

## Strengthening Your Surgical Hand: Strengths-Based Profiling and Coaching of Surgical Trainees

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### Abstract

**Introduction:** As scientific and professional disciplines, medicine and surgery have a tendency to focus on deficiencies, namely what trainees do not know or are not good at doing. The philosophy of Positive Psychology and the notion of “Strengths” takes a different stance. It is an inherently positive process, seeing each trainee as an individual bringing a unique set of strengths to every situation. There is clear evidence from the commercial sector regarding improved performance and well-being when focusing on one’s strengths. We were therefore keen to investigate its potential role in the global development of trainee surgeons.

**Methods:** Surgical trainees from Core Training 1 to Specialty Training 8 in one training region of the United Kingdom were invited to voluntarily undertake the online Strengthscope™ assessment tool. The computer-generated report was reviewed by an Occupational Psychologist and trainees were then invited to have a strengths-focused feedback discussion on that report, either face-to-face or via telephone.

**Results:** Thirty four surgical trainees ranging from CT1 to ST6 completed the tool and 28 undertook the voluntary feedback sessions. Decisiveness, self-improvement, efficiency, emotional control and critical thinking were common strengths identified. Less commonly represented were leading, creativity and developing others. Trainees found that the tool and feedback helped them identify their strengths and embrace them, rather than fitting the surgical mould. It further aided the recognition of strengths in-overdrive and for some trainees it helped explain difficulties they had experienced in previous jobs. It provided insight into individual motivations and character whilst also highlighting how others in the workplace might perceive them. Trainees liked the emphasis on the building up of positive attributes and utilizing innate skills and strengths. The feedback consultation from an accredited coach trained in the Strengthscope™ tool was judged by trainees to be crucial to a full understanding of the report and its potential implications.

**Conclusions:** Surgical trainees have a wide range of strengths which, if identified and focused upon, could help them to fulfil their greatest potential at work. Strengthscope™ has provided new insights into the range of skills and talents of surgical trainees and has a potential role in providing more advanced educational supervision and mentorship. For these trainees, the assessment and feedback discussion aided their personal and professional development, highlighting where their most significant strengths lay with a view to making their daily working lives more fulfilling and, hopefully, helping them excel.

**Keywords:** Strengthscope™, surgery, training, mentoring, positive psychology, non-technical skills

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## Introduction

Surgical training has changed considerably in recent years. Surgical skills training, both within dedicated surgical training centers and at home on virtual reality simulators, are becoming the norm. Enhancing patient safety and reducing adverse events in the operating room have also led to increased interest in the non-technical aspects of surgical training (e.g. team working, communication, personal insight). This led us to explore what more can be done to support the next generation of surgeons in their personal development in order to improve their overall performance and lead a happier working life.

As scientific and professional disciplines, medicine and surgery have a tendency to focus on deficiencies, namely what trainees do not know or are not good at doing (e.g. “your knots are not secure”; “your ward round needs to be more efficient”). Ongoing feedback, while it may be delivered in a constructive manner, is much less likely to mention identified strengths, instead focusing attention on areas of relative weakness requiring further refinement.

The philosophy of Positive Psychology and the associated notion of Strengths is an inherently positive process, viewing each trainee as an individual bringing a unique set of strengths to every situation. The Positive Psychology movement signaled a move towards finding and nurturing talent and helping make an individual’s life more fulfilling.<sup>1</sup> Doctor Seligman believed that happiness occurred when an individual identified their signature strengths and channelled them towards something larger than oneself. Nurturing these strengths could benefit health, relationships, and careers.<sup>1</sup>

The notion of strengths has now been firmly embedded in the commercial world, where the development of strengths-based cultures in organizations has been seen to deliver tangible business benefits including productivity, customer loyalty, employee retention<sup>2</sup> and high quality problem solving.<sup>3-5</sup> Strengthscope™ has been used commercially within the healthcare sector but this was the first time it was used specifically with any doctors. With the growing base of commercial evidence pointing to improved performance and well-being when focusing on one’s strengths, we wished to investigate its potential role in the global development of trainee surgeons.

## Methods

### Measurement instrument

Strengthscope™ is one of a number of assessment tools that provides a comprehensive measurement of individual strengths at work. It comprises 24 strengths which are the most closely related to performance at work and are dependent on a person’s behavior, preferences, personality and motivations. Strengthscope™ consists of a series of rating scale items and dynamically generated questions to help respondents understand: (1) their work-related strengths or sources of energy and peak performance; (2) the tasks and activities that are most likely to energize them, and; (3) the likely consequences of using their strengths too much, too little or in a way that is not appropriate.

