronary disease, 1980–2000. *N Engl J Med.* 356, 2388–2398.

[vi] Treadwell J et al, (2020), GPs' understanding of the benefits and harms of treatments for long-term conditions: an online survey, *BJGP Open*; bjgpopen20X101016.

[vii] Korhonen J et al, (2020), Lifestyle Changes in Relation to Initiation of Antihypertensive and Lipid-Lowering Medication: A Cohort Study, *JAHA*, 9, 4

[viii] Sugiyama T, et al, (2014), Different time trends of caloric and fat intake between statin users and nonusers among US adults: gluttony in the time of statins? *JAMA Intern Med.* 174:1038–1045.

[ix] Bolton L et al, (2008), How Does Drug and Supplement Marketing Affect a Healthy Lifestyle? *Journal of Consumer Research*, 34, 5, 713–726,

[x] Cummings JL, et al. (2014), Alzheimer's disease drug-development pipeline: few candidates, frequent failures. *Alzheimers Res Ther.* 6, 4, 37

[xi] <https://www.alzheimers.org.uk/research/care-and-cure-research-magazine/pfizer-dementia-drug>

[xii] https://www.alz.org/aaic/releases_2019/sunLIFESTYLE-jul14.asp

[xiii] Cooper R and Paneth N, (2020), Will Precision medicine lead to a Healthier Population? *Issues in Science and Technology*, 36, 2, 64

[xiv] <https://deprescribing.org/>

[xv] <https://www.bmj.com/too-much-medicine>

[xvi] <https://sustainablehealthcare.org.uk/>

[xvii] <https://rethinkingmedicine.org.uk/about/>

7. To support good quality lifestyle medicine research:

The WLMO will advocate for and support those who research lifestyle approaches to improve health as there is evidence that patients want this to be a priority despite most research budgets being spent on drug interventions.

"We are failing to change unhealthy behaviours, particularly those related to diet quality, caloric intake, and physical activity, in part due to inadequate policy attention and funding for public health and behavioural research."

Professor Christopher Murray, Author of The Global Burden of Disease Studies

There is a mismatch between patients' agendas for health research and where the funding flows. Trials into pharmaceutical interventions make up over half of clinical trials, but when patients are asked, they would prefer less than a fifth of trials investigated these options [i]. Patients' top priorities for cancer research included management of practical, social, and emotional issues including diet, peer support and stress. These priorities were placed above research into treatments such as chemotherapy or surgery [ii]. The charitable James Lind Alliance has surveyed patients to ask about the top 10 priorities for health research; the top-10 for type-2 diabetes and hypertension were *all* lifestyle related [iii].

A chronic lack of funding to investigate effective, practical lifestyle medicine approaches in medicine has resulted in a research base that is in its infancy. For example, many diet trials would not satisfy the essential standards used for drug trials[iv]. This is thought to have arisen from inadequate nutrition research infrastructure and lower budgets versus drug studies [v]. However, drug trial standards have also “created a strong precedent for reductionist, nutrient focused approaches for dietary research, guidelines and policy” [vi] that may not be appropriate for such a complex issue as diet.

[i] Crowe S et al, (2015), Patients', clinicianpolicy” [[the research communities' priorities for treatment research: there is an important mismatch. *Res Involv Engagem.* 1, 2

[ii] Corner J et al, (2007), The research priorities of patients attending UK cancer treatment centres: findings from a modified nominal group study, *British Journal of Cancer*, 96, 875-881

[iii] <https://www.jla.nihr.ac.uk/>

[iv] Ludwig DS et al. (2019), Discrepancies in the Registries of Diet vs Drug Trials. *JAMA Netw Open.* 2, 11

[v] Ludwig DS, et al. (2019), Improving the quality of dietary research. *JAMA.* 322, 16, 1549-1550

[vi] Mozaffarian D et al, (2018); History of modern nutrition science—implications for current research, dietary guidelines, and food policy *BMJ* 361”

2.5. How to assess the quality of evidence for LM and where are the research gaps

Meta-Analysis >BMC Med Res Methodol2019 Aug 20;19(1):178. doi: 10.1186/s12874-019-0811-z.
Hierarchies of evidence applied to lifestyle Medicine (HEALM): introduction of a strength-of-evidence approach based on a methodological systematic review.

