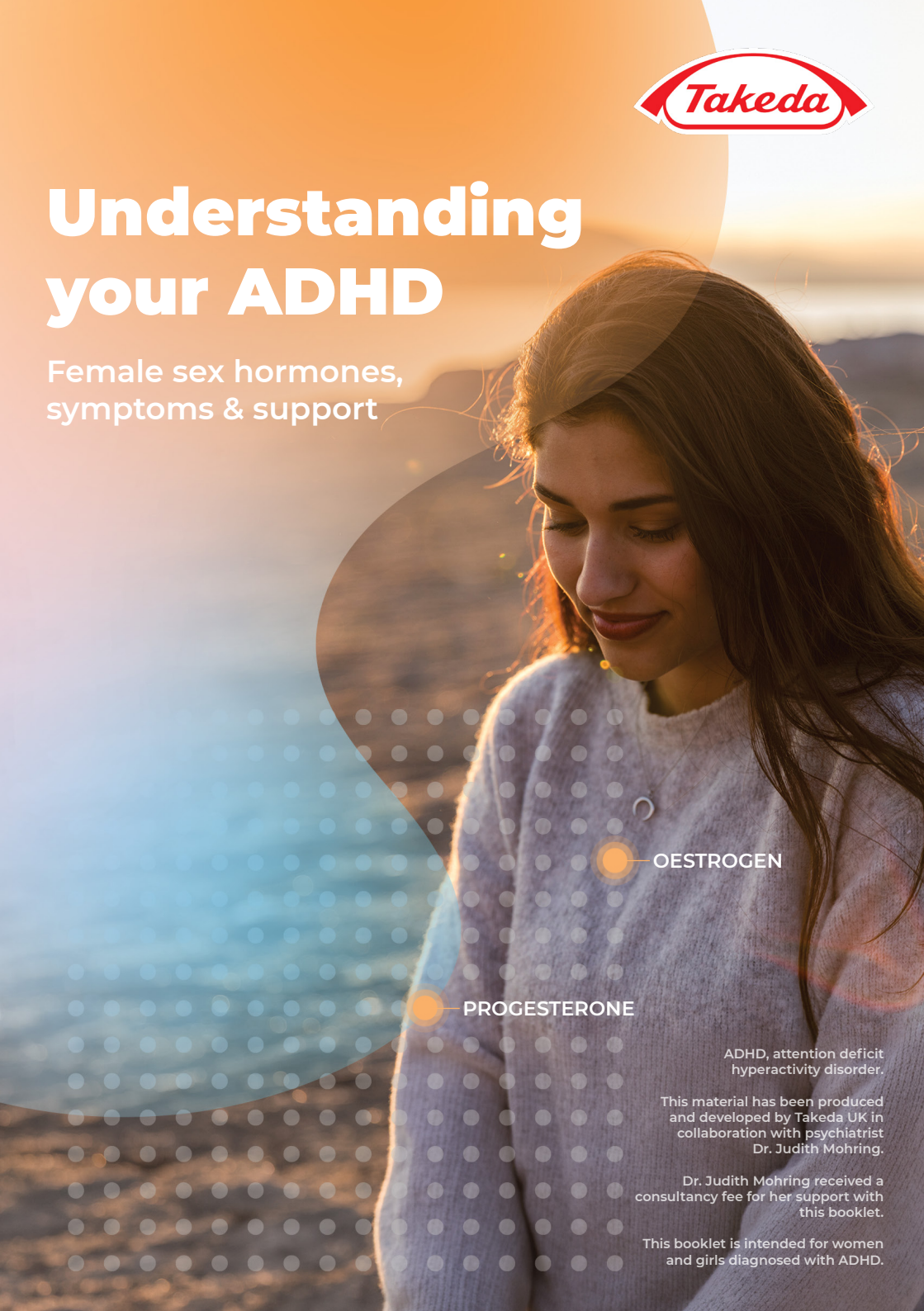
Understanding your ADHD

Female sex hormones, symptoms & support



ADHD, attention deficit hyperactivity disorder.

This material has been produced and developed by Takeda UK in collaboration with psychiatrist Dr. Judith Mohring.

Dr. Judith Mohring received a consultancy fee for her support with this booklet.

This booklet is intended for women and girls diagnosed with ADHD.