Some important facts about the Strengthscope™ tool are listed in Table 1. Strengthscope™ does not describe behavioral preference (as personality questionnaires do) but instead identifies the behaviors and activities which make one feel strong and energized. Although each strength is scored from 0 to 10 on a standardized, norm-referenced (general working population) scale, in practice, the absolute score is not as important as the relative position of that individual strength to the other strengths listed. The report is a comprehensive

**Table 1.** Strengthscope™—the essential points.

- Strengths are listed in alphabetical order so their sequence in the narrative sections of the report has no bearing.
- Seven strengths were chosen because this is the number of items an individual can typically retain in their short-term memory.
- A strength just below “the Significant Seven” may still be an important strength.
- The absolute score for a particular strength is not as important as the relative position of that individual strength to the others listed.
- Strengths are related to the person and not the role or seniority level—so peak work performance is found when someone’s personal strengths align with their job specific competencies and the organization’s goals (‘Right person, Right place, Right time’).
- Strengthscope™ is not a measure of competence, e.g. Compassion might not be in a trainee’s top seven strengths, yet they might evidently be a compassionate doctor. It simply states that the trainee has seven (or more) other strengths which energise, excite or fulfil them more.

account of a respondent's strengths at work that forms the basis for a strength-based feedback discussion. It is this feedback discussion which provides the respondent with the best chance of maximizing their strengths at work. The dynamically-generated questions relate only to the top 7 strengths that users' responses to the questionnaire generate; they then go on to answer 3 sets of questions relating to their specific top 7 strengths. The system takes their responses to the standard questionnaire questions, calculates the rank ordering of their strength scores across all 24 strengths, and then dynamically generates 3 sets of questions relating to their top 7 strengths by rank order.

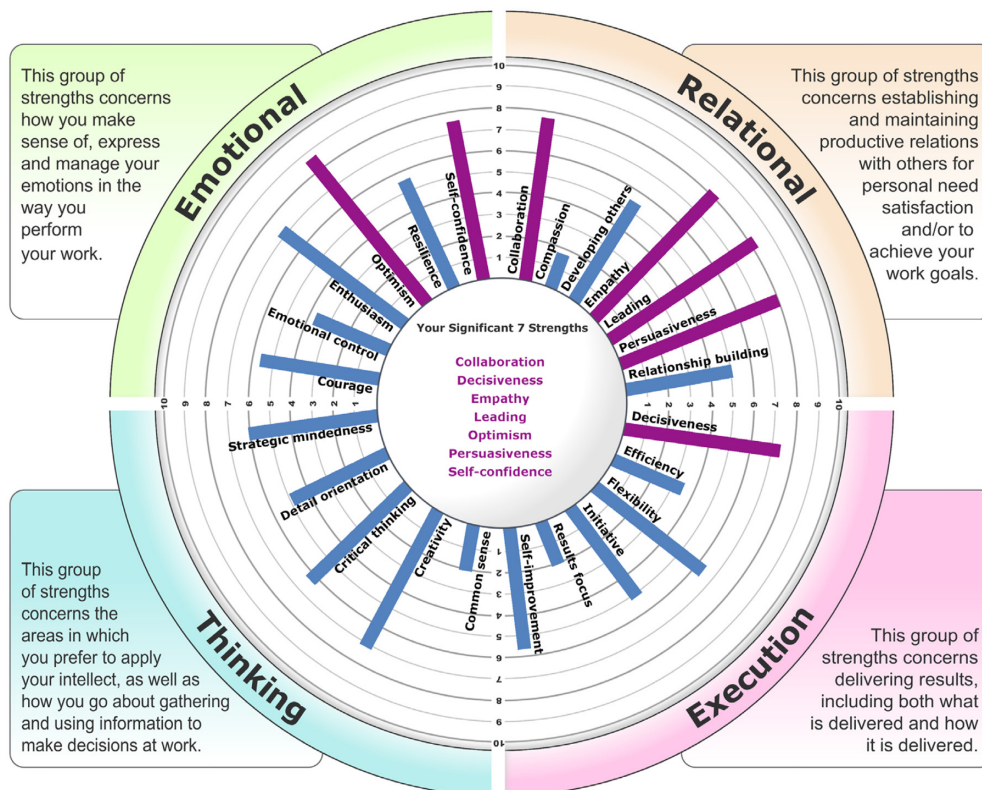
The computer-generated report is split into five sections. These sections include a listing of an individual's Significant Seven strengths, their strengths profile as compared to the comparison group, and suggestions for making the most of those Significant Seven strengths. The strengths are listed in alphabetical order so that their sequence in the report has no bearing. It is best to consider that the seven strengths listed at this moment in time are the strengths to focus on in terms of current and future goals.

Figure 1 provides an example graph that is generated by the system for a report. The 24 strengths are grouped into four clusters: Emotional, Relational, Thinking and Execution. The definition for each cluster is given in the text adjacent to the cluster. A sample report can be downloaded from the Strengthscope™ website (<http://www.strengthscope.com/docs/StrengthscopeReport.pdf>).

### Recruitment

This study was undertaken as part of a surgical skills training program whose primary aim is to improve the operative skills of Core Surgical Trainees (CT) and Specialty Surgical Trainees (ST). All trainees were from the Northern Deanery of the UK. Specialty trainees were all general surgeons whilst core trainees had either an ENT or general surgery focus.

Doctors in the UK undertake two compulsory Foundation Years covering a broad range of specialties in primary and secondary care. Having decided on a surgical career and following competitive interviews, surgical trainees enter Core Surgical Training for two further years during which time they are expected to complete their first set of surgical exams. Further



**Figure 1.** An example of the “strengths profile” graph report a trainee would receive, showing 24 work-based strengths distributed across four clusters. © Strengths Partnership 2005–2012.



competitive interviews, with successful completion of exams, enables entry into Specialty Surgical training for a further 6 to 8 years before reaching consultancy.

Potential respondents were briefed on the strengths approach and the Strengthscope™ instrument during their surgical skills training days or via email. Trainees were invited to complete the Strengthscope™ questionnaire at a time convenient to them.

