



# THE MEDICAL MYRIAD

VOLUME TWO | MEDICINE AND DENTISTRY

**Packed full of:**

- Q&A's
- Days in the Life of Healthcare Professionals
- Medical News Updates
- Disease Awareness Articles
- Snippets from Aspiring Medics
- Book, Podcast, Video Recommendations...and much more!

PREPARED AND WRITTEN BY  
SHREYA VERMA AND  
GABRIELLA YEJU KIM





# Q&A



**WRITTEN BY SPECIALIST REGISTRAR IN GERIATRIC MEDICINE AND OHS ALUMNA DR JESSICA RUDNAY**

## **Q: WHY DID YOU CHOOSE MEDICINE?**

I have always wanted to work with people and do something that would allow me to make a meaningful contribution to others' lives. I also wanted to be challenged academically/intellectually, and to have a level of responsibility whilst having the opportunity to work in a team and learn from others. I wanted a career that would open doors to a multitude of opportunities and different paths, where no two days were the same. Medicine seemed to fit the bill!

## **Q: WHAT STEPS DID YOU TAKE TO GET TO WHERE YOU ARE NOW?**

I started medical school at the University of Edinburgh in 2005 straight after finishing school that year. I did 2 years of mainly preclinical medicine integrated with some basic clinical learning before doing an intercalated degree in Physiology. This involved joining undergraduate biological sciences students in their final year and undertaking scientific modules followed by a dissertation research

project. On finishing this I re-entered the 3rd year of medical school and completed my medical degree in 2011. I applied for academic foundation programmes as I wanted to gain more experience of medical research, and so I accepted a job in Oxford for my foundation years. After doing various clinical rotations including general medicine, general surgery and A&E, I started a lab research project at the Oxford Centre for Diabetes and Endocrinology in my final rotation of FY2. Rather than apply for my next training job after FY2 I took a year out to continue some research and do locum work. I also took a much-needed break and went travelling for 3 months! I then took up a senior house officer job as a core medicine trainee working in hospital medicine. After completing 2 years of this I applied for a specialist post and I am now in my 4th year of being a medical registrar rotating around hospitals in the Thames Valley area.

## **Q: WHAT DID YOU CHOOSE TO SPECIALISE IN AND WHY?**

I chose to specialise in Geriatric Medicine with General Medicine. I always knew I wanted to work in a medical specialty rather than any other area such as surgery or general practice for example. I love my specialty as it puts the patient right at the centre of truly holistic care and requires us to understand

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exactly what our patients' priorities are. Our patients are extremely complex which creates challenges in diagnosis and management, but this makes it all the more rewarding. There are also many career paths to take as it is a broad specialty encompassing several subspecialties which makes for an interesting and varied career.

**Q: HOW IS YOUR WORK-LIFE BALANCE?**

The nature of the career means that there will be many times when work comes before your personal life. There will be missed Christmases, birthdays, weddings etc. It can be hard to leave on time and it can be difficult to leave work at work. I have accepted that this is a part of the job, but over the years I have learnt how to prioritise whilst at work and hand over to colleagues what I cannot do myself. A career in medicine means accepting that there will be continuous learning and exams. This means studying during free time and some periods of intensely hard work. I have always known that I have undertaken a vocation and I cannot simply "clock in and clock out" of work. Luckily my friends and family understand this, and working hard makes me appreciate the time I do spend with them.



**Q: WHAT HAVE BEEN SOME OF YOUR WORST EXPERIENCES AS A DOCTOR?**

The pressure and stress I have been put under has been hard to cope with at times. There have been shifts at work where I've had to try to juggle several emergencies at once and there have been times when I've not known all the answers and not had someone more senior on site to help me. As I have gained more experience I have learnt to manage these situations better, but with this experience comes more responsibility which presents new challenges. When patients don't get better it can be easy to ruminate over what you could have done differently, or whether something you did or didn't do contributed to a death or a bad outcome. I don't think you'd be a good doctor if you didn't have these thought processes, but it can be hard at times not to let them consume your time away from work. It's important to have people close to you to debrief with – luckily, I have some brilliant colleagues who are also great friends and I know I can always count on them, talk through any worries or difficult experiences I have.

