

CREANDO

Familias

THE STERILITY

SOME ANSWERS TO YOUR DOUBTS

Study of the causes



Editorial

Dr. Rocío Núñez Calogne
Senior Embryologist
UR Group



More and more couples are finding it difficult to realise a life choice like parenthood.

In recent years, diagnostic and treatment techniques for infertility have **advanced enormously** and at the UR Group we have modern advances to be able to offer these couples a solution and help them achieve their dream of **having a healthy child at home**.

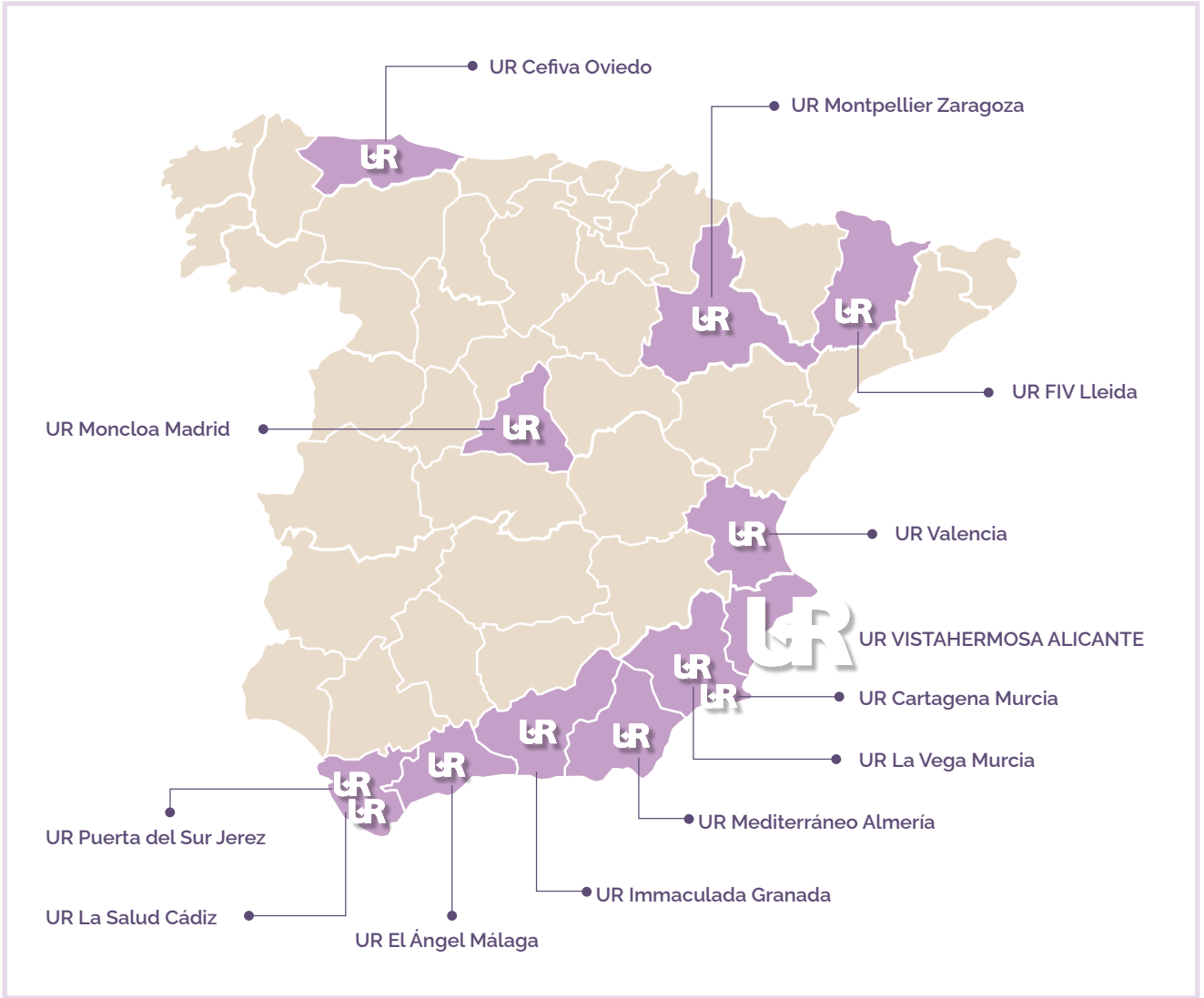
However, this process is not always quick and easy, and often creates numerous doubts in the couple which increases the anxiety of an already difficult wait. That is why it is so important to have **clear and concise information** that resolves these doubts and helps to overcome this anxiety.

Aware of the importance of supporting patients on their way to parenthood, this new magazine issue has been created with concise answers to **the most frequently asked questions** by couples with fertility problems.

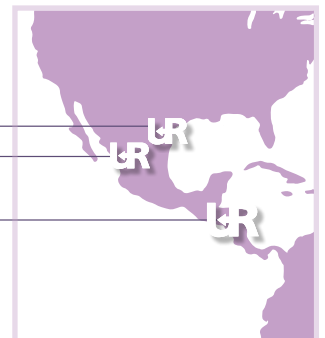
The structure aims to comfortably guide patients through the same steps that will lead them to have their child at home, from the first moment they come to one of our centres, through their **medical history** and the different **diagnostic tests**, to the different **treatments** and the doubts that will arise when they fall pregnant, with a design specially conceived to facilitate access and understanding of its contents.

