

2020 - IID - MD4043 - Eksamen 1
Eksamensdato: 2020-05-27

1

A 33-year-old woman has an appointment with you to have her coil replaced. An hormonal coil was inserted 5 years ago, soon after she gave birth. The insertion was uncomplicated. She has regular, but quite sparse periods, about every month. She does not smoke and has no family history of cardiovascular disease.

You perform a gynaecological examination. You find the cervix, but no coil strings. What is the best way to proceed?

- A You refer her for an X-ray overview of the abdomen
This is not incorrect, but you should first try to remove the coil yourself
 - B You say the coil must have fallen out and insert a new one
You should first make sure whether the coil is still in place; she has quite sparse periods which can indicate that the coil is intact in the uterus
 - C You say she cannot use the coil any more and give her a prescription for a combined pill
You must first find out whether the coil is still in the uterus
 - D X You flush the vagina and fish around in the cervix using a swan neck forceps
Correct answer, you will most probably be able to grab hold of the strings and manage to fish out the coil
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2

A previously healthy woman aged 29 has an appointment with you for her postnatal check-up after giving birth to her first child 8 weeks ago. According to the discharge summary from the hospital she gave birth at term. It was a vacuum assisted delivery because of prolonged second stage of labor. Other than this, she says that she had residual urine the first day after the birth, and was catheterised a couple of times. After this, voiding was adequate. The stay in the maternity ward was otherwise stated to be normal, and in the discharge summary her Hb after the birth was 12.7 g/dL. During the pregnancy she was seen alternately by you and the midwife for check-ups and the pregnancy was normal. Other than the pregnancy check-ups, you see that the last time you saw her was almost 3.5 years ago. What would be the most correct things to discuss at the check-up?

- A Ask her to have the postnatal check-up/talk about the birth with the midwife; she can also give advice about contraception and take cervical cytology. Assess the need for somatic status in regard to BP/urine.
The postnatal control can be done by her GP.
 - B Go quickly through the birth. Find out how she and the child are now. Ask in regard to urinating. Take her BP, pulse, and temp. In addition, check to see whether she has begun to lose the weight she put on during the pregnancy.
Not necessarily important with BP/pulse here. Can be considered. Weight is less important at this time. Cervical cytology should be performed
 - C X Go quickly through the birth. Find out how she and the child are now. Ask in regard to urinating. Ask about contraception. Cervical cytology
It is important to determine how the new mother feels in her new role as mother. Satisfaction/low mood. Contraception is important to consider, NB! urination because she had residual urine. Last cervical cytology probably 3.5 years ago
 - D Before she has an appointment with you, you refer her for a consultation at the hospital because you consider that this experience was very tough, and a vacuum-assisted delivery is generally very dramatic. Any additional investigations can be performed by the hospital.
Vacuum-assisted delivery is basically a common method of delivery. Regardless, referral to the specialist healthcare services is not necessary before the patient has been examined clinically.
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3

Which samples are taken routinely at the first antenatal check-up?

- A** Hb, HbA1c, S-ferritin, HIV, syphilis, Hepatitis B, ABO and RhD typing and antibody screening
HbA1c is taken in women whose ethnic background is from Asia or Africa
Pregnant women with first-degree relatives with diabetes (mother, father, siblings)
Pre-pregnancy body mass index (BMI) above 30 kg/m²
In previous pregnancies:
Children with a birthweight above 4500 gram
Impaired glucose tolerance
Previously diagnosed gestational diabetes
Pregnancy and birth complications that are associated with gestational diabetes (shoulder dystocia and preeclampsia)
- B X** Hb, S-ferritin, Hepatitis B, HIV, syphilis, ABO and RhD typing and antibody screening, as well as a test for asymptomatic bacteriuria
According to the National Guidelines for Antenatal Care and the Personal Maternity Record [Helsekort for gravide]
- C** Hb, S-ferritin, HIV, Rubella status, ABO and RhD typing and antibody screening
Rubella status is taken for women whose vaccination status is uncertain
- D** Hb, S-ferritin, Hepatitis B, HIV, syphilis, ABO and RhD typing and antibody screening, chlamydia, and a test for asymptomatic bacteriuria
Chlamydia is recommended in women with at-risk behaviour and women <25 years of age
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4

Infection with parvovirus B19 (erythema infectiosum) is also known as the 5th childhood disease. This infection in pregnant women sometimes results in severe anaemia in the fetus. Why do most fetuses not get the infection, even when the pregnant woman has been infected?

- A** The infection is only dangerous for a fetus that has growth retardation
Anaemia can occur in all fetuses
- B** The mother's IgM antibodies pass the placental barrier and quickly protect the fetus against serious infection
IgM antibodies do not pass the placental barrier
- C X** The mother's IgM antibodies pass the placental barrier and protect the fetus if the mother has had the infection earlier in life
Many women have had this infection as a child and then they have life-long immunity. IgM antibodies pass the placental barrier and protect the fetus
- D** The virus does not normally pass the placental barrier, and the infection only occurs when there has been bleeding between the maternal and fetal circulation.
Parvovirus B19 passes the placental barrier
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5

What do we mean by vasa previa?

- A** The umbilical cord is inserted centrally in a placenta previa
Central insertion of the umbilical cord is normal. The placenta covers the internal cervical opening; therefore it cannot be vasa previa.
- B X** Fetal blood vessels lie across the internal cervical opening
Correct answer
- C** The umbilical cord can be palpated in the vagina during the delivery
This is called umbilical cord prolapse
- D** The umbilical cord is inserted on the edge of a placenta previa
This is called velamentous cord insertion. The placenta covers the internal cervical opening; therefore it cannot be vasa previa.
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6

A 33-year-old woman has an appointment with you for check-up after she gave birth to her first child a week ago. It was an uncomplicated vaginal delivery at term. Before the pregnancy she had generally been healthy and used no regular medicines. The last few days of the pregnancy she had signs and symptoms of preeclampsia. She was then admitted in gestation week 39+0 with a blood pressure of 165/107 and 3+ proteins in her urine. After being induced, she had an uncomplicated birth of a boy weighing 3300 g. The patient was discharged from hospital after 5 days with BP 140/80 and Trandate treatment (lowers blood pressure) 100 mg x 2. Today she complains that she feels tired and has some frontal headache.

BP at today's check-up with you is 160/107, 165/100 and 155/96. Urine dipstick 4+ blood otherwise negative.

As her GP, what is the best way to manage this situation?

- A X** You increase the blood-pressure lowering medicine and give her a follow-appointment in 3 days
Blood pressure above 90-95 diastolic and 150 mm Hg systolic must be lowered. Untreated or incorrectly treated high blood pressure is the most common cause of maternal death during pregnancy and post-partum (cf. Report on maternal mortality available on: <https://oslo-universitetssykehus.no/seksjon/nasjonalt-kompetansetjeneste-for-kvinnehelse/Documents/Maternelle%20dodsfall%20WEB.pdf>). The diagnosis chronic hypertension is not used before 12 weeks postpartum.
- B** You complete the check-up and think that the blood pressure will normalise spontaneously
- C** You refer her to Renal Medicine Outpatients querying whether she is developing chronic hypertension
- D** You recommend a new check-up with you in 1 week. Continue with an unchanged dose of the blood-pressure lowering medicine

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A 30-year-old woman who is pregnant for the first time, and so far has had a normal pregnancy, has an appointment with you her GP. She has been very well and worked until she started maternity leave in week 37. She has attended the routine antenatal check-ups. After she started maternity leave she has had problems with itching, particularly on the palms of her hands and on her stomach.

You notice that there aren't any scratch marks, and when asked she says that she itches most at night. What is the best way to deal with this situation?

- A** You recommend soothing creams because the skin on the stomach can itch considerably as it gets stretched.
- B X** You check her blood pressure and urine and ask her to come back fasting the next day for blood tests.
Samples for fasting bile acids should be taken to exclude ICP (Intrahepatic cholestasis of pregnancy)
- C** You phone in for a prescription for antihistamines for her
- D** You refer her the same day as emergency help to Maternity Outpatients, because itching during pregnancy can be dangerous.

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At the first antenatal check-up in gestation week 12 you measure a blood pressure of 145/95. What will you do?

- A** Refer to the hospital for assessment within one week.
Such quick referral is not necessary in mildly elevated blood pressure in the first trimester.
- B** Start immediate treatment with labetalol (trandate) to avoid a further increase in blood pressure.
You should repeat the measurements and wait with medical treatment until you are sure that she really has gestational hypertension.
- C** Give lifestyle advice and start treatment with an ACE inhibitor to avoid a further increase in blood pressure.
Lifestyle advice is important, but ACE inhibitors can harm the renal function of the fetus.
- D X** Agree an appointment in a couple of weeks. If the BP measurement is also elevated then, you will perform a 24-hour blood pressure measurement.
This woman has slightly elevated blood pressure in the first trimester. In the first trimester you should take repeated measurements and have a wait-and-see approach. Generally, the blood pressure drops in the second trimester, but you should check it more often in the third trimester because then it can increase again.

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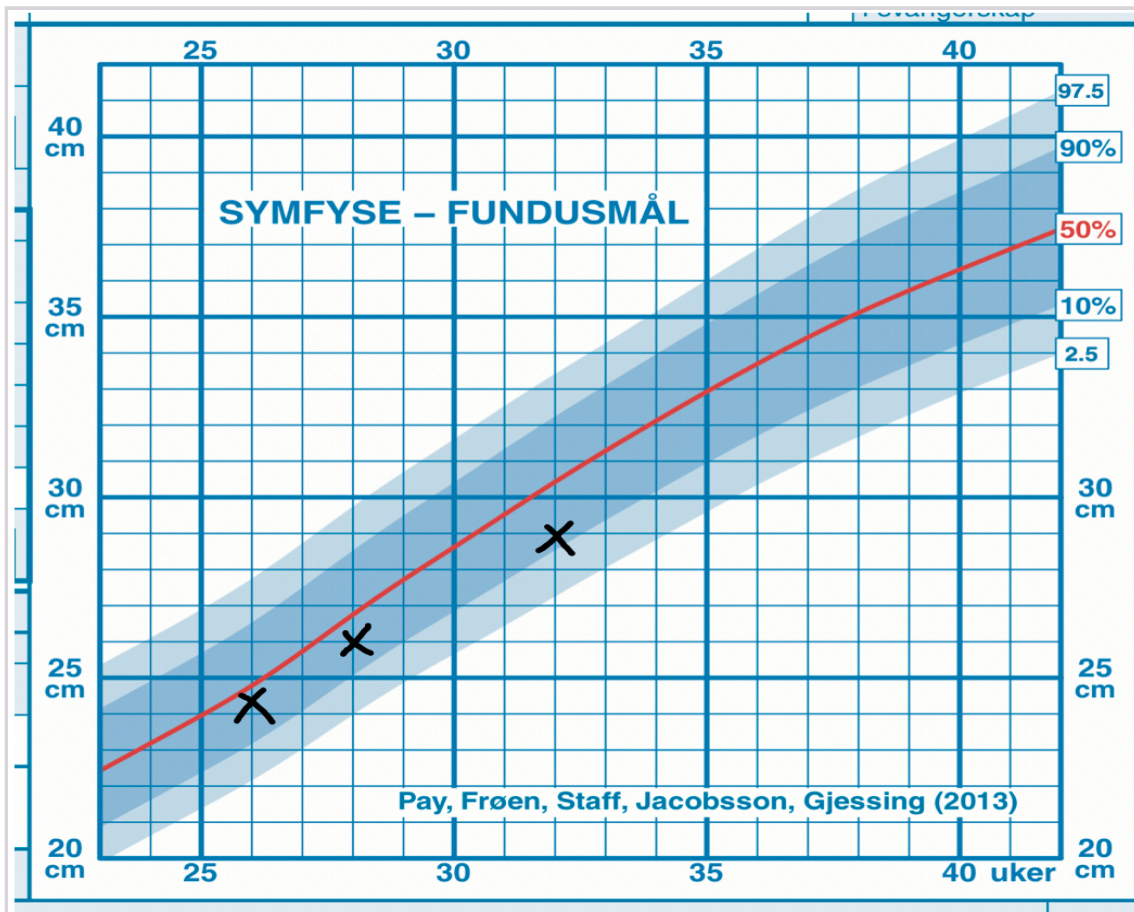
Which of the following presentations cannot be delivered vaginally?

- A Frank breech (flexed hips and extended knees)
Can be delivered vaginally in accordance with given guidelines
- B Occiput posterior
Can be delivered vaginally but will often turn during delivery.
- C Face presentation
Can be delivered vaginally if the spine is facing the back
- D X Shoulder presentation
A caesarean section must be performed

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10

A 27-year-old, healthy, first-time pregnant woman has an appointment with you her GP. She is pregnant in gestation week 36+1. She has attended regular check-ups with you throughout the pregnancy. She feels well. She feels the baby moving every day. You measure a normal blood pressure and find a negative urine dipstick. Using Leopold's maneuver you find the fetus is in the head position. You measure the symphysis-fundus height (SF height) to be 29 cm. The image below displays an extract from her Personal Maternity Record.



- A X** You send a referral to the Maternity Outpatient Clinic for a speedy assessment because you have found a low SF height.
Correct because the patient should have an ultrasound.
- B** You ask her to come back for a new check-up in one week because her SF height is a little low today.
She should be referred for ultrasound.
- C** You tell the woman everything looks fine and give her a new appointment with you in two weeks' time in accordance with the national guidelines on maternity care.
Not correct when the SF height has almost flattened out
- D** You send her directly to the hospital because you find a low SF height.
Emergency help on the day is not necessary because the patient has noticed good fetus movements.
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11

What is considered to be the median length of gestation in Norway (median length from the first day of the last menstruation to birth)

- A** 280 days
WHO continues to use 280 days, but this is based on old studies and does not agree with modern studies. Nevertheless, 280 days is used by many countries.
- B** 259
This corresponds to 37 weeks. Birth before week 37 is called premature (too early) birth
- C** 294
This is the definition of a post-term pregnancy
- D X** 283
New studies in Norway give 283 days (both according to eSnurra and the pregnancy wheel) and there is agreement in Norway that the due date is to be calculated using day 283
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12

A 30-year-old woman who is pregnant for the first time has heard that the birth will injure the pelvic floor and result in urine leakage. She has been given much contradictory advice on pelvic floor exercises in pregnancy and asks you what advice she should follow. What would be the best advice for her?

- A** You encourage her to avoid pelvic floor exercises until she has finished having children
- B X** You encourage her to start systematic strengthening exercises of the pelvic floor muscles
We have good evidence that pelvic floor exercises during pregnancy can prevent urinary incontinence during pregnancy and for 3-6 months after the birth.
- C** You encourage her to train very carefully to avoid enlarging the muscles and prolonging the birth
There is no evidence that pelvic floor exercises prolong the birth or make it difficult
- D** You encourage her to wait with training the pelvic floor muscles until after the birth
There is no evidence that one should wait with starting training until after the birth
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13

A 67-year-old woman is being investigated for postmenopausal bleeding. Gynaecological examination reveals normal findings at inspection, the uterus is the normal size at bimanual palpation and you do not palpate any masses. Transvaginal US reveals an irregular 12 mm intrauterine mass. The ovaries measure 2x3 cm in diameter. You take a pipelle biopsy and the result shows the presence of endometroid adenocarcinoma.

What is the most correct investigation for this patient now?

- A X** CT thorax/abdomen/pelvis + MRI pelvis
CT must be performed to detect any metastases and MRI to define the disease locally, the infiltration depth, growth into the cervix, among other
- B** CT thorax/abdomen/pelvis
Must have MRI in addition
- C** Surgical staging
Does form part of the investigations, but you must perform imaging diagnostics first
- D** Diagnostic hysteroscopy
An alternative if the pipelle biopsy was negative/inconclusive, but in this case you have received a cancer diagnosis
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14

A 21-year-old woman makes an appointment with you for a cervical cell test. She has a cousin who was recently diagnosed with cervical cancer and is very worried. The patient is healthy and takes no medicines. She has regular periods, no spotting or postcoital bleeding. You perform a gynaecological examination. You inspect the cervix, which you can see in the image below. What is the most important next step?



- A Take a cervical sample for cytology and an HPV test
- B Refer the patient to the Department of Medical Genetics for gene testing
- C X Ask her to make an appointment for a cervical test in 4 years
The screening programme in Norway recommends screening start from 25 years of age. HPV infection with transient cell changes is very common in young women, and in these cases testing is not desired to avoid over-treatment. Unnecessary interventions in the cervix could entail a risk for complications later with spontaneous abortion/premature birth, difficulty taking samples, and similar
- D Refer the patient to a gynaecologist for colposcopy

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15

What is the most common histologic type of vulvar cancer?

- A Basal cell carcinoma
- B Adenocarcinoma
- C Malignant melanoma
- D X Squamous cell carcinoma
The clearly most frequent form of vulvar cancer

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16

A 31-year-old woman has a pathological cell cytology (pap smear). The patient's cervical cytology revealed high-grade intraepithelial squamous cell lesion (HSIL). This was followed up with colposcopy and biopsies from the cervix. The biopsies also demonstrated high-grade cervical intraepithelial neoplasia (CIN III) and therefore conization was performed afterwards. What are the most typical long-term complications of this intervention?

- A Urinary incontinence and urine retention
- B Abscess and chronic pelvic infection
- C Constipation and fecal incontinence
Conization rarely damages the sphincter
- D X Cervical incompetence and cervical stenosis
Removal of a large cone biopsy can damage the closure mechanism in the cervix and result in cervical incompetence. If there is post-operative scarring in the cervical canal, this can result in stenosis of the cervix.

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17

Which contraceptive can cause reduced bone density?