The NHS has been under significant strain over the last few years which has meant there have been times when I've felt unable to provide the standard of care I'd like to provide. Working within a system like this

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and being unable to change it has been incredibly hard at times.

**Q: WHAT HAVE BEEN SOME OF YOUR BEST EXPERIENCES AS A DOCTOR?**

Often the most rewarding things are the smallest things. Having a long conversation with a patient or their family to involve them and update them on their care, working closely with different healthcare professionals to safely discharge a patient home, making adjustments and referrals to community services to enable an elderly patient to stay living in their own home. Although it may sound odd, one of the most rewarding things is making sure patients who are dying have a dignified and comfortable death. I have been thanked by families for this many more times than I have been thanked for saving lives.

**Q: WHAT WOULD YOUR TOP TIPS FOR THE APPLICATION PROCESS BE?**

Your application should be underpinned by a genuine desire to understand the realities of working as a doctor and how the NHS, medical research, ethics, public health etc works. If you do this as opposed to trying to “tick boxes”, it will stand out on your personal statement and at the interview. Identifying the key attributes and skills required for a career in

medicine and making sure that you can show you possess these through your extra-curricular activities, work experience and so on is key. Evidence every claim you make about yourself. Your experiences do not have to be extraordinary, they just have to demonstrate commitment and suitability to the career path that you are choosing.

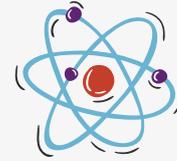
**Q: WHAT IS ONE PIECE OF ADVICE YOU WOULD GIVE TO ASPIRING MEDICS AROUND THE SCHOOL?**

Make sure you find out as much as you can about a career in medicine and be true to yourself when deciding if it is the path for you. Don't do it because you feel you ought to or because the idea appeals – know the realities! Once you are sure of your decision, don't be afraid to go after what you want. Be proactive and ask for opportunities. The worst that can happen is someone says no!



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# PROGERIA: A CONSEQUENCE OF PROTEIN ACCUMULATION



WRITTEN BY YEAR 12 STUDENT SHREYA VERMA



The name Progeria was derived from the Greek word 'pro' meaning before and 'geras' meaning old age, which perfectly sums up this disease. It's a rare genetic disorder, also known as Hutchinson Gilford syndrome, and causes the premature ageing of children, often starting within the first two years of their lives and progressively worsening. Therefore, these children face many problems including osteoporosis and cardiovascular diseases at a very young age, typically dying at the age of 13.

Similar to other progressive diseases such as Alzheimer's, Progeria is caused due to the accumulation of a specific protein. This protein in the case of Progeria is called progerin and gathers on the nuclear envelope, which is a casing that surrounds our main genetic information in the nucleus of the cell and is essential to support it. Accordingly, when protein builds up there, the nuclear envelope is unable to maintain the cell causing it to die prematurely. This process is called nuclear blebbing. Although scientists still haven't discovered why this leads to premature ageing, a pattern is certainly present between degenerative diseases and the accumulation of a protein as the root problem. The cause of this protein gathering in Progeria is a mutation in the LMNA gene which sequences for progerin instead of a protein called lamin A. This means that the enzyme that would usually facilitate the production of the lamin A protein can no longer recognise it, so progerin accumulates in its place.

As the disease is caused by a mutation, the most effective cure for it would be the use of a gene editing tool, such as CRISPR-cas9 to change the gene sequence. This has been tested in mice with Progeria, and it resulted in increased longevity, but is far from being approved for use in humans. However, a drug for Progeria called Lonafarnib has been approved very recently and claims to slow the progression of the disease. It works by inhibiting the enzyme that facilitates the production of the protein progerin and so potentially preventing the protein from building up along the nuclear envelope. Unfortunately, this drug is not a cure but could certainly act as a possible step towards finding one.

