

The Hormones of Mood

Derek Pugh



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“I’m a moody teenager. Why does everyone blame my hormones?”

“Because” I told her, “much of what you’re going through is caused by chemicals your brain makes”.

Lots of kids ask questions like this. Teenagers are at the mercy of their hormones. Dramatic changes are taking place in nearly every part of your body. Hormones are chemical ‘messengers’ released by parts of the body to control other parts. Many come from glands; you may have heard of some of them – the pituitary, the adrenal, the pineal gland. The hormones they release do everything from creating our sleep patterns, to stopping us urinating during the night (try going 9 or 10 hours during the day without a wee!).

But there are four main hormones you should know about that put you into your moods. Two of which are nicer than the other two.

The two you have to have but don’t really want too much of are **adrenaline** and **cortisol**.

Adrenaline

Adrenaline gives you power. I was snorkeling with a friend once and a small sea snake swam towards us. Sea snakes are masters of their environment and have little to

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fear from us, therefore are usually very safe to be near. Robert didn't think of that. The snake swam towards him, he kicked at it wildly, his flippers even came off. He panicked and the next thing he knew he was standing two meters out of the water on a barnacle covered rock. He had no memory of how he got there. Adrenaline had kicked his amygdala (the part of his brain that controls this, as well as emotions) into taking control of his body and up he went. Adrenaline gives us the "flight or fight" response. It's survival at its most basic. I don't know what happened to the snake.

You may not be swimming with sea snakes, but it's possible for people to build up high levels of adrenaline even without scary things. This gives you a mood you might not want. How can you tell if you have high adrenaline? Clinical psychologist Andrew Fuller (2007 p 87) is an expert on this. He lists the signs but I'll turn his lists into questions. If you answer lots of yeses it's possible you have high adrenaline levels.

1. Do you feel silly, or hyperactive?
2. Is it hard to fall asleep?
3. Do you have lots of energy?
4. Do you 'spit the dummy' and run off?
5. Do you argue a lot?
6. Can you concentrate?
7. Are you worried about trying new things?
8. Are you busy without achieving much?

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If you've answered yes too many times you may have high adrenaline levels. How do you get them down? Work with your family to help you calm down. Have quiet times. Do repetitious or ritual things that are easy. Talk with an adult you trust, perhaps a teacher or school counselor. Try to be where you feel safe as much as possible. These are things you can control, though maybe you'll need some help.

Cortisol

Cortisol is the other hormone I warned you about. Watch out for it because it's released during stress, and often follows adrenaline in a double whammy. I saw a two year old boy fall into a pool once and nearly drown. We rescued him and he needed resuscitating, but he didn't seem particularly phased by the experience. His mother however was hysterical. She couldn't speak, she pulled out her hair, she was a mess. Cortisol does this. It blocks your ability to think clearly and speak your thoughts. The boy's mother had way too much cortisol for normal functioning for a few minutes at least. How can you tell if you have too much? Again, answer these questions (adapted from Fuller 2007)

1. Do you find it hard to express your thoughts?
2. Are you worried or on edge?
3. Are you bullied regularly?
4. Are you upset easily?

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5. Are you defensive and overreact to things?
6. Do you find it difficult to prioritise?
7. Do you smell more? Cortisol makes your sweat smell sour.

If you have high cortisol for a long period it will become a problem. What are you going to do? You have to be somewhere you feel safe, away from violence or humiliation. If that's not where you spend most of the day talk to someone - school counselor, parent etc about how you feel. Try not to eat too much sugar, but drink lots of water (cortisol is soluble). Go to bed early and get more sleep. Don't acerbate the situation by playing violent video games or watching violent movies. Listen to soothing music, put away your *Megadeth* albums for a while. These are things you can control.

Now for the two hormones you may want more of - **dopamine** and **serotonin**.

Dopamine

Dopamine is cool. Fuller calls it "the party animal of the neurochemical world "(2007:89). You want dopamine because it makes you feel switched on and positive. Patricia Wolfe (2002), found many neuroscientists think that dopamine might be the one neurotransmitter that is the bottom line for pleasure. Dopamine binds to the pleasure centers of the brain. Without it you experience

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little pleasure. Eight or nine year old kids have an adult dose. But teenagers sometimes get ripped off. Your dopamine levels may have dropped over the last few years. How can you tell if you're low on dopamine? Answer these questions (based on Fuller 2007):

1. Do you have trouble focusing or concentrating?
2. Are you hard to motivate?
3. When you finish something do you lack pride in what you have done?
4. Are you lethargic and tired all the time?
5. Is everything boring?

