PREVENTION IN TRANSITION

Stable routines for unstable times

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Impressum

Content

Starting the day with coffee

10%

Drinking coffee is the first thing 10% of the respondents do in the morning.

Preface

Dear Sir or Madam,

Stable routines are the mainstays of our daily work. Here at Curaden, the Swiss provider of holistic concepts, services and products for oral health, we have known this ever since the start of our business activities some fifty years ago. That is why we support the study from the GDI.

We are convinced that prevention is the key to a more humane and cost-effective form of health care. The realities on the supply side look different, however. Whether in the world of politics, in health care practices or in universities, prevention is not accorded the importance that it deserves. This is for differing reasons, but largely due to insufficient or incorrect financial incentives. Prevention – such as we understand it – is the enemy of treatment. The pressure on the demand side is growing, however, accompanied by the knowledge of the public about their own health and the decisive factors in this respect. We believe that the development is heading in the right direction – and that the current crisis, which is creating so much instability, will help to speed up the intolerably slow pace of this change.

Prevention is our guiding principle, and "Better health for you" is our claim. As the world's leading company in dentist-recommended oral care, please permit us to take a brief detour into oral health. It has been scientifically proven that its importance has direct links to general human health. The quality of the bacterial flora in the mouth determines the intestinal flora. Diseases of the periodontium affect the metabolism, the lungs and the blood vessels. Studies have demonstrated the link between cardiovascular disease and diseases of the mouth. Conversely, both physical and psychological complaints can aggravate periodontitis. With good oral hygiene and nutrition, we ourselves can contribute to preventing inflammations. Prevention is the key.

Here at Curaden, we are dedicated to oral health, but we also think in terms of the future, and to a time when prevention will account for more than just about two percent of total health care spending.

We wish you happy reading. With kind regards,

Ueli Breitschmid
Owner, Curaden AG, Schweiz

Denis Bourgeois
Scientific Advisory Board

Further information about Curaden and its philosophy is available at:
www.curaden.com, www.curaprox.com

Executive summary

Our behaviour is largely determined by habit: behavioural patterns repeated on a daily basis, which are hardly ever questioned because they happen 'on autopilot'. Many behavioural patterns promoting health must be made into habits in order to be stable in the long term.

We can rely on our habits when we have stable day-to-day routines. But what happens in times of upheaval, when our environment suddenly changes? This can happen through events in our personal lives, such as changing jobs, splitting up with a partner, or moving home, or if our environment as a whole becomes unstable, as it might through climate change or a changed world of work.

In view of such new overall conditions, we must then recalibrate our behaviour as well. This poses the risk that habits promoting health may be lost – but it also offers a window of opportunity for exercising desirable habits. So it is a matter of practising resilient health behaviour that not only withstands change but also makes use of the malleability of habits in order to change one's behaviour in a positive direction.

The coronavirus crisis offered the opportunity to observe changes in behaviour, habits, and rituals in dramatically changed environmental conditions in time lapse. A review of studies conducted during the pandemic shows that many people changed their behaviour as a result of the pandemic. But these changes did not always have a clear direction. Some people displayed more healthy, others less healthy behaviour.

What then are the decisive factors for people to change their behaviour in a positive or a negative way? Studies conducted during the pandemic identify several factors promoting stability of be-

haviour or even a positive change. These include mental health, social integration, education and income, age and gender.

Many of these factors correlate with a capacity for self-regulation. That capacity, however, is not fixed but is itself malleable. On the one hand, economic and social security can ensure resilience in health behaviour. On the other hand, mindfulness training, ritualising behaviours, identifying with one's own behaviour, and making plans can be learned.

The more the world changes, the more effective and the more important prevention becomes.

In a concluding scenario, we sketch what tomorrow's world may look like if the factors discussed are implemented in health prevention. In that scenario, much greater importance is attached to prevention than is the case today, and the promotion of health is viewed in a more holistic way. We limit ourselves to factors within the scope of action of individuals. In the scenario, the settings for such individual action are divided into the categories of motivation, capability, and opportunity.

The power of habit

'It's not time to make a change, just relax, take it easy.'
Cat Stevens

Many of us are creatures of habit and do the same things every day. 38% of Austrians give their partner a little kiss every morning. They then spend an average of 15 minutes in the bathroom, brushing their teeth, doing their personal hygiene and grooming. And 83% of them engage in some form of media consumption every day before leaving the house.[1] Younger people mostly prefer digital media, older people still read printed newspapers. 85% of 12 to 17-year-olds in Germany spend about three hours a day on WhatsApp, Instagram and the like.[2] The Swiss spend an average of 1.5 hours a day in traffic.[3] Frequently at the same time and on the same route, such as on the morning commuter train.

In a study whose participants made a note every hour of what they were doing and what they were thinking of, researchers around the psychologist Wendy Wood found that 40% of our everyday lives is determined by habits.[4] Habits were here defined (relatively narrowly) as behaviours that occur in the same place every day. When widening the definition of habits to behaviours that occur regularly but not every day (for instance, washing one's hair, going to the gym, or watching a TV crime film on Sundays), it can be assumed that more than half the day is spent on habits.

Many behaviours relevant to health also meet the narrow definition of habits. Thus, Wood's study found that most hygiene practices such as having a shower, brushing one's teeth, or washing one's hands take place every day and in the same place. But half of all dietary and exercise behaviours,

such as having the same breakfast every day or going for a run after work, are also habits according to this definition. Diet and exercise being crucial for physical and mental health, habits are of the utmost importance for promoting health, especially for primary prevention, i.e., avoiding illness (see the glossary on page 63 for the definition of prevention).

[1]   http://bit.ly/piu-tag (Source: neon.at; retrieved: 16.4.2021)
      http://bit.ly/piu-socmed (Source: zeit.de; retrieved: 16.4.2021)
[3]   http://bit.ly/piu-bfs (Source: bfs.admin.ch; retrieved: 16.4.2021)
[4]   Wood, W., Quinn, J. M., & Kashy, D. A. (2002). Habits in everyday life: Thought, emotion, and action. Journal of personality and social psychology, 83(6), 1281.

What does a typical day look like?

In early December 2018, market research company Marketagent asked 3,035 people in Austria about what they did on the previous day.

50% were awake at 6.30 am on a working day.
First activity after getting up:

38.1%	good-morning kiss
34.5%	going to the toilet
10.1%	making/drinking coffee/tea
8.3%	personal hygiene (washing one's face, having a shower, moisturising, etc.)
7.2%	brushed teeth
6.4%	made/had breakfast
6.4%	looked at their smartphone
	→ 20% of 14 to 19-year-olds,
	→ 0.9% of 60 to 69-year-olds
2.4%	smoked a cigarette
1%	had sex
0.6%	watched TV
0.5%	did some sport/exercise/relaxation exercises
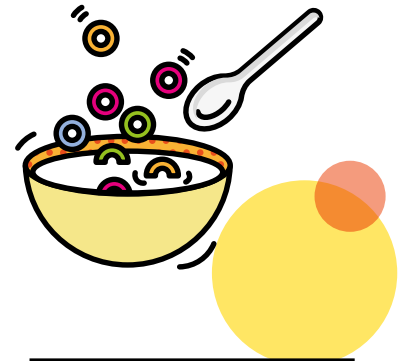
Breakfast

0.4%	at home
9.6%	at the office/at work
2.2%	at a café/bar
1.9%	on the go
1.1%	with family/friends
1.9%	somewhere else
23%	no breakfast

Bathroom routine

92.1%	brushing teeth
60%	doing/drying hair, grooming
54.3%	washing face
37.5%	having a shower
35%	moisturising face
18.8%	applying make-up
17.5%	shaving
10.4%	moisturising body
9%	flossing

Time spent in the bathroom

0.7%	0 minutes
15.8%	1–5 minutes
28%	6–10 minutes
22.3%	11–15 minutes
16.1%	16–20 minutes
12.1%	21–30 minutes
5.1%	→ 30 minutes
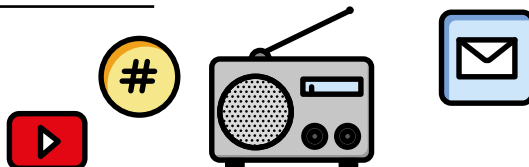
Media consumed in the morning

39.6%	internet	3.8%	video on demand
32.3%	radio	2.2%	book
18.1%	printed daily newspaper	1.9%	printed magazine
10.4%	TV generally	3.3%	other media
6.8%	breakfast television	17%	no media

50% had left the house by 7.35 am on working days. Commute

62.6%	by car
24.6%	by public transport
11.9%	on foot
4.3%	by bicycle

Stress level on previous working day

- **8.9%** very stressful
- **23.6%** somewhat stressful
- **32.9%** moderately stressful
- **24.%** rather less stressful
- **10.7%** not stressful at all

Housework

- **44.1%** up to 1 hour
- **29.6%** up to 2 hours
- **12.2%** up to 3 hours
- **25.9%** up to 4 hours
- **8.1%** more than 4 hours

Portion of the previous day spent on productive work

- **28.7%** 0–50%
- **17.5%** 51–70%
- **22%** 71–80%
- **16.3%** 81–90%
- **15.6%** 91–100

Medication

- **9.4%** prescription-only medicines
- **9.8%** vitamin supplements, herbal remedies, homeopathy
- **8.1%** over-the-counter medicines (e.g. lozenges, eye drops)

Visits to doctors

- **3.2%** GP/family doctor
- **1.3%** dentist
- **2.1%** another specialist

Evening meal

- **74.5%** at home
- **6.4%** at a restaurant/bar
- **3.7%** with family/friends
- **2.2%** at work/educational establishment
- **1.8%** on the go
- **2.7%** somewhere else
- **8.8%** had no evening meal yesterday

Shopping on previous day

- **81%** food
- **29.4%** beverages
- **20.3%** everyday necessities
- **8.9%** clothing
- **4.6%** toys
- **4.4%** furniture and/or furnishings
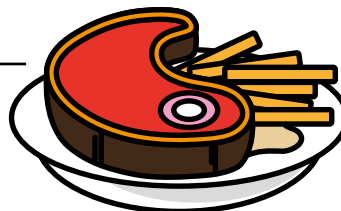
Amount of exercise

- **15%** a lot of exercise
- **36.9%** sufficient exercise
- **35.7%** rather too little exercise
- **12.4%** far too little exercise

Willpower needed to do exercise

- **4.5%** needed a lot of willpower
- **30.1%** needed some willpower
- **43%** rather looked forward to doing exerci
- **22.5%** very much looked forward to doing ex
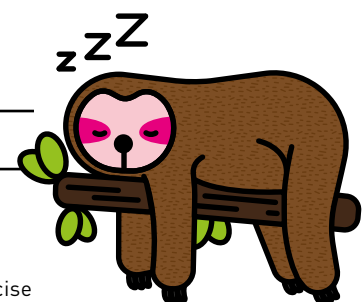
Met new people yesterday?

- **10.2%** yes
- **89.8%** no

Consciously lived/experienced the previous day

- **22.9%** yes, definitely
- **50.2%** yes, pretty much
- **23.8%** no, not really
- **3.1%** no, not at all
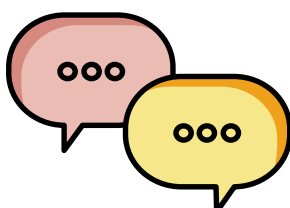
Habits often take place by themselves, 'on auto-pilot', as it were. According to a study by Lally et al.[5] a behaviour must be repeated daily for 66 days for it to become an automated habit. Strictly speaking, half the participants of the study had automated a behaviour after 66 days, although there were outliers in both directions: one participant had internalised the habit after only 18 days, another required 256 days. It was not a problem if the behaviour was skipped on isolated days. The important thing, however, was a stable environment triggering the automated behaviour (more on that later).

If a behaviour is practised 'on autopilot', we can do the washing-up and, in thought, be somewhere else entirely, be it on the next holiday or reliving yesterday's quarrel. With 60% of the habitual behaviours performed (daily and in the same place), participants in the study by Wendy Wood mentioned earlier were not thinking of what they were doing. In another study, in which people were asked at random times what they were thinking of, mind wandering occurred 47% of the time.[6] So, half the time, we think of something else than what we are doing.

The power of habits is that there is no need for specific awareness. You have more space for other things.

Bas Verplanken, Social Psychologist,University of Bath

A behaviour taking place 'on autopilot' is often triggered, relatively automatically, by one's current surroundings. Habits may be understood as reflex responses to a particular situation. For instance, one gets out one's mobile while sitting on the toilet. Before going to bed, one brushes one's teeth. It takes effort not to do that, that is, to fight against the 'power of habit'.

Habits are rarely questioned. At least, not while they are being acted on. How could they be, if one is thinking of something else while doing something out of habit? This can be an advantage, as one does not have to think about whether, how, and when to brush one's teeth every time. If that were necessary, one's teeth would presumably get brushed less often. But of course, this also allows unhealthy habits to sneak in, habits for which it would be desirable to stop and think what it is that one is doing.

Stable routines, stable habits

If habits are triggered by repeated situations, the portion of the day we spend with habits is an expression of the stability of our personal everyday lives. The more stable our daily lives, that is, the more familiar situations there are, the more we can – and usually do – resort to habits.

With our surroundings having such a major influence on our behaviour, our environment is often the target of interventions for behavioural change, such as in the area of promoting health. Much of the literature on behavioural change is based on the assumption that, instead of altering habits directly, people's environment needs to change – the habits then follow suit. This

[5]   Lally, P., Van Jaarsveld, C. H., Potts, H. W., & Wardle, J. (2010). How are habits formed: Modelling habit formation in the real world. European journal of social psychology, 40(6), 998-1009.

[6]   Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. Science, 330(6006), 932-932.

«It's the same routine every evening: brush my teeth, wash, put on pyjamas, prepare the bed, take something to read, read a few pages, put the pillow and book back on the bedside table, switch off the light, go to sleep.»

Examples of routines and rituals from an exploratory GDI survey

might mean that a health authority should build cycle paths to encourage exercise, rather than launching a sport campaign. Following this approach, a dietician need not convince people to eat less. Rather, she must convince them to store snacks out of reach. Similarly, an employer could fill a snack machine in the office with healthier contents.

The concept of 'nudging' assumes that people do not reflect much in many of their everyday decisions but are guided by their environment.[7] Unless a person already has a strong opinion on a given topic, he or she will be influenced by the way a decision is presented. According to this logic, it is more expedient to display healthy foods at eye level in supermarkets than to use persuasion.

Nudging is a big bag of tricks, but it's not a magic bullet. You can't nudge people into a healthy lifestyle.

Bas Verplanken, Social Psychologist, University of Bath

Designing the environment to promote healthy behaviours, whether by individuals, health authorities, or employers, presupposes that the environment can be controlled and is to some extent stable. This is the only way for interventions to be successful and to have a lasting effect. For instance, one can place a toothbrush next to one's screen at the office and go and brush one's teeth after lunch every day. After a while, this becomes a fixed habit – triggered by seeing the toothbrush next to the screen. But this is much easier when working in the same office and at the same desk every day. It is less so if the office introduces hot-desking and staff sit at a different desk every day.

The term 'behavioural change' already implies that the alternatives to intervention are stagna-

tion and stability. But where promoting health is concerned, behavioural change is only one side of the coin. Maintaining behaviours promoting health is at least as important as changing behaviour. This applies particularly if the environment in which habits are embedded is subject to change.

But a review article of various studies on the impact of life events on physical activity shows that significant changes in life often cause people to give up their exercise habits.[8] Examples of such life-changing events include: starting employment, moving home, marriage, divorce, children, retirement. Although the findings are not wholly unambiguous in every case, the overall picture seems to show a strong tendency. When everyday life changes, people at best exercise as much as before, but more often less.

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[7] Thaler, R. H., & Sunstein, C. R. (2009). Nudge: Improving decisions about health, wealth, and happiness. Penguin.

[8] Allender, S., Hutchinson, L., & Foster, C. (2008). Life-change events and participation in physical activity: a systematic review. Health promotion international, 23(2), 160-172.

Malleable habits

The review article on life-changing events just mentioned leaves the impression that change in general is harmful. Given the slightest turbulence, any habits collapse like a house of cards. While that may often be the case, nevertheless it happens sometimes that people start health-promoting behaviours such as exercise. Changes in the environment can also be an opportunity in this respect. If it suddenly becomes difficult to deploy habits, we are thrown out of the autopilot and must again take the wheel ourselves. These moments are opportunities for questioning habits and forming new ones.

The effects of such a disruption of habits are shown impressively in a study with popcorn.[9] Participants were watching a film in a cinema and were allowed to eat as much popcorn as they liked. Half of the participants were given fresh popcorn, the other half were given week-old popcorn that had gone stale. Those participants who were in the habit of eating popcorn at the pictures (so had trained their 'autopilot' to do so), ate the same amount of popcorn, whether fresh or stale. They 'stuffed their faces' with popcorn without thinking or complaining. It was different with those who were not able to resort to their 'autopilot': either because they were not regular cinema-goers, or because automated habits were made more difficult, for example, by showing the film in an unusual environment (a meeting room instead of a cinema), or by making them eat with their left hand (if they were right-handed). In the absence of being able to use the 'autopilot', more popcorn was eaten if it was tasty. The stale popcorn, however, was more likely to be left untouched. Meaning: those participants unable to resort to their routines or 'autopilot' adapted their behaviour to the quality of the popcorn.

Many of us are familiar with the situation of having eaten too much of a snack despite not being hungry and the snack not being all that tasty. It would be useful at this point to pause briefly and to reflect on whether one is actually hungry and on what the snack tastes like. Changes in everyday life that override the autopilot can contribute to raise that attention and to question bad habits. It is of course possible to bring about this change intentionally, for example by eating with chopsticks instead of a fork (until that in turn has become automated).

In a familiar environment, for instance, campaigns promoting a healthy diet often fail in the case of trained habits. Even if one would quite like to eat a little more healthily, it often does not turn out that way. But if one's own everyday life is undergoing significant change, these habits also become less fixed. Thus, people who had just moved house and therefore had to form new habits anyway were more likely to be influenced by a campaign for more environmentally friendly behaviour such as re-using shopping bags or reducing the temperature of their heating.[10] This study mentions a time-window of approximately three months during which habits can be formed and thus during which intervention

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9   Neal, D. T., Wood, W., Wu, M., & Kurlander, D. (2011). The pull of the past: When do habits persist despite conflict with motives? Personality and Social Psychology Bulletin, 37(11), 1428-1437

10   Verplanken, B., & Roy, D. (2016). Empowering interventions to promote sustainable lifestyles: Testing the habit discontinuity hypothesis in a field experiment. Journal of Environmental Psychology, 45, 127-134.

Facets of behavioural resilience

	Good habits	Bad habits
Previous habits	Maintain (stability)	Give up (malleability)
New habits	Adopt (malleability)	Fend off (stability)

Figure 1. Source: GDI 2021

campaigns are more likely to have an effect. To achieve a stronger effect, however, the intervention should begin before the life-changing event and be tailored to the individual.[11]

People's habits are more responsive to interventions when the environment around them changes.

Bas Verplanken, Social Psychology, University of Bath

Changes to our everyday routines can lead to habits being lost. On the one hand, this may be a real loss, if they are habits we would like to continue, such as exercise. But the loss of habits can also be an advantage if bad habits are questioned and adjusted. At the same time, changes to everyday life present an opening for new habits – good ones and bad. Overall, it may be said that changes make us more malleable, to ourselves and to external influences. It would be desirable, therefore, to make use of this malleability to adopt good habits and give up bad ones, while also displaying enough stability to maintain good habits and fend off bad ones (see fig. 1). The key word in this context is resilience, understood as the ability not only to remain steadfast in the face of change and crises, but to emerge even stronger from them.

