



How do ADHD Medications work?

Version 2, September 2026

A Guide for Parents and Carers

Dr C. R. Yemula

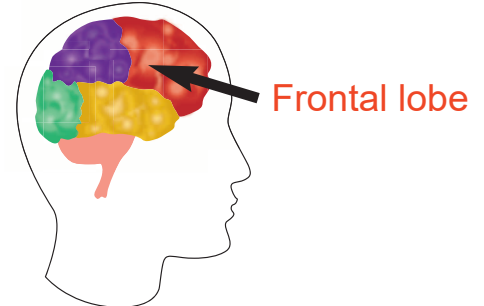
Dr Nivedita Bajaj

What is ADHD?

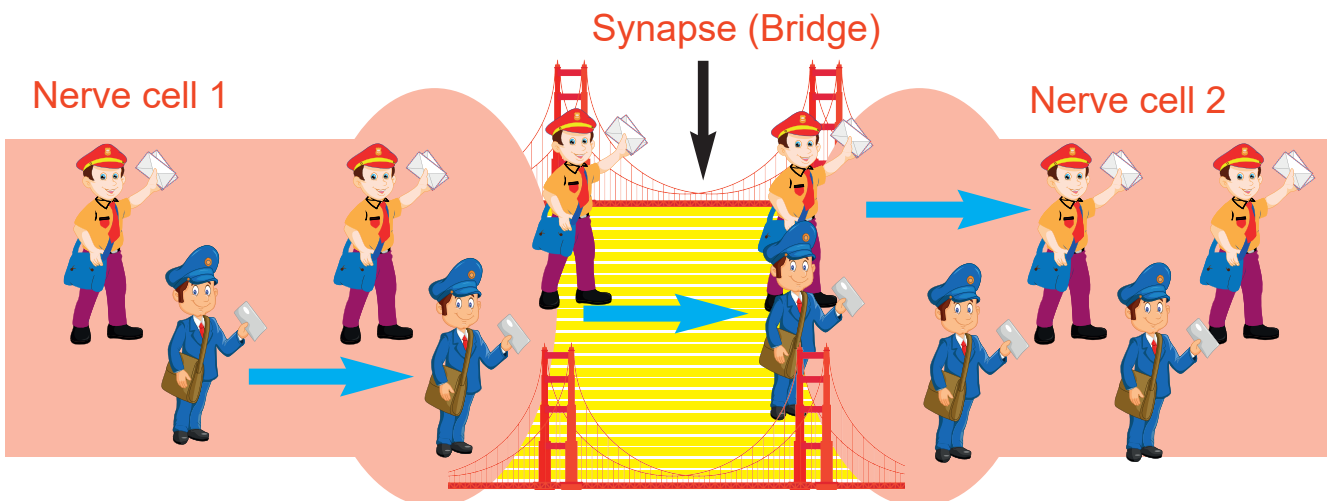
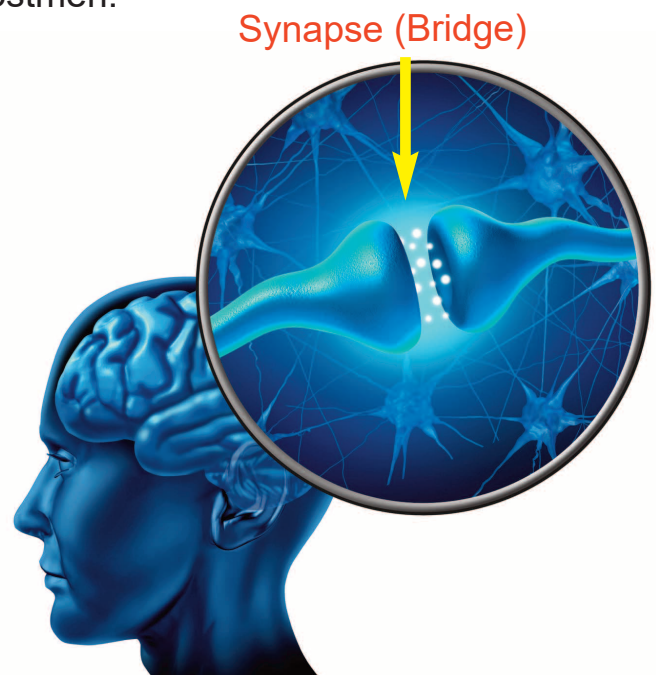
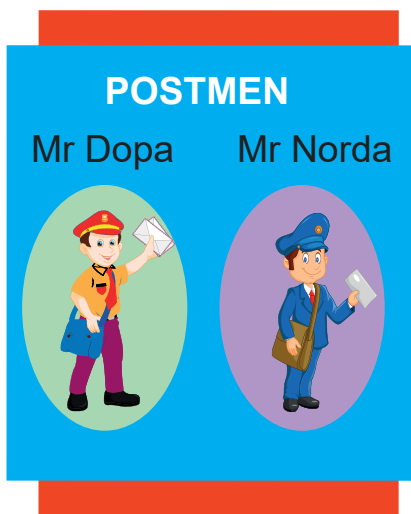
ADHD, a short name for 'Attention Deficit Hyperactivity Disorder' is a common medical condition seen in many children and young people. Having this condition means the child may have problems with being fidgety, on the go, difficulty concentrating and acting hastily without thinking.

