

**2016 - IID - MD4041 Engelsk eksamen**  
**Eksamensdato: 2016-05-30**

1

You are the GP for a 16-year old girl who attends with her mother. The mother describes her daughter as having had problems for several years. She has mood swings but most often feels depressed. She has periods of self-harm to manage internal restlessness; she has thoughts of suicide but has never attempted suicide. She is often in conflict with others, but has many friends even though she frequently switches friends and environments.

Which is the most correct diagnostic understanding of the girl?

- A The girl's symptoms are compatible with depressive episodes, and a more specific mapping of symptoms and severity is necessary.
- B X** The girl's symptoms are compatible with development of emotionally unstable personality disorder, and further mapping of personality traits and behaviour is necessary.  
*The girl's behaviour lies outside what can be called normal adolescent behaviour. The symptoms are more extreme and unstable than in a depressive episode. The behaviour is disturbed, but does not correspond to conduct disorder as a diagnosis, the primary traits of which are persistent aggressive and rule-breaking behaviour. She displays unstable personality traits with a high degree of subjective discomfort, that have persisted over some time and which affect her level of functioning and relationships with others. The symptoms are compatible with a developing emotionally unstable personality disorder and necessitate further mapping.*
- C The girl's behaviour is not uncommon for many adolescents, and must be considered to lie within the range of normal adolescent reactions.
- D The girl's symptoms are compatible with a socialised conduct disorder and further mapping of her behaviour and ability to experience guilt is necessary.

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2

Six months ago, a 15-year old girl was raped at school by a boy from her class. For the last 2 months she has had nightmares about the incident, high absence from school, difficulties concentrating at school, she has isolated herself from her friends, has large mood swings and pain and numbness in her left leg.

Is it probable that she has the diagnosis PTSD (Post-traumatic stress disorder)?

- A No, because she does not have flashbacks, anxiety attacks nor is she "on edge".
- B Yes, because she has both problems concentrating and somatic symptoms.
- C No, because she does not have anxiety attacks and the symptoms have lasted less than 3 months.
- D X** Yes, because she has nightmares, avoidance behaviour and loss of ability to function.  
*The girl has been exposed to a trauma and the diagnosis criteria for PTSD are: A. Stressor/trauma B. Re-experiencing (e.g. nightmare) C. Avoidance (e.g. absence from school where the trauma took place) D. Increased physiological response (e.g. concentration problems). For a clinical diagnosis, the stressor criterion must be met and the child must have symptoms of reliving the incident. The research version states that at least one B criterion, one C criterion and one D criterion should be present. ICD-10 requires that the symptoms should have occurred within 6 months of the incident taking place. The diagnosis can be made if the condition has persisted for at least one month with loss of functionality.*

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3

The parents of a 17-month old girl are worried about her. She is different to her older brothers: she is restless, sleeps restlessly, has little eye contact, does not babble and only has non-articulated sounds without understandable words.

Which description/diagnosis is the most probable?

- A X** Autism spectrum disorder  
*The combination of little eye contact and lack of language development, as well as poor regulation/rhythm in activity and sleep indicates autism spectrum disorder. This is outside the normal range, and little eye contact is more than "just" language delay. Lack of stimulation can cause delayed development, but this is less likely because the parents have older children who have developed normally (and that is why they are now worried).*
- B Normal development
- C Lack of stimulation
- D Language delay

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A 7-year old boy runs around, is noisy and loses his things. He is afraid of the dark and has problems falling asleep at night. At school he does not sit still at his place and refuses to do schoolwork. He is restless and interrupts others; he has few friends.

What is the most probable diagnosis?

- A Bipolar disorder  
*Individuals with bipolar disorder have hyperactivity, irritability, increased distractability and irresponsible behaviour as in the combined type ADHD, but they are differentiated by episodes of a reduced need for sleep, racing thoughts and grandiosity. The diagnosis is very rare at 7 years of age.*
- B Post-traumatic stress disorder (PTSD)  
*Some children with PTSD can be agitated, easily frightened, restless and have low concentration, but they will not have the characteristic pattern of hyperactivity and impulsiveness as in combined type ADHD.*
- C X ADHD combined type  
*School children with combined type ADHD have onset of symptoms in nursery school or their first years in school and have symptoms of concentration problems, hyperactivity and impulsiveness which result in a lowered ability to function.*
- D Specific learning disorder  
*Children with specific learning disorder can present with some restless behaviour because they become agitated if they do not understand and/or master the situation, but will not have a corresponding degree of hyperactivity and impulsiveness as in ADHD, or the consequences for friendships.*

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5

You are the GP for a 14-year old girl. She is dutiful, good, and works hard and over the last 5 months has become very thin. Now she has little mimic and joy, weighing 40 kg after a weight loss of 8 kg (present BMI: 15.6).

Which additional information do you need to clarify whether she meets the diagnostic criteria for Anorexia nervosa (ICD-10)?

- A Whether she has previously followed her weight percentile. and whether the requirement for a duration of more than 6 months has been met.  
*Stable growth curves give additional information, but here the weight reduction is sufficient regardless; there is no criterion for duration (2 criteria are lacking).*
- B Whether the BMI has previously been unchanged, and whether she has been depressed and had an endocrine imbalance prior to the weight loss.  
*The BMI increases with age up until age 17-18, and therefore changes around her age. Whether depression was present previously does not prevent the diagnosis AN. The presence of an endocrine imbalance before the weight loss is an indication for broader somatic investigations, but that is also the case in AN (2 criteria are lacking).*
- C Whether she likes to make food for others but not for herself; has an obsessive type of behaviour and her periods have stopped.  
*Making food for others and obsessive behaviour can be typical but are not diagnostic criteria (2 criteria are lacking).*
- D X Whether the weight loss has been self-induced, whether she considers herself fat when she is thin and whether she has an endocrine imbalance.  
*The requirement for weight loss (that results in a weight < 85% of the expected weight for age and height) is met by the information in the case history. Other criteria for a diagnosis are: Self-induced weight loss, disturbed body image perception, i.e. feels fat when thin, and endocrine imbalance which the girl demonstrates by lack of periods. Only this answer covers all three additional criteria for the diagnosis.*

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A boy, 10-years old, has involuntary rapid movements in his face; blinking and twitching at the corner of his mouth. This started when he was 6 years old, and has got worse. The last 2 years he has had periods with sudden vocalizations: clearing his throat and loud shouts. At the times when he makes these sounds, he does not have any facial movements. Over the last few weeks there has been less throat clearing and shouting than previously.

Does he meet the diagnostic criteria for Tourette's syndrome (ICD-10)?

- A No, because motor and vocal tics must occur together.
- B No, because he had only motor tics before the age of 7.
- C No, the noises have become less frequent and only the criteria for chronic motor tics are met.
- D X** Yes, because he has had multiple motor and vocal tics over 12 months.  
*The diagnosis requires multiple motor tics and at least one vocal tic for at least 1 year, with onset before the age of 18; remission not longer than 2 months; and there is no requirement that the motor and vocal tics have to occur at the same time. Because he has both motor and vocal tics with a duration of more than 1 year, he meets the criteria for Tourette's syndrome.*

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7

You are the GP for a 6-year old boy with special interests. He is very taken with insects, knows the names of many species and likes to talk about them but with few words and in simple sentences. In play situations, he often sits by himself and studies insects. You observe motor clumsiness. His contact with you is formal and with little expression of emotion. You wonder if he could have Asperger's syndrome.

Which cardinal traits must be present in this condition?

- A Moderately-delayed language development, deviating social interaction, motor clumsiness.
- B Stereotypic behaviour, moderately-delayed language development, motor clumsiness
- C Deviating social interaction, special interests, moderately-delayed language development.
- D X** Deviating social interaction, stereotypic behaviour/special interests  
*The correct answer is deviating social interaction and stereotypic behaviour/special interests. Delay of impressive or expressive language is not a criterion. Motor clumsiness is not unusual, but is not a cardinal trait, nor is its presence a requirement to make a diagnosis.*

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8

Girl, 17-years old, has dropped out of the first year of upper secondary education, has used a lot of hash and alcohol, and subsequently heroin. Four months ago she was admitted to hospital after an overdose; is now living in a child welfare institution, but has not yet returned to school. She has poor relationships with the staff and little social interaction: "everybody I know uses drugs". She spends the nights watching TV programmes; is obviously depressed with lack of mimic, feeling tired and unable to sleep: she often has nightmares in which she is alone but being chased. Feels no joy in life. She denies psychosis, hallucinations or thoughts/plans of suicide. She has started seeing a psychologist, feels she gets some help there, and is off drugs. But wants help sleeping.

How can you help her with her sleep problems?

- A You collaborate with the institution and the girl to get a better day rhythm.  
*Not adequate in depression.*
- B Sleep hygiene advice (e.g. removing the PC from the room in the evening, no coffee or tea in the evening) and rhythm therapy to try and get a better day rhythm.  
*Not adequate in depression.*
- C X** Sleep hygiene advice; you consider the sleep problem to be part of the depression and you also propose an anti-depressive that is effective in sleep problems e.g. Tolvon  
*The girl is obviously depressed. Sleep problems (problems falling asleep, waking early) are typical in depression. Psychotherapy alone is not sufficient, and medicine will help both the depression and sleep problems; it will also help her benefit from the psychological counselling and sleep hygiene advice.*
- D Sleeping pills such as Imovane for a short period.  
*Must not be given alone without other measures. Probably contraindicated due to the previous drug misuse.*

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9

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 Medication treatment with SSRI (Selective Serotonin Reuptake Inhibitor)
- B Habit Reversal Training (HRT)
- C Psychodynamic therapy to process negative life experiences
- D 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.*

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10

You are the GP for a 16-year old boy who over the last 2 months has withdrawn from social activities. The last few weeks he has stopped going to school completely, spends a lot of time on the PC, has turned his day upside down and shown strong anxiety reactions when pressured. He appears unkempt, gives little eye contact and answers your questions very vaguely. He shows little joy, says he has many virtual friends and that it is more important to have contact with them than to go to school. What measure would you prioritise as first choice?

- A Start treatment with Melatonin and offer frequent follow-up appointments
- B Start treatment with Fluoxetine (selective serotonin reuptake inhibitor) and offer frequent follow-up appointments
- C Inform that this is not uncommon; give advice about sleep hygiene and offer frequent follow-up appointments.
- D X** Refer to Child and Adolescent Psychiatric Services for further investigation

*These are symptoms and traits that are more extreme than normal, and give a suspicion of an early onset psychotic condition. Referral to CAP is the correct first choice. Indications for Fluoxetine include depression or anxiety, but not negative psychotic symptoms. Melatonin to normalise the day rhythm and frequent follow-up appointments are not adequate if development of psychosis is suspected, for which early diagnosis and treatment are important for the prognosis.*

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11

You are the GP for a boy aged 10 who bullies other children. He gets easily angry, often getting into fights and blames the others for starting it. He has recently started stealing money from his fellow pupils.

Is it probable that he has a conduct disorder?

- A No, because his behaviour is not abnormal at this age.
- B No, such behaviour is often a reaction to being bullied.
- C X** Yes, because he is aggressive and breaks rules.

*Conduct disorder is characterised by consistent aggressive and rule-breaking behaviour in which other people's boundaries and property are not respected. Lack of age-appropriate empathy and understanding of what happens in a conflict situation is common, but the diagnosis cannot be made based on this alone. His behaviour is outside "normal", and whether or not he himself is exposed to bullying is an assumption in this case history.*

- D Yes, because he does not recognize his own contribution to the situation.

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12

Which symptom is most common in women with recurrence of endometrial cancer for which the first line of treatment is removal of the internal reproductive organs and regional lymph nodes?

- A Haemoptysis
  - B Abdominal pain
  - C X Vaginal bleeding
  - D Increasing abdominal girth
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13

Which symptoms/findings are the minimum required to diagnose Polycystic Ovarian Syndrome in a woman?

- A Seldom menstruation (oligoamenorrhea) and considerably elevated levels of s-AMH (anti-Müllerian hormone)  
*Anyway, we must know whether she has clinical or biochemical hyperandrogenism and/or PCO ovaries assessed by vaginal ultrasound.*
  - B Oligoamenorrhea, biochemical hyperandrogenism and PCO-ovaries assessed by vaginal ultrasound  
*This woman has PCOS, but ultrasound is not necessary to make a definite diagnosis.*
  - C X Oligoamenorrhea/oligoanovulation and significant hirsutism (unwanted male pattern hair growth on the body)  
*According to the Rotterdam criteria, at least 2 of the 3 following criteria must be met: 1. Seldom/lack of ovulation; 2. Clinical or biochemical hyperandrogenism and/or 3. PCO ovaries assessed by vaginal ultrasound.  
Correct answer as it meets criteria 1 and 2.*
  - D Significant obesity with male pattern fat distribution, hyperinsulinaemia (pathologic oral glucose tolerance test), acne and hirsutism  
*Anyway, we must know if she has seldom/lack of ovulation and/or PCO ovaries assessed by vaginal ultrasound.*
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14

The husband of a 28-year old woman calls you as the on-duty district GP; his wife is pregnant in week 38. This is her first pregnancy and until now there have been no pregnancy complications. It is night time and she says she has got intense abdominal continuous pain, and her stomach feels hard all the time. Her husband says she is bleeding heavily from the vagina. The couple have a 2-hour drive to the closest Maternity Department.