That part of resilience, however, which concerns the stability of behaviours, i.e., maintaining good habits and fending off bad ones, receives

less attention in the literature than behavioural change – partly because studies on maintaining behaviours are more costly, as they need to be conducted over a longer period of time. But this methodological artefact should not be allowed to blind us – in particular since we must assume that the world will change more rapidly in the near future than it used to.

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[11] Schäfer, M., Jaeger-Erben, M., & Bamberg, S. (2012). Life events as windows of opportunity for changing towards sustainable consumption patterns? Journal of Consumer Policy, 35(1), 65-84

Starting the day with tooth brushing
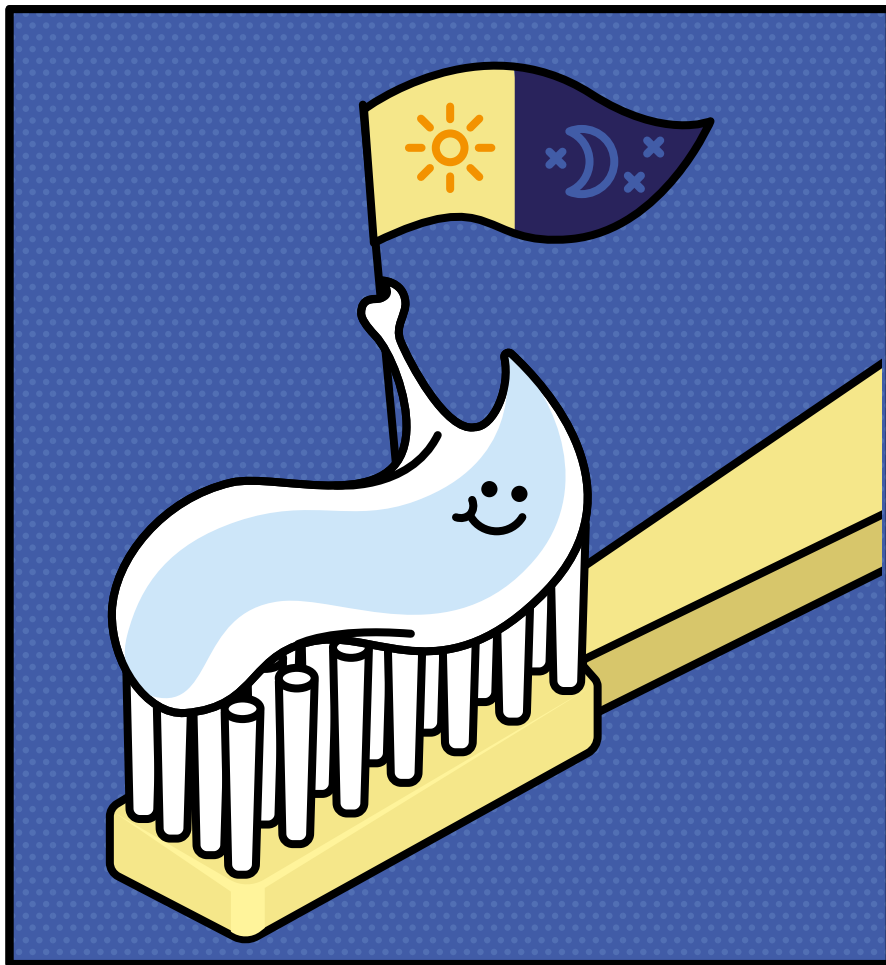
7%
Brushing teeth is the first thing 7% of the respondents do in the morning.

Survey among 3035 Austrians, conducted by Marketagent, see page 6

Change as a constant

*'Life is what happens to us while we
are making other plans.'*

Allen Saunders

The extent to which our everyday life is marked by habits strongly depends on how stable, that is, how structured our everyday life is. But even stable (occupational) biographies are disrupted every now and then.

Magic moments, tragic moments

Figure 2 shows the most important disruptions. Some of them are usually experienced positively: these are the 'magic moments' (e.g., a new job, a new home, a new partner, a new child). Opposite these are negatively experienced 'tragic moments' (e.g., separation from a partner, illness, loss of job). However differently different individuals evaluate these events, they lead to a disruption in each case.

Both categories of events are frequently accompanied not only by a change in living conditions and 'emotional housekeeping', but also by a change in habits. New points of equilibrium are formed which may lead to new everyday routines.

For some of these biographical disruptions, rituals, usually of religious origin, have developed in most societies. Worth particular mention here are the disruptions of birth (e.g., baptism, circumcision), sexual maturity/initiation rites (e.g., first communion, confirmation, bar mitzvah, secular coming-of-age ceremonies), partnership (e.g., wedding, chuppah, stag/hen nights), and funeral rites. For other changes of direction such as splitting up with a partner, moving house, or illness, there are no generally

accepted rituals: those concerned must find their own coping strategies.

Along with such personal disruptions, certain drivers of change have an impact on all of us. And there are several factors suggesting that our everyday lives will become more disruptive for all of us in future. Change is becoming a constant. This not only applies to one domain or at the personal level, but more broadly and more collectively.

Climate change

As a result of climate change, more extreme weather events may be expected in Switzerland such as, depending on the region, more heatwaves, flooding, or droughts.[12,13] While it is difficult to attribute individual extreme weather events directly to climate change, climate change does increase the likelihood of their occurrence and their intensity.[14] Climate change will alter our everyday lives in various ways. Heatwaves such as those experienced in Europe regularly in recent years disrupt everyday life in and of themselves, as it is simply too hot for many activities. Heat and drought can lead to wildfires.[15] What this means became apparent again in

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[12] http://bit.ly/piu-klima (Source: bafu.admin.ch; retrieved: 16.4.2021)

[13] Blöschl, G., Hall, J., Viglione, A., Perdigão, R. A., Parajka, J., Merz, B., ... & Boháč, M. (2019). Changing climate both increases and decreases European river floods. Nature, 573(7772), 108-111.

[14] http://bit.ly/piu-carbon (Source: carbonbrief.org; retrieved: 16.4.2021)

[15] Williams, A. P., Abatzoglou, J. T., Gershunov, A., Guzman-Morales, J., Bishop, D. A., Balch, J. K., & Lettenmaier, D. P. (2019). Observed impacts of anthropogenic climate change on wildfire in California. Earth's Future, 7(8), 892-910.

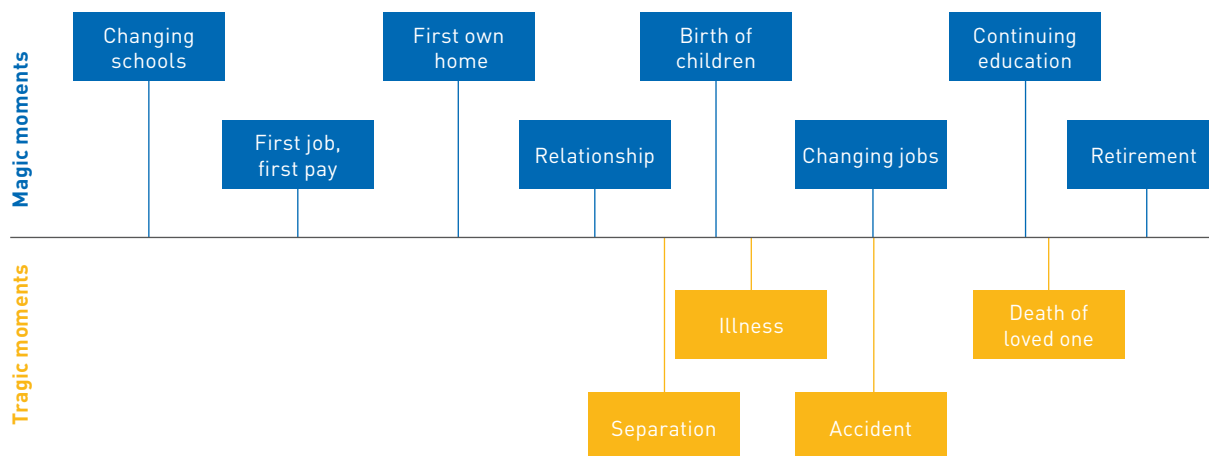## Positively and negatively experienced biographical disruptions

Figure 2 . Source: GDI 2021

2020. In late October 2020, nearly 100,000 people in Irvine, California, were asked to leave their homes on account of approaching wildfires.[16] In September, the San Francisco Bay Area was shrouded in thick smoke from wildfires in northern California, so that residents were advised to stay indoors and keep their windows closed despite the heat.[17]

In the Swiss Alps, there is increasing damage to infrastructure as a result of thawing permafrost.[18] Roads are buried by landslides or slip downhill, rockslides are becoming more frequent. Moreover, climate change also causes an increase in the spread of infectious diseases.[19] As regions in temperate climate zones become hotter, they may become colonised by mosquitoes that carry diseases such as malaria. These are organisms usually found in subtropical or tropical regions. Even if one is lucky enough to be spared any direct consequences of climate change, on a global scale, climate change leads to more migration,[20] which in turn may disrupt the political stability of some countries.

All the climatic changes mentioned and their consequences support the assumption that all our lives will also lose some of their stability. To

some extent, this may be transitions to a new normal, such as when someone migrates to a safer zone or when the economy switches from fossil to renewable energy sources. But as a result of more extreme weather events, it must also be assumed that, in many respects, there will be no new normal to which things settle down, but that we must become more flexible on a permanent basis.

[16] http://bit.ly/piu-cali (Source: nytimes.com; retrieved: 16.4.2021)

[17] http://bit.ly/piu-sf (Source: sfchronicle.com; retrieved: 16.4.2021)

[18] Matasci, C., 2012. Swiss tourism in the age of climate change – vulnerability, adaptive capacity, and barriers to adaptation. PhD-thesis Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland, 291 pp.

[19] http://bit.ly/piu-infekt (Source: researchoutreach.org; retrieved: 16.4.2021)

[20] http://bit.ly/piu-crisis (Source: brookings.edu; retrieved: 16.4.2021)

Change matrix of biographical disruptions

	Magic moments	Tragic moments
Holding on to the past	Why seek far afield, when the good is so close by (loosely based on Goethe)	We'll always have Paris (Humphrey Bogart)
Starting something new	In all beginnings dwells a magic force (Hermann Hesse)	Something better than death we can find anywhere (Brothers Grimm)

Figure 3: Change matrix of biographical disruptions

The job market

Permanent flexibility is likely to be necessary on the job market as well. Many assume that more and more jobs will be taken over by machines.[21,22] Opinions differ sharply regarding the consequences of this development. Some expect increased unemployment, others that new jobs will be created in equal number. Even if new jobs are created, the employees of the future will be required to retrain more frequently to adapt to changed circumstances and disruptions on the job market.[23] This will particularly affect employees performing routine jobs, who have thus been able, so far, to resort mostly to habit.[24] Instead, lifelong learning will be necessary.

Add to this that it is not only the way we work that is changing, but also the way work is organised. Having a lifelong permanent employment after training and until retirement is a thing of the past. Fixed-term employments are increasing. Jobs are becoming more precarious, occupational biographies more ruptured.[25,26] The culmination of this precarity is the so-called gig economy – jobs where individual commissions or 'gigs' are placed via online platforms. What is known from individual sectors today, such as

driving for Uber, will affect more diverse jobs in the future (see the GDI study Future Skills[27] for an extreme scenario in which employed positions and indeed companies no longer exist, but only temporary projects placed online). If more

21   Ford, M. (2015). Rise of the Robots: Technology and the Threat of a Jobless Future. Basic Books.

22   Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? Technological forecasting and social change, 114, 254-280.

23   Bessen, J. (2019). Automation and jobs: When technology boosts employment. Economic Policy, 34(100), 589-626.

24   de Vries, G. J., Gentile, E., Miroudot, S., & Wacker, K. M. (2020). The rise of robots and the fall of routine jobs. Labour Economics, 66, 101885.

25   Katz, L. F., & Krueger, A. B. (2019). The rise and nature of alternative work arrangements in the United States, 1995–2015. ILR Review, 72(2), 382-416.

26   Hohendanner, C. (2018). Reform der befristeten Beschäftigung im Koalitionsvertrag: Reichweite, Risiken und Alternativen. IAB-Kurzbericht Nr. 16/2018. http://bit.ly/piu-iab (Source: doku.iab.de; retrieved: 16.4.2021)

27   Samochowiec, J. (2020). Future Skills. Four scenarios for the world of tomorrow. GDI Gottlieb Duttweiler Institute. https://gdi.ch/futureskills (retrieved: 16.4.2021)

«Every morning I check whose birthday it is among the people in my network and then send the birthday girl or boy a brief happy-birthday message.»

Examples of routines and rituals from an exploratory GDI survey

and more jobs are placed as individual projects, the consequence is that working times become less regular, and both co-workers and the kinds of work done change more frequently.

Whether it be lack of employment, more frequent job changes, or more project work – tomorrow's world of work is likely to be less stable and less structured than today's. This means that stable habits such as breakfast or evening routines will be dropped, one will no longer sit on the same bus at the same time and perhaps one will have less regular sleeping hours as well.

Climate change and a changing world of work are but two examples of emerging changes. It may be assumed that other trends, such as the datacisation of the world, an aging population, and the economic and geopolitical consequences of the COVID-19 pandemic, will change our everyday lives as well. This might be in the form of transitions to a 'new normal' or of increased instability.

But when it comes to radical change, we need not look to the future and engage in speculation. The COVID-19 pandemic has demonstrated impressively what a disruption of our daily lives may look like. Office work was frequently done from home, and conferences were held online. Children no longer went to school but learned at home. Restaurants, gyms, dental surgeries were suddenly shut, and one's own home became a classroom, gym, and co-working space. Life was turned upside down in a way most people had never experienced before. At least, not collectively.

Therefore, we will now look at what impact this disruption has had on habits relevant to health,

and what general conclusions can be drawn from this for preventative health care. What does prevention look like in times of upheaval?

Commuting by train, bus or tram
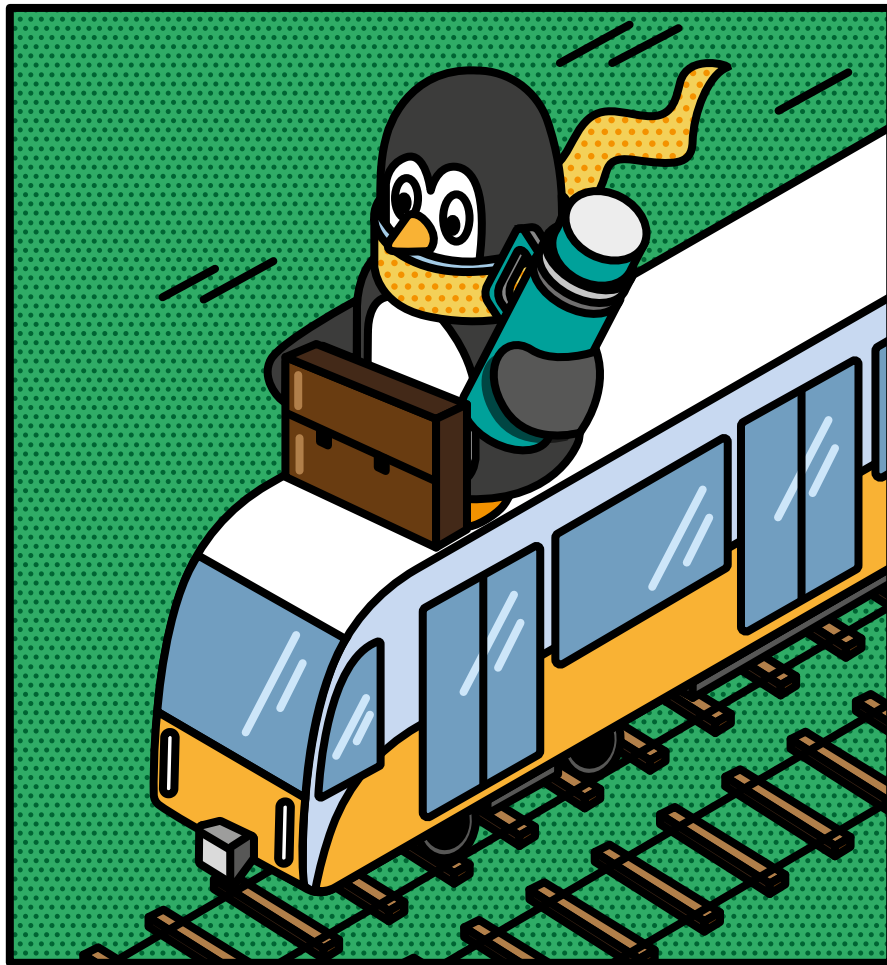
25%

use public transportation to go to work

Survey among 3035 Austrians, conducted by Marketagent, see page 6

The pandemic as disruption

You say you got a real solution. Well, you know,
we'd all love to see the plan.
You ask me for a contribution. Well, you know,
we're all doing what we can.
Lennon/McCartney

Of course, the pandemic cannot be equated to other disruptions such as moving home or changing jobs. In addition to the disruption per se, there is always the peculiarity of the situation. It is a particular feature of the pandemic that the topic of health is very present, and that many habits such as going to the gym were made impossible by government regulations.

Historically, pandemics have always been the drivers of new behavioural norms. Thus, until the 1800s, it was customary in taverns to share a tankard with complete strangers. Then cholera broke out – and everything changed. Parks were created, sewers, sanitary facilities, which in turn brought about new norms such as privacy. Until the outbreak of the Spanish flu in 1914, spittoons were common in public places. The coronavirus pandemic, too, might lead to new codes of conduct such as social distancing or wearing masks becoming entrenched in society. And perhaps, in a few years' time, we will say how irresponsible it was to go on public transport without wearing a face mask.

The experience of the pandemic cannot be directly mapped to other disruptions of our everyday lives. Nevertheless, it is worth looking at the impact one of the most disruptive global events of the 21st century has had and continues to have on our behaviour. We are less interested here in the hygiene rules that are becoming social norms than the sheer 'being thrown off course' and its impact on personal habits.

The pandemic being so significant and global, there has already been a lot of research on it. In what follows, we will look at a number of studies on the topic of changes to behaviour relevant to health during the coronavirus crisis. In doing so, we will consider two questions:
> How have health-relevant behaviours changed during the pandemic? Are people, on average, behaving more or less healthily?
> Which are the factors determining who behaves more or less healthily as a result of the pandemic?