It was emphasized to potential respondents that the process was confidential and voluntary, independent of assessment, and aimed to aid their personal development. All participants were made aware that this was a research study whose results would be published in peer-reviewed journals. Each surgical trainee signed an individual consent form for the Surgical Skills Training research program. The lead author (DM) signed each completed consent form and returned it by hand. With this individual consent and observation of appropriate ethical principles, additional institutional consent was not sought.

Data collection was completed between October 2011 and April 2012. Trainees were at different stages in their surgical training, ranging from Core Trainees (CT1) to the more senior end of the spectrum, the highest grade represented being Surgical Trainee (ST8). Reports were available to the authors within 24 hours but only released to the individual trainee once a feedback date and time were agreed to by both parties.

### Feedback session

The feedback session duration was nominally set at sixty minutes. Feedback was ideally given in person or, if scheduling difficulties occurred, via telephone. Feedback sessions typically began with the coach exploring the surgical trainee's context, what they were enjoying about their work, and what internal or external performance challenges they were experiencing or had experienced previously.

The coach explained key assumptions regarding strengths development and explored the trainee's own assumptions about success and development. The focus then shifted towards helping the trainee explore their strengths, with a view to identifying three to four standout strengths from the Significant Seven. The conversation also considered how these strengths are combined to achieve peak performance.

Trainees were encouraged to find means by which to harness identified strengths more consciously in their

daily surgical practice and methods of making these strengths more visible to colleagues, patients, and other stakeholders at work. The coach assisted trainees in reflecting on situations where their strengths may enter an "overdrive" scenario (where the strength is overused and this results in unintended consequences). Conversations explored specific techniques to manage or mitigate those that have unintended negative implications.

In the remaining part of the session, trainees were invited to consider how they could reduce weaker areas either using their strengths or through building complementary partnerships to reduce their impact.

At the close of the session, the coach asked trainees to summarize their key learnings and checked that they understood how to translate learnings into improved performance.

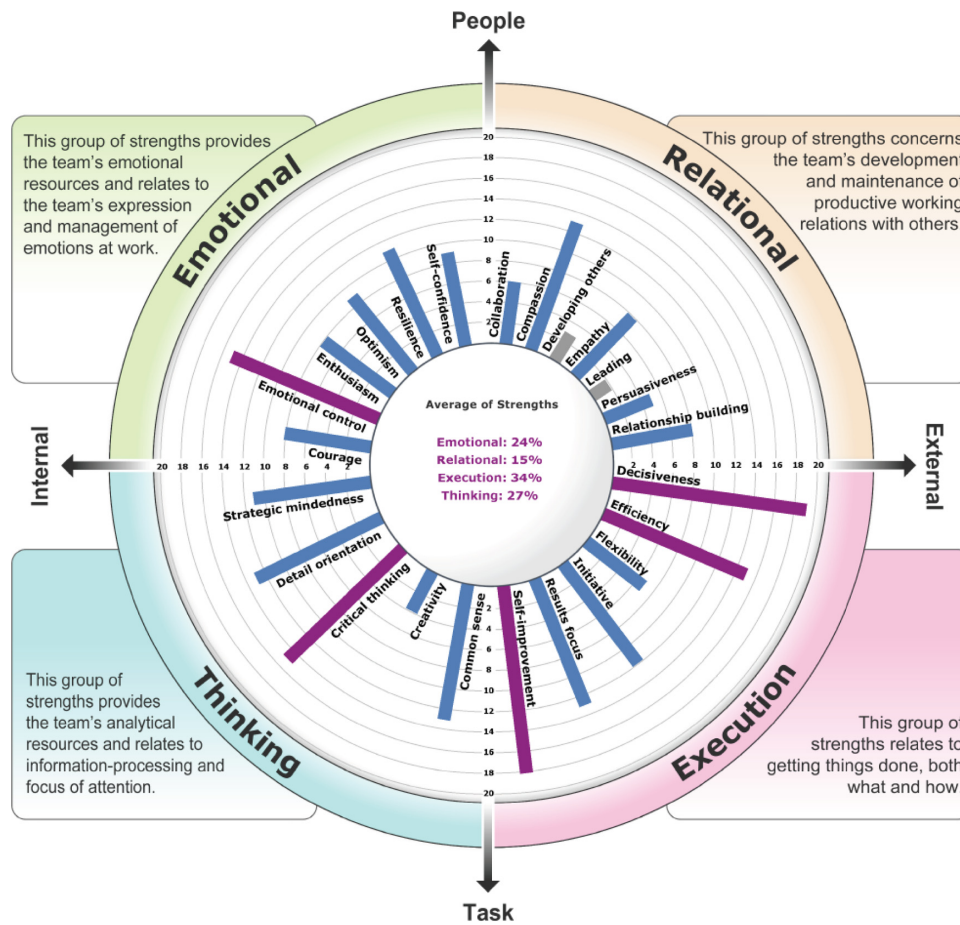
### Data analysis

The online questionnaires were automatically analyzed by The Strengths Partnership with the results of the tool presented in their standard format. Analysis of the reports was by observer impression, with the results presented in structured quantitative and qualitative forms. Percentages, tables, and figures were created in Microsoft Word, Excel and PowerPoint (Microsoft XP Professional 2003). The richest source of information and reflections came from trainees via the face-to-face and telephone feedback sessions undertaken by one author (MM) and the informal discussions at surgical training days with the other author (DM).

