



**Pills,
Rings &
IUD
Things**



With so many contraception options and stories of horror side effects – from mood imbalances to acne – how do you know which one is right for your physical and mental health? Journalist **Ronelle Richards** takes a closer look.

Since the mainstream introduction of the Pill back in the 1960s, women have had to bear the responsibility of contraception – from avoiding pregnancy to dampening irregular or painful periods and easing chronic conditions such as endometriosis or polycystic ovarian syndrome (PCOS), and that little hormone-packed circle has been, in many respects, a lifeline. But could the Pill and other hormonal contraception also be doing unmitigated damage?

A small study presented to the Radiological Society of North America released in December last year found women taking the Pill had a significantly smaller hypothalamus – the part of our brains that (among other things) is responsible for releasing hormones and regulating emotion. Now, the study is extremely preliminary, so there's probably no reason to panic, but it does get you thinking about how the popular prescription is impacting our insides.

Researchers also found that a smaller hypothalamic mass was associated with greater anger responses and strongly correlated with symptoms of depression. Thankfully, there was no significant relationship found between hypothalamic mass and cognitive performance. So your thinking is unlikely to be impacted – it's how you feel that might go down the gurgler.

It's not the first time hormone-based contraceptives have had unprecedented side effects. A small media storm spilled out in 2016 after the World Health Organisation commissioned a trial for a male contraceptive that was deemed 96 per cent effective in preventing pregnancy. Unfortunately, the study was quickly discontinued due to side effects such as severe acne, mood disorders and extreme depression, with one participant even attempting suicide.

All this being said, a study by the CSIRO estimated almost half of all pregnancies in Australia were unplanned – so we aren't saying to ditch the contraception completely. For the 85 per cent of women using some form of contraception to be prepared as possible, what we are saying is that knowledge is power. Understanding how your hormone cycle works and what you're taking is vital.

Ask the experts

Our hormones flux throughout the month and adding in a hormonal birth control adds another layer of complexity.

Specialist Women's General Practitioner (GP) at Jean Hailes for Women's Health, Dr Kerry Rae, says there's no one-size-fits-all approach.

"When health professionals prescribe contraception, the woman's age, physical and emotional health, family history, menstrual, contraceptive

and pregnancy history, personal preference and cost all need to be taken into consideration," she says.

"Women need to find a clinic or women's health provider they can trust, and the contraception consultation should include sexually transmitted infection (STI) screening and cervical screening information."

With all those aspects taken into account, Dr Andrew Zuschmann from City Fertility in Sydney says contraception is still a safe option.

"It has been deemed safe to use hormonal contraception in women with established mental health issues. However, the specific impact of the contraception will differ slightly between individuals," he says.

"Overall, the rates of women developing mood changes or depression as a result of hormonal contraception is roughly one in 200, so a fairly low risk. Some mental health conditions such as premenstrual dysphoric disorder are actually treated by combined contraceptive pills."

Dr Alex Polyakov, Medical Director at Melbourne IVF and Clinical Senior Lecturer at the University of Melbourne, takes a more cautious approach – particularly if a woman is already suffering emotional or cognitive symptoms.

"All contraceptives, except copper intrauterine devices, may have an impact on mental health. Some women may experience low mood and even depression," he says.

"It is also important to consider the type of hormonal imbalance and conduct a full investigation to establish the cause of the imbalance before contraceptive advice is given. This would probably require a review by a gynaecologist or reproductive endocrinologist to ensure that whatever abnormality is present, it's treated appropriately and in a safe fashion."

Oestrogen – villain or friend?

Oestrogen has had a bad rep ever since a Women's Health Initiative study in 2003 concluded hormone replacement therapy

It's all cyclical

Hormones oestrogen and progesterone play integral roles in the ebbs and flows of the menstrual cycle, causing different physical symptoms and changes in your mood and emotions during each phase.

FOLLICULAR – begins on day one of your period and continues until ovulation (egg release). This is where both oestrogen and testosterone begin to build back up and you start to feel good. Heightened smell, clearer thinking and better coordination are just some of the perks.

OVULATION – is when your oestrogen and testosterone peak and sex drive increases. It's not all good news though – this is also the time when those pesky skin breakouts tend to occur.

