

Neuroscience, GPs and Coaching – 10 Insights to help

Summary

- Insight 1: 3 Aspects to the human brain**
- Insight 2: Brains can work together or hijack each other**
- Insight 3: Be aware of going into survival mode**
- Insight 4: Provide safety and security and belonging and people automatically move into competency mode with access to the frontal cortex**
- Insight 5: The brain is plastic**
- Insight 6: Others leave footprints on our brains**
- Insight 7: Emotions are not extras but essential**
- Insight 8: Giving attention to and focusing on strengthens learning.**
- Insight 9: The brain is lazy and wants you to develop habits so that it doesn't have to work too hard.**
- Insight 10: Do away with Fear – that's what stops learning!**

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Introduction

Philip Larkin maintained that sex was discovered in 1963. Had he been talking about the brain he might have suggested that *it* was discovered in the 21st Century. Yes, as recently as that. Of course we always knew that we had brains, just as we already knew that sex has been around for a long time before 1963. But just as sex was liberated in the 1960s so most of the insights and learning into our fabulous brains have been found in the past 10 – 15 years. What we now know about our brains is truly astounding. Not that this knowledge has filtered down into our lives - yet. But it's on its way. As one brain guru puts it, *"The promised land is interpersonal neurobiology in one form or another."* (Professor Paul Brown). But the very terminology is sometimes itself the problem. "Interpersonal neurobiology" is not a term you come across in everyday conversation – what does it actually mean? It's the language of those who study the brain, neuroscientists and unfortunately, neuroscience speaks a language all their own, mostly inaccessible to us mere mortals.

This short article is going to attempt a translation and see if we can make sense of what discoveries about the brain mean in ordinary language and more importantly how they can be used in our everyday lives. And how might these insights be of help to busy GPs. I have been coaching GPs for some time now and want to gather that experience and connect it to these insights.

What is coaching?

First of all, coaching has long been used as a skilled intervention to release potential and build on existing talent. Primarily it was used in the sports industry exclusively for producing top athletes. The same principles then started to be applied to business, professional and personal situations to support busy executives stay in peak condition. Coaching brings out the best in people. So what has that to do with the brain? Here are 10 areas we have learned about the brain that impact us as humans and may be of help to GPs; Not only as individuals but also in dealing with your patients.

Insight 1: There are 3 aspects to the human brain.

That's right. Three. The hind brain which is the most primitive and which we share with reptiles (sharks, and lizards, and frogs and crocodiles etc). This brain looks after us physically and keeps us safe and secure. It's the "Me-First" brain and its job is to take care of the six F's: Feed, flight, fight, flock, freeze and F.. (reproduction). The mid brain which is the mammalian brain arrived with mammals that give birth to their young and relate to them. The "emotional brain" is found in the limbic system which is a part of the cerebrum (the forebrain). This is a part that we share with other mammals. This is the connecting or relationship brain and emotions are its language – especially empathy and compassion. The forebrain which is the most advanced and made up of the cerebral cortex allows us to do amazing things like long term planning, predicting what happens next, reflection, be creative, use imagination, talk, solve problems and many more. It's important to have access to all three and use their positive aspects (they have negative aspects too) when needed. I will come back to the importance and significance of the ability to 'predict'.

Insight 2: Brains can work together or hijack each other

The second insight into the brain suggests that our brains can work against each other, hijack one or act in harmony. My brains work against each other when I want something badly (I want your money) and I don't listen to my limbic brain that tells me about being a good neighbour or my

human brain which points out the long term problems with stealing your cash. My human brain can justify beating you up and getting the reptilian brain to do the job. My mammalian brain can con you into a relationship and then use the trust I have built up to abuse you (reptilian brain). Ideally we want the three working together: keeping me safe, keeping me connected and in relationships, and reflecting carefully on my life.

Insight 3: Be aware of going into survival mode

When we are in danger, or threatened or not safe (emotionally as well as psychically) the brain puts us into survival mode where all energies are harnessed to get us out of danger. Survival mode uses strategies such as of flight (I run away), fight (I attack), fragment (I go to pieces) or freeze (I become paralysed). As you will know, present day danger may not literally manifest in that are we going to be attacked physically, but the modern day stresses we are under can trigger the same primitive responses. Whilst many of us know this, do we really get the significant impact it may be having on our ability to think and remain open and creative? Also in this mode, we usually act first and think later – this can save our lives when there is physical danger but not always helpful in day to day stresses. Aren't these strategies familiar to GPs? In survival mode the brain cuts off access to the executive brain and all those wonderful human gifts we have - long term planning, imagination, creativity, reflection and thinking – are lost to us.