### Results

Thirty four surgical trainees completed the Strengthscope™ tool. Twenty five (74%) were male and the median age was 28 years (IQR 27–72). Distribution by training grade was CT1 (n = 3), CT2 (n = 12), ST3 (n = 8), ST4 (n = 2), ST5 (n = 1), ST6 (n = 4), ST7 (n = 3), ST8 (n = 1). Eleven (32%) received face-to-face feedback and a further 15 (44%) received telephone-based feedback. The tool was easily accessible and straightforward to navigate online. The coach had not met any of the trainees prior to the study and undertook the process without any prior discussions with the surgical trainer (DM). Notes were taken but the sessions were not recorded.

Figure 2 shows the amalgamated Strengthscope™ profiles of all participants in the study in terms of the number who reported each strength as being amongst their 'Significant Seven' (their top 7 strengths by rank



**Figure 2.** Amalgamated Strengthscope™ profiles for 34 Surgical trainees—showing number of respondents reporting each strength in their “Significant Seven”. © Strengths Partnership 2005–2012.

order). The frequency of strengths reported amongst this group of 34 ranged from 2 (Leading) to 19 (Decisiveness). Decisiveness, Self-Improvement, Efficiency, Emotional Control and Critical Thinking were frequently present in the “Significant Seven” strength profiles of this cohort of surgical trainees. Less commonly represented were the strengths of Leading, Creativity and Developing Others.

Table 2 provides examples of how each strength might be evident to the trainee themselves or the surgical teams in which they work. Additionally, within Table 2, there are examples of how these strengths “in overdrive” (when a person overuses a strength or uses it in the wrong situation) might be apparent to their surgical trainer or team.

The feedback session from an accredited coach trained in the Strengthscope™ tool (MM) was judged by trainees to be crucial to a full understanding of the report and the potential implications. Indeed, many trainees intimated that the report alone would not

have sufficiently personalized the strengths for them, as illustrated below in extracts from their feedback (made anonymous for the purposes of this article):

Quote 1: The one-to-one session was very good, and I think I would have found it very difficult to get some real meaning from the Strengthscope™ report based purely upon the written explanation provided...

Quote 2: I think that the Strengthscope™ tool appeared to be fairly accurate with regard to the results it generated. Initially some of the characteristics seemed a bit abstract but, following discussion with the occupational psychologist (MM), the definitions being used were perhaps not the ones I had in my head...

Quote 3: I enjoyed the Strengthscope™ process. The telephone interview was well-conducted and gave ample opportunity to make sense of the results...

Quote 4: I thought that the session was excellent. The emphasis on building on positive attributes of your personality rather than negative ones was far more effective...

**Table 2.** “Surgical trainee significant strengths”—how they might be exhibited at their optimum or in overdrive.

<b>Strength</b>	<b>Exhibition of optimal strength</b>	<b>Strength in overdrive</b>
Collaboration	Trainee works cooperatively with others to overcome conflict and build a common goal, ensuring a common understanding between parties.	May seek out consensus that is unnecessary or inappropriate—including when a quick or straightforward decision is required.
Common sense	Makes pragmatic judgements based on practical thinking and previous experience.	May rely on obvious and pragmatic answers that have worked well in the past, dismissing new ideas and solutions.
Compassion	Demonstrates deep and genuine concern for the well-being of the patients on the ward.	People may take advantage of the trainee and their concern for patients, colleagues or friends.
Courage	Stands up for what is right or what they strongly believe in.	Will protect junior team members from bullying behaviours (even if it is detrimental to their career progression), may be perceived or may be perceived as reckless or extreme in the defending of views.
Creativity	Enjoys coming up with new ideas, is energised by thinking outside “the box”, questions current approaches to management and practice.	May overlook the obvious, tried and tested solutions or develop unworkable, eccentric ideas.
Critical thinking	Breaks down problems systematically and evaluates them objectively, simplifies difficult problems	Could continuously question and look for flaws, so appear negative or over-critical.
Decisiveness	Makes quick, confident and clear decisions even with limited facts, quickly perceiving the impact and implications of those decisions.	May make hasty or rash decisions, spending too little time considering the alternatives.
Detail orientation	Pays attention to detail, producing high quality output no matter what the pressures, with perfection strived for no matter how small the task.	Too much time may be spent on the detail at the expense of the bigger picture—seen as a perfectionist.
Developing others	Recognises others’ strengths and potential and helps them to optimise these, acting as mentor or coach, promoting others’ learning.	May spend excessive time helping others fulfil their development at the expense of their own.
Efficiency	Efficient, well ordered, well organised, good planner, makes action plans and lists.	Once the plan is set or the event unfolding, may leave little room for new information or changes in plans.
Emotional control	Trainee remains calm under pressure, controls against emotional outbursts, is aware of emotional triggers and how to control them.	May come across as dispassionate or aloof.
Empathy	Readily identifies with the patient’s situation, takes a keen interest in others’ situations and see things clearly from their perspective.	May become immersed in others’ (patients’ or colleagues’) situations and lose the ability to provide objective support and advice.
Enthusiasm	Shows passion and energy at work—whether for daily tasks, enthusing junior members of the team, achieving goals or presenting ideas and beliefs.	Trainee’s enthusiasm may overwhelm a situation or others present, appearing over-emotional or making others feel their views are not valued.
Flexibility	Trainee may be energised by fast-moving, unpredictable circumstances, is adaptable and flexible, embraces change.	Might be seen as restless, or a trainee that prefers change for change’s sake.
Initiative	A trainee who anticipates problems independently, solves problems or takes action without being asked to, gets involved in processes early to ensure their input is included.	May habitually start new initiatives without considering their chances of success or their political consequences.
Leading	A trainee who enjoys taking a leadership role and perhaps finds it easy to motivate people to act in a certain way. They can feel energised when given responsibility to motivate a team.	May take a leadership role when it is inappropriate or unnecessary, e.g. when someone else is already performing this well.
Optimism	Trainee looks for the positive in people, plans and projects, remains positive and upbeat about the future even when things go wrong.	May appear controlling or domineering. Can be seen as unrealistically positive, the positivity being “risky” if it doesn’t account for the wider picture or situation.