How does the brain work?

Frontal lobe is the boss which sends instructions to the rest of the brain and the body (for example stop – wait – focus).

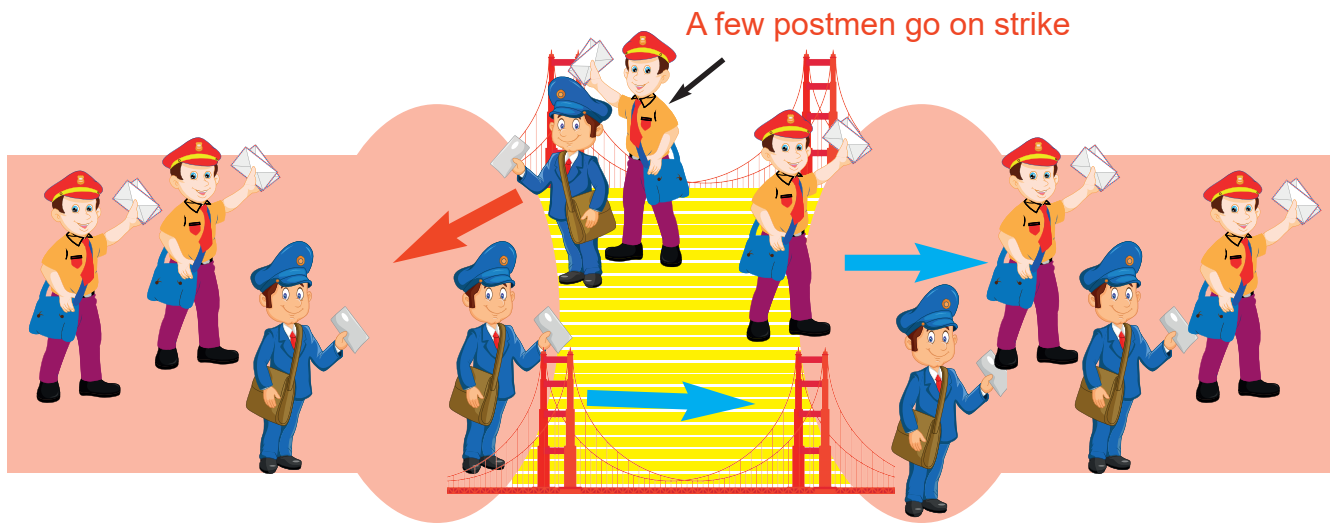


The nerve cells in the brain are connected to each other by a synapse (bridge between the two nerve cells). They talk to each other by sending messages via chemical messengers. Let's call them postmen.



How do nerve cells talk to each other?