How this booklet can help

An introduction from Dr. Judith Mohring

If you are female and have been diagnosed with ADHD, then this booklet has been developed for *you*, as well as your family and friends.

For as long as ADHD has been understood it has been misunderstood in girls and women. The earliest descriptions of ADHD were in cautionary tales of *"Fidgety Philip"* and *"Johnny look in the air"* with the popular and professional idea of ADHD having been confined to school-age boys.

More recently, psychological medicine has caught up with the reality that ADHD persists into adulthood. Although it is now acknowledged to exist among females, ADHD is *still* overlooked and misdiagnosed in girls and women. Females wait longer for an ADHD diagnosis and are more likely to have a co-occurring psychiatric diagnosis, often requiring a more nuanced and flexible approach to treatment than males. These disparities may be due to a range of factors, such as societal norms, historical practice patterns, and/or differences in sex hormones between females and males.

The purpose of this booklet is for the reader to better understand how ADHD specifically affects girls and women, and how fluctuating female sex hormones across the menstrual cycle and the lifespan can impact ADHD.

The story of ADHD in girls and women is a fascinating one, which is only just beginning to be researched and discussed. We hope that you find this booklet useful, share it with others, and feel better understood and less alone with your experience of ADHD.

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ADHD, attention deficit hyperactivity disorder.

Contents page

What is ADHD?

ADHD is a common neurodevelopmental disorder that can affect anyone, male or female, throughout their life.

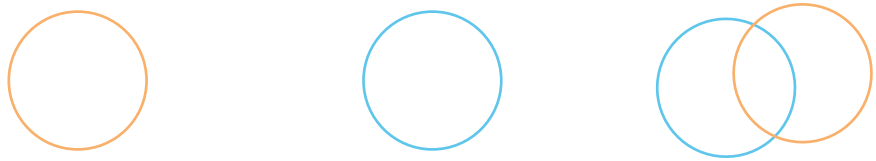
The **core symptoms** of ADHD are **inattention**, **hyperactivity** and **impulsivity**, as well as **emotional dysregulation**.[1]

Symptoms are present from **at least 12 years** of age.[1]

Symptoms **present in different situations**, e.g., work, home, school and cause difficulty/distress[1]

Studies have shown that ADHD **runs in families** – **74%** of the variation in ADHD of the population is **due to genetics** rather than environmental factors.[2]

There are three main types of ADHD:



Inattentive | Hyperactive-impulsive | Combined

If you or a loved one has been diagnosed with ADHD you are not alone:

Around 3–4% of adults in the UK have ADHD[3]

(~3.0 million adults with ADHD in the UK aged ≥25 years)[4]

Approximately 5% of children and young people globally have ADHD[3]

(~882,000 people with ADHD in the UK aged 5–24 years)[4]

Why is ADHD underdiagnosed in girls and women?

The symptoms of ADHD typically **show up differently** in girls and women compared with boys and men, respectively.[5]

Furthermore, **females** are generally better able to **hide their symptoms** and/or **develop coping mechanisms**.[5]

As a result, despite the use of standard diagnostic criteria, ADHD symptoms in females are commonly attributed to **other mental health conditions** or **missed** altogether.[5–7]

The reasons for the disparity in ADHD diagnosis between girls and women compared with men and boys are multifactorial and include:

Lack of awareness among healthcare professionals of the differences between males and females with respect to ADHD.[5,8,9]

More subtle ADHD symptom presentation in girls and women.[5,8,9]

Males with ADHD often display overt, disruptive and externalised symptoms, like physical hyperactivity and impulsivity.

Conversely, females more commonly exhibit internalised, inattentive symptoms, such as daydreaming, anxiety and emotional sensitivity.

'Masking' – the act of hiding or minimising ADHD symptoms to appear more 'typical' in social, academic or professional settings.[10,11]

Females exhibit compensatory functions and better social skills, which enable better 'masking'.

Symptoms are often diagnosed as anxiety or depression because of 'masking' efforts.

KEY POINT

ADHD is often missed or misdiagnosed in girls and women.

How might your ADHD symptoms change throughout your life?

ADHD symptoms frequently **fluctuate and evolve across the lifespan**, from childhood to adolescence and through adulthood to older adulthood.

For example, childhood **hyperactivity or impulsivity** may be replaced by internal **restlessness or inattention** in adolescence.