Too many yeses here and you may need more dopamine. Where do you get it? Your brain will make it for you if you exercise it in the right way. Try repetitive sports like swimming or ping pong or challenging games, and solve some problems. Spend more time with your friends and family and be more social. Try new things, seek success. Do things that make you laugh, especially with other people. You can eat better too - include omega 3 and 6 in your diet. These are things you can control.

Serotonin

Serotonin is a beauty - the feel good hormone of choice because it acts by calming you rather than revving you up like dopamine (Wolfe 2002). If you miss out on this one it's a depressing experience as lack of it is linked to

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depression. Fuller calls it the 'quiet achiever' giving you a slow high that makes you feel good and calm, and in control. Here are the signs (also based on Fuller's lists (2007)):

1. Are you sullen and uncommunicative?
2. Is it hard to get out of bed in the morning?
3. Are you hard to please, nothing ever good enough?
4. Is everything just too hard?
5. Are you sad or depressed?
6. Do you avoid looking others in the eye? (Your parents, teachers, friends?)
7. Do you try and avoid your family's activities?

The good news is serotonin is easy to make. You get it from exercise – even just walking. You get it by spending time with friends or family who support you and make you feel like you belong. You get it by accepting responsibility and taking some control.

Moods and what to avoid – help yourself.

I am a great fan of education that empowers the learner to help themselves. You've read this far so now you have some of the knowledge that will give you power. There are ways you can change your moods. Changing moods is just shifting from the down hormones to the up hormones.

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The biggest way is sleep. You're a teenager. Statistics say you get 9 hours less sleep a week in the 2000s than I did as a kid in the 1970s. You could be sleep deprived. Read my articles on the importance of sleep (Pugh 2010). *If you do nothing else to improve your mood do this one.* Sleep also improves your learning and you're more likely to stay out of trouble.

Light might also be affecting you. In the classroom move closer to the window for natural light. Keep the house lights dim in the evening and don't sit so close to the TV!

Listen to nicer music – you know what I mean. It can really affect your mood. Or better still, play an instrument. I learned the harmonica when I was 19 so I could play when out camping – corny I know, but I had a lot of fun.

Be careful of TV, movies, computer games. Limit the time you spend on them. Get a blue light screen for your computer – blue light can directly affect your pineal gland which makes melatonin, the hormone of sleep. Blue light might be why you can play a game until dawn without feeling tired. Computer games may be fun and you develop a lot of skills playing them, but they're empty skills, of little use outside the virtual world, they just take up brain space. You need to make a conscious decision about how important they are to you.

Ask your friends not to text or phone you when you need to be asleep. Leave your phone outside or on silent. Don't

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allow yourself to be woken for no real reason. Sleep in the dark.

Make things right with your family. Really shock them one day by telling them you love them – this is not easy for many teenagers. Your parents are probably doing the best they can. No one has a degree in parenting; we all learn it as we go along. Trust that you're loved, even if it doesn't feel like it sometimes. Your parents are, after all, governed by the same hormones as you, so they have no choice other than to love their children.

If you've read all this and you're having trouble making enough serotonin and dopamine even after talking with your friends, changing your diet or following the other tips above, and you just feel bad all the time, you'll worry about it less if you get help. Lots of teenagers feel this way and lots of adults devote their lives to helping them get through it. So talk to your school counselor or someone you trust and know cares about you. If they can't help, maybe they'll know someone who can. Good luck.

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Derek Pugh is an experienced Principal and teacher in both Australian and International Schools. He now runs workshops in Brain Compatible Education for students, teachers, parents and corporate groups worldwide. Workshop participants discover the

latest in neuroscience and why knowledge of the brain is a powerful tool in education; the 'SEWBaD model' of preparation for learning; what brain 'plasticity' means to education; individual learning profiles and how to use them for effective learning and teaching; how to teach or learn efficiently; and models of brain operation and function.

He is the author of "The Owner's Guide to the Teenage Brain"

www.derekpugh.com.au