Frequency of the Google search term "baking bread" (Brot backen) in Germany over time
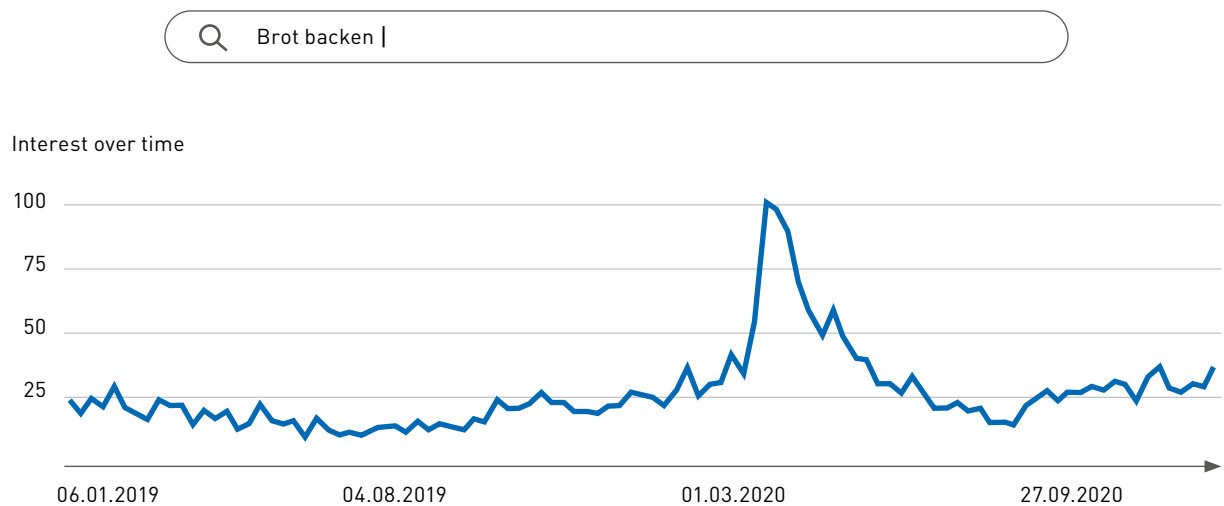
Figure 4, Source: Google Trends

Changed habits during the pandemic: diet

The COVID-19 pandemic has changed the dietary habits of many people: with restaurants and canteens shut, there was more cooking and eating at home. In addition, during lockdown, people had more time to try out new recipes. This was apparent, for instance, in a sudden increase in Google searches for 'baking bread' at the beginning of the pandemic response (see fig. 4).

But what impact did changed habits have on the health aspects of people's diet? Did it become more or less healthy? One such aspect is the amount of food consumed. Most studies find that 40% to 70% of respondents ate about the same amount as before the pandemic. Those whose behaviour had changed were generally eating more. Only a few reduced the amount of food they consumed (see fig 5).

Eating more is not unhealthy per se. But in our affluent society, that is often the case. Many people already tend to be overweight. On underweight people, however, the pandemic had a different impact. Two studies comparing changed eating habits during the pandemic with body mass found polarised results.[31,33] Those already overweight ate even more during the pandemic, while those underweight ate less. In both cases, the destabilisation of everyday life seems to have led to a divergence from a healthy standard.

Studies asking about healthy or unhealthy dietary habits also found considerable stability in habits. Across all studies, among those who by their own estimate had changed their eating behaviour, about the same number judged this to be a change to a healthier diet as those who assessed it as a change to less healthy diet (see fig. 6).

Change in food intake during the pandemic

Proportion of people who ate more, the same
or less than before the pandemic.

Cancello et al.[30]	Italy	42% +29% ○	43% 13%
Pisot et al.[29]	9 southern European countries	44% +28% ○	39% 16%
Herle et al.[33]	England	28% +19% ○	64% 9%
Gesundheitsförderung CH survey 2[35]	Switzerland	21% +12% ○	69% 9%
Gesundheitsförderung CH survey 1[35]	Switzerland	24% +10% ○	62% 14%
UCL Covid-19 Social Study[32]	England	17% +7% ○	73% 10%
Scarmozzino et al.[34]	Italy	52,9%	no specification
Sidor et al.[31]	Poland	43,5%	no specification
Aymerich-Franch[28]	Spain	40,1%	no specification

■ more   ■ same amount   ■ less   ○ more - less

Figure 5, Source: GDI

Change in healthy eating during the pandemic

Proportion of people who ate more, the same
or less healthy than before the pandemic.

Gesundheitsförderung CH survey 1[35]	Switzerland	18% +6% ○	70% 12%
Gesundheitsförderung CH survey 2[35]	Switzerland	14% +5% ○	76% 9%
Constant et al.[36]	France	13,1% +0% ○	73,8% 13,1%
Robinson et al.[37]	UK	35% +0% ○	31% 35%
Ingram et al.[38]	Scotland	25,1% 34,1% ○ -15,8%	40,9%
UCL Covid-19 Social Study[32]	England	7% 70% ○ -16%	23%

■ healthier   ■ equally healthy   ■ less healthy

○ healthier - less healthy

Figure 6, Source: GDI

«Even without make-up (while working from home) I make sure that I always «take off my make-up» in the evening and take care of my skin like on a «normal» day.»

Examples of routines and rituals from an exploratory GDI survey

28 Aymerich-Franch, L. (2020, May 14). COVID-19 lockdown: impact on psychological well-being and relationship to habit and routine modifications. https://psyarxiv.com/9vm7r/ (retrieved: 16.4.2021)

29 Pišot, S., Milovanović, I., Šimunič, B., Gentile, A., Bosnar, K., Prot, F., ... & Drid, P. (2020). Maintaining everyday life praxis in the time of COVID-19 pandemic measures (ELP-COVID-19 survey). European journal of public health, 30(6), 1181-1186.

30 Cancello, R., Soranna, D., Zambra, G., Zambon, A., & Invitti, C. (2020). Determinants of the lifestyle changes during COVID-19 pandemic in the residents of Northern Italy. International journal of environmental research and public health, 17(17), 6287.

31 Sidor, A., & Rzymski, P. (2020). Dietary Choices and Habits during COVID-19 Lockdown: Experience from Poland. Nutrients, 12(6), 1657

32 http://bit.ly/piu-ucl (Source: covidsocialstudy.org; retrieved 16.4.2021)

33 Herle, M., Smith, A., Bu, F., Steptoe, A., & Fancourt, D. (2020, November 30). Trajectories of eating behavior during COVID-19 lockdown: Longitudinal analyses of 22,374 adults in the UK. https://psyarxiv.com/kmgzw/ (retrieved 16.4.2021)

34 Scarmozzino, F., & Visioli, F. (2020). Covid-19 and the subsequent lockdown modified dietary habits of almost half the population in an Italian sample. Foods, 9(5), 675.

35 Gesundheitsförderung Schweiz (2020). COVID Social Monitor 2020 – Verhaltensänderungen und persönliche Herausforderungen.

36 Constant, A., Conserve, D. F., Gallopel-Morvan, K., & Raude, J. (2020). Socio-cognitive factors associated with lifestyle changes in response to the COVID-19 epidemic in the general population: results from a cross-sectional study in France. Frontiers in Psychology, 11.

37 Robinson, E., Boyland, E., Chisholm, A., Harrold, J., Maloney, N. G., Marty, L., ... & Hardman, C. A. (2021). Obesity, eating behavior and physical activity during COVID-19 lockdown: A study of UK adults. Appetite, 156, 104853.

38 Ingram, J., Maciejewski, G., & Hand, C. J. (2020). Changes in diet, sleep, and physical activity are associated with differences in negative mood during COVID-19 lockdown. Frontiers in Psychology, 11, 2328.

Changed habits during the pandemic: exercise and sport

Taking exercise and doing sports saw an even greater disruption as a result of the pandemic. It is not surprising that people take less exercise when they are told to stay at home. Accordingly, most studies found a reduction in physical exercise. But the results of the studies are not all the same. This is due, on the one hand, to lockdown regulations differing between countries (in Paris, during the first 2020 lockdown, jogging was not allowed between 10 am and 7 pm); on the other hand, the surveys were about different types of exercises (e.g., sports or going for a walk). On average, however, the studies in figure 7 found that of any five people, one person took more exercise, two about the same, and two less exercise than before the pandemic.
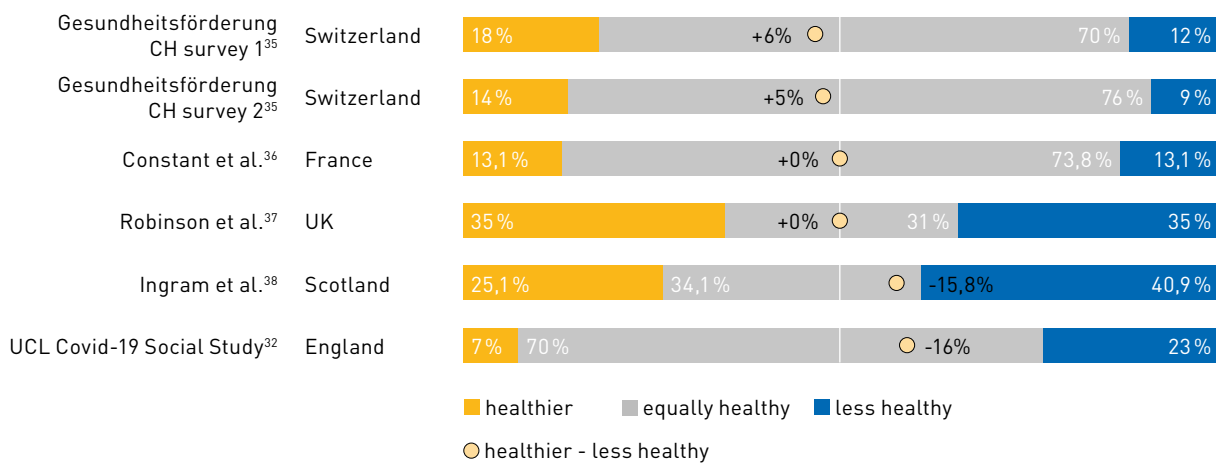
Change in physical activity during the pandemic

Proportion of people who performed more, the same or less physical activity than before the pandemic.
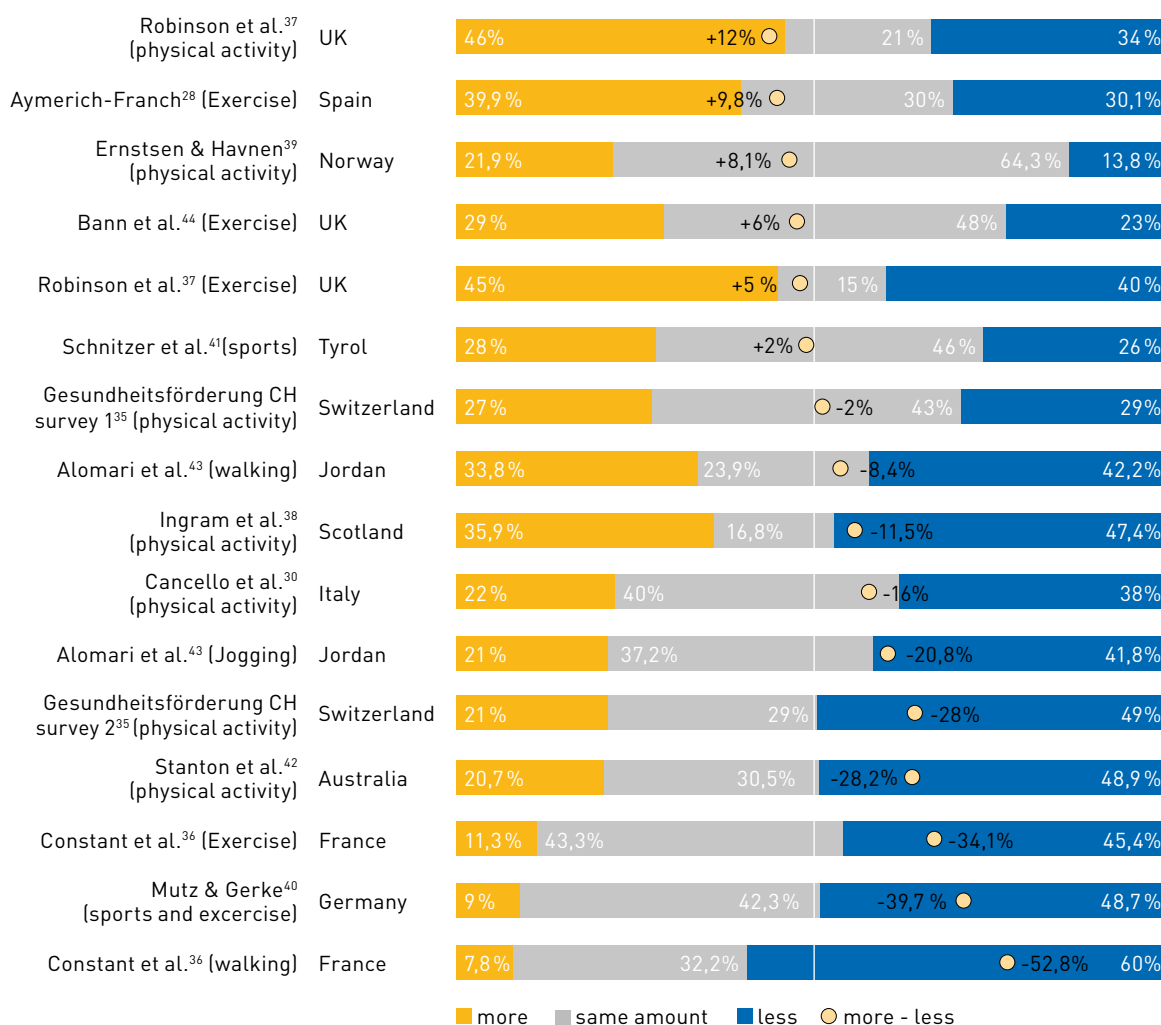
Study	Country	more	same amount	more − less	less
Robinson et al.[37] (physical activity)	UK	46%	21%	+12%	34%
Aymerich-Franch[28] (Exercise)	Spain	39,9%	30%	+9,8%	30,1%
Ernstsen & Havnen[39] (physical activity)	Norway	21,9%	64,3%	+8,1%	13,8%
Bann et al.[44] (Exercise)	UK	29%	48%	+6%	23%
Robinson et al.[37] (Exercise)	UK	45%	15%	+5%	40%
Schnitzer et al.[41] (sports)	Tyrol	28%	46%	+2%	26%
Gesundheitsförderung CH survey 1[35] (physical activity)	Switzerland	27%	43%	−2%	29%
Alomari et al.[43] (walking)	Jordan	33,8%	23,9%	−8,4%	42,2%
Ingram et al.[38] (physical activity)	Scotland	35,9%	16,8%	−11,5%	47,4%
Cancello et al.[30] (physical activity)	Italy	22%	40%	−16%	38%
Alomari et al.[43] (Jogging)	Jordan	21%	37,2%	−20,8%	41,8%
Gesundheitsförderung CH survey 2[35] (physical activity)	Switzerland	21%	29%	−28%	49%
Stanton et al.[42] (physical activity)	Australia	20,7%	30,5%	−28,2%	48,9%
Constant et al.[36] (Exercise)	France	11,3%	43,3%	−34,1%	45,4%
Mutz & Gerke[40] (sports and excercise)	Germany	9%	42,3%	−39,7%	48,7%
Constant et al.[36] (walking)	France	7,8%	32,2%	−52,8%	60%

more ▪ same amount ▪ less ○ more − less

Figure 7, Source: GDI

[39] Ernstsen, L., & Havnen, A. (2020). Mental health and sleep disturbances in physically active adults during the COVID-19 lockdown in Norway: does change in physical activity level matter? Sleep medicine.

[40] Mutz, M., & Gerke, M. (2020). Sport and exercise in times of self-quarantine: How Germans changed their behaviour at the beginning of the Covid-19 pandemic. International Review for the Sociology of Sport, 1012690220934335.

[41] Schnitzer, M., Schöttl, S. E., Kopp, M., & Barth, M. (2020). COVID-19 stay-at-home order in Tyrol, Austria: sports and exercise behaviour in change? Public Health, 185, 218-220.

[42] Stanton, R., To, Q. G., Khalesi, S., Williams, S. L., Alley, S. J., Thwaite, T. L., ... & Vandelanotte, C. (2020). Depression, anxiety and stress during COVID-19: associations with changes in physical activity, sleep, tobacco and alcohol use in Australian adults. International journal of environmental research and public health, 17(11), 4065.

[43] Alomari, M. A., Khabour, O. F., & Alzoubi, K. H. (2020). Changes in physical activity and sedentary behavior amid confinement: The BKSQ-COVID-19 project. Risk Management and Healthcare Policy, 13, 1757.

[44] Bann, D., Villadsen, A., Maddock, J., Hughes, A., Ploubidis, G., Silverwood, R., & Patalay, P. (2020). Changes in the behavioural determinants of health during the coronavirus (COVID-19) pandemic: gender, socioeconomic and ethnic inequalities in 5 British cohort studies. http://bit.ly/piu-bann (Source: medrxiv.org; retrieved: 16.4.2021)

Thus, lockdown did not condemn everyone to inactivity to the same extent – including in countries with strict rules for avoiding contact. It is true that, with the closure of gyms and football clubs (at least in the amateur and youth sectors), certain opportunities for doing sports were no longer available. But some people found other ways to compensate for this. This is symbolised by the increase in Google searches for terms such as 'running shoes' or 'yoga mat' at the beginning of lockdown at the end of March 2020 (see fig. 8).

Undoubtedly, the different results of the studies have something to do with different circumstances in the countries concerned. But they may also be an effect of the timing of the surveys. For behaviours during the pandemic are by no means uniform. Much depends on when 'during the pandemic' surveys are conducted. This is supported by studies with several measurement dates during the pandemic. Thus, a survey by Gesundheitsförderung Schweiz [Health Promotion Switzerland] shows that one month after so-called 'lockdown' (which in Switzerland did not include a mandate to stay at home), 49% of respondents took less exercise. Two months after 'lockdown', this figure had dropped to 29%. It seems that it takes time to establish new habits, or resume old habits, in a new context.

A similar pattern is shown in other studies having several measurement dates. Three such studies – one from Germany,[45] one from Spain,[46] and one from Thailand[47] – investigated how many people took enough exercise according to the WHO (the equivalent of 150 minutes of moderate-intensity physical activity per week) during the pandemic. All three studies found an initial decrease and thereafter a renewed increase in exercise. The European studies, each with three measurement points during the pandemic (the Thai study had two), even found that at the last measurement date, more people met the WHO recommendation of 150 minutes of moderate-intensity physical activity per week than before the pandemic (see fig. 9).

45 Mata, J., Wenz, A., Rettig, T., Reifenscheid, M., Moehring, K., Krieger, U., ... & Naumann, E. (2020). Health behaviors and mental health before and during the COVID-19 pandemic: A longitudinal population-based survey. https://psyarxiv.com/qbgh7/ (retrieved: 16.4.2021)

46 López-Bueno, R., Calatayud, J., Andersen, L. L., Balsalobre-Fernández, C., Casaña, J., Casajús, J. A., ... & López-Sánchez, G. F. (2020). Immediate impact of the COVID-19 confinement on physical activity levels in Spanish adults. Sustainability, 12(14), 5708.

47 Katewongsa, P., Widyastari, D. A., Saonuam, P., Haemathulin, N., & Wongsingha, N. (2020). The effects of the COVID-19 pandemic on the physical activity of the Thai population: Evidence from Thailand's Surveillance on Physical Activity 2020. Journal of sport and health science.