For many, symptoms **may decrease with age**, but they can **resurface** during **high-stress** periods or **life transitions**, such as menopause.[5]

According to a survey of **1500 females with ADHD,** the most problematic ADHD symptoms for girls and women during each stage of life, in order of severity, are as follows:[12]

0–9 years	10–19 years	20–39 years	40–59 years	60+ years
				
Emotional dysregulation	Procrastination	Procrastination	Overwhelm	Brain fog/memory issues
Inattention/distractibility	Emotional dysregulation	Overwhelm	Brain fog/memory issues	Procrastination
Social struggles	Poor time management	Poor time management	Poor time management	Overwhelm

KEY POINT

The ways in which you experience your ADHD may change as you get older.

Why is it important for you to understand how ADHD affects you as a female?

As a female, you have **different sex hormones** than males. These female hormones affect the **same parts of your brain** as ADHD.[10]*

As a result, your ADHD may affect you in **different ways** at different times during your **menstrual cycle** or at **different stages** in your life, depending on your hormone levels.[10]*

The **more information** you have about your hormones and how they affect your ADHD, the **better prepared** you will be to understand and cope with the effects.[10]* Here are some examples of how girls and women with ADHD describe their experiences in their own words...

*My ADHD symptoms become **more intrusive** the week **leading up to my period.** My executive functioning dips, my distractibility increases, and my energy levels are lower. First, I'll be **completely unfocused at work.** Then I'll look at my calendar and realize where I'm at in my cycle, and it'll click.*[13]

*My **working memory** is most severely affected three days before my period. I **can't remember what I'm doing,** and I'll walk into the kitchen 100 times. I'm terrified that when my oestrogen drops during perimenopause and menopause, I **won't be able to hide my symptoms** at work anymore, and it **will impact my ability to have a career.***[13]

*My hormone cycle and ADHD have always been **cumbersome**. At peak ovulation, I think I am a superhero and over-estimate everything that I want to do and can do. Then it wanes as I get closer to my period. My **emotional dysregulation** gets the best of me, and I am a basket case with **no focus**. I do irrational things like quit my job and a week later think, 'That job wasn't so bad.'*[13]

KEY POINT

Changes in your sex hormones can impact how you experience your ADHD.

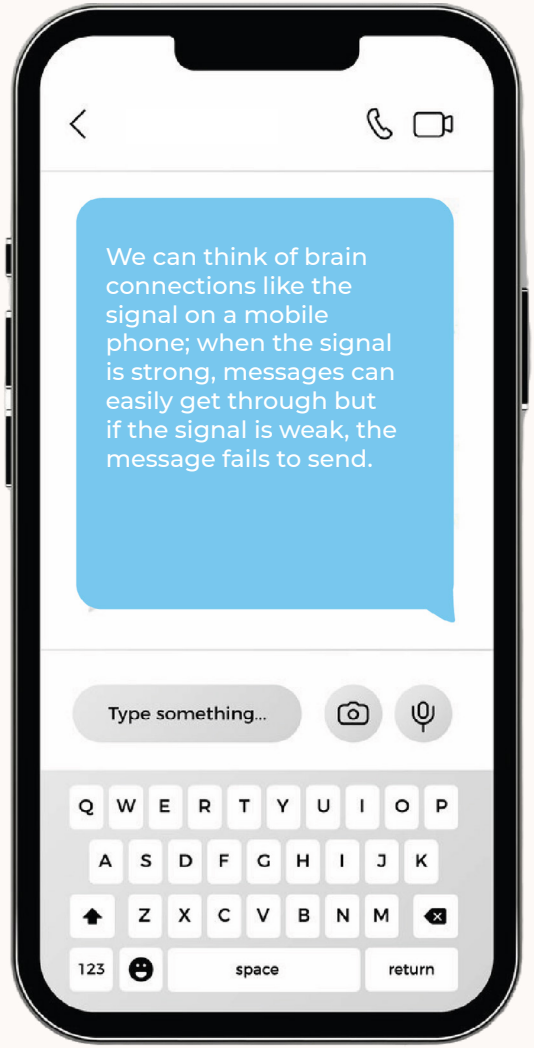
*Dr. Judith Mohring's opinion.

What happens in the ADHD brain?