In this first issue, "Knowing the causes", you will be able to quickly find answers to the doubts that most concern you about the origin of the problem, whether it is female, male or both, without having to read it from beginning to end.

We hope this guide will fulfil its purpose and help patients who need it face the assisted reproduction process.



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01.

The first CONSULTATION

Why is the first
consultation so
important?

What aspects
affect sterility?



What is the first consultation for?

The first consultation, which consists of a patient interview or medical history, is the first step in moving towards a potential diagnosis, assessing any additional tests needed and establishing an initial prognosis.

Putting together a full medical history takes some time, but it can help to provide a lot of information when it comes to deciding on the appropriate treatment and potentially achieving pregnancy. Every question is guided towards finding out more about a specific, important aspect of the problem, and they are not asked routinely.

Even though the end diagnosis usually requires some additional tests, we can find out what is causing infertility in the first consultation.

What questions are asked in the first consultation?

Among other things, you will be asked about both partners' ages, their medical and surgical history, use of medications and toxic substances (**tobacco, alcohol and other drugs**), profession, family history of cancer, infertility, miscarriages, malformations, hereditary illnesses, etc.

For women, it is important to know the age at which periods began (**menarche**), whether these are heavy or painful, and whether menstrual cycles are regular. We also need to review whether there have been previous pregnancies and the result of these, both with your partner and with other partners, the previous use of contraceptives, some details on sexual activity, and the length of time you have been trying to get pregnant.

Do we both need to go to the consultation?

No doubt about it. Just as parenthood is a responsible decision taken by both partners, the difficulty in becoming parents concerns both partners, as do the steps needed to find the causes and fix them.

If both partners are female, even though "biological" involvement of one of the partners isn't necessary, the emotional support for the woman who is going to carry the pregnancy is the same as for a heterosexual couple.

Does the amount of time trying to get pregnant matter?

A lot. The longer a couple has been trying to get pregnant naturally without success, the lower the chance that it will happen in future cycles. And this happens irrespective of what is preventing pregnancy, except for women above **38 years of age**, where it is important not to delay seeing a specialist.

Moreover, the progressive reduction in fertility doesn't just affect natural pregnancies, but also the success rates in assisted reproduction, which are lower when infertility has been developing for many years.



QUESTIONS

RELATED TO THE INTERVIEW IN

The First Consultation

Does age affect infertility?

Yes. No doubt about it. So much so that it is usually thought to be the **main cause** of fertility problems in industrialised societies in recent decades, as social conditions lead women to try for their first pregnancy later and later in life. Even though there are many things that influence the negative effect of age, the main thing is the increase in **chromosomal abnormalities** in remaining eggs. This egg deterioration leads to a lower rate of embryo implantation, even when using assisted reproduction techniques, but also a higher frequency of miscarriages.

Does the type of job have an impact?

In some types of work, there are some specific toxins that can seriously affect fertility, and even though they are not very frequent, it is important to be able to detect these cases. For example, exposure to **tetrachloroethylene** can happen to people who work in dry cleaners, toluene in printing, and various solvents in the chemical industries, all of which are linked to a clear reduction in fertility.

The same thing happens with many products used in agriculture, such as **herbicides, fungicides and pesticides**, which affect

fertility in both women and men. Exposure to high temperatures can affect testicles, such as heat that radiates from ovens.

Does having had several miscarriages have an impact?

A woman who has had a miscarriage knows, at least, that she can get pregnant. Even though it hasn't progressed and the pregnancy has been lost, the fact that she has been pregnant means that she can rule out many of the possible causes of infertility.

This is also the case for pregnancies achieved through as-

sisted reproduction techniques, despite the logical disappointment that a miscarriage brings.

However, if there are repeated miscarriages, we need to ask whether something is preventing pregnancies from progressing normally, and is making a miscarriage more likely. For this reason, it is important, if it has not already been done, to **do a full study** that rules out any malformations in the uterus, chromosomal alterations in the two partners, and immunological problems.

Can having had an abortion have an impact?

As long as we are talking about a voluntary pregnancy termination for social or psychological reasons, and not because of an illness in the foetus, **the answer is no**. In fact, having had a natural pregnancy at some point shows us that pregnancy is possible, ruling out lots of causes of infertility that are difficult to diagnose and treat.

We are then dealing with secondary infertility, which usually has a better prognosis than primary infertility. In any event, **it's important to know** about it, as we need to rule out whether it has caused any alterations during the process that might affect fertility.



Can having taken contraceptives have had an impact?

There is a myth that oral contraceptives can lead to infertility, which is **false**. They are simply used to prevent pregnancies.

Why are we asked about sexual habits?

While the first thing to clarify is that infertility and impotence are completely separate concepts, it's true that an issue with **sexual impotence**, or other problem that prevents semen from being deposited in the vagina, logically prevents pregnancy.

Sometimes, these topics are still taboo for many people, which is why the topic does not come up naturally unless they are specifi-

cally asked about. However, turning sex into a forced activity with the only objective of getting pregnant, can lead to situations that affect sex in general, adding another problem to infertility.

Do smoking and alcohol really have an impact?