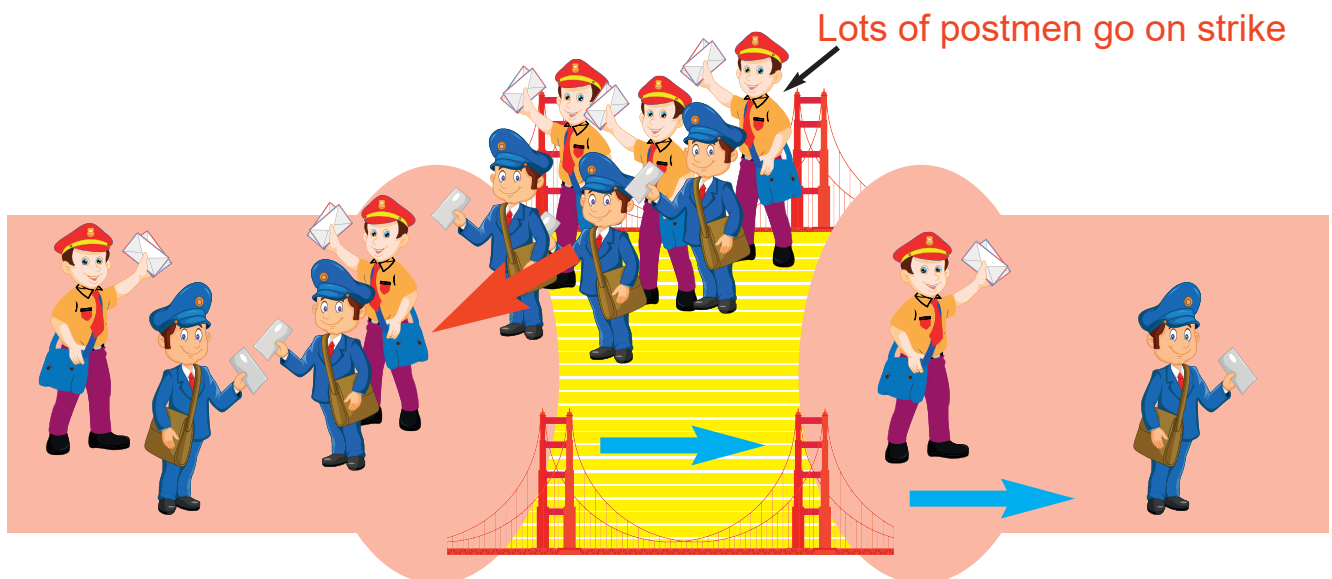
Mr Dopa and Mr Norda are the postmen (chemical messengers) who cross the bridge to deliver letters (messages). However, a few postmen decide not to work and go on strike by going back to their nerve cell (post office).



What happens in ADHD?

In ADHD, lots and lots of postmen decide not to work. They go on strike and so there are not enough postmen left on the bridge to continue to deliver letters.

If you do not get the letters (messages) you may become hyperactive, find it hard to concentrate and be impulsive (acting hastily).



How can ADHD medications help?

They help you to get regular messages going across your brain and the rest of the body. This means you are more likely to focus better, be much calmer and think before acting hastily.

There are two different types of medicines, called stimulants and nonstimulants. Please read below to find out how exactly the medicines work.

About methylphenidate

This medicine is a stimulant. It travels to the bridge between the nerve cells and stops the postmen, Mr Dopa and Mr Norda, from going on strike. As a result, there are more postmen on the bridge to deliver letters (messages).