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# LIVING THE LIFE OF A NEUROLOGIST



**WRITTEN BY CONSULTANT NEUROLOGIST DR ARJUNE SEN**

A neurologist's life for me?

'Perhaps the thing the brain is least designed to do is think how the brain works,' was a phrase one of my supervisors, a certain Sir Colin Blakemore, told me very early in my University life. It has stuck with me ever since because, while surely true, the corollary, 'Working out how the brain works is the most interesting thing your brain can do,' must also apply. It is a principle that still guides me.

I completed Medical School training at Corpus Christi College, Oxford and knew by the end of my first year that I wanted to be an Academic Neurologist. This was mainly owing to a placement I did in my first summer with Professor Shorvon and his Epilepsy Research Group at The National Hospital for Neurology and Neurosurgery, Queen Square, London. While this meant goals were very clear, I am not sure I would recommend deciding so early as there is huge interest in

all of the different facets of Medicine and it is important to not close yourself off to these too soon. It also led to some sleepless nights as when all your friends know that you want to be a Neurologist, you really do need to ensure you become one!

After Medical School, I did Junior Medical training in Oxford and Birmingham before completing 'House Jobs' in London. I firmly believe that if you are going to be good at any sub-speciality, you need an excellent grounding in the basics. In particular working on the intensive care unit at St Thomas's Hospital taught me a lot about critical care medicine that is invaluable today. I then went on to complete a PhD at Queen Square and worked on trying to understand the molecular basis of neuronal loss in epilepsy. I was lucky and the PhD went well, leading to several interesting opportunities, some of which were realised many years later.

I stayed in London for Higher Neurology training and worked at The Royal London Hospital, Queen's Hospital, Romford. I then went out to Sydney to complete an Epilepsy Fellowship. This, coupled with my elective in Vanuatu as a medical student, was perhaps the best part of my entire medical training. Working in different healthcare

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systems, having to establish yourself in another country, learning from different sets of patients is brilliant and essential.

My work in Oxford is split between clinical commitments (around 60%) and academia (40%). I founded and still lead the Oxford Epilepsy Research Group. We are a collective of over 40 people within Oxford and are benefitted by amazing international collaborations. The Group publishes widely and has won multiple national and international awards. We work with local charities, lead a host of international projects and set up the Coronavirus and Epilepsy (COV-E) study group to examine the direct and indirect effects of the pandemic on people with epilepsy.

My personal research interests link back to what I did in my doctorate. I specifically looked at the intersection between seizures and dementia. For example, we set up the world's first trial to see if an anti-seizure drug is able to help memory in people with Alzheimer's disease. More recently I have become very involved in global health. Populations are ageing very quickly in low to middle income countries and epilepsy is more common as you become older. 85% of the 50 million people with epilepsy in the world live in resource poor settings and of

those individuals, 80% have no access to medication. Yet, anti-seizure drugs can cost less than one pound per month. Disparity in healthcare can be shocking and this applies even in the United Kingdom, so we always try and bring learning home to help hard-to-reach communities here as well.

My clinical time is spent doing outpatient clinics, ward rounds, planning epilepsy surgery and working with our wonderful multi-disciplinary team. People used to think that neurologists spent ages making complex diagnoses and then were not able to offer any treatment. That is not the case now. There are over 30 anti-seizure medications and lots of non-drug interventions we can consider. There have been similar advances in headache treatments, multiple sclerosis and Parkinson's.

Medicine, at its heart, remains a vocation, not a job. It tends to attract like-minded people and there is huge camaraderie within clinical practice. We learn with our patients and work through things together. The academic work informs what we do clinically and, as demonstrated during the pandemic, medicine is the career where you will always be studying, always be learning and, hopefully, always be making a positive difference. So come on in, the cortex (in particular) is lovely!

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# HENRIETTA LACKS: THE TRUE UNSUNG HERO OF SCIENCE



**WRITTEN BY YEAR 12 STUDENT  
REBECCA IM**

The definition of 'unsung' is to not be 'noticed or praised for hard work, courage, or great achievements'. Although Henrietta Lacks did not make a conscious contribution, her cells proved to be a huge stepping-stone into the generation of medical endeavours that exist today.