The toxin that most affects human fertility is **tobacco**, because it is so widespread. Even though it is not the only cause, the risk of infertility is up to **60%** higher in women who smoke compared to those who don't smoke, and this trend increases with age for women. So, the first step in treating infertility is to stop smoking, or at least to reduce consumption as the effects depend on the dose. **Marihuana**, even though it only has a few secondary effects in other ar-

eas, does have a strong impact on fertility, affecting ovulation in women and sperm production in men.

Cocaine also has a direct impact on sperm formation and it increases the risk of abnormalities in the Fallopian tubes in women. In addition to causing impotence, **alcohol** affects semen quality and reduces the success rate of assisted reproduction techniques, even in moderate amounts. Finally, too much **caffeine** can also affect fertility, and in particular, increases the rate of miscarriage.

I have never had a period. Is this premature menopause?

Not having a period is called 'amenorrhoea'. If you have never had a period, it's called primary amenorrhoea, whereas if it has stopped after a while it's referred to as secondary amenorrhoea. The causes of both of these can vary, but premature menopause only relates to secondary amenorrhoea caused by prematurely running out of eggs. All of these are easy to diagnose, and the fertility prognosis is very variable depending on the cause.

How can I know when I ovulate?

It is commonly thought that ovulation takes place fourteen days after the previous period. How-

ever, this is only true for women with regular cycles that last twenty-eight days. If you have regular cycles that last thirty-five days, ovulation takes place three weeks after the previous period started. But when cycles vary in length, which is common, there is no way of knowing when ovulation takes place using these calculations.

The female body goes through a series of changes in the days leading up to ovulation (**pre-ovulatory phase**), which may make a woman aware that she is ovulating, but they do not always take place and are not always noticed. These changes vary: slight discomfort or abdominal bloating, changes in mood and sexual desire, etc.

The earliest, most reliable and most useful change is what happens to **cervical mucus**. In the five days before ovulation, this mucus becomes gradually more plentiful, clear and transparent. Immediately before ovulation it looks like egg white. If you were to take some vaginal fluid between your fingers and separate them, there would be a thread several centimetres long that would stretch without breaking.

Currently, the most comfortable and reliable way of predicting ovulation at home is to use tests that are sold in pharmacies. These tests detect the presence of the **LH hormone (luteinising hormone)** in the first urination of the morning. This hormone is the command that the

brain sends to trigger ovulation, so we know that ovulation will occur between **24 and 36 hours** after testing positive for it.

Do irregular cycles have an impact?

First, we need to clarify what we mean by 'regular periods'. Regular periods do not always need to happen on the same day of the month, something that would be extremely difficult because some months are thirty days long and others are thirty-one, and some months only have twenty-eight days, and ovaries don't know how humans have organised our calendar.

Nor is it necessary that cycles last exactly **twenty-eight days**, although this is the average length. Nor that all months have exactly the same length. By regular periods, we understand that they take place within a timeframe of between **twenty-one and thirty-five days**.

If all cycles, or periods between two consecutive periods, are within these margins, even though some are longer than others, we can say that these periods are regular (**eumenorrhoea**) and therefore that ovulation also takes place every month.

However, if cycles fall outside of this timeframe (**polymenorrhoea**) there may be a series of prob-

lems that affect fertility and that are the reason behind you not getting pregnant.

If it's only possible to conceive during ovulation, should we keep sex within this stage?

Having sexual relations only in the ovulatory period (even when you know for certain when that period is), can mean you may sometimes be abstaining from

sex when it could have been successful by choosing to focus on it when it wasn't.

It's also **untrue that the chances of pregnancy** are higher if you have sex more frequently than you naturally desire to ensure it coincides with ovulation. But above all, because going down the path of changing sex from something spontaneous to a forced activity that is governed by the calendar, is a bad idea. Having sex twice a week is more

than enough for the egg to meet sperm in the Fallopian tubes and to get pregnant. It's important that the time when you have sex and the frequency are not affected by ovulation.

Every aspect must be considered to evaluate each case.

In short:

What are the main aspects that influence infertility? And how much do they affect?

AGE	<input checked="" type="checkbox"/> YES. NO DOUBT ABOUT IT.
TOBACCO-DRUGS-ALCOHOL	<input checked="" type="checkbox"/> YES. THESE TOXIC SUBSTANCES HAVE A GREAT INFLUENCE.
TYPE OF JOB	<input checked="" type="checkbox"/> YES. IN SOME TYPES OF WORK
HAD SEVERAL MISCARRIAGES	<input checked="" type="checkbox"/> IT'S NECESSARY A COMPLETE STUDY
SEXUAL HABITS	<input checked="" type="checkbox"/> IT'S POSSIBLE, IN CASE OF SEXUAL IMPOTENCE.
IRREGULAR CYCLES	<input checked="" type="checkbox"/> IT'S POSSIBLE, IN CASE OF POLYMENORRHEA ONLY.
HAD AN ABORTION	<input type="checkbox"/> NO, BUT IT'S IMPORTANT TO KNOW IT.
CONTRACEPTIVES	<input type="checkbox"/> NO. NO DOUBT ABOUT IT.

02.

The EXAMINATION

What exams
will I have
to take?

When is a
male examination
needed?



What can be seen with just a manual examination and a speculum?

