CONTENTS

Acknowledgements ix
About the Author x
About the Contributors x
Introduction xi
Abbreviations xiii
1 FAQs and Tips for Success 1
2 The CSA examination: history and overview 13
3 Consultation skills in the CSA 19
4 Exam Circuit 1 31
   Case 1 33
   Case 2 42
   Case 3 50
   Case 4 57
   Case 5 63
   Case 6 69
   Case 7 75
   Case 8 81
   Case 9 88
   Case 10 94
   Case 11 100
   Case 12 108
   Case 13 115
   Bonus Case 121
<table>
<thead>
<tr>
<th>Exam Circuit 2</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Case 1</td>
<td>129</td>
</tr>
<tr>
<td>Case 2</td>
<td>137</td>
</tr>
<tr>
<td>Case 3</td>
<td>144</td>
</tr>
<tr>
<td>Case 4</td>
<td>151</td>
</tr>
<tr>
<td>Case 5</td>
<td>160</td>
</tr>
<tr>
<td>Case 6</td>
<td>168</td>
</tr>
<tr>
<td>Case 7</td>
<td>177</td>
</tr>
<tr>
<td>Case 8</td>
<td>187</td>
</tr>
<tr>
<td>Case 9</td>
<td>194</td>
</tr>
<tr>
<td>Case 10</td>
<td>202</td>
</tr>
<tr>
<td>Case 11</td>
<td>211</td>
</tr>
<tr>
<td>Case 12</td>
<td>219</td>
</tr>
<tr>
<td>Case 13</td>
<td>226</td>
</tr>
<tr>
<td>Bonus Case</td>
<td>235</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exam Circuit 3</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Case 1</td>
<td>243</td>
</tr>
<tr>
<td>Case 2</td>
<td>253</td>
</tr>
<tr>
<td>Case 3</td>
<td>259</td>
</tr>
<tr>
<td>Case 4</td>
<td>266</td>
</tr>
<tr>
<td>Case 5</td>
<td>272</td>
</tr>
<tr>
<td>Case 6</td>
<td>280</td>
</tr>
<tr>
<td>Case 7</td>
<td>288</td>
</tr>
<tr>
<td>Case 8</td>
<td>298</td>
</tr>
<tr>
<td>Case 9</td>
<td>305</td>
</tr>
</tbody>
</table>
Chapter 1
FAQs and tips for success
If you let it, the CSA can hover over your GP registrar year like a black cloud. It doesn’t need to. The RCGP has spent time and energy perfecting this examination to make sure that it does exactly what it says on the tin. It assesses you ‘doing the day job’, just as it should. So, if you structure your registrar year using all possible resources and prepare properly for both the AKT and the CSA, there should be no surprises when it comes to the day of the assessment.

Here are some ‘top tips’ of how to succeed in the CSA.

**BEFORE THE DAY**

**Tip**

✓ **DON’T NEGLECT BASIC CLINICAL KNOWLEDGE**

Don’t make the mistake of assuming that the CSA is purely a test of your communication skills. Focus your revision on topics that you find difficult or those that you’re least experienced in. After each surgery keep a logbook of cases or topics you found difficult and why (DEN = doctor educational need). Read up on the clinical aspects the same day if at all possible, or discuss them with your trainer at your debrief.

**Tip**

✓ **DON’T PREPARE FOR THE CSA IN ISOLATION**

It is difficult to ‘revise’ for these examinations in the way that you may have done for other more traditional written assessments. Preparation for the CSA should be an ongoing project and an integral part of daily life as a GP trainee. Don’t underestimate how valuable videoing your consultations can be.

**WHAT TO WEAR**

- Smart clothes that would be appropriate if you were working as a locum GP in a new practice
- This does not have to mean tie and suit for men, although a pair of polished shoes go a long way
- Avoid wearing anything too risqué (men and women).
CHAPTER 1

FORMAT OF EXAM

- Simulated surgery of 13 cases (previously this included a dummy case; however, all will be scored as of September 2010)
- An iPad with an RCGP app containing a list of the patients whom you will see during your assessment. Full information is available on the RCGP website
- 10 minutes each case
- 2 minutes between patients to read the notes for the following case; make the most of this time

Tip

✔️ Read each case one at a time so that you can focus on the case in hand.

CASE MIX IN EXAM

- Thought is given to the spread of cases in each exam, so that as many domains and clinical systems are covered while testing as many varied skills as possible.
- See the domain coverage grids appended to each of the four exam circuits in this book.
- You can expect a fairly even mix of age and gender, of acute, chronic and health promotion, and of clinical systems.
- There will be a mix of ‘primary aims’ being tested among the cases within each exam circuit, eg acute and ongoing medical management, practical skills, health promotion, psychosocial issues, diversity issues, ethical issues, handling anger, low mood, anxiety and demanding patients.
- Expect at least one home visit or telephone consultation.
WHY PEOPLE FAIL

- Poorly structured consultation
- Did not develop appropriate management plan (usually because ran out of time – take a watch or clock)
- Did not recognise the challenge (failure avoided if pick up on cues, allow the patient to talk with open questions, and ensure that ideas, concerns and expectations [ICE] are covered)
- Did not develop a shared management plan (failure avoided if the patient is presented with ‘options’, and if understanding of ongoing management including follow-up and safety netting is checked).

