

COVID-19: How Health Professionals Can Support the Mental Health of Young People & Themselves

Information for health professionals



By Dr Nihara Krause, Consultant Clinical Psychologist

Introduction

The many challenges caused by COVID-19 are constantly evolving, making it difficult for health professionals to give consistently clear advice.

Increased stress and worry are natural in the midst of a pandemic, but children and young people can be particularly vulnerable due to their level of cognitive maturity, perception of consequences, and access to uncensored information online.

In addition, the emotional deregulation that often exists in adolescence - with its intense ups and downs - makes it even more difficult to cope.

This document provides practical information for health professionals supporting children and young people during the COVID-19 crisis. It offers tips and resources to help deal with mental health issues presenting in young people. It also provides some guidance on ways to support the mental wellbeing of health professionals.

About stem4

stem4 is a charity that promotes positive mental health in teenagers and those who support them, including their families, carers, teachers, school nurses and GPs through the provision of mental health education, resilience strategies and early intervention.

This is primarily provided digitally through our innovative education programme, pioneering mental health apps, clinically-informed website and mental health conferences that contribute to helping young people and those around them flourish.

Contents

Chapter 1	
Possible Effects of Coronavirus on Young People's Mental Health	04
Chapter 2	
Children and Young People's Mental Health Before the Coronavirus Crisis	08
Chapter 3	
Managing Mental Ill Health in Children and Young People During the Crisis	12
Chapter 4	
Managing Your Own Mental Health	20
Resources	24

Chapter 1

Possible Effects of Coronavirus on Young People's Mental Health

Like all of us, children and young people are likely to experience a range of emotions in response to the current situation

Some common emotional impacts for young people include:

- Fear of becoming ill
- Fear of the virus affecting loved ones
- Fear of the worst/death
- Fear of/anger at social restrictions
- Fear of social exclusion
- Fear of being stigmatised for passing on the illness
- Frustration at a lack of power over decisions that directly affect them
- Boredom
- Fear of missing out on important events, or experiences they had been looking forward to

Stress and worry may manifest themselves in a number of different ways including:

- Seeking constant reassurance - online, from parents, or from GPs and other health professionals
- Increased anxiety or low mood
- Panic attacks, prompted by being in situations where they feel at risk
- Increased irritability and anger
- Indifference, lack of motivation, procrastination
- Risk-taking behaviour
- Avoidance of social situations

For those with pre-existing mental health conditions, such as anxiety disorders and depression, the impact is likely to be magnified.



How to Respond to Mental Health Issues

People process information in different ways during a crisis

Understanding these differences can help to tailor information, and how it is delivered, to the young person's individual needs.

Some ways people respond include:

Condensing information

Under stress, people do not always fully process everything that is said to them. They may find it difficult to remember or get easily confused.

- Reassure and help them feel safe before giving any information
- Keep information short and simple, and be prepared to repeat it

Sticking with what is known

People often stick to taking in information according to what they know and feel safe with. For example, someone with an eating disorder may find it hard to believe that a small alteration to their exercise plan will not have a major effect.

In a crisis people will usually be asked to do things that go against existing beliefs. They may therefore come across as uncooperative, hostile or panicked.

Understand their anxiety, provide accurate and credible information explaining why the change is needed, and enhance motivation to change.

Searching for certainty by seeking reassurance

Uncertainty makes people take steps to protect themselves. When it comes to Coronavirus, this might take the form of booking repeat consultations, wanting frequent testing or asking for multiple referrals in order to gather information from many sources.

- Acknowledge the lack of certainty. Tell them what you know and what you don't know and the process being used to get the answers. Use a consistent message
- Don't encourage the compulsion for more and more reassurance

The response of health professionals must be tailored to each individual and grounded in their understanding of the person and their context:

- Assess pre-existing and ongoing issues, co-morbid conditions and existing social support
- Consider the particular developmental level of the child or young person
- Adjust recommended prevention and treatment strategies to suit their specific needs



To expand on this last point, social distancing is not generally a favoured behaviour of young people and is unlikely to be followed unless anxiety over the consequences is allayed. However, some young people may use social distancing and/or social isolation as a coping strategy, for example, if they are affected by anxiety, obsessive compulsive disorder (OCD) or depression.

There is therefore a fine balance to be struck between encouraging behaviour to deal with the containment of an infectious disease, versus promoting behaviour that enhances a mental ill health problem.