What do you do as the on-duty district GP?

- A You call the midwife and say it is probably the start of labour and ask her to accompany the couple to the Maternity Department  
*Based on the symptoms and findings it is probably placental abruption; travelling for 2 hours is not the correct action.*
  - B X You contact the 24/7 Emergency services, and ask them to requisition a helicopter for rapid transport to the Maternity Department  
*Based on the symptoms and findings this is probably placental abruption, and she must be sent to the hospital by the fastest method possible.*
  - C You put their minds at rest saying that it most probably is the start of labour. If it is unchanged tomorrow, they can go to the Maternity Department  
*The pain is not constant with contractions, and bleeding with a show is not heavy*
  - D You ask the couple to come back to your GP office tomorrow for further investigations  
*You ask the couple to come back to the surgery tomorrow for further investigations.*
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15

There are 5 examinations that you must always do at the pregnancy check-up in week 36. These are:

- A X** Assess the blood pressure, a urine test strip, symphysis-fundus measurement (fundal height), position and fetal sounds  
*This must always be performed at appointments in the last part of pregnancy.*
  - B** Calculate the BMI and perform an oral glucose tolerance test for those with BMI >27, as well as listening to fetal sounds, assessing position and blood pressure  
*The BMI before pregnancy or at the start of pregnancy is used for assessment.*
  - C** Examine the haemoglobin, the blood pressure, a urine test strip, the symphysis-fundus measurement (fundal height) and listening to fetal sounds  
*Haemoglobin is not obligatory, but it is important to assess the position of the head.*
  - D** Examine the blood pressure and a urine test strip, and perform an ultrasound scan to assess fetal size, fetal sounds and position  
*Ultrasound in the third trimester is not routine in Norway, even though it is recommended in some countries.*
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16

A 16-year old girl comes to your office asking for advice on contraception. She has had regular periods since the age of 12 years. About every other month she has such heavy period pains that she has to stay away from school. She has a boyfriend and says they have had sexual intercourse a few times. What advice would you give the girl regarding her choice of contraception?

- A** You cannot give her any advice on contraception since she is < 18 years old. In such cases the parents or a guardian must always be present  
*Incorrect, the patient is responsible for her own health from the age of 16.*
  - B** The patient should be offered a contraceptive injection  
*Incorrect, contraceptive injections contain high-dose progestins and due to the risk of later developing osteoporosis should not be given before the age of 18.*
  - C X** You offer one of the low-dose monophasic pills  
*Presumably the first choice as this is generally considered the least invasive and simplest method.*
  - D** The patient should be offered a contraceptive patch as this gives higher compliance than oral contraceptives  
*Incorrect, a contraceptive patch are not the first choice due to the somewhat higher risk of thrombosis than with the low dose contraceptive pills.*
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17

A 25-year old woman needs some contraceptive advice. She has never been pregnant and has regular painful periods. She has to stay home from work 1-3 days every month. She has already tried combined oral contraceptive pills, but experience that these pills negatively affect her mood. She has tried the contraceptive implant, but has continuous bleeding with this. Which would be the most correct contraceptive to offer her?

- A** You suggest that her partner should use condoms because there is no other usable options  
*A condom is a very ineffective contraceptive in young, fertile women and results in many unwanted pregnancies!*
  - B** You suggest the progestin only oral contraceptive pill Cerazette, because it does not usually affect mood  
*Cerazette will most probably not help sufficiently with her painful periods.*
  - C X** You recommend a hormonal intrauterine contraceptive device as it can help against dysmenorrhoea  
*This is the first choice in this situation - and there are types that can be used by women who have not given birth (Jaydesse).*
  - D** You recommend the Flexi-T, which is a copper intrauterine contraceptive device for women who have not given birth  
*A copper IUD is not a good idea for a woman who has painful periods, because it will probably increase the dysmenorrhoea.*
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18

Classification of pregnancies is important for planning the pregnancy follow-up. This is the ultrasound image of a twin pregnancy in week 9. How would you classify this twin pregnancy?



**A X** Dichorionic, diamniotic (DCDA)

*A thick septum with placental tissue in the septum. This is typical for DCDA twins. Both amnion and chorion are separate, and the twins will each have their own placenta. The thin membrane around the fetuses is the amnion.*

**B** Impossible to classify with certainty this early in a pregnancy

*This classification is easiest to do in the first trimester.*

**C** Monochorionic, diamniotic (MCDA)

**D** Monochorionic, monoamniotic (MCMA)

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19

You are the on-duty GP. A patient calls you at 2:00 AM. She is a 40-year old woman who is pregnant for the first time in week 26. She contacts you because she hasn't felt any fetal movements over the last week, before then she felt lots of movements. She tells you she has previously been healthy and presents now with no other findings than the absence of fetal movements.

What do you do as the on-duty GP?

**A** You tell her that pregnant women often do not feel signs of life, hence, further examination isn't necessary

*In week 26 of pregnancy, the woman should feel fetal movements.*

**B** You tell her that as long as there is no pain, vaginal bleeding or signs of the waters breaking, she shouldn't worry about the absence of fetal movements

*The absence of fetal movements is important as an isolated symptom.*

**C** You make an appointment with the closest Maternity Department, so that she can come the following morning for an examination

*Cessation of fetal movement with a viable fetus must be investigated immediately.*

**D X** You refer her immediately to the nearest Maternity Department

*At this timepoint the fetus is viable, and immediate examination is necessary.*

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20

You are a GP. A 63-year old woman has an appointment because of vaginal bleeding. She is obese (BMI 32), has diet-managed type 2 diabetes and essential hypertension. She feels healthy and doesn't have any complaints other than the bleeding, which has now stopped. She has given birth to one child. Menopause at the age of 54 years.

At the gynaecological examination you find by inspection slightly atrophic vaginal mucous membranes and a normal uterine cervix. At bimanual palpation, the uterus feels of normally sized and with normal mobility and there are no palpable adnex masses.

Which sample do you collect to investigate the cause of the vaginal bleeding?

**A X** Endometrial biopsy

*Postmenopausal bleeding is endometrial cancer until otherwise proven. An endometrial biopsy will in all probability confirm or reject the diagnosis of endometrial cancer.*

**B** Bacteriology sample from the vagina/uterine cervix

*Bacteriology sample is indicated if vaginitis/cervicitis or a pathologic vaginal flora is present.*

**C** Cervical cytology

*Cervical cytology will only provide information on the status of the cervix/presence of cervical dysplasia. Cervical dysplasia does not give any symptoms.*

**D** Cervical biopsy

*Cervical biopsy is indicated if dysplasia is found by cervical cytology or if macroscopic investigation finds an unclarified lesion on the cervix.*

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21

A 27-year old woman has had diabetes type 1 since childhood. She has a BMI of 22 and is otherwise healthy. She is now pregnant in week 29+4. You are her GP and she comes very upset into your office because she read in a chat room on a website for pregnant women that when mothers with diabetes give birth the baby "gets stuck" on the way out

Which information is the most correct to give her?

**A** When a pregnant woman has diabetes, there is an increased risk that the baby's head will be large relative to the body. The birth can stop in the early phase

**B X** When a pregnant woman has diabetes, there is an increased risk that the baby's body will be large relative to the head. The shoulders can get stuck in the vagina after the head has been delivered

**C** Insulin is a growth factor which means that the fetus has an increased risk of being large. If the patient cuts down the amount of insulin she takes and has a higher blood sugar level, the fetus will not have an increased risk of being large

**D** Only pregnant diabetic women with a high BMI have an increased risk of a large baby (macrosomia). This patient is slim and does not have an increased risk of complications at delivery

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22

A 22-year old woman, with no children, comes to you as her GP because she has had slightly irregular periods over the last 2 months. She uses the combined oral contraceptive pill and says she has got slight pain in her abdomen.

What is the most correct thing for you to do as her GP?

**A X** Perform a urinary HCG-test and a chlamydia PCR-test (vaginal self-test or in urine)

*Reason: If the pregnancy test in urine is negative, the chances that she is pregnant are very small. Then if you suspect a pelvic infection you can start treatment.*

**B** Send her to the Gynaecology Outpatient clinic

*Reason: If the pregnancy test in urine is negative, the chances that she is pregnant are very small. Then if you suspect a pelvic infection you can start treatment.*

**C** Start treatment with oral antibiotics

*Reason: The symptoms can indicate a pelvic infection which should be excluded. If there is the slightest suspicion of a pregnancy-related problem that could be life-threatening, such as extra-uterine pregnancy, this must be excluded first. She could have become pregnant despite the contraceptive pill.*

**D** Switch the combined oral contraceptive pills

*Reason: Pain is not a symptom indicating intolerance of a contraceptive pill.*

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23

The algorithm Risk of Malignancy Index (RMI) based on ultrasound findings, menopause and serum CA 125 values is used to:

- A Differentiate between suitability or non-suitability for primary surgery in ovarian cancer
  - B X** Differentiate between benign and malignant pelvic tumours
  - C Differentiate between various gynaecological cancers
  - D Differentiate between high and low risk for development of complex endometrial hyperplasia to endometrial cancer
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24

A young couple (22-23 years of age) have actively been trying to become pregnant for 1 month. Intercourse frequency is 2-3 times a week. The chance of a successful outcome is not more than 25-30% for this couple.

What is the most probable cause for the success rate not being higher?

- A X** Natural fertility is not higher than this for couples in their early twenties  
*Correct answer, the incidence of genetic deviation in the egg, sperm and embryo is so high that natural fertility will not be higher than this in couples in their early twenties.*
  - B At examination both are testing positive for chlamydia. The woman may therefore have damaged Fallopian tubes
  - C The man has very reduced sperm quality
  - D The couple have a problem with premature ejaculation
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25

In the menstrual cycle there is a complex interaction between the hormones LH and FSH which are secreted by the pituitary, and the hormones oestradiol and progesterone which are formed in the ovary. The endometrium is affected by the fluctuations in these hormones, giving rise to the various phases of the menstrual cycle.

What is the relationship between these hormones during menstruation?

- A During menstruation, FSH is transported via the blood stream and stimulates the follicles in the ovaries to excrete oestradiol  
*Incorrect, in the proliferative phase the granulosa cells are stimulated to produce and excrete oestradiol.*
  - B During menstruation, LH is transported via the blood stream and stimulates excretion of progesterone from the corpus luteum  
*Incorrect, progesterone excretion from the corpus luteum takes place during the secretory phase.*
  - C X** During menstruation all 4 hormones (LH, FSH, oestradiol and progesterone) are low
  - D During menstruation, the corpus albicans is formed and this produces oestradiol  
*Incorrect, this is an atretic and inactive follicle that does not produce hormones.*
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26

A 45-year old woman comes to your GP surgery and wants advice on contraception. She has been pregnant twice previously and had abortions; she does not want children now. She has a partner who has two children from a previous relationship. She does not smoke. Over the last two years, the woman has had somewhat increasing menstrual pain and heavier bleeding during her periods. What advice would you give her with regard to contraception?

- A** The patient should be given a prescription for a monophasic low-dose combined oral contraceptive  
*This is not incorrect, but is not as good an option as the hormonal coil, because it gives an increasing risk of thrombosis with age compared to the hormonal IUCD. Contraceptive pills can also help with dysmenorrhoea and menorrhagia.*
- B** The patient should be advised for her to be sterilized  
*This will not help against either dysmenorrhoea or menorrhagia, but is a safe contraceptive. A poorer option than the hormonal IUCD because it is an invasive measure (generally under anaesthetic and using laparoscopy) which is associated with some risk.*
- C X** The patient should have a hormonal intrauterine device inserted  
*Yes, this is a good contraceptive and it could help her dysmenorrhoea and menorrhagia. Inserting an IUCD is not a problem even if she has not had children.*
- D** The patient should be given advice on contraceptive injections (Depo-Provera)  
*Neither is this incorrect, but is a poorer option than the hormonal IUCD because this is a high dose progestin that can give an increased risk of osteoporosis. It is therefore not recommended to women > 45 years of age.*
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27

What is the most common symptom of endometrial hyperplasia?

- A X** Vaginal bleeding
- B** Pelvic pain
- C** Fever and poor general health
- D** Amenorrhoea
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28

The patient is a 28-year old woman. She is now pregnant in week 34 in her first pregnancy. She is calling you as the Foundation House doctor and is very worried because today she went for a check-up with the midwife who suspects that the fetus is in the breech position. She has now read about breech deliveries and is frightened.

What do you do as the Walk-in Clinic doctor?

- A** You ask her to contact the midwife the next day so that she can repeat the investigation  
*No reason for that, the finding has no consequences.*
- B** You ask her to come to your office the next day where you can carry out an ultrasound  
*The position of the baby in week 34 is of no consequence - so there is no need for unnecessary technical investigations, not even in the primary healthcare services. Peace of mind should build on knowledge and information.*
- C X** You explain to her that at this time point, it does not matter how the fetus is lying, and that the midwife will examine her again in two weeks' time when she has her next appointment  
*The position of the fetus before week 36 is unimportant unless there is the threat of a premature birth.*
- D** You want to put her mind at ease and ask her to call the Maternity Department today to get an ultrasound appointment  
*In week 34, a breech position has no consequences so long as contractions or other factors are not also present. Using specialist health care services for unnecessary investigations is incorrect use of resources. Peace of mind should build on knowledge and information, not unnecessary technical investigations.*
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29

Estimation of due date is important for all pregnant women. However, exact dating is of particular importance for women with pre-term or post-term labors. Which method is the standard in Norway?