WHERE IS THE EXAM HELD?

- Visit the RCGP website for full information on the venue and a virtual tour for those who want to get the adrenaline really pumping.

Tip

 ✓ Book a hotel/B&B nearby the night before to avoid the added stress of commuting to the exam from distance. If you consider that your exam fee will be forfeited if you do not arrive for the exam on time, the extra cost of a hotel room can be viewed as a wise insurance policy.

WHAT DO YOU NEED TO TAKE TO THE EXAM?

- See RCGP website for the list
- Don’t forget your photo ID.

Tip

 ✓ Fold pages or insert ‘sticky tabs’ in your BNF (which should not be written in) to give you the confidence of finding specific sections more quickly.
MARKING SCHEME

- Marks are awarded in three broad areas for each case: data gathering, clinical management and interpersonal skills.
- Descriptors of what skills are being assessed in these areas can be viewed at www.rcgp.org.uk. There are four possible overall marks for each of the 13 cases: clear pass, pass, fail and clear fail.
- Descriptors for these marks can be viewed at www.rcgp-curriculum.org.uk.
- There is a ‘borderline averaging’ system to ensure that people are not unfairly marked down if a specific circuit is harder than the next.

WHEN IS THE CSA EXAM?

- See dates on RCGP website.

Tip

✓ Do not miss the application deadlines.

WHEN SHOULD YOU SIT THE CSA EXAM?

- ‘When you are ready’.
- For most people this is after they have passed the AKT, and usually some time in the final registrar year.
- Given the expense entailed, this is an exam that you do not want to fail and so there is an argument for gaining as much experience as possible before making an attempt.
- The flipside to this approach is that if you fail the exam late in your registrar year you may be forced to add a further 6 months to your training.
- Your trainer is usually best placed to assist you in this sometimes difficult decision.
WHAT CLINICAL EXAMINATIONS MIGHT BE EXPECTED?

- Common sense really, and worth some forethought
- Consider how you might ask permission to examine different body parts and systems being polite and using lay language, eg NOT ‘cranial nerves’, but perhaps ‘nerves in your head’
- Think about how you might perform examinations from a problem-based approach (eg ‘short of breath’) as opposed to the hospital medicine systems approach (eg cardiovascular or respiratory systems)
- Discuss this with your trainer to ensure that all the bases are covered – this makes for a good tutorial.

Tip

✓ It is a good time to go back to basics. And dust off your medical school textbooks. Discipline yourself to do proper examinations in your consultations, as if it were the real thing. GP examinations need to be targeted and focused. It might be useful to write down a pro forma for each examination to help you to think things through logically.
Chapter 4
Exam Circuit 1
<table>
<thead>
<tr>
<th>Case Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>The general practice consultation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Clinical governance</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Patient safety</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Clinical ethics and values-based practice</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Promoting equality and valuing diversity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Evidence-based practice</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Research and academic activity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Teaching, mentoring and clinical supervision</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Management in primary care</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Information management and technology</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Healthy people: promoting health and preventing disease</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Genetics in primary care</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Care of acutely ill people</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Care of children and young people</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Care of older adults</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Women's health</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Men's health</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sexual health</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Care of people with cancer and palliative care</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Care of people with mental health problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Care of people with learning disabilities</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cardiovascular problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Digestive problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Drug and alcohol problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ENT and facial problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Eye problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Metabolic problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Neurological problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Respiratory problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Rheumatology and conditions of the musculoskeletal system (including trauma)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Skin problems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Fig. 3 Circuit 1 cases plotted against RCGP curriculum
CASE 1

IN THIS STATION …
You are a new doctor in the practice.

Tip
✓ Start a stopwatch now and give yourself 2 minutes to read through the case notes and brainstorm any points you may want to bring up during the consultation.

