

Panic Disorder Science Communication Resource Plain Text

A LUNA Project Science Communication resource on Panic Disorder

Walking you through the science underpinning Panic Disorder- its causes, symptoms, and treatments.

What can I expect from this resource?

We know Panic Attacks and Panic Disorder (PD) are tough, and often you can feel isolated and hopeless. It's important to remember that you are not alone, and sometimes just knowing a little bit more about what you're going through could ease your nerves. This resource is here for YOU, to help out with all the complicated things you may be hearing from others and the things you feel. We'll take you through what Panic Disorder is, what causes it, panic attacks, triggers, and therapies you might even be considering.

We hope this can help you along your journey

The LUNA Team

(you can meet us at the end!)

Meet Jo!

Jo (she/her) has just been diagnosed with panic disorder. We are going to follow Jo in her journey to understand more about it.

First up, what is panic disorder?

According to the DSM-V , panic disorder can be characterized by "recurrent unexpected panic attacks" where at least one of the attacks has been followed by a month or more of increased worry about having more, leading to significant changes in other behaviours as a result. Panic attacks can be "unexpected", where they seem to come out of the blue, or "expected" where there is an obvious cue or trigger for their occurrence.

How is it diagnosed?

Jo: "I've been feeling worried a lot recently and have experienced episodes of panic with a really fast heart rate. It makes me feel sick and dizzy and sometimes I can't breathe. I think it might be panic attacks."

GP: "Panic attacks are a lot more common than you might think. I will refer you to the mental health team where a clinical psychologist can make a diagnosis using the criteria set. This is called the DSM-V or the ICD-11. There might be a waiting time so in the meantime you can always reach out to me as your GP."

Panic Attacks

Panic attacks have a lot of different symptoms, caused by different things. Here, Jo will explore some main symptoms, causes and how to help manage them during a panic attack!

Dizziness

What: Feeling dizzy or faint

Caused By: Breathing quickly can cause your brain to get less oxygen, which means it can't work as well and makes you dizzy!

Ways to help: Sitting down, focusing on breathing, eating something after a panic attack

Also Caused By: Not eating enough, medications, lack of iron, dehydration, etc.

Ears Ringing

What: Ears are ringing or feel muffled

Caused By: Nerve pressure from fight or flight response. It is completely harmless and will pass afterwards!

Ways to help: Going to a quiet environment

Also Caused By: Infection, age, loud noises, medication

Chest Pains

What: Pain or tightening in your chest

Caused By: Quick breathing and your fight or flight response can tire out or stiffen muscles, making them hurt!

Ways to help: Focusing on breathing and grounding yourself

Also Caused By: Exercise, asthma

Nausea

What: Feeling sick or like you have butterflies

Caused By: Hormones released and your fight or flight response

Ways to help: Taking small sips of cold water can sometimes help!

Also Caused By: Diet, illness, motion sickness, medications

Shaking

What: Shaking or trembling

Caused By: Your fight or flight response prepares muscles to move, and they have too much energy! Your muscles start to shake to remove some of this energy

Ways to help: Moving shaking areas slightly can help to release some of this energy
Also Caused By: The cold, muscle fatigue, caffeine

Pins and Needles

What: Pins and needles or feeling numb

Caused By: Fight or flight response limits blood flow to certain areas, which creates pins and needles

Ways to help: Moving around slightly and focusing on breathing

Also Caused By: The cold, pinched nerves or sitting on your legs for too long!!

Pounding Heart

What: Your heart feels like it's pounding/beating irregularly

Caused By: The release of adrenaline during a panic attack! Breathing quickly also increases heart rate.

Ways to help: Focusing on breathing and grounding yourself

Also Caused By: Exercise, high temperatures, caffeine, standing up too quickly, etc

Short of Breath

What: Feeling breathless or unable to breathe

Caused By: Panic attacks cause breathing to speed up, which can mean we don't breathe as much oxygen as we need! This makes us feel out of breath.

Ways to help: Breathing techniques can slow breathing down

Also Caused By: Exercise, anaemia, allergies, asthma

Try to remember...

Panic attacks seem and feel really scary, but they don't cause any harm or lasting effect on your body! They can be more manageable if you can identify any triggers and you can mentally prepare yourself for them occurring!

What causes Panic Attacks and Panic Disorder?

