

2017 - IID - MD4043 - eksamen 1
Eksamensdato: 2017-12-14

1

What is the most important objective when calculating the Risk of Malignancy Index (RMI) in women with an unclarified tumour in the pelvis?

- A To determine whether the condition can be completely removed surgically
 - B X** To determine whether the condition is benign or malignant
An RMI score above or below 200 discriminates best between a malignant and benign condition
 - C To determine whether the condition is of a gynaecological nature or not
 - D To determine whether the condition arises in the ovaries or uterus
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2

A 22-year old woman originally from Somalia, and who has lived in Norway for 3 months, contacts you her GP 6 weeks after a vaginal birth at term. She has normal lochia, but feels that she must continually wipe herself without being dry around the genital area. She is afebrile and it does not sting when urinating. At examination, you cannot get a complete overview of her anatomy, but inspect what you think is an episiotomy that is healing well. Urine dipstick displays 3+ for blood and 3+ for leukocytes.

What is the most probable diagnosis?

- A X** Fistula from the urinary tract
Fistulas occur easily if a woman has been circumcised, which is the case for many women from Somalia.
 - B Endometritis
 - C Chlamydia infection
 - D Tuberculosis of the urinary tract
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3

A 43-year old woman contacts you her GP to get advice about contraception. She has just got a new, regular partner. She is not interested in taking "anything with hormones". What is the most correct contraceptive you can suggest for her?

- A X** Copper coil (intrauterine contraceptive device)
Long-term effect with satisfactory pearl index in this woman, and an option without hormones. Sterilisation could be an option, but not the first choice.
 - B Condoms
This must be applied every time which is a bit of a bother with a regular partner, but she can of course use it if she wishes.
 - C Essure (hysteroscopic sterilisation)
Non-reversible and therefore perhaps not such a good option
 - D Pessary
Most people think this is cumbersome
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A 25-year old woman has for some time had pelvic pain that has come and gone. She also experiences deep stabbing pain during intercourse. She has tried continuous contraceptive pills without any improvement in the pain. During investigations, a diagnostic laparoscopy was performed which revealed a number of adhesions in the pelvis. What is the most likely diagnosis?

- A Adenomyosis
 - B Endometriosis
 - C X** Chlamydia infection
A pelvic infection can often cause adhesions. Typical endometriosis changes were not described during laparoscopy, and continuous contraceptive pills were not effective as one would expect with endometriosis. PCOS does not cause adhesions.
 - D Polycystic ovary syndrome
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5

Why does the menopause occur in women?

- A The production of oestradiol in women drops too much.
Incorrect answer; it is a consequence not a cause of the menopause.
 - B X** The number of primordial follicles in the ovaries decreases sharply.
Correct answer; the store of eggs is emptied at menopause.
 - C The hormonal interaction between the hypothalamus and the pituitary ceases.
Incorrect answer; it is a consequence not a cause of the menopause.
 - D The production of progesterone drops too much.
Incorrect answer; it is a consequence not a cause of the menopause.
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You are the GP for a 57-year old woman who attends for a routine cervical cytology test. She says she is bothered by dryness in the vagina. You examine her and find nothing abnormal. What should you preferably do now?

- A You refer her to a sexologist
 - B X** You start topical estrogen treatment
This is the best option as it provides treatment of the cause with little risk.
 - C You start with oral estrogen treatment
Generally, topical estrogen treatment helps best against dry vaginal membranes. Systemic estrogen treatment is not indicated here either.
 - D You refer her to a gynecologist
As her GP you can first start her on topical estrogens
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A 44-year old woman with a known uterine fibroid contacts you, her GP, because of increased vaginal bleeding. She has read a little about embolisation on the internet and wonders whether you could explain for her what it is about.

What is the most correct explanation?

- A A method that heats up/destroys the endometrium
No; that is called endometrial ablation
 - B Surgery during which the myoma is removed by hysteroscopy
 - C Treatment with ultrasound waves targeting the myoma using a transvaginal transducer
 - D X** A method that blocks the main blood supply to the uterus
Only correct answer.
*Ref: Perkutan embolisering av uterinarteriene ved uterusmyom [Percutaneous embolisation of uterine arteries in the fibroid uterus]
Tidsskr Nor Legeforen 2003
123:614-6*
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8

A 35-year old woman has for some months had intermenstrual bleeding, particularly in connection with intercourse. She has given birth to three children and has a copper intrauterine device. At gynaecological examination you (a general practitioner) find a easily bleeding "wound" on her uterine cervix. The "wound" is about 10 millimetres in diameter.

What is your most correct course of action?

- A Take a cervical cytology sample and wait for the results
Visible lesions must be biopsed
 - B Remove the intrauterine contraceptive device and make a check-up appointment in four weeks
 - C Take a cervical sample for genital herpes simplex
 - D X** Refer for urgent gynaecological investigations
Risk of malignancy. The patient must be examined by a gynaecologist and have a colposcopy with biopsies taken from the uterine cervix.
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9

A 27-year old woman has an appointment with you her GP because over the last three years she has had increasing pelvic pain, particularly at ovulation and in the days prior to menstruation. What is the most likely explanation of her pain?

- A That she has chronic salpingitis
 - B X** That she has endometriosis
Classic symptoms of endometriosis
 - C That she has a dermoid cyst
 - D That she has myomas
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10

Synthetic hernia mesh can be used in surgery for pelvic organ prolapse. For which patients is a hernia mesh indicated?

- A X** In elderly patients with recurrent prolapse
If a previous prolapse operation has not been succesful, a mesh can be an option
 - B In patients with a connective tissue disorder
This in itself is not an indication for a net
 - C In elderly, frail patients
In these patients, ring treatment or a simple operation such as closure of the vagina (colpocleisis) is indicated
 - D In younger patients in whom the risk of recurrent prolapse is greatest
This is incorrect; mesh treatment can have side effects such as exposure of the net and pain at intercourse.
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11

A 28-year old healthy woman expecting her second child attends for check-up in gestational week 32. You examine the women with the Leopold's maneuvers and conclude that the fetus is in the breech presentation. What is the most correct thing to do in this situation?

- A X** Inform the woman that you will wait and see what happens until the next check up
The fetus can still turn spontaneously.
 - B Refer the woman to the nearest Maternity Department for further investigation and treatment
 - C Reassure the woman that it is safe to give birth to a baby in the breech presentation in Norway
 - D Attempt to turn the fetus to a cephalic presentation
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12

The hemoglobin level in pregnant women is lower than in non-pregnant women. Why?

- A The production of erythrocytes in the bone marrow falls during pregnancy
 - B X** The plasma volume increases more than the erythrocyte volume during pregnancy
Blood volume ↑ by about 40%
Plasma volume ↑ by about 45%
Erythrocyte volume ↑ by about 20%
-> Hematocrit ↓
and thus Hb ↓
 - C Pregnant women have physiologically increased hemolysis which can result in intrahepatic cholestasis (ICP) and HELLP (Hemolysis, Elevated Liver enzymes, Low Platelet count) syndrome
 - D Pregnant women more easily bleed than non-pregnant women and therefore lose quite a bit of blood
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13

You are the on-call doctor in the Obstetrics and Gynaecology Department. A woman phones and is very worried. She has just been to her GP in gestation week 16. The GP could not hear fetal sounds with his stethoscope and she does not feel any fetal movements. How would you best deal with this situation?

- A You ask her to contact her GP in one week for a new examination
- B You organise an appointment for her the next day for an ultrasound examination at the hospital
- C You ask her to come to the hospital immediately so that you can examine her using ultrasound
- D X You say that this is normal. She should come to the scheduled routine ultrasound in gestational week 18

It is very uncertain and difficult to hear fetal sounds with a stethoscope particularly in week 16. Neither is it unusual not to detect fetal movements this early.

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14

A woman in her third pregnancy has had her two previous births by caesarian section. What is she at an increased risk of?

- A Breech position
- B X Placenta accreta
- C Premature birth
- D Post-term pregnancy

Increased risk that the trophoblast grows into the section scar resulting in placenta accreta.

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A 29-year old woman attends your GP clinic in gestational week 24. This is her second pregnancy. All pregnancy parameters are normal. She had diet-controlled gestational diabetes in her first pregnancy. Her pre-pregnancy BMI was 24.

What is the best way to follow-up this pregnancy?

- A Refer her for fetometry in the third trimester
- B No actions. Continue with routine follow-ups during the pregnancy
- C Refer her to the Obstetrics Outpatient Clinic in the third trimester
- D X Perform a glucose tolerance test in week 24

According to the guidelines, a glucose tolerance test should be done if she has had gestational diabetes previously, due to the increased risk of recurrence

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16

A child is born with an Apgar score of 3-3-3 after 1, 5 and 10 minutes even though the pediatrician rapidly administers adequate ventilation using a bag and a mask. Umbilical cord blood tests reveals pH 7.0 and base excess (BE) - 12.5 in the artery and pH 7.02 and BE - 12.2 in the vein. What does this indicate?

- A X Metabolic acidosis
- B Respiratory alkalosis
- C Metabolic alkalosis
- D Respiratory acidosis

The blood values reveal metabolic acidosis which fits with the low Apgar score

acidosis

acidosis

acidosis

Adequate ventilation would quickly bring the child's Apgar score to normal, and the blood values are too serious for respiratory acidosis

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17

Why is measuring the fetus' biparietal diameter (BPD) the best method for determining the due date?

- A Due date using Naegele's rule is based on the last menstruation and is uncertain because the woman rarely remembers the date exactly
Women often remember the date, but ovulation does not always occur 14 days after the last menstruation.
- B It is assumed that the BPD increases equally every week throughout the pregnancy
Incorrect
- C Due date using Naegele's rule is better than BPD measurements for women who are overdue, while the BPD is better for premature births than Naegele's rule. Because there are more premature births than overdue births, the BPD is the best method
Incorrect
- D X** It is assumed that all fetuses of the same age have almost identical BPD at gestation week 18
This is the basis for all methods that use ultrasound measurements to determine due date, regardless of whether one counts forward (eSnurra) or backwards to an assumed last menstruation before adding on 280-283 days (other methods)

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18

What is the lower limit (gestational age) for performing a caesarian section for fetal indications?

- A 22 weeks
- B 23 weeks
Lower limit for a vaginal birth
- C 24 weeks
- D X** 25 weeks
Consensus in Norway for performing a caesarian section for fetal indication is week 25+0

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19

Blood pressure changes during pregnancy.
How does blood pressure normally develop during pregnancy?

- A Systolic and diastolic blood pressure both increase gradually during pregnancy
- B Systolic blood pressure increases but diastolic blood pressure decreases during pregnancy
- C X** Both systolic and diastolic blood pressure usually are lowest in the second trimester
Normally the blood pressure in the second trimester is lower than in the first trimester, while it increases again in the third trimester.
- D In healthy pregnant women, the blood pressure does not change during pregnancy

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You are the GP for a 40-year old woman who attends for post partum check-up 6 weeks after the birth. In the first pregnancy she had a caesarean section in week 32 due to severe pre-eclampsia. In the present pregnancy she has taken Albyl-E 75 mg x 1 from gestation week 12 as a pre-eclampsia prophylaxis. The birth of her second child was uncomplicated but she was induced at term due to slightly elevated blood pressure towards the end of the pregnancy. You now find that her blood pressure has normalized. What is the best way to follow-up this woman?

- A You inform her that she does not have any increased risk of later cardiovascular disease
- B You recommend that she continues to take Albyl-E
- C X** You follow her up with blood pressure measurements due to an increased risk of cardiovascular disease later in life
This is the most correct answer
- D You refer her now to a cardiologist for echocardiography
No indication at the present time; not everybody with mild pre-eclampsia can be referred for this examination

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21

The parents of a 7-year old boy who has recently been diagnosed with ADHD receive psychoeducation on ADHD. The parents ask whether there is any treatment that improves the prognosis for a well-functioning adult life.

What information do you give to the parents?

- A X** Central nervous system stimulants and adaptation at home and in school have a good short-term effect, but uncertain long-term effect.
Correct answer.
- B** Central nervous system stimulants together with adaptations at home and school will ensure that the child grows out of his ADHD symptoms.
Medication and adaptations improve progression by limiting comorbidity, but does not act at the symptom level in the long term.
- C** Central nervous system stimulants will ensure that the child grows out of the ADHD symptoms.
Incorrect answer. Research does not indicate that medication has a long term effect on the core symptoms.
- D** Central nervous system stimulants and adaptation at home and in school do not have any effect.
Central nervous system stimulants and adaptation at home and in school have a good effect, but uncertain long-term effect on core symptoms.