D L Katz, M C Karlsen, M Chung, M M Shams-White, L W Green, J Fielding, A Saito, W Willett

• Information to help you detect bias in research studies:

<https://catalogofbias.org/>

• Tools to help you critically appraise research:

<https://www.cebm.ox.ac.uk/resources/ebm-tools/critical-appraisal-tools>

Lifestyle Medicine is a field that focuses on using evidence-based lifestyle interventions to prevent, manage, and treat chronic diseases. Since research in this field is continually evolving, here are some important research topics in lifestyle medicine that are relevant today and for the future.

Impact of Diet on Chronic Diseases: Investigating the effects of different dietary patterns (e.g., Mediterranean, plant-based, ketogenic) on various chronic conditions such as cardiovascular disease, diabetes, obesity, and cancer.

Physical Activity and Health Outcomes: Studying the relationship between physical activity levels and health outcomes, including the prevention of chronic diseases, improvements in mental health, and overall well-being.

Stress Management and Mindfulness: Researching the effectiveness of stress reduction techniques, mindfulness practices, and meditation in improving health outcomes and reducing the risk of stress-related diseases.

Sleep and Health: Exploring the impact of sleep duration and quality on chronic disease risk, mental health, and overall health.

Behaviour Change Interventions: Investigating effective strategies for promoting and sustaining lifestyle behaviour changes, including dietary changes, increased physical activity, smoking cessation, and reducing sedentary behaviour.

Role of Social Support: Understanding how social support networks and community engagement influence lifestyle choices and impact long-term health outcomes.

Environmental and Socioeconomic Factors: Examining the influence of environmental factors (e.g., pollution, access to healthy food) and socioeconomic status on lifestyle-related health disparities.

Personalised Lifestyle Medicine: Researching the role of genetics, epigenetics, and individual variations in response to lifestyle interventions for tailoring personalised treatment plans.

Integrative Approaches: Investigating the integration of lifestyle medicine with conventional medical treatments to optimise patient care and outcomes.

Digital Health and Mobile Applications: Assessing the effectiveness of digital health technologies, mobile applications, and wearables in promoting healthy behaviours and improving health outcomes.

Workplace Wellness Programs: Evaluating the impact of workplace wellness initiatives on employee health, productivity, and overall job satisfaction.

Lifestyle Medicine in Special Populations: Studying the application of lifestyle medicine principles in specific populations, such as children, adolescents, elderly individuals, and individuals with chronic mental health conditions.

Long-term Sustainability of Lifestyle Changes: Examining factors that contribute to the long-term sustainability of lifestyle changes and identifying barriers to adherence.

Cost-Effectiveness of Lifestyle Interventions: Analysing the economic impact of lifestyle medicine interventions compared to traditional medical treatments in terms of healthcare costs and patient outcomes.

Public Policy and Advocacy: Investigating the role of public policy and advocacy in promoting lifestyle medicine at the community, national, and global levels.

The role of new models of care, group consulting, social prescribing and collaborative care.

These research topics represent just a fraction of the vast potential within the field of Lifestyle Medicine. Continued research in these areas can help shape evidence-based practices and policies that promote healthier lifestyles and prevent chronic diseases.

2.6. Supporting patients to make personalised, informed healthcare choices and use of the LM toolbox.

Including Assessment tools - validated and unvalidated (but useful in practice)
LM Assessment Examples//Options:

Exercise:

<https://youthrex.com/wp-content/uploads/2019/10/IPAQ-TM.pdf>

Diet:

Here's one specifically for vegans.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4113754/>

There's the Alternative Healthy Eating Index Score

<https://www.health.harvard.edu/blog/scoring-highly-on-alternative-healthy-eating-index-lowers-risk-for-many-illnesses-202202082681>

Sleep:

[https://www.med.upenn.edu/cbti/assets/user-content/documents/Sleep%20Quality%20Scale%20\(SQS\).pdf](https://www.med.upenn.edu/cbti/assets/user-content/documents/Sleep%20Quality%20Scale%20(SQS).pdf)

<https://actt.albertadoctors.org/CPGs/Lists/CPGDocumentList/Sleep-Disorders-Questionnaire.pdf>