LUTEAL – progesterone increases, leaving you feeling physically hot. If your egg isn't fertilised and you don't fall pregnant, your progesterone will begin to decline. This imbalance of oestrogen and progesterone is what can cause PMS or feelings of depression or irritability. Avoid eating a lot of salt and sugar, as it will only make the rollercoaster worse.

MENSTRUAL – oestrogen and progesterone reduce significantly, leaving many women feeling tired.

(taking oestrogen for menopause) was a risk factor in developing breast cancer. However, US researchers Avrum Bluming and Carol Tavris of the book *Estrogen Matters* have been working to debunk this myth, asserting that oestrogen is not only the best treatment for menopause, but is also the *only* current treatment to reduce the risk of Alzheimer's.

Another 2008 study from the Alfred Hospital and Monash University found administering estradiol (the most potent form of oestrogen) with antipsychotic medication helped improve symptoms of psychosis and depression.

"Estradiol is a neuroprotective hormone: when oestrogen levels are higher it helps in terms of mood and concentration and anxiety symptoms," says the study's author, Jayashri Kulkarni, a Professor of Psychiatry at Monash University.

"We often think about oestrogen as a reproduction hormone and that it really only affects the ovaries or uterus, but it's

actually got a very potent mental effect on neurochemistry and brain chemistry, and can act like an antipsychotic and antidepressant in the brain."

Which begs the question: what does taking synthetic forms of hormones in our contraception mean for our oestrogen levels and our mental health?

Progesterone problem

Could progesterone actually be the villain we've all been overlooking? A relatively new area of research is the impact of this important hormone on our brain. It appears to trigger the amygdala – our primary alert system that produces fear and anxiety – and this might explain why we can feel stressed over seemingly insignificant situations at certain times of the month.

Research from the University of Umeå in Sweden found that progesterone has a similar impact on our brains to depressive drugs such as alcohol or sleeping pills.

Progesterone is one half of the combined Pill, and the synthetic form progestin makes up many hormonal contraception options.

A growing body of research points to this synthetic progestin being the likely cause of depression and mood changes experienced by some women taking hormonal contraception.

Side effects

A study published in *JAMA Psychiatry* from Denmark studied more than one million women and adolescent girls with some concerning findings.

It found that those on the combined Pill were 23 per cent more likely to be prescribed an antidepressant by their doctor, most commonly within the first six months of taking it. Women on the progestin-only pills (such as the mini Pill), were 34 per cent more likely to either take antidepressants or receive a diagnosis of depression compared to those who were not using a hormonal contraception.

Options, options, options

Pill or not to Pill, that is the question. We look at the pros and cons of some of the contraceptives on the market.

THE PILL

The most common option is the combined oral contraceptive Pill (OCP). "A very simplified way of looking at how an OCP works is to say that it switches off the production of hormones in the ovary and replaces those hormones at the same time," says Polyakov.

PROS: A 2014 study from Monash University showed taking the OCP might improve verbal memory.

CONS: Risk of anxiety or depression, dependent on your susceptibility.

THE MINI PILL

This is a progestogen/progestin only contraception that contains a small amount of the hormone to thicken the mucus at your cervix and prevent sperm from entering.

PROS: Austrian neuroscientist Belinda Pletzer has found women taking progestin-only had altered brain structures, often resulting in better spatial awareness.

CONS: The same research found the women had lower verbal fluency (our ability to think of new words) and less ability to recognise subtle emotions compared to women who weren't currently using hormonal contraception.

IMPLANON (THE ROD)

The size of a match-stick, the rod is placed just under the skin and releases estrogen (progestogen hormone) continuously to stop the production and release of eggs. It also thickens the mucus lining of the uterus to prevent sperm entering.

PROS: Lasts for up to three years, fairly inexpensive.

CONS: Gives you an irregular period, but for 20 per cent of women this will settle down within three months and potentially stop periods all together. A further 18 per cent will experience bleeding abnormalities and will need to have it removed. Acne, breast tenderness and mood changes can all occur.

THE RING

A small flexible plastic ring that is inserted into the vagina and releases synthetic oestrogen and progestin that prevent the ovaries from releasing eggs.

PROS: Very set and forget, with no need to take daily pills, and can remain inserted during intercourse. Each ring lasts for one cycle (three weeks with a week's break for your period). Lower dosage of hormones compared to the Pill.