MATERIALS AND INSTRUCTIONS TO CANDIDATE (CASE NOTES)

<table>
<thead>
<tr>
<th>Name</th>
<th>Sarah Morrison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>67 years</td>
</tr>
<tr>
<td>Address</td>
<td>11a The Mews, Great Kingshill, London NW5 2NF</td>
</tr>
<tr>
<td>Social and family history</td>
<td>Retired teacher</td>
</tr>
<tr>
<td></td>
<td>Lives with husband, also a retired teacher</td>
</tr>
<tr>
<td>Past medical history</td>
<td>Hypertension</td>
</tr>
<tr>
<td></td>
<td>Hysterectomy</td>
</tr>
<tr>
<td>Current medication</td>
<td>Amlodipine 5 mg od</td>
</tr>
<tr>
<td>Recent tests</td>
<td>TSH (thyroid-stimulating hormone): normal range</td>
</tr>
<tr>
<td></td>
<td>Smear (age 64): no dyskaryosis</td>
</tr>
</tbody>
</table>
BRAINSTORM

Tip: make the most of the time you have before each consultation to brainstorm. Compose yourself; make notes about your consultation structure and the important points that you need to cover. Remember your consultation structure.
EXAMINATION FINDINGS

*Information offered on iPad if appropriate*

- No pallor
- Slim build

*Abdomen:*
- Appears distended
- Generally tender
- No discrete masses
- No organomegaly
- Ascites detected
- Bowel sounds normal
- Pelvic and rectal examination declined by patient

*Urine dip:* 3+ blood only

*Respiratory:*
- Normal respiratory rate
- Normal expansion, percussion note, fremitus and air entry
- Peripheral oxygen saturations 97%
INSTRUCTIONS TO ROLE PLAYER (PATIENT OR CARER)

NOT TO BE SEEN BY THE CANDIDATE

You are Sarah Morrison, a 67-year-old retired teacher. You have been experiencing lower abdominal pain and bloating over the last few months. These symptoms have been getting worse recently and are now complicated by needing to pass urine more frequently.

You think you may have a urinary tract infection.

You’re deeply worried about a sinister cause of the bloating and pain, but admit to this only if directly asked.

You decline any intimate examinations.

The doctor should explore the possibility of you having ovarian cancer.

Opening statement

[looking worried] ‘Hello doctor, we’ve not met before. I think I may have a urinary tract infection.’

Freely divulged in response to open questions:

You have been passing urine more frequently for the last few months.

It doesn’t burn or hurt when you pass urine although you have been experiencing lower abdominal pain for the last few months.

You’re horrified at your dress size and feel embarrassed when you’re with your husband.

You’ve brought a urine sample for the doctor to dip.

Information divulged if asked specifically:

For the past few months you’ve been passing urine about twice as often as you normally do. It doesn’t hurt when you pass urine and there is no blood.

You have been a bit more constipated lately.

There is no blood or mucus in your stool.

You have not noticed any vaginal discharge or bleeding.
You had your hysterectomy when you were 40 because of heavy periods caused by fibroids. The gynaecologists didn't remove your ovaries.

Your pain is dull and in your lower abdomen.
The pain doesn't spread anywhere and is constant.
There are no exacerbating or relieving factors.
You feel bloated all the time and your skirts are getting tight; you've gone up three dress sizes. Your swollen abdomen feels like it's affecting your breathing, as though something is pressing on your diaphragm.
The pain doesn't disturb your sleep unless you turn in bed; it reminds you of being pregnant.
You feel unusually tired and have gained weight.
You're concerned that you have cancer of some form.
OVERALL AIM OF THE CASE

The aim of this case is to explore beyond the surface; keep an open mind at the start of the consultation rather than accepting the patient’s initial statement as the diagnosis.

DATA GATHERING, TECHNICAL AND ASSESSMENT SKILLS

- It’s important to keep an open mind in the early stages of this consultation. It would be easy to be drawn into ‘colluding’ with the patient’s opening statement and treating her for a urinary tract infection (UTI).

- She has had a hysterectomy; exploring whether this was ovary conserving is pivotal to this case. Making an assumption that it was a total hysterectomy and bilateral oophorectomy may cost this woman her life.

- Furthermore, she does have constipation, which may draw you into bowel pathology. This can be a symptom of ovarian cancer; a change towards looser stool tends to be suggestive of bowel cancer.

- Exploring and reflecting back why she thinks that she has a UTI will reveal her symptom complex and offer vital clues that this is not a case of a simple UTI, but is a probable ovarian tumour, eg she has a protracted history of urinary frequency and persistent abdominal bloating, and she does not experience dysuria.

- General observations on examination are helpful.

- An abdominal, pelvic and rectal examination is important. For the purposes of the CSA, personal examinations will not be permitted.

- Given the symptom of breathlessness, a chest examination, and arguably a cardiac examination, should also be performed. Given the time pressures within general practice, a cardiac examination is not essential.
A chest examination may reveal a pleural effusion, which may occur in the context of an ovarian tumour (e.g., Meigs syndrome: benign ovarian tumour, ascites, pleural effusion).

The breathlessness may be caused by the pressure of the ascitic fluid splinting the diaphragm.

It’s possible that the examination findings are merely presented to you on the iPad rather than you having to perform a full examination.

**CLINICAL MANAGEMENT SKILLS**

- This patient has an ovarian tumour till proven otherwise.
- Urgent investigations including abdominal and pelvic ultrasound, and measurement of CA-125, are required.
- An MSU should still be sent for culture and sensitivity, and perhaps cytology.
- The ultrasound scan will confirm ascites and should offer a vital clue as to its cause. Remember that the differential of ascites is wide and includes cor pulmonale, tuberculosis (TB), pancreatitis, intra-abdominal tumours and metastatic disease.
- Remember that there are several causes of a raised CA-125 level.
- Robust safety netting and urgent follow-up are required.