Stress:

<https://www.sprc.org/system/files/private/event-training/Penn%20College%20-%20Perceived%20Stress%20Scale.pdf>

Social Connections:

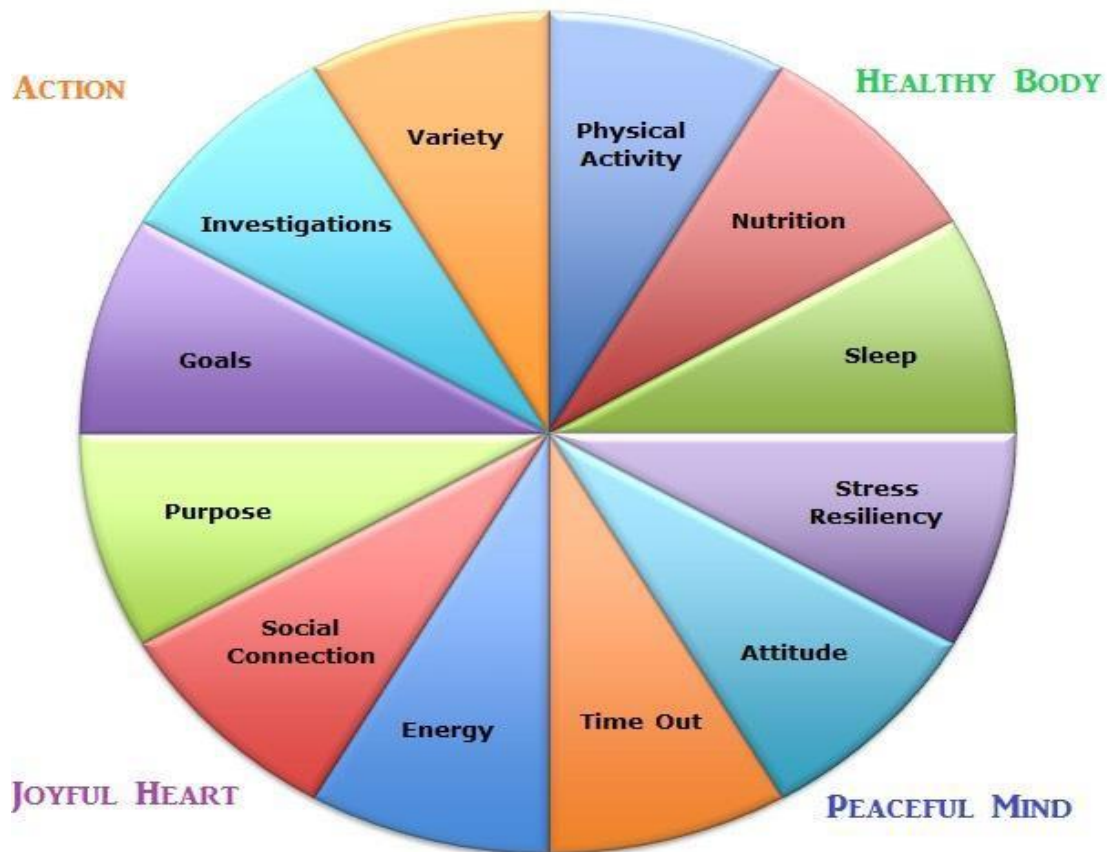
[https://depts.washington.edu/uwcscs/sites/default/files/Social%20Connectedness%20Scale-Revised%20\(SCS-R\).pdf](https://depts.washington.edu/uwcscs/sites/default/files/Social%20Connectedness%20Scale-Revised%20(SCS-R).pdf)

Substance Use--

https://ncsacw.acf.hhs.gov/files/SAFERR_AppendixD.pdf

The PAVING Wheel Questionnaire goes into the six pillars plus purpose, energy, attitude (positive psychology), goal setting and more.