- A Minipill
- B Contraceptive implant
- C Hormonal coil
- D X Contraceptive injection
<https://www.felleskatalogen.no/medisin/depo-provera-pfizer-547876>
Taught in the Contraceptive seminar

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18

Which condition or finding is not a common cause of irregular vaginal bleeding in a 17-year-old girl?

- A Polycystic ovaries
Polycystic ovaries are relatively common in young women.
- B Ectropion
Large ectropion are common (cylindrical epithelium from the cervical canal) in young women.
- C Cervicitis
Cervicitis occurs frequently in young, sexually active women
- D X Cervical polyp
Cervical polyps are not common in young women

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19

Which statement about PCOS is most correct?

- A Most women with PCOS have to use in vitro fertilisation to become pregnant
- B X Overweight and PCOS increase the risk of spontaneous abortion
Both overweight and PCOS by themselves increase the risk of spontaneous abortion
- C Women with PCOS more frequently have uterine malformations
- D About 25% of all women with PCOS remain childless even after in vitro fertilisation treatment (IVF treatment).

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20

A 23-year-old woman contacts you her GP because of stomach pain that has lasted for 3 days. She is pregnant with 16 weeks' amenorrhea. She describes a nagging pain in the lower part of the abdomen, a little pale pink discharge and frequent urination. You are also her mother's GP, who has had conization for severe cervical dysplasia.

Urine dipstick reveals leukocytes 3+, nitrite+, sent for culture. At gynaecological examination, the cervix is closed and macroscopically unremarkable. You see no signs of brownish fluor albus or fresh bleeding. At bimanual palpation, the uterus is enlarged corresponding to the amenorrhea and there is slight palpation tenderness over the symphysis.

What is the most correct course of action?

- A Refer her for Outpatient ultrasound investigation with the gynaecologist within one week
No signs of severe bleeding.
- B X** Start treatment for a urinary tract infection
Classic symptoms and findings of a urinary tract infection in pregnancy.
- C Take cervical cytology and HPV
It is important to examine the cervix even when a woman is pregnant. She is younger than the recommended age for screening in Norway. If signs of malignancy are seen, the woman must then be referred to a gynaecologist for follow up who will also decide whether a biopsy is necessary.
- D Refer her to a gynaecologist for ultrasound investigation the same day
No signs of severe bleeding.

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21

Why have many clinicians been sceptical about diagnosing personality disorders in adolescents?

- A Because such problems cannot be diagnosed in adolescents
Today we know that with early correct treatment, a personality disorder does not need to be a life-long condition. Previously it was thought to be a chronic condition that did not benefit from treatment. And, it was thought that by not diagnosing a personality disorder, the problems could normalise during development.
- B Because such problems only develop in adults
Today we know that with early correct treatment, a personality disorder does not need to be a life-long condition. Previously it was thought that it was a chronic condition that did not benefit from treatment. And, it was thought that by not diagnosing a personality disorder, the problems could normalise during development.
- C Because there are no good treatments for children and adolescents with these problems
Today we know that with early correct treatment, a personality disorder does not need to be a life-long condition. Previously it was thought to be a chronic condition that did not benefit from treatment. And, it was thought that by not diagnosing a personality disorder, the problems could normalise during development.
- D X** Because adolescents are still developing and it is thought that there is a high risk of pathologising normal development.
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22

Severe behavioural problems (Conduct disorder) in 4-to-8-year-old children represent a significant risk of criminality as an adult.

Which treatment option is most effective?

- A X** A manual-based structured intervention programme for children and parents, schools and nursery schools such as "De Utrolige Årene" [The Incredible Years]
De utrolige årene (DUA) [The Incredible Years] is a documented programme to help children with behavioural and social problems and their families. DUA offers training in initiatives to support development, prevention and treatment for children, their families, schools, after-school groups and nursery schools. Of the four answer options, this is the most effective.
- B** Guidance from the municipal Child Welfare Services for the parents on how to set boundaries for their children.
It is correct that the Child Welfare Services should be a collaboration partner in regard to children with serious behavioural problems, and that guidance for the parents is generally an initiative that is often used from the Child Welfare Services. But this initiative has been shown to have less documented effect than programmes such as DUA [The Incredible Years] in regard to serious conduct disorders in children.
- C** A manual-based structured intervention programme for children that is based on cognitive behavioural therapy such as "Coping Cat".
It is correct that manual-based structured intervention programmes have been documented to be the most effective for serious behavioural disorders in children; however, "Coping Cat" has not been developed for behavioural problems but for different types of anxiety in children
- D** Guidance from department of Child and Adolescent Psychiatry to services such as Child Welfare Services, pedagogical-psychological services, health sister and school.
Guidance from department of Child and Adolescent Psychiatry to various municipal services can be useful and a supplement for children aged 4-8 years with conduct disorder. But the question asks for the most effective measure, and structured programmes such as "De Utrolige Årene" [The Incredible Years] have been documented to be most effective.
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23

Why are children with ADHD susceptible to develop attachment disorder?

- A** Attachment disorder is a part of disturbed brain development
Both parents and children affect interaction and the development of attachment disorder. Children with ADHD are more demanding and, statistically, parents with ADHD have a higher burden, including a biological predisposition for neuropsychiatric problems and social conditions. Attachment disorder is not considered to be a congenital disorder.
- B** The parents of children with ADHD have poorer parenting ability
Both parents and children affect interaction and the development of attachment disorder. Children with ADHD are more demanding and, statistically, parents with ADHD have a higher burden, including a biological predisposition for neuropsychiatric problems and social conditions. Attachment disorder is not considered to be a congenital disorder.
- C X** Children with ADHD are demanding children and there is an increased risk of burden on the parents of children with ADHD
Both parents and children affect interaction and the development of attachment disorder. Children with ADHD are more demanding and, statistically, parents with ADHD have a higher burden, including a biological predisposition for neuropsychiatric problems and social conditions. Attachment disorder is not considered to be a congenital disorder.
- D** Children with ADHD are demanding children
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24

Johanna 16 years of age, "I tried hashish for the first time before I was 16. Friends said it would help me relax and concentrate after I started at high school. It helped for the first six months, but then I began to forget things and get more anxious. Smoking increased over the spring and was the only way I could relax or have fun. My schoolwork went downhill and I failed two subjects in the spring. My mother had noticed my red eyes and poor health and thought I was sick. She took me to the GP who understood the problem." As the GP, what do you do?

A X Discuss the problem with Johanna and explain that her mother must be informed to be able to help her

The patient is 16 years old and uses hash in a way that can damage her health and have a negative impact on her development.

Because she is 16, individual follow up without changing the outer framework would not be considered sufficient to result in change. She is also 16 years old and has her own patient rights and right to confidentiality. This is limited because there is a danger to health, but notifying the parents and the system without the patient's permission can be difficult for the future doctor-patient relationship.

Informing the patient that she needs help from her family and the system to cope better usually works and provides access to effective interventions.

The patient could benefit from cross-disciplinary specialised addiction therapy, but interventions near the patient should be tried first.

B Notify the parents, school and community sister

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C Refer the patient for cross-disciplinary specialised addiction treatment

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D Give Johanna several individual appointments

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25

Disorganised attachment predicts development of social and behavioural problems in the child. Is this statement correct?

- A No, social and behavioural development is not affected by attachment patterns
A disorganised attachment pattern does not necessarily result in problems later. Development of such problems can be the result of several risk factors of which disorganised attachment is only one.
- B Both yes and no. Disorganised attachment predicts social problems, but not behavioural development, in children
A disorganised attachment pattern does not necessarily result in problems later. Development of such problems can be the result of several risk factors of which disorganised attachment is only one.
- C **X** Yes, a disorganised attachment pattern is a low-moderate predictor for development of social and behavioural problems
A disorganised attachment pattern does not necessarily result in problems later. Development of such problems can be the result of several risk factors of which disorganised attachment is only one.
- D Yes, a disorganised attachment pattern is a strong predictor for psychopathology in children
A disorganised attachment pattern does not necessarily result in problems later. Development of such problems can be the result of several risk factors of which disorganised attachment is only one.

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26

You are the GP. A 14-year-old girl and her mother attend your surgery. The mother is concerned because the girl no longer wants to eat with the rest of the family, and her menstrual periods have become irregular after having been regular. She wants to eat alone, refuses to eat sauce, pasta, rice, butter and foods containing fat. She has lost 5 kg over the last 3 months. In addition she is exercising more and becomes very angry if she can't exercise. The girl believes her parents' concern is over-exaggerated, because she is not vomiting, is active and eats more healthy. She believes she is too solid and wants slimmer thighs. At examination you find: BP 90/60, pulse 50 soft but regular, height 160 cm, 40 kg, corresponding to less than the 10th percentile/height. Normal blood tests. What further investigations and treatment do you consider to be most correct?

- A **X** Medical history, extended blood tests, map her diet and training patterns and at the same time refer her to the specialist health services (BUP - Child and Adolescent Psychiatric Services) for treatment.
A more detailed mapping of the development and current status is important for your assessment, and the progression and somatic status are sufficiently serious. You suspect an eating disorder and refer her to the specialist health services (Child and Adolescent Psychiatric Services) for follow up. It is important to start treatment quickly, therefore she should be referred immediately. She has lost a lot of weight so far and does not believe she needs to increase her dietary intake. Most probably, further weight loss can be expected if the treatment is not started immediately. It is possible that follow up in a couple of weeks can be the correct solution, but is not optimal. A wait-and-see approach and letting the patient decide what she will eat is in contravention of the recommended treatment for eating disorders.
- B You encourage the parents to let the girl eat what she wants, to see if she will eat with the rest of the family and reduce the conflict level in the family.
- C Because the patient experiences herself to be healthy and appears in good general health, but not motivated for treatment, further action now is not appropriate. You encourage the mother and patient to contact you if the situation gets worse or causes more concern.
- D Because the weight loss has happened gradually over several months and she appears to be in good general health, it is reasonable to agree a follow up appointment in a couple of weeks' time. You encourage her to increase her dietary intake until the next appointment.

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27

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- A Bulimia nervosa
- B Anorexia nervosa
- C X Atypical anorexia nervosa

The patient has developed distinct anorexia, fat phobia, exercises too much and has a distorted body image. Her periods are irregular, but she does not have secondary amenorrhea. Correct answer b) Atypical anorexia nervosa. She does not have symptoms of bulimia nervosa or binge eating disorder; she neither vomits nor binge eats.

- D Binge eating disorder

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28

Some parent education programmes have demonstrated a good effect on disorganised attachment patterns in children. Some of the core components of such programmes are:

- A Focussing on quality time with the child through playing and stimulating to be social
Giving the child comfort, care and help to regulate their emotions are a few of several core components in effective parent education programmes. Alternatives b and d are also important parental tasks, but are not identified as core elements in parent education programmes. Children who have experienced traumatic events need help to understand both the event and their own and other people's reactions. Alternative c must therefore be considered to be definitely incorrect.
- B Help the child to develop good learning strategies to stimulate better school performance
Giving the child comfort, care and help to regulate their emotions are a few of several core components in effective parent education programmes. Alternatives b and d are also important parental tasks, but are not identified as core elements in parent education programmes. Children who have experienced traumatic events need help to understand both the event and their own and other people's reactions. Alternative c must therefore be considered to be definitely incorrect.
- C X Providing comfort and care, and being with the child when they experience difficult emotions
Giving the child comfort, care and help to regulate their emotions are a few of several core components in effective parent education programmes. Alternatives b and d are also important parental tasks, but are not identified as core elements in parent education programmes. Children who have experienced traumatic events need help to understand both the event and their own and other people's reactions. Alternative c must therefore be considered to be definitely incorrect.
- D Teach the child strategies to stop thinking about traumatic memories
Giving the child comfort, care and help to regulate their emotions are a few of several core components in effective parent education programmes. Alternatives b and d are also important parental tasks, but are not identified as core elements in parent education programmes. Children who have experienced traumatic events need help to understand both the event and their own and other people's reactions. Alternative c must therefore be considered to be definitely incorrect.

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29

A mother attends your GP surgery with her 5-year-old son. She is very concerned about what is happening in nursery school. She experiences him as a very clever boy; she mentions that he knows more about outer space than she does and that he has already taught himself to read. She says that things go well at home, he is a very kind boy who is occupied with his things and requires little activation from his parents. She says that as a family they like to have fixed routines and rarely have visitors to the home. She says it can be very difficult when they want to leave the house because he is so focussed on his activity. Moreover the nursery school has reported concerns that the boy gets very angry and in conflicts if he does not get to do what he wants, and that he does not take part in games with the other children. The boy is reading a book while his mother is talking. He does not take part in the conversation, and does not make eye contact. He suddenly talks loudly and in a monotone voice about the mini planet Pluto, but does not appear to be interested in what his mother thinks about this. You suspect an autism spectrum disorder. What is the recommended treatment?

- A** Protecting the child from contact with the outside world
Research shows that good adaptation is beneficial for the child. To achieve good adaptation, it is necessary for everyone in contact with the child to have a good understanding of the problems. Medication treatment can be given as supplementary treatment if the behavioural/anger problems are severe. It is the environment that must adapt to the child. Facilitation means making the day predictable with a manageable adaptation to others. Protecting is not an intervention alone
- B** Medication treatment
Research shows that good adaptation is beneficial for the child. To achieve good adaptation, it is necessary for everyone in contact with the child to have a good understanding of the problems. Medication treatment can be given as supplementary treatment if the behavioural/anger problems are severe. It is the environment that must adapt to the child. Facilitation means making the day predictable with a manageable adaptation to others. Protecting is not an intervention alone
- C** Individual psychotherapy for the child to increase adaptation to others
Research shows that good adaptation is beneficial for the child. To achieve good adaptation, it is necessary for everyone in contact with the child to have a good understanding of the problems. Medication treatment can be given as supplementary treatment if the behavioural/anger problems are severe. It is the environment that must adapt to the child. Facilitation means making the day predictable with a manageable adaptation to others. Protecting is not an intervention alone
- D X** Psychoeducation and facilitation for the child with everyone he meets
Research shows that good adaptation is beneficial for the child. To achieve good adaptation, it is necessary for everyone in contact with the child to have a good understanding of the problems. Medication treatment can be given as supplementary treatment if the behavioural/anger problems are severe. It is the environment that must adapt to the child. Facilitation means making the day predictable with a manageable adaptation to others. Protecting is not an intervention alone

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30

You consider it to be necessary to admit a boy to an acute psychiatric day unit for adolescents. The patient lives in a foster home, placed there pursuant to Section 4-4 of the Child Protection Act [barnevernsloven] where the parents have voluntarily agreed to placement in a foster home as a support intervention without a care order. The patient is 15 years old and resists admission, but the foster parents, biological parents and responsible person in the Child Welfare Services see the need and want this to happen. Who has to give consent to admit the boy?

- A** The foster parents must give consent because he lives with them.
The foster parents are responsible for daily care but do not have legal responsibility. That lies with the biological parents.
- B X** You must get consent from the boy's biological parents because the child has not been taken into care.
*Act on Patient and User Rights stipulates the following on consent on behalf of children: Section 4-4. Consent on behalf of children
Parents or others who have parental responsibility have the right to consent to health care for patients under the age of 16...
If the Child Welfare Services have taken over the care of a child under the age of 16 under the Child Welfare Act section 4-6 second paragraph, Section 4-8 or § 4-12, the Child Welfare Service has the right to consent to health care.
Consent must be obtained from the biological parents because the child has not been taken into care, but has been voluntarily placed in a foster home. The Child Welfare Services have not taken him into care (that occurs pursuant to Sections 4-6, 4-8 or 4-12) but have only taken a decision on assistance pursuant to Section 4-4.*
- C** The responsible person in the Child Welfare Services must give consent because they are responsible for the assistance with foster home placement.
The responsible person in the Child Welfare Services gives consent only if they have taken over care of the child/adolescent, which they have not done in this case.
- D** You must section the boy if he does not consent because he is 15 years old and considered to have capacity to consent to medical treatment.
The age at which a person is considered to have capacity to consent to medical treatment is 16 years; because the boy is younger than 16, the parents/guardians/caregiver give consent to treatment.
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31

You are the GP for a 6-year-old boy who has started in 1st year at school. You know the family and boy well, and have previously referred him to BUP for suspected ADHD. One day you are called by the nurse at the school who says that the boy has serious behavioural problems and easily gets into conflict with other children. The day before the boy had hit another boy and been taken aside by the teacher. He then started crying and said that "the teacher mustn't tell his parents or he would be given a beating". The school nurse wants to help to deal with this. What is the most correct thing to do in this situation?

- A X** You call the Child Welfare Services with a concern notification without telling the parents in advance.
If you suspect violence or sexual abuse, it is important to talk with the Child Welfare Services before you inform the parents.
- B** You call the boy's mother, who is also your patient, and tell her what the boy has said.
By doing this you put the boy at risk
- C** You ask the school nurse to call the parents in to a meeting to tell them about the boy's problems and what he has said.
By doing this you put the boy at risk
- D** You call the intake team at BUP and ask for the boy to be prioritised for fast-track admission.
-

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32

You are the doctor at the Child and Mother Clinic. A boy attends for his 1-year check-up. You examine his scrotum and find one testicle on the left side, but none on the right. What do you do?

- A X** You suspect testicular retention. You examine the groin to determine whether there is a testicle present. Regardless of the findings, you refer the boy to a urologist or paediatric surgeon for assessment
Suspicion of testicular retention is correct and this must be referred
 - B** Reassure the parents saying that the testicle will eventually drop down into the scrotum
 - C** Conclude that the boy lacks a testicle and ask the parents to contact the urologist when he is fully grown for a testicle prosthesis
 - D** You suspect testicular retention. You examine the groin but cannot definitely feel a testicle. You conclude that the boy lacks a testicle and do nothing further
-

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33

A four-week-old boy was admitted with a possible pyloric stenosis. Which of the following statements is most useful when making a diagnosis?