In 1951, at just 31 years old, Henrietta Lacks, an African-American woman, was diagnosed and treated for cervical cancer at the segregated John Hopkins Hospital. It was there that doctors removed two samples of her cervix without her consent, completely disregarding patient autonomy.

Most cells, including cancer cells, do not survive in vitro. Surprisingly, the HeLa (derived from Henrietta Lacks) cell line had the ability to thrive and multiply rapidly outside the body, as it would inside the body. This anomaly was due to the enzyme telomerase, which is usually found in the human embryo.

It acts by restricting chromosomes from shortening their telomeres after each division of the cell; ultimately making the cells immortal. Therefore, the HeLa cell line was perfect for scientists who required large sample sizes of genetically identical cells.

Polio (poliomyelitis) is a highly infectious disease which can cause the detrimental consequence of total paralysis, within a short span of time. The virus slowly attacks nerves in the spine and base of the brain and can result in complete invasion of the nervous system. In 2018, however, there were only 33 reported cases of poliovirus, a staggering 99% decrease compared to 1988. And with just 1 in 200 infections causing irreversible paralysis, the disease seems to be nearing complete eradication.

This notion should be surprising as there is no known treatment for the disease, indicating that there would be a much greater number of cases. However, it is as a result of a now common polio vaccine, that seventeen million who are walking today are able to do so.

When the vaccine was first developed by Jonas Salk, in the early 1950's, it was difficult to be tested due to the excessive price of the cell culture often used for large-scale studies (rhesus monkey cells).

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An ideal cell line for testing the virus would be susceptible to poliovirus but be able withstand it; the HeLa cell culture fulfilled these necessities perfectly. The cells were therefore put into mass production and by 1952, had allowed Salk to fully test and produce his vaccine.

In 2019, the research involving HeLa cells has reached over 110,000 scientific publications, while an estimated 50 million tonnes of the cells exist. They have contributed as the underpinning of a number of Nobel Prize winning discoveries, including one which proved that HPV causes cervical cancer.

Henrietta Lacks herself passed away in 1951, unaware of the invasive handling of her cells that would occur and continued to do so for over sixty years following her death. Although during the time of her passing, taking samples for research without permission did not violate any legal guidelines, one could argue that her doctors were not fulfilling the ethical principle of 'autonomy' (showing respect for the patient and their right to make decisions).

Furthermore, while HeLa cells were fuelling the production of countless medical innovations, Henrietta's family could not afford access to

basic healthcare nor were they aware of the regular utilisation of her cells (until the 1970s). This poor treatment thus displays the absence of respect the scientists had for the Lacks household.

Surprisingly, there continues to be an exploitation of their privacy even to this day. In 2013, German scientists published the sequenced genome of HeLa cells in a public database, without the permission of any of the Lacks family. This affected both the privacy of Henrietta and her surviving family members, as information regarding their genetic traits could have been publicised.

So, should we ignore the inappropriate use of HeLa cells because of the scientific breakthroughs caused by research on the cell line, and consequent lives it has saved?

No. Absolutely not.

In the future, we must make a considerable effort to acknowledge the immense knowledge gained from research on the HeLa cells. By reinforcing ethical principles, we must strive for a future where a story similar to Henrietta Lacks' cannot occur again.



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# MEDICAL NEWS:



## TOPIC: DIAGNOSING DEPRESSION FROM EARWAX

Currently, subjective assessments are used by doctors to diagnose mental health disorders such as depression or anxiety, and thus decide when treatments such as antidepressants or therapy are necessary. However, psychiatric researchers have discovered that earwax of all things could provide a better form of diagnosis.



Through earwax doctors may be able to observe the presence of the stress hormone, cortisol, instead of doing this through the saliva or blood. When tests are carried out on saliva or blood for cortisol, they give a snapshot of the levels of the hormone at that time only and therefore are unreliable to base an entire diagnosis or treatment plan on. However, earwax can show how long the chemical has been there and its build up, allowing doctors to see the progression or regression of stress overtime, and thus provide the most effective form of therapy and relief.