PAVING STEPSS Wheel



Here's a link to the full questionnaire co-created with Harvard Health Publications.
<https://thepositivehabit.com/wp-content/uploads/2021/08/RCSI-Science-of-Happiness-PAVING-the-Path-to-Wellness.pdf>

• **General information about evidence-based medicine tools**

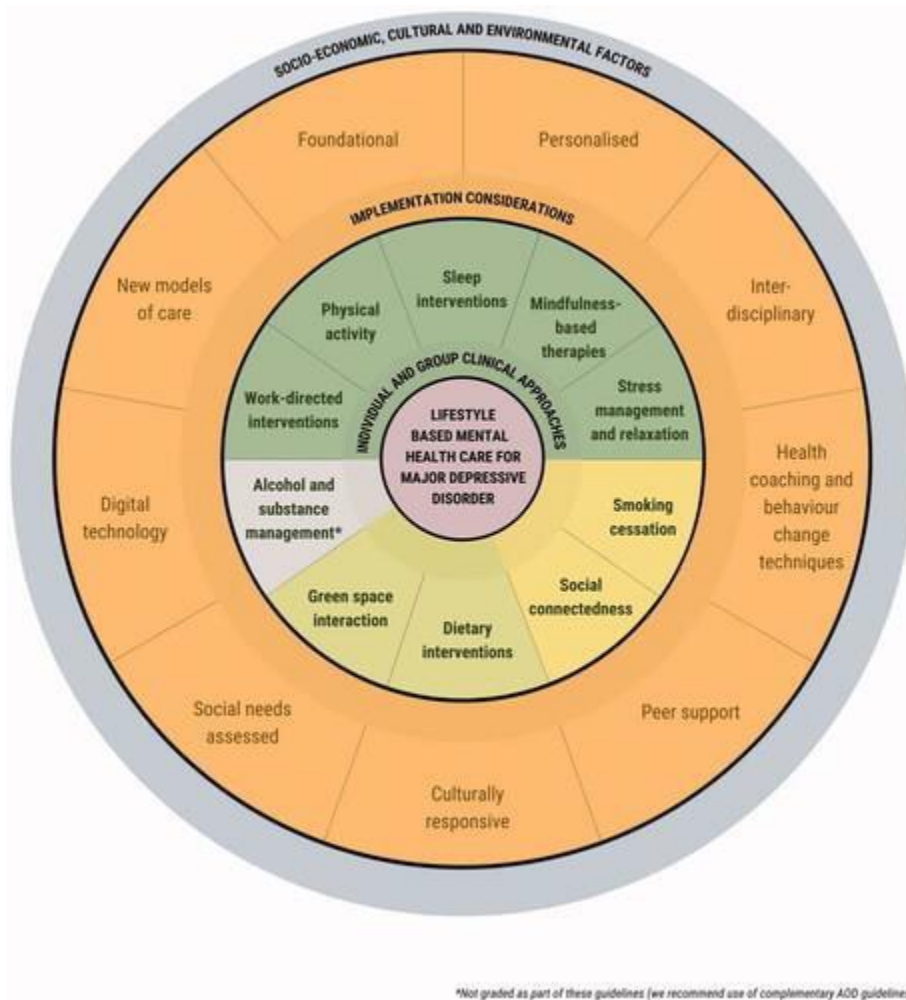
<https://www.cebm.ox.ac.uk/resources/ebm-tools>

Implementation of Lifestyle Medicine Strategies for Wellbeing

The implementation of Lifestyle Medicine strategies including built environments and service design in healthcare, communities, workplaces, schools, and other settings have the potential to either hinder or facilitate health and wellbeing interventions. Hence, optimising these “micro-environments” that healthcare professionals work with and in can not only lead to improved patient outcomes, but also improved patient experiences, job satisfaction, reduced burnout rates, and reduced health care costs.