**INTERPERSONAL SKILLS**

- A clear logical approach with regular summarising is important to ensure that you understand the patient and that the patient understands you and feels listened to.
- The patient is looking worried; exploration of this cue may reveal the concern of a malignancy and she may feel enabled to vocalise more symptoms.
- Empathy is required.
- It’s important not to falsely reassure but to assure that you will investigate quickly.
What are her expectations? Manage expectations, eg what and why you’re organising investigations, what an ultrasound is and what may happen next, ie 2-week wait (2WW) referral, CT (computed tomography) scan.

Offer hope, if the conversation arises, that this may not be cancer and that it may be benign. If it is cancer, it may be treatable.

Be honest that there are a lot of unknowns.

KEY POINTS

- Ovarian cancer is the fourth most common cause of cancer death in the UK
- Often diagnosed too late
- Risk factors:
  - Advancing age
  - Low parity
  - Early menarche
  - Late menopause
  - BRCA
- Features that should raise suspicion of ovarian cancer:
  - Persistent abdominal bloating
  - Early satiety
  - Abdominal/pelvic pain
  - Urinary frequency/urgency
  - Change in bowel habit
  - Features of IBS (irritable bowel syndrome) in a woman aged >50 years
Causes of a raised CA-125:

- Malignant: ovary, endometrial, cervical, breast, hepatocellular, pancreas, colon, lung, lymphoma
- Non-malignant: endometriosis, fibroids, pregnancy, hepatitis, liver disease, ascites, pancreatitis, IBD (inflammatory bowel disease), peritonitis, urinary retention, osteoarthritis, rheumatoid arthritis, SLE (systemic lupus erythematosus), chronic kidney disease, cystic fibrosis, diabetes mellitus, diverticulitis, IBS, heart failure, pericarditis, pneumonia.

**FURTHER READING**

Cancer Research UK has a very good summary on ovarian cancer.


*MIMS Consultation Guide* for extensive list of differential diagnoses, explanation of tests and disease summaries – an excellent revision aid.
CASE 2

IN THIS STATION …
You are a locum GP in the practice.

<table>
<thead>
<tr>
<th><strong>MATERIALS AND INSTRUCTIONS TO CANDIDATE</strong>&lt;br&gt;<strong>CASE NOTES</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Tony Parsons</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>78 years</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>101 Newlands Flats, Bloomsbury Gardens, London W1</td>
</tr>
<tr>
<td><strong>Social and family history</strong></td>
<td>Lives with wife, Brenda</td>
</tr>
<tr>
<td></td>
<td>Smoker</td>
</tr>
<tr>
<td><strong>Past medical history</strong></td>
<td>STEMI (ST-elevation myocardial infarction) in 2009</td>
</tr>
<tr>
<td></td>
<td>Hypertension</td>
</tr>
<tr>
<td></td>
<td>Hypercholesterolaemia</td>
</tr>
<tr>
<td><strong>Current medication</strong></td>
<td>Aspirin 75 mg od (alert: under-use)</td>
</tr>
<tr>
<td></td>
<td>Ramipril 5 mg od</td>
</tr>
<tr>
<td></td>
<td>Bisoprolol 5 mg od</td>
</tr>
<tr>
<td></td>
<td>Amlodipine 5 mg od</td>
</tr>
<tr>
<td></td>
<td>Atorvastatin 40 mg od</td>
</tr>
<tr>
<td><strong>Last cholesterol</strong>&lt;br&gt;(3 months ago)</td>
<td>4.0 mmol/l</td>
</tr>
</tbody>
</table>
BRAINSTORM
EXAMINATION FINDINGS

Information offered on iPad if appropriate

- Sinus rhythm 60 beats/min
- BP 158/68 mmHg
- Bilateral carotid bruits

Neurological examination normal
INSTRUCTIONS TO ROLE PLAYER (PATIENT OR CARER)

NOT TO BE SEEN BY THE CANDIDATE

You are Tony Parsons, a 78-year-old retired policeman. You’ve had a stressful career working in the murder squad.

You think you had a mini-stroke yesterday evening. You couldn’t speak for about 20 minutes.

You’ve come to the doctor without your wife, worried and asking for help.

Opening statement:

‘Hello doctor, I think I had a mini-stroke last night; my wife saw the whole thing but she couldn’t make it today.’

Freely divulged in response to open questions:

You were watching TV last night and chatting to your wife when your speech suddenly changed.

Your words came out all jumbled.

You thought that you were having a stroke.

Everything went back to normal after 20 minutes.

Information divulged if asked specifically:

You’ve never experienced this before.

You tried to talk and it came out like a foreign language.

You didn’t experience any weakness in your limbs.