A basic gynaecological examination is a simple procedure that takes no more than a couple of minutes and isn't in any way painful. Though simple, it gives us a lot of information and discards many potential causes of sterility. By simply **examining the outer genitals** and using a **speculum** to examine the vaginal mucus and the cervix, we can confirm or refute the presence of a tumour, be it malignant or benign.

The discovery of injury to the outer genitals or the appearance of the discharge can lead us to diagnose infections, which can be sexually transmitted or be caused simply by changes to the balance of the vaginal flora. Furthermore, we are able to clearly see whether there are malformations to the hymen, the vagina or the cervix, which can also be accompanied by other malformations of the inner genitals.

Finally, we examine the outer genitals **with both hands**, taking them between the two fingers that we place inside the vagina and pressing the other hand on the abdomen. By doing so we can find the position and size of the uterus, the degree to which it is moving, the presence of painful areas and whether the size and position of the ovaries are normal.

Why am I being given a cervical screening?

The **cervical smear test**, **Papanicolaou test** or **pap smear** is a screening method that is very useful for detecting cervical cancer early on. Despite what is normally believed, cancer is generally curable from the moment it appears. The problem with cancer is that it doesn't normally produce any symptoms, and when it does reveal itself, it can be too late to cure it.

The cervix, one of the most frequent places cancer appears in women, has the advantage of being easy to access – it can be accessed simply by inserting a spec-

ulum into the vagina. In this way, by simply rubbing with a swab stick we can obtain a sample of cervix cells and send them to the pathological anatomy lab.

This is the only reason why all healthy women are advised to periodically visit their gynaecologist to have a **cervical smear test**. When the woman goes to the sterility appointment, if a certain amount of time has already passed since her last smear test, we take the opportunity to do another smear test as well as resolve her sterility issue.

Why am I being weighed?

Changes in weight, both excess weight and lack of weight, are frequently related to a range of problems that can at the same time be linked to sterility. High obesity or rapid weight gain, together with irregular periods, can indicate the presence of **polycystic ovary syndrome** or of **hypothyroidism**. Both are frequent causes of sterility and are easily treatable if diagnosed correctly.

Sometimes the simple fact of losing some weight can be enough to recover fertility, and even when as-



sisted reproduction techniques are required, **correcting an excess in weight increases the success rate** of all techniques. On the other hand, excessive low weight or rapid weight loss can also be related to a lack of ovulation, and by extension to sterility problems.

What is BMI?

BMI stands for **body mass index**.

Body mass index is calculated using the following **formula**:

$$\text{BMI} = \frac{\text{Weight (in kg)}}{\text{Height (in metres)}^2}$$

Though there is no ideal BMI value for all women, since it varies with age and body structure, the normal range is from **20 to 25**. A BMI of over **30** indicates obesity, and if it is less than **18**, it may lead to amenorrhoea or anovulation.

Does an increase in body hair have an impact?

Hirsutism or excess hair, both on the face and the body, is usually caused by an **excess of androgens or masculine hormones** and asso-



ciated with irregular ovulation and sterility. However, the first thing we need to stress is that hirsutism isn't characterised by the amount, colour or thickness of body hair, which is unique to every woman, but rather how it is distributed.

Therefore, we don't talk about excess body hair in usual areas, such as forearms, calves or cheeks, but the appearance of body hair in areas **more associated with men**, such as the chin, the middle of the chest, or the line connecting the pubis to the bellybutton.

An excess of androgens stimulates the activity of the hair follicle which, as well as provoking the appearance of body hair "where it shouldn't appear", often favours the production of **fat**, with the consequent problems of **acne and**

seborrhoea and the **fragility and loss of head hair**, called alopecia. Testosterone – a male hormone – is normally produced in women in small amounts in both the ovaries and the suprarenal glands, and both of these can be the source of excessive production.

In any case, **hirsutism caused by the ovaries** is both a cause and result of persistent anovulation. Together these constitute what we call "**polycystic ovary syndrome**".

Is it necessary for men to be examined?

Regularly and systematically, no. If the lab evaluation of the male's semen quality comes out normal, we can be sure that all the steps in sperm formation are operating correctly.

On the other hand, if the semen analysis shows a deficiency, regardless of what type, **a visit to the urologist becomes necessary.**

Via a simple physical examination, the urologist will discard some possible causes of the issue with the semen, such as **atrophy, infection, inguinal hernias** or varicose veins in the testicle, called **varicoceles**, which can increase the temperature of the semen, affecting sperm production and vitality.

Is infertility in men the same as sexual dysfunction?

No. Infertility isn't linked to sexual dysfunction. It can happen that

males produce high-quality semen but don't successfully impregnate their partner due to a problem preventing semen from being deposited inside the vagina. This may be caused by sexual dysfunctions like a **lack of adequate erection, premature ejaculation or even due to malformations in the penis.** The diagnosis of sexual dysfunctions can't be made through an examination but through quality communication with a doctor and a relaxed, peaceful consultation in which the couple can bring these kinds of problems to light.

Malformations in the penis can be observed in a physical examination by a urologist, but it's extremely rare, given the anatomy

of the male genitals, for a man to suffer malformations without him noticing.

These malformations are often due to a curvature of the penis that is so excessive that it makes vaginal penetration impossible, whether this is a congenital or progressive issue, or even due to an abnormality in the mouth of the urethra. Instead of opening at the tip of the penis, it may open at the front side, which is called **epispadias**, or more frequently at the rear side, called **hypospadias.**

Only in the case that a couple draws attention to one of these problems is a physical examination of the male absolutely crucial.