## TOPIC: CRISPR-CAS9 AS THE MOST EFFICIENT GENE EDITING TOOL

The CRISPR-cas9 tool is supposedly the most unique and efficient equipment that has been introduced to the world of genetics. It works due to its two main components: the enzyme 'cas9' and a piece of 'guide RNA' which is a small section of pre-sequenced RNA located in a longer RNA scaffolding. The enzyme operates almost like a pair of scissors, with the ability to cut two strands of DNA so that a section can be removed or new DNA sequences can be added. Meanwhile, the 'guide RNA' assists this by guiding the enzyme to the specific location in the genome that needs to be edited. Thus, this part of the DNA is split and a mutation can be introduced.

The advancement of the new CRISPR-cas9 technology is a huge leap not only towards learning more about our genome, but also creating the potential to treat medical conditions ranging from cancer to high cholesterol. Interestingly, the development of this tool stemmed from bacteria, who have a built in gene editing tool like CRISPR-cas9 that they use to defend themselves from pathogens, such as viruses. Much like our antibody response, bacteria use their version of the CRISPR-cas9 tool to cut out a section of the virus's DNA so that they are able to recognise it for the following time they get infected. Consequently, this same process was adapted by scientists to create CRISPR-cas9.

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# Q&A

**WRITTEN BY A GENERAL DENTIST  
AND PARENT DR NICOLA  
BEARSLEY**



**Q: WHAT IS YOUR MAIN SOURCE  
OF MOTIVATION IN A DENTAL  
CAREER?**

My grandad was a well respected chiropodist and so visits to him, in my childhood, usually involved jumping on his chiropody chair and marvelling at his chiropody 'tools' which are surprisingly similar to dental instruments. Also my father was a chemistry lecturer in Leeds and so you can see science and healthcare were pretty much in my blood. I went to a state school in Yorkshire and the careers advice was pretty much non-existent. So I decided that as my brother was applying to medicine and I didn't want to copy him, I plumped for dentistry!

I have to say that there was never a burning desire from a young age to be a dentist and I feel that most

people who reach sixth form know what subjects they enjoy and are good at but as regards to a future career, like me back then, they have no idea. I think that as young adults you shouldn't put too much pressure on yourselves and life will unfold your opportunities in it's own time.

**Q: WHAT IS THE MOST  
CHALLENGING AND REWARDING  
PART OF YOUR JOB?**

As I am the owner of the practice then the buck stops with me! That means the most challenging side of the job is not the patients or the dentistry, it is in fact managing a team of dental care professionals, receptionists, hygienists and fellow dentists. We are a close knit bunch but as we work very closely together our younger staff find it hard to separate home life from professional life. This means that a lot of my job can be involved in supporting my staff with personal stress, such as relationship ups and downs, difficult children etc etc!

The most rewarding part of the job is the patients. As I have been at this practice for 25 years (how did that happen!) many of my patients I have known since birth! Some of my elderly patients have suffered loss of a partner and as a dentist who has seen them every 6 months I feel that I have a unique

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insight into their life and can offer them some form of support even if it is just to reminisce about the experiences they had together. As you can see the relationship with the patient is really the biggest part of the job and the trust in your practical skills only comes once you have gained their confidence.

**Q: HOW DID YOU GET TO WHERE YOU ARE NOW?**

I studied my A levels at school in Knaresborough, North Yorkshire. From there I went to Birmingham University to study a Bachelor in Dental Surgery. This was a 5 year course and upon qualification, back then you had the choice to go into foundation training (FT) or straight in to a practice. I decided to go straight into practice. Nowadays the FT element is mandatory after qualification and offers postgraduate training as well as mentoring during your first year of practice.

My first job was in a general practice in Banbury. I was at this practice for 3 years and during that time I did a further post graduate exam which involved case studies and spotter tests (Yes, I did this voluntarily!). From this I gained some more letters after my name FGDP.