- A The crown rump length (CRL) in the first trimester is the standard  
*This is standard in many other countries, but Norway does not offer this first trimester routine ultrasound examination to all pregnant women.*
- B The crown rump length (CRL) at routine ultrasound examination in the second trimester is the most precise method and is used as the standard  
*CRL cannot be measured reliably in the second trimester.*
- C X The due date is estimated based on measurements of the fetal head in the second trimester (biparietal diameter) BPD  
*Correct. Some Hospitals use head circumference instead of the biparietal diameter, but the Norwegian Directorate of Health has decided to use eSnurra as the national standard method of measurement. eSnurra is based on BPD in second trimester.*
- D Due date is calculated based on the last menstrual period (LMP) using Naegel's rule. The due date is adjusted according to the ultrasound findings only if the deviation between the ultrasound dating and the LMP dating is more than one week  
*It has been scientifically shown that the ultrasound due date is a better predictor of due date than that based on the LMP.*

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30

The patient in front of you at your GP office gave birth 6 weeks ago. She had a spontaneous vaginal delivery, but had a third degree tear of the anal sphincter muscle. She says she has been told that she can never give birth again.

How do you handle this? (Cross the most correct answer).

- A If she thinks a Caesarian section is a good solution for her, you will support her request for a Caesarian in future pregnancies  
*There should preferably be a medical indication for a Caesarian section. You should therefore make sure that the Maternity Department recommends a C-section.*
- B You have received the discharge summary from the Maternity Department in which there is nothing about future pregnancies; you therefore tell her she must have misunderstood  
*Discharge summaries can be incomplete - get more information from the Maternity Dept.*
- C X You will ask for a more detailed discharge summary from the Maternity Department so that you will be able to clarify the delivery for a future pregnancy  
*This action will provide enough information so that you can clarify management of the next pregnancy.*
- D You will contact the Maternity Department during her next pregnancy and then clarify how her next delivery should be managed  
*It is better patient care to clarify this now so that she does not have years of uncertainty.*

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31

You are a GP. The woman who has come to see you for an antenatal checkup has had pre-eclampsia in both her previous pregnancies. She asks you whether this will give her hypertension later in life. What do you answer her?

- A If she doesn't have more than 3 children she will not get hypertension later in life  
*There is no documented risk in relation to the number of children.*
- B She will need hypertension medications later in life  
*There is an increased risk for treatment, but not everybody gets such high blood pressure that it needs hypertension medications / treatment.*
- C If she has taken hypertension medications during pregnancy, there is an increased risk of hypertension later in life  
*With hypertension in pregnancy, there is an increased risk with or without treatment / medication.*
- D X She has an increased risk of hypertension later in life  
*She has an increased risk of hypertension.*

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32

You are the GP for a patient attending for her post-natal checkup after her labor. She has been pregnant with twins and gave birth 8 weeks ago. She had a vaginal delivery, but got atonic bleeding complications and an estimated blood loss of 2000 ml. This was a frightening experience for her and if she plans for more children she wants to be delivered by a Caesarian section. As her GP, how do you deal with this?

- A You inform her that such a large blood loss must be avoided in a new delivery; you support her request for a Caesarian section  
*Large atonic bleeding can also occur with a Caesarian; then you support her based on incorrect knowledge.*
- B You inform her that a Caesarian section has so many disadvantages that this is not recommended  
*This argument does not have any relevance to her need for clarification.*
- C X You inform her that a Caesarian section does not prevent an atonic bleeding  
*Because she wants a Caesarian due to large bleeding, it is correct to tell her that this is no guarantee against large blood loss.*
- D You inform her that there is not a repeat risk for large blood loss during delivery  
*Atonic bleeding is associated with a repeat risk.*

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33

A 20-year old woman seeking you for a contraceptive is having a gynecological examination and asks for you to take a cytology sample from the uterine cervix. You advise against this giving the following reason:

- A A cervical cytology sample is only indicated if symptoms are present
- B Cervical cytology samples are only indicated if abnormal findings on the uterine cervix
- C X Cervical cytology samples are not indicated until after 25 years of age
- D A cervical cytology sample is not indicated, but an HPV test can be taken from the uterine cervix

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34

Up until what age can cerebral ultrasound be performed in children?

- A X As long as the fontanelle is open.
- B Until 3 years
- C Until 1 year
- D Until 5 years

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35

X-ray contrast is used in miction cystography. How is this administered?

- A Percutaneously
- B Intravenously
- C X Intravesically  
*It is administered intravesically using a bladder catheter*
- D Perorally

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36

A 73-year old woman has on two occasions in the last weeks noticed that her urine has been mixed with blood. She does not have other urinary tract symptoms, and her weight has been stable over the last 3 years. She had a cholecystectomy about 30 years ago, but is otherwise healthy. The only regular medication she takes is atorvastatin (serum lipid-reducing drug). Blood samples show (reference range in brackets) Hb 11.8 ( 11.7 - 15.3 g/100mL), SR 11 (< 25 mm), CRP 7 (<5 mg/L), Creatinine 99 (45-90 µmol/L), eGFR 49 (> 52 mL/min/1.73m<sup>2</sup>) , ALP 83 (< 105 u/L), GT 63 (< 75 U/L). Which imaging technique should be tried first to find the cause of her symptoms?

**A X** 3-phase CT of the urinary tract.

*Standard haematuria investigation is 3-phase CT of the urinary tract. Her slightly reduced renal function is not a contraindication for performing an examination with intravenous contrast.*

**B** 3-phase CT of the urinary tract without intravenous contrast due to her renal failure

**C** Ultrasound of the urinary tract.

**D** MR of the pelvis with bladder/urethra protocol.

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37

Pituitary tumours can give symptoms of compression on surrounding structures. Which cranial nerves can be affected?

**A** Cranial nerves I and II

**B** Cranial nerves X, XI, XII

**C X** Cranial nerves III, IV and VI

*These can be affected by a pituitary tumour that grows into the cavernous sinus.*

**D** Cranial nerves XII and XIII

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38

Prior to surgery for cervical cancer, the local stage of the disease must be assessed. Which imaging technique is best suited to this?

**A** PET of the Pelvis

**B** Transvaginal ultrasound

**C X** MR of the Pelvis

*Best suited investigation as it is best at distinguishing between the various type sof soft tissue and thus the local growth and spread of the tumour.*

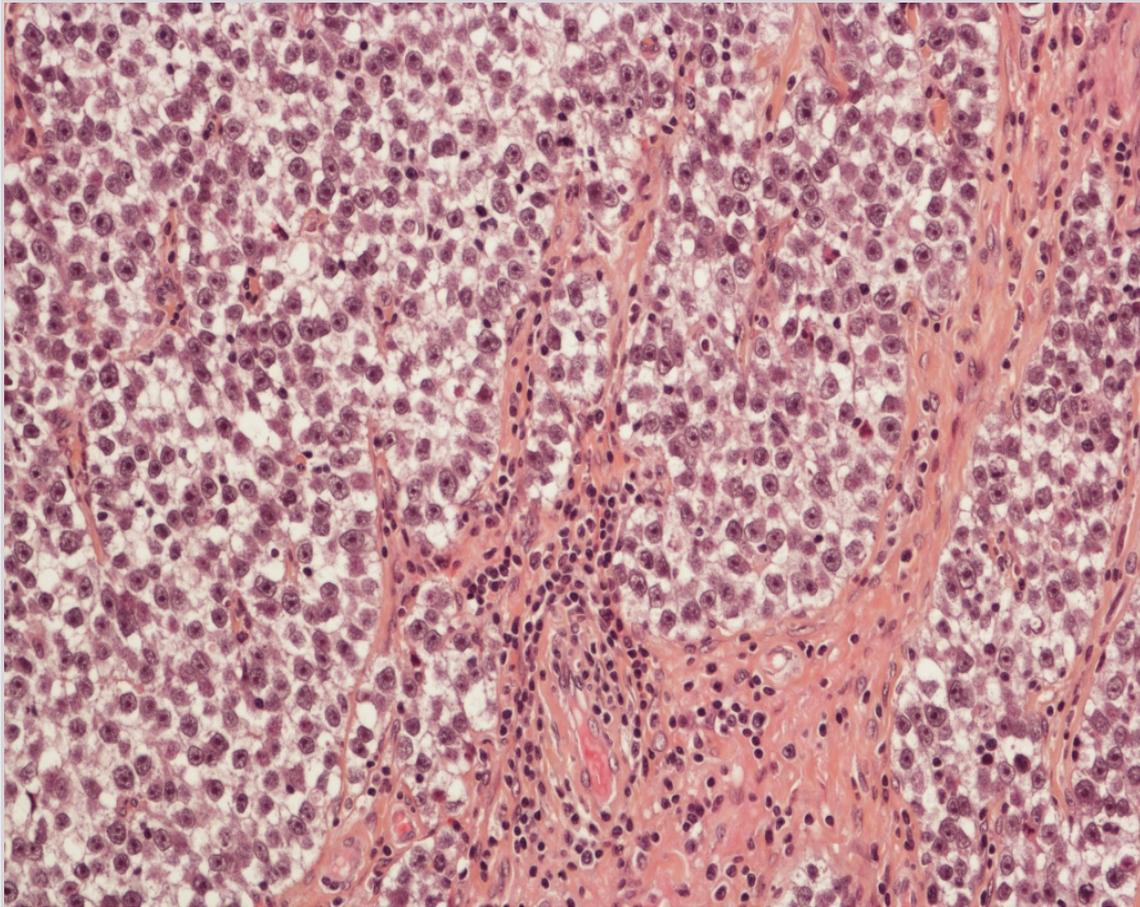
**D** CT of the Pelvis

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39

About 300 new cases of testicular cancer are diagnosed every year in Norway. The majority are classified as germinal cell tumours. The image displays a histopathology section from the most common germinal cell tumour in the testis (x200 , HES). What is this tumour called?



- A Granulomatous inflammation  
*Lymphocytes and fibrosis are seen in granulomatous inflammation, but here atypical germ cells are also present.*
- B X** Seminoma  
*The histopathology section displays atypical germinal cells, lymphocyte infiltrates and fibrosis compatible with a seminoma.*
- C Teratoma  
*A teratoma will have various tissue types from different germ layers.*

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40

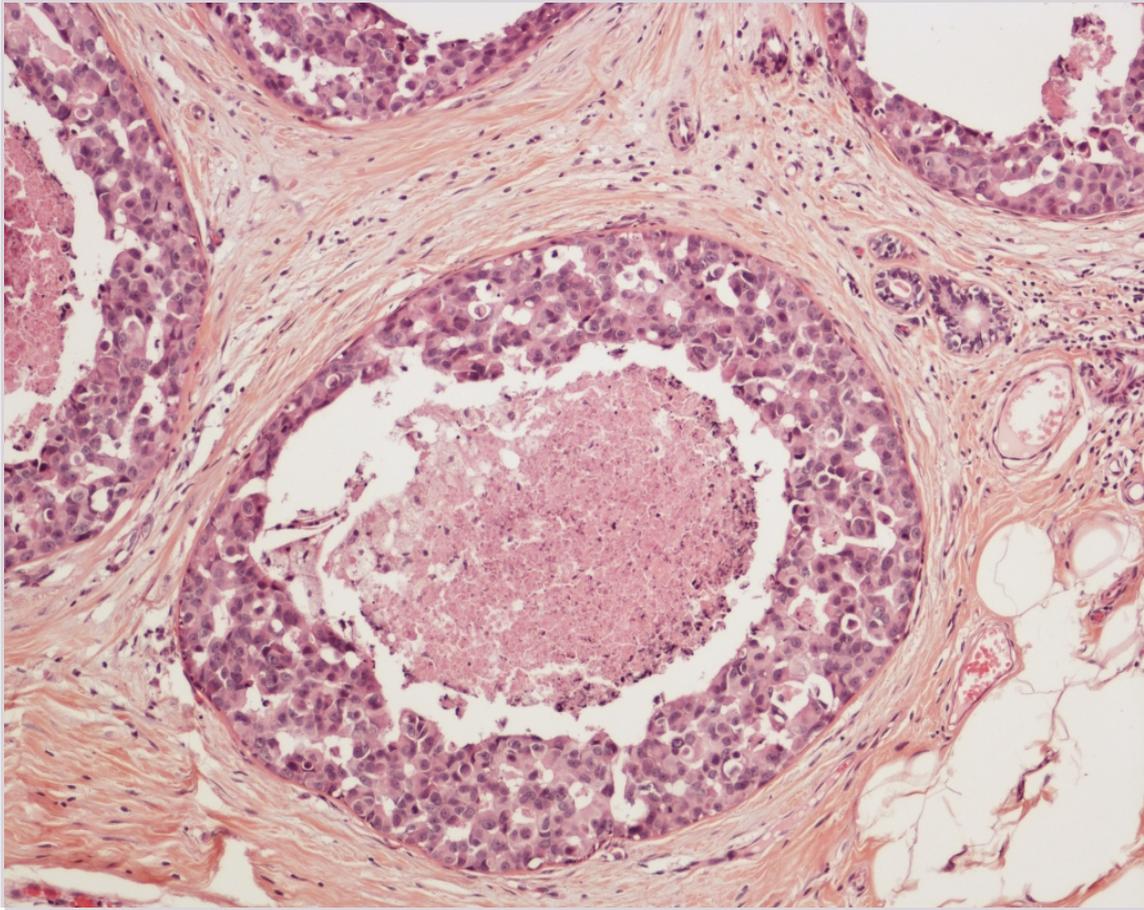
Calcitonin regulates potassium metabolism and is produced in the thyroid gland. Which cells produce calcitonin?