In short:

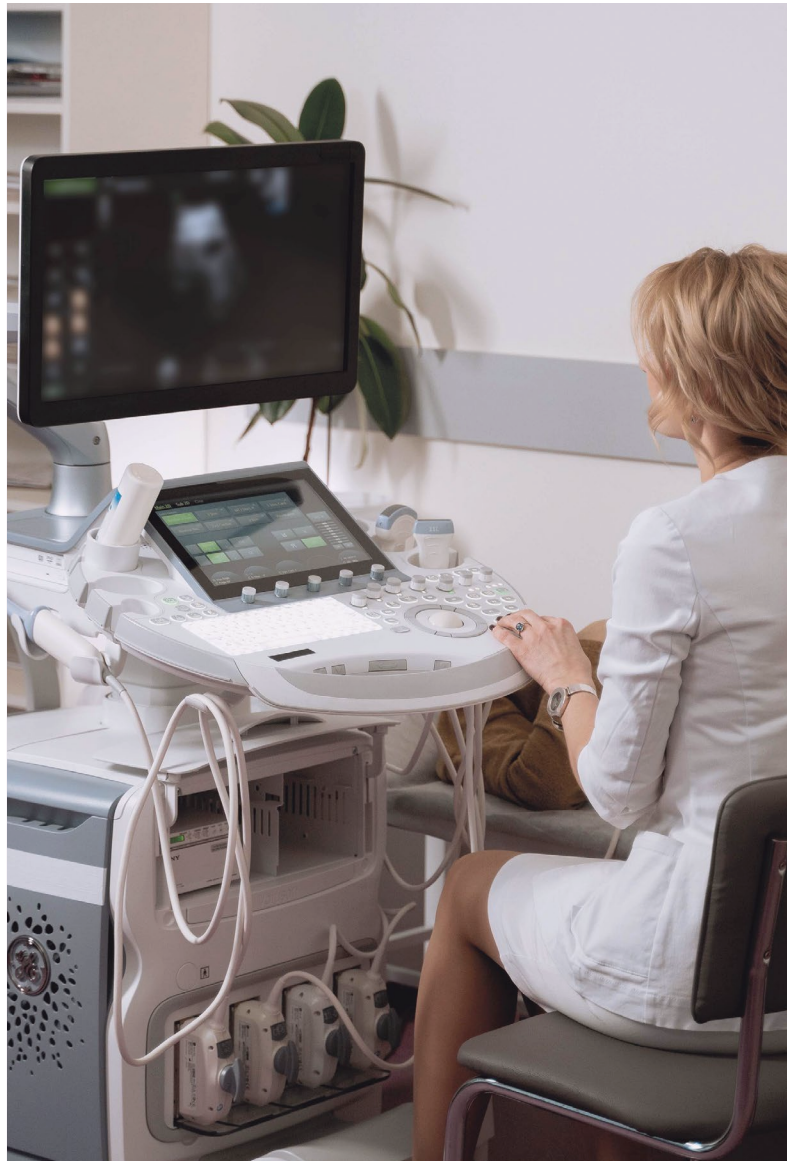
<p>GINECOLOGICAL EXAMINATION</p>	<ul style="list-style-type: none"> • CONFIRM OR REFUTE THE PRESENCE OF A TUMOUR • INFECTIONS • MALFORMATIONS 	<p>MAN EXAMINATION</p> <p> </p> <p>VISIT TO THE UROLOGIST If the semen analysis shows a deficiency</p> <p> </p> <ul style="list-style-type: none"> • LACK OF ADEQUATE ERECTION • PREMATURE EJACULATION • MALFORMATIONS IN THE PENIS
<p>CERVICAL SMEAR TEST</p>	<ul style="list-style-type: none"> • REFUTE THE PRESENCE OF CERVICAL CANCER 	
<p>WEIGHT - BMI</p>	<ul style="list-style-type: none"> • POLYCYSTIC OVARY SYNDROME, HYPOTHYROIDISM • AMENORRHOEA OR ANOVULATION 	
<p>ANDROGENS/ MASCULINE HORMONES</p>	<ul style="list-style-type: none"> • IRREGULAR OVULATION • POLYCYSTIC OVARY SYNDROME 	

03.

The TESTS

What can
be seen with
ultrasound
scan?

How many
ultrasound scan
are needed?



Ultrasound Scan

Does the ultrasound have to be done vaginally?

To begin with, **abdominal ultrasound** was used to examine inner genital organs; in this examination, to avoid the distortion that intestinal gas produces, it's crucial that the bladder is full, so that it displaces the intestinal loops upwards, allowing us to see the uterus and the ovaries on the ultrasound. Even then, the examination of the uterus and the ovaries through the abdomen is typically difficult, especially when there is a considerable layer of fat in the abdomen.

However, the manufacturing of **ever smaller probes** has enabled us to place the ultrasound probe at the bottom of the vagina, with slight discomfort for the patient, and to carry out the ultrasound via the vagina. This enables us to get much closer to the organs we wish to study and be able to see them not only much bigger but in incomparable detail. Furthermore, since it isn't necessary for the bladder to be full of urine, the discomfort produced by the vaginal examination is almost always less.