*(Continued)*



Table 2. (Continued)

Strength	Exhibition of optimal strength	Strength in overdrive
Persuasiveness	Enjoys negotiation and debate, persuading others to their way of thinking, wins arguments.	Trainee may appear to “stop at nothing” to persuade all, including seniors, of their opinions and stance, tries to influence most outcomes in their favour, may indulge in debate for debates sake.
Relationship building	Endeavours to build networks of contacts, enjoys meeting new people, builds close relationships with co-workers.	The focus on building networks and contacts may become an end in itself, so distracting time and energy from other areas.
Resilience	Can quickly recover from setbacks and sees them as opportunities, persists in trying to solve difficult problems.	Risk is taking on “mission impossible”, overcoming each obstacle regardless of the final mission’s value.
Results focus	Has a strong focus on results, completing tasks, takes immediate action to resolve problems, strong focus on goals.	Driving for results and completion may reduce their awareness of other aspects of the task or organization, e.g. colleague engagement and involvement, reflection and learning.
Self confidence	Trainee who trusts in their own abilities and judgements, conveying their ideas in a confident manner and not hesitating to stand forward for a task that they believe they can perform.	May cause trainee to overlook flaws in their own thinking and actions, or their feedback to others, perceived as brash or arrogant.
Self improvement	Trainees that put effort into learning and applying new things, tackling problems that are new to aid development, actively seeks out ways to learn from others.	May become overly focussed on accumulating knowledge and new learning irrespective of its likely usefulness.
Strategic mindedness	Appears orientated towards the future, predicts future trends and scenarios, creates imaginative future strategies.	The focus on the future may blur or distract from focus needed on current realities.

Quote 5: Developing these [strengths] with the discussion was also useful, partly to force me to reflect on my responses, previous experiences, and how these strengths may have related to both the positive and negative aspects of these situations.

Quote 6: I found the whole experience very interesting and it almost felt like a therapy session! I felt like I was made to reflect on feelings towards my job that I had never really done before and the coach (MM) gave me a lot of insight into my pattern of behaviors and personality at work. I don’t tend to talk about work much at home and have always adopted the policy of ‘don’t be afraid to cope!’ Therefore, I spoke to the coach (MM) on a very different level compared to the way I would discuss things with colleagues, and even very good friends. I enjoyed studying my Strengthscope™ results but it was the discussion with the coach (MM) that really put it into context. I would certainly recommend the process to others and it is something I would be very happy to go through again...

The feedback also provided a rich source of evidence and discussion points for the study team. Feedback was favorable in all trainees that responded spontaneously. The most commonly cited areas of impact are described, with illustration, in the figures and tables.

For some trainees, the Strengthscope™ experience confirmed what they felt to be a true representation of themselves. Having this external validation provided an important confidence boost for them in their work and, for some, led to an increased sense of personal fulfilment and greater commitment to surgery.

Quote 1: For me personally, knowing the report and feedback did provide me with more confidence in my character because I used to be very harsh in judging myself, always concentrating on my weaknesses and not thinking of my strengths. However I do forget to use this most of the time!...

Quote 2: On a more positive note, the tool has helped me to see that my strengths are suited to work in surgery and has helped me to feel committed to the profession. The tool has also helped me to focus on my motivation factors to improve my work satisfaction and realize why I have found some jobs demoralizing in the past...

Quote 3: I found the study useful. It was very beneficial to see my main 7 strengths outlined and both the positive and negative aspects of these explained. This offered me insights into my motivations and character which I had been aware of previously, but it was interesting to see these qualities reiterated



on paper. This has helped me to see how I may be perceived by others and how to be aware of this (for instance, one of my strengths is self-confidence but this can easily be interpreted by others as arrogance)...

A number made reference to the self-critical nature of surgeons and their constant striving to conform to an idealized and ultimately unattainable “surgical personality”. However, with a new-found understanding of individual strengths, several reported that they were now able to appreciate the unique and diverse strengths that each trainee brought to their surgical practice. In essence, the comments would suggest that they were released from the pressure of an unattainable perfection and finally had permission to be their authentic selves:

Quote 1: It changed how I worked literally overnight. I remember when I first went into surgery, I felt like I had to be a certain type of person; to “fit the mould”. One of my highlighted strengths was my ability to be empathic and sympathetic and, since receiving this feedback, I have been reminded that not only is this a big part of my personality but also a strength. As a result, I have felt more confident at work and I have started to naturally incorporate this into patient consultations to build up a rapport, with positive patient feedback, and an increasing sense of fulfilment...