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22

A boy (5 years old) has delayed speech development.

What is the most common cause of this condition?

- A** Selective mutism
- B** Autism spectrum disorder
- C** Sequelae after encephalitis
- D X** Serous otitis media with fluid formation in the middle ear
Correct answer. Serous otitis media with fluid formation in the middle ear giving impaired hearing is the most common cause of delayed speech development. A thorough ear examination by the GP is therefore important if delayed speech is suspected.

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23

The semi-structured interview Kiddie-SADS-PL (Schedule for Affective Disorders and Schizophrenia for School-Age Children Present and Lifetime Version) offers the opportunity for diagnosis of psychological disorders in children and adolescents.

What are the advantages of such interviews?

- A** They describe dimensional aspects of psychological disorders that help clinicians to take decisions on whether to treat or not.
That they describe dimensional aspects of psychological disorders is incorrect; that they help clinicians decide who is to be treated is correct.
- B** They describe well both categoric and dimensional aspects of psychological disorders primarily in a research context.
It is incorrect that they describe dimensional aspects of psychological disorders well. Kiddie-SADS gives categoric diagnoses.
- C** They can give a diagnosis that is categoric and primarily suitable in a research context but of little use for clinicians.
It is correct that they can give a categoric diagnosis and that they can be used in a research context, but it is incorrect that such interviews are of little use for clinicians
- D X** They can give a diagnosis that is categoric and which helps the clinician to take a decision on whether to treat or not.
They can give a diagnosis that is categoric and thereby help the clinician to take the decision as to whether he/she should offer treatment or not.

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24

You are the GP for a girl, 10-years old who uses a lot of time to check that things are in their right place. In the evening she has a number of rituals that she must complete before she can go to bed. If she is disturbed in these rituals, she becomes irritated, despairs and has to start again. She knows this is silly, but cannot stop herself.

What is the first line of therapy for her problems?

- A Psychodynamic therapy to process negative life experiences
 - B Habit Reversal Training (HRT)
 - C X** Cognitive therapy with exposure and response prevention
An obsessive-compulsive disorder is probable, and cognitive therapy with exposure and response prevention is currently the most evidence-based treatment for this condition and therefore the first choice. Medication treatment with SSRI can alleviate the symptoms and give a supplementary effect to cognitive therapy, but is not the first choice by itself. Psychodynamic therapy has not been documented to be as effective as cognitive therapy. Habit Reversal Training is currently a treatment method for tics/Tourette's syndrome.
 - D Medication treatment with SSRI (Selective Serotonin Reuptake Inhibitor)
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25

A 16-year old girl comes to the medical centre. She is quite upset and suspects that without knowing she took drugs the night before. She says that she became excitable, her behaviour changed to be more outgoing, with increased sexual interest and being uncritical (she went to the home of an older man; normally she is very careful). She did not feel sedated or chaotic. She says that she drank one unit of alcohol, and that the glass was left unattended while she was dancing. Which drug do you suspect?

- A Magic mushroom
Magic mushrooms give psychosis-like symptoms.
 - B X** Amphetamine
Amphetamine is the correct answer. It is a central nervous stimulant and gives the effects described in the vignette.
 - C Cannabis
Cannabis normally gives sedation.
 - D Benzodiazepines
Benzodiazepines typically cause sedation.
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26

A boy, 10 years old has been given the diagnosis Tourette's syndrome.
What is the prevalence of this condition in a paediatric population?

- A About 5% of the paediatric population
 - B About 3% of the paediatric population
 - C About 7% of the paediatric population
 - D X** About 1% of the paediatric population
Tourette's syndrome has a prevalence in the paediatric population of about 1%
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27

A 17-month old boy is the third child in the family. His healthy older sisters are 4 and 6 years old. According to his mother, his development was the same as his sisters', but when he was 15 months old she started worrying about his language. He only used two words and never put two words together. He never points at pictures in books when you name them. According to his mother, her son gets agitated by the slightest thing, he does not smile, has no eye contact and never waves "bye bye". The father adds that the boy has unusual bodily movements such as rotating his hands at the wrist.
What is the most probable diagnosis?

- A Specific developmental disorder of motor function
 - B Attention deficit hyperactivity disorder (ADHD)
 - C Mixed impulsive-expressive developmental disorder of language function
 - D X** Pervasive developmental disorders (Autism Spectrum Disorder)
The vignette describes typical symptoms of a disorder within pervasive developmental disorders/autism spectrum disorder.
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28

Post traumatic stress disorder (PTSD) is a severe condition that can occur as a result of an experienced negative life event.

Does this disorder occur in children of school age?

- A X** Yes, the condition can occur in children of school age.
Correct, the condition can occur in children of school age.
 - B** This disorder can occur very occasionally in children of school age.
 - C** No, the condition only occurs in adults.
 - D** Yes, the condition occurs more frequently in children of school age than in adults.
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29

A boy (15 years old) has tics/Tourette's and ADHD. He has started stealing from shops. Together with a 5-year older youth he has stolen a car. He lies to both his mother and teacher, and is continually getting into fights with other pupils. He does not like school. He is rarely at home and drinks a lot of alcohol every weekend. His big dream is to become a member of "Hell's Angels" when he grows up. His mother is a single parent, has little money and has to have two cleaning jobs to manage financially. She is extremely worried because he no longer listens to her.

You are the doctor at BUP. What is the best treatment for this boy?

- A** To treat his Tourette with Risperidone. This will also have a positive effect on his ADHD.
It is correct that Risperidone can have a positive effect on suppressing serious Tourette symptoms. Risperidone alone is not a medication against ADHD but, in some cases, may be considered to have a positive indirect effect on ADHD. However, the vignette describes a very worrying conduct disorder and a single parent who has lost control of the child's upbringing. The boy's complex problems therefore need more interventions than just suppressant psychopharmacologic treatment with Risperidone.
 - B** To treat ADHD and Tourette's. The programme "The incredible years" ("De utrolige årene") should be tried for the other problems.
It is correct that if his ADHD and Tourette's are serious, they should be treated. It is incorrect that his conduct disorder should be treated with the programme "The incredible years" ("De utrolige årene"). This programme is designed for small children, 4-8 years old.
 - C X** To treat ADHD and Tourette's. Multisystemic therapy (MST) should be tried for the other problems.
Correct solution. The vignette has already stated that the boy has ADHD and Tourette's. The vignette describes additional symptoms compatible with a serious conduct disorder (CD). This should be treated using MST. This is an intensive intervention in which the therapist goes into the home and helps the mother with bringing up the child without taking over responsibility.
 - D** To treat his ADHD with Ritalin. This will also have a positive effect on his Tourette's.
It is correct that his ADHD could be treated with Ritalin. It is also correct that this could have a suppressing effect on the tics and also potentially reduce the conduct problems somewhat. But the vignette describes a very worrying conduct disorder and a carer who has lost control of the boy's upbringing. The boy therefore needs more interventions than psychopharmacologic treatment with Ritalin.
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30

As an Emergency Centre doctor you meet Mina, 15 years old, and her mother. The mother had discovered Mina crying with a razor blade and several cuts on her left wrist. Mina confirmed suicidal thoughts and her mother is worried.

One year ago, Mina was being followed-up in the Child and Adolescent Outpatient Clinic for depression and suicide attempt (tablet intoxication), which was concluded 6 months ago due to improvement. She has been absent from school a few times during the last weeks. Her mother says Mina quarrelled with her boyfriend yesterday, and assumes that the relationship, which has been ongoing for 6 months, is about to finish.

Mina is quiet, looks down, does not make eye contact, answers questions abruptly, but will not say anything about how she is or what she thinks. She has several small cuts on her lower arm which are bleeding, but which do not need stitching. You see that she has several old scars from previous self-harming.

How should you as the doctor assess Mina's suicide risk?

A X

You assess the suicide risk as high, mostly due to the probable existence of emotional disorder and to the previous suicide attempt

A previous suicide attempt together with the existence of emotional disorder are the strongest risk factors for suicide that we know. Mina has previously had a depressive disorder, is probably developing depressive symptoms again, has injured herself, confirms suicidal thoughts, and there is a high risk that she will repeat a suicide attempt

B

You cannot assess her suicide risk until you have talked with her more and been given a description of any suicidal thoughts

The suicide risk can be assessed even if you cannot talk with Mina about her possible suicidal thoughts. Many of the factors on which our assessment is based are factors in the medical history/information we are given by, for example, family members, as in this case. Of course it is best if we can also hear the adolescent's own thoughts, but often they will not talk about these and we nevertheless still have to make an assessment

C

You assess the suicide risk as high, mostly due to the probable break with the boyfriend

Breaking off with a boyfriend is a risk factor which often can contribute to triggering suicidal thoughts/actions, but in those cases as an additional factor when there are other more underlying and serious factors present.

D

You assess the suicide risk as high, mostly due to the existence of emotional disorder and self-harm.

The existence of probable emotional disorder contributes to increasing the risk, but the previous suicide attempt weighs more heavily as a risk factor than self-harming

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31

Carl, 6 months, is fed mainly on breastmilk, but has also started with a little rice and maize porridge. Ever since a few weeks of age, he has had problems with a distended stomach, pain with bowel movements and constipation. You suspect that the constipation could be secondary to another condition.

Which secondary condition do you suspect?

A Pyloric stenosis

Incorrect answer. This is a high stenosis that can cause retching/upper GI symptoms but not constipation.

B X Hirschprung's disease

Correct answer: Absence of ganglial cells distally in the colon/rectum causes stenosis and secondary constipation.

C Meckel's diverticulum

Incorrect answer. This does not cause stenosis, but can give blood in the stools and possibly pain.

D Treitz ligament

Incorrect answer. This is not a disease/condition, but an anatomical structure.

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32

Oliver is 4-years old. Previously he has been healthy. The last 3 months he has had hives (urticaria). The problem comes 2-3 times a week with itchy skin. He has no other complaints and eats normal food. He has been to his GP recently who took blood tests with the following results:

Test	Result	Ref. range
Specific IgE against milk	0.5 kU/L	<0.35 kU/L
Specific IgE against wheat	0.5 kU/L	<0.35kU/L
Specific IgE against egg	1.1 kU/L	<0.35kU/L

You are the substitute for the GP and get the results. How do you interpret the results and what advice do you give?

- A Send a referral to a specialist as it is difficult to interpret the result.
Yes, it can be difficult to interpret the test results, and it is not wrong to refer to a specialist. However, it is worth trying a diet for a short time first, and this is the more correct answer
- B Probably allergy to milk, wheat and eggs. Recommend a diet without milk, wheat and eggs.
Slightly elevated IgE against milk, wheat and eggs is not necessarily the explanation for the problems. A diet without milk, wheat and eggs is a big change. In this case a diet plan would have to be drawn up and followed, with check-ups to assess whether the actions have been effective.
- C X Try a diet without milk, wheat and eggs for 2-4 weeks to see if the hives improves.
Slightly elevated IgE against milk, wheat and eggs is not necessarily the explanation of the problems. A diet plan could however be tried for a short period of 2-4 weeks to assess whether this has an effect.
- D Probably allergy to eggs. Recommend a diet without eggs.
Slightly elevated IgE against eggs is not necessarily the explanation for the problems. A diet without eggs is not such a big change to the diet, but nevertheless there is uncertainty about its effectiveness. If a diet is introduced, a diet plan would have to be drawn up and followed, with check-ups to assess whether the actions have been effective.

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33

Which of these conditions gives an increased risk of hip dysplasia (DDH) in the newborn?

- A Boy child
Boys do not have an increased risk of DDH
- B Twin pregnancy
Twin pregnancy itself is not a risk factor for DDH.
- C Face presentation of the fetus
Face presentation does not have an increased risk of DDH
- D X 1st degree relative (parent/sister) with hip dysplasia (DDH)
This gives an increased risk of DDH

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34

Petter has had normal psychomotor development up to the age of 3. After this, he has become more clumsy and often falls over. Recently, he has struggled with getting up in the standing position. On examination, you find normal muscle tone and deep tendon reflexes, there is no asymmetry in his movements and his fine motor skills are normal. Language development is somewhat low, but within the normal range for his age group. Clinical examination is almost normal, but he has well-developed lower-leg muscles. Creatinine phosphokinase (CK) is raised. What condition is most likely?