Frequency of the Google search terms "running shoes" (Joggingschuhe) and "yoga mat" (Yogamatte) in Germany over time
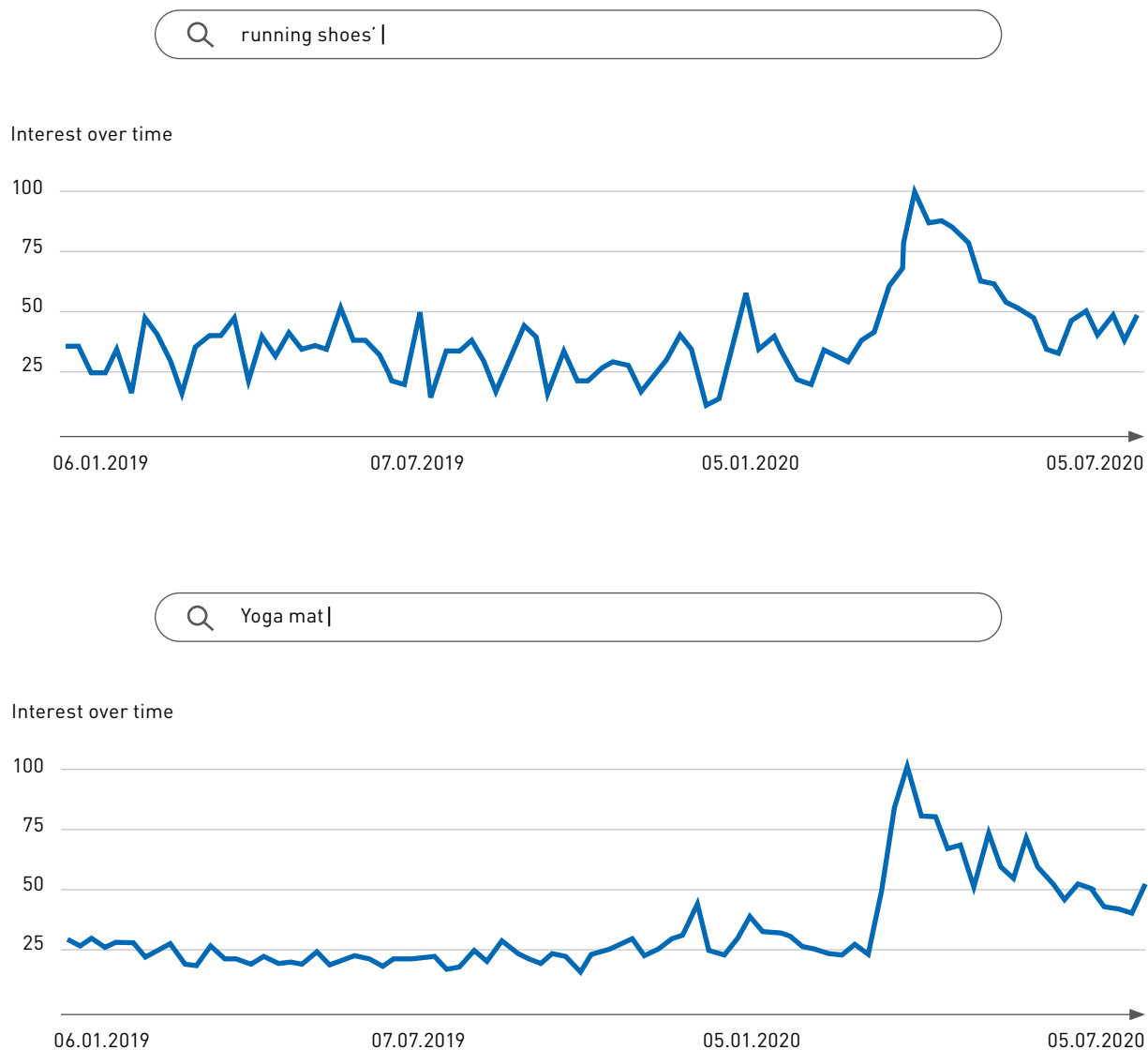

Figure 8, Source: Google Trends

48   Bommelé, J., Hopman, P., Walters, B. H., Geboers, C., Croes, E., Fong, G. T., ... & Willemsen, M. (2020). The double-edged relationship between COVID-19 stress and smoking: implications for smoking cessation. Tobacco Induced Diseases, 18.

49   Zajacova, A., Jehn, A., Stackhouse, M., Denice, P., & Ramos, H. (2020). Changes in health behaviours during early COVID-19 and socio-demographic disparities: a cross-sectional analysis. Canadian Journal of Public Health, 111(6), 953-962.

50   Vanderbruggen, N., Matthys, F., Van Laere, S., Zeeuws, D., Santermans, L., Van den Ameele, S., & Crunelle, C. L. (2020). Self-reported alcohol, tobacco, and Cannabis use during COVID-19 lockdown measures: results from a web-based survey. European Addiction Research, 26(6), 309-315.

51   Siddiqi, K., Siddiqui, F., Khan, A., Ansaari, S., Kanaan, M., Khokhar, M., ... & Bauld, L. (2020). The impact of COVID-19 on smoking patterns in Pakistan: findings from a longitudinal survey of smokers. Nicotine & Tobacco Research. https://doi.org/10.1093/ntr/ntaa207

Proportions of respondents taking enough exercise according to the WHO

Germany - Mata et al. (2020) (monthly measurements)
Spain - López-Bueno et al. (2020) (weekly measurements)
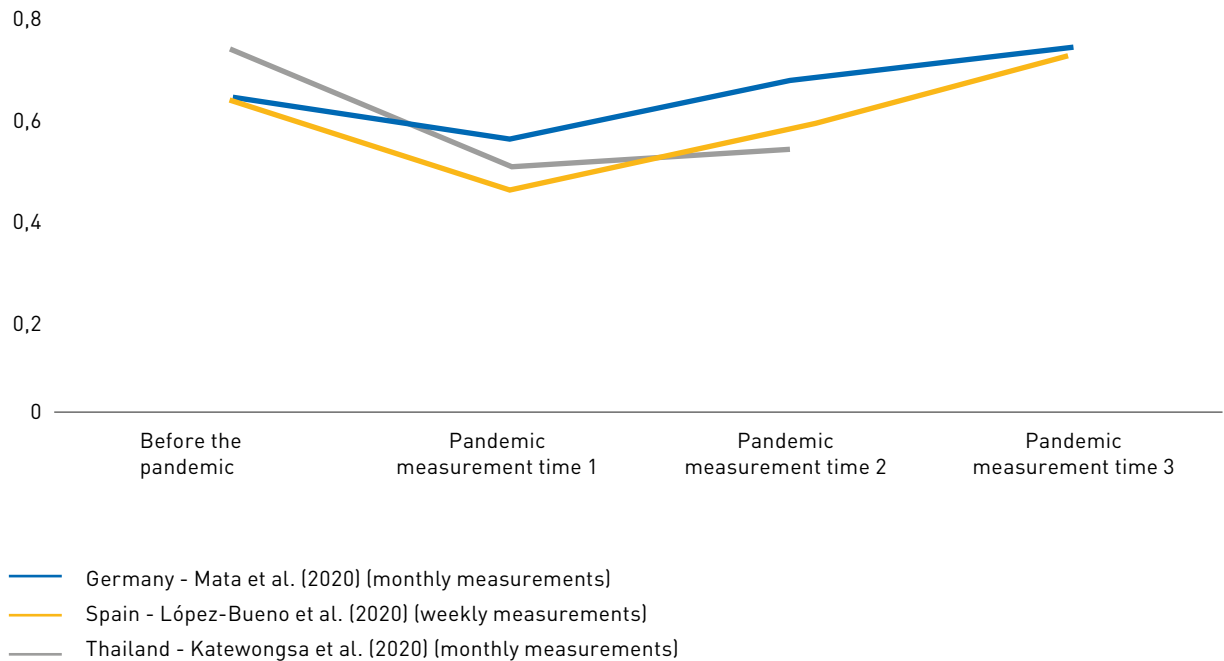Thailand - Katewongsa et al. (2020) (monthly measurements)

Figure 9 . Source: GDI

Changed habits during the pandemic: smoking

What about habits harmful to health? Smoking is an interesting example. Did the pandemic cause smokers to reflect more on their smoking behaviour and quit? Or was smoking perhaps even a calming ritual in troubled times that became more attractive?

Unlike physical activity and eating, smoking is an activity pursued by few people. In most countries, 10% to 25% of people smoke. Accordingly, studies surveying the general population find that most do not change their smoking behaviour. They did not smoke before and do not

smoke now. For that reason, we have adjusted the percentages in the table so that they reflect only the smokers in the relevant sample.

The studies on smoking show the least uniform picture. Many smokers have changed their smoking habits. This is understandable to the extent that smoking is firmly embedded in everyday routines (e.g., every day at lunchtime with colleagues on the balcony of the cafeteria). But the direction of that change is by no means predetermined, as is shown by the very different results of the studies. Some people seemed to smoke more during the pandemic, others less (see fig. 10).

Change of smoking habits during the pandemic

8.1% of smokers in england quit smoking in the year 2020 (compared to 4.3% in the previous year)

Source: Smoking Toolkit Study (UK), see page 28

Change in smoking behavior during the pandemic

Proportion of people who smoked more, the same
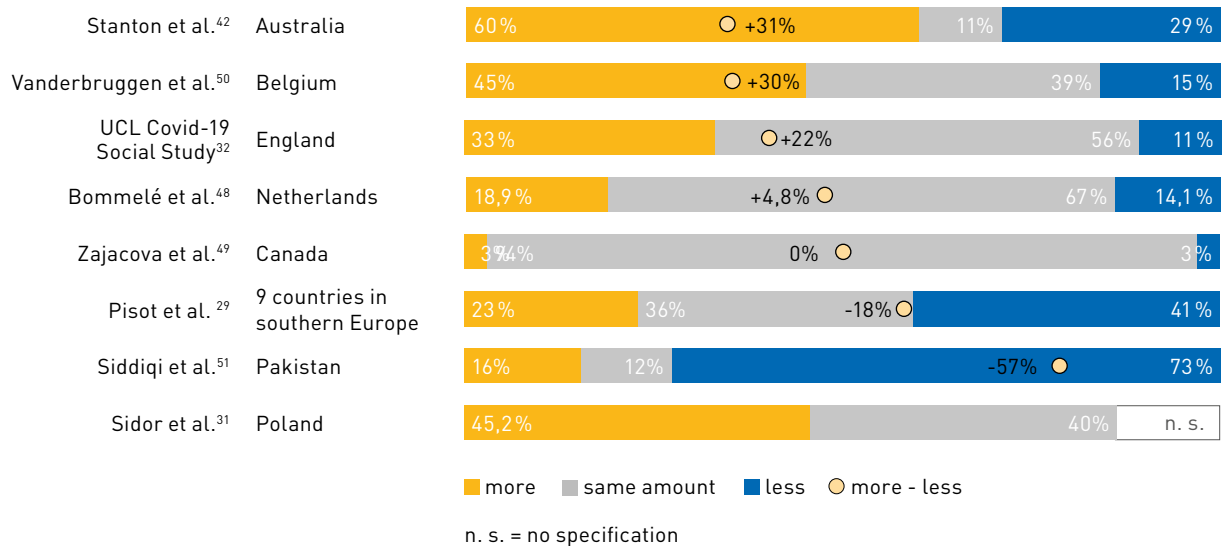amount or less than before the pandemic.

Stanton et al.[42]	Australia	60% ○ +31% / 11% / 29%	
Vanderbruggen et al.[50]	Belgium	45% ○ +30% / 39% / 15%	
UCL Covid-19 Social Study[32]	England	33% ○ +22% / 56% / 11%	
Bommelé et al.[48]	Netherlands	18,9% / +4,8% ○ / 67% / 14,1%	
Zajacova et al.[49]	Canada	3% 94% / 0% ○ / 3%	
Pisot et al. [29]	9 countries in southern Europe	23% / 36% / -18% ○ / 41%	
Siddiqi et al.[51]	Pakistan	16% / 12% / -57% ○ / 73%	
Sidor et al.[31]	Poland	45,2% / 40% / n. s.	

■ more   ■ same amount   ■ less   ○ more - less

n. s. = no specification

Figure 10, Source: GDI

This dichotomy becomes particularly apparent in England' 'Smoking Toolkit Study'.[52] In 2020, this annual survey found the largest increase in smokers among 18 to 24-year-olds since measurements began in 2007 (see fig. 11). On the other hand, the same survey also found that, in 2020, more people quit smoking than ever observed before (see fig. 12). Not only did an above-average number of people attempt to quit smoking during the pandemic, but more of these attempts were successful in 2020 than at any time since these measurements began. This supports the assumption that disruptions to everyday life provide a window of opportunity for changing behaviour – positively as well as negatively.

Who responds in what way? Factors promoting behavioural resilience

If a disruption can trigger both positive and negative behavioural change, this raises the question who responds in what way. Who is smoking more during the pandemic and who is smoking less? Who gives up jogging? Who takes it up? Who compensates for missing football practice? Who 'lets themselves go'? Many of the studies on behavioural change during the pandemic analysed here also address these questions. If we understand the reasons for different behavioural changes, prevention measures may be derived from them. In what follows, we list several factors that have an impact on the resilience of health behaviours.

[52]   http://www.smokinginengland.info/ (retrieved: 16.4.2021)

Uptake: Prevelance of ever smoking in those aged 18-24
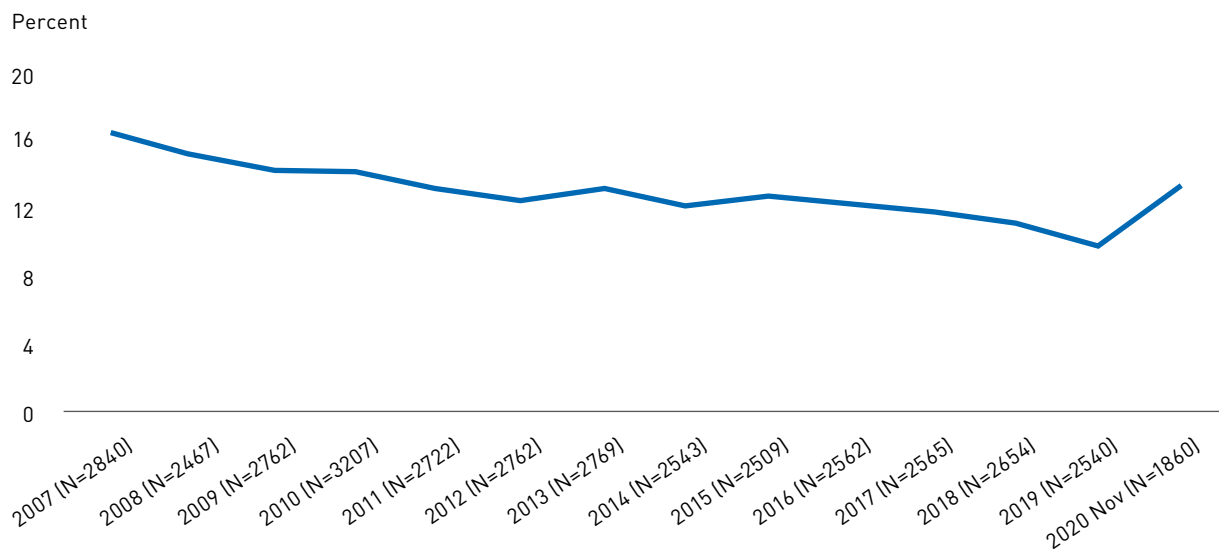
Percent

Figure 11 . Source: Smoking Toolkit Study (UK)

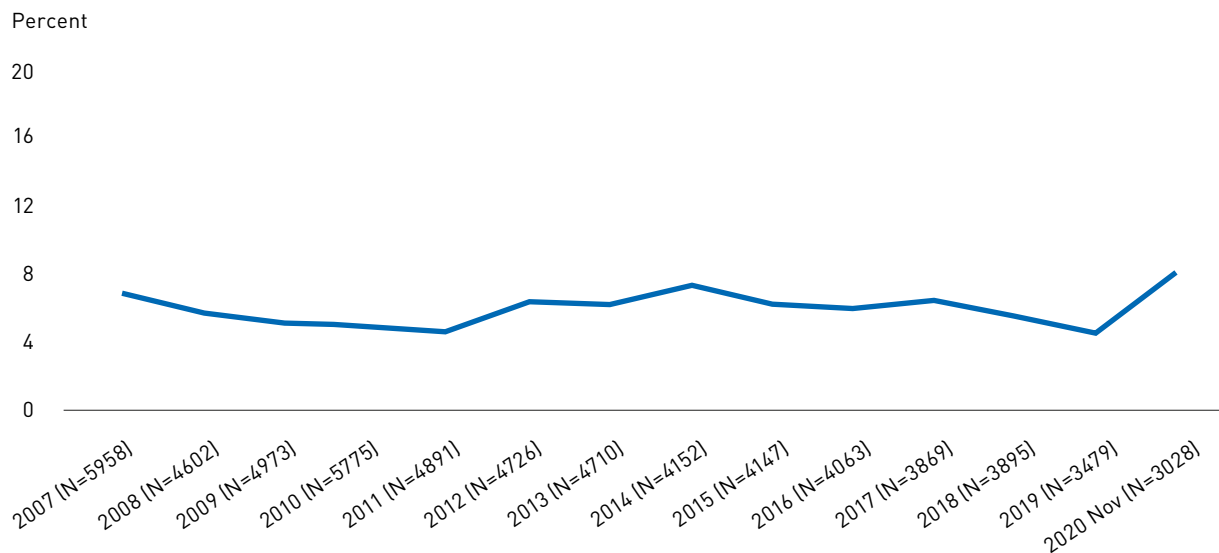## Stopped smoking in past 12 months

Percent

Figure 12 . Source: Smoking Toolkit Study (UK)

> «Every morning, with no rush, I make a small pot of coffee at home using our large portafilter machine. But I don't yet drink any coffee while at home. When I get to the office, I go find the one special espresso cup from which I can enjoy small, fine coffees all day.»
>
> Examples of routines and rituals from an exploratory GDI survey

Extent of the disruption

Assuming that a change to everyday routines disturbs habits relevant to health, people whose everyday life was impacted more by the pandemic should be expected to show more changes in behaviour. While both favourable and unfavourable change is possible, it tends to be easier to change in a negative way. Indeed, studies have found that the loss of a daily structure coincides with increased consumption of alcohol and tobacco,[50] a less healthy diet,[38] more irregular sleep,[53] as well as less oral hygiene.[54] This may be induced by stress (see below). In some areas, however, there may be very simple situational reasons. Thus, Burrekers and colleagues[55] mention the example of a person whose oral hygiene had deteriorated because they normally cleaned their interdental spaces in the car, but were driving much less as a result of the pandemic. So, habits stop being performed when the context in which they are embedded changes.

Mental health/mood

Several studies conducted during the COVID-19 pandemic found a correlation between health-promoting habits such as physical activity and mental health and its subcomponents such as depression, stress, anxiety, or even just good and bad moods.

A decrease in mental health is not only problematic in itself, but also correlates with changes detrimental to health in the areas of sleep, frequency of overeating episodes, snacking, alcohol consumption, physical activity, and smoking.[28,37,38,42,45,56,57] The causality of the correlation is not always clear. Does, for instance, depression lead to less exercise and poorer sleep, or do less exercise and poor sleep lead to more depression? A simple causal link cannot be determined.[45,58] Rather, these factors are linked in a multicausal way. That means that interventions can and indeed must be made in several places at once. One might, at the same time, start a course of talking therapy, practise sleep rituals, and join a gym.

53 Cellini, N., Di Giorgio, E., Mioni, G., & Di Riso, D. (2020). Sleep quality, timing, and psychological difficulties in Italian school-age children and their mothers during COVID-19 lockdown. https://psyarxiv.com/95ujm/ (retrieved: 16.4.2021)

54 Baptista, A. S., Prado, I. M., Perazzo, M. F., Pinho, T., Paiva, S. M., Pordeus, I. A., & Serra-Negra, J. M. (2021). Can children's oral hygiene and sleep routines be compromised during the COVID-19 pandemic? International journal of paediatric dentistry, 31(1), 12-19.

55 Burrekers, S. Y., Gortzak, J. J., Reyerse, E., & Buunk-Werkhoven, Y. A. The impact of COVID-19 on oral health and oral self-care awareness. http://bit.ly/piu-oral (Source: oatext.com; retrieved: 16.4.2021)

56 Violant-Holz, V., Gallego-Jiménez, M. G., González-González, C. S., Muñoz-Violant, S., Rodríguez, M. J., Sansano-Nadal, O., & Guerra-Balic, M. (2020). Psychological Health and Physical Activity Levels during the COVID-19 Pandemic: A Systematic Review. International journal of environmental research and public health, 17(24), 9419.