- A** Generally results in hypochloremic metabolic acidosis
Hypochloremic metabolic alkalosis is often found, not acidosis
 - B** Generally diagnosed best by overview X-ray of the abdomen
Pyloric stenosis cannot be seen on an overview X-ray of the abdomen
 - C X** Generally diagnosed best using ultrasound of the abdomen
Ultrasound of the abdomen will reveal an enlarged pylorus if present
 - D** Generally presents with bile-coloured projectile vomiting
Projectile vomiting due to pyloric stenosis comes from the stomach and is therefore not bile-coloured
-

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34

A couple with a 2-month-old boy comes to the acute treatment centre. The boy has been lethargic and restless all day. He has vomited and the vomit has a green colour. His abdomen is distended. He had a bowel movement the day before, but today the parents have observed neither a stool nor flatulus. Which condition do you suspect?

- A** You suspect constipation and recommend that the parents give the child an enema
 - B X** You suspect intestinal obstruction such as intestinal malrotation/volvulus. You refer him to the nearest hospital that has a paediatric surgeon.
Classic medical history
 - C** You suspect gastroenteritis and refer to the Paediatric Department for fluid therapy
 - D** You suspect milk allergy and refer for elective investigations with the paediatrician
-

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35

A 1-month-old boy comes with his parents to the acute treatment centre-in clinic. The boy is lethargic and unwell. He appears to have waves of stomach pain when he cries and can't be comforted and pulls his legs up towards his stomach. His mother shows you a nappy with some mucous and blood. What do you suspect and what do you do next?

- A** You suspect enterocolitis and refer him to the Paediatric Department
 - B** You suspect gastroenteritis and recommend high fluid intake
 - C** You suspect acute constipation and give the boy a Microlax enema
 - D X** You suspect invagination and refer him as emergency help to the Surgical Department
Classic medical history
-

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36

A mother and her 12-month old child attend for a check-up at the family practice because they have recently moved here as refugees from a country in central Africa. The boy has been relatively healthy all his life, continues to be solely breastfed and is growing reasonably well. His mother nevertheless says that he has been a little pale recently and, because he has also had a slight temperature, cough and runny nose for the last two days, haematology is performed giving as the only finding a low Hb of 8.8 g/dL (ref. 10.5-13.1).

What is the most probable cause of the anaemia?

A X Iron deficiency

Correct. In the absence of any other information, iron deficiency is the most common cause of anaemia, regardless of where in the world you come from. In this case in addition, being solely breast fed is a clue because from at least 6 months of age, the diet must be supplemented with iron to ensure an adequate supply.

B Sickle cell anaemia

C Malaria

D G6PD deficiency

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37

An 11-year-old healthy girl comes with her mother to the GP surgery because she has now had her first period. It is almost 2 years since her breasts started growing. Since the age of 3, she has grown around the 50th percentile (corresponds to 167 cm as an adult) for length versus age, and today she lies just below the 90th percentile with her 154 cm.

Which statement is probably correct about the height of the girl as an adult?

A She will end up above the 90th percentile (corresponds to above 175 cm)

B She will end up a couple of cm around the 75th percentile (corresponds to between 169 and 173 cm)

C She will end up a couple of cm around the 50th percentile (corresponds to between 165 and 169 cm)

D X She will end up a couple of cm below the 25th percentile (corresponds to below 163 cm)

She is early into puberty (average menarche just below 13.5 years) and will basically lose years with childhood growth before the growth zones close at the end of puberty. The early puberty spurt explains why she now lies higher than previously (near the 90th percentile). It is common to grow only about 5-8 cm after menarche.

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38

Malin was born by vaginal delivery one week before term. Examination by the paediatrician on her 2nd day was normal, and mother and child were discharged after 48 hours in the Maternity Ward. One week after going home, Malin has a fever of 38.9 degrees and the mother calls the emergency clinic in the municipality. Malin has wet nappies, but is very lethargic. It is a 4-hour journey to the nearest hospital.

What is the correct course of action?

A Ask the mother to give paracetamol for the fever, and to take the child to the emergency clinic the next day if the fever has not gone down

Children with a fever younger than 1 month must always be examined by a doctor

B Order an X-ray of the thorax and ultrasound of the head at the nearest hospital and ask the mother to take Malin there

With a journey time of 4 hours, such a small baby must always be examined clinically by a doctor before being transported. Ultrasound of the head is not useful in this acute situation.

C Send an e-prescription for Penicillin to the nearest pharmacy and ask the mother to collect the medicine and start treatment the same day

D X Ask the mother to take Malin to the nearest emergency clinic for a clinical examination

Such a small baby must always be examined clinically by a doctor on the same day

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39

A couple come to the walk-in clinic with a 1-month-old boy. Yesterday they saw a lump in his right groin. It was soft and could be pressed back. Today, it is hard, red and tender. They are unable to push it back in. The boy has not had a bowel movement today. What do you do?

- A You suspect a tumour and refer for further investigations with a paediatrician.
- B X** Refer him for Surgery as emergency help with a suspected incarcerated inguinal hernia.
Classic medical history
- C You suspect a swollen lymph gland due to a viral infection. You send him home and expect it will pass.
- D You suspect an abscess and incise it under local anaesthetic

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40

A boy born at term of healthy parents after a normal pregnancy weighs 3550 g at birth. He is their first child. On day 3 after birth, the boy weighs 3350g, and his mother has started to produce milk. At examination, the boy is a little listless and his skin and sclera are yellow.

Which blood tests should be taken to determine treatment and possible cause?

- A Infection status and acid/base
This will not provide information on whether the jaundice should be treated.
- B X** Total bilirubin, Coombs' test, ABO and Rhesus
This will provide information on whether the jaundice should be treated and whether incompatibility is the possible cause of the jaundice.
- C Conjugated and unconjugated (indirect) bilirubin
There is no indication for taking conjugated bilirubin so early
- D Haemoglobin, leukocytes and thrombocytes
Only haematology will provide information on whether the jaundice should be treated

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41

As a doctor in the Paediatric Emergency Clinic you see a four-year-old girl who now weighs 15 kg, is acutely ill, and appears to be dehydrated. She is admitted and given IV fluids because she cannot keep anything down and is debilitated. She continues to vomit as much during admission as the day before, i.e. 5 bouts of vomiting, in addition to four bouts of diarrhoea per day, and she has had a persistent fever of around 38.5 degrees Celsius. Recently she weighed about 16 kg. What total volume of fluids should be given in the first 24 hours?

- A 1500-1800 ml
- B 2500-2800 ml
- C X** 3000-3300 ml
Correct. A deficit of about 1kg = 1000ml. Basal requirement for 16kg (100ml x 10kg + 50ml x 6kg)= 1300ml. Ongoing loss: 10% of basal requirement per degree temperature above 37.5= 130ml. Vomiting 5x (2ml+16kg) = 160ml. Diarrhoea 4x (10ml x 16kg)= 640ml. This gives a total of 3230ml. Regardless of whether one does not remember to cover all loss, the basal+deficit is 2300, and there is ongoing loss and fever.
- D 2000-2300 ml

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42

A 6-year-old girl attends your doctor's surgery because her parents think her friends are growing faster than her. You see that she has moved from lying between the 50-75th percentile for length at the last measurement at 4 years of age and now lies directly below the 25th percentile after having grown 8 cm over the last two years. Target height based on the parents is 170 +/- 9cm (corresponds to between 10-25th percentile and up to about the 97th percentile).

What statement about the girl's growth is correct?

- A X** Pathological growth and rate for this age group
Correct. The growth rate is too low for this age group and she has crossed a percentile which is not acceptable in this age group, regardless of whether she continues to lie within her genetic potential cf. target height based on her parents' heights.
- B** Normal growth and rate for the age group
- C** Pathological growth because she also lies at the extreme edge of the target height based on her parents
- D** Normal growth because she lies within the target height derived from her parents

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43

A 6-week old boy is admitted with a fever and poor general health that has persisted for a day. A urinary tract infection is diagnosed with high CRP and growth of enterococci in the urine. He is treated with antibiotics and responds well. As part of the investigations, an ultrasound is performed which reveals dilation of the ureters and renal pelvis bilaterally and a half-filled bladder.

Which investigation should now be requisitioned?

- A X** X-ray micturition (voiding) cystourethrogram
When ultrasound reveals a bilaterally dilated urinary tract one must make sure that there are no outflow obstructions by performing micturition (voiding) cystourethrogram and in particular to exclude the urethral valve
- B** DMSA scan of the kidneys
Can be relevant later to look at the function distribution between the kidneys and signs of reduced perfusion (kidney scar after infection)
- C** New ultrasound of urinary tract (control)
Can be relevant at later follow-up
- D** MRI of kidneys and urinary tract
Is not the first choice for investigating the urethral valve

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44

A low IQ score is used to diagnose intellectual disability. But such a diagnosis has widespread consequences for the individual. Low IQ score is not sufficient to make the diagnosis.

Which of these supplementary criteria are necessary to diagnose intellectual disability?

- A** A need for additional pedagogic follow-up in nursery school and school
- B X** A lack of adaptive behaviour based on age
The criterion for having intellectual disability is that the level of skills for day-to-day living does not reflect the age.
- C** Abnormal behaviour
- D** Delayed motor development

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45

A 13-month-old boy who has recently begun in nursery school comes to the acute treatment centre after an episode with loss of consciousness, rolling of the eyes, rigidity, breath holding and perioral cyanosis. It lasted about 1-2 minutes. Afterwards he was dazed and tired for about 10 minutes before he became awake and responded as normal. His parents say that he has had a cold for 3 days, has kept touching his ear, and been whiny, and today feels a little hot. At examination at the emergency clinic his temperature measures 39.2, and at otoscopy the tympanic membrane in the left ear appears inflamed. He is snotty, whiny and does not want to be examined, but is considered to be awake and adequate neurologically, no neck stiffness. CRP 45 (ref. range <5). Blood glucose 4.0 (ref. range 4.0-6.0 mmol/L)

What should the acute treatment centre doctor do?

- A Refer to the nearest Paediatric Department for admission after febrile seizures for observation, and any further investigations to exclude meningitis
- B Refer to Outpatient EEG for suspected epilepsy
- C Give Stesolid rectal liquid at the acute treatment centre to prevent more episodes as he still has a fever
- D X** Give an antipyretic/painkiller for the ear infection and information about febrile seizures

This child has had an uncomplicated episode of febrile seizure due to a probable viral upper respiratory tract infection/ear infection. It is important to exclude an intracranial infection. The child is described as awake and reacting adequately; ear infection and cold are the probable cause of the fever with a slightly raised CRP and normal blood glucose. There is no neck stiffness and there is low probability of meningitis or other serious underlying disease.

Febrile seizures are common between 6 months and 5 years of age. Most febrile seizures pass quickly and need no further treatment, and can normally be managed in the primary healthcare services. An EEG is not normally necessary after simple febrile seizures, but should be considered after complex episodes of febrile seizure i.e. episodes that last for a long time (>15 minutes), focal episodes/focal start of an episode and/or more than one episode per 24 hours. Imaging diagnostics are considered in cases of persistent effects on consciousness or focal neurological impact. The need for admission must be assessed individually, for example in complicated/complex febrile seizures, poor general health, persistent reduced consciousness or neurological impact, or with very traumatised parents who cannot be reassured by good oral and written information about febrile seizures.

Simple/uncomplicated febrile seizures are defined as generalised episodes of <15 minutes duration, no previous neurological symptoms and only one episode per 24 hours.

It is important to acknowledge that febrile seizures are a traumatic experience for the family and they must be reassured in writing and orally about a good prognosis. About 30% have new febrile seizures. There is also a low risk of developing epilepsy after repeated simple febrile seizures.

They should be given a prescription for emergency medicine (e.g. Stesolid rectal tube 0.5mg/kg, max. 10mg) to be used in cases of new febrile seizures that last >5 minutes. If the child returns to normal, the family feel safe and the clinic does not suspect an underlying condition, they can go home after assessment at the acute treatment centre.

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46

The mother of a six-week-old boy comes to the GP because her boy has a cough. The illness started six days ago with sneezing and a runny nose. His coughing has increased and at times causes his face to turn blue and he retches. The mother does not think he breastfeeds as well as he did earlier. An older brother, aged seven, has been coughing for three weeks, but has not been too affected. At examination the child has no fever, is awake and gives good contact. His respiration is quiet, there is some nasal secretion, reddish injected mucous membranes in the throat, and his ears, heart, lungs and abdomen are normal.

The doctor takes the following tests at the surgery: CRP 12 mg/dl, (ref. < 5 mg/L), leucocytes $27.3 \times 10^9/L$ (ref. 4–20.0 $\times 10^9/L$), Hgb 12.9 g/dl (ref. 9.0–16.6 g/dl), Strep A test negative.

Which diagnosis is most probable, and which action is important to initiate?

- A Whooping cough. Take a whooping cough test, give erythromycin
The medical history indicates whooping cough, but the child should not normally be treated outside a hospital
- B Bacterial respiratory tract infection. Give penicillin, Paracetamol in case of fever
A bacterial respiratory tract infection should be defined in more detail in regard to localisation and severity; if, for example, bacterial pneumonia is suspected, an infant should be admitted and treated with antibiotics
- C **X** Whooping cough. Admit the child as an emergency to the hospital
The medical history indicates whooping cough and the normal recommendation is to admit infants because of the high risk of complications
- D Viral respiratory tract infection. Wait and see for a few days, Paracetamol in case of fever
The medical history clearly indicates that this is not just a viral infection

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47

A boy born of Norwegian parents and from a healthy family was admitted aged 18 months. From around 1 year of age he showed signs of growth stagnation, increasing tendency to diarrhoea, signs of failure to thrive and increasing abdominal circumference. Overview X-ray of the abdomen was interpreted to correspond to constipation. Laxatives were started which resulted in increased diarrhoea. At 15 months of age he underwent gastroscopy, the results of which were compatible with coeliac disease. This was not confirmed by blood tests and there was no improvement on a gluten-free diet. The clinical situation worsened and he has now been admitted aged 18 months. At examination you find an uncared for, hypertensive, febrile and emaciated boy. At closer examination you find sweaty skin, prolonged capillary refill, periorbital ecchymosis and several blue-purple spots and noduli in the skin. What is the most probable diagnosis for this boy?

- A Physical abuse
- B Acute lymphatic leukaemia
- C Sepsis with disseminated intravascular coagulation
- D **X** Neuroblastoma
Neuroblastoma. He has an increased abdominal circumference which is the most common finding in neuroblastoma due to an abdominal tumour. He is critically ill as can be seen in metastatic disease. This includes several paraneoplastic syndromes and symptoms from metastases such as sweating, diarrhoea, hypertension, periorbital ecchymosis and extramedullary hematopoiesis in the skin. Hypertension, periorbital ecchymoses or extramedullary hematopoiesis would not be expected in cases of sepsis. Physical abuse can present as an uncared for child with ecchymosis, but the remainder of the description does not fit.

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48

5-month-old boy, born at term after a normal pregnancy has developed normally up to present. The last two weeks, the parents have noticed that he often appears distant and is difficult to make eye contact with, often throws out his arms several times after each other, and cries and appears unhappy. He makes contact in-between, gurgles and can appear happy. In regard to motor function, he appears more passive. His parents are concerned and have come to the Mother and Child Clinic. What should the doctor at the Mother and Child Clinic do?

- A Refer to Paediatric Outpatients for assessment
- B Refer to the municipal physiotherapist for advice and interventions to promote development
- C Reassure the parents saying that it most probably is a slightly lively Moro reflex
- D X** Refer to the Paediatric Department for emergency assessment the same day
This boy's symptoms give suspicion of infantile spasms, a very serious form of epilepsy that affects infants (typically at 3-7 months of age) and if untreated gives encephalopathy with stagnation of development and eventual loss of skills and eventually a very poor prognosis with treatment refractory epilepsy and inhibition of psychomotor development. The episodes come typically in series with spasms where the child bends his head forwards, throws out his arms and bends at the hips. In the beginning it can be subtle with only a series of "head nods". There are generally short episodes of absence in connection with the spasms and some infants cry and are out of sorts during/after the episodes. But quickly starting treatment can improve the prognosis considerably and some become completely well. The patient should be referred as emergency help to the Paediatric Department for assessment by a paediatrician and investigation with EEG.

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49

You are the on-call doctor in the emergency clinic. A couple come with their 3-week-old girl who has been unwell all day and cried a lot. She is vomiting and cannot keep food down. The mother says that the vomit is greenish/bile coloured. When you examine the child, her abdomen is distended and the girl screams when you palpate. What is the correct course of action?

- A X** You suspect intestinal malrotation/volvulus and refer the child as emergency help to the nearest hospital
Bile-coloured vomit is a strong indicator of intestinal malrotation/volvulus
- B You suspect gastroenteritis and send them home recommending that they ensure she gets a lot of fluids
- C You suspect milk protein allergy and refer for elective investigations at the nearest Paediatric Department

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50

You are a doctor in A&E and receive a 50-year-old woman with stomach pain which you believe is kidney stone pain. Which imaging diagnostics would you requisition to most quickly clarify the diagnosis?

- A Ultrasound kidneys
Can reveal stones in slim patients, but is not a good method to refute the presence of stones.
- B X-ray of the urinary tract
CT is more accurate and is preferred in this situation even though it gives a little more radiation.
- C CT urinary tract with contrast
Contrast is not necessary. Stones are visible on a non-contrast image
- D X** CT without contrast
Best method to clarify whether a patient has a stone

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51

A 60-year-old man has an appointment with you his GP because of weak urine stream, more frequent urination and increasing nocturia over the last 5 years. The prostate is palpated to be firm, smooth and elastic in consistency throughout with a retained mid-furrow and is not enlarged. PSA value is 3.4 (0.01-4.1 u/L)

What should you do?