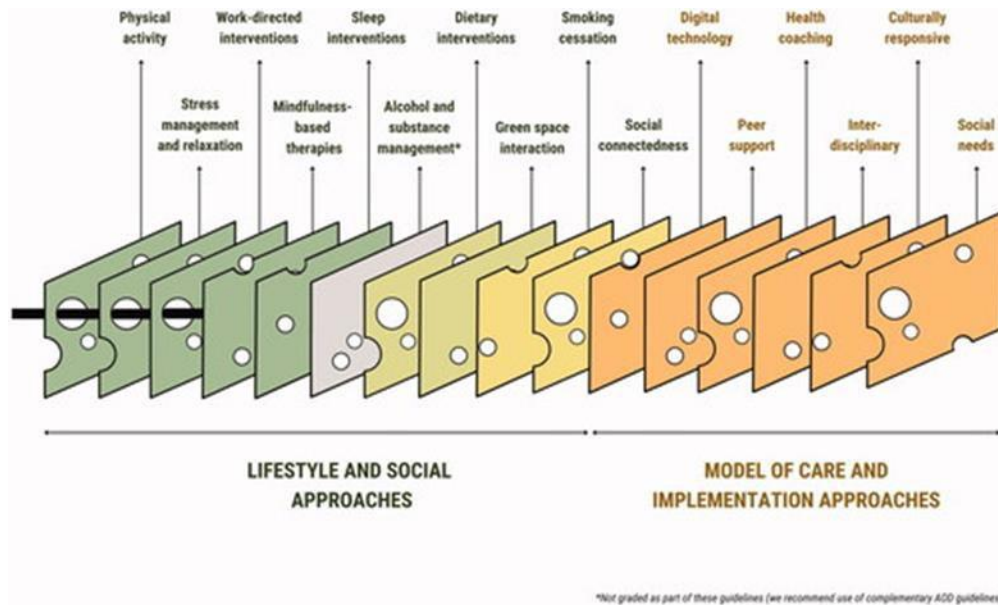
To date, the implementation of lifestyle-based approaches and innovation in service delivery has largely been ‘grassroots’. These have included personalised individual and group clinical approaches including shared medical appointments, shifts in workforce delivery (such as link workers for social prescribing, health coaches, and peer support workers), health delivery in other settings (workplaces, schools, community), improved coordination of care between interdisciplinary teams, and use of digital technology including virtual care, telehealth, apps, wearables, online programs, text services, decision support software and artificial intelligence, adapted in the context of socio-economic, cultural and environmental determinants.[i, ii]

A “reverse-Swiss cheese model” of Lifestyle-based health care has been proposed. Lifestyle-based health care is not a single intervention but rather several mutually supportive and interacting approaches that involve lifestyle domains combined with models of care including interdisciplinary teams, peers and carers, health coaching behaviour change approaches, and digital technology. The more each of these layers are cultivated and built within a person’s life and environments, the greater the likelihood of preventing disease progression, enhancing resilience against adverse internal or external events, and improving mental, physical, and social wellbeing. This is illustrated by disease progression (thick black line) being mitigated by the additional layers of lifestyle approaches and implementation considerations [iii].



[iii]

There exist several barriers to the widespread implementation of Lifestyle Medicine, such as time, funding, service design, workforce, and training. A 2019 systematic review examining the extent to which nutrition is taught in medical education [iv] found that ‘nutrition is insufficiently incorporated into medical education, regardless of country, setting, or year of medical education’. A study surveying UK medical students in 2019 found that 52% were unaware of the current exercise guidelines, 80% stated they had not received training in Lifestyle Medicine, 48.1% were unacquainted with motivational interviewing and 76% wanted more Lifestyle Medicine teaching. [v]. Training underpins many of the other barriers, and relatively urgent improvements in undergraduate and postgraduate health professional education is indicated.



[i] Marx W, Manger SH, Blencowe M, Murray G, Ho FY, Lawn S, Blumenthal JA, Schuch F, Stubbs B, Ruusunen A, Desyibelew HD, Dinan TG, Jacka F, Ravindran A, Berk M, O'Neil A. Clinical guidelines for the use of lifestyle-based mental health care in major depressive disorder: World Federation of Societies for Biological Psychiatry (WFSBP) and Australasian Society of Lifestyle Medicine (ASLM) taskforce. *World J Biol Psychiatry*. 2022 Oct 6:1-54. doi: 10.1080/15622975.2022.2112074. Epub ahead of print. PMID: 36202135.

[ii] Osborn D, Burton A, Hunter R, Marston L, Atkins L, Barnes T, Blackburn R, Craig T, Gilbert H, Heinkel S, Holt R, King M, Michie S, Morris R, Morris S, Nazareth I, Omar R, Petersen I, Peveler R, Pinfold V, Walters K. Clinical and cost-effectiveness of an intervention for reducing cholesterol and cardiovascular risk for people with severe mental illness in English primary care: a cluster randomised controlled trial. *Lancet Psychiatry*. 2018 Feb;5(2):145-154. doi: 10.1016/S2215-0366(18)30007-5. Epub 2018 Jan 22. Erratum in: *Lancet Psychiatry*. 2019 Jan;6(1):e2. PMID: 29396118.