You didn’t lose consciousness.

You’re aware that this was a mini-stroke and that a stroke is like a ‘brain attack’ and should be taken seriously.

You had no idea that this may herald a major stroke.

You take drugs to lower your cholesterol and blood pressure, hence you thought that you would be immune from getting further cardiovascular disease; because of this you continue to smoke. Your
wife cooks healthy foods, but you often eat chips and chocolate behind her back.

You take your medicines as prescribed, except for aspirin; you just decided, because the dose seemed so small, that it wasn’t that important.

You checked your blood sugar at the chemist last week and were told that it was normal.

You enjoy smoking but are willing to change your lifestyle if advised. You’re happy to take whatever advice the doctor gives you. You’re worried what might happen in hospital.
NOTES

OVERALL AIM OF THE CASE

This case is about managing the patient’s health beliefs, and recognising and managing a TIA (transient ischaemic attack) as a risk factor for major stroke.

DATA GATHERING, TECHNICAL AND ASSESSMENT SKILLS

- A clear understanding of what the patient experienced is essential.
- It is important to establish the diagnosis and its severity, and if possible consider potential sources of emboli, eg AF (atrial fibrillation)/carotid artery stenosis/atrial septal defect.
- Confirmation that there are no residual neurological anomalies will rule out a stroke (it is quite possible that the examination findings will be given to you in the CSA rather than expecting you to have to perform one).
- In this case, there are no abnormal neurological signs; the patient is in sinus rhythm and has carotid bruits. Note that patients in sinus rhythm may have paroxysmal AF which carries the same stroke risk as persistent/permanent AF.
- NICE (National Institute for Health and Care Excellence) endorses the ABCD2 risk score in patients with a TIA, and questions should cover this.
- It is important to establish whether he has had any other TIA episodes previously. Two low-risk TIAs in the last week should be considered high risk overall.
- The ABCD2 score in this case: 4
CLINICAL MANAGEMENT SKILLS

- Aspirin 300 mg od should be commenced.
- Refer for further assessment at a local TIA clinic to be seen within 24 hours because the ABCD2 score is 4.
- Advice on drug adherence.
- Smoking cessation advice and referral to a smoking cessation counsellor if patient agrees.
- Offer lifestyle counselling and advice on driving.
- Clear safety net.
- Follow-up after the hospital appointment will include a blood pressure check.

INTERPERSONAL SKILLS

- Recognise that this may be a frightening experience and address any concerns.
- Explain what is going on in language that the patient understands. Summarise and check understanding at points throughout the consultation.
- Explore if the patient has expectations, and manage them accordingly.
- Don’t be judgemental re smoking and drug adherence with aspirin, but emphasise the importance of prevention and healthy living.
### KEY POINTS

<table>
<thead>
<tr>
<th>ABCD scoring system</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&gt;60 years</td>
<td>1 point</td>
</tr>
<tr>
<td></td>
<td>&lt;60 years</td>
<td>0 points</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>&gt;140/90 mmHg</td>
<td>1 point</td>
</tr>
<tr>
<td></td>
<td>&lt;140/90 mmHg</td>
<td>0 points</td>
</tr>
<tr>
<td>Clinical features</td>
<td>Speech impairment without weakness</td>
<td>1 point</td>
</tr>
<tr>
<td></td>
<td>Unilateral weakness</td>
<td>2 points</td>
</tr>
<tr>
<td>Duration</td>
<td>10–59 min</td>
<td>1 point</td>
</tr>
<tr>
<td></td>
<td>&gt;60 min</td>
<td>2 points</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>Yes</td>
<td>1 point</td>
</tr>
</tbody>
</table>

*Reproduced with kind permission of GPonline.*

- Score of $\geq 4$, or two or more TIA's in the last week, require specialist assessment within 24 hours.
- Scores of $\leq 3$ should be assessed within 7 days

### FURTHER READING

www.nice.org.uk covers the latest advice on stroke and TIA's.

CASE 3

IN THIS STATION …
You are a GP in a busy clinic.

MATERIALS AND INSTRUCTIONS TO CANDIDATE (CASE NOTES)

<table>
<thead>
<tr>
<th>Name</th>
<th>Jason King</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>45 years</td>
</tr>
<tr>
<td>Address</td>
<td>18 Drayton Close, Chalk Farm, London NW5 3AD</td>
</tr>
<tr>
<td>Social and family history</td>
<td>Lorry driver</td>
</tr>
<tr>
<td></td>
<td>Lives with wife and three children</td>
</tr>
<tr>
<td>Past medical history</td>
<td>Psoriasis</td>
</tr>
<tr>
<td>Current medication</td>
<td>Calcipotriol</td>
</tr>
<tr>
<td></td>
<td>Betacap</td>
</tr>
</tbody>
</table>

Examination of patient’s thumb:
BRAINSTORM
INSTRUCTIONS TO ROLE PLAYER (PATIENT OR CARER)

You are Jason King, a lorry driver, and have come to see the doctor about your nails.