Similarly, for young people who have contamination fears associated with Obsessive Compulsive Disorder (OCD), handwashing can take on a significance that is out of proportion with what is needed for good hygiene.

Some actions that might be helpful include:

- A brief assessment of presenting issues, needs and available resources
- Promotion of self-care strategies (as appropriate). These can be reinforced by family/carers
- Recommending the Clear Fear App which helps manage symptoms of anxiety using a CBT approach. Calm Harm which provides a range of strategies to regulate emotions and manage the urge to self-harm. Combined Minds which helps parents and carers support young people who are anxious
- Identifying and challenging negative coping strategies (for example compulsive handwashing) and addressing fear and stigma
- Providing accurate information on COVID-19, including possible symptoms, sources of help (e.g. 111) and simple steps to manage the condition at home
- Discussing how parents/carers can carry out watchful waiting and when and how to connect remotely with health professionals
- Activating referral pathways (when there are diagnosable mental health conditions)
- Assessing risk and discussing a monitoring strategy



Chapter 2

Children and Young People's Mental Health Before the Coronavirus Crisis

stem4 is a charity that works with young people, their parents, education professionals and primary healthcare professionals

We provide tools for mental health literacy to support the early awareness of and intervention in mental health difficulties. We talk to our users about their experiences of asking for help for mental health difficulties; carry out national surveys to raise awareness of need; and develop digital strategies as a first step to help.

The lack of resource within NHS mental health services often means parents and GPs are unable to request effective help until problems are severe. This is one of the reasons one in eight children and young people between the ages of five and 19, presented to the NHS with a mental health difficulty in 2017^[1].

Most families encounter some form of concerning behaviour in their children but when a mental health condition becomes severe, they often have a hard time supporting them or accessing helpful interventions. According to a 2016 report from the Association for Young People's Health: 'parents of children and young people are the most unsupported of all groups of parents, and those who have young people with mental health problems seem to be particularly isolated'.

It found that parents were struggling to deal with long waiting times for help and had to work hard to receive it. Even when they did, they felt they were left alone without support to deal with crises. Furthermore, parents often felt they had something to offer but were underutilised^[2].

GPs are often the first port of call, but they are similarly finding it difficult to access support or make referrals to specialist services. Whilst the government has started to take welcome steps to address these problems, services have been so poorly resourced that they need to be built back up from 'ground level'.



In 2019, stem4 carried out its third national survey of GPs into the scale of those problems. Findings included:

- 90% of GPs (compared to 77% in 2016) said that mental health services for children and young people were inadequate
- 83% said they see more young patients with mental health difficulties than they did in 2018
- GPs reported that 54% of all patients aged 11-18 referred to CAMHS were rejected for treatment, even though only the most at risk were referred
- Of the 11-18 year-olds accepted by CAMHS, 27% waited at least three to six months to be seen (from referral to first treatment), with 28% waiting up to 12 months
- When dealing with the young patients rejected by CAMHS, only 31% of GPs said they were able to refer them to other NHS-commissioned services, such as talking therapies; most referred the patients back to their school or to local charities, which were overwhelmed
- 99% feared that these young people may come to harm while waiting to access treatment^[3]

At the same time, stem4 carried out a separate survey of 1000 parents. Three quarters (76%) were worried about their children's mental health, and 56% felt they were ill equipped to deal with it, saying they felt as if they had been left to fend for themselves. Seven in ten (72%) said that as a result of access to poor mental health services they feared for their children's lives^[4].

Since 2016, the Government has been undertaking initiatives to improve treatment for children and young people experiencing mental health difficulties. More money has been funnelled into CAHMS services and selected primary and secondary schools with the aim of providing early, preventative, low-level mental health strategies. Nevertheless 73% of GPs believe that mental health services for children and young people aged 11-18 have continued to deteriorate over the last 12 months^[5].

Only 6% of GPs said they had seen a decrease in the number of young people aged 11-18 seeking their help

- Eight in 10 (83%) had seen a rise in the number of patients aged 11-18 suffering with anxiety
- 8 in 10 (79%) had seen an increase in young patients with depression
- 6 in 10 (64%) were seeing more young patients self-harming
- Many had witnessed an increase in conditions such as conduct disorders and eating disorders



The results indicated that there were limited referral pathways for mental health interventions/therapies, and that patients were experiencing long waiting times for treatment.