Causes of panic disorder are unclear, however risk factors include a variety of things. For example, genetics, being female, previous trauma, as well as it having high comorbidity with other disorders such as depression. There's an estimated heritability rate of 30-40%, and PD has an estimated lifetime prevalence of 4.7%- aka approx. 366,600,000 people have PD at some point in their lives, which totals the populations of the US and Mozambique combined. So, without a doubt, you are not alone.

Women are also almost twice as likely to develop PD compared to men. Major stress and changes in your brain functioning have also been linked to panic attacks and PD.

Evidently, causes of the disorder are extremely varied, but something to take away is that none of them are completely in your control, nor are they your fault.

As for panic attacks themselves, they often come on suddenly and without warning, and can feel like they're caused by nothing at all. Overtime, you may start to notice that they are caused by a fear stimulus or other trigger, which could be a physical object, intense emotions, and/or certain situations.

Regardless of what brings on a panic attack, an evolutionary mechanism to protect you from harm, called the fight or flight response, is most likely involved.

It's your body's reaction to life-or-death situations, and also ones of intense stress. When you're met with a trigger, some of your primitive brain areas become activated; the pituitary gland and amygdala.

Your amygdala will recognize a fear stimulus (trigger) and tell your pituitary gland to release adrenaline as a response, resulting in all the familiar panic attack symptoms (heart racing, hyperventilation, muscle tension etc.). Your body releases noradrenaline after this stage of distress is over, bringing things back down to normal levels. The intense and overwhelming symptoms of panic attacks that you experience may seem like they are doing your body harm, but it's important to consider that they are natural ways of your body dealing with unnatural amounts of stress. There are no long term negative impacts on your physical health associated with having panic attacks or PD.

Jo's Experience: Triggers

At the start I didn't know what was going on so I definitely didn't identify any triggers early on. By the time I learned about triggers and was getting support I was in very deep, missing school and housebound so that made it very hard to identify triggers since I was in a cycle of being afraid of panic attacks so panicking more, so being more afraid, etc. So I avoided everything, because as far as I was aware, if I panicked at home, at least I was at home rather than in public and that wouldn't be embarrassing or as scary. Once I got back to school I learned that being trapped was something I didn't like, so if I couldn't get out of a classroom easily I would panic. I also learned that crowds were a trigger, probably linked to that trapped feeling. Social situations with people I wasn't comfortable with was also a trigger for me, so teachers who didn't sit me with people I knew well would cause me to panic. Public transport was a no no until I'd learnt coping strategies and for some odd reason at that time family gatherings. But it took being able to control panic attacks to be able to place myself in these situations to identify those triggers.

Once I knew that those were triggers, a lot of things from my earlier childhood started to make sense. For example, I used to throw up a lot on Sunday nights, now we think that that was anxiety manifesting in a different way as a 6/7 year old. I used to make my grandpa walk the long way to school to avoid getting there, and I got headaches in school in primary 7. I was also obsessed with asking my mum when we would be going home from family gatherings; not like a normal kid who was bored, I wanted to know exactly what time, and would always check that we were still leaving at that time. So I noticed that my behaviours as a child related to the things that I identified as triggers as a teen/adolescent.

Therapeutic treatment...

The NHS recommends talking therapies as the main treatment for panic disorder... Part of your treatment might include having regular sessions with a therapist. Usually, cognitive behavioural therapy (CBT) involves discussing your thoughts and feelings (the “cognitive” part) and taking actions to encourage positive thoughts and discourage unhelpful ones (the “behavioural” side). Therapy may also include “homework” being set between sessions so you can practice what you’ve learnt independently.

GP: Therapists might teach you about the nature of panic disorder, panic attack, bodily symptoms and other relevant information. This can help you understand why some bodily signals appear, which may help you to not interpret them as a threat, breaking the panic cycle. For example, knowing that it is common to feel out of breath after walking explains your fast breathing rate, rather than it being a sign of something scary! Individuals with panic disorder are often surprised to learn that their symptoms are no different from the body’s response to danger, and their attacks are just false alarms triggering the fight or flight response system, meaning they are neither dangerous nor harmful.

Jo's experiences in therapy...

My panic symptoms were made worse by some unhelpful beliefs that I had developed - I used to think having a high heart rate meant I was going to have a heart attack! My therapist helped me to identify and change these thoughts to more helpful and positive ones by...