- A Specialised cells in the colloid.  
*There are no cells in the colloid.*
- B Specialised macrophages.  
*These cells are not present in the thyroid.*
- C Epithelial cells in the follicles.  
*Follicular epithelial cells produce thyroxine and triiodothyronine.*
- D X** Parafollicular cells in interstitial tissue.  
*These cells are also called C-cells and are localised in the interstitial tissue between the follicles.*

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41

A 55-year old woman was shown to have a tumour suspected of being malignant with calcification in the left breast at mammography. The tumour was removed surgically. The image displays a histopathology section from the tumour (x100, HES). What is the most probable diagnosis?



- A X** Ductal carcinoma in situ (DCIS)  
*The image displays the lactiferous ducts that are significantly dilated and filled with atypical epithelial cells with central necrosis. The lesions are well-defined and cells can be seen that could be myoepithelial cells. There is no definite evidence of invasive growth.*
- B** Lobular carcinoma in situ (LCIS)  
*Necrosis is not common in LCIS. There is also more obvious nuclear pleomorphism than is normally seen in LCIS.*
- C** Invasive ductal carcinoma  
*There is no definite evidence here for invasive ductal carcinoma.*

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**42**

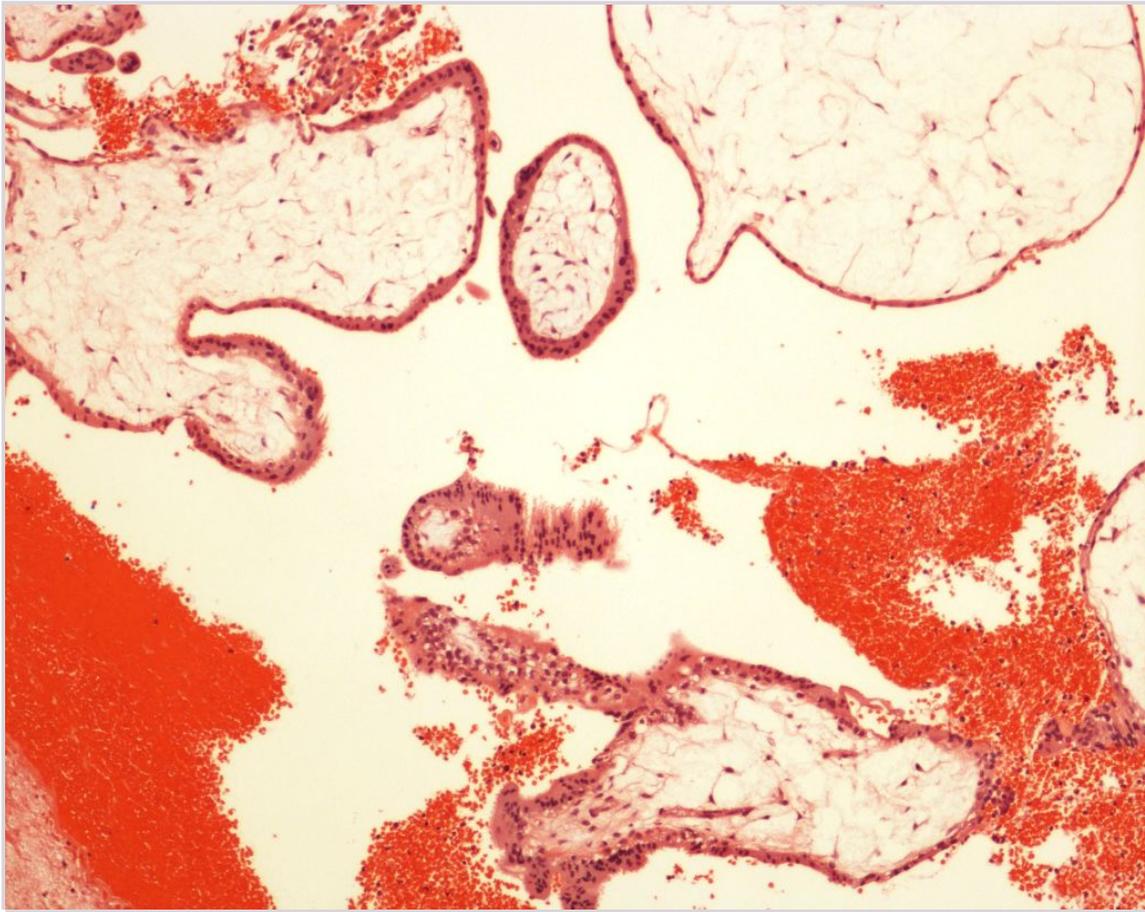
A 50-year old woman underwent surgery for a hysterectomy and a leiomyoma was found. Which statement about leiomyomas is correct?

- A** Leiomyomas do not give symptoms.  
*Leiomyomas can give symptoms.*
- B X** Leiomyomas are often multifocal.
- C** Leiomyomas consist of striated muscle.  
*Leiomyomas consist of smooth muscle.*
- D** Leiomyomas do not have mitoses.  
*Leiomyomas can have mitoses.*

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**43**

A woman underwent surgery to remove the right tube. A lesion is present that is visible at macroscopic examination. The image displays a section from this lesion (HE, 100X magnification). What is the diagnosis?



- A X** Extrauterine pregnancy  
*The image shows products of a pregnancy, with villous tissue and bleeding.*
- B** Torsion with infarction.  
*The image shows products of a pregnancy.*
- C** Mucous membrane oedema.  
*The image shows products of a pregnancy.*
- D** Haematoma in organisation.  
*The image shows products of a pregnancy.*

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**44**

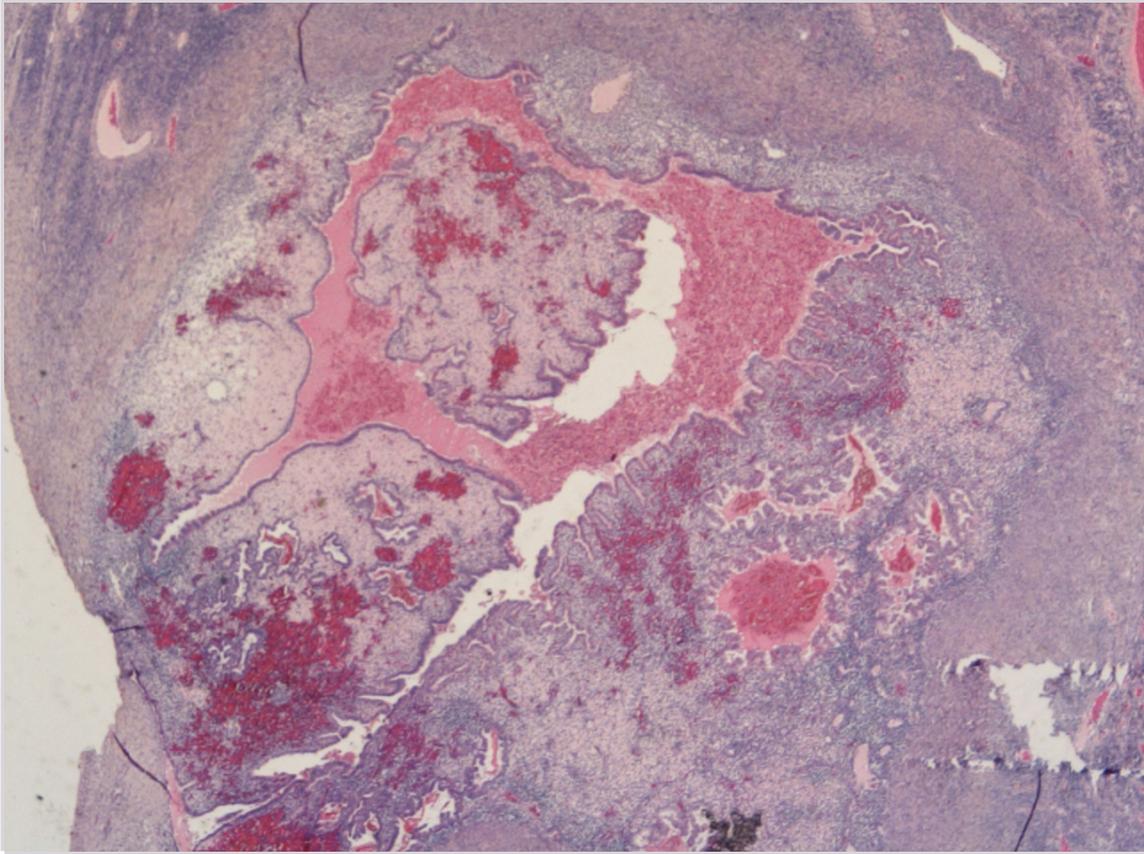
A woman underwent surgery for an ovarian tumour. Her doctor receives the report from the Pathology Dept. stating that the tumour was a mucinous cystadenoma without atypia. Which statement on mucinous cystadenoma without atypia is correct?

- A X** They are generally unilateral.
- B** They are borderline tumours.  
*Borderline tumours in the ovary have epithelial atypia.*
- C** Excrescences are common.  
*Excrescences can be seen in serous cystadenoma with atypia (borderline tumour), but are not common in mucinous cystadenoma without atypia.*
- D** They are by definition <10 cm.  
*Mucinous cystadenomas can be very large.*

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**45**

The image displays a microscopic section from an ovary from a woman with problematic dysmenorrhoea and infertility. The section shows an epithelial covered cyst surrounded by stroma with bleeding and pigment macrophages. Which diagnosis is the most probable?



- A X** Endometriosis
- B** Endometrial hyperplasia
- C** Adenomyosis
- D** Adenocarcinoma

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**46**

Women who are operated for breast cancer may be treated with tamoxifen (anti-*oestrogen*). Which of the following side effects can these patients experience?

- A** Cervical intraepithelial neoplasia (CIN)
- B** Adenomyosis
- C** Cervical polyps
- D X** Endometrial hyperplasia
- E** Leiomyoma

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**47**

What is the most common cause of hypocalcemia?

- A** Hypoparathyroidism
- B** 22q11 deletion syndrome (DiGeorge syndrome)
- C X** Vitamin D deficiency
- D** Alcoholism

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48

Jan who is 55 years old has over the last year had problems with palpitations, sweating, anxiety and chest pain that comes in episodes. Has been shown to have significantly raised blood pressure that has not responded to conventional treatment. As part of investigations, a CT of the adrenals has shown a tumour on the right side.

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

- A Renal artery stenosis
  - B Primary hyperaldosteronism
  - C Cushing's syndrome
  - D X Pheochromocytoma**  
*Typical with episodic symptoms and resistant hypertension*
- 

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49

Which of the following medicines give the greatest risk of bone loss and fractures?

- A Antiepileptic drugs
  - B Proton pump inhibitors
  - C X Glucocorticoids**
  - D Aromatase inhibitors
- 

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50

Espen, 25-years old, has type 1 diabetes and uses multi-injections (subcutaneous: 1-2 injections slow-acting plus 3-4 injections rapid-acting insulin/day). He is admitted with diabetic ketoacidosis after a weekend with considerable alcohol consumption. On arrival on Monday at 13:00, p-glucose is elevated: 31.5 mmol/L (ref. 4.0 - 6.0 mmo/L), pH is 7.05 (ref. 7.35 - 7.45) and bicarbonate 9 mmol/L (ref. 21 - 27). He is given insulin mixed in 0.9% NaCl intravenously. At 20:00 the same day his general condition is better, p-glucose is 12 mmol/L, pH 7.15 and bicarbonate 16 mmol/L.

What should you as the on-duty doctor in the Department of Medicine do about the insulin treatment?

- A X** Continue with i.v. insulin/NaCl, and in addition give glucose 5% until the next morning.  
*With this degree of diabetic ketoacidosis it is recommended to continue with i.v. insulin for at least 24 hours, and supplement with glucose 5% when the blood sugar is <15 mmol/L.*
  - B Continue with unchanged i.v. insulin/NaCl infusion throughout the night.  
  
*Not recommended. There is a danger that the blood glucose could fall significantly and that he will become hypoglycemic during the night*
  - C Stop the i.v. insulin, and await blood glucose results the next morning before taking a decision.  
*Not recommended. Same reasoning as A, but with an even greater danger of blood sugar increase and worsening of the acid-base status during the night.*
  - D Start multi-injections at his normal doses, discontinue i.v. insulin after 3-4 hours.  
*Not recommended. He most probably has a large insulin deficit. At transition to subcutaneous insulin after only 7-8 hours of i.v. insulin treatment his blood glucose will probably increase and his acid-base balance will worsen during the night.*
- 

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51

A 27-year old woman has "always" had irregular periods, occasionally with 2-3 month intervals. She believes that some years ago she was given the diagnosis PCOS (polycystic ovarian syndrome). The reason for coming to the surgery now is that she has not had a period for 4 months.