As a consequence, 90% of GPs in the 2019 survey (compared with 77% in 2016) described mental health services for children and young people as either extremely inadequate (31%) or very inadequate (59%), while virtually all (99%) feared that these young people might come to harm while waiting for specialist mental health support.

The impact of COVID-19 on children and young people's mental health services

Given pre-existing prevalence, service constraints and the psychological impact of the pandemic, it is highly likely that mental health conditions affecting young people have worsened further.

Most health services, but especially mental health, have changed their methods of delivery to comply with social distancing rules. In-patient services are running at a low level due to concerns about spreading the virus as well as staff shortages, and new referrals are on hold. The impact of further slowdown on an already overstretched service is worrying.

The stem4 survey results also demonstrate the importance of school support services, leaving children and young people who depend on them further affected.

Chapter 3

Managing Mental Ill Health in Children and Young People



Common mental health conditions affecting children and young people include:

- Anxiety disorders
- Obsessive Compulsive Disorder (OCD)
- Depression
- Self-Harm
- Eating Disorders
- Alcohol Misuse
- Digital Addiction

Anxiety Disorders

Anxiety disorders are the most common mental ill health conditions among children and young people. They can start from the age of five and are believed to affect around one in six children and young people. Anxiety disorders are debilitating, affecting education, relationships and physical health.

It is important to recognise that children and young people will be affected by a variety of anxieties as they grow – for example, separation anxiety in 0-3 year olds, anxieties around illness and death in middle childhood and social anxiety in young

and middle teens. These are not anxiety disorders unless they impact significantly on wellbeing. Guidelines for GPs on working with anxiety disorders have been provided by the RCGP. However, unlike many forms of anxiety, it is important to recognise that anxiety related to COVID-19 has been triggered by a real threat.

Some approaches that might help:

- Talk to children about the facts, keeping in mind their developmental level
- Provide practical guidelines, keeping in mind that a person who is anxious will focus on the negative information more than the positive
- Help set limits. People who are anxious are more likely to overthink and overdo precautions 'just to make sure'
- Support parents who are anxious. Children pick up on fear in adults easily
- Encourage parents to create structure and routine
- Encourage healthy eating and regular sleep
- Encourage parents to offer choice and promote independence to teens as best they can
- Consult parents and young people separately. There may be family tensions that need addressing
- Find out how young people might be expressing their anxiety (behaviour difficulties, recurring aches and pains, insomnia, regression into younger child behaviours, clingy behaviour, increased risk in teenagers are all common symptoms)
- Identify damaging behaviours resulting from anxiety (for example self-harm, increase in alcohol/substance misuse)
- Provide support to children and young people who are bereaved

Of course some groups of young people may actually experience a reduction in anxiety during lockdown. They include those with separation anxiety disorder, social anxiety, experience of being bullied, challenges with interpersonal relationships, neurodevelopmental conditions or physical and sensory problems that make a normal school day more challenging.

This may create its own problems when usual daily routines resume. There will be a whole new focus on how to help them return by learning to manage their anxiety and its symptoms, and to face their fears one step at a time.

The first line of treatment for anxiety disorders is Cognitive Behaviour Therapy (CBT). There are some online CBT programmes recommended in the NHS App Library. Apps such as Clear Fear, for example, which helps children and young people manage symptoms of anxiety using a CBT approach. Other options include Calm, and mindfulness apps such as Head Space.

Obsessive-Compulsive Disorder (OCD)

OCD is a form of anxiety disorder in which repeated and intrusive thoughts are experienced. Usually they are distressing, and in order to deal with them the person will carry out some form of repetitive behaviour.

OCD often focuses around a number of common worries but of particular relevance to Coronavirus are:

- Fear of contamination
- A worry about harm, either to oneself, or to someone else
- Fear that something bad will happen unless a particular behaviour is carried out

Common behaviours to help manage these worries include:

- Washing
- Checking
- Touching
- Ordering
- Counting

OCD can occur at all ages and is best treated using CBT, which involves facing fears through exposure and response prevention (ERP).

In general, if a person is fearful of contamination, they will be encouraged to stop carrying out their usual behaviour (for example not washing their hands). This is a problem considering what is being promoted during the current pandemic.