[iii] Marx W, Manger SH, Blencowe M, Murray G, Ho FY, Lawn S, Blumenthal JA, Schuch F, Stubbs B, Ruusunen A, Desyibelew HD, Dinan TG, Jacka F, Ravindran A, Berk M, O'Neil A. Clinical guidelines for the use of lifestyle-based mental health care in major depressive disorder: World Federation of Societies for Biological Psychiatry (WFSBP) and Australasian Society of Lifestyle Medicine (ASLM) taskforce. *World J Biol Psychiatry*. 2022 Oct 6:1-54. doi: 10.1080/15622975.2022.2112074. Epub ahead of print. PMID: 36202135.

[iv] Crowley J, Ball L, Hiddink GJ. 2019. Nutrition in medical education: a systematic review. *Lancet Planet Health*. 3(9):e379–e389.

[v] Radenkovic D, Aswani R, Ahmad I, Kreindler J, Robinson R. Lifestyle medicine and physical activity knowledge of final year UK medical students. *BMJ Open Sport Exerc Med*. 2019;5(1):e000518. Published 2019 Jun 14. doi:10.1136/bmjsem-2019-000518

References, appendices, validated tools/questionnaires

Appendix 1 Some tools of LM

Person-centred care

“A person-centred approach means putting people, families and communities at the heart of health, care and wellbeing.” [i] It is also known as personalised care. Lifestyle medicine uses person-centred techniques that ask people what is important to them about their health to support their autonomy. Techniques used in person centred care include shared decision making, care and support planning, goal setting and supported self-management. People are much more likely to make and sustain behavioural change[ii] if this approach is used.

Motivational Interviewing (MI)

“Motivational interviewing uses a guiding style to engage clients, clarify their strengths and aspirations, evoke their own motivations for change and promotes autonomy in decision making” [iii].

MI is founded on these principles:

- How we speak to people matters just as much as what we say
- Being listened to and understood is essential in supporting behaviour change.
- If supported, people will come up with the best solutions to their own problems.
- People change their behaviour when they are ready and not when they are told to.

The practice of MI involves resisting the “righting reflex” with didactic advice, understanding people’s reasons for change, listening to people’s own solutions and empowering people to feel that they can change. It avoids arguing with people about how much they need to change or using an authoritative/expert role by offering direct advice or solutions. There is evidence to suggest that this style of consulting may be more likely to support successful behaviour change [iv].

Health Coaching

Coaching has been described as a way of “unlocking a person’s potential to maximise their own performance” [v] by supporting people to find their own unique solutions by focusing on the present and being goal oriented.

The key ingredients to health coaching are:

- A compassionate approach
- Active listening and reflection by using open questions.

- Goal setting
- Supporting ownership and the patient generating their own ideas
- Encouraging taking small steps in the patient’s chosen direction

Coaching has been found to be particularly effective in supporting people with Type-2 Diabetes. [vi] Health coaching is being introduced in the NHS as a method of supporting self-care [vii].

Cognitive Behavioural Therapy (CBT)

CBT recognises the link between thoughts, feelings, and actions. It aims to help people to recognise vicious cycles of negative thoughts and feelings. CBT has been shown to be effective at supporting people to lose weight, improve emotional well-being, increase activity, and improve diet[viii], [ix].

Social Prescribing

Social prescribing takes a holistic approach to health by connecting people to community groups for practical and emotional support. It recognises that our environment and social connections play a huge role in influencing our health behaviours. Social prescribing link workers are now working in primary care as part of NHS England’s long-term plan [x].

Patient Activation Measures (PAM)

PAM is a tool that allows for assessment of people’s knowledge, skills, and confidence to manage their health. Research has shown that people who have greater knowledge, skills and confidence are more likely to engage in positive health behaviours and to have better health outcomes [xi]. Use of PAM can help to target interventions to support lifestyle change that is appropriate to people’s needs.