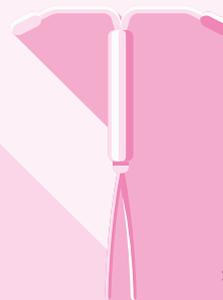
CONS: Common side effects include mood changes and depression, especially if you have a history of depression. That said, Kulkarni says it may impact brain neurochemistry less than some other choices: "It can still cause depression but it's not as bad – I would put it in our book as maybe second or third choice [for contraception]".

PROGESTOGEN INTRAUTERINE DEVICE (IUD)

The Mirena branded IUD slowly releases a synthetic hormone progestogen to prevent pregnancy and also makes your uterus lining thin and not ideal for implantation. It's inserted into the uterus with or without anaesthetic. "They have only a partial effect on suppressing ovarian production and therefore are probably less likely to affect mood and sexual function," says Polyakov.

PROS: Statistically, it's the most effective form of contraception and contains less progestin than the Pill.

CONS: The manufacturer states one in 20 women presents with depressive mood or episodes.



Make yourself heard

Zuschmann is quick to point out your health professional is your best place for advice.

“It’s important that treatment is optimised for individual woman and her particular medical circumstances. Some methods of hormonal contraception can actually be used to treat hormonal imbalances or mid-cycle spotting, and a medical professional can help guide the individual in question to the best option for her,” he tells *STRONG Australia*.

“It is also important that women with any specific mental health concerns have individualised management under the care of their GP or women’s health specialist to determine the best contraceptive choice for them.”

Kulkarni says women often don’t get listened to when discussing symptoms with their GP, and sometimes second guess the severity of what they are experiencing themselves. She says dramatic mood changes are a reality and it’s important to take notice.

“Unfortunately, women’s mental health has never received much attention. When people talk about side effects from the Pill, there’s a whole range of physical side effects – and very serious ones like blood clots – but I think major depression is a major killer,” says Kulkarni.

Kulkarni emphasises that more awareness of the impact of hormones is needed, and women in particular need to understand their impact on brain chemistry and concentration. Although most GPs recommend trialling a new contraception for three months, Kulkarni says a significant and persistent drop in mood must be actioned quickly.

“Three months of depression is a long time to be depressed and I also worry about the message of you have to grin and bear it, because that’s not the message,” she says.

“This depression might include a significant drop in mood, tearfulness, not being able to get out of bed, but this depression can also be much more insidious – not being able to enjoy things, loss of perspective, an irritability creeping in and a sense of hostility over not very much.

“Let’s try and empower women in the community to understand [contraceptive induced depression] is real.”

“A growing body of research points to this synthetic progestin being the likely cause of depression and mood changes experienced by some women taking hormonal contraception.”

Non-hormonal options

If you’re ditching the hormones, there’s still a few contraception options worth trialling, including cheap and simple barrier methods such as condoms.

COPPER INTRAUTERINE DEVICES (IUD)

Inserted into the uterus (with or without anaesthetic) the copper IUD is a non-hormonal option. Toxic to sperm, it also stops a fertilised egg from settling into your uterus.

PROS: Depending on the brand, a copper IUD can last for five to 10 years. For women over 40, it can last double that time. It can also be used as an emergency contraception if it’s inserted within five days of intercourse.

CONS: Can cause painful and heavy bleeding.

DIAPHRAGM

The diaphragm is a barrier cap placed inside the vagina and blocks sperm from entering the uterus. It must be left in for at least six hours after intercourse so the sperm die.

PROS: A drug-free option and can be used at the last minute.

CONS: Incorrect insertion can void its effectiveness, and insertion and removal can increase the risk of a urinary tract infection. Overall, it’s not as effective as some other options.

FAMILY AWARENESS METHOD (FAM)

This method has been gaining traction with some influencers as a natural way to protect yourself from unwanted pregnancy. It is based on monitoring your bodily signs multiple times a day – including temperature and observing your cervical mucus to determine how fertile you are – and abstaining when in a fertile part of your cycle.

PROS: No hormones or need to take medication.

CONS: Requires a lot of checking and if incorrect is ineffective. It’s also not recommended if you are travelling through different time zones or are stressed. **S**