57 Maugeri, G., Castrogiovanni, P., Battaglia, G., Pippi, R., D'Agata, V., Palma, A., ... & Musumeci, G. (2020). The impact of physical activity on psychological health during Covid-19 pandemic in Italy. Heliyon, 6(6), e04315.

58 Giuntella, O., Hyde, K., Saccardo, S., & Sadoff, S. (2021). Lifestyle and mental health disruptions during Covid-19. Proceedings of the National Academy of Sciences, 118 (9).

Sleep in itself is a resilience factor.
If you sleep well, you are better able to cope with
stress or adapt to new circumstances.

Christine Blume, Sleep Researcher at Basel

Centre for Chronobiology

Social integration

Social integration is crucial for mental health. On the one hand, factors such as a relationship with a partner, the frequency of human contact, the size of one's social network, and a feeling of belonging correlated with good mental health during the pandemic.[42,59,60,61,62,63] On the other hand, these social factors also directly determined health-promoting behaviours. Those not spending lockdown alone but with a partner and/or family snacked and smoked less, drank less alcohol, and got more exercise.[36,45,56]

Education/income

Education and income are further factors often linked to stress and maintaining health-promoting habits during the pandemic. Those having attended higher education and/or not having financial worries during the pandemic suffered less psychological stress[42,59,62,63] and displayed fewer unhealthy and/or more healthy behavioural changes regarding diet, alcohol and tobacco consumption, and exercise.[36,49,50,64]

Age/gender

Several studies found that the mental health of younger people and that of women suffered more during the pandemic than that of older people and that of men.[42,59,62,64] Some studies report an increase in behavioural changes detrimental to health among younger people in particular.[49,50] Others, however, found that younger people were more likely than older people to change their behaviour – in ways both beneficial and detrimental to health.[32,44] There is

no uniform pattern of women showing more negative changes to their health behaviour than men, even though women's increased psychological stress during the pandemic would suggest that.

59   Długosz, P. (2021). Factors influencing mental health among American youth in the time of the Covid-19 pandemic. Personality and Individual Differences, 110711.

60   Nitschke, J. P., Forbes, P. A., Ali, N., Cutler, J., Apps, M. A., Lockwood, P. L., & Lamm, C. (2020). Resilience during uncertainty? Greater social connectedness during COVID-19 lockdown is associated with reduced distress and fatigue. British Journal of Health Psychology.

61   Magson, N. R., Freeman, J. Y., Rapee, R. M., Richardson, C. E., Oar, E. L., & Fardouly, J. (2020). Risk and protective factors for prospective changes in adolescent mental health during the COVID-19 pandemic. Journal of youth and adolescence, 1-14.

62   Kowal, M., Coll-Martín, T., Ikizer, G., Rasmussen, J., Eichel, K., Studzinska, A., ... & Ahmed, O. (2020). Who is the most stressed during COVID-19 isolation? Data from 27 countries. https://psyarxiv.com/qv5t7/

63   Gloster, A. T., Lamnisos, D., Lubenko, J., Presti, G., Squatrito, V., Constantinou, M., ... & Karekla, M. (2020). Impact of COVID-19 pandemic on mental health: An international study. PloS one, 15(12), e0244809.

64   Niedzwiedz, C. L., Green, M. J., Benzeval, M., Campbell, D., Craig, P., Demou, E., ... & Katikireddi, S. V. (2020). Mental health and health behaviours before and during the initial phase of the COVID-19 lockdown: longitudinal analyses of the UK Household Longitudinal Study. J Epidemiol Community Health.

Change = change for the worse?

The pandemic has primarily disrupted existing habits. For the most part, this has been in a way detrimental to health, as the behaviours concerned are those where an unhealthy change is easier. It is easier to stop jogging than to take it up. Negative change, therefore, is often more a drifting off than a conscious decision. Yet, as we have seen, disruption need not only be negative.

But it takes more conscious co-ordination to make positive changes to habits or just to maintain habits despite drastic disruptions. This is where the aforementioned favourable factors such as social integration, mental health, or prosperity come in. While each favourable factor has its own unique effect on the resilience of habits, there is some overlap. They are all linked to the ability of self-control and self-regulation. This is the ability to consciously control and reflect on one's own behaviour and to plan it in the long term, rather than to act only on short-term impulses.

For all favourable factors, research has shown a link to self-regulation:
> Someone who is stressed or depressed has a reduced capacity for self-regulation and engages in less long-term thinking.[65,66,67]
> Social integration is not only conducive to healthy behaviour by promoting mental health and thus preventing stress and depression. The study by Wendy Wood and colleagues[4] cited at the beginning also found that we pay more attention to our own behaviour in the presence of other people and thus act in less automated ways. We reflect more on our behaviour and adjust it to our ideals when such behaviour is also being observed by other people.

> Financial worries, for one thing, have a negative impact on mental health. For another, such worries use up a lot of mental resources, so that people cannot also reflect on their behaviour and plan for the long term. The cognitive impairment caused by acute financial worries is comparable to the effect of a sleepless night or a reduction in IQ by about 13 points.[68]
> Education is linked to the capacity for self-regulation, such that people better able to control their behaviour have more academic success, while conversely the ability to self-reflect is reinforced by education. Thus, the capacity for self-reflection is part of Lehrplan 21 [School curriculum in Switzerland].
> The capacity for self-regulation also increases with age but may decrease again from the age of 60.[69] At the same time, younger people have fewer stable habits, as their life-world is still subject to continuous change.
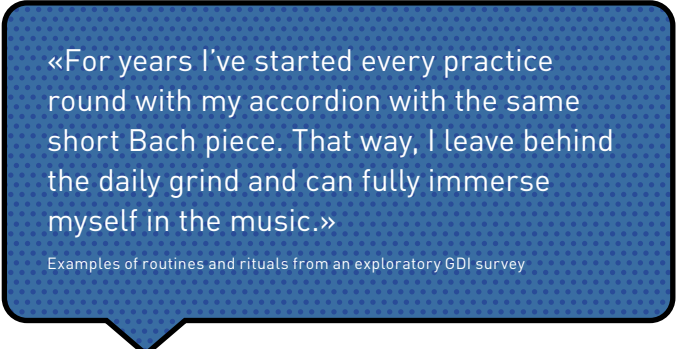
65   Marin, M. F., Lord, C., Andrews, J., Juster, R. P., Sindi, S., Arsenault-Lapierre, G., ... & Lupien, S. J. (2011). Chronic stress, cognitive functioning and mental health. Neurobiology of learning and memory, 96(4), 583-595.

66   Snyder, H. R. (2013). Major depressive disorder is associated with broad impairments on neuropsychological measures of executive function: a meta-analysis and review. Psychological bulletin, 139(1), 81.

67   Gray, J. R. (1999). A bias toward short-term thinking in threat-related negative emotional states. Personality and Social Psychology Bulletin, 25(1), 65-75.

68   Mani, A., Mullainathan, S., Shafir, E., & Zhao, J. (2013). Poverty impedes cognitive function. Science, 341(6149), 976-980.

69   Geldhof, G. J., Little, T. D., & Colombo, J. (2010). Self-regulation across the life span. The Handbook of Life-Span Development.

«For years I've started every practice round with my accordion with the same short Bach piece. That way, I leave behind the daily grind and can fully immerse myself in the music.»

Examples of routines and rituals from an exploratory GDI survey

> The link between gender and self-regulation is not clear. It is true that stressors are more demanding on women mentally.[70] However, on the whole, women show more self-discipline (explaining, among other things, their greater academic success).[71] This matches the finding that while women were more stressed by the pandemic, this did not lead to an increase in unhealthy behaviours.

What, then, does it mean that self-regulation is a crucial factor? Can it be promoted?

[70]   Nolen-Hoeksema, S., Corte, C., & Vohs, K. D. (2004). Gender and self-regulation. Handbook of self-regulation, 411-421.

[71]   Duckworth, A. L., & Seligman, M. E. (2006). Self-discipline gives girls the edge: Gender in self-discipline, grades, and achievement test scores. Journal of educational psychology, 98(1), 198

More physical activity during the pandemic?
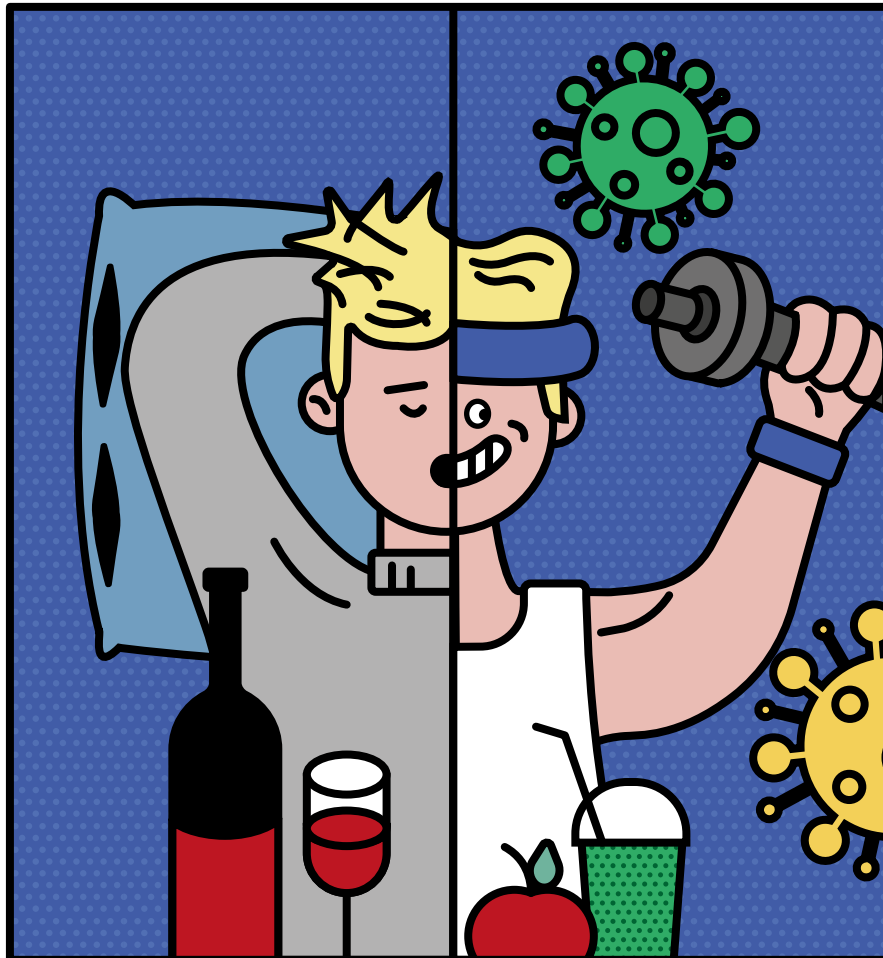
24 **%** showed more physical activity during the pandemic than before (averaged over the studies in figure 7)

What can be done?
Encouraging self-regulation

Even though the factors discussed relate to self-regulation, those who have engaged in unhealthy behaviour during the pandemic should not be portrayed as being weak in character or lacking in willpower. After all, bad habits aren't necessarily permanent – on the contrary. Self-regulation can be strengthened, and is therefore becoming a more important factor in the promotion of health and prevention in an ever more rapidly changing world.

Pursuing a healthy lifestyle is not something that people are predestined to do. It is possible to give people the appropriate tools so that they can achieve this.

Urte Scholz, Chair of Applied Social and Health Psychology,

University of Zurich

Yet how can an individual improve their self-regulation? Here are some starting points:

Environmental variables

Factors such as stress, social integration or financial worries and their effects on mental health are highly situational and not necessarily a matter of a person's character. Their social environment, employer, community or the country in which they live can all influence these factors. Financial support may be provided, for example. Contrary to the stereotype that poorer people spend their money on alcohol and drugs, for instance, it has been shown that financial security leads to a reduction in spending on things such as alcohol or tobacco by people in financial difficulties.[72] Encouraging people to interact socially can also be achieved through urban planning measures, for example.[73]

In focusing on behaviour, we must also bear the determining social factors of such behaviour in mind.

Lisa Guggenbühl, Gesundheitsförderung Schweiz

Interview with Kristian Villadsen

Partner at Gehl Architects, Copenhagen

To what extent are health-related factors included in urban planning?
Health plays an important role in urban planning in several respects. In this context, we focus on simplifying healthy behaviour as far as possible. In Copenhagen, for example, lots of people ride bicycles. Not necessarily because it is healthy, but because it is easiest and fastest to get around by bicycle.

Many towns and cities are still shaped by the approach of the modernists in the 1950s, 60s and 70s, however, who planned them to make home life, work and leisure very much spatially separate, and to encourage people to go from one place to the next by car. This not only leads to a lack of physical activity: when people take the lift from the underground car park directly to their apartment door, they often fail to interact with anyone else. That makes people feel lonelier, which is also very unhealthy. These days, we are trying to be more sociable again. An example of this is provided by the 15-minute city. That not only encourages exercise, but also social interaction.

What specific format do urban interventions for the promotion of health take?
A great example in which we participated was a project in London on the subject of "food

72   Evans, D. K., & Popova, A. (2017). Cash transfers and temptation goods. Economic Development and Cultural Change, 65(2), 189-221.

73   Gehl, J. (2013). Cities for people. Island press.

deserts" – places where there are precious few opportunities to buy healthy food. In the vicinity of a school, for instance. The shops nearby offered very little that could be considered healthy. The McDonald's was the only place where young people were able to stay for any length of time without without constantly consuming and spending money.

To address this problem, we worked with the local shops to encourage them to include more healthy food products in their assortments. Secondly, we created a public space where people are able to eat what they buy and also stay there without being forced to consume. This place was designed together with the youngsters. In a design process of this kind, it proved important for the location and food to be 'Instagram friendly'. The food trucks that we drove there further enhanced the offer, from both the gastronomic perspective and in terms of social media. It also meant that increasing numbers of other people who worked or lived nearby chose to visit the area at their lunchtime. This, in turn, achieved a certain degree of social interaction.

Another example is the waterfront in Shanghai. This offers some 45 kilometres of continuous public space, and is a great place in which to ride a bike, go for a walk and see other people. It is now one of the most photographed places in Shanghai, and has become particularly important as a public place during the coronavirus pandemic. It is interesting to note that in China, some 70% of the population doesn't own a car. In contrast to Europe, the challenge in China is not in encouraging people to use a bicycle, but in maintaining healthy patterns of mobility.

It all sounds very convincing. What hurdles need to be overcome for a project of this kind, however?
First, there is the argument relating to costs. Building new infrastructure costs money. A recent study in Copenhagen demonstrated that the city saves money with every bicycle kilometre its residents ride. The infrastructure necessary for bicycles is cheaper than that required for cars. People also spend less time in traffic jams, which is another cost to the economy. Added to that are the costs which are saved when a place has a healthier population.

The savings, however, may appear elsewhere. At first, a transport authority has little incentive to spend money that is then saved in the health sector. But as long as traffic, housing, environment or health are regulated by different organisations within a city that speak little to each other, measures that have overarching effects will hardly be tackled. One could say that desegregation would be necessary here as well.

In this way, the strict separation pursued by the modernists isn't just reflected in the urban architecture, but also in the way in which a town or city is organised. And that doesn't just mean the organisation of the government departments. Many regulations also date back to that era, which also stand in the way of changing the status-quo towards towns and cities that are more liveable.

«Every meal with the family follows a ritual: salad and greens as a starter, appetiser or main course, bread on the table, a glass of wine to have along with the meal … from the way the table is laid to eating, enjoying, clearing the table together.»

Examples of routines and rituals from an exploratory GDI survey

Mindfulness

Self-regulation is something that can be learned.[74] Mindfulness is a successful way of achieving this.[75] An important part of mindfulness, although it isn't the only factor (see interview, page 37), is awareness. Through mindfulness training, a person's awareness for environmental stimuli can be sharpened and they are better able to control that awareness. This means that they don't get distracted as easily. At the same time, mindfulness training enables us to better perceive and understand internal signals – whether they are physical sensitivities, thoughts or emotions.

People who scored higher on a mindfulness scale have experienced fewer mental health problems during the pandemic.[76] Mental resilience can be encouraged through mindfulness training.[77] By sharpening a person's physical sensitivity, this training can help them to realise when they have eaten enough and make them eat less,[78] or allow them to pursue their goals more effectively.[79]

Mindfulness is also associated with the feeling of a person being in control of their life.[80] In a study of people partaking in a weight loss programme, this feeling is crucial in terms of the impact of life-changing events. Events that people felt able to control easily were more likely to lead people to take the event as an opportunity to eat less. In the case of events over which people felt they had limited control, however, people ate more.[81]

A ritual can serve as a moment of mindfulness. If a person ties a form of behaviour to a ritual, they can shield themselves from external influences and thereby maintain that behaviour.

Urte Scholz, President of the Swiss Society
for Health Psychology

74   Dahl, C. J., Wilson-Mendenhall, C. D., & Davidson, R. J. (2020). The plasticity of well-being: A training-based framework for the cultivation of human flourishing. Proceedings of the National Academy of Sciences, 117(51), 32197-32206.

75   Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. Perspectives on psychological science, 6(6), 537-559.

76   Gloster, A. T., Lamnisos, D., Lubenko, J., Presti, G., Squatrito, V., Constantinou, M., … & Karekla, M. (2020). Impact of COVID-19 pandemic on mental health: An international study. PloS one, 15(12), e0244809.

77   Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. Clinical psychology: Science and practice, 10(2), 125-143.

78   Kristeller, J. L., & Wolever, R. Q. (2010). Mindfulness-based eating awareness training for treating binge eating disorder: the conceptual foundation. Eating disorders, 19(1), 49-61.

79   Evans, D. R., Baer, R. A., & Segerstrom, S. C. (2009). The effects of mindfulness and self-consciousness on persistence. Personality and Individual Differences, 47(4), 379-382.

80   Sulphey, M. (2016). Is mindfulness a predictor of locus of control. J. Appl. Manag. Invest, 5, 121-130.

81   Ogden, J., Stavrinaki, M., & Stubbs, J. (2009). Understanding the role of life events in weight loss and weight gain. Psychology, health & medicine, 14(2), 239-249.

Interview with Regula Saner

Qualified Psychotherapist (Swiss Confederation), Mindfulness
Instructor and Director of Basel Centre for Mindfulness

What kind of people visit you at the Centre for Mindfulness, and why?
A greater degree of mindfulness gives most people a better quality of life. However, many people only decide they want to change something about themselves when they are suffering. Therefore, their journey to us mostly begins due to illness or dramatic life changes. Many patients visit us experiencing stress, for example, whether following the recommendation of a friend or a referral by their GP.

Can it be said that mindfulness helps a person to perceive themselves and their environment with greater awareness, to function less in autopilot and to better question their personal habits?
Yes, that is true. It would be very rash to simply reduce mindfulness to increased awareness, however. The point is to be aware on a benevolent basis, to view oneself, one's strengths and one's weaknesses compassionately, and to therefore be able to relate to other living beings respectfully and benevolently and stay healthy in the long term. To summarise matters, we could say that we work with four pillars. Awareness, i.e. the straightforward perception of external and internal stimuli, is one such pillar. Insight is a second pillar. Insight is about understanding how our own feelings, thoughts and expectations shape our subjective experiences and self-image. It is about trying to gain an outside view of your own mental processes and reactions, and to thereby understand yourself better. A third

point is the 'connection', whether that is your relationship with yourself or your relationships with other people. One's personal experiences can be handled better by sharing them with other people, especially if they have similar problems to you. The fourth pillar is 'purpose'. This point entails asking yourself why you are doing something in the first place. What goals and values are important to me? Studying your own behaviour only takes on meaning if you place it in the context of those values and goals. But it is necessary for you to define those values and goals first. For mindfulness, it is necessary for us to work on all four points.