Approaches that may be effective include:

- Helping recognise what is best practice by presenting scientific facts and not doing more than is recommended
- Anxiety management strategies such as breathing, progressive muscle relaxation and cognitive restructuring
- Encouraging parents to place limits on compulsive behaviour
- Online CBT programmes targeting OCD on the NHS App Library, such as Clear Fear or Calm Harm, which helps young people manage their urge to self-harm
- A referral to a clinician specialising in the condition

Depression

Clinically, the term depression refers to a group of symptoms and behaviours clustered around three core alterations to experience: changes in mood, thinking and activity. These changes will be sufficient to cause impairment in personal and/or social functioning. Mood changes typically include sadness and/or irritability accompanied by a loss of pleasure, even from the most passionately held interests.

Cognitive changes include negative thinking, usually with a pronounced self-critical focus. Physically, depressed people become less active. Although there are many similarities between adult depression and depression in younger people, there are important developmental differences in each of the three areas.

When assessing a child or young person with depression healthcare professionals should:

- Take a history, including any pre-morbid conditions
- Explore physical, social, educational and family context
- Get an understanding of interpersonal issues
- Assess risk, including substance misuse, self-harm and suicidal ideation or intent
- Include a family history to identify unipolar or bipolar depression in parents and grandparents

Major depressive disorder is marked by a significant decrease in quality of life. Some of the main features noted in children and young people include:

- Sadness
- Emptiness increased irritability and anger
- Withdrawal from important friendships
- Loneliness
- Risk-taking behaviour
- Self-harm
- Sleep changes
- Withdrawal from school and family
- Drop in school performance
- Withdrawal into online activities
- A lack of hope and pleasure

In general, looking after mental health when depressed is difficult since it requires energy. This is harder for children and young people, and even harder in the current situation, with its limited opportunities for self-care.

Social distancing and isolation lead to a more cloistered existence. A reduction in life's pleasures, disruption to daily routine, lack of face-to-face encounters, dislocation from friends, a feeling of dread, financial changes to the family and uncertainty about the future are all everyday feelings for many young people. However, these factors are likely to intensify the negative outlook, helplessness, hopelessness and withdrawal that accompany major depression.

Young people who are depressed are also more likely to misuse alcohol or drugs and there are reports of increased alcohol use during lock-down. They are also more likely than usual to interact online and to absorb themselves in gaming. Parents working from home may find it more difficult to monitor young people's use of such activities.

Young people who are depressed may also self-harm, either with or without suicidal intent. If their living situation is a contributory stressor to their mood (for example, because of family conflicts) then being locked in without a break can lead to further despair.

Tips for health professionals:

- Work on engaging the young person. This may well have to be online due to social distancing
- Set up contact (initially regularly) and explain confidentiality, with its limits, in order to develop trust
- Assess mental state. If suicidal ideation is present, develop a safety plan
- Encourage the establishment of a daily routine and explore future plans
- Explore positive relationships and also what doesn't work
- Address any alcohol or substance misuse issues
- If grieving is an issue recommend bereavement counselling. Many psychologists and counsellors offer online support
- Move Mood is a new app from stem4 which provides young people with the opportunity to develop positive behaviours using evidence based Behavioural Activation Therapy



Self-Harm

Around one in 12 young people in the UK self-harm. However, the prevalence of self-harm increases with age and generally occurs between the ages of 16-24, with as many as a fifth of young women with concurrent mental ill health conditions (such as depression and anxiety) self-harming^[7].

Self-harm is associated with increased risk of mortality, with the strongest predictor a combination of self-harm and alcohol misuse. There are many reasons why young people self-harm and a thorough assessment is needed in order to target the best treatment plan. Self-harm usually occurs as a result of difficult emotions, and the current crisis has enhanced emotional intensity for many young people. Since they are also confined to their homes, the temptation to self-harm is closer.

Tips to manage self-harm during this period include:

- Carry out a thorough risk assessment
- Engage and keep regular contact in order to observe changes in behaviour
- Provide information about the Coronavirus situation (if it is causing distress)
- Identify stressors at home and help develop a safety plan
- Encourage them to put away easy to access self-harm equipment
- Help them manage sleep - night times can increase self-harm
- Identify a safe person they will be able to contact, keeping in mind that social distancing limits choices
- Consider digital tools, such as Calm Harm, distrACT and Blue Ice to help manage self-harm urges

Eating Disorders

Eating disorders - anorexia nervosa, bulimia nervosa and binge-eating disorder - are serious mental health conditions that affect both physical and psychological health. People with anorexia nervosa are extremely careful about their food intake and often manage their anxiety through a set, daily routine. They will get very anxious if this is changed, particularly without any preparation.