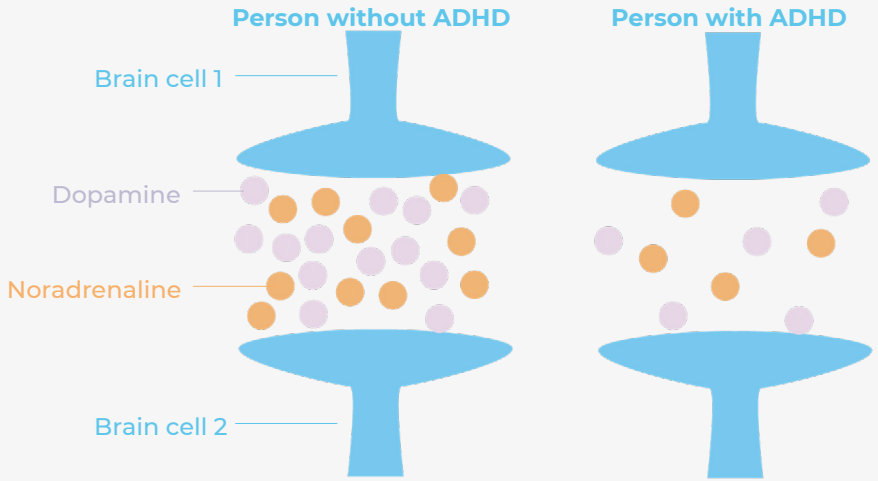
Neurotransmitters are chemicals that are used to **pass messages** between **brain cells**.[14]

ADHD is linked to an **imbalance in key neurotransmitters** in the brain.[14]

These imbalances **disrupt important connections and networks** that are involved in planning and carrying out tasks, shifting focus, regulating emotions, reward and motivation in people with ADHD.[14–16]



Levels of key neurotransmitters, including **dopamine** and **noradrenaline**, are altered in people with ADHD.[14,15]



Dopamine and **noradrenaline** are essential for good function in the pre-frontal cortex, the part of the brain managing our working memory and attention, or ability to focus.

Too much or too little of either of these neurotransmitters can result in poor control of executive functions including impulse control, emotion regulation and organisation of tasks and activities.[16]

KEY POINT

ADHD is linked to an imbalance of the neurotransmitters dopamine and noradrenaline in the brain.

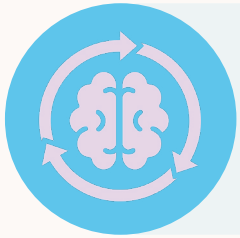
How do sex hormones affect your brain?

Female sex hormones are a class of hormones that, among other things, help **regulate sexual maturation and reproduction**, including sexual behaviour, pregnancy and the menstrual cycle.[17]

The female sex hormones, **oestrogen and progesterone**, also **interact with neurotransmitters** in the brain[18] and have an impact on **mental health**.

OESTROGEN

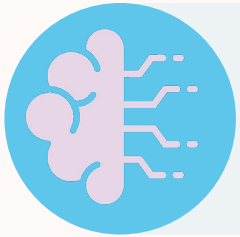
Oestrogen **increases** the amount and activity of the neurotransmitter **dopamine**, as well as the activity of the **brain's reward system** and **memory centre**.[18-21]



Oestrogen affects **mood, emotional regulation, memory, executive function and circadian rhythms**.[22,23]

Periods of **decreased oestrogen** increase vulnerability of **depression, anxiety, cognitive decline** and **ADHD symptoms**.[24]

PROGESTERONE



Progesterone also affects the amount and activity of the neurotransmitter **dopamine**.[19,25,26]

Progesterone plays an important role in **regulating emotions and mood**.[25]

Changes in progesterone levels in the second half of the menstrual cycle play a role in **premenstrual syndrome**[25] – a combination of physical, emotional and behavioural symptoms that occur **1–2 weeks before menstruation**.

KEY POINT

The female sex hormones oestrogen and progesterone also interact with neurotransmitters dopamine and noradrenaline in the brain.

How do sex hormones change throughout your life?

Female sex hormones, oestrogen and progesterone, **fluctuate across the lifespan** from puberty to pregnancy to menopause.