- A Cerebral palsy
No loss-of-function and normal clinical examination
- B Myelomeningocele
This is a congenital disease, and the child would not have a normal clinical examination at 3 years of age
- C Spinal muscular atrophy
This is not a typical history (raised CK, well-developed calves)
- D X Duchenne muscular dystrophy
Typical history

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Frode is 1,5 years old and has had normal psychomotor development. His parents tell you that Frode has had a couple of episodes where he "faints". The episodes last less than 1 minute, he has slightly blue lips, becomes flaccid and falls, and afterwards he is fine. He has often injured himself or cried just before an episode.

What is the most likely diagnosis?

- A Epilepsy
This is a seizure provoked by crying.
- B Arrhythmia
This is a seizure provoked by crying. Arrhythmias in small children that have previously been healthy is very rare.
- C Vasovagal syncope
This is a seizure provoked by crying. Vasovagal syncope is rare in small children that have previously been healthy.
- D X** Breath-holding spells
This is a seizure provoked by crying, and Frodes history is typical.

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You are the GP for a 5-year old boy. His mother brings him to the medical centre because he has a lot of stomach ache and appears to be constipated. Clinical examination reveals a slightly overweight boy with a mass in the left fossa. At rectal examination, you can feel a lot of stools in the ampula, and you see that he has a clear anal fissure in the mid-line of the anus. Otherwise you notice that the boy has extremely poor dental health.

What do you do?

- A You refer the boy to the municipal dental services for further follow-up there.
- B X** You start treatment for the constipation, refer to a dentist, and send a Child Concern Notification form to the Child Social Care Services.
There are several factors here that give cause for concern for a failure of care, particularly the poor dental health and the problem of overweight.
- C Based on the prevent duty, you notify the problem to the police.
- D You prescribe Movicol powder to treat the constipation and follow-up with check-ups.

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37

In your job as GP you see a 3-year old girl who has previously been healthy, and who for the last two weeks has had bruises on her arms and legs. She had a fever and cough a few weeks ago. Normal bowel movements and urination. Had one episode of nose bleed 1 week ago. Has since had slight pain in one foot. At examination you find she is in good general health, temp 38.0°C, no respiratory problems, some bruises on her arms and legs. She also has some small red spots on her calves that do not disappear when you stretch the skin slightly. Individual glands in the neck; largest diameter 5 mm. Normal sounds over the heart, lungs and abdomen. No swelling over the ankles/lower legs/knees. Blood tests give the following results:

Test	Result	Ref. range
Hb	8.5 g/dL	10.5-135 g/dL
MCV	79 fL	75-87 fL
MCH	28.8 pg	23.9-34.1 pg
Tot. leukocytes	8.0 x 10 ⁹ /L	4.0-14.0 x 10 ⁹ /L
Granulocytes	0.8 x 10 ⁹ /L	1.5-7.5 x 10 ⁹ /L
Thrombocytes	25 x 10 ⁹ /L	145-390 x 10 ⁹ /L
CRP	<5 mg/L	< 5 mg/L
Creatine	30 µmol/L	23-37 µmol/L

What is the most probable diagnosis?

- A** Idiopathic/immune thrombocytopenic purpura (ITP)
Isolated thrombocytopenia with preservation of the other cell constituents combined with petechia, echymoses and possibly nose bleeds are typical in ITP. Here, however, the other cell constituents are also affected, so leukemia is the most likely.
- B X** Acute lymphoblastic or myeloid leukemia (ALL/AML)
She has bruising and petechia most probably due to thrombocytopenia. She has normochromic/normocytic anaemia and neutropenia, i.e. pancytopenia. In addition, bone pain and moderately swollen glands. These are clear indications of acute leukemia. Not everyone with leukemia has an obvious hepatosplenomegaly at debut.
- C** Henoch-Schönlein/allergic purpura (HSP)
HSP is an acute vasculitis that gives a rash, skin haemorrhage, affects the joints (often swollen ankles/feet), gastrointestinal symptoms (stomach ache/vomiting), frequently affects the kidneys, never thrombocytopenia. The symptoms match poorly with those typical for HSP.
- D** Hemolytic uremic syndrome (HUS)
As a rule preceded by gastroenteritis and then often, but not always, with bloody diarrhoea. Rarely such pronounced thrombocytopenia, but generally clear (haemolytic) anaemia, and elevated creatine. The clinical picture refutes HUS.
-

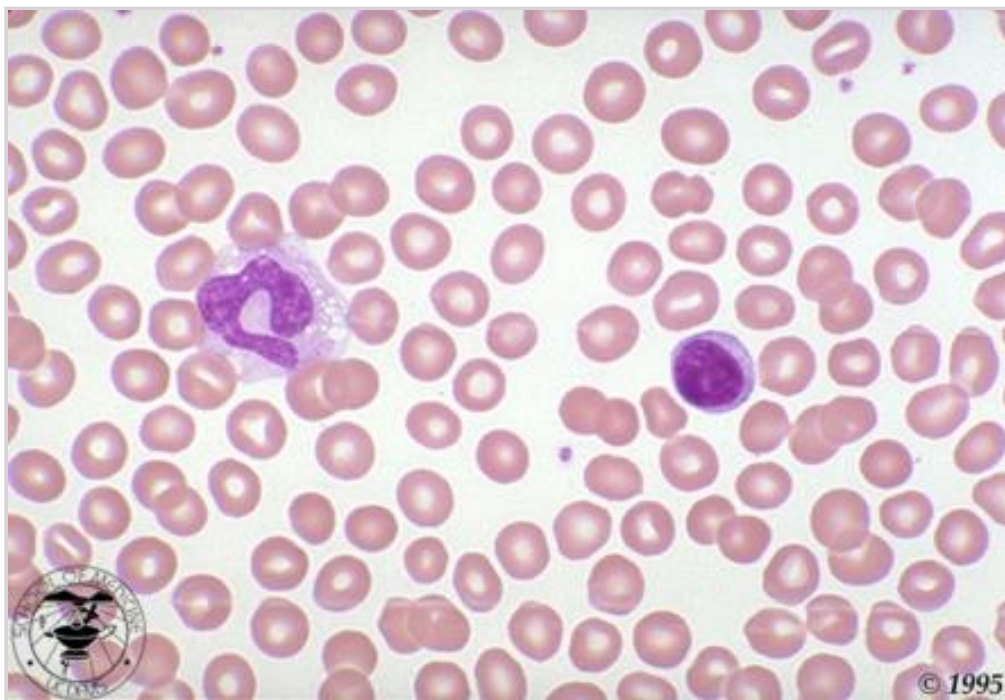
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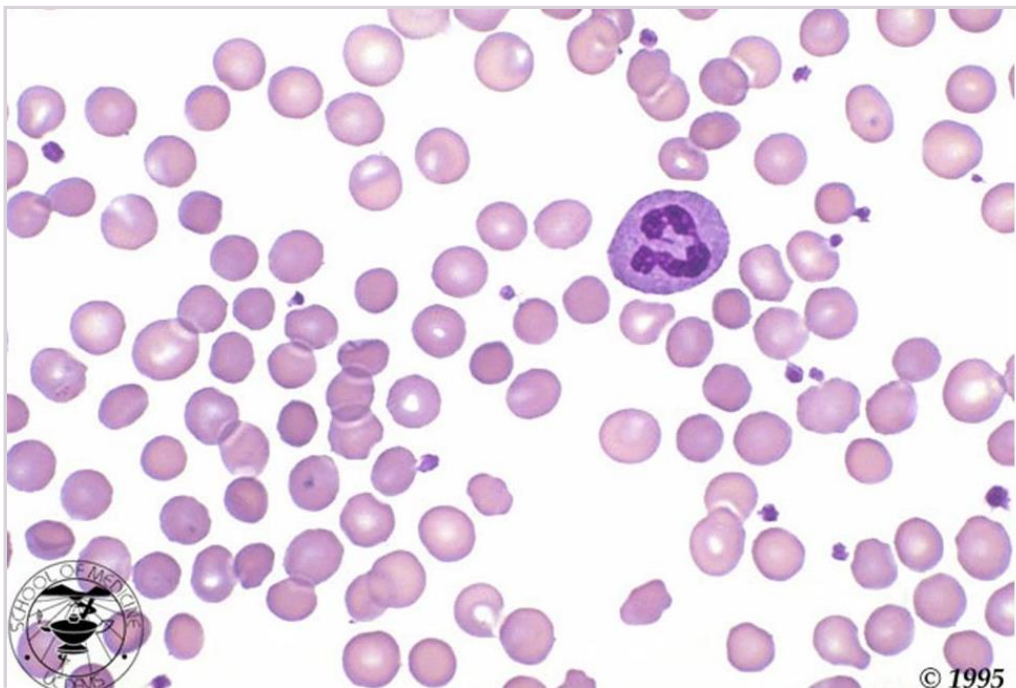
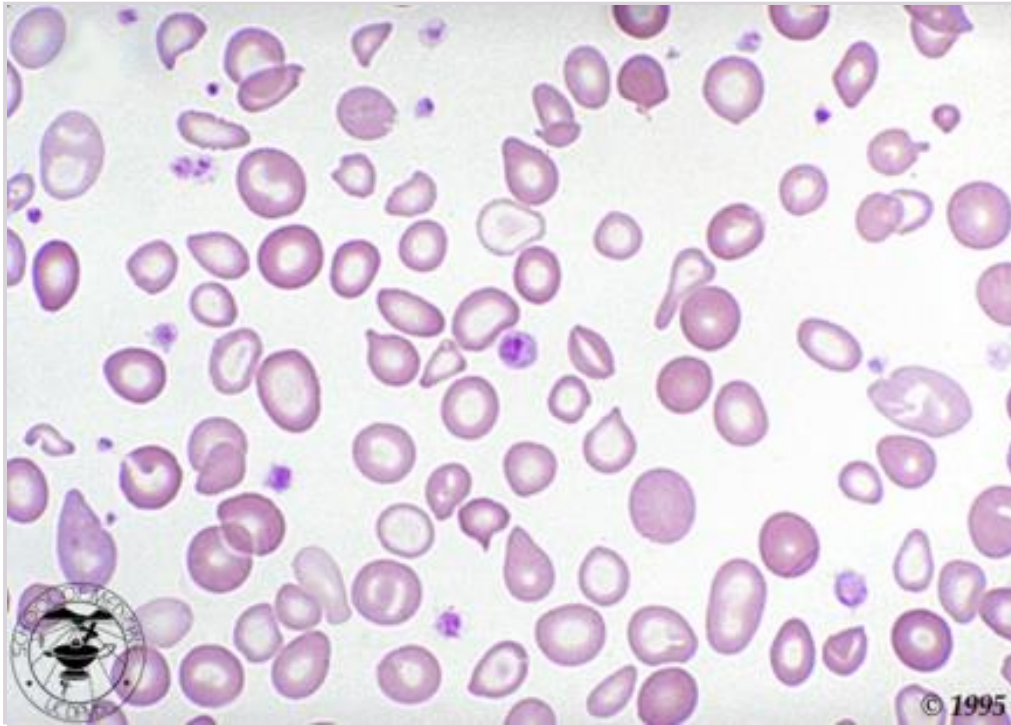
38

Below you can see an image of a peripheral blood smear from three people (children).

Which combination of conditions/disease is the most correct?

(The order of the answers is random in relation to the order of the images)





- A X** iron deficiency anaemia, hereditary spherocytosis, normal blood smear
The first/uppermost image shows erythrocytes with normal size, stain saturation (chromasia) and shape, as well as a normal lymphocyte and a monocyte. The second/middle image shows anisocytosis, polychromasia and poikilocytosis, compatible with iron deficiency. The third/lowermost image shows spherocytes of which many cells lack central pallor, compatible with hereditary spherocytosis
- B** hereditary spherocytosis, normal blood smear, sickle cell anaemia
C normal blood smear, thalassemia, hereditary spherocytosis
D iron deficiency anaemia, thalassemia, sickle cell anaemia

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39

You are working as the first on-call at the hospital. A 2-week old baby arrives with an acute problem in the abdomen. The baby has been in pain for the last 24 hours and has bile-coloured vomit. Which diagnosis do you suspect based on these clinical symptoms?

- A Constipation
Incorrect answer.
- B X** Volvulus/malrotation
Correct answer. In volvulus, the intestines rotate around themselves causing an acute obstruction. The obstruction is located below the bile duct (ductus choleductus) resulting in the yellow-coloured vomit.
- C Gastroenteritis
Incorrect answer. Yellow-coloured vomit is not likely with gastroenteritis
- D Pyloric stenosis
Incorrect answer. Pyloric stenosis is characterised by retching and vomiting, most often as projectile vomiting.