Group Consultations

Group consultations are a tried and tested way to deliver better quality care to patients in a cost-effective and rewarding way. 10-15 people with similar conditions come together and agree to some shared understandings and discuss a results board where they share their clinical results (having given consent). The group consultation facilitator supports the group to reflect upon what their priorities are and ask questions such as “what matters to me about my health?”. The clinician is briefed before joining the group and then reviews each patient’s questions 1:1 before encouraging the group to share experiences and problem-solve together. Group consultations are proving to be a very powerful tool to support people to make lifestyle and behaviour change by delivering group support, education as well as the benefits of 1:1 attention from a clinician. There is good quality evidence that group consultations are better than a 1:1 appointment for the care of people with Type-2 diabetes[xii]. There is growing evidence that group consultations also help with many other long-term conditions and that they can be used in the virtual space[xiii].

[i] <https://www.personalisedcareinstitute.org.uk/>

- [ii] Ahmad N et al, Person-centred care: from ideas to action, *The Health Foundation*, (2014)
<https://www.health.org.uk/sites/default/files/PersonCentredCareFromIdeasToAction.pdf>
- [iii] Rollnick S et al, *Motivational Interviewing in Health Care; helping Patients Change Behaviour*, (2007) New York: Guildford Press
- [iv] Frost H et al. (2018), Effectiveness of Motivational Interviewing on adult behaviour change in health and social care settings: A systematic review of reviews. *PLoS ONE*, 13(10)
- [v] Grant AM, Stober D: Introduction. Evidence based coaching handbook. Edited by: Grant AM, Stober D. 2006, Hoboken, New Jersey: John Wiley & Sons, Inc, 1-14.
- [vi] Ammentorp, J, et al. (2013), Can life coaching improve health outcomes? – A systematic review of intervention studies. *BMC Health Serv Res*, 13, 428 8
- [vii] <https://www.england.nhs.uk/personalisedcare/supported-self-management/supporting-tools/>
- [viii] Rapoport, L. et al. Evaluation of a modified cognitive–behavioural programme for weight management. *Int J Obes*, (2000). 24, 1726–1737
- [ix] Uchendu C and Blake H, (2017), Effectiveness of cognitive-behaviour therapy on glycaemic control and psychological outcomes in adults with diabetes: a systematic review and meta-analysis of randomised controlled trials, *Diabetic Medicine*, 34, 3, 328-339
- [x] <https://www.england.nhs.uk/personalisedcare/social-prescribing/>
- [xi] Hibbard J, Gilbert H. Supporting people to manage their health: An introduction to patient activation. The King’s Fund, 2014
- [xii] Booth A et al, what is the evidence for the effectiveness, appropriateness, and feasibility of group clinics for patients with chronic conditions? A systematic review. *Health Serv Deliv Res*, (2015), 3, 46
- [xiii] <https://bslm.org.uk/vgc/>.

Appendix 2 LM as a comparator

Area	How Lifestyle Medicine is different
<p>Public Health focuses on prevention of ill health through organized efforts and informed choices of society, organizations (public and private), communities and individuals.</p>	<p>Lifestyle medicine focuses not only on prevention but treatment and reversal of ill health. It uses approaches that are tailored to the patient-clinician relationship rather than at the population level.</p>
<p>Preventive Medicine aims to prevent disease and avert resulting complications after its onset. It can be practiced by governmental agencies, primary care physicians and individuals.</p>	<p>Lifestyle medicine includes preventive medicine but also addresses the treatment and reversal of some long-term conditions. It is most often practiced by individual clinicians with their patients.</p>
<p>Population Health Management describes the use of large-scale population data, including data on the wider determinants of health, to inform policy decisions with the aim to support health and reduce health inequalities across an entire population.</p>	<p>Lifestyle medicine uses person-centred clinical data (such as Patient Activation Measures or Quality of Life scores etc.) to individualise the support that is required to prevent, treat, and reverse illness. Data from population health management can be used to target lifestyle medicine interventions for those in greatest need.</p>
<p>Rehabilitation Medicine describes the management of disabling diseases or injuries and their personal, interpersonal, and social consequences.</p>	<p>Lifestyle medicine addresses prevention as well as management and reversal of some long-term conditions.</p>
<p>Sports and Exercise Medicine is a medical specialty that addresses medical conditions and injuries that occur in those who wish to participate in sport or exercise. It also covers the role of physical activity in the treatment and prevention of illness</p>	<p>Lifestyle medicine addresses all areas of lifestyle, not just exercise but also stress, social connection, nutrition, sleep, alcohol, smoking, and recreational drug use.</p>
<p>Behavioural Medicine focuses on the techniques that can be used to support health-related behaviour change.</p>	<p>Lifestyle medicine combines proven techniques for supporting behaviour change with the evidence for which lifestyle changes are important for health.</p>