- A Interpret the condition as benign prostatic hyperplasia and start treatment with a beta blocker.
- B Interpret the condition as benign prostatic hyperplasia and start treatment with a 5-alpha-reductase inhibitor.
An enlarged prostate (which this patient does not have) in men with LUTS can be treated with 5-alpha-reductase inhibitor.
- C Interpret the condition as benign prostatic hyperplasia and start treatment with a phosphodiesterase type 5 (PDE5) inhibitor.
- D X Interpret the condition as benign prostatic hyperplasia and start treatment with an alpha blocker.
Non-enlarged prostate in men with LUTS can be treated with an alpha blocker

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52

A previously healthy 27-year old man is admitted with increasing cough, problems breathing and fever over the last 14 days. In addition, he has back pain. He has been taking Phenoxyethylpenicillin 1.3 gr. x 3 daily as prescribed by the Urgent Treatment Centre without effect.

Blood tests reveal

Analysis	Result	Ref. range
B-Hb	13.5 g/dl	13.4 – 17.0
B-Leukocytes	6.4 x10 ^{**} 9/litre	3.7 – 10.0
B-Thrombocytes	214 x10 ^{**} 9/litre	145 - 390
B-SR	80 mm/hour	1 - 19
P-CRP	60 mg/litre	0 - 5
P-Sodium	141 mmol/litre	137-145
P-Potassium	3.8 mmol/litre	3.5 – 4.4
P-Creatinine	89 micromol/litre	60 - 105

X-ray of the thorax reveals bilateral, large, lung densities/infiltrates.

What should be done as the next step in investigations?

- A Bacteriological examination of expectorate and haematoxylin and eosin (HE) staining of sputum which can be guiding for choice of antibacterial drug.
- B Auscultation of the lungs and heart and bronchoscopy with sterile sampling of material from the bronchi.
- C Consideration of possible penicillin-resistant bilateral pneumonia and assessment of change of antibiotic treatment to quinolones, e.g. Tarivid.
- D X Measurement of pulse and blood pressure and palpation of lymph nodes and scrotum.
All men should have their testis examined in cases such as described. This patient had testicular cancer with lung metastases.

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53

As a GP you see a 24-year-old man with a swelling in the right scrotum that has arisen over the last weeks and you believe it is a hydrocele. You use a torch to illuminate the scrotum and your findings support the suspicion of a hydrocele.

What is the next investigation or referral you should perform as the GP?

- A You refer to Urology Outpatients to investigate for a hydrocele.
- B You order CT testis to exclude a spermatocele
- C X You order ultrasound of the scrotum to verify the diagnosis.
Almost all changes in the scrotum in young men must be investigated with ultrasound of the testis to exclude testicular cancer. Testicular cancer can give a reactive hydrocele.
- D You perform a urinary dipstick to exclude an ascending urinary tract infection.

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54

What is the most common method for treating hydrocele in the testis in Norway today?

- A Retrograde embolisation in the Radiology Department.
Embolisation is performed for varicoceles
 - B Tapping and injection of a sclerosing agent.
Can result in infections and must not be performed on fertile men wanting to have children.
 - C Elevation, diuretic and palliative treatment.
Is only effective in peripheral oedema.
 - D X Radical surgery with removal of membranes.
Most common is surgical treatment with either Lord's or Winkelman's procedure.
-

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55

A 78-year-old man contacts you his GP because of tiredness, an increasing need to urinate, decreased stream force and a tendency to urinary incontinence over the last 9 months. He has a symptom score (IPSS) of 24. PSA is 12. He passes about 200 ml unclear urine and using ultrasound you measure a residual urine of about 900 ml. What is the first step in treatment, and further investigations?

- A X Insertion of a two-way catheter and referral to a Urologist
The first step is to empty an over-extended bladder.
 - B Urine for culture and referral to a Urologist.
 - C Digital rectal palpation and referral to a Urologist.
 - D PSA follow-up in one week and referral to a Urologist.
-

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56

Thomas is 28 years old and previously completely healthy. There are no known cases of cancer in his family. Over the last few weeks he has felt a change in his left testicle. He has no symptoms, and it is not painful to touch. As his GP you want to exclude testicular cancer. Which condition other than cancer can give palpable changes in the testis itself (within the tunica albuginea)?

- A X Leydig cell tumour
This is an uncommon tumour (5-6% of all testis tumours) which normally is benign, but this must be decided by microscopic examination. Treatment is therefore the same as for seminoma and non-seminoma cancer - orchidectomy.
 - B Hydrocele
 - C Spermatocele
 - D Varicocele
-

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57

In order to make a diagnosis of prostate cancer, it is necessary to take biopsies via the anus. This is performed under local anaesthetic in the Urology Outpatient Clinic. Which statement about this procedure is correct?

- A Low dose X-ray is used routinely to aim the needle into the prostate itself.
 - B The prostate is very resistant to infection and prophylactic antibiotics are not necessary.
 - C X Routine, systematic biopsies are taken to ensure that the entire prostate is carefully examined.
Initially, MRI prostate is performed and then systematic biopsies.
 - D Routine tissue samples are only taken in the area that had been palpated as potentially malignant at rectal palpation.
Palpation via the rectum to diagnose prostatic cancer is neither specific nor sensitive.
-

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58

As a doctor in A&E you receive a 45-year-old man who is admitted with severe pain in the right testis and epididymis which is large, hard and red. You cannot examine him properly because of the pain. The pain has lasted 3 hours. What is the most probable diagnosis?

- A Testicular cancer with acute bleeding
Testicular cancer is rare in this age group
 - B Testicular cancer
Testicular cancer is rare in this age group
 - C Testicular torsion
The most common cause in young boys/men
 - D X Epididymitis
The most common cause in older men
-

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59

Gunnar (55) has been diagnosed with high blood pressure at 3 check-ups. The average is 145/88 mmHg. He is otherwise healthy, but smokes 5 cigarettes a day. His weight is normal (65kg). His father had a heart attack when he was 60, but is still alive and healthy. Which treatment option is the most correct?

- A His blood pressure is only slightly increased. It is sufficient to check his BP when he returns at a later date for something else (opportunistic screening).
 - B X Start treatment with a moderate dose of a calcium blocker
The indication for BP treatment is BP >140/90 in this patient group, at least when several risk factors are present such as in this patient. Most probably enough with one medicine at a moderate dose. Two medicines will be too much
 - C Check BP again in 3-4 months
 - D Start treatment with a moderate dose of a calcium blocker and angiotensin II receptor blocker
-

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60

Kristin (24) has been shown to have hypertension with an average blood pressure of 170/105. She has no children, is studying economics and feels completely well. She is investigated and you find Renin 560 (H) and Aldosterone 150 (lower normal range). What is the most probable diagnosis?

- A Hypoaldosteronism
 - B X Fibromuscular dysplasia
High renin and suppressed aldosterone indicate renal artery stenosis, and in young women renomuscular dysplasia is a much more common cause of this than atherosclerosis
 - C Atherosclerotic renovascular disease
 - D Conn's syndrome
-

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61

Kristoffer (32) has been shown to have hypertension (average 178/103). He has started taking three medicines (ACE inhibitor, thiazide, and calcium blocker), but this has little effect (BP now about 160/100). You have taken various blood tests and have received the following results: Hb 14.1 (13.5-17.5), Na 141 (135-145), K (3.9 (3.5-4.6), creatinine 115 (65-105), uric acid 550 (150-430), TSH 2.2 (0.5-4.6), free T4 12.5 (11.5-19.5), Renin 4 (10-45) Aldosterone 675 (150-810), glucose 7.1 (3.5-6.5), HbA1c 5.7% (4.0-5.6%), urine dipstick Albumin - Erythrocytes-Leukocytes+ Nitrite-.

What is the most probable cause of his treatment resistant hypertension?

- A X Hyperaldosteronism
The aldo/renin ratio is strongly increased due to pathologically low renin with aldo in the upper normal range. All other causes are improbable
 - B Diabetic nephropathy
 - C Renal artery stenosis
 - D Hypothyroidism
-

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62

Anna (62) had high blood pressure at her last check-ups (average 145/80). She is healthy but has had diabetes type 2 for the last 3 years. She is being treated with Metformin 1000mg x2. Blood tests are satisfactory, including HbA1c 7.4%, urine dipstick shows Leukocytes +, Albumin ++, otherwise negative.

Which action is the most correct?

- A X** Slightly increased blood pressure should be treated. She is given a prescription for an ACE inhibitor at a high dose (Lisinopril 20 mg x1)
Diabetic nephropathy (she has macroalbuminuria) should be treated with high doses of ACE/ARB to reduce proteinuria, reduce fibrosis, etc. in addition to reducing BP
- B** Slightly increased blood pressure should be treated. She is given a prescription for an ACE inhibitor at a moderate dose (lisinopril 10mg x1) plus low dose thiazide (hydrochlorthiazide 12.5 mg x1)
- C** Slightly increased blood pressure should be treated. She is given a prescription for a calcium blocker at a moderate dose (amlodipin 5 mg x1)
- D** No new actions are necessary now; new check-up in 6 months.

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63

Petter (83) attends for a check-up. He lives at home, but had a stroke 5 years ago with moderate sequelae in the form of decreased strength in his right arm. He has a home nurse x2 per dag. He feels slightly tired and wonders if he can have more help in the house. His appetite is slightly less than before, and he is beginning to feel his age. He has had high blood pressure for many years and is being treated with three different medicines (Lisinopril 10 mg x1, Amlodipin 10 mg x1, Hydrochlorthiazide 25 mg x1). He does not complain about side effects and his BP is generally around 150/75 mmHg.

Which action is the most correct?

- A** Discontinue thiazide due to the risk of developing DM and increase ACE to the maximum dose
- B X** No change to his medication
No reason to change his BP treatment even though he is over 80; he has no side effects, his BP is in the recommended range
- C** Discontinue thiazide and the calcium blocker
- D** Discontinue thiazide and ACE inhibitor

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64

Kristin (75) has had high blood pressure on 3 occasions. The average is 165/75 mmHg. She is otherwise healthy and takes no medicines. Blood and urine show nothing unusual.

Which statement/alternative is most correct?

- A** There is an indication for treatment and the treatment goal is 120-130/70-80 because she is otherwise healthy
- B** There is no indication for treatment for this blood pressure in this age group
- C** There is an indication for treatment and the treatment goal is 140-150/70-80 because of her high age
- D X** There is an indication for treatment and the treatment goal is 130-140/70-80
in accordance with recent guidelines: the new stricter treatment goals (120-130) are for people under 65

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65

Kåre (55) has been shown to have high blood pressure on several occasions, the average is 165/94. He is otherwise healthy, and there are no other risk factors based on the medical history and blood/urine tests.

Which treatment option is most correct?

- A ACE inhibitor at a relatively high dose (Lisinopril 20 mg x1)
- B Thiazide at a low-moderate dose (Hydrochlorothiazide 25 mg x1)
- C X Calcium channel blocker at a moderate dose (Amlodipin 5 mg x1) plus ACE inhibitor at a moderate dose (Lisinopril 10 mg x1)
Stage 2 hypertension must always be treated. Here, two medicines are needed to quickly and effectively lower the BP with few side effects; this is now recommended in all guidelines
- D Calcium channel blocker at a moderate dose (Amlodipin 5 mg x1)

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66

A 28-year-old man has had type 1 diabetes for 9 years. He attends for check-up with his GP for the first time in 3 years. He feels well. Blood pressure is 114/70 mmHg.

Lab.:

creatinine 97 micromol/L (ref. 60–105 micromol/L);

e GFR ≥90 (ref. ≥90);

HgbA1c 66 mmol/mol (ref. 28–40 mmol/mol);

Urine dipstick: negative (ref. negative),

u-albumin/creatinine ratio: 24 mg/mmol (ref. <3 mg/mmol)

The urine findings are checked with the same result

What is the correct assessment?

- A He has poorly regulated diabetes with irreversible kidney damage. However, optimisation of his blood sugar can reduce progression of the kidney damage.
as above
- B He has poorly regulated diabetes and a high risk of end-stage renal failure within a few years
He has the onset of kidney damage and because this is a slowly progressing condition, it will be many years before he reaches the end-stage of renal failure.
- C X He has poorly regulated diabetes with the onset of kidney damage. Optimisation of his blood glucose can reverse the kidney damage.
Correct. He has onset of kidney damage which is reversible with good glycaemic regulation.
- D He has poorly regulated diabetes with significantly increased albumin excretion in the urine. The most important action is to start on an ACE inhibitor or Angiotensin II blocker
An ACR of 24 is classified as "moderately elevated albuminuria" (or microalbuminuria). In low-grade albuminuria the kidney damage is sufficiently little that the condition is considered to be reversible with good glycaemic regulation. RAAS blockade will be able to reduce the albuminuria, but he has low BP and the treatment may therefore be problematic. Regardless, the most important action at this stage is to improve the blood glucose regulation.

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67

A 28-year-old man has had type 1 diabetes for 9 years. He attends for check-up with his GP for the first time in 3 years. He feels well. At clinical examination his blood pressure is 164/90 mmHg, otherwise normal findings.

Lab.:

creatinine 87 micromol/L (ref. 60–105 micromol/L);

e GFR ≥ 90 (ref. ≥ 90);

HgbA1c 62 mmol/mol (ref. 28–40 mmol/mol);

Urine dipstick: protein +, blood +++, otherwise negative (ref. negative),

u-albumin/creatinine ratio: 45 mg/mmol (ref. <3 mg/mmol)

The urine findings are checked with the same result

What is the correct assessment?

- A He has poorly regulated diabetes with the onset of kidney damage. Optimisation of his blood glucose can reverse the kidney damage.
same as above
- B He has poorly regulated diabetes with irreversible kidney damage. However, optimisation of his blood glucose can slow the progression of the kidney damage.
same as above
- C He has poorly regulated diabetes but, with significantly elevated albumin excretion in the urine, the most important action is to start on an ACE inhibitor or Angiotensin II blocker
This is correct, but it is important to investigate the haematuria
- D X He has poorly regulated diabetes with the onset of kidney damage, but a condition other than diabetic nephropathy is suspected. He should be investigated further.
Correct. Diabetes does not generally cause haematuria, and a significantly elevated BP can indicate glomerulonephritis.

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68

A 28-year-old man has had type 1 diabetes for 9 years. He has not attended a diabetes clinic for several years, but now comes for a check-up. Without being asked, he admits that he has not been good at looking after himself and his health because he feels so well. His blood pressure is 164/92 mmHg, his skin is a little pale, but otherwise he appears healthy.

Lab.:

creatinine 87 micromol/L (ref. 60–105 micromol/L);

e GFR ≥ 90 (ref. ≥ 90);

HgbA1c 69 mmol/mol (ref. 28–40 mmol/mol);

Urine dipstick: albumin 3+ (ref. negative),

u-albumin/creatinine ratio: 287 mg/mmol (ref. <3 mg/mmol)

The urine findings are checked with the same result

What is the correct assessment and action?

- A He has poorly regulated diabetes and in addition there is indication of kidney disease. It is important to have better blood glucose regulation. Await treatment with an ACE inhibitor or Angiotensin II antagonist due to the risk of rapid decline in kidney function; first refer to a nephrologist. He should be referred for an eye check.
Incorrect; there is indication for RAAS blockade, and he has a normal GFR so there is no great risk that his kidney function will rapidly decline
- B He has poorly regulated diabetes and in addition has nephrotic syndrome. It is important to have better blood glucose regulation and treatment with an ACE inhibitor or Angiotensin II antagonist. He should be referred for an eye check. He should be referred to a nephrologist for suspected kidney disease with cause other than diabetes.
Does not meet the criteria for nephrotic syndrome: ACR >300, low s-albumin and oedema
- C X He has poorly regulated diabetes and probably diabetic nephropathy with significant albuminuria and hypertension. There is a risk of developing renal failure within the next few years, but nonetheless it is important to have better blood glucose regulation and treatment with an ACE inhibitor or Angiotensin II antagonist. He should be referred to a nephrologist and for an eye check.
Correct. Such pronounced albuminuria should be referred
- D He has poorly regulated diabetes and probably diabetic nephropathy with significant albuminuria and hypertension. It is important to have better blood glucose regulation and treatment with an ACE inhibitor or Angiotensin II antagonist. He should be referred for an eye check. It is currently not necessary to refer him to a nephrologist because his GFR is normal.

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69

A 77-year-old woman saw her GP because she felt tired and listless. Blood samples were taken, and some of the results for tests taken at 11.00 in the morning are shown below.

Analysis	Result	Reference range
S-Albumin	48	36-45 g/L
S-Calcium	3.13	2.15-2.51 mmol/L
S-PTH (Parathyroid hormone)	<0.4	1.6-6.9 pmol/L

Which of the following is the most probable explanation of the results?

- A Hypercalcaemia due to high albumin
Not when PTH is low and the calcium concentration is so high.
- B X Hypercalcaemia due to malignant disease
The results are most compatible with secondary hypercalcaemia due to low PTH. ONE cause is a malignant disease
- C Primary hypoparathyroidism
PTH is low, but hypercalcaemia does not fit
- D Secondary hyperparathyroidism
PTH is low

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70

Below are the analysis results for venous samples from a number of patients. Assume that the same results are found in any follow-up tests.

How many of these test results meet the diagnostic criteria for diabetes mellitus?