My time working in general practice helped me hone my skills in staff

management and ultimately running a practice of my own. I was in a very fortunate position that my boyfriend (now my husband) was also a dentist. This meant that we could take the risk of buying our own practice very early on as he remained in his job in Northampton ensuring we had a steady income.

There is always a huge risk with buying a practice as the value of the practice is not only worked out from the building and contents but the good will of the practice. This means if the patients don't like you and leave then your practice is pretty much worthless. Luckily they seemed to like me and now our practice in Botley, Oxford has over 8000 patients.

**Q: HOW DO YOU MANAGE YOUR WORK LIFE BALANCE?**

I am in a very fortunate position which allows my work life balance to be quite unique. Originally I worked full time at the practice, but when I was pregnant with my first daughter my husband decided to leave his job in Northampton and work at Botley. This meant that he covered all my patients during my maternity leave of 9 months. From 2001 onwards Pepe and I have shared the working week. Even when I had a further 3 children I had 3 months off for maternity

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leave and then returned to part time work in the knowledge that Pepe was at home minding the babies! I think we have been so fortunate and I know that this isn't really the norm as I was able to have a very successful career whilst not really missing out on my children growing up.

**Q: ANY COMMENTS TO ASPIRING DENTISTS?**

I know that my children will all roll their eyes as I could wax lyrical about dentistry and I fear there isn't enough space in your magazine! What I like the most is the relationship that you build up with your patients. People come to me even when they are well and so I see them regularly and from there you get to know people characters, extended families etc. Invariably a patient will bring in photos of their new grandchildren, children's weddings etc.

Dentistry is unique in that taking time off for children doesn't affect your career prospects as you can return at the same level. Obviously I work in general practice but there is huge scope to specialise and/or work in the hospital environment. It is a challenging degree to get onto and there is stiff competition as there is for many vocational courses, but that shouldn't put you off trying. One of the guys on my course was originally a greengrocer. He studied in the evening to pass his 3 A levels and gained a position at Birmingham dental school... If that isn't inspiring then I don't know what is!



## DENTAL ANXIETY DURING THE PANDEMIC AMONGST CHILDREN

WRITTEN BY YEAR 12 STUDENT GABRIELLA KIM

Anxiety can be the feeling of butterflies circling inside your stomach or rapid heart beats but nevertheless it is not an enjoyable one. Dental anxiety is the most common anxiety people experience and it is not subjected to a certain age group. It is usually triggered by drilling noises, needles or just the

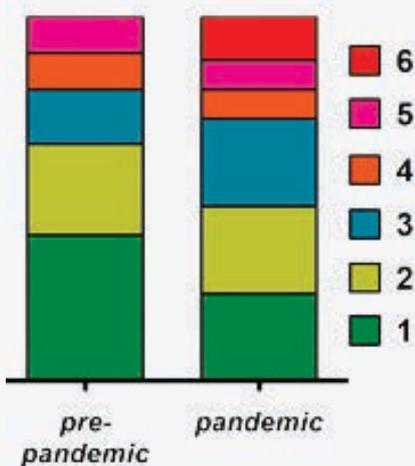
dental setting itself. So what is dental anxiety like in adolescence? Studies have shown that 74.1% of children suffer from moderate to severe dental anxiety and this figure has been proven to have risen due to the ongoing pandemic.

When dental clinics reopened after the first lockdown, the government imposed sanitary regimes and social distancing measures, which is thought to have provoked anxiety in dental settings, especially for children.

A Polish study on dental anxiety of children demonstrated that under pandemic related lockdown the fear of pain at the dentist can be further induced by the stress from the presence of the virus, and also by the psychological tension from their guardian who are deciding to leave home with the fear of contracting COVID-19. Also, PPE requires dentists to wear masks and this does not allow children to read facial expressions which is significant to building trust with the dentist. Additionally, changes in the dentist’s tone of voice can make it difficult for them to understand what the dentist is saying, therefore hindering their interaction.