Your previous GP felt that it was a fungal infection, but, as you were moving to this current practice, she didn’t want to initiate treatment.

All your nails are discoloured and you’re convinced that it’s due to a fungal infection because your stepfather has fungally infected toenails.

You want the antifungal tablets that your stepfather is taking.

You have no idea that your nail disease is due to psoriasis rather than a fungal infection.

Opening statement:
‘Hi doc, I think I need some treatment for my fungal nail infection.’

Freely divulged in response to open questions:
All finger and toenails are affected.
They have been like this for many years.
They are not painful and crumble easily.

Information divulged if asked specifically:
Your skin and scalp psoriasis is well controlled.
You’re convinced that the problem is caused by a fungal infection and would like drugs for this.
You’ve tried over-the-counter, ‘paint-on’ medication with no improvement.
You’re surprised to hear that the nail disease could be due to psoriasis.
You don’t really understand what psoriasis is.
You’re not overly keen to wait for nail clippings to be sent to the lab and would prefer to try antifungal medication.
You didn't realise that the medication can have serious side effects and agree to have samples sent to the lab; if the samples are negative for fungal elements you’re willing to see a dermatologist.

You’re embarrassed about your nails and this has affected your confidence; you’re not depressed.
NOTES

OVERALL AIM OF THE CASE
To manage patient’s health beliefs, recognise the psychological consequences of disease and manage it accordingly.

DATA GATHERING, TECHNICAL AND ASSESSMENT SKILLS

✔ When approaching new problems, it’s useful to consider the differential diagnosis of the symptom and ask questions accordingly. Explaining the differential to the patient signals your logical approach and keeps them involved and engaged.

- There are several causes of onycholysis including congenital, infection (fungal, *Pseudomonas* sp.), psoriasis, trauma, sarcoid and amyloid. Care needs to be taken not to miss a melanoma.
- Given that he has a history of psoriasis, it’s highly likely to be psoriatic nail disease.
- It’s important to explore whether any chronic or disfiguring condition is affecting a patient’s mental health.
- Checking whether his skin psoriasis is under control is good practice.

CLINICAL MANAGEMENT SKILLS

- It would be usual to send adequate nail samples for mycology.
- Psoriatic nails, particularly when widespread or causing distress, should be referred to a dermatologist.
- Manage the psychosocial impact of the disease.
INTERPERSONAL SKILLS

- Exploring the patient’s health beliefs and offering education are important and empowering for the patient. Signposting to websites is often useful, eg www.psoriasis-association.org.uk and www.bad.org.uk.
- Education on what psoriasis is will again empower the patient and help him manage his condition more effectively.
- Summarising and checking understanding will make the patient feel valued.
- Recognising that his condition may affect his confidence will forge a good therapeutic relationship.

KEY POINTS

- Psoriasis: 1–3% prevalence (European population)
- Aetiology and risk factors: family history, infections (bacterial, HIV, scabies) stress, obesity, smoking, alcohol, drugs (lithium, β blockers)
- Subtypes:
  - **Chronic plaque**: 90% cases, large well-demarcated plaques, pink with silvery scale, often on extensor surfaces
  - **Guttate**: children/teenagers, post-β-haemolytic streptococcal/viral infection, small plaques over trunk
  - **Generalised pustular**: fever, malaise, unwell, pustules
  - **Palmoplantar pustular**: F > M; pustules noted on palms and soles
- Complications: arthropathy, nail involvement (50%, pitting, onycholysis, nails may be affected without skin disease), scalp disease, alopecia, secondary bacterial infection, depression, low self-esteem, suicide, erythroderma
- Nail disease is associated with, and is more severe with, psoriatic arthritis
• **Management:**
  
  - *Chronic plaque psoriasis:* vitamin D analogues (first line but too irritant for face), emollients, combination vitamin D analogues/betamethasone (not for maintenance), topical steroids, topical tar agents (cause staining), coal-tar bath additives, topical retinoids for very scaly lesions, dithranol, salicylic acid with steroids or white, soft paraffin. Review after 4–6 weeks.
  
  - *Scalp psoriasis:* vitamin D/betamethasone combination, steroid shampoo/lotion/gel, coconut compounds for scaly disease, tar shampoo (adjunct or for mild scalp disease)
  
  - *Erythrodermic:* secondary care, fluids, topical agents, immunosuppressants, infliximab, UVB, PUVA (psoralen + UVA), analgesia
  
  - *Generalised pustular:* urgent referral required.
  
  - *Palmoplantar pustular:* often requires systemic treatment; psychodermatology
  
  - *Second-line agents:* tacrolimus/pimecrolimus, UVB, PUVA, methotrexate, azathioprine, ciclosporin, hydroxyurea
  
  - *Third-line agents:* eg infliximab, etanercept, adalimumab, ustekinumab.
  