The GP takes samples which reveal slightly elevated total testosterone, LH:FSH ratio of around 2 and AMH (anti-Mullerian hormone) 2-3 times above the reference level.

The patient attends a new appointment and is informed that she has hormone levels that are typical for PCOS and that PCOS is the cause of her lack of menstruation. The patient casually mentions that she has had problems with secretion from her breasts over the last month.

Which combination of tests is most relevant to investigate this further, while not ordering more tests than necessary?

- A** DHEAS, cortisol, androstenedione, 17-OH progesterone and testosterone and SHBG to calculate the free testosterone index. The aim is further investigation of the patient's androgen status and PCOS.  
*Incorrect. Changes in androgen status do not cause galactorrhoea or other secretion from the breasts.*
- B** Oestrogen and cortisol  
*Incorrect*
- C X** TSH, prolactin, IGF-1 and HCG  
*Correct. This makes it possible to detect hyperprolactinaemia and to determine if it is secondary to low metabolism (i.e. high TSH). In addition, it will detect the rare possibility that it is acromegaly. It will also exclude the possibility that the woman is pregnant.*
- D** Prolactin and IGF-1  
*Partly correct, but not completely. The cause of increased prolactin should also be checked. Pregnancy should also be excluded.*
- 

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52

A 72-year old woman who is your patient as a GP, has recent onset of atrial fibrillation. Metabolic tests: Free thyroxine (FT4) 28 pmol/L (reference interval 12.0 - 22.0 pmol/L) and thyroid stimulating hormone (TSH) < 0.01 mIU/L (reference interval 0.27 - 4.20 mIU/L). Anti-TPO and anti-TSH receptor antibody (TRAB) are both negative (i.e. normal levels). She has no other endocrine ophthalmopathy, and there are no pathological findings at palpation of the collum. Which investigation would you order to clarify the cause of the patient's hyperthyroidism?

- A X** Thyroid scintigraphy with measurement of uptake  
*Correct. Thyroid scintigraphy can give information on the gland's function, potentially on the function in any nodule/nodules in the gland. This patient has thyrotoxicosis with high FT4 and suppressed TSH, as well as negative antibodies. An autonomous toxic adenoma, or toxic multinodular goitre is suspected. Autonomous nodules in the thyroid take up more radioactive isotope than surrounding tissue and this can be demonstrated using thyroid scintigraphy with measurement of radioactive isotope uptake.*
- B** CT with contrast of the thyroid gland  
*Incorrect. CT with contrast of the thyroid gland can map the nodules or cysts in the gland but provides no information on the gland's function. In this case, we are primarily seeking to clarify the cause of the patient's hyperthyroidism.*
- C** Ultrasound of the thyroid gland  
*Incorrect. Ultrasound of the thyroid gland can map the nodules in the gland but provides no information on the gland's function. In this case, we are primarily seeking to clarify the cause of the patient's hyperthyroidism.*
- 

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53

A 49-year old woman has noticed a swelling on her throat over the last year, and she is worried that it is malignant. Over the last six months she has had problems with hot flushes. She goes to her GP who says she has goitre, and that she will be investigated to find the cause. What does the GP mean when he/she says she has a goitre?

- A X** This means that she has a diffuse enlargement of the thyroid gland, regardless of the cause and regardless of whether the gland's function is affected or not.  
*Correct. The term goitre is defined as an enlargement of the thyroid gland regardless of the cause. The condition is often, but not always, associated with a disturbance of thyroid gland function.*
- B** This means she has high metabolism.  
*Incorrect. See answer A. It is true that this patient does have hot flushes which can be an expression of high metabolism, but these can also be an expression of the onset of the menopause. To give a diagnosis of high metabolism, the metabolic tests must reflect this.*
- C** This means that she has a malignant nodule in the thyroid gland.  
*Incorrect. See answer A. Only about 5% of tumours (nodules) in the thyroid gland are malignant.*
- D** This means she has autoimmune thyroiditis with enlargement of the thyroid gland.  
*Incorrect. People can often have an enlarged gland without this being evidence of autoimmunity.*
- 

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54

You are GP for a 55 year old man with diabetes type 2. He uses metformin 500mg x3. He is not well regulated but can not increase the metformin dose because of side effects from the gastrointestinal tractus. You consider additional treatment with either a DPP-4-inhibitor or a sulphonylurea preparation. In what way does DPP-4-inhibitors decrease blood glucose levels in patients with type 2 diabetes?

- A** DPP-4-inhibitors inhibit or reduce the absorption of glucose from the intestine.  
*Wrong. Akarbose works in this fashion.*
- B** DPP-4-inhibitors inhibit the reabsorption of glucose in the kidneys and increase the glucose excretion in the urine  
*Wrong. Sodium-glucose-co-transporter 2-inhibitors (SGLT2-inhibitors) uses this mechanism. See answer on C*
- C X** DPP-4-inhibitors function via the incretin-system by inhibiting the disintegration of active incretin  
*Correct. DPP-4-inhibitors inhibit the enzyme DPP-4 which disintegrates incretin-hormones. DPP-4-inhibitors thereby increase the level of active incretin. The incretin-hormones are released from the intestine as a response to a meal, and increased level of incretin hormones increases insulin secretion (if blood glucose is increased, not if blood glucose is low).*
- 

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55

A 56-year old man is admitted to hospital for thorax trauma in connection with a collision. He apparently did not give way to the traffic from the right. He also complains that for some time he has had "discomfort" in his eyes. At examination, he is found to have a slightly impaired visual field laterally on the right side.

MR of the head reveals a large, well-defined homogenous tumour in the area of the pituitary that is growing up towards and partly lifting the optic chiasma. The pituitary stalk is strongly deviated to the left where there is little pituitary tissue with a normal appearance.

Tests reveal subnormal morning values for TSH, cortisol, FSH, LH and testosterone. IGF-1 is immediately below the upper reference value for age. Prolactin is 3 times higher than the upper reference value.

What is the most probable diagnosis?

- A X** Large non-functional pituitary adenoma affecting the sight, and giving a tendency to partial pituitary failure in several axes and hyperprolactinaemia due to compression of the pituitary stalk.  
*Correct. A quite common picture with large non-functional pituitary adenomas.*
- B** Large non-functional macroprolactinoma giving affectation of the sight and hyperprolactinaemia.  
*Incorrect. Such a large prolactinoma would give prolactin values that are many times higher. Most probably this is a case of a compressed pituitary stalk.*
- C** The patient has acromegaly.  
*Incorrect. Such a large growth-hormone producing pituitary adenoma would without exception give a strong increase in levels of both growth hormone and IGF-1.*
- D** A metastasis from a primary tumour of unknown origin. This results in a general effect on the pituitary with a tendency to partial pituitary failure.  
*Incorrect. The tumour is well-defined and homogenous, and it is highly probable that it is a pituitary adenoma. Pituitary adenomas comprise 10% of all intracranial tumours and are therefore not uncommon.*

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56

Why is the risk for insulin-induced hypoglycemia increased in patients with diabetes type 1 who in addition have Addison's disease?

- A** Because they are low in aldosteron  
*Patients with Addison's disease more often have low aldosteron, but this do not increase the risk for hypoglycemia. Aldosteron does not influence production of glucose in the liver.*
- B** Because they have two autoimmune diseases  
*Two autoimmune diseases give by itself no increased risk of hypoglycemia*
- C X** Because they are low in cortisol  
*Low cortisol, as those with Addison's disease, gives increased risk of hypoglycemia because cortisol increases the production of glucose in the liver when the level of glucose is decreasing. Hence, cortisol is an important regulating hormone.*
- D** Because they often are slim  
*Slim persons with type 1 diabetes have increased sensitivity for insulin, but being slim does not give increased risk of hypoglycemia because the insulin dose is adapted to weight and insulin sensitivity.*

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57

Marit 65-years old fell on the ice and broke her arm. She is referred for bone density measurement which reveals a T-score of -2.7 in the lumbar column and -2.5 in the neck of the femur. The patient has had oesophagitis for many years which is treated with a proton pump inhibitor. The GP starts her on calcium supplements and vitamin D. Which of these medicines would you give her in addition?

- A Bisphosphonate alendronic acid, once-weekly tablet
- B Oestrogen/gestagen  
*Relevant for women with menopausal problems and osteoporosis*
- C **X** Infusion with bisphosphonate zoledronic acid about once year  
*Because the patient has oesophagitis and uses a proton pump inhibitor, this is preferred to peroral bisphosphonate*
- D Teriparatide (Parathyroid analogue)  
*The ideal option since it increases bone formation. Due to the high price, it is currently only an option for those with the greatest problems and preferably only after other treatment has been tried.*

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58

Kari (50) has just been admitted with pneumonia. She has pre-existing hypertension and mild heart failure, otherwise no known diseases. Blood pressure 115/75 mmHg; she is receiving 1 litre oxygen through nasal prongs and is not short of breath at rest. The first blood tests now reveal: CRP 270 mg/L (ref. range: <5), Hb 10.0 g/dl (ref. range: 11.7-15.3 g/dl), Leukocytes 16 x10E9/L (ref. range: 4.1-9.8 x10E9/L), Na 142 mmol/L (ref. range: 137-145 mmol/L), K 6.6 mmol/L (ref. range: 3.6-4.6 mmol/L), Tot. Ca 2.0 mmol/L (ref. range: 2.15-2.51 mmol/L), phosphate 1.9 mmol/L (ref. range: 0.85-1.50 mmol/L), Albumin 33 g/L (ref. range: 36-45 g/L), bicarbonate 16 mmol/L (ref. range: 22-26 mmol/L), creatinine 230 micromol/L (ref. range: 45-90 micromol/L), carbamide 17 mmol/L (ref. range: 3.1-7.9 mmol/L).

Your colleague from A&E comes to you for advice and presents the following problem: The patient has acute renal failure of pre-renal origins and therefore primarily needs more fluids i.v. What advice do you give?

- A **X** No, the patient probably has an acute-on-chronic renal failure and therefore the focus should be on the hyperkalemia. She probably needs a glucose-insulin drip iv first, possibly with bicarbonate later if required.  
*Hb 10 indicates chronic disease; the patient may well have chronic renal disease; no data in the assignment indicates that she needs large amounts of fluids which could be problematic due to the heart failure. K 6.6 should be treated immediately.*
- B No, the patient probably has an acute-on-chronic renal failure and therefore does not need more fluids now. The ACE inhibitor should be discontinued and the diuretic dose increased to reduce the s-K level.
- C Yes, the patient needs more fluids, probably 2-4 litres over the next 24 hours. Ringer-acetate should be used as the infusion solution to avoid a large supplement of chloride which could result in an effect on the acid base balance.
- D Yes, the patient needs more fluid; this must be the first priority to reverse this situation (e.g. 1000 ml Nacl over 2 hours and then 100 ml/hour). New s-creatinine the next morning to see how things are developing.

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59

Ottar (55) has demonstrated blood pressures of 145/88, 152/90 and 142/92 at three consultations. He is otherwise healthy, a non-smoker, with a BMI 26. He does not have diabetes; does not take any medicines. Rarely on sick leave. Does he have hypertension and if so should he be treated with medicine?

- A No, this is most probably an episode of "white coat hypertension" and he therefore does not have hypertension at all.
- B Yes, he does have hypertension and should be started on a moderate dose of calcium channel blocker (e.g. Amlodipin 5mg x1)
- C **X** Yes, he does have hypertension, but it is uncertain whether he should start treatment with medicines. To clarify this he needs further investigations.
- D Yes, he does have hypertension, and he should start lifestyle intervention, but does not need medicine treatment at the present time.

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60

The demonstration of end organ injury in hypertension is important in deciding if there is an indication for treatment and for choice of medicine. Which tests should we use for this and why?

- A CT cerebrum: to demonstrate small lacunar infarctions and white substance changes  
Ultrasound carotid arteries: to demonstrate general atherosclerosis  
Echocardiography: to demonstrate left ventricular hypertrophy
- B X** s-creatinine: to demonstrate chronic renal disease  
u-albumin: to demonstrate chronic renal disease and/or general vessel injury  
blood pressure arm/ankle index: to demonstrate general atherosclerosis  
ophthalmoscopy: to demonstrate eye injury in severe hypertension  
*u-albumin and ophthalmoscopy are necessary (c.f. answer B and C). CT and UL are high-tech investigations with high costs and not much better diagnostic accuracy than, for example, the creat/albumin tests*
- C s-creatinine: to demonstrate chronic renal disease  
blood pressure arm/ankle index: to demonstrate general atherosclerosis
- D s-creatinine: to demonstrate chronic renal disease  
ophthalmoscopy: to demonstrate eye injury in severe hypertension  
Ultrasound carotid arteries: to demonstrate general atherosclerosis

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61

When investigating hypertension, blood electrolytes are often analysed. Which electrolytes should be analysed and why?

- A Potassium: should be analysed because low values indicate hyperaldosteronism
- B X** Potassium: several current medicines can affect the s-K level which should therefore be checked  
*Calcium has no importance in the investigation of hypertension. K is always measured, primarily because ACEi and diuretics affect the level; K as a test for hyperaldo' is not a good reason (here we use the aldosterone/renin ratio). Na is measured out of old habit, but has no well-evidenced basis; it says nothing about salt intake (24-hour urine measurement is necessary for this).*
- C Sodium: salt intake is an important cause of hypertension and diuretics can give hyponatremia  
Potassium: hyperaldosteronism is one of the most important causes of secondary hypertension  
Calcium: disturbances in calcium level can cause dangerous arrhythmias
- D Sodium: salt intake is one of the most important causes of hypertension

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62

What is microalbuminuria?