People with bulimia nervosa typically have an overlap of the same symptoms and behaviours but will alternate them with periods of binge eating together with ways to 'lose' the food they have consumed. Unlike anorexia nervosa, the condition is often characterised by disorganisation around eating and impulse regulation is difficult, particularly if emotions are high and food is easily accessible.

People with binge eating disorder experience periods of binge eating with no compensatory behaviour.

Eating disorders isolate individuals, either because of their extreme focus on weight or because they feel uncomfortable around food and eating.

The Coronavirus crisis has had a major impact on a number of factors relating to eating disorders, including:

- The availability of certain foods
- Access to specialised eating disorder services
- Access to regular monitoring of weight and safety measures such as blood tests
- The amount of contact with family (where relationships and meal times may be stressful)
- Restrictions on social situations
- Reduced access to exercise

All of these changes will have direct effects on someone with an eating disorder.

What you can do for children and young people with eating disorders:

- Encourage adherence to their recommended eating plan
- If they are unable to get their 'safe' food, help them identify similar alternatives
- Help them nominate a 'safe' person in their household who can take their weight and provide information on signs that should trigger a visit to either the GP or emergency services
- If self-reporting, set up a video link so you can see their weight on a scale (keeping in mind that it may not be very accurate)
- Take mid upper arm circumference to identify whether body mass is increasing or decreasing (this is a tricky procedure so is probably not preferable)
- Keep up some blood tests and monitoring for those most at risk
- Encourage them to stick to an agreed exercise routine
- Encourage them to keep any scans or other appointments that have been booked (balancing the risk of the eating disorder vs risk of the virus)
- Provide factual information about their level of risk from the virus
- Liaise with parents/carers on management and request a treatment plan
- Encourage them to join an online group which specialises in specific eating disorders
- For individuals with binge eating disorder encourage planned shopping to make access to large quantities of stored food less easily accessible
- Consult the Beat FAQs on COVID-19 and Eating Disorders: www.beateatingdisorders.org.uk/coronavirus





Chapter 4

Managing Your Own Mental Health

The mental health effects of coronavirus on healthcare staff can take a number of different forms. The crisis impact may be divided into three phases^[8].

1. Initial Phase

This is the stage of acute danger. The priority is for basic safety and survival, and emotional impacts might include:

- A sense of connectedness - 'we're all in this together'
- Rising to the challenge, acts of heroism
- Disbelief (going over things in your mind to verify it is actually happening)
- Hyperarousal (shown by alarm responses, sleep problems, agitation)
- Speedy mood shifts (irritation, agitation, intense action, despair)
- Intrusive thoughts, vivid dreams
- Feelings of powerlessness and helplessness
- Over-work
- Personal loss and dislocation (e.g. being separated from loved ones)
- Family tensions as life becomes unsettled
- Anxiety responses in relation to threat
- Feelings of guilt and responsibility (e.g. I should be doing more)
- Being highly affected by team disagreements
- Feeling valued by the community

What you can do:

- Make sure you have regular breaks and rest
- Connect with your normal support networks in addition to crisis networks
- Acknowledge uncertainty about what lies ahead
- Acknowledge vulnerabilities
- Talk and share
- Acknowledge positive evaluation by others but beware of your own limitations
- Take steps to manage time (avoid a speedy journey to burnout)
- Make time to take part in at least one enjoyable activity with friends or family

2. Ongoing Phase

During this phase the magnitude of the crisis will be starting to dawn. Personal risk will be clearer and a routine will be starting to be established.

Depending on how the crisis is managed there may be a change in community attitude. Colleagues may become unwell or even die, leaving gaps in the service. This is an emotional time and common responses include:

- Numbness
- Flashbacks
- Grief
- Anger
- Despair
- Guilt
- Hopelessness
- Disillusionment
- A sense of loss of control
- Disconnection with team and family
- Frustration about being let down
- Compassion fatigue ('what about me?')
- Periods of hope

What you can do:

- Acknowledge how things are affecting you - keep connected with others
- Grieve for lost colleagues
- Express your wishes
- Ask for practical help
- Keep up the breaks and rest
- Share joys and successes as well as frustrations and fears
- Look to managers for support and guidance
- Be alert to interpersonal challenges - try not to personalise other people's stress responses
- Set up team connections and acknowledge that it may be an ongoing process to build team connection
- Build on hope - focus on the small positives