The study conducted research pre-pandemic and during the pandemic by asking the children’s guardians to evaluate their child’s emotional state by selecting one out of the six images on the side. 1—calm; 2—uncertain; 3—reserved, closed and uncooperative; 4—avoiding; 5—loud; 6—crying.



The results shown as a bar graph on the left, are evidence for the changed emotional state.

The most common symptoms of anxiety in children are crying and being uncommunicative, which are all expressions that have increased in the study, before and during COVID-19. Unfortunately, this study therefore, provides evidence that the affects of the pandemic are linked to the rise of dental anxiety amongst children.

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# A TYPICAL DAY AS AN ORTHODONTIST

**WRITTEN BY DR BHAMRAH  
GURPRIT**

Orthodontics is a specialised branch of dentistry involving recognising and correcting irregularities of the teeth or developing jaws which can improve the function and appearance of the teeth and face. The journey to becoming a Consultant Orthodontist requires a commitment and hard work however it is important to go to work everyday and enjoy what you do.

My journey involved completing 5 years undergraduate training at Dental School where I gained experience in various fields of dentistry. I spent time in a dental practice where I would see children and adults for routine check ups and carry out treatments such as fillings, dental extractions and root canal treatments. The great thing about being a dental surgeon is having the training and skills to listen to patients' concerns (especially when they present with dental pain) and being able to discuss with them their treatment options and delivering the care they require.

General dentists have the ability to carry out a wide range of procedures however I wanted to further my training and skills so I went on to spend time in an Oral and Maxillofacial Surgery department which was quite different from routine dentistry. I assessed and treated patients with facial and dental injuries and assisted in surgical procedures such as removing impacted teeth and jaw surgery. I had the opportunity to shadow a Consultant Orthodontist in the department who treated complex cases alongside the maxillofacial surgery team. I saw patients who needed orthodontic braces as well as surgery to correct their jaw position to improve their bite and this is when I knew I wanted to train as an orthodontist.

I spent a further year in Paediatric and Special Care Dentistry where I completed professional qualifications while further developing my skills, in particular treating anxious patients with sedation.



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I was then able to apply and commence my 3 years Orthodontic training within a hospital department and successfully completed a Master of Science (MSc) degree in Orthodontics and passed professional examinations to then be able to register as a Specialist Orthodontist. As an orthodontist you are able to work in high street practice, a community setting or within a hospital department assessing and treating patients with removable and fixed braces. I decided to complete a further 2 years training to be able to treat more complex cases to become an Orthodontic Consultant.

Currently I work as a Hospital Consultant and also within a specialist practice. The majority of patients I treat in the hospital require multidisciplinary care involving orthodontics with Oral and Maxillofacial Surgery and/or Restorative Dentistry involvement such as patients requiring braces as well as jaw surgery, replacement of missing teeth or uncovering displaced buried teeth. Within this career I have a great variety of roles from planning complex treatment with other specialities, carrying out orthodontic treatment and training orthodontic specialist trainees as well being involved in research and developing hospital services.

The best part of my job is having the skills to be able to improve someone's teeth, smile and confidence which they will benefit from long term.

## WHY DENTISTRY?

**WRITTEN BY YEAR 12 STUDENT ISABELLE LI**

I aspire to study in the medical field and be trusted with the great responsibility to care for someone's health and well-being. For me, dentistry stood out from other fields of healthcare professions because it had the additional aspect of intricate manual work, something I want as a feature of my everyday job. Dental students have the opportunity to learn hands-on and treat their own patients whilst learning. This method of learning was appealing to me as it motivates students to actively engage in their learning and improve their skills. Whilst working on my GCSE Art and Design Textiles project, I discovered how much I enjoyed having the creative freedom to design and construct intricate pieces of art, such as an elaborate embroidery of a kiwi fruit or a fruit inspired silk painting.

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I believe that dentistry is a perfect balance of art and science. It encompasses the creativity of an artist and the skills and knowledge of a surgeon to create a healthy, beautiful smile that has the power of changing a person's life.