- b-HbA1c: 42 mmol/mol
- b-HbA1c: 62 mmol/mol
- b-HbA1c: 105 mmol/mol
- fasting p-glucose: 6.4 mmol/L
- fasting p-glucose: 7.9 mmol/L
- fasting p-glucose: 11.9 mmol/L
- p-glucose after glucose load: 6.3 mmol/L
- p-glucose after glucose load: 8.9 mmol/L
- p-glucose after glucose load: 11.9 mmol/L

Explanations:

- b: blood
- p: plasma
- after glucose load: sample taken 2 hours after peroral glucose load with 82.5 g glucose monohydrate

Reference ranges:

- fasting p-glucose 4.2-6.3 mmol/L
- b-HbA1c: 28-40 mmol/mol

- A 2
- B 3
- C 4
- D X 5

criteria:

- p-glucose ≥ 7 mmol/L*
- HbA1c ≥ 48 mmol/mol*
- 2h OGTT ≥ 11.1 mmol/L*

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71

A man (aged 62) is receiving chemotherapy as life-prolonging treatment due to metastatic cancer. In addition to cytostatics he is receiving Dexamethasone (high-dose glucocorticoid), planned for a few more weeks. At the blood checks a few weeks after starting treatment his non-fasting p-glucose was 19.8 mmol/L. For the last couple of days he has had to get up at night to urinate. HbA1c is slightly elevated 52 mmol/mol (=6.9%). what do you do?

- A 1. Give rapid-acting insulin (Humalog/Novorapid) in accordance with the following; 2U if blood glucose >10 mmol/L, 4U if blood glucose >14 mmol/L and 6U if blood glucose >18 mmol/L
Incorrect. We do not recommend a sliding scale dosage with rapid-acting insulin
- B Give advice on a diet with fewer carbohydrates and increased physical activity, and start on Metformin 500 mg x 2
Not the most correct. He has presumably had mild diabetes from the beginning, but now has symptoms of hyperglycaemia due to the glucocorticoid treatment. Therefore the normal treatment strategy for newly-diagnosed type 2 diabetes will be less effective. Neither would a strict diet be beneficial in conjunction with chemotherapy.
- C X Start him on an intermediate-acting insulin (Humulin/Insulatard) in the morning and evening
Correct. Dexamethasone is long-acting and he will therefore need insulin throughout the day.
- D HbA1c is satisfactory and the treatment goal has been achieved; therefore there is no need to start diabetes treatment
Incorrect. Because his treatment with glucocorticoid (Dexamethasone) only started a few weeks ago, his HbA1c will not yet reflect his current status. His glucose level is considerably higher and he has symptoms.

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72

A woman (35 years of age) with diagnosed type 1 diabetes calls the surgery when the switchboard opens at 8.00 am. She uses an insulin pump, and has moderately good glucose regulation (HbA1c 62 mmol/mol) with almost daily hypoglycaemia. She is contacting you because today she woke early due to feeling very unwell, nausea and vomiting. Blood glucose 12.6 mmol/L. What is the first condition you must consider?

- A Infectious gastroenteritis
Not the most correct. Even though patients with type 1 diabetes can get infectious gastroenteritis just like everyone else, it is most important to exclude ketoacidosis. The symptoms are often quite similar, but it is important to clarify whether ketoacidosis is present because it is a potentially life-threatening condition and early correct treatment is essential.
- B X Ketoacidosis
When using an insulin pump, ketoacidosis can develop quickly in the event of pump failure, e.g. if there is blockage in the tube, a bend in the subcutaneous cannula (typically occurs after replacing the cannula) or if the tube has come loose from the cannula without the patient noticing (e.g. at night). The patient then does not have any store of insulin in the body because only rapid-acting insulin is used in an insulin pump. Ketoacidosis can therefore develop within hours, such as during the night. Blood glucose is often not as high as in ketoacidosis due to other causes.
- C Primary adrenal failure (Addison's disease)
Not correct, even though patients with type 1 diabetes have an increased risk for other autoimmune diseases and nausea/stomach pain can be symptoms in an adrenal crisis. Primary adrenal failure rarely has such a rapid onset of symptoms and, most typically, the blood glucose is lower.
- D Inflammatory intestinal disease
Not correct, even though patients with type 1 diabetes have an increased risk for other autoimmune diseases.

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73

A 37-year-old woman has high blood pressure (BP) of 165/100 at a routine check-up with her GP. At follow-up one month later it is 170/105.

She has previously been healthy and takes no medication. She thinks her muscles are weaker, otherwise no symptoms. She is slim, and there are no clinical findings apart from the elevated BP. She does not know of any members of her family who have high BP. Blood tests with her GP show a low serum potassium of 3.2 (ref. range 3.5-4.6) mmol/L. Follow-up tests show persistent hypokalaemia. What is the most probable cause of her hypertension?

A Primary hyperparathyroidism

B Cushing's syndrome

C X Primary hyperaldosteronism

Is caused by autonomous overproduction of aldosterone from one or both adrenals. This can give a mild hypokalaemia which can cause muscle weakness. Cushing's disease will also give hypokalaemia, but the patient will have other clinical findings in addition (central obesity, striae, moon face, slim extremities, among others)

D Pheochromocytoma

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74

A 24-year-old student with type 1 diabetes is admitted with diabetic ketoacidosis (DKA). Blood glucose is 28.7 mmol/L (ref. 4.2-6.3 mmol/L), venous sample results include pH 7.04 (ref. 7.31-7.42), bicarbonate 9 mmol/L (24-31), Na 135 (137-145) mmol/L, K 4.2 (3.5-4.4) mmol/L, creatinine 146 (60-105 µmol/L). He is receiving NaCl 0.9% and insulin infusion in accordance with standard procedure. Should he have a potassium supplement and, if so, when?

A He has normal serum potassium and does not need a potassium supplement

Not correct. Patients with DKA generally have potassium deficiency even if the potassium can be (false) normal (or high) on admission. In acidosis, the H⁺ ions move into the cells and K⁺ ions move out of the cells, and there is an intracellular potassium deficiency. Potassium is lost in the urine. When insulin is administered and the acidosis is corrected, the H⁺ ions move out of the cells and the K⁺ ions move into the cells, and the patient's potassium deficiency becomes obvious. Hypokalaemia can result in cardiac arrhythmias and potassium should be given to almost all patients with DKA

B X He should have a potassium supplement added to the 0.9% NaCl infusion when he has normal diuresis

Correct answer. Some patients with DKA can have (transient) prerenal renal failure due to dehydration and it is important not to give a potassium supplement before clarifying whether the renal function is good (https://www.uptodate.com/contents/diabetic-ketoacidosis-and-hyperosmolar-hyperglycemic-state-in-adults-treatment?search=diabetic%20ketoacidosis%20adult&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)

C He should have a potassium supplement added to the 0.9% NaCl infusion from the start
Not correct. He should not be given a potassium supplement before he has normal diuresis. He has high creatinine (probably due to dehydration) and it is important to clarify that renal function is good before giving him a potassium supplement

D He should have a potassium supplement added to the 0.9% NaCl infusion until he can eat by himself

Not correct. He should not be given a potassium supplement before he has normal diuresis. Whether or not he can eat is not relevant

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75

The patient is a 45-year-old woman. She sees you her GP because of episodes of headache, sweating, palpitations and anxiety. You determine that her blood pressure is significantly elevated and start her on conventional treatment for this. However, she does not respond to the treatment. You wonder whether this could be pheochromocytoma. Which blood tests will you take to verify this?

A aldosterone and renin

relevant for suspected primary hyperaldosteronism

B X metanephrines, normetanephrines

metabolic products of adrenalin and noradrenalin, and the best markers for pheochromocytoma

C cortisol, ACTH

relevant for suspected Cushing

D angiotensin II

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76

Nina, age 65, has osteopenia, which is treated with calcium (1000 mg) and vitamin D supplements (800 IU). She visits a doctor for a routine check-up. Clinical examination is normal. Blood samples are taken which show an elevated calcium of 2.82 (reference: 2.15-2.51) mmol/L, and albumin of 41 (reference 36-45) g/L. Her kidney function is normal. She has previously been healthy and takes no medication apart from calcium and vit D supplement.

What is the most probable cause of the patient's hypercalcaemia?

- A Vitamin D overdose
- B Myelomatosis
- C Benign familial hypocalciuric hypercalcaemia
- D X** Primary hyperparathyroidism

This is the most common cause of hypercalcaemia. The diagnosis must be verified by demonstrating an elevated PTH

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77

A 32-year-old woman has type 1 diabetes (T1D). She has a BMI of 27.2 kg/m². She uses an insulin pump, and also an SGLT-2 inhibitor (empagliflozin) 10 mg daily 'off-label' (i.e. is not an approved indication) to avoid putting on weight. In connection with a mild infection she is nauseous, vomits and has abdominal pain. Blood glucose 14.2 mmol/L (reference range 4.2-6.3 mmol/L) by self-testing. Which of the conditions below is it important to exclude?

- A Acute gastroenteritis
Acute gastroenteritis. Not the most correct answer. It is possible that she has an acute gastroenteritis, but it is most important to clarify whether this is diabetic ketoacidosis, which would mean that she must be admitted as an emergency even if her blood glucose is not very elevated.
- B X** Diabetic ketoacidosis
Diabetic ketoacidosis. The most correct answer. With 'off-label' use of SGLT2 inhibitors in people with T1D, the risk of DKA is increased manyfold, and DKA can be seen with almost normal blood glucose levels (euglycaemic ketoacidosis). Source: Taylor SI et al. SGLT2 inhibitors as adjunctive therapy for type 1 diabetes: balancing benefits and risks. Lancet Diabetes Endocrinol. 2019 Oct 1. When using an insulin pump, DKA can also occur with almost normal blood glucose levels
- C Non-ketotic hyperosmolar syndrome
Non-ketotic hyperosmolar syndrome. Not the most correct answer. This condition occurs primarily in older people with type 2 diabetes. In non-ketotic hyperosmolar syndrome, the blood glucose is generally considerably higher (often >34 mmol/L)

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78

A 68-year-old man with type 2 diabetes gets an infection with fever. He drinks too little. He is admitted after one week with very poor general health and confusion. P-glucose 42.5 mmol/L (ref. 4.2-6.3 mmol/L), pH 7.32 (ref. 7.35-7.45), s-bicarbonate 19 mmol/L (ref. 21-27), s-osmolality 341 mosmol/kg (ref. 289-305), anion gap 9 mmol/L (ref. <11), p-lactate 1.3 mmol/L (ref. 0.5-2.2 mmol/L), p-ethanol <2.2 mmol/L (0.09 Promille). B-haemoglobin 19.9 (ref. 13.4-17.0 g/dL), haematocrit (EVF) 0.63 (ref. 0.41-0.53). What is the most important first treatment?

- A** Rapid-acting insulin as an intravenous infusion
Rapid-acting insulin as an intravenous infusion. Is not the most correct answer. He is dehydrated (high Hb and EVF) with significantly elevated s-osmolality. His condition is compatible with non-ketotic hyperglycaemic hyperosmolar syndrome and will improve with i.v. NaCl infusion, which is the most important initial treatment. I.v. NaCl lowers the osmolality, replaces the fluid loss and reduces p-glucose both by dilution and because improved renal perfusion increases glucose excretion in the urine.
- B** Rapid-acting insulin as an intramuscular bolus dose
Rapid-acting insulin as an intramuscular bolus dose is not the most correct answer. See answer to A. In addition: He is dehydrated, i.e. absorption of insulin i.m. is reduced until his circulation has improved.
- C** Intravenous sodium bicarbonate (NaHCO₃) as bolus
Intravenous sodium bicarbonate (NaHCO₃) as bolus. Not correct. He does not have diabetic ketoacidosis (DKA). Even in cases of definite DKA, treatment with NaHCO₃ is in dispute and is not indicated before severe acidosis with a pH <6.9
- D X** Intravenous sodium chloride (NaCl) as infusion
Intravenous sodium chloride (NaCl) as infusion is the correct answer. His condition is compatible with non-ketotic hyperglycaemic hyperosmolar syndrome and will improve with i.v. NaCl infusion, which is the most important initial treatment. I.v. NaCl replaces the fluid loss, lowers osmolality and reduces p-glucose both by dilution and because improved renal perfusion increases excretion of glucose in urine.
Source: Gosmanov AR, Gosmanova EO, Kitabchi AE. Hyperglycemic Crises: Diabetic Ketoacidosis (DKA), And Hyperglycemic Hyperosmolar State (HHS). PubMed PMID: 25905280.

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79

Herman, 45 years old, has, for a long time, had symptoms that occur sporadically with sweating, headache, palpitations and chest pains. At the same time he has also had anxiety. At his general practitioner's, his BP has repeatedly been high at 200/110 mm Hg. Sometimes it has been normal. Levels of Hb, CRP, creatinine, Na and K have been normal, but fasting blood sugar has been somewhat elevated.

What is the most probable diagnosis for this patient?

- A X** Pheochromocytoma
- B** Renal artery stenosis
- C** Hyperaldosteronism
- D** Essential hypertension

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80

Mona is 65. She had a radius fracture one year ago which was treated in Outpatients. She has now gone to her GP wondering whether she has osteoporosis. She is worried because her mother had pronounced osteoporosis. The doctor refers her for bone density measurement which reveals a T score of -3.0 in the femur neck and -3.5 in the lumbar spine.

What should the doctor give this patient in addition to calcium and vitamin D supplements?

- A** PTH analogue
- B** Estrogen/progesterone
- C X** Bisphosphonate
- D** Selective estrogen-receptor modulators

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81

A 54-year-old woman attends for follow-up of her treatment for breast cancer at your GP surgery. She had a mastectomy and sentinel node biopsy on the right side. In addition, she has been recommended to have endocrine treatment for 5 years post-treatment. The notes from the hospital states mammography and clinical follow-up once a year for 10 years after the operation. At the follow-up appointments, you as her GP have been requested to note any side effects of the endocrine treatment. What, in addition, should be included in the clinical follow-up and what is the purpose of the follow-up plan?

- A** At follow up appointments, one would expect to perform a general clinical examination with blood samples. The purpose is to find sequelae from the treatment and to possibly discontinue endocrine treatment if she has a lot of side effects.
Incorrect answer. It is not possible to measure the effect of endocrine treatment. The GP is expected to examine the area operated on, the remaining breast and the regional lymph nodes. The purpose is to detect any recurrence of the disease as well as keeping in mind the patient's slightly increased risk of new breast cancer. In addition, it is important to follow up the endocrine treatment. By asking how she is doing, her GP helps her to keep up her motivation to continue this long-term treatment. It is also possible to alleviate some side effects.
- B** At follow-up appointments, one would expect to examine the area operated on and the regional lymph nodes. The purpose is to find any recurrence of the breast cancer and, in addition, to issue new prescriptions so that the patient can continue the endocrine treatment.
A lot of this is correct, but this is not sufficient. The area operated on must also be examined and the main purpose is to detect any recurrence of the disease. The patient has a slightly increased risk of new breast cancer, and the remaining breast must therefore also be examined. In addition, it is important to follow up the endocrine treatment. By asking how she is doing, her GP helps her to keep up her motivation to continue this long-term treatment. It is also possible to alleviate some side effects.
- C** At follow-up appointments, one would expect to examine the remaining breast and the regional lymph nodes. The purpose is to find any new breast cancer and, in addition, to initiate measures in the event of side effects of the endocrine treatment.
A lot of this is correct, but this is not sufficient. The area operated on must also be examined and the main purpose is to detect any recurrence of the disease. The patient has a slightly increased risk of new breast cancer, and the remaining breast must therefore also be examined. In addition, it is important to follow up the endocrine treatment. By asking how she is doing, her GP helps her to keep up her motivation to continue this long-term treatment. It is also possible to alleviate some side effects.
- D X** At follow-up appointments, one would expect to examine the area operated on, the remaining breast and the regional lymph nodes. The purpose is to find recurring or new breast cancer and, in addition, to initiate measures in the event of side effects of the endocrine treatment.
Correct answer. The area operated on must be examined and the main purpose is to detect any recurrence of the disease. The patient has a slightly increased risk of new breast cancer, and the remaining breast must therefore also be examined. In addition, it is important to follow up the endocrine treatment. By asking how she is doing, her GP helps her to keep up her motivation to continue this long-term treatment. It is also possible to alleviate some side effects.

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82

A 45-year-old woman has made an appointment with you her GP after she became aware of a lump in her left breast. She discovered it 2 days ago, and she is now afraid that she has breast cancer. After taking the presenting history and performing clinical examination you assess that she should be referred for further investigations. The lump is 2 cm in diameter. There are no palpable lymph nodes in the regional lymph nodes.

Where should she be referred and what are the most likely investigations you will tell her about?