Could I have an internal malformation?

A complete absence of the vagina, cervix or uterus (womb) is extraordinarily rare and is always diagnosed in puberty at latest, since such an issue prevents menstruation. The existence of a **unicornuate uterus** due

to the absence of one of the sides is also rare and often goes unnoticed, but has no effect on the fertility of the women.

The most frequent malformations are caused by what we call **fusion defects**. These malformations aren't linked to alterations in the ovaries, but are often linked to other urological malformations, like the absence of a kidney, for example. When this fusion isn't fully created, a duplicity can persist in one of the parts. This can consist of anything from a small wall or septum in the uterus cavity to a complete duplication (with the presence of two uteri or vaginas), and everything in between. None of these will prevent the women from conceiving, but depending on their severity, they can lead to **late abortions**, during the second trimester of pregnancy, or premature birth, meaning **surgical correction** is usually required.

Malformations in the vagina or cervix are easily detected in the first routine gynaecological examination, when the first cervical test is done. Some malformations in the uterus can also be diagnosed via an ultrasound performed during any routine check-up.

Furthermore, the basic study of sterility includes **hysterosalpingography**, which is a special radiography that enables the uterus cavity and the permeability of the tubes to be examined. If the diagnosis isn't conclusive, the exam can be completed with other tests such as **hysteroscopy**, nuclear magnetic resonance, and occasionally **laparoscopy**.



Do ovary cysts disappear by themselves?

Yes. In fact, they almost always do. But it's important to know what we mean when we speak of a "cyst". Every month the fertile ovary develops a follicle with an ovule inside. During ovulation, that follicle, which by then has reached around two centimetres in diameter, breaks and the ovule inside leaves and moves towards the Fallopian tubes. The broken follicle then goes through several changes, called **luteinisation**, which transform it into the "**corpus luteum**", responsible for the production of progesterone. In some cases, up to ten per cent of cycles, the follicle doesn't break and instead continues to grow during luteinisation.

This is what we call **LUF syndrome** (luteinised unruptured follicle syndrome). The result is a "**cyst**", a ball of liquid inside the ovary measuring over two centimetres. We call this type of cyst a "functional cyst" or a "persistent follicle", and they aren't produced by a growth in

anomalous tissue but by a fault during ovulation. These cysts always disappear within **three months** at most. The ultrasound appearance of the cyst produced by a LUF is very characteristic and provides us with confidence around future changes to it. On other occasions, what is produced during the breaking of the follicle in ovulation is a bloody cyst, found inside the follicle. These hemorrhagic cysts also disappear as the previous ones do, but its appearance on an ultrasound image may be confusing.

In any case, the only way to be fully sure that the cyst is functional is to confirm via ultrasound if the cyst has indeed disappeared after a few months. Occasionally during this period of time, **hormonal contraceptive** treatment is established.

The goal of the treatment isn't to make the cyst disappear, which would happen anyway without treatment. The aim is to **inhibit ovulation** and, given that functional cysts are so frequent, prevent the ovary from, in those

three months, creating another functional cyst that causes confusion in the following ultrasound. If the cyst disappears, but before the ultrasound another one is created, we won't know if they are two different functional cysts or if the previous one hasn't disappeared and, therefore, isn't a functional cyst.

Can endometriosis be seen with an ultrasound?

The answer is NO, but further explanation is required. Endometriosis is when cells from the endometrium are found outside of their location in the body: the womb.

The most common area for endometriosis, if not the only one, is in **the ovaries**, and in **the pelvis**, in the form of little implants. In the ovaries, they give rise to **endometrial cysts**, **endometriomas**, or, more colloquially, "**chocolate cysts**" (called this because the liquid content inside them is a thick substance with a dark brown colour similar to that of chocolate).

The ultrasound image of endometriomas is, in general, characteristic and unmistakable. If we detect the presence of endometriomas in an ultrasound we can be almost sure that endometriosis is also present, but the latter can also exist if the ultrasound is normal.

A polyp has been found in my uterus. Could this be the cause of my sterility?

Polyps are local growths, like "**warts**" in the endometrium, the tissue that lines the inside of the uterus. They are often small in size and don't usually produce any symptoms, though they can be responsible for an increase in the **intensity of bleeding during periods** and the appearance of bleeding between them. The diagnosis is identified easily with a vaginal ultrasound, though it is advisable to carry out this analysis in the first half of the cycle, since in the second half physiological changes to the endometrium usually hide polyps.

When a polyp is suspected to be present, a **hysteroscopy** is recommended. As well as confirming the diagnosis, this enables the polyp to be removed. Endometrial polyps rarely become malignant and, unless they reach a large size, they don't affect chances of pregnancy nor risk of abortion. However, their removal is so simple that, even while considering the above, it is still advisable to remove them using a hysteroscopy, even in cases in which no symptoms are present.

Will I need further ultrasound scans during the treatment?

As well as diagnosing certain illnesses, ultrasound scans also enable us to track both the **natural cycle** and cycles resulting from **hormonal stimulation**. In a natural cycle, lasting 28 days, it is possible to distinguish a dominant follicle in the ovaries from day ten of the cycle. Prior to ovulation, it will have a size of two centimetres; endometrium, on the other hand, has a very characteristic appearance that we call "triple line". After this ultrasound scan we're able to confirm **if the follicle has broken** and has become a "corpus luteum", whose progesterone production modifies the endometrium and gives it a characteristic appearance.