  - *Guttate:* often resolves spontaneously.
  
  - Ensure compliance.

**FURTHER READING**

The latest NICE guidelines on psoriasis were published in October 2012.
CASE 4

IN THIS STATION ...

You are a new GP in the practice.

MATERIALS AND INSTRUCTIONS TO CANDIDATE (CASE NOTES)

<table>
<thead>
<tr>
<th>Name</th>
<th>Harriet Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>38 years</td>
</tr>
<tr>
<td>Address</td>
<td>23 Holtspur Close, Euston Wharf, London W1</td>
</tr>
<tr>
<td>Social and family history</td>
<td>Personal assistant to Chief Executive Officer, Biopharm Ltd</td>
</tr>
<tr>
<td></td>
<td>Married a year ago</td>
</tr>
<tr>
<td>Past medical history</td>
<td>Tennis elbow</td>
</tr>
<tr>
<td></td>
<td>Shingles</td>
</tr>
<tr>
<td></td>
<td>Hypothyroidism</td>
</tr>
<tr>
<td>Current medication</td>
<td>Levothyroxine 100 mcg od</td>
</tr>
<tr>
<td>On examination of patient’s face</td>
<td>Erythematous symmetrical butterfly rash</td>
</tr>
</tbody>
</table>
BRAINSTORM
INSTRUCTIONS TO ROLE PLAYER (PATIENT OR CARER)

You’re Harriet Green, a 38-year-old personal assistant to a large biotech company.

You’ve had a rash on your face for around a year.

Your last GP said that it was shingles and you’d like to try aciclovir again; it hadn’t worked in the past.

You’ve also been treated for rosacea with no improvement.

The rash is deeply upsetting and damaging your self-esteem

Opening statement:

‘Hello doctor, about my rash, I’d like to try aciclovir.’

Freely divulged in response to open questions:

You’ve had the rash for a year.

It came on ‘out of the blue’.

Your last GP was convinced it was shingles and gave aciclovir, which didn’t work.

Another GP then tried several treatments for rosacea, with no improvement.

You’d like to give the aciclovir another go.

Information divulged if asked specifically:

You are a little sceptical about a diagnosis of shingles; you’ve not seen any blisters and you remember being told shingles isn’t symmetrical – yours is. However, you would give any treatment a chance, including another course of aciclovir.

You’ve tried lymecycline, erythromycin and topical metronidazole for rosacea with no benefit.

The joints in your hands have been painful over the last few months.

You’ve never heard of lupus.

The rash is damaging your confidence. You feel your new husband has avoided sex recently because of the rash and you feel lonely. Life is worth living and you’re not depressed.
NOTES

OVERALL AIM OF THE CASE
To challenge diagnoses given by previous doctors, discuss a potential new serious diagnosis and investigate accordingly.

DATA GATHERING, TECHNICAL AND ASSESSMENT SKILLS
- In this case, it is important to understand the nature of the rash, e.g. distribution, onset, associated symptoms.
- Rashes of this nature have several causes but the most likely two to exclude are rosacea and lupus.
- Once you have formulated your differential diagnoses, questions should be asked accordingly.
- The symmetrical distribution, absence of blisters and lack of pain exclude shingles.
- Given that she has tried several treatments for rosacea, all of which have failed, that is also less likely.
- If, by history taking, your working diagnosis is lupus, asking questions to refute or corroborate your theory is helpful.
- In her case, she has joint pains, which fit with lupus.

CLINICAL MANAGEMENT SKILLS
- It wouldn’t be unreasonable at this stage to arrange serological blood tests that would point towards lupus.
- You also wouldn’t be criticised if you referred the patient to a dermatologist, except to say that, if your bloods turn out to be positive for lupus, you may have wasted a dermatology appointment because the patient may have been referred directly
to a rheumatologist; in the new age of commissioning, this could be considered a poor use of resources.

- Asking a dermatologist for advice, perhaps sending a picture (with consent), would be innovative and appropriate.
- Follow-up is important.

INTERPERSONAL SKILLS

- It’s important to recognise the psychological consequences, pick up on cues and give hope.
- Be clear to the patient that the diagnosis may be, but is not definitely, lupus so that expectations are managed.
- Ensure that the patient understands your language and thought process by intermittently summarising and checking understanding. This is important when discussing a potential new and complex diagnosis.
- Explore health beliefs and offering education will empower the patient.

KEY POINTS

- Systemic lupus erythematosus affects females more than males.
- Peak onset 15-40 years.
- Risk factors: autoimmune, genetic, drugs, Klinefelter syndrome.
- Clinical features: fever, malaise, fatigue, skin (photosensitive facial butterfly rash, vasculitis, scarring alopecia, Raynaud phenomenon, livedo reticularis, subcutaneous nodules, bullae, discoid lupus, telangiectasia), joint pains (non-erosive arthritis [Jaccoud arthopathy], deformity), muscle pains, oral ulceration.
- Complications: CNS (headaches, psychosis, seizures), pleural effusions, cardiac (pericarditis, pericardial effusions, myocarditis, Libman–Sacks endocarditis, accelerated congestive heart failure, myocardial infarction [MI]), renal (glomerulonephritis, nephritic
syndrome, proteinuria, haematuria), haematological (anaemia of chronic disease, haemolysis, lymphadenopathy, splenomegaly), eyes (sicca syndrome, haemorrhages, papilloedema), miscarriage, VTE (venous thromboembolism).