- A X** She is referred to the Breast Diagnostics Centre for mammography. Further investigations are decided there, but these are likely to be ultrasound and biopsy.
Mammography is always performed before proceeding with ultrasound and biopsy. Both breasts and both axilla must be examined.
- B** Because she is under 50, she should first be referred directly for MRI of the breasts. Those findings will determine whether biopsy is necessary.
The patient is referred to the Breast Diagnostics Centre. Mammography is always performed before proceeding with ultrasound and biopsy. Both breasts and both axilla must be examined. MRI is relevant in some cases, but that is decided by the Breast Diagnostics Centre after mammography and Ultrasound.
- C** She is first referred to the Surgical Department for assessment. The surgeon assesses whether investigation is appropriate and which investigations are to be performed
The patient is referred to the Breast Diagnostics Centre. Mammography is always performed before proceeding with ultrasound and biopsy. The surgeon is involved after this. In the traditional triple diagnostics, the GP is responsible for the clinical examination before mammography.
- D** Because it is a palpable lump, ultrasound of the affected breast and biopsy of the lump is sufficient
Mammography is always performed before proceeding with ultrasound and biopsy. Both breasts and both axilla must be examined. The patient is referred to the Breast Diagnostics Centre.
-

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83

List the three most serious complications after thyroid and parathyroid surgery

- A** Damage to the trachea, keloid formation in the scar, hypoparathyroidism
Damage to the trachea is extremely rare. Wound infection after surgery on the throat is very rare. Keloid formation is not a serious complication even if the patient finds it to be bothersome and unsightly. Damage to the recurrent laryngeal nerve and the parathyroid is not usually life-threatening, but results in significant morbidity.
- B X** Bleeding, damage to the recurrent laryngeal nerve, hypoparathyroidism
Correct answer. The most serious complication is postoperative bleeding. This is because it results in compression of the trachea and, in the worst case, suffocation. Damage to the recurrent laryngeal nerve and parathyroid is normally not life-threatening, but results in considerable morbidity. None of these complications are common, but it is very important that the patient is aware that they could occur. In cases of surgery for benign conditions it is particularly important that the patient can weigh the risk of complications versus what can be achieved by the surgery. In surgery for a malignancy, the patient is given the same information, but then it is generally not a good option not to operate.
- C** Damage to the trachea, postoperative wound infection, keloid formation in the scar
Damage to the trachea is extremely rare. Wound infection after surgery on the throat is very rare. Keloid formation is not a serious complication even if the patient finds it to be bothersome and unsightly.
- D** Bleeding, damage to the recurrent laryngeal nerve, postoperative wound infection
The most serious complication is postoperative bleeding. This is because it results in compression of the trachea and, in the worst case, suffocation. Damage to the recurrent laryngeal nerve and parathyroid is normally not life-threatening, but results in considerable morbidity. Wound infection after surgery on the throat is very rare.
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84

You are a GP and a 72-year-old woman has made an appointment with you. She has noticed dimpling of the skin on the lateral side of one of her breasts. She noticed it 2-3 months ago but because she couldn't feel a lump in her breast she did not make an appointment earlier. The woman is healthy but slightly overweight. You find it a little difficult to examine her as she has large breasts. You note that the dimpling is relatively discreet, but otherwise find normal conditions at palpation of the breast and the regional lymph nodes.

Should this be investigated and why?

- A** Investigation of this is not necessary because the examination found nothing wrong.
Wrong. Breast cancer must be suspected when dimpling of the breast occurs. It is not always so easy to palpate a tumour, particularly if the breasts are large. A differential diagnosis can be fatty tissue necrosis after trauma. Even if the presenting medical history gives suspicion of this, it should be investigated with a mammography.
- B** Investigation of this is not necessary because she would soon be invited for another breast screening mammography anyway
Wrong. The patient is not covered by the National Breast Screening Programme which invites women aged 50-70 for mammography. And the screening programme is intended to screen women who have never been suspected of having breast cancer. Women must be investigated if there are symptoms or findings that could indicate breast cancer. In these cases, one should not wait for the next screening invitation.
- C** Investigation of this is not necessary because it is most probably a deep infection that is treated with antibiotic tablets for 7 days with follow up
Incorrect. This does not fit with inflammation/infection. Dimpling like this should be investigated as suspected breast cancer.
- D X** This should be investigated for suspected breast cancer and the patient is referred to the nearest Breast Diagnostics Centre.
Correct. Breast cancer must be suspected when dimpling of the breast occurs. It is not always so easy to palpate a tumour, particularly if the breasts are large. A differential diagnosis can be fatty tissue necrosis after trauma. Even if the presenting medical history gives suspicion of this, it should be investigated with a mammography. It is not unusual if the trauma is small that the woman has forgotten about it before the symptom occurs (lump/dimpling/bruising). In some cases, dimpling can occur and disappear again without the cause being found.

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85

A patient has been diagnosed with a 7 mm concrement in the left ureteropelvic junction, and has been relieved with a JJ stent in the left ureter for a few days. He is attending for stone treatment using ESWL. Which radiological modality is normally used to check whether the concrement is still present and, if so, whether it is in the same place as before?

- A X** X-ray of the abdomen in one plane
A low radiation dose providing a good enough overview to generally be able to re-detect a known concrement and to evaluate its position.
- B** Ultrasound urinary tract
Ultrasound can demonstrate individual concrements, but does not provide a good enough overview to exclude concrements or to see if they have moved towards the ureter.
- C** 3-phase CT urinary tract
Unnecessarily extensive investigation and gives an unacceptably high radiation dose for this problem.
- D** Stone CT urinary tract
Provides a good evaluation of the concrement and its position but with a higher radiation dose than X-ray.

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86

Which contrast phase(s) during CT of the urinary tract are best suited for stone (concrement) diagnostics?

- A Venous phase and excretion phase.
Double radiation dose (at least) without any particular advantages in stone diagnostics.
- B Only the excretion phase.
Can drown the concretions in the excreted contrast, necessitates use of a contrast agent, higher radiation dose and increased use of time without giving any particular advantages.
- C Pre-contrast phase and venous phase.
Double radiation dose without any particular advantages in stone diagnostics.
- D X CT urinary tract without contrast (pre-contrast phase).
Visualises the majority of concretions well; distinguishes them easily from the surrounding soft tissues.

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87

A man has been diagnosed with a malignant tumour in his left testis. Which of the following imaging investigations is best suited for staging metastatic disease before choosing the treatment programme?

- A X CT thorax, abdomen and pelvis
This is the only combination that provides a good image of both retroperitoneal lymph nodes and the lungs.
- B Ultrasound abdomen + bone scintigraphy
Provides a certain overview of the retroperitoneum, but not the lungs which are the most important organ for distant haematogenous metastases.
- C MRI posterior abdominal wall + MRI liver
Provides a good image of the retroperitoneal lymph nodes but not the lungs which are the most important organ for distant haematogenous metastases.
- D MRI pelvis + MRI total spine
Does not provide a good overview of the retroperitoneal lymph nodes or the lungs

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88

Just about a year ago, a 65-year-old man was diagnosed with prostate cancer ISUP grade group 1 (Gleason<6) and was placed on active surveillance. He now has pain in the lumbosacral spine. You want to investigate whether he can have bone metastases, even though he is known to have low-grade prostate cancer. These 4 modalities can all detect bone metastases, but which is considered to have the best sensitivity?

- A X-ray
- B Scintigraphy
- C CT
- D X MRI
The modalities are listed by increasing sensitivity.

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89

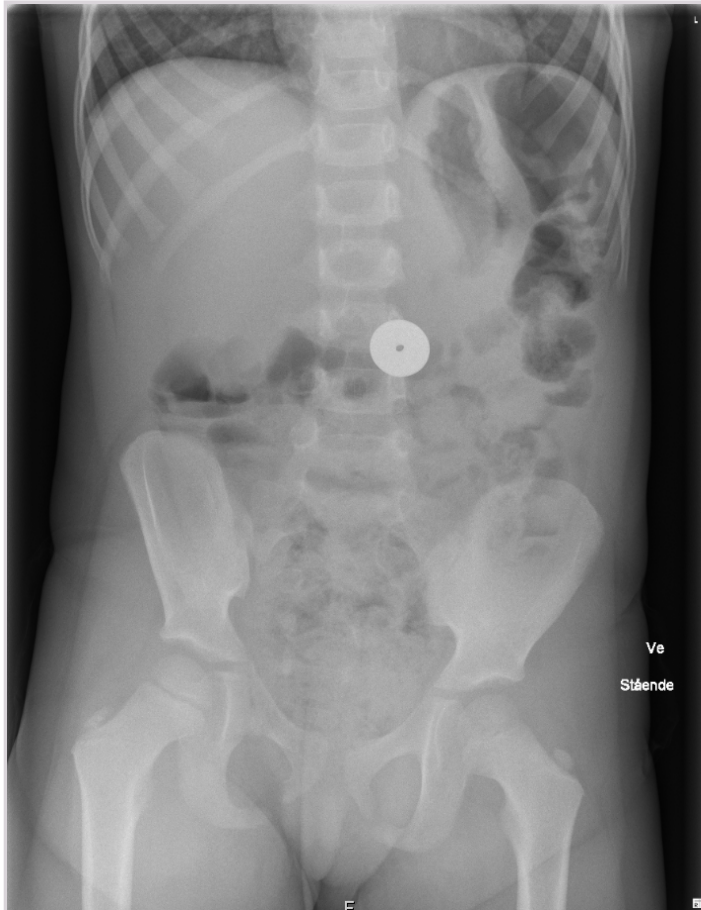
About 2 years ago, a 22-year-old man was involved in a cycling accident when he experienced severe trauma to the perineum. He recovered quickly afterwards. Recently, he has felt that it has become more difficult to empty his bladder, it takes longer. The Urologist who is investigating him using cystoscopy meets a non-passable stenosis in the bulbar part of the urethra and suspects a trauma-induced constriction. Which imaging diagnostic is commonly used to investigate such stenoses?

- A MRI bladder and urethra
Is used to investigate the urethra in women
- B X Urethrography with retrograde contrast
Provides a direct image of constrictions in the urethra
- C Ultrasound penis and bladder
Could possibly be used by an experienced operator
- D 99mTc-DTPA scintigraphy
Suitable for demonstrating vesicoureteral reflux

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90

A 4-year-old girl has swallowed a 1-krone coin. She was referred for X-ray of the abdomen from the Urgent Treatment Centre which showed 'a foreign body located in the area of the stomach'. After 13 days neither she nor her parents have seen it in her stools. She is asymptomatic. A new X-ray is taken which shows 'foreign body persists located more centrally, uncertain in which section of the intestines'. What do you do to find the location of this?



- A X** Refer for X-ray procedure with peroral contrast (fluoroscopy).
This was done and the krone coin was found in the prepyloric region of the stomach (antrum). Gastroscopy was performed afterwards. Very low radiation dose; lower than X-ray of the abdomen. The best modality and method in the first instance. Then at least location in the stomach and duodenum is verified or excluded.
- B** Refer for gastroscopy with removal of the foreign body.
This is only performed when the foreign body has been localised in the stomach. 'Invasive' procedure necessitating an anaesthetic; should not be used in the first instance.
- C** Refer for CT abdomen (low dose) to find the exact location.
Never CT in this case. There is nothing that justifies the radiation dose in an asymptomatic patient.
- D** Wait and see. No need for further diagnostics as of now. The coin is small and will pass by itself.
Sounds like the least invasive technique in an asymptomatic patient. But we do nothing about the 'problem'. We still do not know where the coin is located. Another X-ray might be needed in a few weeks - and we will be no further along.

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91

A 2.5-month-old boy is admitted to the Paediatric department with clinical and biochemical suspicion of pyelonephritis. Ultrasound of the urinary tract did not find any underlying pathology. His general health and blood tests improved after iv. antibiotic treatment. After a few weeks, supplementary investigation of the urinary tract is desired to determine the cause of the pyelonephritis. Which imaging modality do you refer him for?

A X X-ray MCUG

In accordance with Paediatric guidelines, children <3 years (particularly boys) must be investigated further. With this, urethral valve/COPUM (congenital obstructing posterior urethral membrane) and/or reflux (VUR) can be diagnosed.

B X-ray urography

If hydronephrosis has not been diagnosed, this is not indicated. Does not detect any underlying cause of upper UTI.

C X-ray pyelography (antegrade)

This is performed via an in-situ nephrostomy catheter to demonstrate passage or obstruction of such through the collection system.

D MRI urography

Sedation in an infant. Again, it does not determine the cause of upper UTI. Only anatomically displays the urinary tract.

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92

A 6-year-old boy fell out of a tree (3-4 metres) and hit the ground with the left side of his stomach and lower part of his chest. He is unable to stand because of the pain. The ambulance arrives and takes him to A&E. His circulation is stable, but he has macroscopic haematuria when he tries urinating. X-rays of the thorax and pelvis are taken.

What is the next imaging diagnostic modality for such trauma received in A&E?

A Does not need further investigation with imaging modality. The boy must go to the operating theatre - strong suspicion of kidney injury.

No surgeon will operate a suspected kidney injury without imaging diagnostic mapping of the extent of the injury and any organ damage.

B CT abdomen/pelvis

Always ultrasound first. Easy and quick to do (takes <2-3 mins).

C CT multitrauma (CT head neck / / thorax / abdomen / pelvis)

Standard multitrauma CT can be omitted if the trauma leader does not suspect head/neck injury. In this patient, CT thorax/abdomen/pelvis are however indicated; potential late injury through the urinary tract (to detect urine leakage).

D X Ultrasound abdomen

US abdomen/US FAST. To detect free fluids (not potential organ damage!). According to the literature, laparotomy must be considered if free fluids are found, but in this case the overall situation and circulatory status decide whether the path is via CT or not (fresh bleeding and extensive organ damage should be treated).

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93

A 52-year-old woman has been diagnosed with an infiltrating breast carcinoma, histologic grade 3. The tumour was negative for oestrogen and progesterone receptors at immunohistochemistry, but was positive for HER2 using fluorescence in-situ hybridisation (FISH) where an increased copy number (amplification) of the HER2 gene was found.

Which treatment alternative will be the most beneficial for this patient?

A X Trastuzumab

Correct answer – High HER2 copy number is associated with high protein expression and treatment with the monoclonal antibody trastuzumab will improve the prognosis.

B Antiandrogen

This is not normally used in breast cancer – we have not tested this tumour for androgen expression

C Anti-oestrogen

Indication for anti-oestrogen treatment: hormone receptor positive.

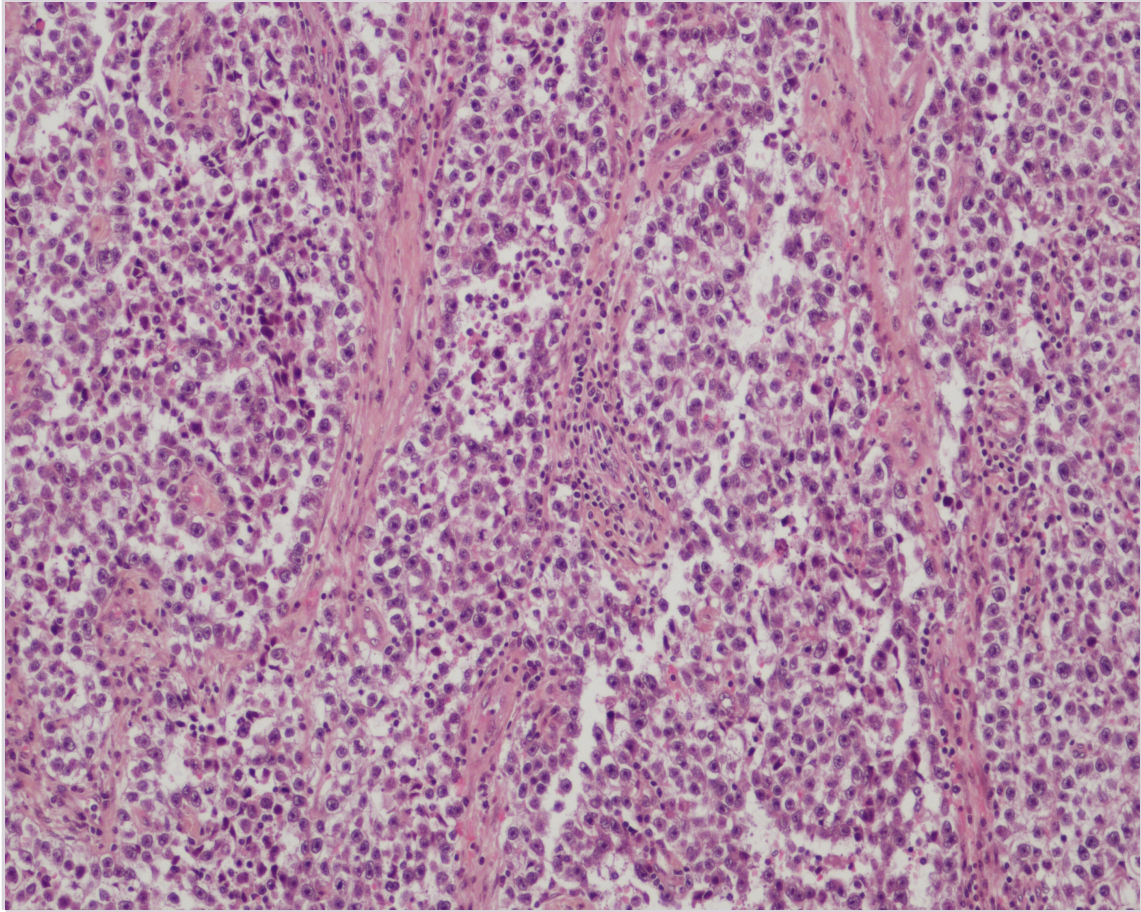
D Aromatase inhibitor

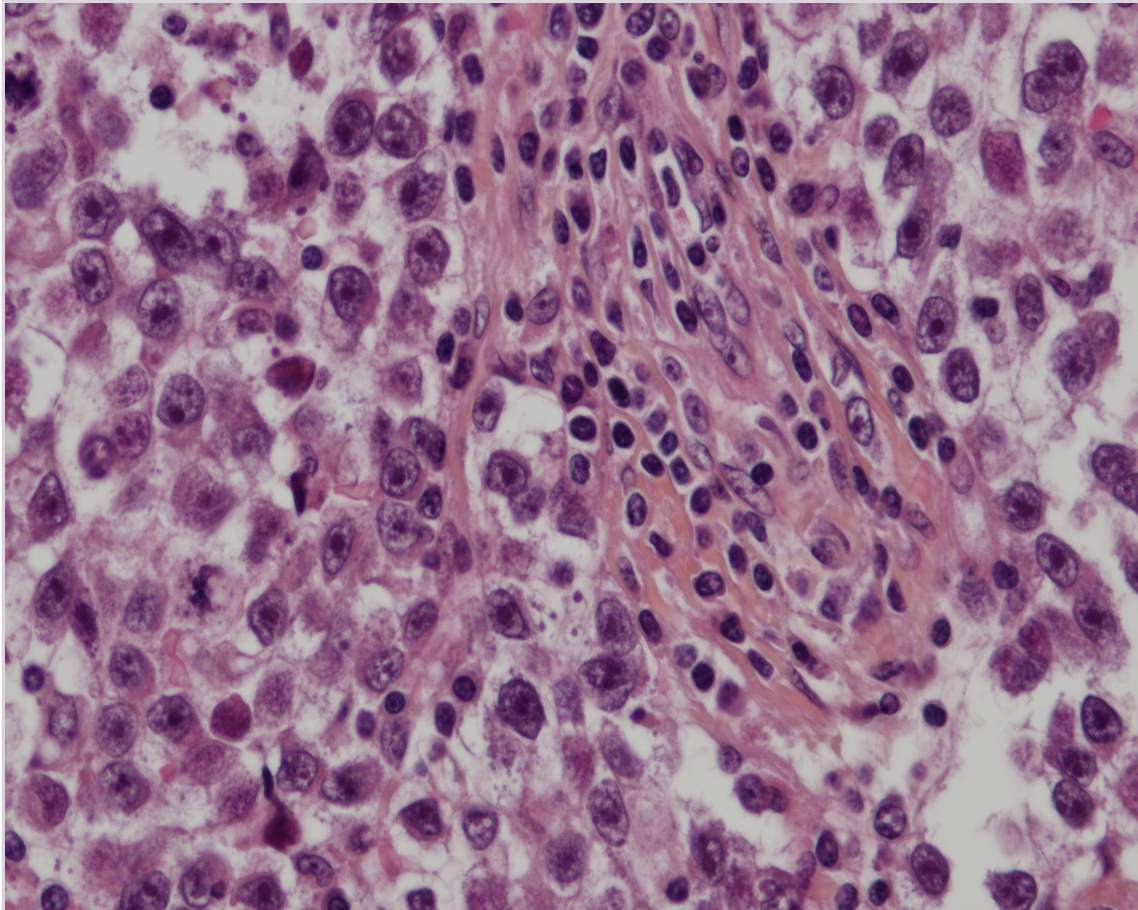
Nonsteroidal aromatase inhibitor – indication: hormone receptor positive.