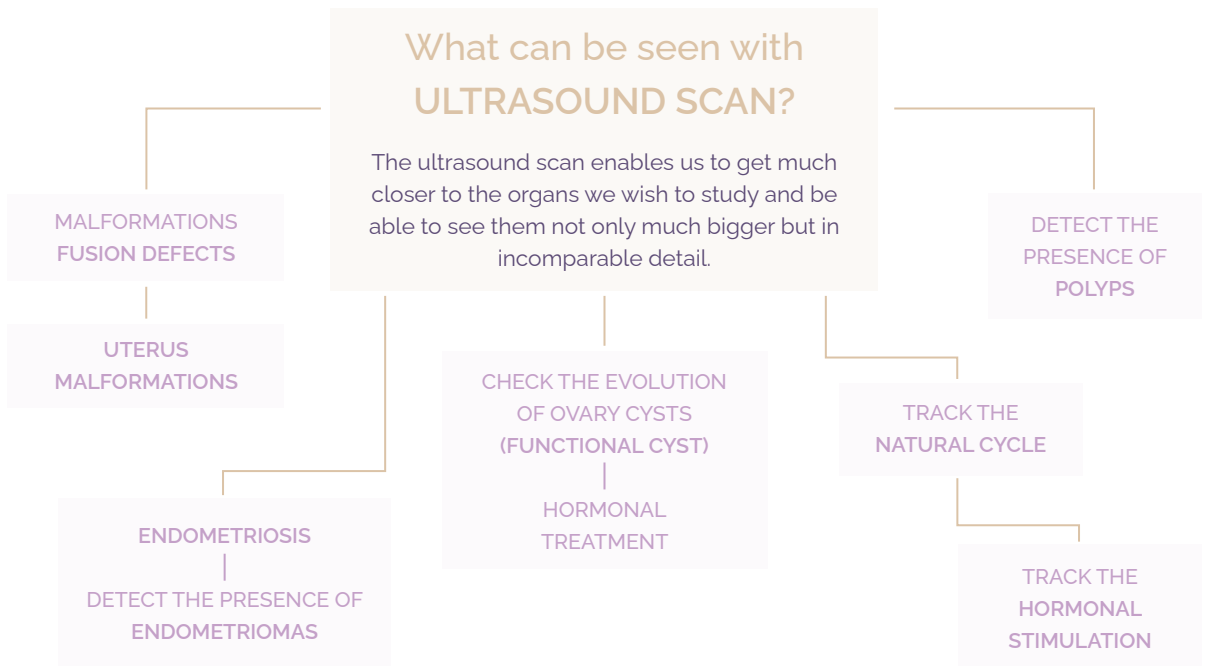
In this way, an ultrasound following enables us to confirm if the cycle has correctly taken place. In cases of hormonal stimulation, this ultrasound control is made strictly necessary and must be meticulous. The reason for this is because there are no pre-established doses – in every woman, and even in every cycle, **ovaries respond differently to equal doses of the drug**. An ultrasound control of the response of the ovary to the initial dose enables us to know if the response is adequate or if we should reduce or increase the dose, as well as identify the right time to move to the next step.

The first ultrasound is carried out on the day two or three of the cycle to check if there are any resid-

ual follicles or cysts from the previous cycle, given that if this is the case and but their presence was unknown, we could erroneously think in subsequent ultrasounds that it is a newly developed follicle caused by our stimulation, which creates confusion. As a general rule, the next ultrasound is usually carried out four days later, when **follicle growth is visible**, and from there the ultrasounds are carried out more frequently, on alternate days and finally daily.

In any case, the state of the ovaries over time is all that enables us to know when the **right time for the next ultrasound is**, meaning it isn't possible to know in advance how many ultrasounds need to be done in every cycle, nor when.

In short:



Glossary

OF TERMS

A

ALOPECIA: abnormal hair loss.

AMENORRHOEA: lack of menstruation.

AMH: Anti-Müllerian hormone. Measured to determine a woman's ovarian reserve.

ANAMNESIS: information collected by a health professional through a series of questions to learn about the patient's state of health.

ANDROGENS: male sex hormones.

ANEUPLOIDIES: an alteration in the number of chromosomes.

ANTIPHOSPHOLIPID SYNDROME: an autoimmune disease that makes women more prone to blood clots and increases the risk of thrombosis, affecting fertility and the risk of miscarriage.

APOPTOSIS: programmed cell death. A physiological process that occurs naturally in all cells of the body but can sometimes be triggered by external agents such as oxidative stress.

ASTHENOZOOSPERMIA: decreased sperm motility. Progressive sperm motility must be greater than 32%.

AZOOSPERMIA: absence of spermatozoa in the ejaculate.

B

BMI: abbreviation for Body Mass Index, which is calculated by dividing weight in kilograms by height in metres squared.

C

CORPUS LUTEUM: structure that the follicle becomes after ovulation.

D

DNA: abbreviation for Deoxyribonucleic Acid. The material that contains the hereditary information of all living things.

DYSMENORRHOEA: pain during menstruation.

E

ENDOMETRIUM: the layer of cells that lines the inside of the uterus, where implantation of the embryo takes place.