Oestrogen and progesterone levels fluctuate across the lifespan[10]

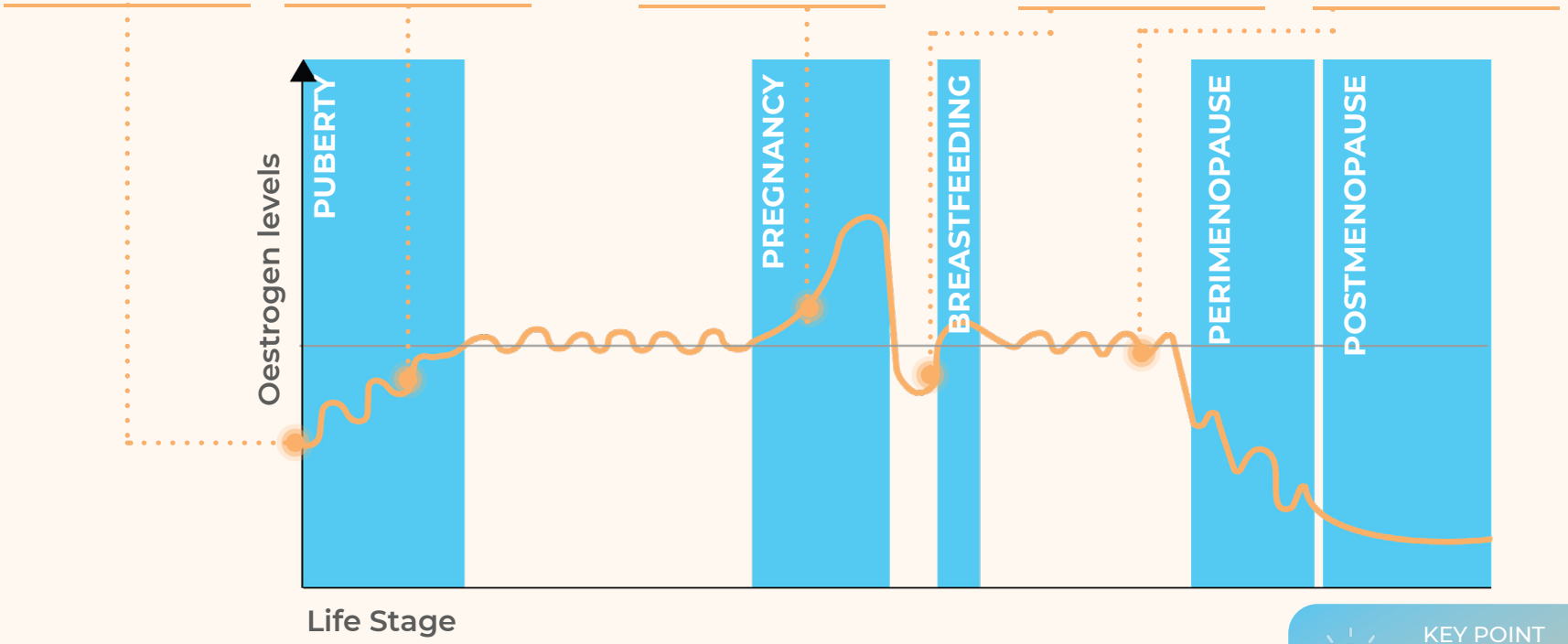
Until puberty, the amount of oestrogen is **low**.

During puberty, this **increases significantly** but **fluctuates** along the way during each menstrual cycle.

During pregnancy, the level of oestrogen **rises continuously** and ends up many times higher than at pre-pregnancy.

A few days after birth, the level **drops abruptly** back to what it was before the woman became pregnant.[17,19]

The year before menopause, the level of oestrogen **drops to the same as before puberty**.



Progesterone levels are **very low** during the various phases of life, **except during the second half of the menstrual cycle**, where it rises briefly, as well as **during pregnancy**.[17,25]

Figure based on Dr. Judith Mohring's opinion/experience.

KEY POINT

Oestrogen and progesterone levels naturally go up and down during the different stages of your life.

ADHD, female sex hormones and the menstrual cycle

Hormonal fluctuations in the menstrual cycle may be linked to fluctuations in **ADHD symptom severity**.[27,28] The first menstrual period is a **major milestone** in female puberty and the onset of reproductive fertility.[10*]

For some girls, this important transition in early adolescence is the stage at which their **ADHD symptoms** are first **unmasked**.[10*]