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40

Emma, 3 years old, sees you as her GP for a throat infection with fever. She has previously not had murmurs over the heart, but now you hear a cardiac murmur. You suspect Still's murmur. What findings would support your suspicion of Still's murmur?

- A The murmur is high frequency
Still's murmur is low frequency.
- B The murmur is strongest over the back
Still's murmur is generally strongest precordially.
- C Easily palpable groin pulses
Faint groin pulses can indicate coarctation of the aorta and is a rare congenital condition. This means that, in general, groin pulses will be palpable in most types of congenital heart conditions and therefore cannot be used to confirm/refute Still's murmur.
- D X** The murmur disappears when changing position
Still's murmur typically disappears with a change in position, particularly extending the back.

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41

You are in the swimming hall when you witness that Per, 3 years old, is rescued from the bottom of the pool. He has been there for about 2 minutes and is lifeless. You see that the lifeguard calls 113. You go to start CPR. What is the first action you do?

- A Perform the Heimlich manoeuvre
This manoeuvre is of no use in the CPR algorithm.
- B Start 30 cardiac compressions
In children (and particularly here) respiratory stop is the most common cause of lifelessness, and ventilation has priority.
- C Dry the skin and start warming
Time should not be spent on this; rescue breaths are the most effective action.
- D X** Start 5 rescue breaths
In accordance with the CPR algorithm for a lifeless child

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42

There is a higher incidence of brain injuries in premature babies than term babies. One common injury is Periventricular Leukomalacia or PVL.

What exactly is PVL?

- A Necrosis of several areas of the brain
Incorrect answer
 - B X** Necrosis of the white matter
PVL is a brain injury in premature babies with necrosis (softening) of the white matter localised to the highly sensitive periventricular areas. PVL is a strong predictor for later development of cerebral palsy
 - C Necrosis of grey matter
Incorrect answer
 - D Necrosis of basal ganglia
Incorrect answer
-

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43

Kurt was admitted after three days with diarrhoea. Clinically, he is about 5% dehydrated and weighs 19 kg at admission. How much fluid in total do we anticipate he will need the first 24 hours if we do not need to take into account any ongoing loss and he receives isotonic dehydration?

- A 2400 ml
Weight must be calculated as before dehydration: here calculated as 19 kg with a 5% loss of 19
 - B 1830 ml
here calculated based on weight 19 kg with maintenance requirements 1950 + acute rehydration 20 ml/kg
 - C 1900 ml
1500 maintenance + initial rehydration 20ml/kg
 - D X** 2500 ml
weight 20 kg: maintenance 1500 ml + 5% loss = 1000 ml
-

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44

Which of these intestinal microbial pathogens typically cause voluminous, watery and non-bloody diarrhoea?

- A *Campylobacter*
Acute watery diarrhoea, often bloody after a few days.
 - B X** *Vibrio cholerae*
Causes acute watery diarrhoea with rapid development of dehydration
 - C *Entamoeba histolytica*
Parasite that invades the colonic mucosa and causes profuse bloody diarrhoea
 - D *Shigella*
Watery diarrhoea in the acute phase, but after a few days development of stomach pains and bloody, mucous stools
-

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45

A baby is born prematurely in week 24. After discharge from the Newborn Intensive Care Unit, the baby should, in accordance with the national guidelines, be followed-up in the specialist healthcare services in addition to the primary healthcare services.

When should the first interdisciplinary assessment be performed in the specialist healthcare services?

- A Immediately after discharge
Incorrect answer
 - B At 1 year corrected age
 - C X** At 3 months corrected age
Prematurity must be corrected up until 2 years' old. The first interdisciplinary assessment must, in accordance with current national guidelines, take place at 3 months corrected age
 - D At 3 months chronological age
Incorrect answer
-

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46

An otherwise healthy 4-year old girl was examined at a routine check-up at the health station. No murmurs had been heard previously. Clinical examination in a sitting position revealed a grade 2/6 high frequency continuous humming sound over the left upper sternal border which was also audible over the medial end of the left clavicle. The murmur disappears when she turns her head to the right and when she is lying flat.

What is the most probable diagnosis?

- A X Left-sided venous hum
Fits best as the murmur disappears after a change of position
- B Persistent ductus arteriosus
The murmur does not normally disappear after changing position
- C Perimembranous VSD
The murmur does not normally disappear after changing position

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47

10-year old boy, previously healthy. Over the last 8 days has had a worsening cough without phlegm production, fever and listlessness. Examination by the doctor shows him to be pale, listless but not seriously debilitated. T_p 38.5, respiratory rate 28/minute. Normal BP and pulse. Individual crackling sounds are heard over both lungs basally over the back. No suppression. CRP 50 mg/L (ref: <5 mg/L).

Which microbe do you think has most probably caused the infection?

- A Streptococcus pneumoniae
Pneumococci normally cause a more acute sickness history and higher CRP increase than in this case
- B X Mycoplasma pneumoniae
His age, the long sickness history and the clinical findings with relatively low CRP values indicate a mycoplasma infection
- C Respiratory syncytial virus
A pure viral infection with a sickness history as described is not so common in this age group

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48

Which of the following diseases in children is characterised by haematuria, renal failure and sometimes mild oedema?

- A Kawasaki's disease
- B Haemolytic-uremic syndrome
- C X Acute nephritic syndrome
- D Nephrotic syndrome

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49

Erik (10 years old) has asthma and hay fever. He uses inhalation steroids daily and a beta-2-agonist as needed. In spite of this, over the last 4 weeks he has had symptoms with coughing at night, and he cannot manage more than the first 15 minutes of football training because he gets so short of breath. How should you now proceed with the drug treatment?

- A Give a week's course of penicillin
- B Supplement with teofyllamin
- C X Supplement with a leukotriene antagonist
- D Supplement with antihistamine

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50

Jørgen is 2 months old and previously healthy. He has a fever and takes very little milk when breastfeeding. At the hospital after a day's illness he is listless and pale, sleeps most of the time, but can be woken. The anterior fontanelle is not tense, he does not have neck or back stiffness, capillary filling time is 3 seconds, pulse 170/minute, tp 38.8 Celsius rectally, no rash, respiration rate 45/minute, no subcostal retractions, normal conditions at auscultation of the heart and lungs, normal palpation of the abdomen, normal findings at examination of the mouth, throat, ears and limbs. Spinal puncture reveals no cells and normal glucose and protein levels in CSF.

Which of the diseases in the answers below is the most probable?

- A Purulent meningitis
- B X** Urinary tract infection
- C Acute bronchiolitis
- D Primary encephalitis
- E Bacterial pneumonia

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51

A 65-year old man has attended a 4-week height training camp in Kenya (he also visited Mombassa on the coast for a short trip) and when returning home to Trondheim he took part in a marathon race. The day after the race he handed in a urine sample to the laboratory at the health centre because his urine has been "dark" after returning to Trondheim. He celebrated achieving a good position in the marathon with a special meal yesterday evening. Urine dipstick is positive for blood.

Which of the following differential diagnoses must be excluded in this patient?

- A Kidney stones, malaria, cancer of the bladder
 - B Malaria, bile duct obstruction, kidney stones
 - C Cancer of the bladder, exertional haemoglobinuria, bile duct obstruction
 - D X** Exertional haemoglobinuria, malaria, cancer of the bladder
- Malaria can cause haemolysis, a marathon can cause haemolysis, and cancer of the bladder must always be excluded if blood is visible in urine.*

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52

Patients with a low risk of prostate cancer should be followed with active surveillance to reduce treatment-related side effects. Which side effects are the most serious with radical treatment of prostate cancer?

- A Lymphatic oedema and fatigue.
 - B X** Urine leakage, erectile dysfunction and dysuria.
- Radical surgery can cause urine leakage and radical radiotherapy can cause dysuria and loose stools. Both treatments can cause erectile dysfunction. Medication treatment for metastatic disease causes hot flushes, and fatigue and loss of sexual desire.*
- C Erectile dysfunction and loss of sexual desire.
 - D Anal soiling, urine leakage and hot flushes

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53

A man in his thirties is seeing you because of a swelling in the scrotum. He says that it is uncomfortable when he stands for any length of time and that it is most pronounced on the left side. He has no signs of infection and says that he has had the problem for almost a year. You find an irregular swelling on the left side which retracts when the patient lies down.

What is the most probable diagnosis and how should this be investigated further?

- A Spermatocele, does not need further investigation.
 - B X** Varicocele, ultrasound of the upper and lower urinary tract.
- Varicoceles are dilated veins which on the left side drain into the renal vein. Pathology in the testicular vein causes varicoceles in the scrotum, a feeling of heaviness, and discomfort, mostly when standing. One should exclude a tumour in the kidney on the left side using ultrasound; treatment is with coiling.*
- C Cancer of the testis, phone the on-call urologist for an emergency assessment.
 - D Hydrocele, referral to a urologist.

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54

You see a young man, 29 years old, in your office who is worried about a lump in his right testis and has diffuse discomfort in the testicle. You examine him and find a change about the size of a pin-head in the upper pole. Non-tender at palpation. Otherwise the testes feel normal. What do you do?

- A X** You reassure the patient saying this is probably just a small, harmless change but to be on the safe side you are referring him for ultrasound of the scrotum.
Patients can have a tumour in the testis that is not palpable and, in this age group, one should not hold back with referring for ultrasound if the patient has discomfort.
- B** Refer the patient for investigation at the hospital the following day with ultrasound scrotum, CT abdomen and thorax and tumour markers.
There is little suspicion of a tumour in this case, so such thorough investigations are not indicated in the first round. Ultrasound of the testis is sufficient.
- C** You reassure the patient saying this is not cancer, but only a small calcification in the tunica that surrounds the testis. You explain that further investigations are not necessary.
The patient also has discomfort in the testis, and one should therefore not hold back with referring for an ultrasound.
- D** Refer the patient to Urology Outpatients for further investigations with ultrasound.
Ultrasound of the testes must be done by a radiologist if it is part of investigations for a tumour.

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55

You have referred a 70-year old woman for CT of the urinary tract after a painful episode that you presume is due to kidney stones. The patient was effectively treated with analgesics. The results of CT show that the patient has an 8 mm stone in the distal ureter on the left side. There are no signs of hydronephrosis.

What should you do?

- A** You refer the patient for admission as emergency help due to the risk of obstruction affecting kidney function. Even though there are no symptoms at the moment, it is important to prevent damage to the kidney.
Admission as an emergency is only indicated if the patient has pain and a fever.
- B** You consider that such a small stone has passed spontaneously and that further action is not necessary.
An 8 mm stone is quite large and does not normally pass spontaneously, but can do so.
- C** You contact the patient by phone and ask whether the patient has any symptoms. If the patient is well, no further investigations are necessary.
The stone can still be present and cause obstruction and possibly kidney damage without symptoms in the patient.
- D X** You inform the patient about the CT results. If the patient doesn't have any symptoms, order a new CT in a few weeks to see if the stone has passed spontaneously.
It is correct to investigate further even if the patient doesn't have symptoms. If the stone is still present at the second CT, the patient should be referred to the Urology Department for further treatment.

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56

There are several reasons why men experience erectile dysfunction and impotence. These can include psychological factors such as poor self-esteem, divorce and depression. What are the most common reasons for erectile dysfunction?

- A** Injury to the neurovascular bundle after pelvic surgery.
- B** Disruption of the hormone balance and neurological diseases.
- C X** Diabetes and cardiovascular disease.
Diabetes gives arterosclerosis which gives the earliest symptoms in the small arteries such as those for the corpora spongiosa.
- D** Trauma affecting the spinal cord and diabetes

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57

A 60-year old woman comes to the health centre because of severe pain in her right side radiating out to the right groin. She has not had this type of pain previously. You interpret the condition as an acute attack of renal stones.

Which of the investigations listed below is the most relevant to confirm your diagnosis?

- A X** Urine dipstick
90% of patients will have microscopic/macrosopic haematuria which, together with the classic symptoms, will most often give the correct diagnosis.
 - B** Calcium
Is rarely elevated in cases of kidney stones.
 - C** Creatine
Creatine is not necessarily changed during a kidney stone attack. It is often temporarily elevated in cases with obstruction. Not as suitable for distinguishing between causes of the pain.
 - D** Fist percussion test (bankeømhet) over the costovertebral angle on the relevant side
Does not really help to distinguish between kidney stones and other cause.
-

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58

A young woman aged 20 sees the doctor because of diffuse pain in her lower abdomen and a burning sensation when urinating. You attend the patient, examine her and find tenderness in the lower abdomen at palpation. Urine sample reveals 3+ blood and 3+ white blood cells, nitrite pos. The patient is afebrile.