Suppose I never manage to get to bed early because I always find myself stuck on my phone at bedtime. The next day I'm extremely tired and annoyed with myself. What, specifically, does the mindfulness training entail which could help me with this?
The first thing you should ask yourself is why you want to go to bed earlier. What values and goals are associated with this? This relates to the pillar of purpose. If you have identified that you would like a better quality of life over the long term, for example, you could set your alarm to remind you of your scheduled bedtime and see if you still disregard it. If you do disregard it, then it would be helpful to reflect on the feelings and thoughts that went through your mind and body at that time. Ideally, at that very moment. In doing so, you should also make certain that you are kind to yourself, as if you are self-critical, you will be unlikely to change your behaviour, and your courage and desire to change will evaporate. You could also spend three minutes focusing on your breathing, or try to consciously feel

your whole body with what is known as a 'body scan'. To allow you to be at one with the thoughts, feelings and sensations you experience at these moments, you require a genuinely benevolent and stable attention and a positive relationship with yourself. After all, it is often in those very moments that we can encounter 'disturbance factors' which have been preventing us from achieving our personal goals, maybe for our whole lives. This benevolent presence then allows you to gain the deeper insights which are essential if you want to make genuine changes to your usual behaviour.

To be able to complete mindfulness exercises while ignoring the alarm clock, it is beneficial if you have already done some mindfulness meditation. Science has taught us that meditating for just 20 minutes every day over a two-week period leads to changes in the brain. You could compare it to a physical workout. If you do half an hour of endurance training every day, your levels of endurance will also improve in your daily life, and not just in a competitive activity.

To what extent can you partake in training of this kind with an app?
The pillar of awareness can be supported exceptionally well using electronic assistants. I find some of the mediation apps which are currently available to be very good. I do recommend learning meditation from experienced mindfulness or meditation teachers, perhaps together with other people, though. In my courses and workshops, sharing experiences and difficulties in meditation classes and when integrating mindfulness into one's daily life is something I have found exceptionally supportive to the participants. Interacting

with other people about your own goals is often necessary as well.

Can I strengthen certain behaviours by ritualising them, i.e. by training in a fixed sequence of behaviour and always carrying it out in the same way?
It is certainly the case that rituals can be helpful. People have always engaged in rituals, and valuable rituals at that. Rituals can also have a compulsive character, however, and a mindful approach to life is quite the opposite: it frees us from our fears, allowing compulsive behaviour to be abandoned …

Financial worries as mental burden
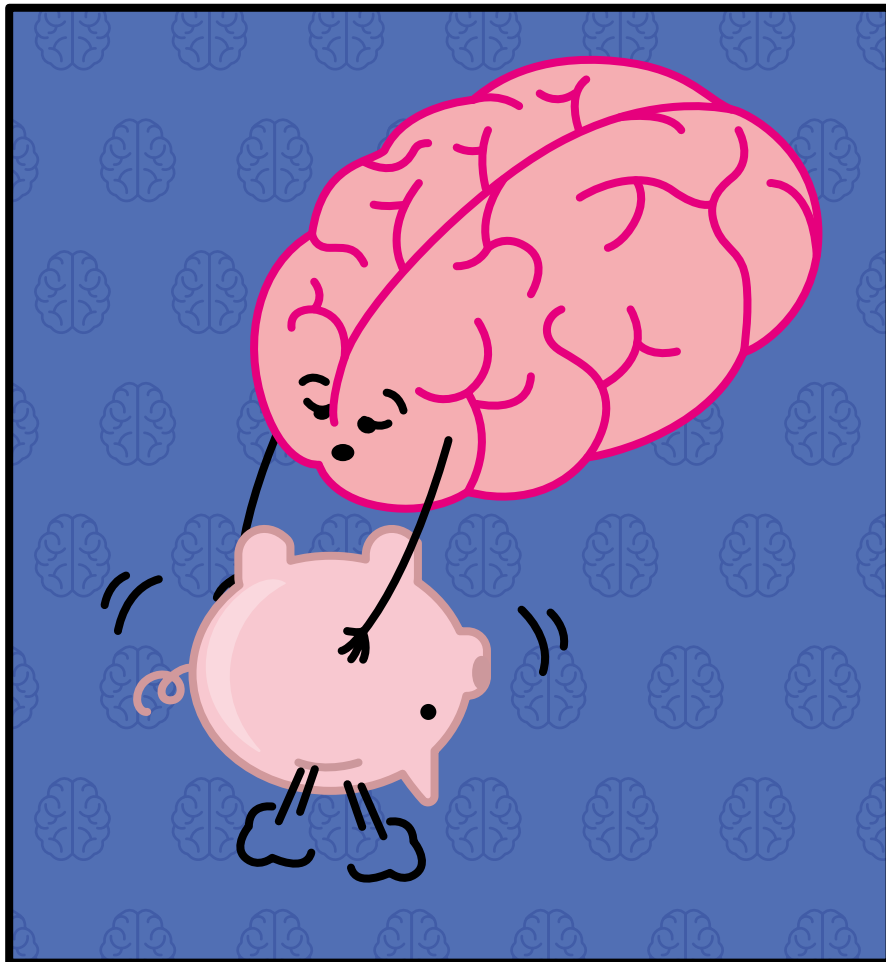
13pt

Financial worries can result in a cognitive impairment comparable to the reduction of 13 IQ points (see page 31)

Mani, A., Mullainathan, S., Shafir, E., & Zhao, J. (2013). Poverty impedes cognitive function. science, 341(6149), 976-980.

Rituals

People rely on rituals to foster a sense of self-control and self-discipline. In times of uncertainty or life changes, rituals become more important. We do not understand rituals as a clearly-defined category. Almost any form of behaviour can be ritualised, which is why rituals amount to more of a spectrum.

A form of behaviour becomes a ritual if it involves aspects that would not be necessary for the functional fulfilment of the task. A typical example here is the rigidity of the sequence. In their bedtime ritual, some people decide they have to put on their pyjamas first and then brush their teeth. While their dental hygiene does not depend on them wearing pyjamas, it simply feels wrong for these people to change this sequence. If they feel unable to change, the ritual can also be considered a compulsion.

In addition to the fixed sequence of necessary steps, such as brushing teeth after putting on pyjamas, in the case of a ritual, seemingly arbitrary steps are often incorporated into a sequence of behaviour. This is well known (and especially visible) from the rituals of sportsmen and sportswomen. Diego Maradona, for example, would always warm up with the laces on his football boots undone. This behaviour, which seems strange to outsiders, seems to follow arbitrary yet strict rules, such as always having to enter the sports field with the left foot first. Some people can only drink their morning coffee from a certain cup. Others insist on wearing red underwear on New Year's Eve. A ritual of this kind has no obvious purpose, and for this very reason, takes on an almost magical character. The ritual is not only a means to achieve the goal – it becomes something special in itself. And

that makes it into something that people like to do. The ritual can embellish a form of behaviour and also have a calming effect.

In sports, people consciously practice rituals. These have to be built up in a structured way and kept in mind right from the start.

Philippe Müller, Sports Psychologist (die-sportpsychologen.ch)

In one study in which the participants consumed chocolate, lemonade, or carrots, they found that everything tasted better and the overall experience was more intense if a predetermined ritual was performed beforehand. This included, for example, an unusual, precisely specified way of unwrapping the chocolate.[82] Performing rituals helps people to gain control of a situation. A pre-meal ritual, for instance, can help people reduce the amount of calories they eat.[83] And families which have eating rituals (such as staying seated until everyone has finished eating) have a lower average BMI.[84]

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[82] Vohs, K. D., Wang, Y., Gino, F., & Norton, M. I. (2013). Rituals enhance consumption. Psychological Science, 24(9), 1714-1721.

[83] Tian, A. D., Schroeder, J., Häubl, G., Risen, J. L., Norton, M. I., & Gino, F. (2018). Enacting rituals to improve self-control. Journal of personality and social psychology, 114(6), 851.

[84] Wansink, B., & Van Kleef, E. (2014). Dinner rituals that correlate with child and adult BMI. Obesity, 22(5), E91-E95.

Degree of agreement with the statement "The ritual is a part of my identity"
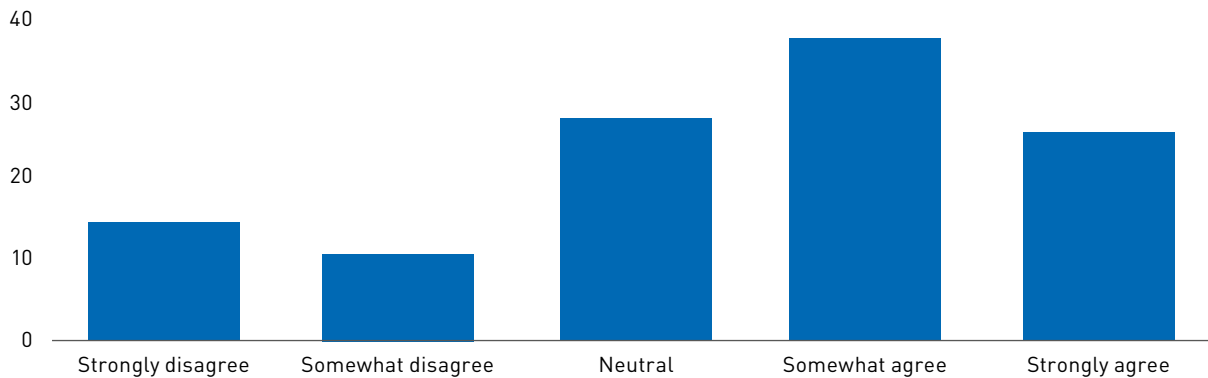

Figure 13 . Source: GDI

Practising rituals precisely seems to create a sense of self-discipline and strengthen a person's sense of control over a situation. This leads to the fact that rituals also help to prevent anxiety and uncertainty, and serve to improve performance.[85] They create a sense of order and predictability. In stressful times in particular, rituals can help create a sense of personal control and therefore have a calming effect.

Rules or rituals must not themselves become the cause of stress. It would be counterproductive, for example, if someone were to believe that they could no longer fall asleep without their bedtime ritual.

Christine Blume, Sleep Researcher at Basel Centre

for Chronobiology

Building one's identity

In his book 'Atomic Habits'[86], the author James Clear writes that the goal should not be to run a marathon, but to become a runner. After all, once the marathon has been run and the individual has achieved their goal, the behaviour becomes superfluous. That person remains a runner, however. Their behaviour is therefore more likely to adapt to changing circumstances. For example, if the marathon is cancelled due to a pandemic, they are still able to run. According to Clear, even going for a five-minute jog a day is valuable for building one's identity. It isn't necessary to set big goals at all.

Rituals can also be understood as ways of defining one's identity. A person gives more significance to a specific action, which is why it becomes more important. In a brief non-representative survey, we found that more than half of the respondents considered rituals to be an

[85] Brooks, A. W., Schroeder, J., Risen, J. L., Gino, F., Galinsky, A. D., Norton, M. I., & Schweitzer, M. E. (2016). Don't stop believing: Rituals improve performance by decreasing anxiety. Organizational Behavior and Human Decision Processes, 137, 71-85.

[86] Clear, J. (2018). Atomic habits: An easy & proven way to build good habits & break bad ones. Penguin.

«I make my own rules for myself, such as «go outside at least once a day» or «exercise at least 5 times a week in all». I've also started to monitor my daily steps on my iPhone more and so I take it with me practically everywhere.»

Examples of routines and rituals from an exploratory GDI survey

important part of their identity (see figure 13). The development of rituals may also increase the attention paid to a behaviour – especially if it becomes special through the creation of the ritual itself. If a person observes themselves more consciously with a regular form of behaviour, it is plausible that they also define themselves more strongly with that behaviour.

When a person performs a specific behaviour in the presence of others, their awareness is also heightened, and the behaviour is more strongly linked to the person's identity. Self-control can therefore be increased by exposing one's behaviour to others. This is often done when people share their jogging route on social media, for example, or announce that they are quitting smoking.

Plans and goals

In addition to awareness for one's own problematic behaviour and commitment to a healthy lifestyle, self-regulation also requires knowledge of what to do. For example, it is also important to know about healthy cooking recipes or physical exercises. The low-threshold accessibility to opportunities for learning such forms of behaviour can be considered as a task of prevention.

Goals are necessary for self-regulation. Only then can an individual orient their behaviour to something and notice when they are off course. The SMART approach is useful for defining goals.[87] SMART stands for 'specific', 'measurable', 'achievable', 'relevant' and 'timed'.
> Specific: A goal must be specific. You shouldn't just say, "I want to exercise more", but define exactly what kind of exercise, and for how many minutes.

> Measurable: If you set yourself the goal of exercising for a certain amount of time each day, the achievement of your goal becomes measurable.
> Achievable: The goals must be achievable, otherwise the motivation drops very quickly.
> Relevant: Is the goal at all important and does it achieve what you want it to?
> Timed: The period in which the goal is to be achieved must be clearly defined.

An example of such a SMART goal to benefit your health could be: "I'm cooking vegan dinners three evenings a week for the next month."

Goals must be formulated positively and not simply to avoid something. What should I do instead?

Philippe Müller, Sports Psychologist (die-sportpsychologen.ch)

It goes without saying that you can specify the goal in more detail, and formulate specific strategies on how to achieve it. These can be simple 'if / then' rules, such as: "If I don't know what to cook, then I'll look for a new recipe on vegan. ch", or "If I want to smoke a cigarette, then I'll eat a carrot instead."[88]

People who fail to maintain good habits have poorer strategies.

Urte Scholz, Chair of Applied Social and Health Psychology,
University of Zurich

87   Bovend'Eerdt, T. J., Botell, R. E., & Wade, D. T. (2009). Writing SMART rehabilitation goals and achieving goal attainment scaling: a practical guide. Clinical rehabilitation, 23(4), 352-361.

88   Gollwitzer, P. M. (2014). Weakness of the will: Is a quick fix possible? Motivation and Emotion, 38(3), 305-322.

In a rapidly changing environment, these rules must become more complex and take more eventualities into account. What happens if the internet is down, for example, and vegan.ch can't be accessed? What if I can't make it to the supermarket that has the big vegan selection before it closes for the day? For more sophisticated plans, the 'how', 'where' and 'when' of the approach that is supposed to benefit your health also need to be spelled out.[89]

To keep a form of behaviour stable through changing life circumstances, it is necessary that you tie it to the right 'triggers'. For example, not to a particular place, but to breakfast.

Urte Scholz, President of the Swiss Society for Health Psychology

89   Hagger, M. S., & Luszczynska, A. (2014). Implementation intention and action planning interventions in health contexts: State of the research and proposals for the way forward. Applied Psychology: Health and Well-Being, 6(1), 1-47.

Interview with Lukas Zahner
CEO Salutacoach AG for health coaching

Why are health coaches necessary?
Many people would like to behave in a healthier way, but fail to do so. Sometimes they need a push and some gentle pressure from outside. A health coach should be seen as a partner who helps people to achieve their health-related aspirations. This requires regular contact. It is not sufficient for them to see their GP once every six months for half an hour and to go home with a prescription. Good health means hard work. That is why we are now offering the Health Coach CAS course at the University of Basel.

In this respect, we mainly focus on exercise, nutrition and stress. However, a coach must be able to respond flexibly and as comprehensively as possible to all the wants and needs of individuals. Things have to be seen in terms of the big picture, and people have the need to be cared for by one person as comprehensively as possible instead of going from one specialist to the next. It is also clear that we need to be clear about our limits and when it is necessary to refer someone to a professional.

What exactly does a coach do?
To start with, coaching requires an assessment of the current situation. This takes place with a questionnaire. How healthy is the person's lifestyle? What health problems do they have? The person is then assigned to a coach. Together with the coach, the goals are defined which they want to achieve. These must be adapted to the person's individual life situation. Which physical activity or sport is the coached person most likely enjoy? When would be the ideal time to participate in them?

Can exercise be integrated into their everyday working life? What healthy food is most likely to appeal to the coached person? What barriers to healthy behaviour exist in their daily life, and what is the best way to eliminate them? People often add sport to their schedule, but then fail to participate in it. They therefore need an additional trigger. One coach recommended that the first thing the coached person should do when they get home from work is to put on their training shoes. They will then serve as a reminder if they decide to watch TV instead, so that they will at least feel bad about it. A balancing exercise, for example, can always be done while brushing one's teeth.

Regular contact between coach and the coached person is of key importance. They should talk to each other about once every two weeks. Either by telephone or video conference. During the coaching process, something akin to a friendship develops. This emotional connection also leads people to put added effort into their plans. We often hear statements like: "If I didn't know my coach was going to call again next week, I would have quit a long time ago." The coached person certainly doesn't feel such a sense of obligation towards an app. When the coached person achieves a goal, such as managing to climb the stairs without getting completely out of breath, they can also celebrate this success with their coach. Successful experiences are a fundamental part of the coaching process.

Who makes use of the services offered by a health coach?

Very few people approach us of their own accord. Companies are an important channel. They send their employees to us if they feel that they "look a little jaded". Increasingly, doctors also want to work with us. Doctors from the cardiology department at Basel University Hospital, for example, are interested in cooperating. People who have had a heart attack are very open to giving us a go. That is certainly the right moment for them to think about their life and their lifestyle. Many people who join a traditional health programme return to their old ways as soon as the programme is finished. They need a point of contact, especially when they leave hospital or supervised group programmes.

Of course, it would be ideal if people didn't just visit us when they have had a heart attack or when employees notice that they are on the verge of a health crisis. We need to reach these people sooner. Companies could offer coaching to all of their new recruits to make themselves more attractive as an employer. I also see great potential in schools, where the coaching could be introduced on a compulsory basis. It could become part of daily life, like cleaning one's teeth. In this way, a norm would change, and children and their acquaintances would be coached before they become overweight. Although this is associated with some effort, from the perspectives of healthcare and economics it is certainly the best approach, and chimes in with the motto of prevention rather than treatment.

Planned disruption

Planned changes in everyday life allow habits to be questioned and adjusted on a regular basis. This makes these habits more dynamic. Consciously questioning current habits can be achieved through the previous example of eating with chopsticks. Some companies prohibit their employees from reading their work emails during the holidays (or part of the holidays). In this way, habits can be questioned, with the intention of deciding not to open emails over the weekend and continuing with that approach after the holidays.

Other companies are going one step further. The "Seitenwechsel" project[90], for example, sends company managers on visits to social institutions such as psychiatric clinics or workshops for the disabled. Breaking away from everyday life in this way means that it isn't just existing habits and opinions that are shed light on and called into question. A form of self-awareness in dealing with new things is also developed. As it can be planned, disruption causes less stress and is therefore easier to control. In this way, companies hope that their employees will be able to respond more calmly and in a more controlled way in the event of unexpected disruptions, thanks to the wealth of experience and the self-awareness that they have built up.

We have seen that self-regulation capabilities have been crucial during the pandemic in determining whether people are able to maintain or improve their healthy behaviour, or whether they are more likely to "let themselves go". In a world which is changing more quickly than ever before, in a world in upheaval, the capability to self-regulate is all the more important.

As previously mentioned, self-regulation is something that can be strengthened. This strengthening is becoming an increasingly important factor in the promotion of health and in prevention work. In the following, we want to sketch out a future scenario which illustrates this.