Quote 2: I think that many surgical trainees are highly self-critical and motivated towards self-improvement. We tend to be acutely aware of times when we could have done things better but, in a training process as complex as ours, I think it can be difficult to tease out patterns. I think it can also be difficult to see why we might be struggling with specific aspects of training...

Quote 3: We are all going to be different surgeons at the end of the day—or even not!—and it is important that we utilize our natural personality and skills. For me, it identified key attributes that I could use in management and other roles that will be useful in surgery...

Others remained drawn to the notion that there might be an ideal set of “surgical strengths” and still had lingering doubts about how their profile would match up:

Quote 1: As a surgical trainee I have a couple of questions on my mind. What are the strengths of a surgical doctor? In the harsh, stressful, intense surgical world with the surgical persona are these actually strengths that will enable one to succeed in surgery? Can these strengths help in choosing a surgical path?

Quote 2: I’m not sure where to go with this for a couple of reasons. This is the first time I have tried something like this and, prior to this experience, I would probably described it as a load of rubbish. That’s a view I have changed having gone through the experience. As I said before, it appears accurate but I’m not sure how it can be used for development as to my knowledge we can’t define ideal qualities for a surgeon...

Several trainees derived particular benefit from the discussion around strengths in overdrive. They were actively able to reflect on surgical situations and appreciate events in a new light. Going forward, they would then have strategies to potentially manage or mitigate the impact of their strengths being “overdone”.

For me, the Strengthscope™ feedback helped me to identify the personality traits that are most relevant to my experience of surgical training. I felt that my strengths were clearly defined, and the idea of “strengths in overdrive” was highly resonant for me. Discussing the report gave an opportunity for focused reflection on how specific strengths might be used to address areas of relative weakness. The thing that surprised me most was how easy it was to translate the Strengthscope™ output into a practical strategy for dealing with certain aspects of training...

Some trainees had already been able to put this into practice:

I’ve actually found the ‘strength in overdrive’ bit the most useful. Based on the feedback, I’ve certainly tried to involve the team around me a bit more, rather than just try to do everything myself, and I’ve also tried to be flexible, allowing diagnoses and plans to evolve naturally rather than just picking one and doggedly going at it until the end. I also agree that my results focus can be a problem, I often find myself having done a procedure and then “on to the next”. Now I try to spend time reflecting both immediately afterwards and later...

Others were rather more skeptical about whether they would attribute changes they had made to the process itself:

I found the exercise very useful, and I am normally very skeptical about this kind of thing. Hearing that my intended career path matched up with my strengths on the test was reassuring. I have to be honest, I don’t think that it has changed my outlook, goals, or behavior in any way. However, it did open my eyes (just a little wider) to being more accepting of the unknown and to the different ways of reflecting upon myself as an individual, both personally and professionally. In the past





year, I have made more of an effort to be more reflective before contributing or intervening in group situations and in terms of patient interactions. I am unsure if this can be attributed to Strengthscope™ but it certainly affirmed the need for this in my mind...

Several trainees referred to the challenge of sustaining the change to focus on strength as opposed to weakness and deficiency:

Quote 1: I think that retraining the mind to use those strengths and not only thinking of weaknesses was hard. Interestingly, I heard some of my strengths before from other people, such as patients and colleagues, but I never believed them till I got the feedback!! I tried to use them. For example, there was a time when I did not get a training job—there was a strength about resilience. Another example, I thought too much compassion is a negative in surgery as one needs to be tougher!! I do not think that anymore!...

Quote 2: It was interesting to hear the results and the analysis. Some points were amazing to hear because they were so close to the truth and real life, yet I never thought of them in that light before. What I found interesting during this experience was that my mind kept diverting to one thought—yes that's nice to know but what are my weaknesses?

One trainee referred to the need for regular reinforcement during training:

I suppose, like anything of this sort, you quickly forget these things so continued feedback over training would be useful...

While it was felt to be a beneficial approach, there was a suggestion that not all trainees would embrace such an approach:

I think Strengthscope™ would be beneficial to trainees who are keen to reflect on their experiences. It definitely requires motivation from both sides to do the sessions. There may be trainees who do not see reflection as important—particularly in surgery!—and there would certainly be a challenge engaging these people...

In terms of timing the introduction of strengths-based approaches to trainee development, most observed-during the discussion and written feedback—that earlier in the training process would be better. For instance:

I would say that ST3/4 is a good time to do this study tool as we have already had several years of work in surgery to reflect on and relate our strengths to. Also, we can then develop these insights over our years as Specialty Trainees. I would guess that

it would also have value for senior SPRs before the move on to a Consultant level...

## Discussion

Medicine is an increasingly competency-focused profession where skills, knowledge, and behaviors are defined for particular roles and seniority levels. Crucially, strengths are related to the person and not the role or seniority level. This study highlights that there are strengths which are more commonly seen in this group of surgical trainees—namely Decisiveness, Self-improvement, Efficiency, Emotional control and Critical thinking. However, in keeping with the general population, their remaining strengths are more varied, which may be beneficial to patients clinically, to the healthcare team in which they work, and to the organizations with which they are linked.

This study was an opportunity to explore and work with the strengths of a young, highly motivated, enthusiastic, and professional workforce within the public sector. Optimal work performance is possible when one's personal strengths align with both their job-specific competencies and their organization's goals. Also, the strengths we bring to the workplace are present and hard-wired in our teens and therefore can withstand, as this study shows, the unintentional moulding effect of undergraduate and early postgraduate medical training.