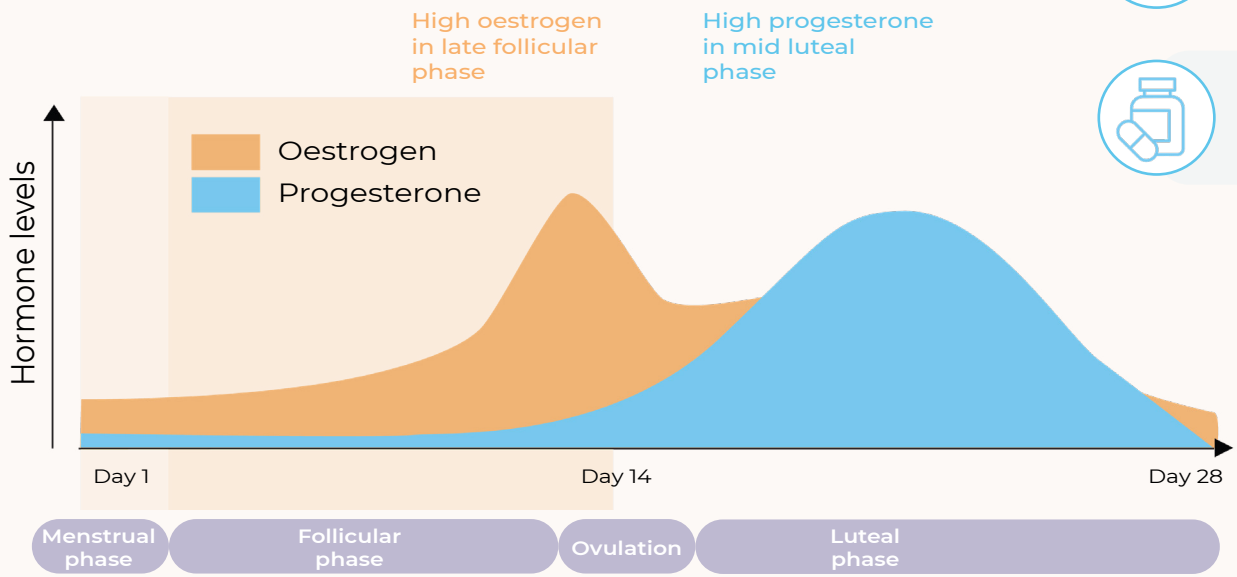
Levels of the sex hormones oestrogen and progesterone **vary significantly** during the different phases of the menstrual cycle, **affecting the brain** to varying degrees.[17,19]

Females with ADHD are thought to be **more sensitive** to the impact of hormonal changes than those without ADHD.[28]

Hormonal fluctuations during the menstrual cycle may affect ADHD symptom severity[27]

Most of us find that our **mood changes** across the menstrual cycle. This is because **oestrogen and progesterone impact the brain** as well as the body.[10*]

Many women find their mood and energy is **at its best, mid cycle,** when oestrogen levels are at their **highest**.[10] Whereas most women find the days around their period **more challenging** with **increased anxiety, lower mood and increased irritability**.[10*]



You might be surprised to know that **these changes** across the cycle can be **more pronounced** if you have ADHD, with a **clearer head mid-cycle** and more **brain fog and emotional ups and downs** towards the **end of the cycle** and around the start of your period.[10,28*]

Every woman is **unique**, so **charting your cycle** to get to know how you feel in mind and body can be useful.[10,28*]

Some women find that their **ADHD medication** is **less effective at certain points** in their cycle, commonly in the days before their period. **Talk to your prescriber** if this is the case.[10*]

KEY POINT

Changes in natural oestrogen and progesterone levels during the menstrual cycle can affect ADHD symptoms. If you notice changes in your symptoms, speak to your healthcare professional. They can advise whether any changes to your treatment are appropriate.

*Dr. Judith Mohring's opinion.