[90] https://www.seitenwechsel.ch/home (retrieved: 16.4.2021)

Automatisation through repetition
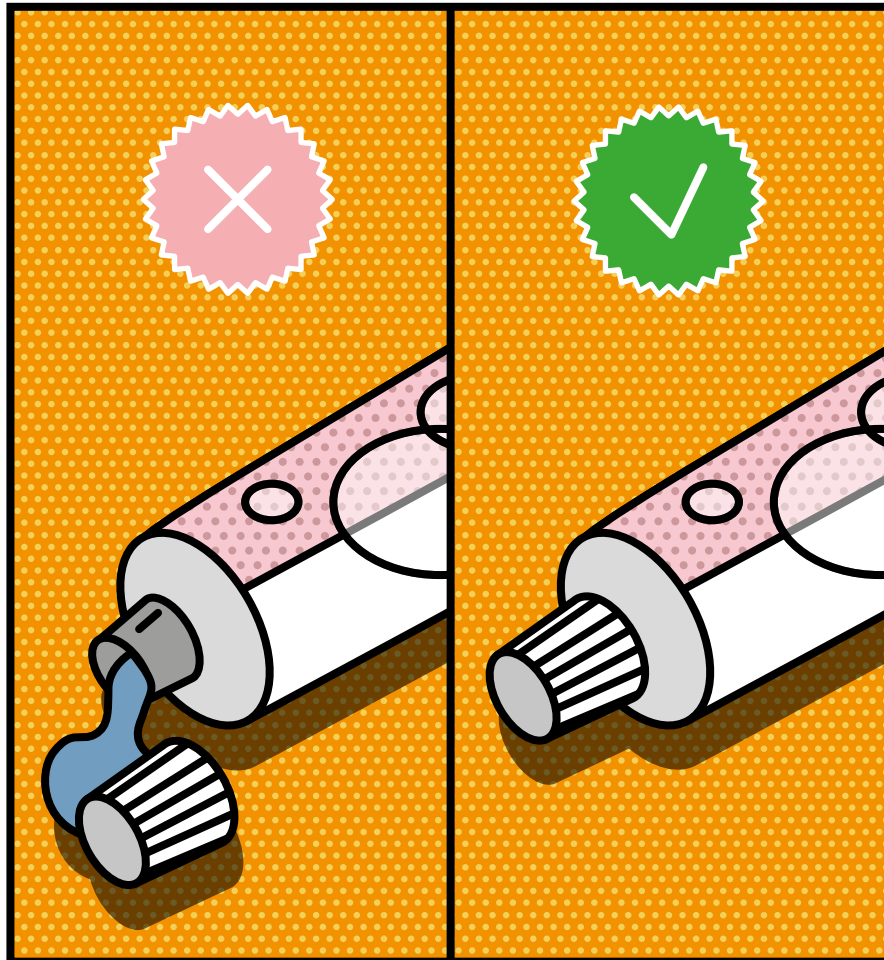
66x

Behaviors must be repeated 66 times on a daily basis to be automated (see page 8)

Lally, P., Van Jaarsveld, C. H., Potts, H. W., & Wardle, J. (2010). How are habits formed: Modelling habit formation in the real world. European journal of social psychology, 40(6), 998-1009.

The future under control –
a prevention scenario for an
unstable future

Somewhere over the rainbow,
skies are blue
And the dreams that you dare to
dream really do come true
E.Y. Harburg

Based on the above knowledge, we will draw a future scenario for a Switzerland in 2040 in which prevention plays a far more important role in healthcare than it does today. This scenario should not be interpreted as being a precise forecast. That would be nonsensical, because we shape the future together, and it doesn't just happen to us. This shaping process depends on plausible stories that we tell ourselves about the future, though. Scenarios can therefore become self-fulfilling prophecies. They do not predict the future, but make it possible in the first place by formulating opportunities.

While we are naturally aware that a single study such as ours will not completely transform the future, we believe that many different stories, visions, strategies and scenarios collectively shape the collective imagination, and therefore the future. We also want to be able to make a contribution to this.

We certainly aren't going to completely reinvent things for this scenario. On the contrary, we shall combine approaches, some of which are established and some of which still have a niche existence, to create an overall picture. This also means that technological revolutions aren't necessary for this scenario. While technological advances are assumed which simplify developments, it isn't necessary for us to wait for a miraculous technology that the scenario otherwise requires.

The prevention scenario won't address everything that could impinge on the health of the citizens of Switzerland. Rather, we will focus on things that affect health-related everyday habits and which can be determined by the individual. Other preventive measures, such as the reduction of unhealthy environmental pollution like particulate matter, cancer screenings, or changing the incentive structures of the healthcare system are not, or only marginally, discussed in this scenario. While these are certainly important points, this study is primarily concerned with self-determined health-related everyday habits. The circumstances and factors that influence this and are, as it were, the levers for the promotion of health, are placed into the three categories according to the 'Behavioural Change Wheel'[91] approach, 'motivation', 'capability' and 'opportunity', and will structure the scenario accordingly.

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[91] http://www.behaviourchangewheel.com/ (retrieved: 16.4.2021)

Factors promoting behavioral resilience
in the preventio scenario

Motivation

Knowledge base / education
→ Change towards a more holistic understanding
  of health
→ „Health Literacy"
  • Visualisation and prediction of health trajectories
  • Understanding probabilities and risks

Social norms
→ Promotion of social media posts on healthy behaviour
→ Communication of statistical norms

Capability

General
→ Psychological condition
  • Wide range of psychological care
  • Destigmatisation of psychological care
  • Reduction of noise
  • Maintaining and building biodiversity
  • Introduction of the 6-hour work day
→ Social condition
  • Promoting volunteering
  • Promoting Co-Working Spaces for Gig Economy
    Workers
  • Creation of meeting places
→ Economic condition
  • Catching people at risk of poverty at an early stage

Specific
→ Offering cooking, fitness or mindfulness courses
→ Support in goal setting and planning
→ Use of digital tools for feedback on one's
  own behaviour

Opportunity

Healthcare system
→ More investment in the area of prevention
→ More intensive exchange between health care providers
→ More embedding of health care providers in
  local communities

Environment
→ 15-minute city
→ Promotion of cycle paths, public exercise equipment
  and parks
→ Promoting accessibility to healthy food
→ Indication of nutritional values on food

Figure 14, Source: GDI

«I only have black (some blue) trousers and white shirts/blouses now. As a result, there's no fuss in the morning about what to wear (what goes together, what doesn't, etc.). This way, everything always goes together!»

Examples of routines and rituals from an exploratory GDI survey

A new understanding of health, a new understanding of medicine

In an increasingly ageing society which focuses on chronic disease, as well as an increase in stress and other mental health problems, the focus of the healthcare system is changing. A long-term and holistic approach to medicine is replacing a reductionist approach which looks at individual health problems in isolation and mainly treats them on an acute basis. Good sleep, for example, is associated with a good immune system.[92] Low oral hygiene is associated with the risk of premature birth[93] or diabetes.[94] We are thinking and working in bigger contexts.

Health should be considered a continuous service, not a solution.

Lars Münter, Nordic Health

Credence has been given to this holistic perspective through the increasing dataification of health, bringing it closer to the general public. From pedometers to smart toilets, a variety of sensors provide data, which is collected and combined to create a more holistic picture. The digital mapping of health has accelerated a shift in society's understanding of health which was already taking place. Health isn't something that can simply be fixed at the doctor's surgery, but a lifelong project. Not least due to the triumph of the 'quantified self' movement, at the social level, health is also considered to be something holistic which is constantly being worked on – a dynamic system which must be kept in balance at all times (an equilibrium, in which it isn't just a person's physiology, but also their psyche, behaviour and environment which play a role).

Health insurance schemes want a 'quick fix'. And customers do too.

Lukas Zahner, Manager of CAS 'Personal Health Coach'

Digitalisation has also placed health in a social context. The difference between communicable diseases (CDs) and non-communicable diseases (NCDs), for instance, is becoming less clear-cut, because the more data to be collected, the clearer it becomes how much people in a social environment 'infect' each other with healthy and unhealthy habits. The chance of someone becoming overweight, for instance, is almost 60% greater if someone close to them has previously become overweight as well.[95] Therefore, you don't just infect yourself with viruses, but you also infect yourself with the amount of mayonnaise you put on your fries. Obesity can also be considered an epidemic (at least in richer countries).

92 Lange, T., Dimitrov, S., & Born, J. (2010). Effects of sleep and circadian rhythm on the human immune system. Annals of the New York Academy of Sciences, 1193(1), 48-59.

93 Jeffcoat, M., Parry, S., Sammel, M., Clothier, B., Catlin, A., & Macones, G. (2011). Periodontal infection and preterm birth: successful periodontal therapy reduces the risk of preterm birth. BJOG: An International Journal of Obstetrics & Gynaecology, 118(2), 250-256.

94 Chang, Y., Lee, J. S., Lee, K. J., Woo, H. G., & Song, T. J. (2020). Improved oral hygiene is associated with decreased risk of new-onset diabetes: a nationwide population-based cohort study. Diabetologia, 63(5), 924-933.

95 Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. New England journal of medicine, 357(4), 370-379.

Such an understanding of health as an equilibrium between a person's physiology, psyche, behaviour and environment also means that medical education is increasingly giving equal importance to prevention as it does to cure. In addition to physiology and anatomy, it isn't just behaviour, but social, psychological and economic factors that are becoming the focus of the world of medicine. It is increasingly becoming a social science.

Medical students are not being prepared for the topic of 'Exercise is medicine'.
Lukas Zahner, Manager of CAS 'Personal Health Coach'

The focus on prevention has been made easier through the increased gathering of data, which allows the effectiveness of different interventions to be better verified. The Apple Watch, for instance, can measure a person's heart rate with an integrated ECG app. Fitness trackers are becoming a mobile doctor's surgery. It is therefore clear that certain preventive interventions aren't just more effective, they are also cheaper than retrospective treatment. The financial shift towards prevention is therefore easier to legitimise. While in 2020, just 2-3% of total healthcare expenditure was spent on prevention,[96] in 2040, following the successful 'Nordic Health 2030' programme in Scandinavia,[97] this figure is set to reach an impressive 50%.

2.6% of healthcare expenditure is spent on prevention. In an ideal world, things would be different.
Lisa Guggenbühl, Gesundheitsförderung Schweiz

When calculating expenditure on prevention, many investments by employers and private initiatives are not taken into account.
Fridolin Marty, economiesuisse

At the same time, however, this also means that expensive interventions such as heart transplants are being carried out less frequently. The money is being invested in more effective prevention instead. It is true that the shift towards prevention has increased the average age of the population as well as the number of healthy years that people enjoy. Anyone who requires a heart transplant, however, will only be comforted by this development to a limited extent. The question of those interventions that are still performed and those that aren't is increasingly becoming a broad socio-political discussion which is ongoing. In this way, the statistics are coming up against tragic individual cases.

The holistic approach and the strong focus on prevention are only being partially provided by actual medical professionals. It may be the case an individual has one person who, as a health coach, acts as their first point of contact for all health-related questions. That person can be a GP, a specially trained health coach or, for cost reasons, in some cases, a digital assistant, even. However, these health coaches work in a wider environment together with medical specialists, nutritionists, sports coaches, yoga instructors, psychologists, meditation experts, social workers, and so on. A greater level of discussion and cooperation between the care providers makes it easier to gain an overall picture of a person's health and well-being. During this cooperation, it is important that the individual is not forgotten. And it is helpful if they are not sent from one specialist to the next, but have just one point of contact.

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[96] http://bit.ly/piu-kosten   (Source: bfs.admin.ch;   retrieved: 16.4.2021)

Health is created in the community,
Lars Münter, Nordic Health

Users (formerly referred to as patients) are much more likely to interact with the healthcare system. This is because health coaches are integrated more strongly in their community, and sometimes work from the same building as the post office or the local district centre. This means they benefit from lower-threshold access. It isn't always necessary for the user to have an appointment, they are on first name terms with the health coach, and may even have lunch together (refer to Bromley-By-Bow Health Centre as an example[98]). Conversations with health coaches start with people talking about the things they are interested in and the social relationships that are important to them – rather than their ailments.

People discuss their life with health coaches,
and not just a possible ailment.
Lukas Zahner, Manager of CAS 'Personal Health Coach'

At the same time, however, health coaches also work together with digital assistants who assist the users with implementing the plans and goals that they have discussed in their everyday behaviour. The digital assistants remind you that you have been sitting down for too long, suggest what food you could cook or whom you could contact again, and remind you of your daily personal hygiene. The Apple Watch, for instance, encourages its users to wash their hands.[99] For many users, the challenge is to use these assistants as useful tool rather than allowing it to take control of their lives and allowing the device to take their every decision to the point that they lose the ability to assess their own condition themselves.

I don't need an app to tell me how well I slept.
A person should be able to tell for themselves
whether they slept well or not.
Christine Blume, Sleep Researcher at Basel Centre
for Chronobiology

Motivation

Knowledge basis/education

Taking a humanistic view of humanity, it is assumed that people should be able to make informed decisions about their health – at least if they want to. To do this, the most important thing is knowledge. In this respect, the term 'health literacy'[100] is considered to be an important cornerstone of health prevention work. This is often understood in the context of accessibility, understanding and the applicability of medical information, whether that means understanding package information leaflets or the risks of a treatment. This term can also be applied more broadly to everyday habits, however.

Education is the best prevention.
In schools, unfortunately, the subject tends
to be neglected.
Fridolin Marty, economiesuisse

97   http://nordichealth2030.org/
98   Guillochon, R. (2006). What's so special about Sam Everington's Bromley-by-Bow health centre? BMJ, 333(7580), gp218-gp219.
99   http://bit.ly/piu-watch (Source: apple.com; retrieved: 16.4.2021)

«For important conversations, including phone calls, I wear something red, because the colour red gives me a kind of stronger sense of security. When I wear a red jacket, I feel strong.»

Examples of routines and rituals from an exploratory GDI survey

Children begin learning about the basic contexts of healthcare and the wider picture of health as a balance between several different factors at school. This holistic picture of health is relayed to them by showing them the relationships between physical, psychological and social factors.

To be able to make informed decisions, it is necessary for an individual to understand the consequences of their actions. Big data approaches allow such consequences to be forecast more accurately. What will I look like at 50, for instance, if I smoke a packet of cigarettes every day from now on? And what will I look like if I don't? Visualisations of this kind are especially popular in health literacy classes.

If you discover that you have a 50% chance of developing diabetes at 60 with your current lifestyle, it is important to be able to understand exactly what this means. How bad is living with diabetes? Media presentations such as virtual reality applications allow children to get a better insight into the daily life of a person who has diabetes and gain a better understanding of the disease.

An equally important aspect of health education is interpreting risks and probabilities. School children learn about what it means and what it doesn't mean, if a certain form of behaviour increases the risk of an illness by 70%.

Social norms

Despite the humanistic view of humanity, it is clear that people do not make decisions solely on the basis of rational considerations and probability assessments – even when their health is at stake. Social norms are also an important factor. In times of uncertainty in particular, which is usually the case in times of change, people take their cue from what the others in their peer group are doing.

An important source of information about this behaviour is social media. People don't just share how many miles they covered on their morning run. They also discuss the yoga positions they have mastered, their REM sleep duration, and even their high score for their low amounts of dental plaque!

This has two effects: on the one hand, people identify with a form of behaviour even more strongly when they show it to the world. This makes that behaviour more stable. On the other hand, a norm is created for behaving in a healthy way, which others imitate in turn. In this respect, social media isn't simply a neutral reflection of the world. When it comes to behaviour such as eating or exercising, most people want to portray themselves in a better light than the reality of their personal situation. Evenings spent in front of the TV with a bag of crisps, for example, aren't very likely to make it onto social media. This creates a distorted image that everyone eats healthily and exercises regularly. Many people take their cue from this distorted image, but some are very much discouraged by it.

Some health coaches make use of this effect. Like restaurants that include lighting with the meal, some health coaches help people to portray their healthy behaviour in a good light on social media. Sharing healthy behaviour therefore becomes a ritual, or a 'meme'.

Due to the high degree of identification and the sense of community that comes with it, some fans of social media have even taken to brushing their teeth together via video conference – with

conflicts and tensions regularly arising between users of manual toothbrushes and users of electric toothbrushes. And it isn't just taking place in the virtual world: in India, for example, some 26,382 school children and students gathered, in uniform, to brush their teeth together in public for an entry in the Guinness Book of Records. An impressive example of synchronicity.[101]

Capability

General self-regulation capabilities

Having knowledge and good intentions alone is not enough. Capabilities are also required to put intentions into action. In addition to skills for implementing specific health-related habits, such as knowing how to brush one's teeth properly, a basis is also required for general self-regulation capability. This is characterised by the psychological, economic and social constitution of an individual. As seen earlier (see page 27), these factors are particularly necessary for being able to practise resilient, healthy habits in a changing environment. If this basis is lost, it can be a warning sign for upcoming physical complaints.

Psychological constitution. A wide range of mental healthcare is available to all, partly state-funded and partly employer-funded – without the need for an individual to suffer from a specific complaint. Many people choose to participate in meditation and/or mindfulness classes. Also, thanks to the more holistic view of health, visiting a psychotherapist or a support group no longer has the stigma of weakness attached to it. That is why people don't just go to the doctor when they feel bad.

All health coaches encourage their clients to engage in activities that are beneficial to their mental health and discuss what kind of activities would be most appropriate for their needs. While talking with others and mindfulness classes are helpful for many people, some are more likely to achieve mental balance by taking a yoga class, going on long walks or joining a chess club.

Mental health problems cannot always be prevented in advance. Digital assistants are programmed to detect stress and depression in their users (based on their social media posts, for example),[102] and can then suggest steps forward or a discussion with a professional.

In addition to personal measures for maintaining one's own mental constitution, there are a number of environmental factors that are known to promote mental health and happiness. Strengthening these factors is the task of the government and employers.

[100] http://bit.ly/piu-hl (Source: wikipedia.org; retrieved: 16.4.2021)

[101] http://bit.ly/piu-india (Source: washingtonpost.com; retrieved: 16.4.2021)

[102] Lin, H., Jia, J., Guo, Q., Xue, Y., Li, Q., Huang, J., ... & Feng, L. (2014, November). User-level psychological stress detection from social media using deep neural network. In Proceedings of the 22nd ACM international conference on Multimedia (pp. 507-516)

Noise pollution is one such example. Noise causes stress[103] and should therefore be reduced wherever possible. On the other hand, for reasons of psychological balance, biodiversity is enhanced, as an individual's sense of happiness can also relate, for example, to the number of different bird species in the environment.[104] Biodiversity has suffered particularly badly at a time of climate change, which is why the introduction of new animal and plant species is also being discussed as a health-promoting measure – whether for the enjoyment of being around animals, or to keep the city cooler with more plants to reduce the mental and physical stress caused by the heat.

Mental health is being fostered by changes in the labour market. Many companies introduced the six-hour work day some years ago. This hasn't just increased productivity in many jobs,[105] it has also meant that employees are less stressed[106] and behave more healthily as a result.[107] Employees in permanent employment benefit the most from this. Regulating online gig economy platforms has been difficult from the outset, however. In the case of these online platforms, there are companies that have an obvious address and telephone number (such as the taxi provider Uber) which policymakers have been able to address with their measures. However, these online platforms have gradually been supplanted by algorithms on a blockchain. This means there are no more accountable companies, which has further complicated their regulation.