- Discussing my beliefs and what made me think they were true
- Looking at evidence for and against my beliefs
- We used situations that had happened to me to disprove my unhelpful, wrong beliefs
- I started keeping a journal to track my beliefs, how they made me feel and how they linked to panic attacks.

I used to think my attacks were spontaneous, random, and out of my control. My Therapist encouraged me to keep a journal of when I had a panic attack, like the times, situations and circumstances. This helped me see patterns, so I could predict when they might occur, giving me a sense of control which reduced a lot of my anxiety.

Practicing breathing exercises reduces the likelihood that changes in your breathing rate or depth will lead to physiological symptoms that trigger panic. What I practiced in therapy I now apply when I feel a panic attack beginning, which can slow down the other physiological symptoms, preventing the attack.

Exposure Therapy

Therapists may suggest putting yourself in the situations that trigger your panic. In these situations you might be encouraged to simply accept what is happening, and avoid using strategies which help you cope.

For example, if you feel like you will faint when in a busy place, your therapist might suggest you visit somewhere crowded. If you normally cope by sitting down or leaning

against a wall, your therapist could encourage you to not do it this time, as it will show you that you are able to deal with these situations without fainting, which eventually may remove the fear itself!

Some can be done during your therapy, like holding your breath to feel breathless, spinning to get dizzy, or even watching a scary movie or roller coaster ride!

Exposure therapy is your choice - you shouldn't feel pressured to try anything you are not comfortable doing!

Support Groups ... Jo's Experience

I also went to support groups, which I found really helpful for a number of reasons...

As I was meeting other people with panic disorder, I used the opportunity to gain useful information and some really good advice!

Meeting other people with similar experiences to my own helped make living with panic disorder and having these feelings seem more "normal"

I found it really inspiring to hear other people talk about achieving their personal goals and pushing themselves, which motivated me to do the same.

Although I went to face-to-face meetings, support groups can also happen over the phone or in writing.

Going to support groups reminded me that there is no shame or stigma surrounding mental health.

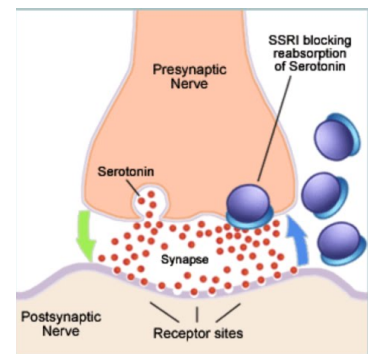
Being part of a group helped me realise the positive things I was doing to help myself, and other people gave me encouragement and support to keep doing it!

Pharmacological treatment ...

Another treatment for panic disorder is to take medications - this is known as "pharmacological treatments". Types of pharmacological treatments that may be suggested include SSRIs and Benzodiazepines.

What is an SSRI?

An SSRI, also known as Selective Serotonin Reuptake Inhibitor. SSRIs are mainly prescribed to treat depression but can also be used for panic disorders. Serotonin is a naturally occurring neurotransmitter in the body, it is used to stabilise our mood and happiness, it is also sometimes referred to as the happy chemical.



What does an SSRI Do?

A neurotransmitter is a chemical substance that is released at the end of a neuron to pass on a chemical message onto the next neuron. Once the neurotransmitter has done its job, the neurotransmitter will be reabsorbed back into the neuron by a transporter. The job of an SSRI is to block the reabsorption of serotonin back into the neuron to allow more serotonin to be in the brain, thus increasing "happy" feelings. The process can be seen in the drawing above.

What is it taken as and for how long?

SRIs are usually taken in tablet form, and depending on the severity of the panic disorders, taken 1 to 3 tablets a day. It usually takes 2-3 weeks before noting the effect of the SSRI and a recommended course lasts at least 6 months.

What are some types of SSRIs?

- Fluoxetine (Prozac)
- Fluvoxamine (Luvox)
- Sertraline (Zoloft)
- Paroxetine (Paxil)
- Escitalopram oxalate (Lexapro)
- Citalopram (Celexa)

Side effects ...

Like all types of medication there are some possible side effects including:

- Insomnia
- Headaches
- Rash
- Blurred vision
- Drowsiness
- Reduced sexual desire

Missing several doses or stopping suddenly could cause flu symptoms or:

- Nausea
- Dizziness
- Uneasiness
- Fatigue

What are benzodiazepines and how does it work?