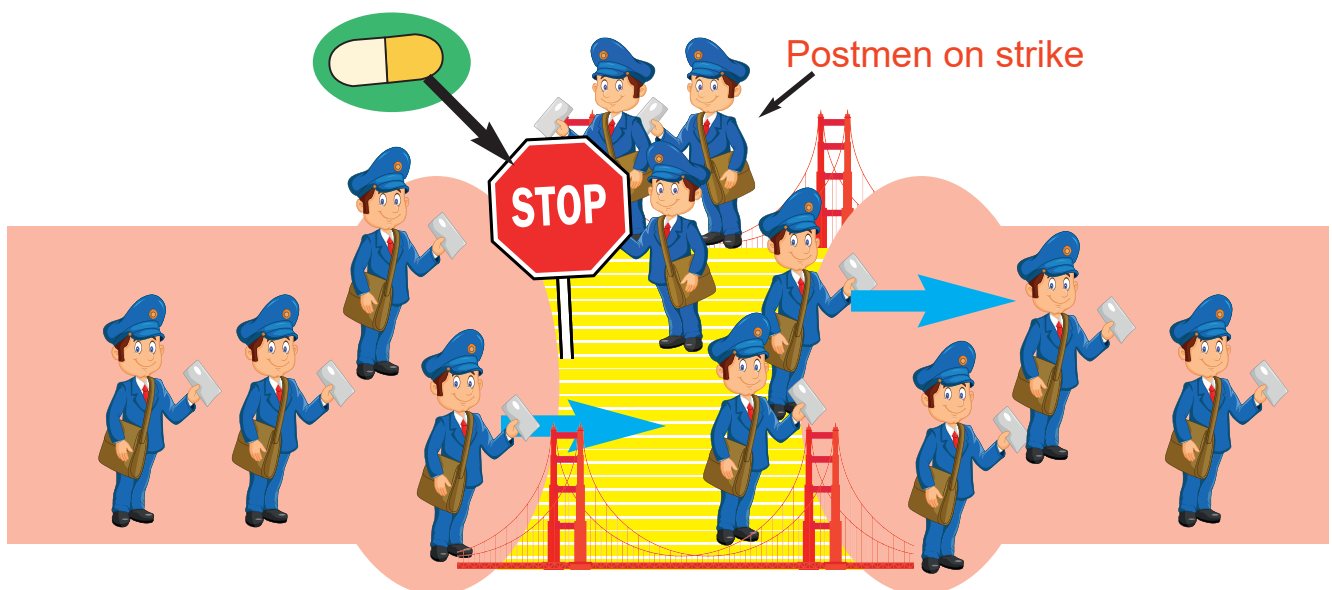
About Lisdexamfetamine

This medicine is also a stimulant. Like methylphenidate, it stops the postmen Mr Dopa and Mr Norda, from going on strike. In addition, it sends orders to the postmen to get back from the office to work on the bridge. Therefore, postmen continue to deliver letters.



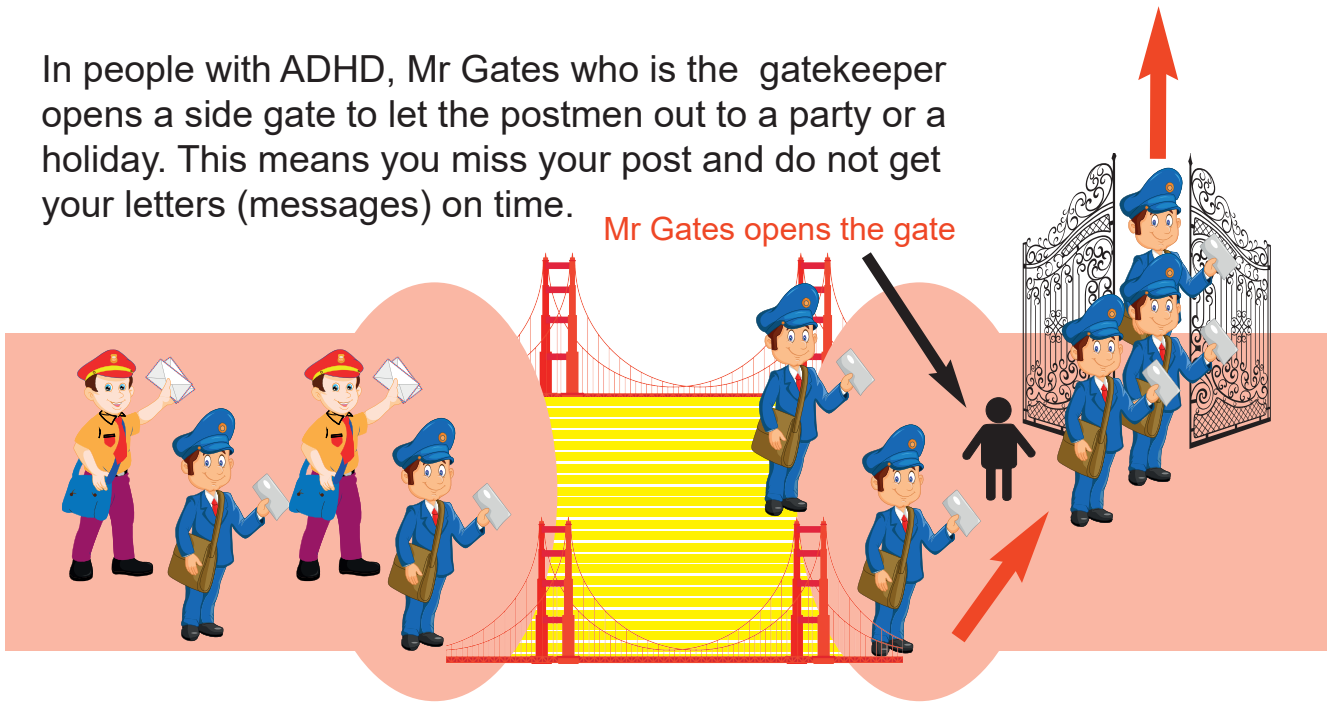
About Atomoxetine

This medicine is a nonstimulant and works on the bridge to stop Mr Norda, the postman, from going back on strike. Therefore, you get more postmen on the bridge to deliver letters (messages).