Indeed, this study has provided the lead author (DM) with a new perspective on the diverse strengths, skills, and working approaches of surgical trainees. Whilst one needs to be cautious about over-rationalizing the working environment, the Strengthscope™ tool and this study have helped identify and promote each trainee's strengths. Strengths-based profiling has the potential to broaden the perspective of a supervisor and enable more detailed and focused verbal or written feedback. Trainers and supervisors will also remember trainees that they perhaps found more difficult to work with—the discussions below give insights into how trainer strengths can be useful in optimizing the trainee's strengths, to the benefit of the whole team. Overall, it has been fascinating to see the impact of the feedback session on trainees' interpretation of their role in the workplace and the visibility and use of their strengths.

Strengthscope™ is not a measure of competence. For instance, Compassion might not be in a trainee's



top seven strengths, yet there may be no doubt in the workplace that the trainee is considered to be a compassionate doctor. It merely states that the trainee has seven (or more) other strengths which energize, excite, or fulfil them more.

It is important for trainees to understand where strengths, if used excessively, could be detrimental to their work within the team. These are referred to as strengths in overdrive within Strengthscope™. A trainee whose strengths include Courage may find themselves at odds with a consultant who sees a clear hierarchy within the surgical team. The trainer might not welcome challenges to their decisions and therefore see the trainee as being disrespectful, without realizing that the trainee is simply responding to their strength. The trainee who features strongly with Empathy and Compassion may appear less efficient on ward rounds due to a more holistic approach to each consultation. A strength of Self-confidence could be construed as arrogance.

A trainee possessing Persuasiveness as a strength may appear to “stop at nothing” to persuade all, including senior leadership, of their opinions and stance. Alternatively, they may try to influence most outcomes in their favor. Perhaps they may indulge in debate for debate’s sake. For the supervisor or trainer, a suggested resolution for this strength in overdrive would be to utilize the trainer’s Empathy strength to provide the forum for the trainee to put forward their views whilst at the same time retaining Self-confidence and Courage to stand firm in the face of persuasion. Emotional control may also be an asset if the attempts to persuade become too strong. Ultimately however, any strength can counter or help facilitate the best from any other if the user adopts a considered and mindful approach.<sup>6</sup> The second column of Table 2 provides surgical examples of where each strength in overdrive might be detrimental to either the trainee or their team.

Less commonly represented strengths were Leading, Creativity and Developing Others. We had perhaps expected to see more evidence of Compassion and Empathy than we did within this admittedly small sample. It is important to note that if a strength is just below the respondent’s Significant Seven (a ‘bubbling under’ strength), it may still be an important strength and on a different day might be listed within the Significant Seven. It should also be noted

that the strengths approach does not seek to ignore areas of relative weakness (i.e. which could render a trainee clinically unsafe). As Linley observes, weaknesses must be compensated, accommodated, or alleviated in some way.<sup>7</sup> A focus on identifying strengths and proposing methods of enhancing strengths in clinical practice could improve trainee performance and make their job more fulfilling.

In developing the Strengthscope™ reports, seven strengths were chosen as the main summary output because this is the number of items an individual can typically retain in their short-term memory. Practically speaking, it is easier for individuals to focus their development on a smaller number of strengths than these Significant Seven. Strengthscope™ coaches would, therefore, generally hone in on the most relevant three standout strengths during the feedback sessions.

In this study, the coach (MM) was not only trained in the Strengthscope™ tool but also had chartered membership in the British Psychological Society. Whilst the latter qualification is not required to use the tool or deliver the feedback, it did ensure that the highest standard of psychological knowledge and expertise were available to trainees. The Strengthscope™ tool is not available to coaches until validated training by The Strengths Partnership is undertaken. However, The Strengths Partnership does not require formal qualifications in psychology (or any other discipline) in order to accredit individuals in the use of Strengthscope™.

The new generation of trainees have often undertaken other learning and personality tools in medical school (e.g. Kolb Learning Style Inventory® (KLSI®), Myers-Briggs Type Indicator (MBTI®)). The output of these instruments and associated processes tend to focus on the differences between people, for example, active experimentation versus reflective observation or introversion versus extroversion. This is in contrast to a strengths approach which identifies the unique cluster of strengths which energize and could propel an individual to future success. This is not to say that a strengths assessment tool cannot be applied very usefully alongside other psychometrics to give a powerful development outcome for respondents. For example, personality questionnaires (such as Occupational Personality Questionnaire®, Hogan Personality Inventory, and NEO PI-R) are used to identify behavioral styles with a strengths tool then pinpointing what might energize these behaviors. An



MBTI® assessment would identify a trainee's preferences while a strengths tool could explain some of the reasons behind these preferences.

## Limitations

Thirty four trainees voluntarily contributed to this study, representing 51% (n = 66) of those invited. This study is therefore a small one, which prevented sub-group analysis of different training grades or specialties. There is an uneven distribution in the training years involved, which could suggest a recruitment bias. The number of females involved in the study is consistent with the proportion of female surgical trainees currently in surgical training. The study is limited to General Surgical or ENT trainees within one training region of the United Kingdom, and not all trainees wished to receive feedback from their reports. After six months, we intend to formally survey all those who received feedback. Undertaking further research into whether certain clusters of strengths naturally draw trainees towards particular surgical specialties, and then comparing this cohort with similar age groups within the commercial sector are both exciting areas for future research.