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94

Around 300 new cases of testicular cancer are diagnosed every year in Norway, and about 50% of the patients are under 32 years of age. Almost 95% of the cases are classified as testicular germ cell tumours (TGCT). The images display an haematoxylin-erythrosin-safran (HES) stained histology section from a testicular germ cell tumour (x100 and x400).





Which type of germ cell tumour is this?

- A** Malignant teratoma
Wrong answer. In teratoma we expect to find several types of tissue from two or more germ layers. The tissue types are often highly differentiated.
- B** Mixed germ cell tumor
Wrong answer. The image only displays a seminoma.
- C** Choriocarcinoma
Wrong answer. In choriocarcinoma we expect to find tissue that is similar to extraembryonal or trophoblastic elements.
- D X** Seminoma
Correct answer. Here we see immature germ cells, lymphocytes and fibrous septa compatible with seminoma.

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95

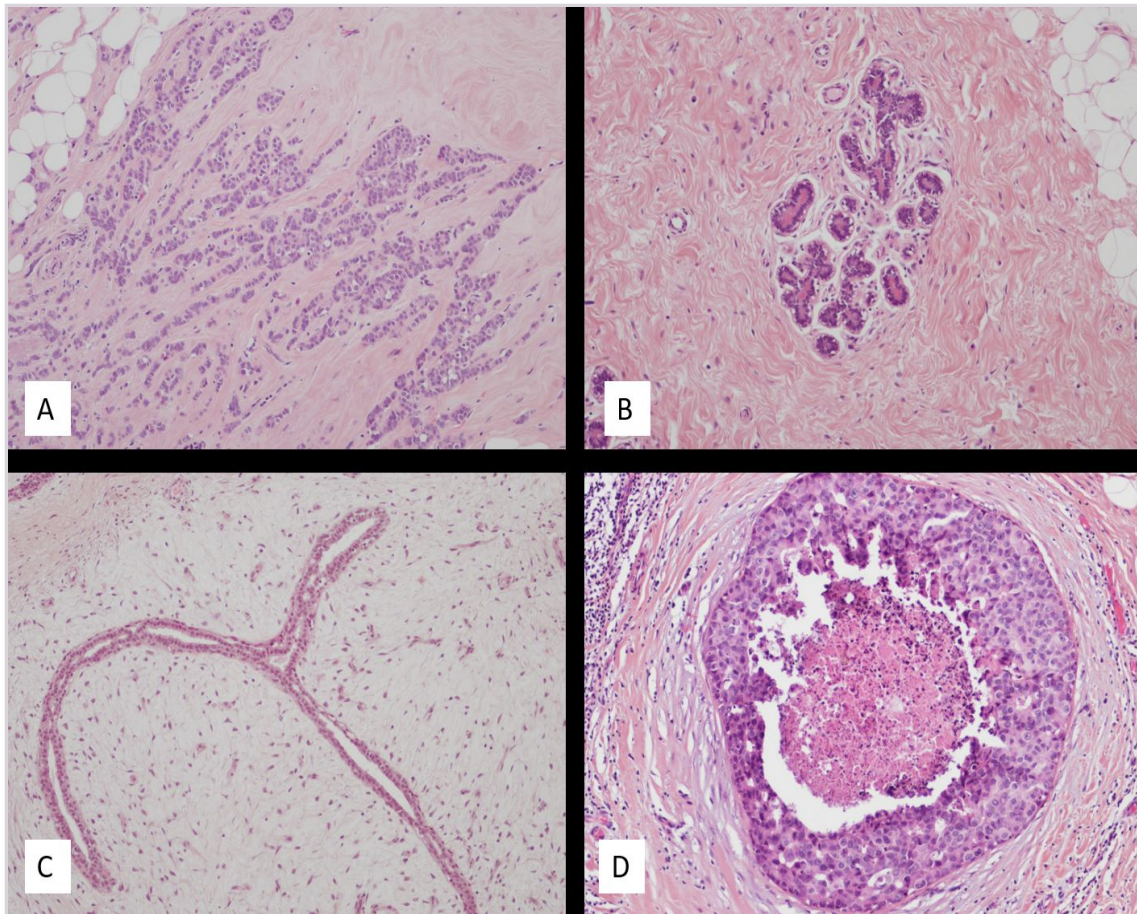
Which statement about endometrial carcinomas is correct?

- A X** Endometrial hyperplasia is associated with endometrioid carcinoma
Endometrial hyperplasia is associated with development to adenocarcinoma, particularly Type I as endometrioid. Endometrioid carcinomas are Type I carcinomas and serous carcinomas are Type II carcinomas. Type II carcinomas are normally more aggressive than Type I. Type I carcinomas are often oestrogen dependent.
- B** Type II endometrial carcinomas are normally oestrogen dependent
- C** Serous carcinomas are examples of type I endometrial carcinomas
- D** Endometrioid carcinomas have a poorer prognosis than serous carcinomas

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96

At mammography screening, a 58-year-old woman has been diagnosed with microcalcification in an area in her right breast. Histopathology finds changes compatible with ductal carcinoma in situ (DCIS). Which of the four images below displays DCIS?



- A Image A
Image A shows infiltrating lobular carcinoma
- B Image B
Image B shows normal breast glandular tissue and stroma
- C Image C
Image C shows fibroadenoma
- D X Image D
Image D shows DCIS: proliferation of atypical cells in a milk duct. No penetration of the basal membrane. Necrosis in the middle.

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97

A 75-year-old woman has been diagnosed with thickened endometrium at ultrasound. A pipelle sample was taken and the sample reveals endometrial hyperplasia with atypia. Infiltrating growth is not seen. Even though infiltrating growth has not been seen, the gynaecologist recommends performing a hysterectomy.

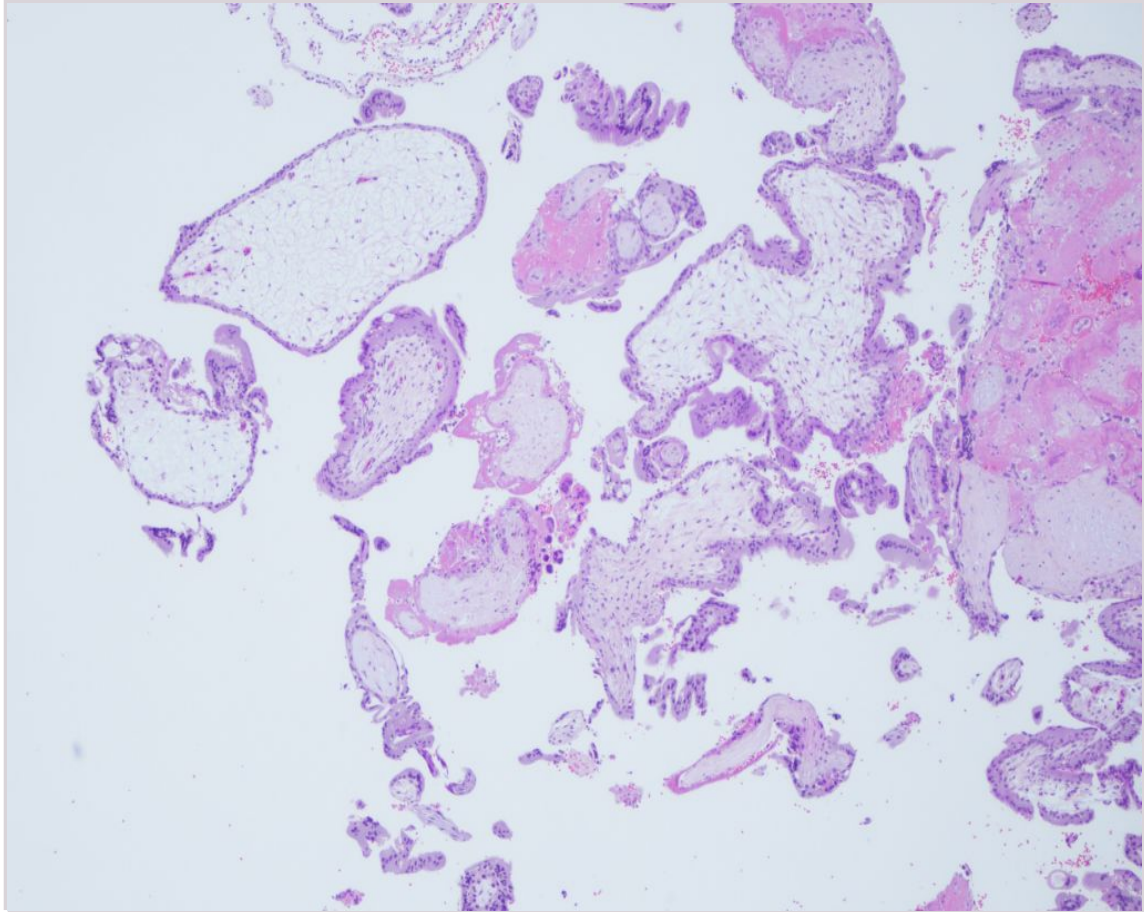
Why do you think this was recommended?

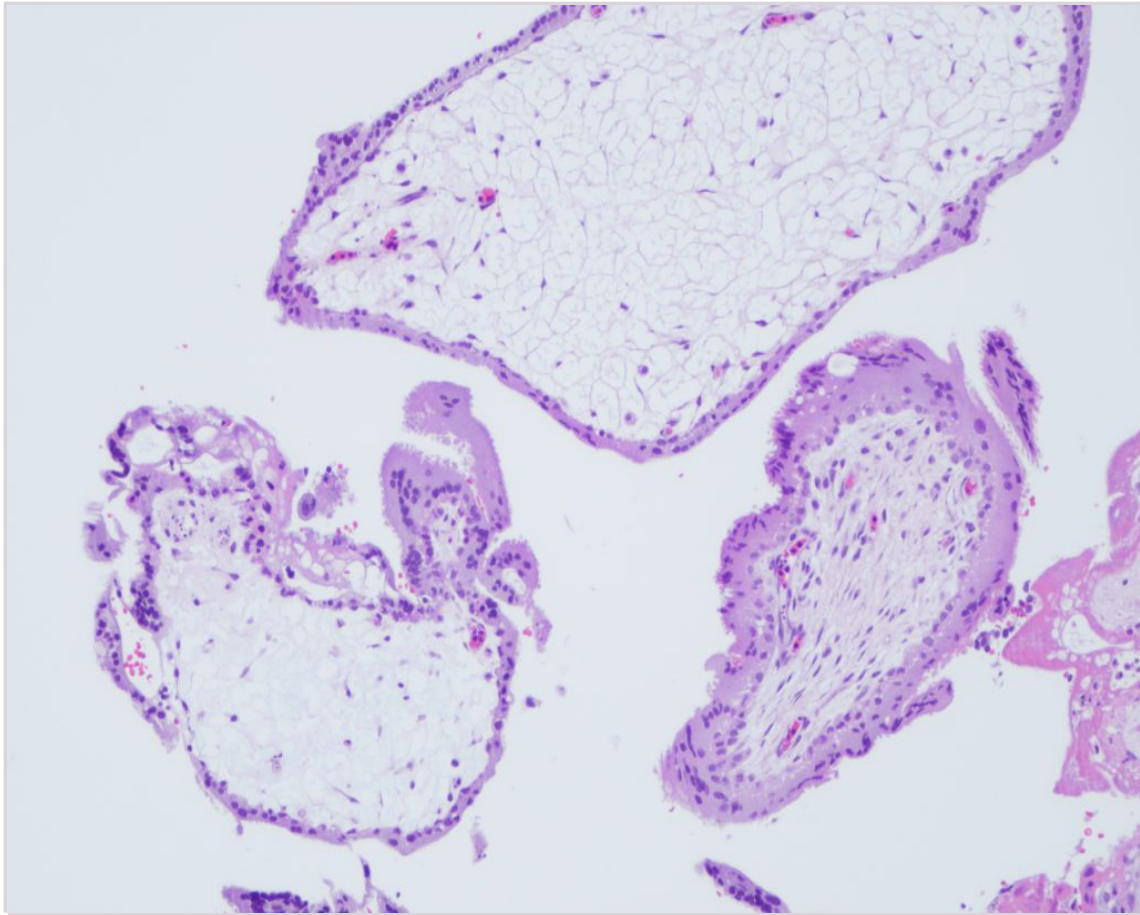
- A Because atypical hyperplasia is often associated with considerable pain
Atypical hyperplasia is not associated with pain
- B Because it is a simple operation without complications
- C X Because atypical hyperplasia can develop to adenocarcinoma
Atypical hyperplasia is a risk factor for development of adenocarcinoma in the endometrium
- D Because atypical hyperplasia always gives major bleeding problems

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98

A young woman was admitted to hospital because of acute stomach pain. She underwent surgery shortly after admission. Below you see two histology images from a rough content of the left tube lumen (X40 and X100, respectively). What is your diagnosis?