Benzodiazepines work by enhancing the effect of a neurotransmitter called gamma-aminobutyric acid (GABA) which produces a calming effect. When a person feels anxious, there is an overstimulation in the brain and by taking benzodiazepines, this will increase GABA causing a calming effect and reducing the overstimulation, thus reducing the symptoms of anxiety. Benzodiazepines are taken as a one off dose, when needed as it is most effective taken as a one off dose.

What is it taken as and for how long?

Benzodiazepines are also taken in pill form and as a one off dose, when needed as it is most effectively taken as a one off dose. However it may be prescribed for a once per day dose. They are also generally used on a short term basis as they can be habit-forming, causing mental or physical dependence.

Side effects ...

The side effects of benzodiazepine use may include:

- drowsiness
- confusion
- dizziness
- impaired coordination, increasing the risk of falls and accidents
- depression
- increased anxiety

More serious effects include:

- memory problems
- behavioral changes — for example, increased risk taking
- delirium, especially in older people
- risk of dependence, especially with long-term use
- possibly an increased risk of dementia, although scientists are unsure of this

A note from Jo...

There was a time when I thought that my panic attacks were going to stop me from doing the things I wanted to do. My journey was a long one: it took me 3 years to get on top of my panic disorder with the help of a mental health nurse, a psychiatrist and sertraline: one of the SSRI medications. Now I'm at uni, work part time and am back volunteering with a local sports group. There are still times when I feel panicked but I now know how to cope with those emotions. My journey will be different from yours but it is important to know that you are not alone. and panic attacks are something that can be overcome.

Glossary...

Adrenaline - Also known as epinephrine, it is a hormone secreted by the adrenal glands that increases rates of blood circulation, breathing, and metabolism, preparing the body and muscles for exertion.

Amygdala - mass of grey matter in the brain associated with emotion and fear processing.

CBT - a talking therapy based on the idea that how we think (cognition), how we act (behaviour) and how we feel (emotions) all interact together. Our thoughts influence our feelings and behaviours, therefore this therapy focuses on the unhelpful thoughts and changes them for the better.

Exposure Therapy - a behaviour therapy where we deliberately put ourselves in situations that give us anxiety to see what happens - usually nothing really bad occurs, which reassures us in similar situations in the future.

Fear stimulus - aversive stimulus resulting in a fear/negative response.

Flight or fight response- a physiological reaction that occurs in response to a perceived harmful event, attack, or threat to survival.

Noradrenaline - Also known as norepinephrine, it is a hormone with similar functions to adrenaline and is essential for the fight or flight response.

Pituitary Gland - gland responsible for several endocrine responses as well as the growth and development of other endocrine glands.

Support Groups - meeting with people who might have panic disorder or something similar to share personal experiences and feelings, coping strategies and other stories. Can be either face to face, over the phone, or in writing.

References and other resources...

Websites:

<https://www.nhs.uk/conditions/panic-disorder/>

<https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/medicines-and-psychiatry/ssri-antidepressants/overview/>

<https://www.medicalnewstoday.com/articles/262809>

<https://www.mind.org.uk/information-support/types-of-mental-health-problems/anxiety-and-panic-attacks/panic-attacks/>

Books:

An introduction to modern CBT: psychological solutions to mental health problems (Hoffman, 2011)

When Panic Attacks (David D. Burns M.D, 2007)

Organisations:

Mind: <https://www.mind.org.uk/>

Young Minds: <https://youngminds.org.uk/>

No Panic: <https://nopanic.org.uk/about-us/>

Meet the team!

Eilidh Murphy (She/her) Hi! I'm Eilidh, a final year psychology student at the University of Glasgow.

Elodie Camus (She/her) Hi! I'm Elodie, a first year Psychology student at the University of Exeter :)

Sophie Chan (She/Her) Hey! I'm Sophie, a 2nd year Psychology student at the University of Exeter

Ally Lloyd (She/her)

Hannah Allison (She/her)

Ashley Sheridan (She/her) Hey, I'm Ashley, a 3rd year Psychology student at the University of Exeter

Emma Skinner (She/her) Hello! I'm Emma, a 1st year Psychology student at the University of York :)