ENDOMETRIOMA: a cyst usually formed in the ovary as a result of endometriosis.

ENDOMETRIOSIS: an often painful condition in which the endometrium grows outside the uterus.

EPISPADIAS: a malformation of the penis in which the urethra ends in an opening in the upper or dorsal side of the penis.

EUMENORRHOEA: normal menstrual function.

F

FIBROID: a benign tumour in the uterus.

FISH: abbreviation for Fluorescent In Situ Hybridisation. A genetic laboratory technique for detecting and locating a specific DNA sequence on a chromosome.

FOLLICLE: structure containing the ovum or oocyte.

FSH: abbreviation for Follicle Stimulating Hormone. It is secreted by the pituitary gland. It stimulates follicular development in women and spermatozoa production in men.

H

HAEMOGRAM: a laboratory test in which the cells contained in the blood are evaluated.

HEMI-UTERUS: a uterus where only one side of the uterus develops, or uterine hemicavity, which is functional.

HYPERPROLACTINAEMIA: higher-than-normal prolactin levels.

HYPOGONADISM: a disorder where the ovaries in females and the testes in males produce little or no sex hormone.

HYOSPADIAS: a defect in which the opening of the urethra is not at the tip of the penis.

HYPOTHYROIDISM: lower than normal levels of thyroid hormone.

HIRSUTISM: excessive hair growth in women, in areas where it is not usually present.

HYSTEROSALPINGOGRAPHY: radiological test to check the condition of the tubes and uterus.

HYSTEROSCOPY: a diagnostic procedure to view the inside of the uterus by inserting a lens through the cervix.

I

ICSI: abbreviation for Intracytoplasmic Sperm Injection.

INFERTILITY: inability to carry a pregnancy to term after one year of unprotected sex.

IVF: abbreviation for in vitro Fertilisation.

K

KARYOTYPE: laboratory test in which the size, shape and number of an individual's chromosomes are examined.

L

LAPAROSCOPY: surgical technique that allows viewing of the pelvic-abdominal cavity by inserting a tube (laparoscope) with a lens through a small incision in the abdomen.

LH: luteinising hormone, secreted by the pituitary gland, responsible for regulating the menstrual cycle and triggering ovulation when the follicle is mature.

LUTEINISATION: the atrophy process that the corpus luteum undergoes when the egg is not fertilised.

M

MACS: abbreviation for Magnetic Field Cell Separation. This technique is used to separate spermatozoa undergoing apoptosis (programmed cell death) from the rest.

MENARCHE: the beginning of menstruation.

MICROFLUIDICS: devices that allow the separation of spermatozoa according to certain characteristics such as motility, fragmentation index, etc.

N

NECROZOOSPERMIA: when the percentage of non-vital spermatozoa in an ejaculate exceeds 58%.

O

OESTRADIOL: female sex hormone secreted by the ovary.

OLIGOZOOSPERMIA: less than 15 million sperm per ml in the ejaculate, or less than 39 million in total.

P

PITUITARY: an internally secreting gland at the base of the skull, responsible for the secretion of various hormones, e.g. LH and FSH.

POLYCYSTIC OVARY: ovaries where there are more follicles smaller than 10mm than the usual number of follicles in a resting state. It is not the same as polycystic ovary syndrome. This is an endocrine disorder that is linked to obesity, irregular periods, increased androgens, and hirsutism.

POLYMENORRHOEA: a condition with irregular periods, usually menstruation lasting less than 21 days.

PROGESTERONE: a hormone produced by the ovaries and involved in the maintenance of gestation and embryogenesis.

PROLACTIN: a hormone synthesised by the pituitary gland, responsible for the secretion of milk during lactation and the production of progesterone by the corpus luteum.

PROLACTINOMA: a benign tumour in the pituitary gland, which causes increased prolactin secretion.

R

REM: stands for Recovery of Motile Spermatozooids. It is also called sperm capacitation.

S

SEMENOGRAM: a study of the macro- and microscopic characteristics of semen. Also called a spermogram.

SEROLOGY: a test to check for antibodies in the blood.

SPERM CAPACITATION: the process that spermatozoa undergo from the time they are deposited in the vagina until they reach the egg, to be able to fertilise it. In the laboratory, attempts are made to mimic this process in order to select the best motile spermatozoa.

SPERMIOGRAM: laboratory semen analysis.

STERILITY: inability for a couple to conceive after one year of regular sexual intercourse without contraception.

T

TERATOZOOSPERMIA: when there are less than 4% morphologically normal spermatozoa in the ejaculate.

TESTOSTERONE: male sex hormone (although it is also produced in small amounts in women), responsible for the appearance of secondary sexual characteristics in males.

TUBAL PATHOLOGY: alteration of the functionality of the fallopian tubes.

V

VARICOCELE: enlargement of the veins that carry blood to the testicle.

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CEO of the UR Group

Contacts

Alicante

www.urvistahermosa.com

Almería

www.urmediterraneo.com

Cádiz

www.urlasalud.com

Cartagena

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Hospital HLA Vistahermosa
Avda. de Denia, 103, Alicante, 03015, España



+34 965 269 146

+34 615 822 325



INTERNATIONAL DEPARTMENT



Avda. de Denia, 103, Alicante, 03015, España



+34 672 272 961

www.grupointernacionalur.com
pacientes@grupointernacionalur.com