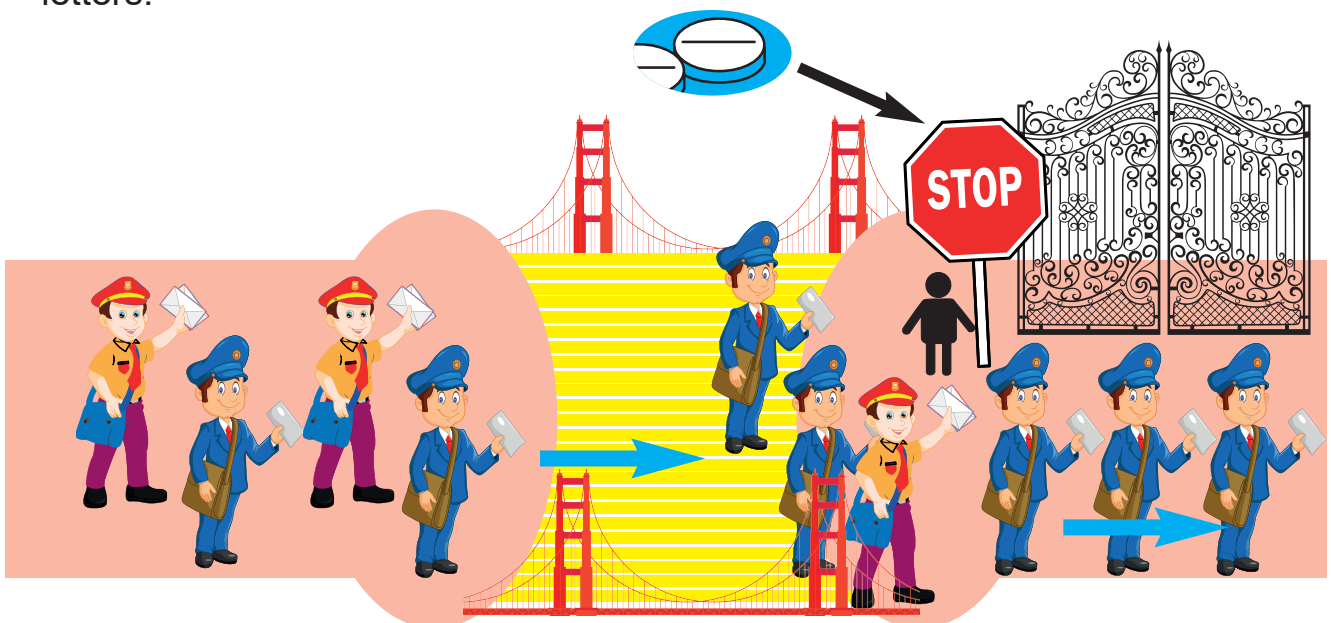


In people with ADHD, Mr Gates who is the gatekeeper opens a side gate to let the postmen out to a party or a holiday. This means you miss your post and do not get your letters (messages) on time.

Mr Gates opens the gate



About Guanfacine: This medicine, also a nonstimulant, works on the other side of the bridge and stops Mr Gates opening the gate. So the gate is shut and as a result, the postmen don't get out and you will continue to get your letters.



Stimulant medicines

A. Methylphenidate group

Medikinet and Ritalin: A short-acting tablet which works up to 4 hrs, to be taken 2-3 times a day

Addepta XL, Ambinet XL, Equasym XL, Focusim XL, Medikinet XL, Meflynate XL, Ritalin XL : A longer acting capsule that works up to 8 hrs, taken once a day in the morning. Content can be sprinkled on to yoghurt/apple sauce in case of the child with swallowing difficulties.

Affenid XL, Atenza XL, Concerta XL, Delmosart, Kixel XL, Matoride XL, Xaggitin XL and Xenidate XL: A longer acting tablet that works for up to 12 hrs, taken once a day in the morning.

B. Amphetamine group

Dexamfetamine and Amfexa: A short acting tablet that works for up to 4 hrs.

Elvanse and Lisdexamfetamine: A longer acting capsule which works for up to 13 hrs, taken once a day. The content can be dissolved in water in case the child has swallowing difficulties.

Nonstimulant medicines

Atomaid and Atomoxetine: A longer acting capsule that can work for up to 24 hrs, taken once a day or in two divided doses per day.

Intuniv (Guanfacine): A longer acting tablet that works for up to 24 hrs, taken once a day in the morning or evening.



Please see your doctor or nurse to learn more about the medications mentioned above.



What is ADHD?



Let me be your camera



What is it like to have ADHD?



What is the role ADHD medications?