<p>Alternative or Complementary Medicine use approaches that fall outside of mainstream healthcare and may not have widespread acceptance or evidence base.</p>	<p>Lifestyle medicine is part of mainstream medicine and forms part of major national medical guidance. It is evidence-based.</p>
<p>Integrated Medicine practising in a way that selectively incorporates elements of complementary and alternative medicine into comprehensive treatment plans alongside solidly orthodox methods of diagnosis and treatment.</p>	<p>All aspects of lifestyle medicine form part of mainstream medicine and major national medical guidance. All lifestyle medicine practice is evidence-based.</p>
<p>Functional Medicine uses history-taking tools to map symptoms to the categories of root processes that underlie illness. It often uses specific additional biomarker measurements.</p>	<p>Lifestyle medicine fits into traditional medical consulting methods with the addition of a lifestyle history and assessment. It does not often require specific additional biomarker measurement.</p>
<p>Ecological/Sustainable Health recognises the importance of external influences such as the environment on health and attempts to improve public health without exhausting natural resources or causing ecological damage</p>	<p>Lifestyle medicine focuses on the patient’s relationship and their lifestyle concerns. These may result in a more sustainable health care practice.</p>
<p>Holistic Medicine is a whole-body approach to healthcare and often combines traditional medicine, complementary and alternative medicine.</p>	<p>Lifestyle medicine also takes a whole-body approach but is part of mainstream medicine and forms part of major national medical guidance. It is evidence-based.</p>

Appendix 3 Definitions of LM

The American College of Lifestyle Medicine

Founded in 2003 with the definition: “Lifestyle Medicine is the use of a whole food, plant-predominant dietary lifestyle, regular physical activity, restorative sleep, stress management, avoidance of risky substances and positive social connection as a primary therapeutic modality for treatment and reversal of chronic disease.”

The Australasian Society of Lifestyle Medicine

Defines Lifestyle Medicine as “the application of environmental, behavioural, medical and motivational principles to the management (including self-care and self-management) of lifestyle-related health problems in a clinical and/or public health setting” [i].

The British Society of Lifestyle Medicine

Founded in 2016 BSLM it has the definition of LM as: “Lifestyle Medicine is evidence-based clinical care that supports behaviour change through person-centred techniques to improve mental wellbeing, social connection, healthy eating, physical activity, sleep and minimisation of harmful substances and behaviours”

The European Lifestyle Medicine Council

States that Lifestyle Medicine requires an understanding and acknowledgement of the physical, emotional, environmental, and social determinants of disease. Hence the LM practitioner will engage with patients and operate within a boundary of evidence-informed medicine.

The Indian Society of Lifestyle Medicine

ISLM Founded in 2019 defines Lifestyle Medicine as: Lifestyle Medicine is a branch of allopathic medicine that focuses on the prevention, management, and treatment of various lifestyle diseases and health conditions through the evidence-based modification of lifestyle behaviors using appropriate lifestyle modification techniques in different settings at population, regional and individual levels.

The Institute of Lifestyle Medicine

A collaboration between Harvard Medical school and The Spaulding Rehabilitation Hospital in 2007. Their mission is “reducing lifestyle-related death and disease in society through clinician-directed interventions with patients”.

The American College of Preventive Medicine

States that Lifestyle Medicine is “a medical approach that uses evidence-based behavioural interventions to treat and manage chronic diseases related to lifestyle.”

[i] https://www.mja.com.au/journal/2009/190/3/emergence-lifestyle-medicine-structured-approach-management-chronic-disease#0_i1091988

Other sources:

G Egger et al. LM potential for reversing a world of chronic disease epidemics: from cell to community. [Int J clin pract, November 2014, 68,11,1289-1292.](#)

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