What should you do?

- A** Start treatment with antibiotics and order CT of the urinary tract without contrast to reduce the dose of radiation.
CT of the urinary tract is not indicated. CT without contrast is used if kidney stones are suspected. The patient does not have symptoms of this.
 - B** Order blood tests, take a urine sample for bacteriological culture and 3-phase CT of the urinary tract because the patient has microscopic haematuria. Start treatment with antibiotics for urinary tract infection.
CT must not be performed on young women with microscopic haematuria because of the radiation hazard.
 - C** Start treatment with antibiotics, send a urine sample for bacteriological investigation, order ultrasound of the abdomen to exclude other pathology.
In the case of a simple cystitis, it is not necessary to send a urine sample for bacteriological investigation nor are supplementary investigations such as ultrasound or CT necessary if the symptoms disappear after treatment and the haematuria stops.
 - D X** Send the patient home with a prescription for antibiotics. Ask her to contact her GP with a new urine sample when the course of treatment is finished.
Here you can assume that the patient has an acute lower urinary tract infection that can be treated without further investigation in the first instance. Check the urine to see whether the haematuria has gone.
-

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59

Kristine (25), previously healthy, underwent 3-phase contrast CT of the urinary tract which revealed a 3 cm solid tumour in the lower right renal pole. No regionally enlarged lymph nodes. CT thorax and skeletal scintigraphy were normal. Renography has revealed equal renal function on both sides. S-creatinine is normal. Ultrasound-guided biopsy of the tumour showed adenocarcinoma (renal cell carcinoma).

What treatment should the doctor recommend?

- A** Radiotherapy of the lower half of the right kidney and peri-aortal lymph nodes at the renal hilus level
Radiotherapy is not used in the primary treatment of localised renal cell carcinoma due to poor efficacy
- B X** Resection of the lower right renal pole
Resection of solitary renal cell carcinomas with diameter <4.0 cm gives just as good survival/cure as radical nephrectomy, i.e. removal of the entire kidney. Moreover, peri- and post-operative complications are the same for renal resection and nephrectomy.
- C** Radical nephrectomy right side with right-sided retroperitoneal lymph node dissection
Radical nephrectomy alone would be a good option, but there is no indication for retroperitoneal lymph node dissection as this has not been shown to improve survival.
- D** Radical right-side nephroureterectomy
Radical nephroureterectomy is used for urothelial renal pelvis cancer, but not localised renal cell carcinoma/adenocarcinoma.
- E** 6 courses of chemotherapy (docetaxel)
Chemotherapy is not used in the primary treatment of localised renal cell carcinoma due to poor efficacy

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60

A 73-year old man has had type 2 diabetes for 20 years. He had a cardiac infarction 3 years ago, and is overweight with a BMI 32. He uses Metformin 500 mg x 2, ACE inhibitor Lisinopril 20 mg x 1, betablocker SeloZok 100 mg x 1, Simvastatin 20 mg x 1 and Albyl E 75 mg x 1. He now attends for his annual doctor's check-up. BP is 164/93, otherwise normal organ findings.

Lab tests:	Reference range:
Hb 13.4 g/dl	13.4-17.0 g/dl
creatinine 138 micromol/L	< 105
eGFR 46	> 90
Na 139 mmol/L	137-145 mmol/L
K 4.8 mmol/L	3.6-4.4 mmoml/L
fasting glucose 8.3 mmol/L	4.0-6.0 mmol/L
HbA1c 7.3%	4.3-5.6%
cholesterol 4.4 mmol/L	3.9-7.8 mmol/L
u-stix: albumin 3+, all other neg	
u-ACR: 123 mg/mmol	< 3 mg/mmol

What is the correct course of action and why?

- A** Add insulin to his metformin to improve control of his blood glucose
For multimorbid elderly patients, HbA1c should not be below 7%. According to the new Norwegian guidelines from Helsedirektoratet, HbA1c in the elderly with low GFR (<45 ml/min/m2) can be maintained at <8.5%.
- B X** Add a calcium antagonist or thiazide to reduce his blood pressure and thereby the risk of further cardiovascular disease
In cases of established kidney injury in diabetes (here in the form of albuminuria and reduced GFR) there is a very high risk of cardiovascular disease. This risk can be reduced somewhat with better control of the blood pressure. (ref.:KDIGO Clinical Practice Guideline for the Management of Blood Pressure in Chronic Kidney Disease)
- C** Discontinue the ACE inhibitor due to impaired renal function and start other antihypertensive treatment such as a calcium antagonist.
Incorrect; beneficial with RAAS blockade in albuminuria.
- D** No change to his medication as he is adequately managed in relation to his age and comorbidity
Incorret, his blood pressure is too high.

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61

A 27-year old man was diagnosed with type 1 diabetes about 7 years ago. He is slim and in good shape, but has only sporadically attended for check-ups with the doctor. As today's check-up he is in good general health, BP 136/83, fasting glucose 9.3 and HbA1c 7.9. Urine dipstick gives the following results:

u-creatinine: 4.67 mmol/L	
u-albumin/creatinine ratio: 15.0 mg/mmol	ref: 0-3 mg/mmol
u-glucose: neg	ref: neg
u-albumin: +	ref: neg
u-blood: neg	ref: neg
u-leukocytes: neg	ref: neg
u-nitrites: neg	ref: neg
u-albumin: 70 mg/L	ref: 0-25

Control urine sample confirmed the findings.

Which assessment is the most correct:

- A X** He has moderately elevated albumin in his urine (microalbuminuria). Improved glycaemic control could reverse the urine findings
By definition, moderately elevated albumin/microalbuminuria. This indicates the onset of diabetes injury primarily caused by hyperglycaemia. Improvement of glycaemic control could reverse the finding.
- B** He has severely elevated albumin in the urine (macroalbuminuria). Improved blood pressure control could reduce cardiovascular disease
- C** He has severely elevated albumin in the urine (macroalbuminuria). The cause of this must be investigated further
- D** He has severely elevated albuminuria in the nephrotic range. Improved blood pressure control could reduce cardiovascular disease

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62

A 40-year old woman has diabetes mellitus type 2. She takes a high-dose ACE inhibitor and her blood pressure is 132/75. In addition she takes metformin 1000mg x2. Today's lab results show the following: HB 13.6 g/dl (12.5-15.5), K 3.9 mmol/l (3.5-5.0), cholesterol 4.8 mmol/l (3,3-6,9), HDL cholesterol 1.5 mmol/l (1,0-2,7), creatine 119 umol/l (45-90), glucose 9.1 mmol/l (3.5-6.5), HbA1c 7.3% (<5.7), urine albumin/creatinine ratio 15 mg/mmol (<3).

What is the most correct treatment option and assessment of the situation?

- A There is a high risk of progression (low eGFR and high albuminuria) so one recommends supplementing with long-acting insulin to give maximum control of blood glucose.
- B Metformin should be reduced to 500mg x2 due to impaired renal function
- C Metformin should be reduced to 500mg x2 because of the reduced renal function, and the patient should start on a DPP4 analogue (e.g. Trajenta)
- D X** The situation is almost optimal; no change is recommended
The patient has diabetic nephropathy, but very low albuminuria and BP. The recommended HbA1c level is down at 7.0, but not necessarily much lower. The situation is optimal. There is no need to reduce metformin before eGFR <45; in this case, eGFR is 50

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63

A 78-year old man is admitted as an emergency due to 10 hours' moderate acute stomach pains. He has diabetes and takes furix 20 mg x1 due to mild heart failure. BP 115/70 and heart rate 95/min. The registrar in the Surgical Department wants to perform an acute CT abdomen. Blood samples taken on arrival are relatively unchanged from the last check-up:

Hb: 13.1 g/dL	ref: 13.4 - 17.0 g/dL
K: 4.1 mmol/L	ref: 3.5 - 4.4 mmol/L
Ca: 2.15 mmol/L	ref: 2.15 - 2.51 mmol/L
creatinine: 110 µmol/L	ref: 60 - 105 µmol/L
carbamide: 5.1 mmol/L	ref: 3.5 - 8.1 mmol/L
u-dipstick, albumin: 2+	ref: neg
u-dipstick otherwise negative	

What is the most correct assessment?

- A X** CT should be postponed 4-5 hours so that the patient can be rehydrated well with saline as the risk of contrast nephropathy is high
Renal function is only moderately reduced, but the patient has very elevated albuminuria which increases the risk of acute renal injury. In addition, he is somewhat dehydrated and has diabetes which increase the risk.
- B CT can be performed immediately because there is a low risk of acute contrast nephropathy and good indication.
- C CT can be performed immediately because there is negligible risk of acute contrast nephropathy.
- D CT should be cancelled and replaced by ultrasound of the abdomen as the risk for contrast nephropathy is very high.

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64

A 40-year old woman is diagnosed with hypertension. BP is 150/70 at the last 3 check-ups. She does not have diabetes. She is otherwise healthy and takes no medications. Lab tests give the following results:

Hb 13.7 g/dL (ref: 12.5-15.5 g/dL), K 4.5 mmol/L (ref: 3.5-5.0 mmol/L), Cholesterol 5.1 mmol/L (ref: 3.3 - 6.9 mmol/L), HDL cholesterol 1.5 mmol/L (ref: 1.00 - 2.70 mmol/L), creatine 85 μ mol/L (ref: 45-90 μ mol/L), uric acid 380 mmol/L (ref: 150-370 mmol/L).

In addition, urine tests show u-Albumin/creatinine ratio 51 mg/mmol (ref: <3 mg/mmol)
What is the most correct answer in regard to type of medication and treatment goal?

- A Calcium channel blocker and BP <140/90
- B ACE inhibitor and BP <140/90
- C Calcium channel blocker and BP <130/80
- D X** ACE inhibitor and BP <130/80
due to severe albuminuria want a lower BP limit and use of ACE inhibitor

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65

A 55-year old man has known nephrosclerosis (hypertensive renal injury). He is being treated with an ACE inhibitor and has a BP 135/70. He is otherwise healthy. Most recent lab tests show s-creatinine 110 μ mol/L (ref: 60 - 105 μ mol/L) and u-Albumin/creatinine ratio 21 mg/mmol (ref: < 3 mg/mmol).

What is the most correct answer for how often such a patient should have a check-up?

- A Twice a year because the renal function is moderately to severely impaired but there is only moderately increased albuminuria.
- B Twice a year because the renal function is only slightly to moderately impaired but there is severely increased albuminuria
- C Three to four times a year because the renal function is moderately to severely impaired combined with a severely increased albuminuria.
- D X** Once a year because the renal function is only slightly to moderately impaired combined with a moderately increased albuminuria.
This is in accordance with the guidelines. It is also possible to work this out based on the reasons given in each answer option.

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66

A 35-year old man has had a known low grade glomerulonephritis over the last 5 years. He now wants an appointment because he is worried about the prognosis. You have access to the following relevant lab information:

Sept. 2015: s-creatinine 125 μ mol/L (H), u-Albumin/creatinine ratio 17 mg/mmol (H)

Oct. 2017: s-creatinine 148 μ mol/L (H), u-Albumin/creatinine ratio 12 mg/mmol (H)

What is the most correct description of his progression/risk of progression?

- A This is a slight to moderate reduction in renal function (1-3 ml/min per year), but the minimally increased albuminuria indicates a good prognosis
- B X** This indicates a rapidly falling renal function (>5 ml/min per year)
This corresponds to eGFR of 64 and 52 ml/min/1.73m², i.e. a drop of 12 ml/min over two years which is a lot. We have emphasised on several occasions that relatively low s-creatinine levels such as these here means a change that is a much greater drop in GFR than one would instinctively think.
- C This represents no significant change in renal function (< 1 ml/min per year)
- D This is a slight to moderate reduction in renal function (1-3 ml/min per year)

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67

IgA glomerulonephritis is one of the most common types of glomerulonephritis.
How does it most commonly manifest in these patients?

- A X** Microscopic haematuria with varying degree of proteinuria
- B Nephrotic syndrome with pronounced peripheral oedemas
- C Rapidly progressing glomerulonephritis with development of renal failure
- D Nephritic syndrome with treatment-requiring hypertension

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68

What is the most common histopathology findings in patients with acute renal injury?