- A u-Albumin-Creatinine ratio 30-300 mg/mmol
- B X** u-Albumin-Creatinine ratio 3.0-30mg/mmol
- C u-Albumin-Creatinine ratio >300 mg/mmol
- D u-Albumin-Creatinine ratio 0-3.0 mg/mmol

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63

ECG is used as part of the investigations into hypertension. Why?

- A ECG can reveal whether left ventricular hypertrophy is present with very good sensitivity.
- B ECG has good diagnostic accuracy in demonstrating left ventricular hypertrophy.
- C ECG is widely available and a good alternative to echocardiography which requires referral to a specialist.
- D X** ECG can reveal whether pathology such as atrial fibrillation, infarction, left ventricular hypertrophy, ischaemia, etc. is present.  
*ECG has poor sensitivity for LVH but has high specificity. In addition, it can provide information on the other conditions above, which would be important in evaluating indications for treatment and choice of medicine.*

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64

Pressure natriuresis plays a central role in the kidneys' regulation of blood pressure. Pressure natriuresis means that

- A Sodium excretion decreases when blood pressure increases.
- B Sodium excretion decreases when blood pressure drops.
- C X** Sodium excretion increases when blood pressure increases.
- D Sodium excretion increases when blood pressure drops.

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65

Arne Margido (64-years old) has been treated for high blood pressure for 30 years. He had an anterior wall infarction (FVI) 20 years ago and underwent an Aorta Coronary Bypass (ACB). He has also had several Non-ST-elevation heart attacks (NSTEMI) after this and underwent 2 Percutaneous coronary interventions (PCI). He was also treated for claudication with percutaneous transluminal angioplasty (PTA) 1 year ago with a succesful result. His blood pressure has been well-regulated; he does not smoke and exercises occasionally.

At a routine check-up his BP measured 200/64. *Lab results:* Hb 15.4 g/dl (13.4-17.0 g/dl), creatinine 85 µmol/L (60-105 µmol/L), eGFR > 60 ml/min/1.73m<sup>2</sup> (normal), cholesterol 4.7mmol/L (3.9-7.8 mmol/L), blood sugar 5.1 mmol/L (4.2-6.3 mmol/L). Urine test strip: negative.

*Medicines:* Lisinopril 10 mg x 1 (ACE inhibitor), Amlodipin 10 mg x 1 (calcium blocker), Carvedilol 12.5 mg x 2 (alpha- & beta-blocker), Simvastatin 20 mg x 1 (statin), Albyl E 75 mg x 1 (acetylsalicylic acid) What should you do?

- A Increase the dose of Lisinopril and in addition start on thiazide diuretic 12.5 mg x 1.
- B Increase the dose of Lisinopril to 20 mg x 1
- C Order 24-hour BP measurement and new follow-up appointment in 1 week.
- D X** Order CT angio of the renal arteries

*In patients with pronounced atherosclerotic disease, there is a high probability that an increase in blood pressure is due to renal artery stenosis.*

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66

Karen (30) has just been diagnosed with hypertension, moderate grade (BT 175/100). She is somewhat overweight (BMI 29), had asthma as a child, but is otherwise healthy now. How would you start treatment of this patient?

- A Encourage her to lose weight and start double treatment with a moderate dose of Calcium blocker and a low dose of hydrochlorthiazide.
- B Encourage her to lose weight and start treatment with a low dose of hydrochlorthiazide.
- C X** Encourage her to lose weight and start double treatment with moderate doses of ACE inhibitor and Calcium blocker.  
*BP is so high that there is a clear indication to start medicine treatment, and starting with two medicines is recommended for such patients. Could be ACE+CCB or ACE+hzt; in this case the former is chosen because of her overweight rather than use of Htz (metabolic side effects)*
- D Encourage her to lose weight and monitor her blood pressure development over the next 6-9 months

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67

Hyperphosphatemia is considered to be a serious problem in chronic renal failure. When and how should this be treated?

- A Phosphate binders should be started when eGFR drops below 15 ml/min
- B Reduction of phosphate-containing foods should be started at an eGFR 60 ml/min.
- C X** Reduction of phosphate-containing foods should be started at an eGFR 60 ml/min and supplementation with phosphate binders should start when s-phosphate rises above 1.7 (normal 0.7-1.4 mmol/L).  
*Calcium supplements increase the risk of calcification in vessels. Phosphate treatment should be started based on serum levels, not eGFR level.*
- D Hyperphosphatemia should be treated with a phosphate binder and calcium supplement when eGFR drops below 30 ml/min.

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68

IgA glomerulonephritis is the most frequently occurring glomerular disease, and in 30-40% of cases progresses to end-stage renal disease.

Which of the following conditions are associated with an increased chance of chronic renal failure in this kidney disease?

- A X** Blood pressure above 140/90 mmHg
  - B** Macroscopic haematuria
  - C** Demonstration of leukocytes in the urine
  - D** Demonstration of enlarged kidneys using ultrasound investigation
- 

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69

Prostate cancer varies in aggressiveness and the treatment depends on which type of cancer the patient has. In cases of low risk prostate cancer (PSA <10, Gleason score <6, tumour stage < T2a) active monitoring is an option. What is meant by active monitoring?

- A X** To avoid treatment-related side effects, the patient goes for check-ups with their GP and urologist until there is indication for radical treatment.
  - B** Patients with high comorbidity and who are not candidates for radical treatment are monitored by the urologist until the disease progresses, when antiandrogen treatment is started.
  - C** Patients with a life expectancy <10 years who are shown to have low risk prostate cancer are monitored using annual PSA check and ultrasound to start antiandrogen treatment when the disease becomes symptomatic.
  - D** Patients who are not candidates for radical therapy can nevertheless be considered for radical therapy if the disease subsequently progresses.
- 

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70

A 53-year old man comes to you at your GP office. He rarely goes to the doctor, but now his wife has sent him here because she thinks it's high time he got his prostate checked so that he doesn't go around with prostate cancer. He has heard that you can take a blood sample that excludes prostate cancer. What is the Directorate of Health's recommendation on PSA testing on otherwise healthy men without any hereditary predisposition?

- A** Routine PSA measurements are offered to all men under 40.
  - B** Routine PSA measurements are offered to all men over 70.
  - C X** Routine PSA measurements at general health check-ups are not recommended.
  - D** PSA testing should always be offered to all men who go to their doctor with a desire to detect prostate cancer early.
- 

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71

You have a 63-year old woman in your GP office. She has to renew her driver's licence and to do this wants a doctor's certificate. She has previously received radiotherapy for a gynaecological cancer and has not had any recurrence for 15 years. She is in good general health and feels well, with no complaints. You order a urine test and find 2+ blood on the urine test strip. What do you do with this finding?

- A You refer the patient for ultrasound of the urinary tract to spare the patient for radiation since she has previously received radiotherapy. You also refer her for cystoscopy.  
*Ultrasound is less sensitive than CT in demonstrating a tumour in the urinary tract. Neither is it true that patients who have received radiotherapy cannot have CT. Answer C is the best answer.*
- B You perform a gynaecology examination and find nothing wrong. Since she doesn't have any symptoms from the urinary tract, further investigations are not indicated.  
*See answer C.*
- C You ask her if she has any urinary tract symptoms, and if everything is working normally you do nothing.  
*The patient must be investigated even without symptoms. See answer C.*
- D X You refer her for 3-phase CT investigation of the urinary tract and for cystoscopy.

*Patients who have previously received radiotherapy for cancer in the pelvis have an increased risk of developing another type of cancer in the radiation field. Because of this, patients with microhaematuria must be investigated with CT and cystoscopy.*

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72

You have a 22-year old woman at your GP office. She wants to do a parachute jumping course and in connection with this wants a medical certificate. You requisition a urine test and find 2+ blood on a urine test strip. What do you do with this finding?

- A You refer the patient for ultrasound of the kidneys to avoid the radiation exposure given by a CT investigation. You also refer here for cystoscopy.  
*It is correct that it is better to use ultrasound in younger patients in many instances, and this should be considered more often than it is today, but in this case investigation is not indicated.*
- B You ask her about her period; if she was menstruating at the time of the test you ask her to hand in a new sample in 2 weeks.  
*See Answer A*
- C You refer her for 3-phase CT investigation of the urinary tract and cystoscopy.  
*See answer A*
- D X You ask her about symptoms from the urinary tract and if everything functions normally, you do nothing.  
*Microhaematuria in younger people without symptoms from the urinary tract can be safely left uninvestigated as it is rarely associated with a condition that needs treatment.*

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73

PSA is a blood test that has been much debated in the diagnostics of prostate cancer. What is the most important disadvantage of the PSA test in detecting prostate cancer?

- A It has been shown that PSA screening does not reduce prostate cancer specific survival.
- B It has been shown that PSA screening increases overall survival.
- C PSA is an expensive test but has high specificity and high sensitivity and therefore has a high cost-benefit effect.
- D X PSA is not specific for aggressive prostate cancer, for example.

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74

You are the substitute in a GP office and the patient is a 40-year old woman who visit you because of pain at micturition and macroscopic haematuria. She says that over the last week she has seen a little blood every time she urinates. She also has frequent and painful urination. In the medical records you see that she has previously had several episodes of urinary tract infection that have been treated effectively with antibiotics. She has also seen blood in the urine on several previous occasions with infection. The patient has never smoked and is otherwise healthy. What do you do?

- A** You refer the patient for Ultrasound of the kidneys and cystoscopy because she has both macroscopic haematuria and urinary tract infection. You send off urine for culture and start treatment with antibiotics.  
*Ultrasound of the urinary tract is not as sensitive as CT for pathology in the urinary tract in macroscopic haematuria.*
- B** You refer the patient for ultrasound of the urinary tract and cystoscopy. Because the patient has had several infections previously, you assume that resistant bacteria could be present in the urine and you want a positive culture result before you start treatment. You ask the patient to drink copiously and await the results of culture. You will call the patient when you have the results and write a prescription for the correct type of antibiotic.  
*Because the patient has symptoms and has previously had effect of antibiotics, it is most probably not resistant bacteria. However, notwithstanding, it is correct to send off for bacteria in urine; but in this case treatment can start before the results are available. The main points of this question are investigation of macroscopic haematuria and that CT of the urinary tract is better than ultrasound in cases of macrohaematuria.*
- C X** You refer the patient for 3-phase CT and cystoscopy because she has macroscopic haematuria. You send off urine for culture and start treatment with antibiotics.  
*This patient has two reasons for further referral; both chronic UVI and macroscopic haematuria.*
- D** You assume that the patient has chronic urinary tract infection which often gives blood in the urine. You send off urine for culture and start treatment with antibiotics against the urinary tract pathogens. You ask the patient to hand in a new sample after the treatment to check that the haematuria has gone.

*Patients with macrohaematuria must be investigated with CT of the urinary tract and cystoscopy. The urinary tract infection is treated correctly.*

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75

You have recently taken over as the GP for a man aged 87. In his medical records you find that 8 years ago he was investigated for asymptomatic microscopic haematuria using cystoscopy and CT of the urinary tract. The patient is now contacting you because of problems with urination at night. He has to get up 3 times compared to only once previously. You examine the patient and find an enlarged prostate; perform a urine strip test and find 2+ for blood. What do you do next with this finding?

- A** You plan check of the urine 3 times at 3-4 weeks' interval. If the haematuria is persistent, referral for new investigation with CT of the urinary tract and cystoscopy.  
*New investigation for microhaematuria is not indicated.*
- B** You recommend that the patient receives medical treatment for the micturition problems and agree a follow-up appointment in 1 month with new urine dipstick.  
*The medical treatment is OK, but further follow-up of microhaematuria is not indicated.*
- C X** As the patient has already been investigated for microscopic haematuria, you consider this sufficient in itself, even though it was some years ago. You believe the micturition problems are most probably due to an enlarged prostate and you offer treatment with medicines.  
*Very many people have microhaematuria that is not associated with any pathological condition. If a patient has been investigated once, this is considered sufficient unless new alarming symptoms appear, such as macroscopic haematuria or severe pain.*
- D** As he now has symptoms from the urinary tract, you refer the patient for a new 3-phase CT and cystoscopy at the Urology Outpatient Clinic.  
*The patient was investigated 8 years ago and there are no new symptoms which make you suspect a serious condition. New investigations based on the symptoms the patient now exhibits are not indicated.*

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76

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

- A X** A tumour in the prostate cannot generally be visualised by ultrasound.
  - B** In the routine procedure, only one to three tissue samples are taken in the area that has been palpated as potentially malignant at rectal palpation.
  - C** In the routine procedure, 20 systematic biopsies are taken to ensure that the entire prostate is carefully examined.
  - D** The prostate is very resistant to infection and prophylactic antibiotics are not necessary.
- 

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77

A 60-year old man comes to your GP office for renewal of his driver's licence and in connection with this wants a medical certificate. As a 19-year old he underwent radiotherapy for testicular cancer with metastases in the retroperitoneum. Many years ago he was declared cured. You now find 2+ for blood on a urine dipstick. What do you do with this finding?