Social constitution. The time freed up by the six-hour work day can be devoted to hobbies and volunteering work, as people still have the time and energy for such tasks. This serves not only their mental well-being, it also supports their social integration. People who volunteer

are healthier physically and mentally, have lower mortality rates and are more satisfied with their lives. They also engage in more healthy behaviour and are more socially integrated.[108]

People who work in the gig economy have neither clearly structured working hours nor the same interactions with colleagues, because, as freelancers, they always work with different people. By promoting co-working space for gig economy workers, however, it has been possible to support the social integration of this group somewhat. While they may work on different projects, their physical proximity still leads to bonding and friendships.

Better opportunities for social interaction can also be achieved through urban planning measures. These are planned and implemented by local communities. However, they are supported by the local council. A simple example is the fruit and vegetable beds that have been established on many streets, or community gardens

[103] Evans, G. W., Hygge, S., & Bullinger, M. (1995). Chronic noise and psychological stress. Psychological Science, 6(6), 333-338.

[104] Methorst, J., Rehdanz, K., Mueller, T., Hansjürgens, B., Bonn, A., & Böhning-Gaese, K. The importance of species diversity for human well-being in Europe. Ecological Economics, 181, 106917.

[105] http://bit.ly/piu-work (Source: theguardian.com; retrieved: 16.4.2021)

[106] http://bit.ly/piu-bbc (Source: bbc.com; retrieved: 16.4.2021)

[107] Berniell, M. I., & Bietenbeck, J. (2020). The effect of working hours on health. Economics & Human Biology. 39.

[108] Casiday, R., Kinsman, E., Fisher, C., & Bambra, C. (2008). Volunteering and health: what impact does it really have. London: Volunteering England, 9(3), 1-13.

in courtyards and on brownfield sites. These local gardening opportunities create opportunities for people to meet and connect. This strengthens social cohesion.[109]

Economic constitution. Basic economic security is also of central importance to a healthy life. Only those who do not have to worry about their finances all the time can take care of their health.

By far the best strategy supported by scientific data for the prevention of communicable and non-communicable diseases (as well as youth violence, delinquency and even drowning accidents) is a social policy which has the goal of reducing poverty.

Prof. Dr. Martin Hafen, Institute of Social Management,

Social Policy and Prevention, Lucerne University

of Applied Sciences and Arts

Forecasting models allow the government to identify people at risk of poverty and provide them with preventive support. Big data can be used to predict those at risk of becoming homeless, for instance.[110] Stopping this development in time isn't just a moral issue. It is also cheaper for society as a whole to spare these people from homelessness through social welfare than to manage the consequences when they land on the streets. That is why health insurance also pays the housing costs of people who are unable to do so themselves.[111]

Specific self-regulation capabilities

General self-regulation capabilities that don't relate to a particular domain are now being joined by specific self-regulation capabilities. These relate to specific forms of behaviour, like maintaining a diet or going to the gym regularly.

Health coaches therefore prescribe cookery classes or training sessions with sports coaches. The dentist demonstrates the best way to clean the inter-dental spaces. Some of these forms of behaviour are learned at school. For others, courses for adults are available. Other forms of behaviour can be instructed by the digital assistant.

To prevent the learned behavioural repertoire (e.g. cooking recipes or sports exercises) from remaining in a vacuum, on the one hand, the corresponding coaches support their clients with defining goals. These should be ambitious but also achievable, and broken down into smaller intermediate goals. On the other hand, plans need to be created on how to achieve these goals. Work takes place with clients on how best to condense the activities into habits and how to shape those habits so they can withstand changes in everyday life. At the same time, the habit-based training is organised in such a way that life changes are used, or even actively brought about. The corresponding ability to modify one's own behaviour allows a new habit to be established.

One tool to 'immunise' behaviour against change is the development of rituals. The health coaches help their clients add meaning to their habits, such as asking them to precede the habit

[109] Veen, E. J., Bock, B. B., Van den Berg, W., Visser, A. J., & Wiskerke, J. S. (2016). Community gardening and social cohesion: different designs, different motivations. Local Environment, 21(10), 1271-1287.

[110] http://bit.ly/piu-home (Source: capolitylab.org; retrieved: 16.4.2021)

[111] http://bit.ly/piu-rent (Source: forbes.com; retrieved: 16.4.2021)

with certain self-defined ritual behavioural sequences or by telling them to wear certain clothes. The development of rituals can also include a social component if these rituals are shared with others or shared on social media. Healthy behaviour which is learned at school is often packaged in the form of rituals, such as combining proper tooth brushing with a song that can be hummed while brushing one's teeth. If a health-promoting form of behaviour such as a fitness programme or a healthy dinner becomes a ritual, on the one hand it has an emotionally-regulating effect – it is calming. On the other hand, it contributes to forming a sense of identification with the behaviour. If people identify with being someone who eats healthily, that healthy eating will continue even when there are changes in their environment – for example, if they have moved to a new place and they shop elsewhere.

The mindfulness courses discussed in the 'general self-regulation capabilities' section help people gain a better sense of how their behaviour, feelings and habits are changing. Mindfulness, however, is more than just an increased awareness of change. Mindfulness also helps people accept these changes for the first time and deal with them productively – instead of letting them cause the individual stress, leading them to become mired in blame and self-doubt.

In many cases, awareness for change is also complemented with digital tools that give people feedback on the steps they have taken, amounts of food they have eaten or numbers of beers they have drunk. This helps many people who have a false self-image to obtain a clearer picture of themselves. Some people, for instance, believe that they only drink alcohol on special occasions. Through the digital registration of

their behaviour though, they realise that their lives are full of such special occasions. Achieving the previously discussed interim goals can also be checked easily with digital monitoring. Some people are more likely to feel driven to achieve these intermediate goals when the monitoring is combined with a 'gamification' approach[112]. They collect points and awards for 10,000 steps or going a week without eating meat. These awards are, in turn, often shared online.

Opportunites

Having the capabilities to behave in a healthy way is not enough on its own. An infrastructure is also needed. This includes, for example, making cycle paths available, which significantly increases the use of bicycles.[113] Towns and cities are being designed according to the principle of the 15-minute city – this concept, created by urban planner Carlos Moreno, envisages that all the amenities of daily life – bakers, supermarkets, pharmacies, schools, work, sports clubs – should be within a walking, cycling or public transport distance of just 15 minutes.[114] That would mean there is no need to use a car at all. People would exercise more and their social integration in their neighbourhood is strengthened. Something similar is achieved by providing parks and publicly accessible exercise equipment where people can jog, work out, or just relax when they want to cool off on hot summer days.

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[112] http://bit.ly/piu-game (Source: wikipedia.org; retrieved: 16.4.2021)

[113] http://bit.ly/piu-paris (Source: leparisien.fr; retrieved: 16.4.2021)

[114] https://www.15minutecity.com/ (retrieved: 16.4.2021)

«Putting on socks and shoes, for example: first left, then right, even if I picked up the right shoe first.»

Examples of routines and rituals from an exploratory GDI survey

Would you like your children to be more active, or see the social isolation of older people to be reduced? Then ban private car traffic from local neighbourhood streets, as Barcelona is doing with its 'Superblock' strategy.

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For healthy behaviours to be achievable, a wide range of healthy foods that are accessible to less well-off families must be available. Food manufacturers have also undertaken to include nutritional information in large print on their packaging.[115] This is despite the fact that most people have long-since used apps to compare the nutritional values of different foods.[116] This means it is possible for consumers to choose a healthy lifestyle; thanks to this transparency, they can find out that certain products are less healthy than they actually seem. The prerequisite for this is, of course, that consumers also understand these nutritional values, which is also an educational task.

Healthy living has to be easy. By making healthy eating affordable, for instance.

Lisa Guggenbühl, Gesundheitsförderung Schweiz

Promoting healthy behaviour is hugely multifaceted and context-dependent. Supermarkets have begun making personalised digital suggestions for inviting menus with healthy food. Time displays at bus stops not only tell people when the next bus is coming, but also whether there would be enough time to walk to the next stop. Diners are offering healthy and varied menus, rather than traditional food like schnitzel and fries.

Already possible tomorrow

We decided against making our scenario particularly futuristic. Most of it could be implemented tomorrow. The hurdles aren't technical, they are mostly social. That doesn't make them any easier to overcome, though. The discussions that are to be encouraged by the scenario, however, revolve more around the role and goals of our healthcare system, personal responsibility and our ideas about human nature that we start from. Moreover, it is more about what we want and how we want a society to work rather than what we might invent and when. By formulating, and in some cases, exaggerating the future role of prevention, the discourse should be shifted from the questions of 'when' and 'if' to the question of 'how'. How do we want to carry out prevention in the future?

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[115] http://bit.ly/piu-nzz (Source: nzz.ch; retrieved: 16.4.2021)
[116] https://www.codecheck.info/ (retrieved: 16.4.2021)

Behavior is contagious

60% The chance to become overweight increases by 60% if a close person becomes overweight (see page 49).

Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. New England journal of medicine, 357(4), 370-379.

Conclusion

We assume that the world will change faster in the future than it has in the past – on both an individual and collective level. This confronts people with the challenge of maintaining their health-promoting habits, despite all of the disruption that the changes will bring. On the other hand, change is also an opportunity that can be used for a controlled change in personal habits, as habits are easier to amend during times of change. Preventive healthcare work that supports both the maintaining of habits and their controlled change is therefore becoming more important and effective than ever before in a changing world.

For the change in our habits to move in a desirable direction for the individual, the capability to self-regulate and engage in self-reflection is necessary. Luckily, these abilities are not innate, but depend on the circumstances in which one finds oneself, and they can also be learned and taught. Adapting to circumstances and learning and teaching self-regulation capabilities are therefore becoming increasingly important aspects of prevention work, which extends far beyond the conventional understanding of prevention with anti-smoking campaigns and prostate screenings, for example.

Strengthening these self-regulation resources can go a long way and mean, for example, strengthening neighbourhood biodiversity, which makes people happier overall, and which in turn leads them to brush their teeth with greater discipline (see 'General self-regulation capabilities', p. 34). In addition to the traditional stakeholders in the healthcare sector such as government agencies, employers and associations such as the Swiss Lung League, new stakeholders are also entering the arena: from urban planners to mindfulness coaches and social media influencers.

When we talk about promotion and prevention of health, the question about the individual's capacity to decide invariably arises. Whose role is it to promote health? The government's? Or is it, in fact, the responsibility of the individual? Do people have an obligation to their community to behave as healthily as possible and, therefore, in a cost-saving way? Or does one have the right to lead a life, however unhealthy, which is financed by the community? These questions are becoming increasingly urgent as the costs of healthcare rise.

Measures which strengthen self-regulation have the advantage that they do not prescribe certain forms of behaviour. They serve self-empowerment, allowing people to act on an autonomous and self-determined basis. We have also discussed desirable behaviour and good habits. This implies a right and a wrong, but can also be considered on a completely subjective level. Strengthened self-regulation allows people to be more likely to engage in behaviour that they personally find to be desirable and good. Those who want to play video games all night should be free to do so. He or she should simply make a conscious decision.

Most people want to exercise more, eat healthier food, sleep more regularly, etc. Unfortunately, this doesn't always work out as planned. Not least, because people can become victims of their bad habits. Especially when many habits have not been consciously formed but have crept in gradually, almost without them being noticed. If someone never questions the habits that have crept into their lives, that person lacks personal autonomy just as much as if they were told by the government how to behave. In this respect, the capability to self-regulate is a prerequisite for self-responsibility.

It is certainly true that self-regulation, self-empowerment and self-responsibility are necessary. However, the reduction to the individual level doesn't go far enough. The pandemic has made it clear that we aren't only responsible for ourselves, but also for others. This is clear when wearing a mask, for example. The same applies to vaccinations. Having that jab in the upper arm is something many do out of their responsibility to others (for example, the elderly and people with pre-existing conditions). However, this altruism presupposes trust in the willingness of others to vaccinate and in the expertise of the responsible authorities. This means that maintaining a sense of social trust can also be seen as a preventive measure also in the field of healthcare.

It isn't just viruses that are contagious, however. Forms of behaviour are, too. If I start smoking, for example, I increase the chances of others around me starting smoking as well. Seen in this light, one could say that my smoking, too, is not just about self-responsibility, but implies a responsibility towards others (not to mention any health costs). Considering that almost every action affects other people in some way and that we are not islands, it is difficult to draw the line as to where one's own freedom ends and that of others begins.

This boundary must be negotiated at the societal level. It should also take place as democratically as possible. In the case of the pandemic in particular, much of the resistance to measures such as compulsory mask-wearing arose not so much because of the act itself, but from a defensive attitude towards government authority.

In negotiating the limits of freedom and responsibility, it is necessary to remember that neither freedom nor responsibility are zero-sum games. Allowing people freedoms does not necessarily restrict the freedom of others. Taking responsibility for people does not exclude their own personal responsibility. One reason why the term 'personal responsibility' has prevailed over the simpler term 'responsibility' may be because the latter was understood as being paternalistic or incapacitating. Taking responsibility, the objection goes, excludes personal responsibility. However, it doesn't have to be that way. Only if someone has sufficient resources can that person engage in self-regulation and therefore take personal responsibility. We have seen, for example, that direct payments in the field of development cooperation lead to the recipients spending less money on alcohol and cigarettes than they did before. The example of Scandinavian countries also shows that a welfare state does not necessarily have to be incapacitating. Scandinavians engage a lot in volunteering, despite high levels of government intervention, (see GDI study: 'The new volunteers') and are not exactly reticent when it comes to setting up businesses, for example.

Responsibility can therefore add up – at least up to a certain point, which has to be negotiated. In a world in which everyone takes more responsibility for each other, we can respond to crises more resiliently. We are better able to reflect on our own habits and take responsibility for them. Think of our consumer- and throwaway behaviour and climate change.

Of course, one can argue that in the future, the negotiation of responsibility, and with its self-regulation capability and autonomy, will become obsolete if we are all controlled by our smartphones. Whether that is financially, through prohibitions and offerings, or through

a point system like in the Chinese 'Social Credit Score'[117] (at least the western idea of it). This could also have been included as a scenario. However, we do not see the role of scenarios as stirring up fears about the future. This only leads to a reinforcement of the status-quo, even if the status-quo is no longer able to rise to new challenges, which therefore leads to a perceived loss of control when the world changes. Rather, we want to show that a future with more self-empowerment is possible, and that prevention, especially in a changing world, is an important building block in achieving this.

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[117] http://bit.ly/piu-scs (Source: wikipedia.org; retrieved: 16.4.2021)

Experts

We were able to interview the following experts for this study. Their ideas are included throughout the text and not only in the passages where they are quoted verbatim. We thank them for sharing their valuable experience with us.

Christine Blume, Sleep Researcher at the Centre for Chronobiology Basel
Jérôme Cosandey, Director for French-speaking Switzerland, Head of Research "Sustainable Welfare Policy"
Lisa Guggenbühl, Health Promotion Switzerland
Martin Hafen, Institute for Social Management, Social Policy and Prevention, Lucerne University of Applied Sciences and Arts
Fridolin Marty, economiesuisse
Philippe Müller, the-sports-psychologists.ch
Lars Münter, Nordic Health
Regula Saner, Federally Recognised Psychotherapist, Mindfulness Teacher and Head of the Centre for Mindfulness Basel
Urte Scholz, Chair of Applied Social and Health Psychology, University of Zurich & President of the Swiss Society for Health Psychology
Bas Verplanken, Social Psychologist, University of Bath
Kristian Villadsen, Partner at Gehl Architects, Copenhagen
Dominik Weber, Health Promotion Switzerland
Lukas Zahner, Head of CAS "Personal Health Coach

Glossary

Altruism
Altruism in everyday language means "unselfishness, selflessness, a way of thinking and acting characterised by consideration for others.

Behavioural Change
Behavioural change theories are attempts to explain why behaviours change. These theories cite environmental, personality and behavioural characteristics as the most important factors in determining behaviour. In recent years, there has been growing interest in applying these theories to the fields of health, education, criminology, energy and international development, in the hope that understanding behavioural change will improve the services offered in these areas.

Blockchain
A blockchain is a continuously expandable list of records called "blocks" that are linked together using cryptographic techniques. Each block typically contains a cryptographically secure hash (scatter value) of the previous block, a timestamp and transaction data. A blockchain is not stored centrally, but is maintained as a distributed register. All participants store their own copy and update it.

Body Mass Index (BMI)
The body mass index - also body mass index, body mass number or Quetelet-Kaup index - is a measure for evaluating a person's body weight in relation to their body size.

Disruption
The term "disruption" (from the English word "disrupt": to destroy, to interrupt) describes a procedure or process in which traditional social patterns, behaviours, business models, technologies or procedures are radically questioned and largely or even completely displaced or changed.

Gamification
Gamification is the application of game-typical elements in a non-game context. Gamification is also known as gameification or gamification.

Gig Economy
Gig economy (from English gig for "gig" and economy for "economy") refers to a part of the labour market where small jobs are given to independent self-employed, freelancers or marginally employed people on a short-term basis.

Homeostasis
In physiology, the term homeostasis describes the maintenance of largely constant conditions in an open system. Homeostasis creates a dynamic equilibrium and is thus an essential principle for the life support and function of an organism or organ.

Influencers
Since the 2000s, influencers have been people who use their strong presence and high reputation in social networks to promote products or lifestyles, for example.

Memes
The meme is the subject of meme theory and refers to a single content of consciousness, for example a thought. It can be passed on through communication and internalised through the process of imitation, thus multiplying and being perpetuated socioculturally in a similar way to how genes are inherited biologically.

Nudging
Nudge is a term from the field of behavioural economics. A nudge is a method of influencing people's behaviour without having to resort to prohibitions and commandments or to changing economic incentives.

Prevention

Prevention refers to measures aimed at reducing risks or mitigating the harmful consequences of disasters or other undesirable situations. In this study, we focus primarily on health-promoting primary prevention in the context of habits. Measures that target healthy people and reduce the likelihood of disease occurrence.

Quantified Self

"The Quantified Self" is a network of users and providers of methods as well as hardware and software solutions with the help of which they record, analyse and evaluate, for example, environmental and personal data. A central goal is to gain knowledge about personal, health-related and sporting issues, but also habit-specific questions. Quantified Self as a term is now also used outside the network in connection with data-based self-optimisation.

Resilience

Resilience (from Latin resilire 'to bounce back' 'to rebound') is the process by which individuals respond to challenges and changes by adapting their behaviour. This process includes influencing factors that require resilience (e.g. trauma), factors that promote resilience (e.g. resources) and consequences (e.g. changes in behaviour or attitudes). Resilience can make an important contribution to an individual's ability to recover or respond to challenges and change. In medicine, resilience also refers to the maintenance or rapid recovery of mental health during or after stressful life circumstances and is defined as the result of adaptation to stressors.

Ritual

A ritual is an action with a high symbolic content, usually formal and often solemn, which takes place according to predefined rules. It is often accompanied by certain word formulas and fixed gestures and can be of a religious or secular nature (e.g. church service, greeting, wedding, funeral, admission ceremony, etc.).

Routine

Routine or habit is the term used to describe a reaction pattern developed under similar conditions, which has been stereotyped through repetition and is carried out as if automatically under similar situational conditions according to the same reaction pattern, if it is not consciously avoided or suppressed. There are habits of feeling, thinking and behaviour.

Self-regulation

Self-regulation includes, among other things, the mental handling of one's own feelings and moods and the ability to realise intentions through purposeful and realistic action. It also includes the competence to subordinate short-term desires for satisfaction to longer-term goals.

Social Credit Score

The social credit system is an online rating or "social scoring" system in the People's Republic of China. It represents an attempt at total control of the population by awarding "points" for desirable behaviour and withdrawing them for negative behaviour.

Virtual Reality

Virtual reality refers to a real-time computer-generated, interactive virtual environment.