Why am I here?

Having a purpose to what you do could help you live longer – and better, finds Teal Burrell

SOMETHING to live for. This simple idea is at the heart of our greatest stories, driving our heroes on. It is the thread from which more complex philosophies are woven. As Nietzsche once wrote, "He who has a why to live for can bear almost any how".

As human beings, it is hard for us to shake the idea that our existence must have significance beyond the here and now. Life begins and ends, yes, but surely there is a greater meaning. The trouble is, these stories we tell ourselves do nothing to soften the harsh reality: as far as the universe is concerned, we are nothing but fleeting and randomly assembled collections of energy and matter. One day, we will all be dust.

One day, but not yet. Just because life is ultimately meaningless doesn't stop us searching for meaning while we are alive. Some seek it in religion, others in a career, money, family or pure escapism. But all who find it seem to stumble across the same thing – a thing psychologists call "purpose".

The notion of purpose in life may seem ill-defined and even unscientific. But a growing heap of research is pinning down what it is, and how it affects our lives. People with a greater sense of purpose live longer, sleep better and have better sex. Purpose cuts the risk of stroke and depression. It helps people recover from addiction or manage their glucose levels if they are diabetic. If a pharmaceutical company could bottle such a treatment, it would make billions. But you can find your own, and it's free.

The study of how purpose influences our health largely began with Viktor Frankl, an Austrian psychiatrist who survived four Nazi concentration camps. He noticed that some of his fellow prisoners were far more likely to survive than others. "Woe to him who saw no more sense in his life, no aim, no purpose, and therefore, no point in carrying on. He was soon lost," he later wrote. After the second world war, Frankl dedicated his work to understanding the role of purpose and developed a therapy based on his findings.

Beyond happiness

Today, researchers define purpose as a sense of direction in life – a long-term goal set around one's core values, that makes life worth living, and shapes daily behaviour. It is a component of broader measures of subjective well-being or happiness (see "How do you measure purpose?" page 32), in which there has been a surge of interest in the past two decades. That's why, in 2012, then United Nations secretary-general Ban Ki-moon commissioned the first ever *World Happiness Report*, which has been updated annually since.

Measures of happiness can reflect broader social issues such as inequality, but when researchers look at the individual elements that make up well-being, they find purpose on its own has a unique influence on health.

Of course, teasing out whether it is actually purpose itself, and not the fact that purposeful people may exercise more or eat better, can be difficult. But over the past 10 years, the findings about the health benefits of purpose have been remarkably consistent – revealing that, among other advantages, alcoholics whose sense of purpose increased during treatment were less likely to resume heavy ›

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drinking six months later, that people with higher purpose were less likely to develop sleep disturbances with age, and that women with more purpose rated their sex lives as more enjoyable. These findings persist "even after statistically controlling for age, race, gender, education, income, health status and health behaviours", says Victor Strecher, a public health researcher at the University of Michigan in Ann Arbor and author of the book, *Life on Purpose*.

In an analysis of 7000 middle-aged people in the US, even small increases in sense of purpose were associated with big drops in the chances of dying during a period of 14 years. A study of more than 9000 English people over 50 years old found that – even after adjusting for things like education, depression, smoking and exercise – those in the highest quartile of purpose had a 30 per cent lower risk of death over nearly a decade compared with those in the lowest quartile. Other studies show higher purpose cuts risk of heart disease by 27 per cent, stroke by 22 per cent and Alzheimer's disease by half.

The only reason purpose isn't a top public health priority, says Strecher, is because it somehow feels too vague or ephemeral. "It's not a construct that feels scientific enough," he says. "If this were a physical issue or a new drug or a gene, you would see lots of funding going into it."

Some of the scepticism has to do with concerns that purpose is merely a stand-in for opportunity in life, or wealth. Indeed, in recent research, Patrick Hill, now at Washington University in St Louis, did find that people with a stronger sense of purpose tended to have more money to begin with, and earn more over the period studied.

Health benefits

But a 2007 Gallup poll of 141,000 people in 132 countries found that, even though people from wealthier countries rate themselves higher on measures of happiness, people from poorer nations tend to view their lives as more meaningful. Shigehiro Oishi at the University of Virginia in Charlottesville, who analysed the poll data, suspects this is in part because people in developing countries have more concrete things to focus on. "Their goals are clearer perhaps: to survive and believe. In rich countries, there are so many potential choices that it could be hard to see clearly," he says.

Could it be that purpose is just another term for religious faith? Oishi's study did find that nations with the highest ratings of meaning in life were also the most religious. And religious people do tend to report having more purpose. But efforts to disentangle the two have revealed differences. Religiosity doesn't predict a lower risk of heart attack or stroke, for example. And certainly many non-religious people have high levels of purpose.

In fact, few of us rank on the very low end of the scale. "We tend to focus on the utter meaninglessness of the world," says Samantha Heintzelman at the University of Virginia. But, "for the most part, people feel like their lives are pretty meaningful".

So how does that meaning, that sense of purpose, actually improve your health? In part, it may be because greater purpose makes people more conscientious about maintaining their health. But Steven Cole at the University of California, Los Angeles, thinks there's more to it. "If people are living longer, there's got to be some biology underpinning that," he says. Cole has spent years studying how negative experiences such as loneliness and stress can increase the expression of genes promoting inflammation, which can cause cardiovascular disease, Alzheimer's or cancer.