- A Normal tube
- B X** Extrauterine pregnancy
There are chorionic villi in the tube lumen
- C Intraepithelial carcinoma
- D Infection and inflammation

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99

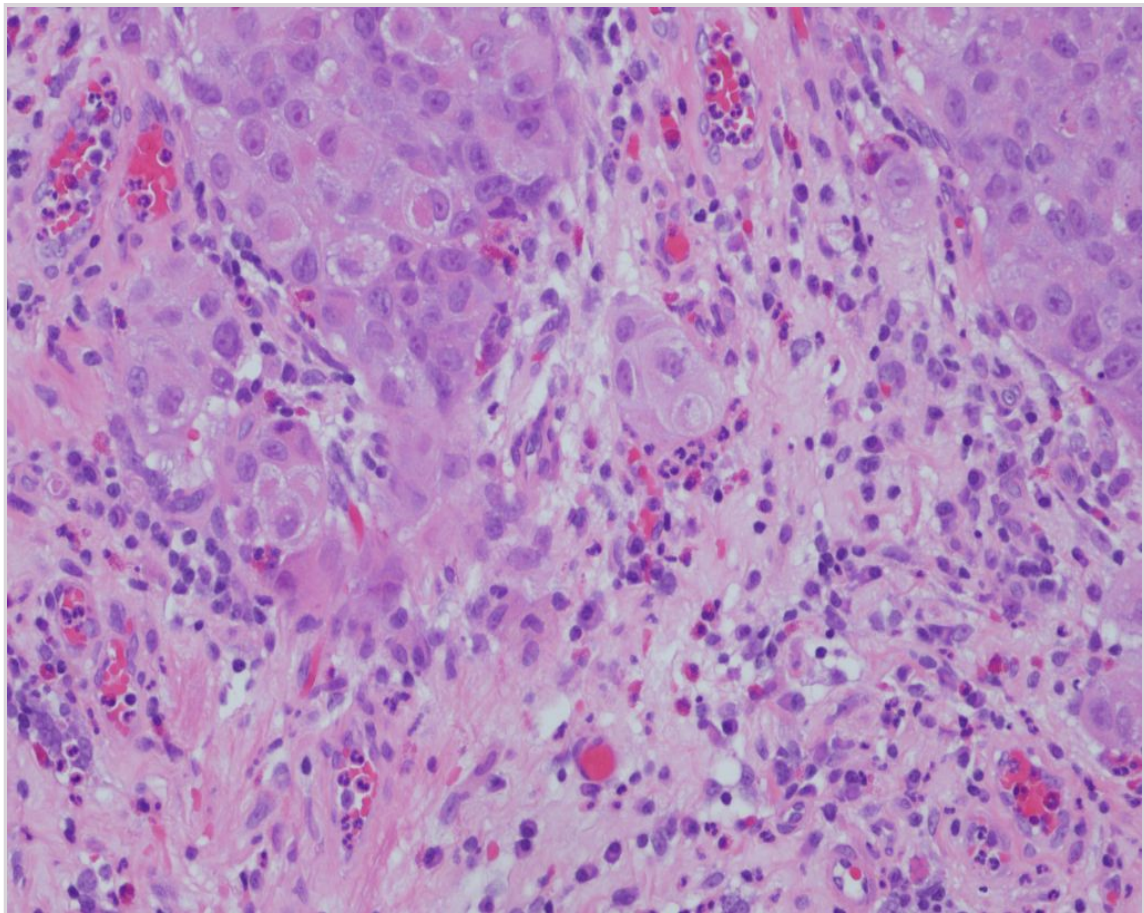
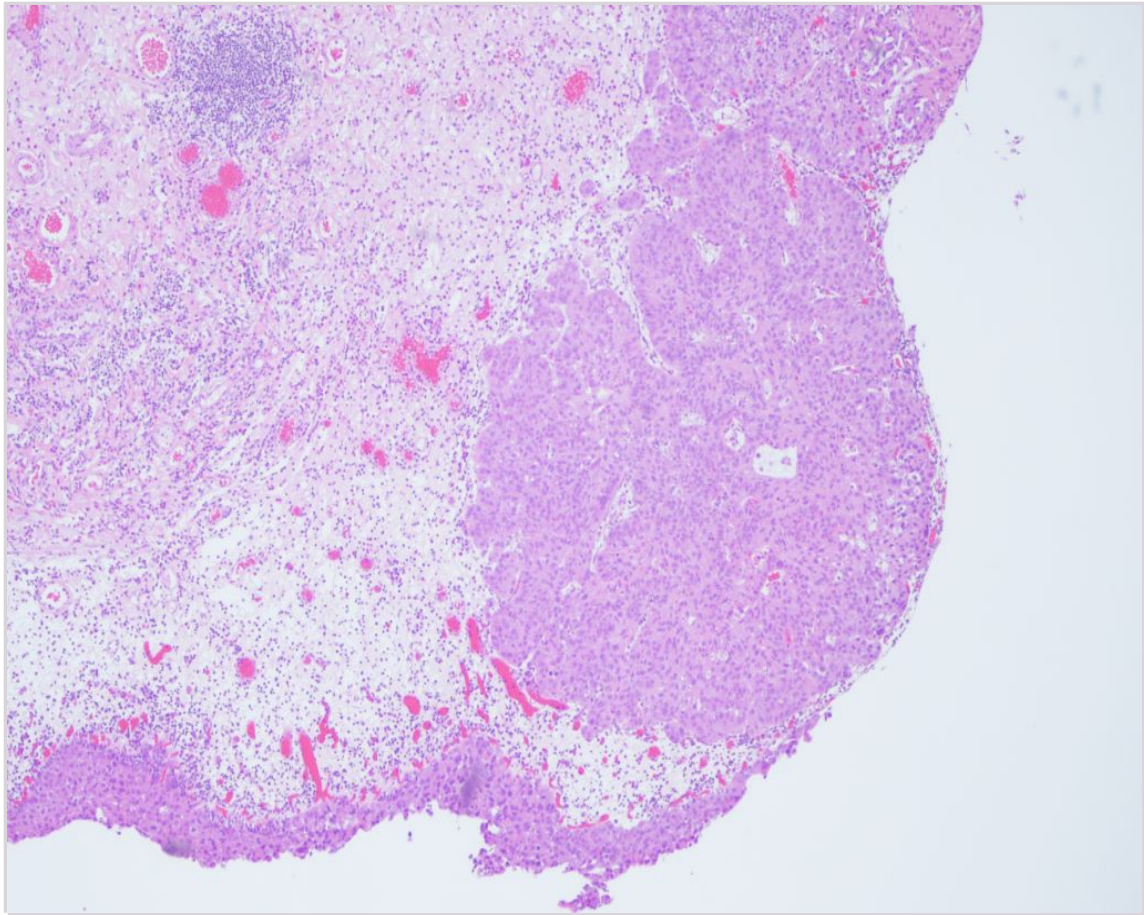
A 55-year-old man had surgery for a tumour in the kidney. The tumour is 3 cm in size and is located subcapsularly without penetration into the renal pelvis. Histology reveals that the patient has cancer with site of origin in the kidney. Which diagnosis do you expect?

- A Pheochromocytoma
- B X** Clear cell carcinoma
Clear cell renal cell carcinoma is the most common carcinoma with site of origin in the kidney
- C Squamous cell carcinoma
- D Transitional cell carcinoma

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100

A 70-year-old man is investigated for blood in his urine. Irregular areas were seen in the mucous membranes of the bladder and biopsies were taken. Below you see two images from one of the biopsies (X40 and X200, respectively). What is your diagnosis?



- A X** Transitional cell carcinoma
There is thickened transitional epithelium and small islands of epithelial cells in the underlying stroma which means there is infiltrating growth
- B** Squamous cell carcinoma
- C** Inflammation and reactive epithelium
- D** Normal bladder mucous membrane
-

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101

A 33-year-old woman attends for pregnancy check-up in her third pregnancy. Her youngest child had septicaemia with group B streptococci immediately after the birth. Fortunately, the child recovered and is now healthy. The woman is naturally concerned that the same thing will happen again because she is a carrier of the bacteria in her vagina.

How should a situation like this be managed in accordance with Norwegian guidelines?

- A** A vaginal sample for group B streptococci is taken in gestation weeks 35-37, and antibiotics given in connection with the birth if the test is positive
- B** The child is placed under intensified monitoring during and after the birth, and is given early treatment at any signs of infection
- C X** Antibiotics are given in connection with the birth because she has already given birth to one child who got septicaemia with group B streptococci in connection with the birth
Regardless of the length of the pregnancy, intravenous prophylactic antibiotics are given during the birth to women who have previously given birth to children with early-onset neonatal GBS disease (https://www.helsedirektoratet.no/retningslinjer/gruppe-b-streptokokker-hos-gravide-og-fodende-kvinner/Gruppe%20B-streptokokker%20hos%20gravide%20og%20fodende%20kvinner%20-%20Nasjonal%20faglig%20retningslinje.pdf/_attachment/inline/3583a5d6-1936-451e-879f-2e5d6ff24bb0:34fe5aad119fa0a460c5e659349841d8f4bc1c96/Gruppe%20B-streptokokker%20hos%20gravide%20og%20fodende%20kvinner%20-%20Nasjonal%20faglig%20retningslinje.pdf)
- D** It is not necessary to take a sample from the mother, but she is given antibiotics for 2-4 weeks before the birth to remove the group B streptococci from her vagina
-

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102

You suspect Tinea capitis with effect on the hair in an 11-year-old boy. Which fungal species is the most probable cause of this disease?

- A X** Microsporum species.
Dermatophyte that can give Tinea capitis, but is less common than Trichophyton rubrum.
- B** Aspergillus species.
Mold that infects via the airways and can cause respiratory tract infections or disseminated infection in other organs, most often the brain. The most common cause of invasive mold infections in Norway. Can also cause allergies.
- C** Malassezia species.
The cause of pityriasis versicolor which is a superficial fungal infection characterised by hypo- or hyperpigmented areas of the skin.
- D** Candida species.
Candida can cause skin infections and systemic fungal infection, but not Tinea capitis
-

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103

A 67-year-old woman from Bangladesh is seeking asylum in Norway. She comes to the doctor with a cough that has lasted several weeks. She has lost weight during this period and is very tired. X-ray of the lungs shows a diffuse infiltrate apically in the right upper lobe, and hilus gland enlargement on the same side. The on-call doctor at the hospital admits the patient for further investigations. What isolation regimen should be used?

A Contact transmission regimen

B X Airborne transmission regimen

The patient's background, medical history, symptoms and findings at X-ray of the thorax give strong suspicion of active pulmonary tuberculosis. Tuberculosis infects via inhalation of droplets containing tuberculosis bacteria. In cases of confirmed or suspected infectious tuberculosis the patient must be isolated in an airborne infection isolation room.
<https://www.fhi.no/nettpub/tuberkuloseveilederen/smitte-og-smitteverntiltak/7.-smitteverntiltak/#72-smitteverntiltak-i-helseinstitusjoner>

C Droplet transmission regimen

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104

As the On-duty specialist in medicine you see a man aged 23 who has been travelling around the villages of India. He has drunk water from the tap. He has a fever, headache and stomach pain. BP: 95/60 and pulse 115. Rapid tests for malaria and Dengue fever have been taken both of which are negative.

Which investigation should you do for this patient?

A X Take a blood culture for typhoid fever

Typhoid fever can have this clinical picture. There is a particularly high risk of this in India and after having drunk non-sterilised water. The diagnosis is made by demonstrating Salmonella typhi or Salmonella paratyphi in blood cultures.

B Take a bone marrow sample for culture for typhoid fever

C Take a blood sample to perform Widal's reaction for Salmonella infection

D Take a stool sample for culture of pathogenic intestinal bacteria for Salmonella gastroenteritis

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105

A 45-year-old man with rheumatoid arthritis is to start treatment with rituximab (anti-CD20 antibody). You explain that he has a slightly increased risk of hypogammaglobulinaemia (low levels of IgG) and that he is therefore at a slightly higher risk of infections.

Which infections is he primarily susceptible to?

A Meningitis with meningococci and Listeria monocytogenes

B Skin and soft tissue infections with staphylococci and streptococci

C X Respiratory tract infections with pneumococci and Hemophilus influenzae

Patients with hypogammaglobulinaemia are susceptible to recurring respiratory tract infections (otitis, sinusitis and pneumonia) with pneumococci and H. influenzae. These are encapsulated bacteria for which opsonization with immunoglobulins is critical for effective phagocytosis.

D Urinary tract infections with E. coli and Proteus mirabilis

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106

A 25-year-old man is admitted with a high fever. Four weeks ago he returned from a trip to several countries in East Africa. He took a malaria prophylactic (Malarone), but he took the tablets irregularly during the last part of his stay.

Is malaria the probable diagnosis?

A No, because the incubation time for malaria is always less than 2 weeks

B X Yes, because the incubation time for malaria increases above 2 weeks if the malaria tablets are taken irregularly.

The prophylactic must be taken regularly (for Malarone every day) to provide good protection. The normal incubation time for malaria is less than 2 weeks; however, if the prophylactic is taken irregularly it can increase considerably, often up to 4-6 weeks. In addition, he has been in East Africa which is a risk area.

C Yes, because the incubation time for malaria in East Africa is always longer than 4 weeks

D No, because a malaria prophylactic is very effective even if used irregularly

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107

A 75-year-old man is admitted to the Medical Dept with BP 85/50, pulse: 120, and fever (39°C). Urine dipstick reveals 3+ for blood and 3+ for leukocytes. He has previously had kidney stones several times, and therefore ultrasound of the urinary tract is performed. This reveals significant hydronephrosis of the right renal pelvis.

Which treatments should the doctor start in this patient?

- A X** Ampicillin + gentamicin i.v. and referral for admission for nephrostomy
 - B** Selexid i.v. and referral for admission for nephrostomy
 - C** Ampicillin + gentamicin i.v. and referral for stone crushing (ESWL)
 - D** Selexid i.v. and referral for stone crushing (ESWL)
-

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108

A 72-year-old woman with type 2 diabetes mellitus continues to have a high HbA1c in spite of treatment with three different peroral antidiabetics. You decide to try insulin in this patient. What should you use in the start-up phase?

- A X** Intermediate-acting insulin in the evening
It is important in type 2 diabetes to have a basal supply of insulin. Mealtime insulin/rapid-acting insulin is unnecessarily complicated for this patient, at least in the start-up phase.
 - B** Intermediate-acting insulin in the morning and evening, and rapid-acting insulin with all meals
 - C** A ready-mixed combination of rapid-acting and intermediate-acting insulin with breakfast and the evening meal
 - D** Rapid-acting insulin with all meals
-

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109

Hydrochlorthiazide, furosemide, spironolactone and amiloride all belong to the group of medicines known as diuretics. Two of these medicines can give hyperkalemia as a side effect.

Which medicines are they?

- A X** Spironolactone and amiloride
Both of these are potassium-sparing diuretics. Amiloride is perhaps not well known, but the students should be able to reason their way to the correct answer because the other alternatives contain either furosemide or hydrochlorthiazide (they ought to know that both give hypokalemia).
 - B** Amiloride and hydrochlorthiazide
Hydrochlorthiazide gives a tendency to hypokalemia
 - C** Hydrochlorthiazide and furosemide
Both of these give a tendency for hypokalemia
 - D** Furosemide and spironolactone
Furosemide gives a tendency for hypokalemia
-

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110

Angiotensin receptor inhibitors and ACE inhibitors both affect the renin-angiotensin-aldosterone system, but by different mechanisms of action. This results in some differences in the side effect profiles for the two drug groups.

Which side effect is considered to be the most clinically important difference?

- A X** Dry cough
It has been well established that ACE in addition to converting angiotensin I to angiotensin II, is also important in the metabolism of bradykinin to inactive metabolites. The characteristic dry cough that many patients experience as a side effect of ACE inhibitors is considered to be caused by bradykinin accumulation in lung tissue. Angiotensin receptor inhibitors do not affect ACE and thus do not have this effect/side effect.
 - B** Thirst
 - C** Urine retention
 - D** Cold limbs
-

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111

A woman is pregnant in gestation week 9+0. She has just found out that she is pregnant. Last week she took a medicine which according to the reference literature could potentially harm the fetus. What is the most probable type of effects?

- A Physiological anomalies in the neonatal period
 - B All-or-nothing effect; i.e. the pregnancy will either miscarry or the fetus is unharmed
 - C Intrauterine growth retardation
 - D X** Structural anomalies
most probable
-

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112

An elderly man with prostatic hyperplasia, hypertension, hypothyroidism, previous heart attack and moderate renal failure uses among others the following medicines:

- Metoprolol (a beta blocker)
- Ramipril (an ACE inhibitor)
- Doxazosin (an alpha blocker)
- Levothyroxine

He now complains of exhaustion and sweating, and has had an unintended weight loss of 5 kg. ECG reveals new-onset atrial fibrillation.

Which medicine is the most probable cause of this?

- A X** Levothyroxine
The vignette describes symptoms that match those with thyrotoxicosis caused by an overdose of levothyroxine.
 - B Ramipril
 - C Metoprolol
 - D Doxazosin
-

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113

Medicines in the group known as phosphodiesterase-5-inhibitors must not be used together with glyceryl trinitrate (nitroglycerin) and other nitrates. What is the reason for this?

- A The combination can cause renal failure
One could think of renal failure secondary to an extreme drop in blood pressure but, nonetheless, the drop in blood pressure is the primary reason.
 - B X** The combination can cause a large drop in blood pressure
Medicines in both groups act as vasodilators, and if combined give a very strong vasodilatory effect.
 - C The combination can give a prolonged QT interval with a risk of torsades de pointes arrhythmias
 - D The combination can cause seizures
-

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114

Postmenopausal hormone treatment is associated with both positive and negative effects. Of the negative effects, there is a special type of cancer that is considered to have a causal relationship with exposure to such treatment. Which cancer is this?

- A Lung cancer
 - B Uterine cancer
 - C Osteosarcoma
 - D X** Breast cancer
Correct answer
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115

NSAIDs can be nephrotoxic by causing a reduction in renal bloodflow and thereby a reduced GFR. This is seen particularly in patients who are old and ill and who have additional conditions or diseases that result in increased activation of the adrenergic system or the RAAS. This potentially nephrotoxic mechanism is a direct consequence of the NSAIDs' analgesic mechanism of action. What is this mechanism of action?

- A Reduction of COX-mediated synthesis of prostaglandins and related endogenous compounds from leukotrienes.
 - B X** Reduction of COX-mediated synthesis of prostaglandins and related endogenous compounds from arachidonic acid.
Correct answer.
 - C Reduction of COX-mediated synthesis of prostaglandins and related endogenous compounds from thrombocytes.
 - D Reduction of COX-mediated synthesis of prostaglandins and related endogenous compounds from ascorbic acid.
-

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116

Finasteride is a medicine that is used in benign prostatic hyperplasia and acts by blocking the enzyme testosterone-5-alpha-reductase.

Here are four statements about this medicine:

- A potential side effect is hypotension
- It can increase the concentration of prostate specific antigen
- It should not be used together with beta blockers
- The effect cannot be evaluated before at least six months after start of treatment

Only one of these statements is correct. Which one?

- A A potential side effect is hypotension
 - B It can increase the concentration of prostate specific antigen
The concentration will fall because the volume of the gland is reduced.
 - C It should not be used together with beta blockers
 - D X** The effect cannot be evaluated before at least six months after start of treatment
The medicine acts by reducing the size of the prostate gland. This reduction in volume can take time.
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117

A woman is being treated with levothyroxine for hypothyroidism. She then becomes pregnant. How should the treatment with levothyroxine be changed in connection with the pregnancy?

- A The dose of levothyroxine is immediately reduced by 20-30% with a positive pregnancy test
 - B The dose is basically not changed, but TSH and free T4 are monitored and measured in each trimester
 - C X** The dose of levothyroxine is immediately increased by 20-30% with a positive pregnancy test
Ref.: Gynaecology Guidelines 2014 (Endocrinology Guidelines state 20%, Gynaecology Guidelines 30%)
 - D Use of levothyroxine is contraindicated in pregnancy
-

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Testen har 117 oppgaver. På utskriftstidspunktet var 0 oppgaver blitt trukket og det var gjort fasitendringer på 0 oppgaver.