ADHD, female sex hormones, PMS and PMDD

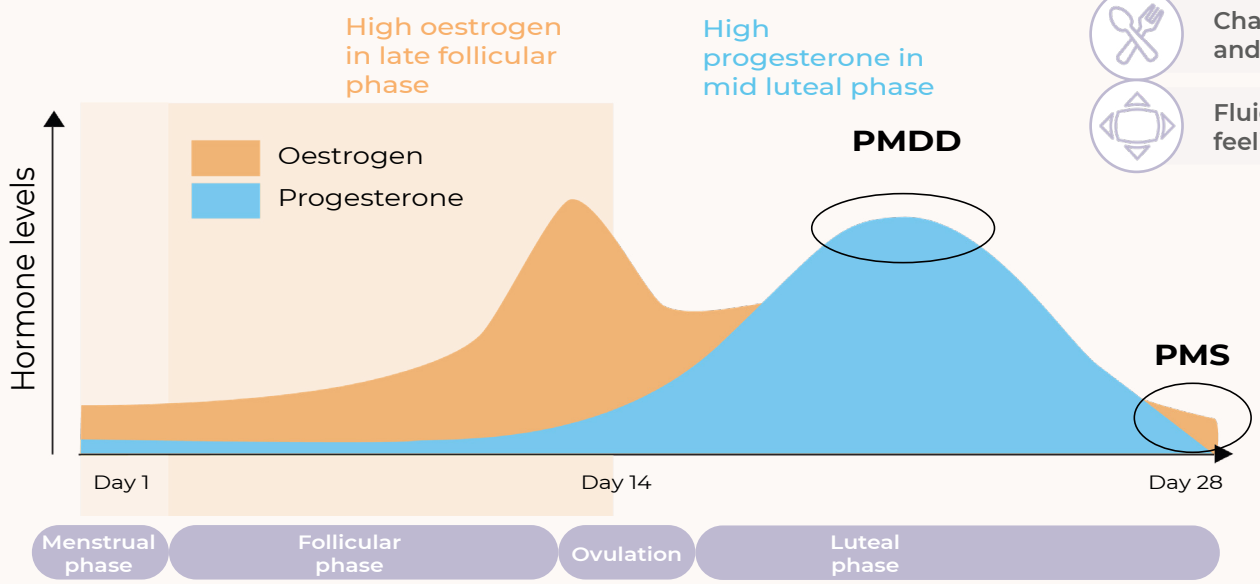
Like symptoms of ADHD, **hormonal fluctuations** in the menstrual cycle may be linked to fluctuations in **PMS and PMDD severity**.[10*]

Researchers have noticed a **link between these conditions**, but they **do not yet fully understand** how they are connected.[10, 32*]

Hormonal fluctuations during the menstrual cycle may also be related to PMS and PMDD[33]

PMS is the name given to the **physical and emotional symptoms** affecting your daily life in the days **before you have your period**. These symptoms usually get better once your period starts.[34] **PMDD** is a **severe** form of PMS.[33]

A study found that 94 out of 229 people (41%) who met the criteria for ADHD reported symptoms consistent with possible PMDD.[32] Researchers have noticed a **link between these conditions**, but they **do not yet fully understand** how they are connected.[10, 32*]



Symptoms of PMS include:[34]

- Feeling depressed, irritable or upset
- Feeling anxious or emotional
- Tiredness
- Headaches
- Changes in appetite and food cravings
- Fluid retention or feeling bloated

Symptoms of PMDD include:[33]

- Feeling depressed, irritable or upset
- Feeling anxious or emotional
- Decreased interest in usual activities
- Difficulty concentrating
- Fatigue
- Sleep and/or appetite changes

KEY POINT

Many women and girls with ADHD also experience PMS and PMDD.

*Dr. Judith Mohring's opinion.
PMDD, premenstrual dysphoric disorder; PMS, premenstrual syndrome.

What you need to know about ADHD and pregnancy

Pregnancy is associated with **large changes in oestrogen and progesterone** levels, which **increase continuously** during pregnancy and decrease rapidly again after childbirth.[17,19]

These increases in hormones help **prepare the body** for the role of mother, and involve, among other things, changes in structure and activity in certain areas of the brain.[38]

These changes can be **particularly challenging** for girls and women with ADHD; therefore, it is important to **consult your qualified HCP** regularly during this time.[10*]

Factors associated with ADHD and pregnancy to be aware of:

Pre-conception

- There is an **increased risk of unplanned pregnancy** among women and girls with untreated ADHD compared with those without ADHD.[10*]

During pregnancy

- If you are considering **continuing or discontinuing** your medication, discuss this with your prescribing healthcare professional. Together, you can make a treatment decision based on the **benefits and risks**.[10*]
- Continue to keep in **regular contact** with your healthcare professional so your treatment can be reviewed as your needs change.*[10]

Postpartum and early motherhood

- Females with ADHD have a **5-fold higher risk** of developing **post-natal depression** compared with those without ADHD.[39]
- Therefore, females with ADHD may need **additional support from HCPs, partners and family** in managing the demands of a newborn baby.[10*]

KEY POINT

Large changes in natural oestrogen and progesterone levels during pregnancy can be particularly challenging if you have ADHD – speak to your HCP regularly.