- A** You refer the patient to the Oncology Dept. that previously has followed up the patient informing them of the microhaematuria and requesting further follow-up.  
*In the first instance, urologists investigate microhaematuria. Patients must be referred to Urology Outpatients.*
  - B X** You refer the patient for 3-phase CT and cystoscopy.  
*Because the radiotherapy includes parts of the urinary tract, microhaematuria is an important symptom and the patient must be investigated using cystoscopy and CT of the urinary tract. Age 60 is a risk factor in itself; in Norway CT is recommended on this basis alone.*
  - C** You want to investigate the patient further. You order MR of the urinary tract to spare the patient for radiation as he has been exposed to radiation previously.  
*The patient must be referred for both cystoscopy and imaging diagnostics. MR can be performed, but is not generally preferred to CT for older patients.*
  - D** You ask if he has any symptoms from the urinary tract, and if everything is functioning normally you do nothing.  
*Patients who have received radiotherapy have an increased risk of developing cancer in the radiation field. This is a long-term side effect and further investigation with CT of the urinary tract and cystoscopy are necessary.*
- 

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78

You are working as a doctor in the Urology Dept. A 63-year old man has been referred from his GP with mild paraesthesia in both legs. Over the last few months he has complained of back pain. PSA is 500. You suspect metastatic prostate cancer. What do you do?

- A X** You take prostate biopsies, give corticosteroids and put him on the operations schedule for acute orchidectomy.
  - B** You take prostate biopsies, start chemotherapy and contact orthopaedics for acute decompressive surgery the same day.
  - C** You take prostate biopsies and start chemical castration with gonadotropin-releasing hormone agonist (GnRH-agonist).
  - D** You take prostate biopsies and contact the specialist in Oncology to start acute chemotherapy.
- 

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79

Jørn is 5-years old and previously healthy. He is admitted after 2 days with increasing breathing problems, stomach pains and vomiting. At admission he is afebrile, appears lethargic, but reacts when spoken to, breathes deeply with respiratory rate 40/minute. There are no retractions. Capillary filling time is 3 seconds, pulse 130/minute. He appears slightly dehydrated with dry mucous membranes and sunken eyes, and his breath smells bad. There are normal findings at auscultation of the heart and lungs and no signs of infection in the upper respiratory tract. The abdomen is soft and non-tender. Normal intestinal sounds, no rash.

Which diagnosis is the most probable?

- A Obstructive bronchitis  
*Normally there are no abdominal symptoms but respiratory problems with signs of bronchopulmonary obstruction (lacking here).*
- B Severe septicaemia  
*Sepsis cannot be excluded, but 5-year old children with sepsis generally have a fever.*
- C X Diabetic ketoacidosis  
*Abdominal symptoms, tachypnoea without respiratory problems and dehydration and foetor ex ore (bad smells from breath) match the condition.*
- D Acute gastroenteritis  
*It is rare that a 5-year old child becomes so ill from gastroenteritis without diarrhoea.*

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80

A girl is born prematurely with a gestational age 30+4 weeks. Immediately after the birth the child has tachypnoea, subcostal and intercostal retractions and she makes grunting sounds. When the girl breathes room air, oxygen saturation is around 45%. The girl is quickly placed on CPAP with 60% oxygen. At age 30 min her oxygen saturation is around 60% and she has strong retractions in spite of CPAP and oxygen.

What should be the next treatment action?

- A Steroids
- B BIPAP
- C X Surfactant
- D Racemic adrenaline

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81

Mrs Nilsen has had glucosuria in her pregnancy. Her child weighs 5350 gram at birth. Which action must be taken in the delivery unit/maternity ward after the birth?

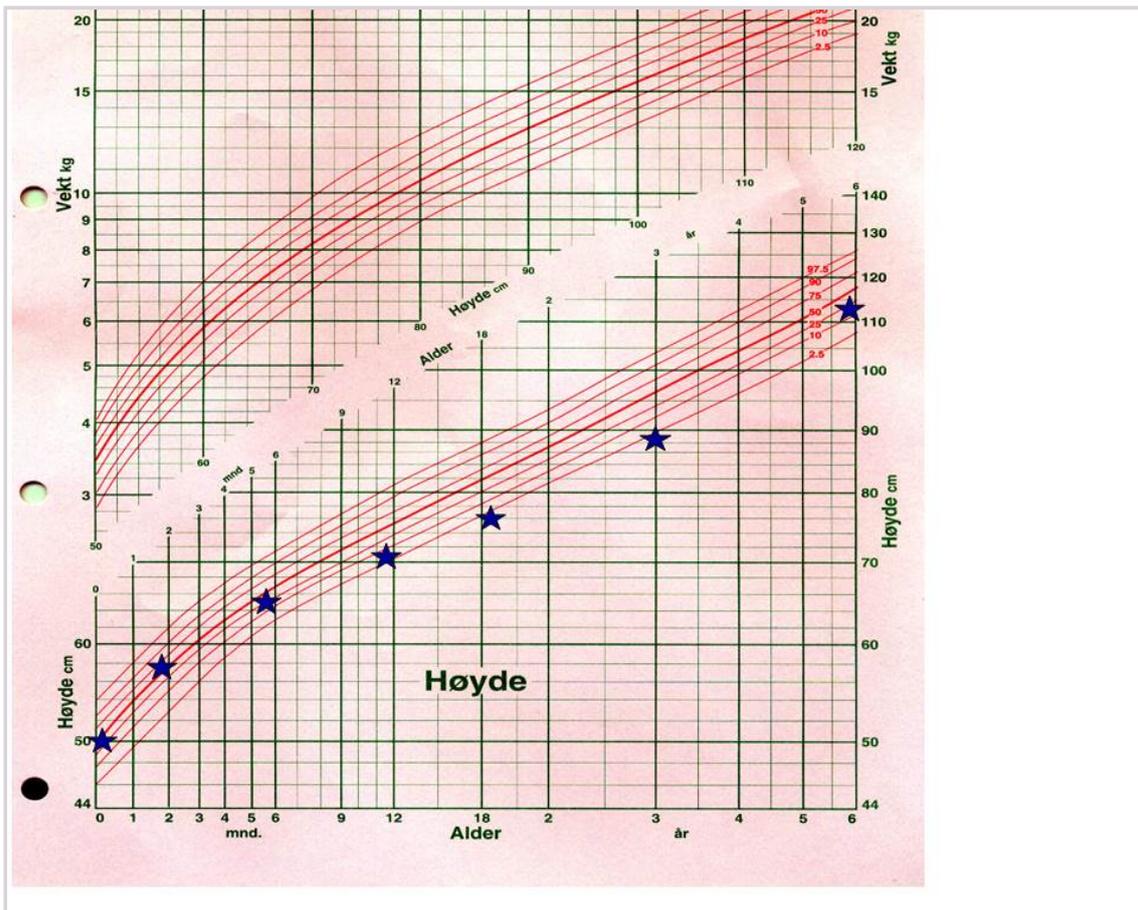
- A Measure blood sugar immediately after the birth to ensure a normal blood glucose.  
*It is more important to give food than measure blood sugar; that can be measured later, generally before the second feed.*
- B X Give regular extra food to the child to avoid hypoglycaemia.  
*Food must be given early and regularly in addition to breast-feeding to avoid hypoglycaemia. These children generally get too little food through breast-feeding alone in the first 24 hours.*
- C Place the child on the mother's breast to quickly stimulate breast-feeding.  
*This is correct, but not in the case of this child which most probably has hyperinsulinism and needs more food in the first 24-48 hours.*
- D Weigh the child after each feed to make sure they receive enough food.  
*Experience shows that the mother does not have enough food for these children and therefore they must have additional feeds.*

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82

At the start of school, the school doctor finds that Mina has had a growth spurt (see attached growth curve). Her parents (mother 152 cm and father 165 cm) are satisfied and think it is good that their daughter is now closer to the average for her age. She had a number of respiratory tract infections from 6 months of age, but they now feel she is healthy.

What is the correct assessment of this growth pattern?



- A** The girl had poor growth from 6 months to 2 years of age but is now catching up to the normal level. Children grow in spurts and this variation lies within the normal range.  
*The growth from 6 months to 2 years of age is normal with parents of short stature. The problem here is that it is abnormal to cross two percentiles after 2 years of age.*
- B X** The girl has grown normally, corresponding to her genetic potential up until the age of 3. She has had a growth spurt now before school start which is abnormal.  
*It is abnormal to cross 2 percentile or more after the age of 2. The most probable cause here would be precocious puberty or hyperthyroidism, or possibly development of obesity.*
- C** The girl has a growth pattern of crossing two percentiles up until 2 years of age corresponding to the mid-parent height. It is normal to have a growth spurt at the start of school.  
*She has crossed two percentiles which is pathologic (particularly after 2 years of age).*
- D** The girl had delayed growth from 6 months to 2 years of age, probably due to continuous respiratory infections. After the age of 3 she has exhibited catch-up growth and is now on her correct percentile.  
*Respiratory infections do not cause long-term growth delay - that needs chronic illness.*

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83

Ole is 1-year old. He has atopic eczema. His mother says that he has coughed a lot over the last 3 months. They have a dog and cat at home. The mother and Ole come to your office. Ole has been admitted twice as an emergency to the local hospital in the last 6 months with bronchiolitis, and was discharged without medication. In connection with the last admission, blood samples were taken for specific IgE against dogs and cats, which were negative. You examine the boy and at auscultation hear whistling sounds on expiration. He has quite a bit of eczema. What do you do?

- A You nonetheless suspect that he has an allergy and recommend starting on daily, fixed antihistamines perorally.  
*The vast majority of people with an allergy give a positive result with the blood tests (specific IgE), for which a negative blood test in the majority of cases will exclude an IgE-mediated allergy. Starting with fixed antihistamines is not indicated and will not improve the boy's symptoms.*
- B You refer the boy for a prick test with the paediatric specialist for complete allergy clarification.  
*Both specific IgE measurement in blood and prick tests are very good tests, but this can vary a little with the allergen. In general, blood tests detect most people with IgE-mediated allergy. One important point is that such young children rarely have animal hair allergy. Thus, further investigation with a prick test would most probably be an unnecessary investigation.*
- C X You suspect that the boy has developed asthma and start inhalation treatment with 2-agonist.  
*Specific IgE measurement in blood is a good test. Children aged 1 rarely have an allergy to animal hair. He has had 2 definite obstructive episodes previously, and you hear whistling sounds at examination. He has atopic eczema and is predisposed to develop asthma. Starting inhalation treatment with a 2-agonist is correct.*

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84

When changing their baby's nappy, the parents discover that their 5-month old boy has a hard and painful swelling the size of a walnut in his right groin. The boy is whining and out of sorts. He has never had a swelling in his groin before. What is the most probable diagnosis?

- A Testicular torsion
- B Acute inguinal lymphadenitis
- C Subcutaneous abscess
- D X Incarcerated inguinal hernia

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85

Emma is 6-months old and previously healthy. Her parents have observed that over the last 2 – 3 weeks she has episodes of suddenly throwing her arms wide while arching her body. These movements can come several times after each other. She is awake between the episodes, but possibly somewhat cranky for a short while afterwards. The episodes have gradually become more frequent and last longer. Her parents experience that she is generally less content. What is the most probable diagnosis?

- A Colic  
*Not typical age for onset of colic; not typical symptoms; does not cry.*
- B Normal movements  
*The movements described above cannot be considered as normal and must be investigated.*
- C Gastro-oesophageal reflux  
*No relationship with meal times has been mentioned. Reflux episodes do not typically come in series and increase in frequency.*
- D X Infantile spasms  
*She suddenly throws her arms wide and flexes her body. These movements can occur several times in succession. She is awake in between the episodes.*

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86

You are working in the Surgical Dept. and a 3-week old boy comes in with a diffuse, red skin discolouration on the front left side of the chest and stomach. The mother says that after bathing the boy, she suspects the water was too warm. You assess the injury to be a 1st degree burn. The boy appears unaffected, he eats well and is in good general health.

- A The boy goes home with moisturiser, but you send a note to the GP requesting follow-up.
  - B You send the boy home with the message that you have to notify this to the Child Welfare Services the next day.
  - C X** You admit the boy for investigation with X-ray of the total skeleton, cerebral CT and eye examination
  - D You let the boy go home and agree with the mother that she applies a mild steroid cream and moisturiser.
- 

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87

In cases of deviation when assessing neurology status, it is important to assess whether it is primarily a central or peripheral condition.