Insight 4: Provide safety and security and belonging and people automatically move into competency mode with access to the frontal cortex

When individuals and groups feel safe and secure the brain then moves them into competency mode which gives them access to the frontal cortex which in turn allows them to be at their best. The best gift we can give people is to provide them with the relationships and the environment that keeps them physically and emotionally safe. When they are not, they go into survival mode. That is why child abuse is such a dreadful thing – it makes children unsafe and unable to trust that the very people who should be protecting him or her actually betray them. It affects the brain enormously. This corresponds to Abraham Maslow's hierarchy of needs where the highest rank of self actualisation only occurs when the lower ranks of physiological needs, safety needs feeling of belonging and esteem have been met. So not only is it important for GPs to stay in full competency, it is also important for them to continually create an environment where patients can feel safe, heard and also be encouraged to think. Many consultations from a patients perspective are beginning to feel unconnected, and therefore not safe and therefore correct communication doesn't take place. This opens up not only the GP to risk but also the patient.

Insight 5: The brain is plastic

A new insight from the brain is called "neuroplasticity" and it means simply that the brain is incredibly adaptable and open to new learning. The fact that you have done it this way forever doesn't mean that the brain cannot learn how to do it differently. You are not condemned to thinking the same old thoughts in the same old way forever.

Having had first-hand experience of changing the way I think and therefore creating a different reality I absolutely know that my thinking affects the world I live in and the world that I create for

myself. My brain is like a steering wheel which before had the steering lock firmly in place. At no point in my life did anyone give me any indication that a) there was a lock and b) I could choose to undo it. My delight and excitement of recognising that I indeed could not only unlock this I could choose to steer it in whatever direction I felt like was unbelievably freeing. I never knew why I was able to leave old thought processes & beliefs behind and also why I was able to create new ones, but now Neuroscience is offering the answer & evidence to this question. If we can truly grasp this concept and make it part of own reality we can not only affect enormous personal change we can help to support and effect the world of our colleagues, peers, families, patients etc. Imagine if currently 80% of the population believe they are locked into one way of existing and we could turn that around to 80% steering their own wheel and making a positive difference. With this needs the understanding that it comes with responsible thinking. The subconscious has no conscience and will equally forge ahead on any negative thinking as it will positive. Hence the need to focus on creating new positive neurological pathways. For most people change is possible. No longer should we be saying a 'leopard can't change its spots'. If the leopard wants to - it's possible – but not without commitment and hard work - which is normally where things fall down!

If you imagine getting to the edge of a jungle and you have always used the established path it is easy and clear. There are no branches in the way or debris or leaves as it is well trodden. It is the line of least resistance. To go down this path takes no real energy. To create a new pathway into the jungle from the edge is daunting. Where do you start? The jungle is thick with vines and leaves and debris and trunks. When you first make a start it is almost impossible to see where you have begun. The next day it is hard to find but you just may make out some damage so start chopping again with your machete. It is really hard work. The second day you can see where to enter and the vines are less thick and the path is beginning to open up. By the 3rd and 4th day you are making real progress and the path is easier. Within a month this path is now easy to walk down. As long as you keep using this pathway it will remain clear and keep you on track. However, if you stop to use it, it will become overgrown and fade back into the jungle. Neuroscience is saying our brains work in a similar way. We can't just eradicate the old path. It was a reality. But if we keep going up and down it and over it again and again it will actually become more established. We need to start a new path and eventually the old one will fade. This fits beautifully with the expression that it takes 3 weeks to make a habit and three weeks to break one. Again at one level we know these things but we haven't to this point known why that is.

By understanding this concept it truly allows us hope and forward movement. Anyone can create new pathways, new thought processes, which in turn create different realities. (as long as they are not brain damaged).

In terms of people this is important as it backs up the recognition that there is always hope for any person. No matter what they have suffered the brain has the capacity to physically build new neural connections, creating new pathways that support new and supportive thought processes and ways of being.

Insight 6: Others leave footprints on our brains

A second insight into our brains makes us aware of just how social they are. We are built for relationships and relationships impact who we are and how we learn. Deprive children of love, security and human warmth and they grow up seriously disadvantaged. The best food for the brain

is loving relationships and creative environments. Go into a primary school classroom and watch children learn: when they are safe, have fun, are challenged and treated with respect, they blossom.