In 2013, Cole examined the influence of well-being instead. He focused on two types: hedonic, from pleasure and rewards, and eudaemonic, from having a purpose beyond self-gratification. These two aspects were measured by having participants note down their well-being over the previous week, how often they felt happy (hedonic) or that their life had a sense of direction (eudaemonic), for example. Although scoring highly in one often meant scoring highly in the other and both correlated with lower levels of depression, they had opposite effects on gene expression. People with higher measures of hedonic well-being had higher expression of inflammatory genes and lower expression of genes for disease-fighting antibodies, a pattern also seen in loneliness and stress. For people scoring highest on eudaemonia, it was the opposite. "There were surprises all around," Cole says. "The biggest surprise being that you can feel similarly happy but the biology looks so notably different."

Cole suspects eudaemonia – with its focus on purpose – decreases the nervous system's reaction to sudden danger that increases heart rate and breathing and surges of adrenaline. Over-activation of this stress-response system, as you see with chronic stress, causes harmful inflammation. "There may be something saying 'be less frightened, or less worried, anxious or uncertain'," says Cole.

"If people with purpose live longer, there must be some biology underpinning that"

That something could be a brain region called the ventral striatum, an area activated when people are told to focus on things of value. Cole has found in as-yet-unpublished research that people with more activity in this area show similar patterns of gene expression to those with high levels of eudaemonic well-being. Focusing on something positive and bigger than yourself may activate the ventral striatum, which can inhibit areas like the amygdala, which usually promotes the stress response. Another indication of this comes from research showing that higher scores on a scale of purpose correlated with less amygdala activation.

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Full circle: having goals that benefit others may provide particularly strong benefits for you

And one study indicates that people with higher eudaemonic well-being have both increased activity in the ventral striatum and lower levels of the stress hormone cortisol. "Things that you value can override things that you fear," says Cole.

An alternative theory for how purpose could affect biology is by preserving telomeres, caps on the ends of chromosomes that protect DNA from damage, but that shorten with age and stress. A study on stress reduction through meditation has found that it could defend telomeres. But close analysis showed that the benefit was down to a change in sense of purpose, not the meditation directly: the greater a person's purpose became, the more of the protein telomerase they had to protect their telomeres.

Because of findings like these, some researchers think purpose should be more of a public policy priority, shifting away from traditional measures of economy like GDP, and narrowing the focus of happiness campaigns. Doing this would reduce early mortality, give us better overall health and cut the need for medical help, says Michael Steger at Colorado State University in Fort Collins.

It may also help us all get along. Hill has found that people who report higher levels of purpose are less distressed in situations where they are in the minority. It makes sense: people on a mission must accept that achieving their aims requires getting along with others. "Whether goals are focused on helping others or not, it's very rare that our life goals don't involve others at all," he says.

This is all well and good if you're already brimming with direction, but how can people boost their sense of purpose if it is lacking? There are several different strategies. As the study on telomeres indicates, meditation can have an effect. And other research has shown that eudaemonic well-being is strengthened by carrying out random acts of kindness. Cole has found that having a purpose that benefits others may be particularly helpful. But striving for something that isn't necessarily constructive, like climbing a mountain, may be enough to create the health-boosting biology he sees in his studies.

To identify or strengthen your sense of purpose, Steger suggests starting small, by focusing first on making work more meaningful or becoming more invested in relationships. Strecher recommends setting a different purpose for each of four domains in life – family, work, community and personal – and acknowledging that your focus will shift between them over time, and the goals themselves can shift too.

Purpose pills

Strecher says to consider what you would like to be said about you at your memorial, or to identify people you would like to emulate. He is also developing an app called Jool that he hopes can eventually serve as a kind of "purpose pill". Users begin with an assessment, and then get encouragement and guidance as they go on. It is currently being tested by companies to help employees hone their sense of purpose – and boost productivity. His team has been following an initial group of users for over a year, and they will begin randomised studies in the coming months.

There are also more formal therapies that foster purpose and meaning in life for people with conditions such as depression. For example, Dolores Gallagher-Thompson at Stanford University in California, has found that cognitive behavioural therapy can promote meaningfulness. She encourages patients to consider their legacy and how they might provide a good example for children and grandchildren.

Purpose isn't a fixed entity – it waxes and wanes with changes in life. Many people experience a drop in purpose following retirement, for instance, but can regain it by engaging in the community, helping others and remaining sociable. And, as Hill found, the health effects of purpose are apparent whether someone is 20 or 70. "To me, that's evidence suggesting that whenever one finds a purpose it can still imbue benefits," he says. In other words, it's never too late to start seeking the meaning of life. ■

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HOW DO YOU MEASURE PURPOSE?

To determine whether purpose affects health and longevity, you first have to measure it. To do this, many researchers turn to a set of scales developed in the 1980s by the psychologist Carol Ryff at the University of Wisconsin in Madison.

Ryff's scales measure six different aspects of well-being: autonomy; environmental mastery (the feeling of being in control in your everyday environment); personal growth; positive relations with others; purpose in life and self-acceptance. For each item, people read a series of statements, and select one of six responses ranging from "strongly disagree" to "strongly agree". These types of scales are often used to assess national levels of well-being.

For purpose, the statements include things like, "My aims in life have been more a source of satisfaction than frustration to me", or, "In the final analysis, I'm not sure that my life adds up to much".

Higher scores are based on stronger agreement with purposeful statements such as: "Some people wander aimlessly through life, but I am not one of them", and disagreement with remarks such as: "I live life one day at a time and don't really think about the future".

People who score in the bottom 25 per cent are considered to have low levels of purpose. A person with a high degree of purpose – someone who falls into the top 25 per cent – is characterised as someone who "has goals in life and a sense of directedness, feels there is meaning to present and past life, holds beliefs that give life purpose and has aims and objectives for living".