- A Acute interstitial nephritis (AIN)
 - B Acute glomerular necrosis (AGN)
 - C X** Acute tubular necrosis (ATN)
 - D Focal segmental glomerulosclerosis (FSGS)
-

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69

Which clinical findings are typical for a patient with nephrotic syndrome?

- A High BP (>160 mmHg systolic), normal GFR and oedemas
 - B X** Normal BP, normal GFR and oedemas
 - C High BP (>160 mmHg systolic), reduced GFR (<60 ml/min) and oedemas
 - D Normal BP, normal GFR obvious ascites and oedemas
-

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70

A 62-year old man has type 2 diabetes and takes metformin 1 g x2 as well as a sulfonylurea (SU) medication. At the last doctor's check-up he has an estimated GFR 49 mL/min/1.73m², HbA1c 9.1% and fasting blood glucose 10.7 mmol/L. The doctor recommends switching to insulin. How is this done in compliance with the Norwegian guidelines for treating diabetes from 2016?

- A Start with rapid-acting insulin at each meal time. Metformin and SU are discontinued.
Not correct. The guidelines from 2016 (which are harmonised with international guidelines) recommend starting with intermediate-acting (NPH) insulin at night, generally 10-12 units. The dose is titrated every 3rd to 4th day according to the fasting glucose (FPG). Metformin is continued in this patient at a reduced dose due to the impaired renal function. If eGFR is 45-59 ml/min/1.73 m², the metformin dose should be max 500 mg X 2.
- B Start with intermediate-acting insulin morning and evening. Metformin and SU are discontinued.
Start with intermediate-acting insulin morning and evening. Metformin and SU are discontinued.

Not the best answer. The guidelines from 2016 (which are harmonised with international guidelines) recommend starting with intermediate-acting (NPH) insulin at night, generally 10-12 units. The dose is titrated every 3rd to 4th day according to the fasting glucose (FPG). Metformin is continued, but in this patient at a reduced dose due to the impaired renal function. If eGFR is 45-59 ml/min/1.73 m², the metformin dose should be max 500 mg X 2.

- C X** Start with intermediate-acting (NPH) insulin at night. Metformin is reduced to 500 mg X 2. SU is discontinued.
Correct answer. The guidelines from 2016 (which are harmonised with international guidelines) recommend starting with intermediate-acting (NPH) insulin at night, generally 10-12 units. The dose is titrated every 3rd to 4th day according to the fasting glucose (FPG). Metformin is continued, but in this patient at a reduced dose due to the impaired renal function. If eGFR is 45-59 ml/min/1.73 m², the metformin dose should be max 500 mg X 2. Sulfonylurea medications result in an increase in endogenous insulin production and is not as a rule given together with exogenous insulin (increased risk of hypoglycaemia).
 - D Start with rapid-acting insulin at each meal time and intermediate-acting NPH insulin at night. Metformin and SU are discontinued.
Not correct. The guidelines from 2016 (which are harmonised with international guidelines) recommend starting with intermediate-acting (NPH) insulin at night, generally 10-12 units. The dose is titrated every 3rd to 4th day according to the fasting glucose (FPG). Metformin is continued in this patient at a reduced dose due to the impaired renal function. If eGFR is 45-59 ml/min/1.73 m², the metformin dose should be max 500 mg X 2.
-

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71

An otherwise healthy woman aged 43 (weight 60 kg) has symptoms of low metabolism and the following lab results:

	Patient's test results	Reference range
Free thyroxine (FT4)- 1st sample	9.1 pmol/L	11.6 - 19.1 pmol/L
Free thyroxine (FT4) – 2nd sample	8.5 pmol/L	11.6 - 19.1 pmol/L
Thyroid Stimulating Hormone (TSH)- 1st sample	5.65mIE/L	0.24 - 3.78 mIE/L
Thyroid Stimulating Hormone (TSH)- 2nd sample	8.83 mIE/L	0.24 - 3.78 mIE/L
Anti-thyroid peroxidase (anti-TPO)	> 1300 IU/mL	≤ 35 IU/mL

Her GP decides that she should receive treatment for autoimmune hypothyroidism. How should this treatment be started?

- A** NeoMercazole 5 mg X 2 per day.
Not correct. NeoMercazole is an antithyroid agent that inhibits production of T4 and T3 in the gland. Such treatment would exacerbate the patient's hypothyroidism and is definitely considered to be incorrect treatment.
- B** Levothyroxine (L-T4) 100 ug and T3 (triiodothyronine) 20 ug per day.
Not correct. Combination treatment with T3 and T4 is not generally recommended in European and American guidelines. As of 2017, there is no evidence that such combination treatment is better than levothyroxine alone. Otherwise healthy patients with hypothyroidism are normally started at a full substitution dose of levothyroxine 1.6 ug/day, i.e. in this patient around 100 ug X 1. T3 has a short half-life and often gives large variations in hormone level during a 24-hour period, with too high a level a few hours after ingestion; the patient then often has symptoms of overdose (restlessness, palpitations, etc.). Moreover, in this patient (weight 60 kg) a total day dose of 120 ug is too high a starting dose.
- C X** Levothyroxine (L-T4) 100 ug per day.
Correct answer. The Norwegian national guidelines in endocrinology recommend that otherwise healthy patients with hypothyroidism start with a full substitution dose of levothyroxine 1.6 ug/day, i.e. in this patient about 100 ug X 1. T4 has T/2 of about 1 week, and a daily dose eventually gives relatively even serum levels.
- D** Armour thyroid extract 60 mg daily.
Not correct. Combination treatment with T3 and T4 is not generally recommended in European and American guidelines. This product contains too much T3 relative to T4 because Armour (thyroid extract from pigs) 60 mg tablets contain about 38 ug T4 + 9 ug T3 per 60 mg thyroid extract, i.e. T4/T3 ratio about 4: 1.

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72

A 52-year old man underwent surgery for a non-functional pituitary adenoma 7 years ago. 5 years ago he was treated with a gamma knife for a residual tumour that had grown a little since the operation two years previously. At the annual routine check-up he says that he feels his life's a drag.

Blood tests reveal that TSH, free T4, cortisol, prolactin, FSH, LH and testosterone all lie within the reference range.

Which of the following diagnostic measures should be done first (are best suited to clarify the situation/ make a satisfactory diagnosis)?

- A** Order a glucose load with determination of growth hormone and IGF-1 determination in a basal sample to exclude acromegaly secondary to radiotherapy of the pituitary 5 years previously.
- B** Tell the patient that everybody gets older, and that this is a natural development that affects many patients who have undergone surgery on the pituitary.
- C X** Order an insulin hypoglycaemia test with determination of growth hormone, ACTH and cortisol
- D** Order blood tests for determination of adrenal gland antibodies

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73

A 30-year old mother with type 1 diabetes mellitus is concerned that her daughter will also get the disease.

How great is the risk that her daughter will get the disease at some point during her lifetime?

- A** 50%
Incorrect. Even though there is a genetic component to type 1 diabetes, it is a polygenic inheritance and children have a low risk of the disease compared to the risk that can be seen with monogenic diseases.
- B X** 3%
Correct. Even though there is a genetic component to type 1 diabetes, it is a polygenic inheritance and children have a low risk of the disease compared to the risk that can be seen with monogenic diseases.
- C** 75%
Incorrect. Even though there is a genetic component to type 1 diabetes, it is a polygenic inheritance and children have a low risk of the disease compared to the risk that can be seen with monogenic diseases.
- D** 30%
Incorrect. Even though there is a genetic component to type 1 diabetes, it is a polygenic inheritance and children have a low risk of the disease compared to the risk that can be seen with monogenic diseases.

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74

When blood glucose in a person without diabetes drops below about 4.5 mmol/L, the person's own (endogenous) insulin production is suppressed. When the blood glucose drops to about 3.8 mmol/L, hormonal counterregulation starts to prevent a further drop in blood glucose.

Which four hormones are the most important in this hormonal counterregulation of hypoglycaemia in people who do not have diabetes?

- A** Glucagon, thyroxine, cortisol and growth hormone
Incorrect. Thyroxine has no known role in the hormonal counterregulation of hypoglycaemia. Adrenaline is lacking here, and adrenaline is an important counterregulatory hormone.
- B** Adrenaline, cortisol and growth hormone
Incorrect. Glucagon is lacking and glucagon is the most important counterregulatory hormone in people who do not have diabetes. Gastrin has no known role in the hormonal counterregulation of hypoglycaemia.
- C X** Glucagon, adrenaline, cortisol and growth hormone
Correct answer. Glucagon, adrenaline, cortisol and growth hormone are the most important counterregulatory hormones in people who do not have diabetes.
- D** Glucagon, adrenaline, thyroxine and gastrin
Incorrect. Neither gastrin nor thyroxine have a known role in the hormonal counterregulation of hypoglycaemia. Cortisol and growth hormone are missing, and these both have an important role in hormonal counterregulation of hypoglycaemia.

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75

A woman aged 52 has the following blood test results:

	Patient's test results	Reference range
Free thyroxine	15.3 pmol/L	11.6 - 19.1 pmol/L
Thyroid Stimulating Hormone (TSH)	2.74 mIE/L	0.24 - 3.78 mIE/L
Anti-thyroid peroxidase (anti-TPO)	>1300 IU/mL	≤35 IU/mL
Anti-TSH receptor antibody (TRAS)	1.0 IU/L	<1.5 IU/L

Does this woman have an increased risk of developing metabolic disease and, if so, which disease is she at most risk of developing?

- A** Yes. She has an increased risk of Grave's disease (autoimmune hyperthyroidism).
Incorrect. Anti-TPO is elevated only in about 50-80% of patients with Grave's disease (autoimmune hyperthyroidism), but is elevated in >90% of patients with autoimmune hypothyroidism (Hashimoto's thyroiditis). In contrast, TSH receptor antibody (TRAS) is elevated in >90% of patient's with autoimmune hyperthyroidism (Grave's disease) and only in 10-20% of patients with autoimmune hypothyroidism (Hashimoto's thyroiditis).
- B X** Yes. She has an increased risk of autoimmune hypothyroidism (Hashimoto's thyroiditis).
Correct answer. Anti-TPO is elevated in >90% of patients with autoimmune hypothyroidism (Hashimoto's thyroiditis). Elevated levels of anti-TPO have been shown to give an increased risk of developing autoimmune hypothyroidism. Anti-TPO is also elevated in 10-20% of healthy women.
- C** No. She has no increased risk of developing metabolic disease.
Incorrect. Elevated levels of anti-TPO have been shown to give an increased risk of developing autoimmune hypothyroidism (Hashimoto's thyroiditis).
- D** Yes. She has an increased risk of subacute thyroiditis.
Incorrect. Subacute thyroiditis is not an autoimmune disease but is probably caused by a virus; and thyroid autoantibodies are not elevated with this disease.
-

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76

A 23-year old woman has had type 1 diabetes (T1D) for 15 years. One year ago her HbA1c was 7.9% (reference range 4.3 - 5.6%). Over the last year she has lost weight from 60 kg to 57 kg. She has reduced her insulin dose due to frequent hypoglycaemic episodes, and now uses 24 units insulin/day (i.e. 0.42 units/kg/day) but continues to have hypoglycaemic episodes. HbA1c is now 6.7%. BP is 105/60. She is not pregnant. What is the most probable cause of her tendency to hypoglycaemia, and which tests are most important to check?

- A** Insulinoma; check insulin C-peptide and concomitant plasma glucose.
Incorrect. Insulinoma is a very rare condition (1 per 1,000,000/year) and normally occurs in an older age group (average age at diagnosis is 50 years (Grant CS. Best Pract Res Clin Gastroenterol. 2005). Patients with insulinoma (high insulin C-peptide, low plasma glucose) often put on weight due to increased insulin secretion and an increased need for food high in carbohydrates.
- B X** Addison's disease; check serum cortisol and adrenocorticotropin hormone (ACTH).
Correct answer. Patients with T1D have an increased risk of other autoimmune diseases, including autoimmune thyroid disease and Addison's disease (primary adrenal failure). In primary adrenal failure, the cortisol level is low (resulting in a considerable risk of hypoglycaemia in T1D) and ACTH is elevated.
- C** Primary hypothyroidism (Hashimoto's thyroiditis); check free thyroxine (FT4) and thyroid stimulating hormone (TSH).
Incorrect answer. Patients with T1D have an increased risk of other autoimmune diseases, including autoimmune hypothyroidism (Hashimoto's thyroiditis). However, this disease does not result in an increased risk of hypoglycaemia, and patients with hypothyroidism generally put on weight.
- D** A haemoglobinopathy with false-low HbA1c; perform haemoglobin electrophoresis.
Incorrect. it is true that some haemoglobinopathies (for example sickle cell anaemia with abnormal haemoglobin, HbS) can interfere with the HbA1c analysis in some assays, and give a false-low Hba1c, but does not affect the blood glucose.
-

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77

Which (only one) of the following blood glucose lowering drugs can **not** result in severe hypoglycaemia (low blood glucose) when it is given as the only blood glucose lowering medication?