The bottom line of all this research is that LOVE from the beginning is the significant key to healthy brain development, and enables the brain to create new neural pathways. The brain is able to operate at this level when it is in a good place. We don't need neuroscientists to tell us that. But to help others to stretch their thinking we need to continue to be supportive, non-judgemental and ask questions of them rather than tell them. Do you always remain non-judgemental, or do you tend to jump to conclusions before people have finished speaking and take the path of least resistance. How do you know when it is your experience that is giving you the right answer, or just your brain trying to fit the incoming information into an already established template....that may be wrong?

People can usually tell when we are genuinely interested in trying to understand their feelings and concerns. The result is that we build a better relationship with them, leading to more effective consultations and interactions.

Insight 7: Emotions are not extras but essential

Insights into the brain reveal a number of interesting facts about feelings. They are not only important but vital to making decisions and being in touch with others. Empathy and Compassion are our connecting links with others. When these are not around problems emerge. We can be too rational for our own good. Look at this:

"Psychopaths shed light on the crucial subset of decision-making that's referred to as morality. Psychopaths have no emotional brains – a broken Amygdala. The madman (as Chesterton remarked) is not the man who has lost his reason. The madman is the man who has lost everything except his reason. " (Lehrer, 2009 165 ff).

Listen carefully to your own emotions and those of others – they will often be more accurate than your thoughts about what is really happening.

Insight 8: Giving attention to and focusing on, strengthens learning.

We need not continuously go over past events and problems and issues as this actually deepens their intensity, reinforcing neural pathways and ways of thinking, making it more difficult to move away from. Asking questions about new possibilities and new things that people haven't tried can open up new ideas and solutions. By asking questions you can enable people to focus on how they do want to be and what can help them get there. Clearly this isn't to say don't focus on diagnosing.

Insight 9: The brain is lazy and wants you to develop habits so that it doesn't have to work too hard.

This may challenge your thoughts about your role as a GP. What is important to you in that consultation. Are you there just to diagnose? Are you there to take more of a holistic role. Many statements that you might have said can be turned into questions that may gain better results. People are more motivated to take action when something is their own idea. To ask questions instead of make statements may require you making new neural pathways of your own. It is easy to

keep doing things the same way, as we have demonstrated. It actually takes new energy (electricity) in the brain to create new neural pathways.

This may take more time initially but the end result will outweigh the extra time spent. Even heart sink patients can become easier to deal with!

Insight 10: Do away with Fear – that's what stops learning!

GPs and the Brain

So why is this important to GP's? There are two main areas that coaching can create a positive impact in. This is your own personal growth and development in terms of relationships with others and self awareness, and also business planning and outcomes needed for the practice. First of all you have to look after your own brain (and body). Make sure you stay close to competency mode and don't go into survival mode. In survival mode you lose your best abilities: to think, to reflect, to solve problems. Secondly, be aware of how lazy your brain can get. It's easy to get into unhelpful ruts and routines. As GPs you are having to deal with patients day in and day out. You will have formed various templates about certain conditions and diagnoses based on fact. You may also have created different templates for different types of patients, peers and colleagues. You may end up with a lazy brain that sees what it wants to see rather than see what is there. Sometimes it is extremely difficult to imagine anything outside of these, so daily decision making is based on experience and knowledge. Nothing wrong with that. What coaching can do is help to highlight and challenge any thought processes that are no longer serving you and help create a space where new neural pathways can be created. This then opens up new and different ways of creatively thinking, keeping you at the forefront of your expertise. It allows for your continual personal development alongside creating focused outcomes and results for your practice. It can help you engage in depth with the patient but keep to time, whilst raising patient responsibility.

Few GPs have a safe place where they can be listened to by someone who is trained to get the best out of them without making them feel inadequate or stupid. A coach can provide this environment. Secondly, most GPs are not only medical practitioners but also managers who have to manage their staff to some degree. Coaching can help improve people management skills and therefore help GPs get the best out of their staff.

At the beginning of this article I said I would come back to 'predicting'. 'What sets us out as humans from different animals is our ability to predict. We are able to predict because our brain creates templates of information from past experiences. Ill goes on to explain. Neuroscience is suggesting that neurons (which are all over the neo-cortex brain) hold pieces of information. This in turn is activated by a thought which the brain hunts around for any information that it can find to relate to. (any past experience) It then pulls all the information together to create a template. What it also does is try to fit any new information into existing templates. I am sure you have experienced a time in your life when you made an assumption based on previous information that you then found out to not be the case. A wonderful example of this is I was attending a CPD event in London. It has previously been held at a certain hotel in London 3 times before. I had the email telling me about the event and my brain dutifully connected the information from previous templates telling me I knew where I was going even to the point that I believed it and booked the train tickets. It wasn't until I was actually on the train that I checked the original email and found out I should have been going to

Buckinghamshire! I chuckled at the irony that because my brain was able to predict therefore making me more “intelligent” that I actually ended up on the wrong train going to the wrong place – which would seem to most as being less intelligent. An interesting excuse turning up to a meeting saying “sorry I’m late but it’s because I am intelligent”...