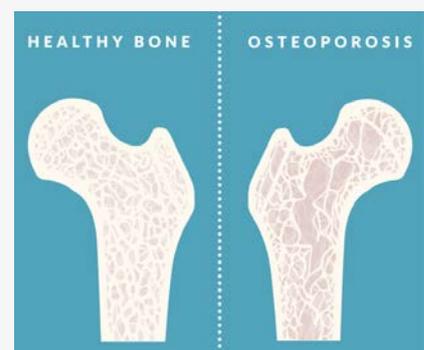
My decision to pursue dentistry was reinforced by discussions with senior dentists which allowed me to realise that oral health is pertinent in maintaining lifelong health. These conversations also showed me that dentistry is not only highly dependent on applying your knowledge to restore oral health, but also your eagerness to share this knowledge. I love how dentistry is a career that is dynamic and ever-evolving, thus providing endless opportunities to further my knowledge and specialise in a particular area of dentistry and concurrently provide a secure, fulfilling and exciting career.

## DENTAL NEWS

### TOPIC: TREATMENT FOR OSTEOPOROSIS COULD ALSO HELP PREVENT GUM DISEASE

Research carried out by New University at Buffalo, examined the prevalence of periodontitis in postmenopausal women. The study showed that women over the age of 50, who had been prescribed oestrogen therapy along with supplements of calcium and vitamin D for osteoporosis were 44 percent less likely to have severe periodontitis than women who did not receive the treatment.

During postmenopause, hormone levels fall below 30pg/mL from 30~400pg/mL and this includes the hormone, oestrogen. Oestrogen is not only important for controlling the menstrual cycle but is also essential to bone health because it promotes the activity of osteoblasts, which are cells that produce bones. Therefore, the drop of oestrogen levels during postmenopause leads to less bone formation, hence increasing the risk for osteoporosis.



The research examined 356 women diagnosed with osteoporosis and divided them into two categories: women who had received oestrogen therapy for at least 6 months and women who had never received the treatment. Of the

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356 women, 113 women chose to receive oestrogen therapy. From this, researchers found that women receiving osteoporosis treatment had less periodontal probing depth and less gum bleeding than those who did not receive therapy.

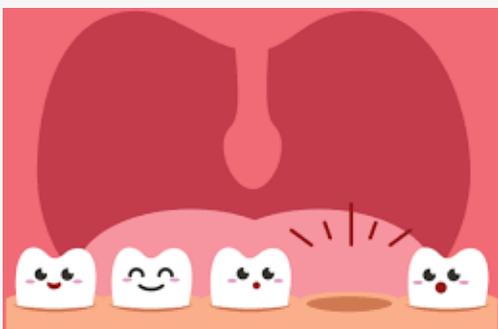
Professor Frank Scannapieco, a co-author on the study said, "These results help confirm the findings of previous studies that suggested that oestrogen therapy to prevent osteoporosis could also play a role in the prevention of gum disease," and that "...by advancing our understanding of how this treatment can impact oral health, we can better work to improve the bone health and quality of life of female patients."

**Periodontitis:** A gum disease, which infects and damages the soft tissue and without treatment, it can destroy the bone that supports your teeth.

**Osteoporosis:** A skeletal disease that weakens the bones and increases the risk of sudden fracture, usually this disease progresses without any symptoms or pains.

**Periodontal probing depth:** The amount of space between the teeth and surrounding tissue due to bone loss.

## TOPIC: LOSS OF FIRST BABY TOOTH AS A POSITIVE EXPERIENCE



Losing a baby tooth is one of the first biological changes to the body that a child experiences consciously and recent study shows that it is also a positive one. Parents were asked to comment on their children's reactions to their tooth loss, and around 80% reported a positive experience. Dental researcher Raphael Patcas says that one possible reasoning is that a baby tooth will loosen gradually before falling out, 'unlike an accident, it unfolds slowly and unpredictably'. Supposedly, for children this preparation and waiting time for a tooth to fall out creates a sense of pride and relief when it does.

Additionally, sociodemographic factors are suggested to be linked to the positive feelings, for example children tend to have a greater sense of pride and joy if their parents are well educated and non-western.

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