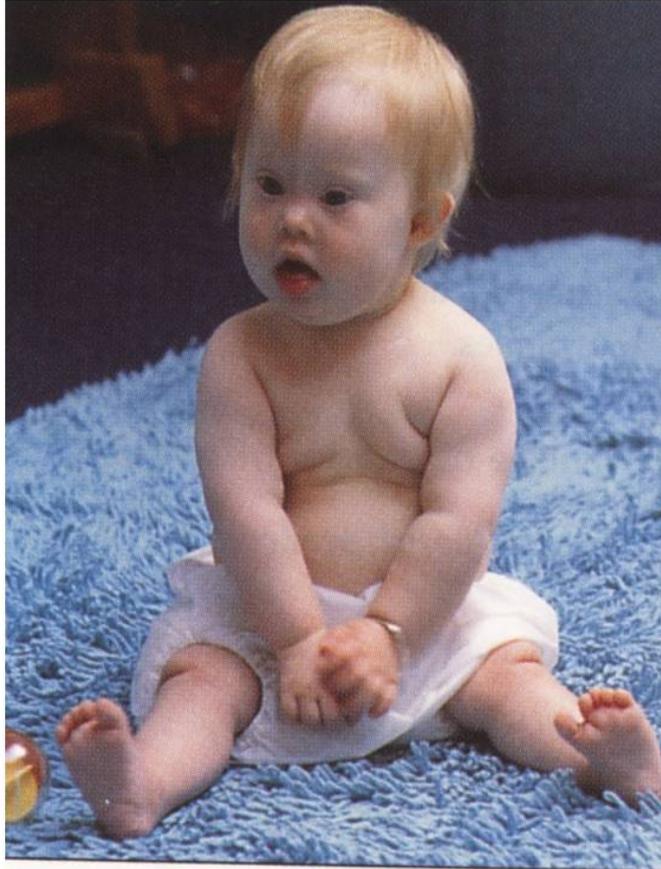
Which of the following findings most strongly indicate a peripheral condition?

- A Positive Babinski  
*Typical for central neurological conditions*
  - B Hyper-reflexion  
*Typical for central neurological conditions*
  - C X** Hypotonia  
*Hypertonia is most common in a central condition.*
  - D Spasticity  
*Typical for central neurological conditions*
- 

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88

Which diagnosis is the most common in children with this condition?



- A Coeliac disease  
*Occurs in 5-12% of all children with Down's syndrome*
- B X** Intellectual disability  
*Basically all children with Trisomy 21 have intellectual disability.*
- C Congenital heart condition  
*About 40% of children with Down's syndrome have a congenital heart condition.*
- D Hypothyroidism  
*Lifetime prevalence of 3-50% with increasing occurrence with age.*
- E Duodenal atresia  
*Gastrointestinal malformations, in particular duodenal atresia are not uncommon in children with Down's syndrome; 2.5-5% have malformation in the intestines.*

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89

The parents of a 4-year old boy are worried because they experience that he falls more easily than before, and has problems getting up again by himself. They deny that they have previously had any concerns about his health, growth or development. He talks in long sentences, and to start with is a little sceptical to you, but eventually there is no problem examining him if he is allowed to sit on his mother's lap. He is right-handed and can draw circles. His gait is symmetrical, but when he runs he appears a little unsteady.

What is the most probable diagnosis?

- A Cerebral palsy  
*They deny having had any concerns about his health, growth or development.*
- B Autism  
*He talks in long sentences, and to start with is a little sceptical to you, but eventually there is no problem examining him if he is allowed to sit on his mother's lap. He is right-handed and can draw circles*
- C X Neuromuscular disease  
*His parents experience that he falls more easily than before, and has problems getting up again by himself.*
- D Intellectual disability  
*He talks in long sentences, and to start with is a little sceptical to you, but eventually there is no problem examining him if he is allowed to sit on his mother's lap. He is right-handed and can draw circles.*

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90

Ole is 6 months old and has had eczema since 2 months of age. He was breastfed until 2 weeks of age, and then received breast milk substitute. Porridge was gradually introduced from 4 months of age and exacerbated the eczema. His skin itches a lot and he has periods with stomach pains and gulping. The mother and Ole come to the GP office wanting help. The mother says that she has applied a moisturiser. You examine the child and find large areas with atopic eczema in the face, scalp, torso and limbs.

What do you do next? (Indicate the optimal answer)

- A Prepare a moisturising schedule that includes a moisturiser and cortisone cream.  
*Preparing a moisturising schedule for his eczema is good. Nonetheless, you should also clarify whether allergies are the reason for his complaints. Early onset of widespread atopic eczema can be associated with food allergy.*
- B Suspect food allergy to be the cause and recommend a diet without wheat for 4 weeks before a new follow-up appointment.  
*Suspecting a food allergy at this age based on the child's symptoms and clinical examination is good. Nevertheless, it is not known whether this is due to wheat or some other allergen. An investigation should be made before implementing measures with diet change in a small child.*
- C X Prepare a moisturising schedule that includes cortisone cream, and investigate with blood tests for allergies.  
*Preparing a moisturising schedule for his eczema is good. It is also important to clarify whether any food allergies are causing his problems. Such early onset of atopic eczema can be due to an IgE-mediated allergy, for which diet can have a good effect on the eczema and other complaints.*
- D Suspect food allergy to be the cause; investigate with allergy blood tests before a new appointment.  
*Investigation of the complaints is correct. Nevertheless measures should be started with applying cortisone cream to the eczema. This means treatment and investigation takes place at the same time.*

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91

Epilepsy occurs in about 0.5-1.0% of children and adolescents. What percentage of these have a good prognosis and become seizure-free with or without treatment?

- A X About 70%  
*20-35% have seizures that cannot be managed completely with treatment.*
  - B About 35%  
*The majority of children become seizure-free.*
  - C <10%  
*The majority of children become seizure-free.*
  - D >90%  
*20-35% have seizures that cannot be managed completely with treatment.*
- 

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92

When is antibiotic treatment recommended for children with middle ear infection in Norway?

- A Children with >2 otitis in the last year and a new otitis  
*Only after >4 cases in the last year are antibiotics always recommended in a new case of otitis media ("glue ear")*
  - B X All children younger than 12 months with otitis media  
*Correct answer*
  - C All children younger than 24 months with otitis media  
*Incorrect, see above*
  - D All children with double-sided middle ear infection  
*It must be considered in pronounced double-sided middle ear infection*
- 

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93

You are examining a 4-year old boy who has previously undergone surgery for Meckel's diverticulum, but has otherwise been healthy. He has now been ill for 2 days with stomach pains, diarrhoea and vomiting, Nobody else in the family or surroundings has been sick. At examination, you find the boy to be limp with a temperature of 39.3 grader. He resists examination, but you find that his abdomen is slightly distended and appears tender to the touch everywhere. What do you suspect to be the most probable diagnosis?

- A Acute gastroenteritis
  - B X Acute appendicitis
  - C Invagination
  - D Adherence ileus
- 

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94

Guidelines recommend extra food for newborn infants that are receiving phototherapy for hyperbilirubinemia. What is the reason for this?

- A Compensates for increased calorie requirement with phototherapy.
  - B X Reduces the uptake of conjugated bilirubin from the intestines.
  - C Compensates for increased fluid loss during phototherapy.
  - D Increases the excretion of bilirubin via the bile duct.
- 

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95

The parents of a 12-month old boy are concerned when they discover that he has not shown much motor development over the last months. He sits securely, but cannot get into a sitting position by himself. He cannot crawl. He can pick up small things well using the pincer grip ("pencil grasp") and he makes a lot of different sounds and says mama to his mother. It is difficult to examine him properly as he is sceptical about you. You cannot manage to elucidate any tendon reflexes. What is the most probable diagnosis?

- A Autism  
*Sceptical to strangers, reacts to his name and has words*
- B Mental retardation  
*Has words and reacts to his name*
- C Cerebral palsy  
*Lacks tendon reflexes*
- D X Neuromuscular disease  
*Only motor development affected and lacks tendon reflexes*

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96

A 3 year old previously healthy boy develops peripherral edema, urinates often and has become in reduced general condition during the last 2 weeks. The day of admittance he has got a temperature of 37.5°C. The following investigations are performed:  
BP 100/60 (90% perc. for normal BP: <105/70)

		ref.
CRP	6 mg/l	<5 mg/l
Hb	10,5 g/l	10,5 - 13,5 g/dl
Hvite	12,3 x 10 <sup>9</sup> /l	4,0 - 14,0 x 10 <sup>9</sup> /l
Platelets	265 x 10 <sup>9</sup> /L	150 - 400 x 10 <sup>9</sup> /L
creatinin	40 µmol/l	11 - 41 µmol/l
LD	345 U/l	240 - 500 U/l
Haptoglobin	0,7 g/l	0,4 - 1,9 g/l
Albumin	15 g/l	35 - 48 g/l
AST (antistreptolysin)	200 (low)	not measureable
Urine is light and clear		
Urine dip stick	+4 protein negative white cells +1 red cells	negative negative negative
Urine microscopy	0 white cells per visionary field 5-10 red cells per visionary field Some hyaline cylinders	0-5 0-5
Urine culture	Negative	

What is the most probable diagnosis?

- A Nephritic syndrome (acute nephritis)  
*Usually not that low albumin and so much protein in the urine*
- B Hemolytic uremic syndrome (HUS)  
*Usually thrombocytopenia, hemolysis (increased LD, low Hb), and kidney failure (increased creatinin).*
- C X Nephrotic syndrome  
*Protein in urin and hypoalbuminemia is suspicious of this condition*

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97

Kari is a previously healthy 2-year old girl. Her parents suddenly noticed that she had started to have twitches on the right side of her body and subsequently throughout her whole body. This lasted about 2 minutes; during this time she was contactable. You visit them at home as the GP about 15 minutes after the attack, and find that the girl is dozy, but awake, moves all her body parts, is somewhat irritable and does not like to be examined. Her temperature is then 38.9 degrees.

Which of the following combinations best matches typical (simple) febrile seizure attacks?

- A Her age, description of the seizure and irritability.  
*The description of the seizure does not fit as it was focal at the beginning.*
- B Her temperature, age and the description of the seizure.  
*The description of the seizure does not match as it was focal at the beginning.*
- C X Her temperature, age and irritability.  
*Temperature and age fit. Irritability does not exclude typical febrile seizures.*
- D Her temperature, description of the seizure and irritability.  
*The description of the seizure does not fit as it was focal at the beginning.*

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98

The parents of a 3-year old girl are worried because they experience that she talks far less than her peers. She can run and get on and off a chair without problem. She picks up small things from the floor with both hands. You hear no words and it is difficult to get her attention. She does not look at her parents when they say her name. You also think it is difficult to get eye contact with her. She is fascinated by one of the toys she plays with that makes noises.

What is the most probable diagnosis?

- A X Autism  
*You hear no words and it is difficult to get her attention. She does not look at her parents when they say her name. You also think it is difficult to get eye contact with her. She is fascinated by one of the toys she plays with that makes noises. This combination is typical for autism.*
- B Neuromuscular disease  
*She can run and get on and off a chair without problem. She picks up small things just as easily from the floor with either hand*
- C Cerebral palsy  
*She can run and get on and off a chair without problem. She picks up small things just as easily from the floor with either hand*
- D Delayed mental development  
*You hear no words and it is difficult to get her attention. She does not look at her parents when they say her name. You also think it is difficult to get eye contact with her. She is fascinated by one of the toys she plays with that makes noises. This combination is not typical for delayed mental development.*

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99

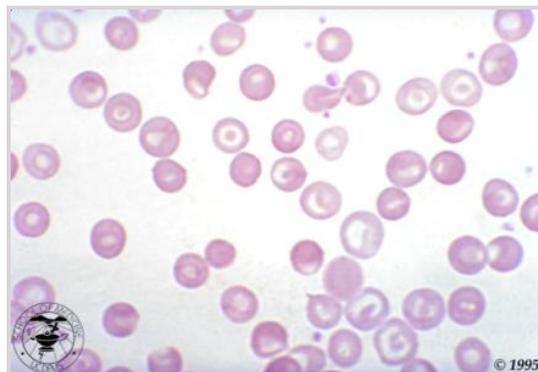
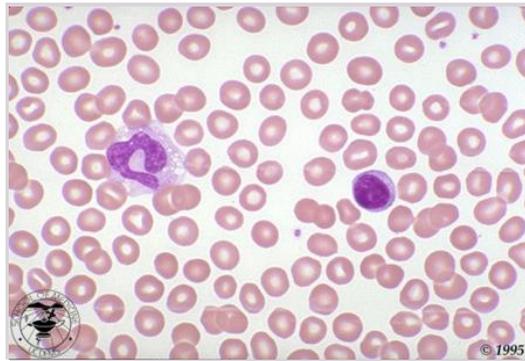
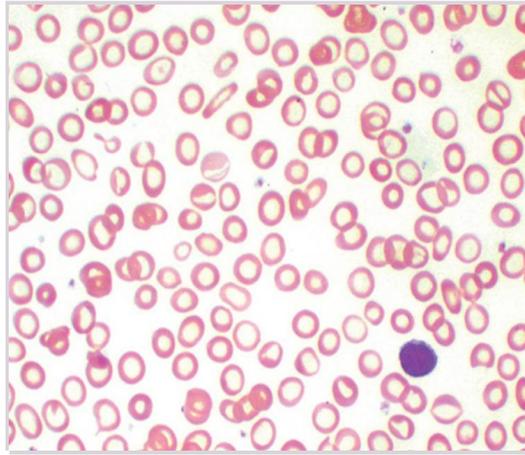
At what week during pregnancy is a child considered born premature?

- A X Only when born before week 37  
*All children born alive before week 37 is defined as premature*
- B Only when born before week 33
- C Only when born before week 28
- D Only when born before week 23

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100

Here you can see images of peripheral blood smears from three different people (children). Which combination of conditions/diseases is most correct?



- A Iron deficiency anaemia, hereditary spherocytosis, thalassaemia
- B Hereditary spherocytosis, sickle cell anaemia, iron deficiency anaemia
- C X Thalassaemia, normal blood smear, iron deficiency anaemia
- D Sickle cell anaemia, thalassaemia, normal blood smear

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