The above video is authored by Dr Yemula



Top 10 inspirational people with ADHD

About the authors

Dr Chinnaiah Yemula has worked as a Consultant Community Paediatrician in Bedford for over 25 years. He has a specialist interest in the field of ADHD, behaviour, sleep and bedwetting difficulties in children and young people.



He has been the Guest Editor for ADHD and ASD focus issues of the journal 'Cutting Edge Psychiatry in Practice'. He has presented his work (posters, talks, lectures, courses) within the UK and several other countries, including India, Ireland, Canada, Japan, Australia and China.

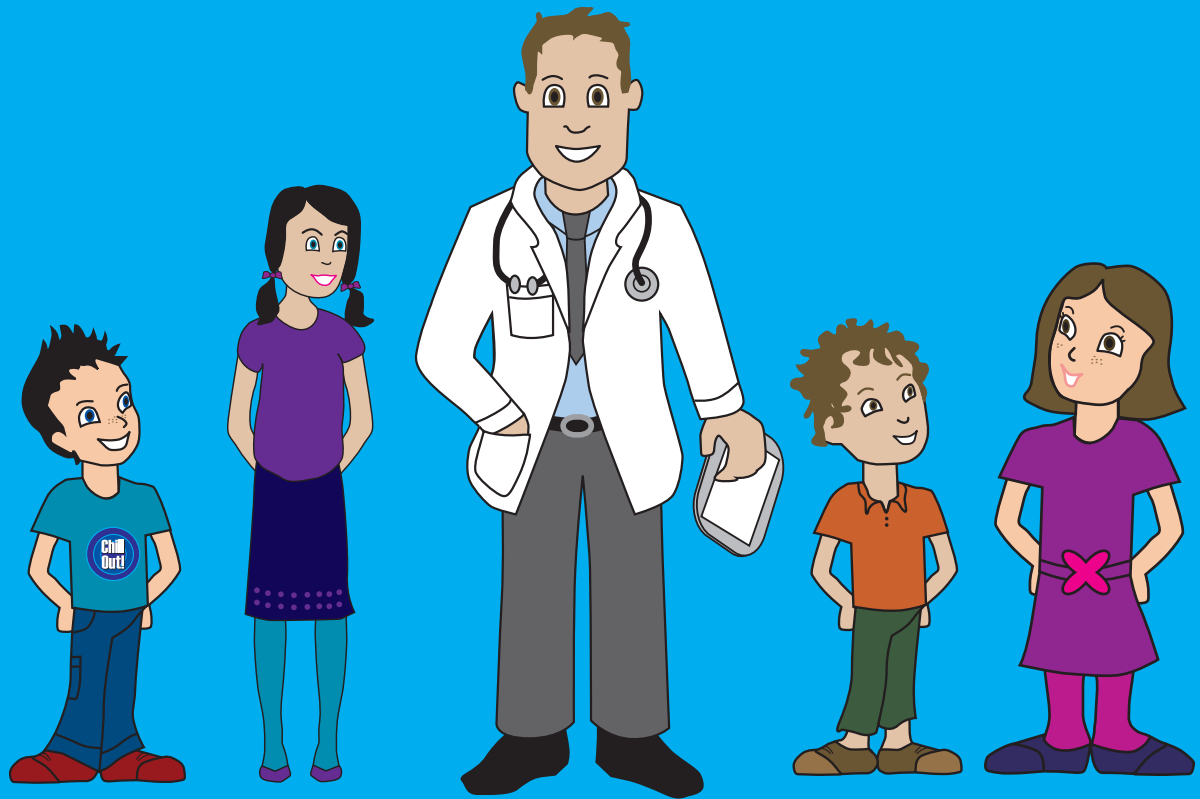
He is a strong advocate of patient education and collaborative work with children and families to achieve a holistic care with the best outcomes. He has published a number of resources (story books, parental guides, ebooks, leaflets, flip charts) for children, teenagers, parents/carers and healthcare professionals.

Dr Nivedita Bajaj, FRCPCH, is a Consultant Community Paediatrician and is employed by the East and North Herts NHS Trust.



As Neurodevelopmental Paediatrician, she specialises in complex neurodisability and neurodevelopmental conditions supporting children and young people with ADHD, autism, FASD, developmental delay, epilepsy, cerebral palsy and related conditions. She has practised paediatrics for over three decades.

She chairs the George Still Forum, the UK's national ADHD forum. A regular speaker at national and international conferences, Dr Bajaj has authored numerous psychoeducation resources for children, young people, carers and professionals.



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