The more that thought is thought, the more the neurons are activated and the more engrained the neural pathways are deepening the template. If the thought isn’t thought very often the template will begin to fade –and the brain will find it harder to activate the information that correlates together. Making things more difficult to remember. Hence the expression time heals.

Events become more distant the less we think about them as the template isn’t being activated and begins to fade. New thought processes literally take energy to create. Electrical energy in the brain is used to connect neurons and create pathways.

Conclusion

At long last the mysteries of the brain are being revealed. It’s taken a long time. But now we are beginning to understand that this amazing body organ is capable of incredible achievements. Knowing about them helps us all develop the best in ourselves and the best in others. Being challenged in our thinking, actually creates the possibility of developing new neural pathways – having a light bulb moment is literally when the electricity races through our brains and ‘snaps’ into making a new neural connection. We are suddenly able to think in a different way.

Suggested reading

Curran, A. (2008) The Little Book of Big Stuff about the Brain. Carmarthen, Wales: Crown Publishing

Fine, C. (2009) A Mind of its Own: How your brain distorts and deceives. Cambridge: Icon Books.

Arden, J (2010) Rewire Your Brain. New Jersey: Wiley

Notes: Anatomy of the Brain: Brain Divisions

The [anatomy](#) of the brain is complex due its intricate structure and function. This amazing organ acts as a control center by receiving, interpreting, and directing sensory information throughout the body. There are three major divisions of the brain. They are the forebrain, the midbrain, and the hindbrain.

The **forebrain** is responsible for a variety of functions including receiving and processing sensory information, thinking, perceiving, producing and understanding language, and controlling motor function. There are two major divisions of forebrain: the [diencephalon](#) and the [telencephalon](#). The diencephalon contains structures such as the thalamus and hypothalamus which are responsible for

such functions as motor control, relaying sensory information, and controlling autonomic functions. The telencephalon contains the largest part of the brain, the [cerebrum](#). Most of the actual information processing in the brain takes place in the [cerebral cortex](#).

The **midbrain** and the hindbrain together make up the [brainstem](#). The midbrain is the portion of the brainstem that connects the hindbrain and the forebrain. This region of the brain is involved in auditory and visual responses as well as motor function.

The **hindbrain** extends from the spinal cord and is composed of the [metencephalon](#) and [myelencephalon](#). The metencephalon contains structures such as the [pons](#) and [cerebellum](#). These regions assist in maintaining balance and equilibrium, movement coordination, and the conduction of sensory information. The myelencephalon is composed of the [medulla oblongata](#) which is responsible for controlling such autonomic functions as breathing, heart rate, and digestion.

- [Prosencephalon](#) - Forebrain
 - [Diencephalon](#)
 - [Telencephalon](#)
- [Mesencephalon](#) - Midbrain
- [Rhombencephalon](#) - Hindbrain
 - [Metencephalon](#)
 - [Myelencephalon](#)

Anatomy of the Brain: Structures

The brain contains various structures that have a multitude of functions. Below is a list of major structures of the brain and some of their functions.

[Basal Ganglia](#)

- Involved in cognition and voluntary movement
- Diseases related to damages of this area are Parkinson's and Huntington's

[Brainstem](#)

- Relays information between the peripheral nerves and spinal cord to the upper parts of the brain
- Consists of the midbrain, medulla oblongata, and the pons

[Broca's Area](#)

- Speech production
- Understanding language

[Central Sulcus \(Fissure of Rolando\)](#)

- Deep groove that separates the [parietal](#) and [frontal](#) lobes

Cerebellum

- Controls movement coordination
- Maintains balance and equilibrium

Cerebral Cortex

- Outer portion (1.5mm to 5mm) of the [cerebrum](#)
- Receives and processes sensory information
- Divided into cerebral cortex lobes

Cerebral Cortex Lobes

- [Frontal Lobes](#) -involved with decision-making, problem solving, and planning
- [Occipital Lobes](#)-involved with vision and color recognition
- [Parietal Lobes](#) - receives and processes sensory information
- [Temporal Lobes](#) - involved with emotional responses, memory, and speech

Cerebrum

- Largest portion of the brain
- Consists of folded bulges called gyri that create deep furrows