3. Reconstruction and Resolution Phase

This will start to happen when the emergency has passed. People will start to pull together again. Whilst this is a hopeful time, as an individual it can be the most challenging and you might feel:

- Physical symptoms - sleep changes, appetite alterations, exhaustion
- Difficulty managing a variety of emotions
- Impact on close relationships

What you can do:

- Seek one-to-one support
- Take some time off work
- Keep up self-care

If you manage others:

- Make sure basic physical safety is prioritised
- Make yourself available
- Listen with compassion and patience
- Help staff tolerate uncertainty
- Encourage rest breaks, provide times to relax
- PPE is depersonalising both to the patient but also to the staff
Encourage opportunities to connect
- Give staff the opportunity to debrief and share distressing experiences
- Provide psychological support to staff - group and 1 to 1 psychological support
- Celebrate successes and provide hope

stem4 Apps to Manage Existing Health Issues



A free app to help children and young people manage the symptoms of anxiety
www.clearfear.co.uk

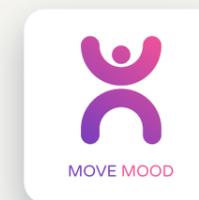


A free app to help teenagers resist or manage the urge to self-harm
www.calmharm.co.uk



A free app to help families and friends provide mental health support
www.combinedminds.co.uk

Available June 2020



A free app to help teenagers manage symptoms of depression
www.movemood.co.uk

Available on the App Store and Google Play



Resources

NHS Information Governance

www.nhs.uk/covid-19-response/data-and-information-governance/information-governance/covid-19-information-governance-advice-health-and-care-professionals

England: www.england.nhs.uk/wp-content/uploads/2020/02/20200305-COVID-19-PRIMARY-CARE-SOP-GP-PUBLICATION-V1.1.pdf

CERC (2019) Psychology of a Crisis, US Dept of Health and Human Services

Scottish information: www.hps.scot.nhs.uk/a-to-z-of-topics/wuhan-novel-coronavirus

Public Health Wales: phw.nhs.wales/topics/latest-information-on-novel-coronavirus-covid-19

Northern Ireland: www.publichealth.hscni.net/news/covid-19-coronavirus

NHS Digital (2017) - Mental Health of Children and Young People in England, 2017

Other Resources

stem4 (2020) booklet on supporting the mental health of children and young people during the COVID-19 pandemic

www.stem4.org.uk

References

- [1] NHS Digital, 2018
- [2] Association for Young People's Health "“There for you”: The role of parents in supporting young people with mental health problems: Results of a survey’, 2016
- [3] Survey of 1,000 regionally representative GP’s across the UK carried out by MedeConnect Healthcare Insight between 17 and 20 December 2019.
- [4] Survey of 1,000 regionally representative parents across the UK carried out by Survey Goo between 18 – 20 December 2019.
- [5] Survey of 1,000 regionally representative GP’s across the UK carried out by MedeConnect Healthcare Insight between 14th and 28th November 2018. Last accessed 18.12.18
- [6] Survey of 300 GP’s across the UK, A Time Bomb Waiting to Explode, May 2016 <https://stem4.org.uk/wp-content/uploads/2017/12/A-Time-Bomb-Waiting-to-Explode.pdf>. Last accessed 18.12.18
- [7] McManus, S, Gunnell, D, Cooper, C, Bebbington, B, Howard, L, Brugha, T (2019) ‘Prevalence of non-suicidal self-harm and service contact in England 2000-2014 repeated cross-sectional surveys of the general population, The Lancet, Vol 6, Issue 7, July 01, 2019
- [8] (CERC, 2019)

stem4

supporting teenage mental health

www.stem4.org.uk

This guide has been made possible through the generosity of



Wooden Spoon

The children's charity of rugby

Thank you to Steve Harman and HMA

Email: enquiries@stem4.org.uk

Twitter: [@stem4org](https://twitter.com/stem4org)

Instagram: [@stem4org](https://www.instagram.com/stem4org)

Facebook: [@stem4](https://www.facebook.com/stem4)

Wimbledon Business Centre, Old Town Hall,
4 Queens Road, London, SW19 8YB
Registered Charity No. 1144506

Copyright © 2020 by Dr. N. Krause. All rights reserved.

This booklet, or any portion of, may not be reproduced without the written permission of the author.