The age of trainees involved ranged from 24 to 35. Previous Strengthscope™ research has shown that the prominence of strengths can alter over time. The older respondents get, the more likely they are to report higher levels of Collaboration, Courage, Creativity, Critical thinking, Decisiveness, Developing others, Efficiency, Empathy, Flexibility, Leading and Common sense. They also report lower levels of Detail orientation.<sup>6</sup> However, the test-retest reliability of Strengthscope™ is high (mean and median ratings are 0.80 and 0.81 respectively; coefficients range from 0.65 to 0.87), which means that an individual's profile in terms of Significant Seven strengths and overall pattern of profile is unlikely to change significantly over time.<sup>6</sup>

We did not undertake the multi-rater feedback option within Strengthscope™ for a number of reasons. Whilst it is undoubtedly valuable to see how visible a person's strengths are to their co-workers, this study was focused on an individual trainee's strengths and their personal perceptions. Many areas of healthcare are already overwhelmed with administration and we wished to avoid questionnaire fatigue

or a lack of engagement. Multi-rater feedback would be an important area for future investigation as it is beneficial to also focus attention on any "blind spots" between how a trainee views themselves versus how others view them. In the feedback discussion, trainees were encouraged to share their top seven strengths with trusted colleagues and explore their visibility in the various clinical settings.

The deficit approach to surgical training still prevails and perhaps the healthcare sector can learn from their commercial colleagues how to inspire their trainees to excel within and outside the team. Strengths can also be used to help resolve "non-strength" areas that represent limiting weaknesses. To minimize or resolve such weaknesses, a three pronged solution is suggested. This solution consists of using trainees' strengths to compensate for weaknesses, encouraging trainees to develop disciplined practice and habituation of new behaviors, and using other team members' strengths to compensate for trainee's weaknesses.

## Understanding strengths in terms of professional development

Trainees are likely to develop more rapidly if they focus on their strengths. Whilst surgical training has been traditionally about moulding consultants in terms of their technical surgical skills, team work, and decision-making capabilities, a greater consideration of trainees' individual strengths, both in optimal and overdrive scenarios, should enable them to develop more rapidly and cohesively within the team.

Surgery remains a specialty requiring good communication skills, team working and dexterity. However, it almost always requires leadership capability in terms of developing or reconfiguring services (e.g. enhanced recovery programs, increasing day case surgery), educational supervision, conflict resolution, and management roles (e.g. Clinical Director). Understanding your own strengths and ensuring that, within your team, you have a diverse pool of strengths from which to draw will prove useful in terms of delivering results. Organizations that have a better understanding of their medical staffs' strengths can not only help those staff to focus on their strengths but perhaps also better understand why there are areas of tension or differing opinions within groups.



## Implications for the clinical and educational supervisors

Strengths-oriented tools can be helpful for supervisors endeavoring to help the superb trainee excel. For the struggling trainee, focusing them on using their strengths to overcome current challenges is useful and “strengths in overdrive” may identify why they might be having difficulties in the first place. Developing a detailed understanding of whether certain clusters of strengths are associated with specific specialties could also help trainees make more informed career choices. This remains another potential area of future study.

## Strengthening surgical training

To strengthen surgical training, the authors would create and embed a new culture within surgery and medicine as a whole, one based on the appreciation of strengths as opposed to the more pervasive deficit model. This would be achieved via three strategies. The first strategy would be broadening the population of medical and other healthcare staff who are exposed to a strengths-based approach to team-working. A second strategy calls for spending time at supervisory meetings considering a trainee’s strengths and how to optimize these and then including these strength optimizations in their learning plans. Lastly, there is a need to engender a positive appreciation of everyone’s strengths within the theatre, ward, and clinic environments.

## Conclusions

Surgical trainees have a wide range of strengths which, if identified and focused upon, could help them to fulfil their greatest potential at work. Although certain strengths such as Decisiveness and Self-improvement featured more often, a undergraduate medical and postgraduate surgical training appears to select individuals with a wide range of strengths.

This study is the first to look at the strengths of trainees in the medical profession using the Strengthscope™ instrument. It has provided new insights into their range of skills and talents and has a potential role in providing more advanced educational supervision and mentorship. For trainees, it aided their personal and professional development, highlighting where their most significant strengths lie with a view to making their daily working lives more fulfilling and, ideally, helping them excel long term.

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## Author Contributions

DM, MM and PB undertook all aspects of this paper as the authors. All authors conceived and designed the experiments, analyzed the data, wrote all drafts of the manuscript, and undertook all revisions.

## Competing Interests

David and Margaret Macafee are siblings. Paul Brewerton is a founding director of The Strengths Partnership Ltd and co-author of Strengthscope™, who discounted the cost of the tool to enable its use with this cohort.

## Disclosures and Ethics

As a requirement of publication author(s) have provided to the publisher signed confirmation of compliance with legal and ethical obligations including but not limited to the following: authorship and contributorship, conflicts of interest, privacy and confidentiality and (where applicable) protection of human and animal research subjects. The authors have read and confirmed their agreement with the ICMJE authorship and conflict of interest criteria. The authors have also confirmed that this article is unique and not under consideration or published in any other publication, and that they have permission from rights holders to reproduce any copyrighted material. Any disclosures are made in this section. The external blind peer reviewers report no conflicts of interest.

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