- A intermediate-acting insulin analogue
Incorrect. Intermediate-acting insulin analogues can give severe hypoglycaemia if the dose is not adjusted for activity and food intake
 - B X** metformin tablets
Correct. Metformin increases insulin sensitivity and can not give severe hypoglycaemia when it is given as the only blood glucose lowering medication
 - C Sulfonyl urea tablets
Incorrect. Sulfonyl urea tablets stimulate insulin release and can give severe and long-term hypoglycaemia particularly in patients with impaired renal function
 - D rapid-acting insulin analogue
Incorrect. Rapid-acting insulin analogues can give severe hypoglycaemia if the dose is not adjusted for activity and food intake
-

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78

Uptake of radioactive iodine or technetium (which is taken up as iodine) in the thyroid can give useful information in the diagnosis of thyroid conditions. Which type of uptake is typical for thyroiditis?

- A X** Low and homogenous uptake
Injured cells in the thyroid are not able to take up and concentrate iodine
 - B Normal and non-homogenous uptake
 - C High and homogenous uptake
 - D High and non-homogenous uptake
-

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79

You are the Registrar in the Surgical Department and see a patient in the Outpatient Clinic. A 40-year old woman has been diagnosed with breast cancer after a mammography. The tumour is said to measure 5 cm. There are suspicious findings in the axilla. Which treatment should you recommend to her?

- A Consider medical treatment first, with anti-estrogen tablets and radiotherapy.
 - B Consider medical oncology treatment first with chemotherapy and radiotherapy.
 - C Removal of the breast together with the lymph nodes in the axilla, then chemotherapy.
 - D X** Consider medical oncology treatment first, and then removal of the breast and lymph nodes in the axilla.
The best answer
-

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80

You see the patient in the GP's office. She is a 23-year old woman, previously healthy, no children, takes the contraceptive pill. There are no special diseases in the family. She says that over the last few weeks she has felt a tumour in the left breast. It is perhaps a little tender. There is nothing noticeable at visual examination. At palpation there is a well-defined tumour slightly laterally and up in the right breast. There are no other findings. What do you think this is, and what actions would you take?

- A Breast cancer; would refer to the Breast Diagnosis Centre (BDS).
Breast cancer is highly unlikely at this age
 - B X** Fibroadenoma; would refer to ultrasound.
Best answer
 - C Infection with abscess; would try a course of antibiotics.
There are no signs of infection.
 - D Breast cancer; would requisition mammography at a private institute where there is a short waiting time.
For suspected breast cancer, which is highly unlikely at this age, patients should be referred to BDS.
-

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81

As part of a follow-up for haematuria, a 3-phase-CT-scan is performed. What does this consist of?

- A CT images with intravenous contrast after 80 seconds, 5 minutes and 10 minutes
- B X** CT images without contrast + with intravenous contrast after 80 seconds and 10 minutes
- C CT images with intravenous contrast + oral contrast + rectal contrast
- D CT images with oral contrast after 80 seconds, 5 minutes and 10 minutes

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82

A 9-month old boy is admitted with renal failure and suspected posterior urethral valve. Which imaging diagnostic method is optimal to display an urethral valve before an operation?

- A MRI urinary tract
- B Urography
- C X** Miction cystography
The images would have to be taken during miction and therefore only a voiding cystourethrogram gives a definite diagnosis and clear image findings. Due to renal failure he must not have intravenous contrast at this time. Ultrasound can display a dilated proximal urethra if he passes urine during the investigation and one can thus get a suspicion of whether a posterior urethral valve is present, but this does not provide precise images.
- D X-ray overview of the urinary tract

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83

Petter, 1-year old, has a fever and symptoms of an airways infection. He is debilitated and is admitted to the Paediatric Clinic. X-ray of the thorax reveals atelectasis of the right mid-lobe, small areas of atelectasis also in the other lung sections and areas with hyperinflated lung tissue bilaterally. What is the most probable diagnosis?

- A Lobar emphysema
- B Pulmonary sequestration
- C X** Bronchiolitis
Correct. A virus gives a generalised lung disease while the others are localised. They also give a completely different picture at X-ray of the thorax.
- D Lobar pneumonia

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84

A 65-year old man visits his GP because he believes he has problems seeing in parts of his visual field. When you examine him using the Donder's test, you suspect that he has lost vision in his peripheral vision bilaterally. Which imaging investigation is the most sensible to start with?

- A X** MRI (Magnetic Resonance Imaging) of the pituitary gland
- B MRI (Magnetic Resonance Imaging) of the basal ganglia
- C CT (Computer Tomography) of the pituitary gland
- D CT (Computer Tomography) of the basal ganglia

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85

A 4-month old child comes to the Paediatric emergency ward with a high fever and symptoms of respiratory tract infection. An X-ray of the thorax front is taken. Here, consolidation of the right upper lobe without loss of volume is seen. At which of the following conditions is this a typical finding?

- A Pneumothorax
- B X** Lobar pneumonia
- C Bronchiolitis
- D Foreign body

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86

Meningiomas can grow into the sella tursica.
Why can this sometimes cause prolactinaemia?

- A Meningiomas can sometimes contain prolactin-producing cells
 - B X** Meningiomas can compress the pituitary stalk so that inhibiting substances from the hypothalamus cannot reach the adenohypophysis
 - C Compression of the adenohypophysis can stimulate the pituitary tissue to increased production of all pituitary hormones
 - D Meningiomas and prolactinomas often occur together
-

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87

An 18-year old boy has been diagnosed with cancer of the testis by ultrasound. The treating doctor is concerned about the presence of remote metastases (we are not asking here about lymph node metastases, but remote metastases).

Which investigations are then the most important?

- A MRI spine and pelvis
 - B X** CT Thorax
Metastases from testicular cancer are most frequently found in the lungs; CT of the thorax is therefore the most important investigation for demonstrating remote metastases
 - C Ultrasound of the liver
 - D Skeletal scintigraphy
-

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88

A 65-year old woman has been shown to have something that is described as "a 2 cm oval mass with high density values" in the left kidney.

How, using CT, can one decide whether this is a benign cyst or solid malignant tumour ?

- A This can be done by comparing the density of the mass with the density of normal kidney tissue
 - B X** It is necessary to take a series before and after contrast to show contrast uptake
Malignant tumours will take up contrast. Simple cysts will not take up contrast. Simple cysts will often have low density values (HU <30), but there are hyperdense cysts (with higher density/HU) which then require 1) contrast uptake investigations, or 2) ultrasound (hyperdense cysts will appear as ordinary cysts on US). The question asks how this can be clarified using CT.
 - C It isn't possible; another modality is necessary in addition to CT
 - D A series is necessary in the arterial phase to show blood vessel supply
-

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89

A micturating cystourethrogram (MCUG) in a 4-year-old boy shows grade 5 vesicoureteral reflux. Which treatment is most commonly used?

- A Fluid and diet restrictions
Incorrect.
 - B Diuretics
Incorrect. This would damage the kidney's concentrating ability at an early stage.
 - C Infection prophylaxis
Incorrect. This would not prevent pressure-associated injury to the kidney.
 - D X** Operative treatment
Grade 5 reflux gives renal injury due to high pressure (which in the long run could damage the kidney completely), as well as an increased risk of ascending infections.
-

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90

Developmental disorders cover a wide range of conditions with varying aetiology.

What term is used about disorders in several areas of development/organs with one aetiological cause?

A Association

B X Syndrome

Used for disorders in several developmental areas/organs with one aetiological cause

C Sequence

D Malformation

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91

At routine ultrasound, fetal hydrops is diagnosed in a pregnant women in gestation week 18. The woman says that recently she briefly had a fever, joint pains and rash.

What would you suspect based on this information?

A Pre-eclampsia

B Placental abruption

C X Parvovirus infection

Fever, rash and joint pains are symptoms compatible with a parvovirus infection. In pregnant women, the parvovirus can cross the placental barrier and attack the pre-stages of the red blood cells which would cause anaemia in the fetus and result in fetal hydrops.

D Chorioamnionitis

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92

The ovaries can be the starting point for a number of tumours with varying origin.

Which category of ovarian cancers is the most common?

A Metastases

B X Epithelial tumours

65-70% of all ovarian tumours are epithelial and comprise 90% of malignant ovarian tumours.

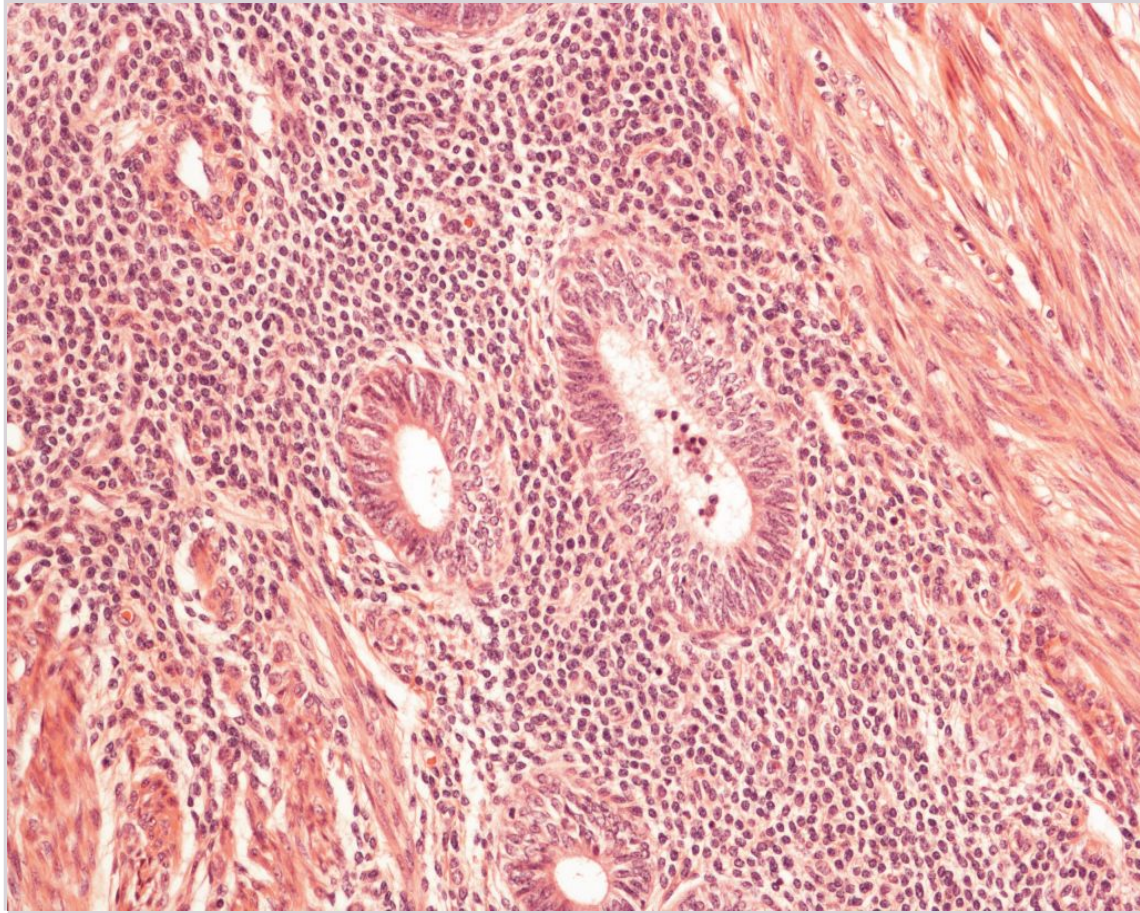
C Sex cord stromal tumours (tumours arising in the support cells)

D Germinal cell tumours

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93

A 50-year old woman has undergone surgery for an adenocarcinoma in the endometrium. At macroscopic investigation, changes were noticed in the myometrium. The image below is from such a change in the myometrium (HE, 200x magnification).



What is the diagnosis?