*Dr. Judith Mohring's opinion.

How might having ADHD impact your menopause experience?

Perimenopause is the **transitional stage** before menopause during which the ovaries gradually produce **less oestrogen**.[40]

Menopause is the natural and permanent **end of menstruation**, defined as **twelve consecutive months without a period**.[40]

As perimenopause/menopause leads to variable oestrogen levels, it impacts **neurotransmitters**, including **dopamine and noradrenaline**.[41]

Menopausal symptoms are common several years before and several years after menopause, including:[40,42–44]

- Girls and women with ADHD have **increased risk for perimenopausal symptoms** compared with those without ADHD.[9,45]
- Menopausal symptoms can make previously manageable ADHD symptoms **unmanageable**.[46]
- HCPs and females frequently report **'unmasking'** or even **emergence of ADHD symptoms** during menopause.[46]

According to a survey of 1500 females with ADHD:[12]

reported **worsening ADHD symptoms** during the perimenopause and menopause

experienced **'life-altering symptoms'** in perimenopause

developed **new ADHD symptoms** in perimenopause and menopause

KEY POINT

Many women with ADHD experience new or more challenging ADHD symptoms during the peri(menopause).

ADHD in girls and women – a summary

ADHD is often **missed or mis-diagnosed** in girls and women.[5]

ADHD is linked to an **imbalance of neurotransmitters** in the brain – primarily **dopamine and noradrenaline** – which affect impulse **control, emotion regulation and organisation of tasks and activities**.[14–16]

Female sex hormones interact with neurotransmitters in the brain – specifically **dopamine and noradrenaline**.[18]

The presentation and treatment of ADHD in females is **complicated** by the **impact of sex hormones on these neurotransmitters**, which changes **across the lifespan**.[10,46*]

*Dr. Judith Mohring's opinion.

Lifestyle management

Talk to your HCP for lifestyle management recommendations.

Examples of lifestyle interventions that may benefit females across the lifespan include:[10]

1. **Exercise** – any form of movement can help reduce ADHD symptoms by increasing circulating neurotransmitters.
2. **Mindfulness, or mindful movement** such as Tai Chi, yoga or walking, or breathwork – can improve focus.
3. **Sleep** – 30 minutes of natural daylight exposure before noon and CBT for insomnia can improve focus, attention and overall mental health.
4. **Nutrition** – eating a well-balanced diet rich in plants/fibre, and checking and supplementing (if required) vitamins D, iron, and omega-3 levels can help with ADHD symptoms.
5. **Reducing alcohol** and **drug use.**
6. **Forming social connections** – girls and women in particular benefit from support with a social element.
7. **Authenticity** – don't let shame associated with ADHD interfere with what is key to your identity and brings you joy!

Resources

These resources are current as of 2026. Over time, some may be removed, organisations may cease operating, or links may no longer work.

Non-Takeda resources

These resources are provided for information purposes only. Takeda does not endorse the content, and is not responsible for the content or accuracy of these resources, or anything they may link to.

Books on ADHD for girls and women

- ADHD Girls to Women: Getting on the radar – Dr Lotte Borg Skoglund
- A Radical Guide for Women With ADHD – Sari Solden and Michelle Frank
- Your Brain's Not Broken – Tamara Rosier

Booklet supporting children, teens and parents

- ADHD resources for children and young people and their carers
- (https://www.transformationpartners.nhs.uk/programmes/mental-health-transformation/cyp-adhd-resources/)

Video podcasts and online magazines

- Russell Barkley on youtube (https://www.youtube.com/@russellbarkleyphd2023)
- Alex Partridge podcast: ADHD Chatter (https://www.youtube.com/@adhd_chatter_podcast)
- Jessica McCabe: How to ADHD (https://www.youtube.com/@HowtoADHD)
- ADDitude Magazine(https://www.additudemag.com)

Booklet on premenstrual syndrome

- Managing premenstrual syndrome (https://www.rcog.org.uk/media/mcreb5ix/pi-managing-premenstrual-syndrome-pms.pdf)

Takeda resources*

Click or scan the QR codes to view the resources.

ADHD and You – for adults

ADHD and You – for young adults

Making the Most of It – for young adults

*These resources have been initiated, funded and developed by Takeda.

Notes

Notes

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