- A Complex hyperplasia with atypical cells
- B Endometriosis
- C Adenocarcinoma
- D X** Adenomyosis

Endometrial glands can be seen without atypical cells surrounded by endometrial stroma in the myometrium.

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94

Different developmental disorders can have their origin in a common cause, for example, a stenosis distally in the urethra could cause bladder dilatation, hydroureter and hydronephrosis.

Which term is used when a focal defect causes such a cascade of several other developmental disorders?

- A Malformation
- B X** Sequence

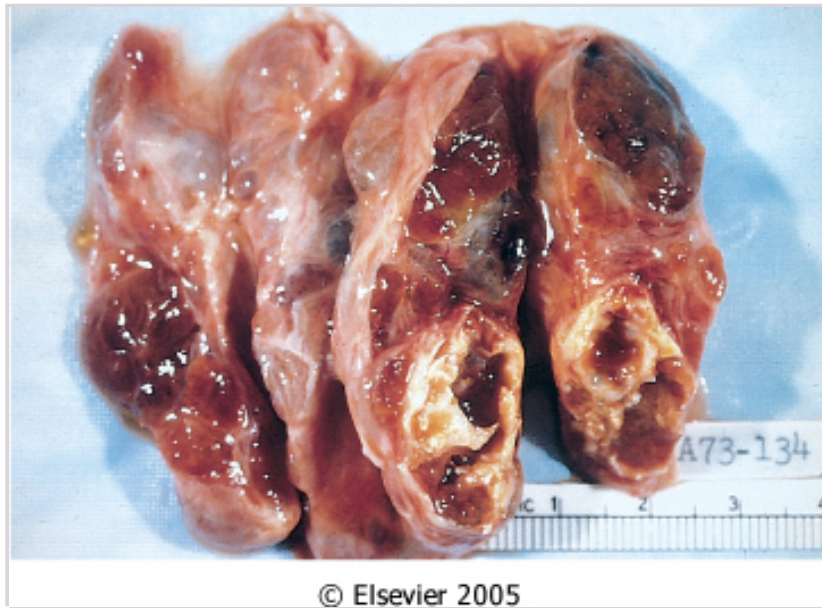
This is the term used when a focal defect causes such a cascade of several other developmental disorders.

- C Syndrome
- D Association

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95

A patient has had her entire thyroid gland removed surgically due to goiter because fine-needle biopsy has not been conclusive in regard to malignancy. The image shows the cut surface of the gland.



What is the most probable diagnosis?

- A Follicular carcinoma
- B Graves' disease
- C X Colloid nodular goiter (adenomatous nodules)
- D Hashimoto's thyroiditis

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96

The picture shows a kidney removed at an autopsy and with a random finding.



What type of change can you see?

- A Polycystic kidney disease
 - B X** Renal cysts
 - C Adenoma
 - D Renal cell carcinoma
-

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97

A 55-year old woman has had a tumour in her left breast surgically removed. Histopathologic examination shows an invasive ductal carcinoma, histopathologic grade 1.

Which histopathologic criteria does the pathologist consider when determining the tumour's grade?

- A Number of apoptoses in 10 visual fields, proliferation index and degree of nuclear pleomorphism
 - B Tumour size, hormone receptor status and proliferation index
 - C X** Number of mitoses in 10 visual fields, percentage of tubular structures and degree of nuclear pleomorphism
 - Correct answer*
 - D Tumour size, lymph node metastases and invasion of overlying skin
-

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98

Urine dip agar ("Uricult") has been used a lot for diagnosing urinary tract infections, particularly at the GP offices.

What is the most important reason this method continues to be used?

- A It has a good sensitivity for detection of anaerobic bacteria.
It is not suitable for culture of anaerobic bacteria.
 - B It offers a good option for assessing the total number of bacteria strains.
It is less suited to assessment of the number of bacteria strains than culture in a dish (generally chromogenic agar) in the laboratory because there the volume seeded is better defined and the bacteria are streaked into a larger area so that the growth is not so dense.
 - C X** It ensures good survival of the bacteria in the urine sample.
This is the primary advantage with dip agar. In particular, if the transport time to the laboratory is long, the use of dip agar will better ensure survival of the bacteria compared to transport of the urine sample, with or without addition of boric acid.
 - D It provides a good assessment of the amount of bacteria in the various bacteria strains.
Dip agar gives a less accurate assessment of the amount of bacteria than quantitative seeding and culture in a dish in the laboratory.
-

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99

What most strongly indicates that a urine culture finding represents contamination and not an actual infection?

- A The patient has an impaired immune system
 - B More than two days have passed from sample collection to sample streaking
 - C X** There is growth of two different strains of bacteria
 - D The sample has been taken as a mid-stream sample
-

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100

On call in the Medical Department, you see a young man who has been a backpacker in India. He has a fever, headache and stomach ache. There is no evidence of malaria, and your specialist asks you to investigate and treat the patient as though he has typhoid fever.

Which investigation and treatment are the most correct for you to choose for this patient?

- A Take a blood sample for a Widal test, and start treatment with antibiotics.
 - B X** Take a blood sample for culture and start treatment with antibiotics.
Blood culture is used to diagnose typhoid fever. Typhoid fever is a fatal disease and, if suspected, the patient must be started on antibiotics (ciprofloxacin or ceftriaxone).
 - C Take a stool sample for culture of pathogenic intestinal bacteria and wait with antibiotics.
 - D Take a bone marrow aspirate sample for culture, and wait for the results before starting antibiotics.
-

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101

A 25-year old woman is admitted to hospital with fever and suspected malaria after a round trip to East Africa. Tests reveal 8% parasitemia with Plasmodium falciparum. Which antimalarial drug would you use to treat this patient?

- A Lariam (mefloquine)
 - B Chloroquine
 - C Malarone (atovaquone+proguanil)
 - D X** Artemisinin
The patient probably has falciparum malaria with high parasitemia (>5%) and must be admitted for intravenous treatment. First line is artemisinin i.v. as this is the most effective drug and also gives the fewest side effects
-

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102

What type of fungi are seen in connection with imported infectious diseases in Norway?

- A X** Histoplasma capsulatum.
Is only seen in Norway as an imported infectious disease.
 - B Candida glabrata.
Yeast fungi, also widespread in Norway.
 - C Aspergillus fumigatus.
Most frequent cause of invasive mould fungi infections; infection via mould fungi spores, also in Norway.
 - D Trichophyton rubrum.
Frequent cause of dermatophyte infections, also in Norway.
-

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103

A 45-year old man returns from South Africa where he has been on safari. One week after returning he develops a fever (39.5°C), a maculopapulous rash and swollen lymph glands in the groin. He says he had several tick bites, and the doctor finds several lesions with black crusts after probable tick bites on his legs.

Which diagnosis is the most probable?

- A Dengue fever
 - B Malaria
 - C X** Rickettsia infection
Rickettsia are gram-negative bacteria that are transferred by tick bites. Tick bites typically give black crusts (eschar). The symptoms are often fever, rash and swollen lymph glands. The disease often develops after trips to Africa and Asia, and particularly in connection with safaris and trips into the countryside.
 - D Typhoid fever
-

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104

You are the GP for a 55-year old woman. She was recently admitted for investigations at the hospital and was diagnosed with heart failure (NYHA class II). She was started on a low dose of ACE inhibitor. The discharge summary advises that further dose increases should be supervised by the GP. She does not use diuretics.

Which blood tests are important to monitor before you increase the dose of ACE inhibitor in this patient?

A X Sodium, potassium and creatinine

ACE inhibitors will indirectly inhibit the production of aldosterone. This results in increased retention of potassium and increased loss of sodium and water. Both sodium and potassium must therefore be checked. High potassium in particular is important, as this can cause disturbance of the heart rhythm (it also provides some information on renal function). Creatinine must also be checked (particularly in people whose creatinine level is already high) because in rare cases renal failure can develop or, more often, exacerbation of an existing renal failure.

Source: Forfang m.fl.: Kardiologi - klinisk veileder, 3. utg. (2015), s. 200. Read about ACE inhibitors in Legemiddelhåndboka: <http://legemiddelhandboka.no/Generelle/63166?expand=1>

B Potassium, haemoglobin and NT-proBNP

The last two are not particularly relevant in this context.

C Potassium, HbA1c and glucose

The last two are not particularly relevant in this context.

D Sodium, ALAT and gamma-GT

A slight increase in liver values can often be seen with ACE inhibitors but are not important to check as liver failure is not a concern with this medication (but it's good to know if you need to check liver values for other reasons).

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105

A patient who has recently had a cardiac infarction receives the following medication as secondary prophylaxis: Acetylsalicylic acid (ASA), clopidogrel, a beta blocker, an ACE inhibitor and a statin. At follow-up a few weeks later, the patient complains of an irritating dry cough. There are no signs of infection and you suspect the cough may be a side effect of the medication.

Which medication is the most likely cause of the dry cough?

A Beta blocker

B Acetylsalicylic acid

C X ACE inhibitor

Dry cough is a known, common side effect when taking ACE inhibitors. Source: Norsk legemiddelhåndbok "L8.6.1 Angiotensinkonverterende enzymhemmere [L8.6.1 Angiotensin-converting enzyme inhibitors]" published: 25.01.2017

D Statin

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106

Patients with high blood pressure often have heart disease in addition, such as AV-block grade II, heart failure, angina pectoris or atrial fibrillation.

Which of these conditions is a contraindication for use of betablockers?

A Heart failure

Only pronounced, decompensated heart failure is a contraindication (ref. Norsk Legemiddelhåndbok). Betablockers are otherwise standard therapy in heart failure.

B Atrial fibrillation

C Angina pectoris

D X AV-block grade II

This is the only condition of those listed that is a contraindication for the use of betablockers, see for example Norsk legemiddelhåndbok.

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107

Benzodiazepines can reduce anxiety and restlessness and improve sleep. These effects can be useful; for example, in palliative treatment of terminally ill cancer patients. Some of these terminally ill patients can present additional challenges by having impaired renal function.

What consequences would this have for the dosing of benzodiazepines?

- A Benzodiazepines are themselves nephrotoxic and should therefore not be used in patients with impaired renal function or, if necessary, only at low dosage
- B Benzodiazepines are partly metabolised in the liver and partly excreted unchanged; the dose must therefore be reduced, normally to about half of a standard dose in moderately impaired renal function
- C X** Benzodiazepines are inactivated by metabolism in the liver; therefore, there is normally no need to reduce the dose in patients with impaired renal function
Correct answer
- D Most benzodiazepines have active metabolites that are critically dependent on renal excretion, these medications should therefore normally not be used in impaired renal function

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108

What effects would you expect if you give a medication that blocks alpha-1 adrenergic receptors?

- A X** Vasodilation and relaxation of the urethral sphincter
Adrenergic stimulation gives vasoconstriction and increased tension in the urethral sphincter, and is primarily mediated via alpha-1-receptors. Giving a medication that specifically blocks these receptors would give the opposite effect.
- B Vasoconstriction and relaxation of the urethral sphincter
- C Vasoconstriction and increased tension in the urethral sphincter
- D Vasodilation and increased tension in the urethral sphincter

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109

You work in a psychiatric department. A 24-year old woman was admitted with acute mania a few days ago. She has previously been healthy, in work, has a partner, and uses no medication apart from the contraceptive pill. She responded well to acute treatment which included parenteral risperidone, diazepam and valproate (valproic acid). The time has now come to consider oral maintenance treatment.

Why should this patient *not* receive maintenance treatment with valproate (valproic acid)?

- A Because valproate can cause thrombocytopenia, and women younger than 30 years of age have been identified as a high risk group
It is correct that valproate can cause thrombocytopenia, but this side effect is neither woman- nor age-specific, and affects men to the same extent.
- B Because valproate induces the liver enzyme CYP2D6, which with long-term treatment increases the metabolism of risperidone with the risk of treatment failure
No. Valproate is not an enzyme inducer
- C X** Because valproate can cause hormonal disorders such as polycystic ovary syndrome, and because it can be harmful to the fetus
Yes. Valproate can have undesired effects on sex hormones, metabolism and the fetus, and the European Medicines Agency (EMA) recommends that it should be avoided in women of child-bearing age
- D Because valproate, like many other antiepileptic agents, can induce metabolism of contraceptive pills, which with long term treatment could result in diminished efficacy and undesired pregnancy
No, valproate is not an enzyme inducer.

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Testen har 109 oppgaver. Av disse ble 0 oppgaver trukket. Totalt ble det gjort fasitendringer på 0 oppgaver.