- Usual cause of death: renal failure, cardiovascular disease, infections.
- Management: education, refer urgently if cardiorenal involvement, UV light, sunblock, hydroxychloroquine (with annual optician review), systemic steroids for flare, methotrexate, azathioprine, cyclophosphamide, rituximab, mycophenolate mofetil, cardiorenal risk assessment (maintain blood pressure [BP] <130/80 mmHg), low-dose aspirin for pregnant women.
CASE 5

IN THIS STATION …
You are a salaried GP at the practice.

MATERIALS AND INSTRUCTIONS TO CANDIDATE (CASE NOTES)

<table>
<thead>
<tr>
<th>Name</th>
<th>Jerry Smith</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>47 years</td>
</tr>
<tr>
<td>Address</td>
<td>123 Huntley Street, London W1</td>
</tr>
<tr>
<td>Social and family history</td>
<td>Architect</td>
</tr>
<tr>
<td></td>
<td>Lives with partner, Steven</td>
</tr>
<tr>
<td>Past medical history</td>
<td>Nil</td>
</tr>
<tr>
<td>Current medication</td>
<td>Nil</td>
</tr>
</tbody>
</table>
EXAMINATION FINDINGS

Information offered on iPad if appropriate

Slim
Afebrile
Sweaty palms
Fine tremor
Pulse 120 regular
BM 5.7 mmol/l
Chest clear, no murmurs, no abnormalities detected on abdomen
INSTRUCTIONS TO ROLE PLAYER (PATIENT OR CARER)

You are Jerry Smith, a shy architect working in London.
For the past 8 weeks you’ve been losing weight and been sweatier than usual.
You’re gay and are worried about HIV.

Opening statement:
‘Hello doctor, we’ve not met before. I’ve been losing weight. I probably ought to tell you I’m gay.’

Freely divulged in response to open questions:
You’ve been losing weight for 2 months, about half a stone (3 kg).
You’ve no idea why it’s been happening.

Information divulged if asked specifically:
You’re normally fit and well.
You’re eating more than usual and eat a healthy and balanced diet.
You’re not vegetarian.
Your bowels are looser than normal but there is no blood.
You’re not thirsty nor do you pass urine more than usual.
You’re sweatier than normal, throughout the day and night.
You are worried that you may have HIV, given that you slept with a man without protection at a party a few months back. You’ve not been tested for HIV because you’ve been with your partner for 6 years. You feel remorse re this and have never been unfaithful either before or since.
You don’t have any other symptoms.
You’re not depressed. You only drink at Christmas and you don’t take drugs.
NOTES

OVERALL AIM OF THE CASE
To be able to establish a diagnosis from a wide possible list of differentials and put the case in the context of the patient’s life in a sensitive manner.

DATA GATHERING, TECHNICAL AND ASSESSMENT SKILLS

- As with most new symptoms, building a quick list of differentials in your mind and asking questions in logical order will help avoid missing an important diagnosis.
- Weight loss can be suggestive of poor diet, poor absorption or hypermetabolic states.
- Mr Smith eats well. Coeliac disease or an inflamed bowel may cause malabsorption whereas excess calorie expenditure may suggest malignancy, infection or thyroid disease.
- The social history is important here and his HIV (human immunodeficiency virus) risk needs to be explored.
- A review of symptoms to exclude any red flags for malignancy and infection such as TB and endocarditis is important and demonstrates safe practice to the examiner.
- A thyroid and general systems examination should be offered.

CLINICAL MANAGEMENT SKILLS

- Urgent thyroid function tests (TFTs), HIV test and coeliac bloods are very reasonable tests to perform. An FBC is also justified.
- Given the sweats and weight loss, a chest radiograph would not be unreasonable.
- You may wish to express that you would like to check a BM (blood glucose) in clinic.
• Clear safety netting and robust follow-up are essential.

INTERPERSONAL SKILLS
• Explaining your differentials early in the consultation and that you would like to ask questions accordingly will keep the patient on board and give him confidence.
• Sensitivity is required, particularly given that HIV is an emotive subject.
• He will also be concerned, if he does have HIV, that he may have passed it to his partner.
• It is important not to appear judgemental or ‘thrown’ by the fact that this patient may have HIV.
• Explaining what tests you are doing and why helps to keep the patient on board and reassures him.

KEY POINTS
The differential diagnosis for weight loss is wide and includes: malnutrition, malabsorption, hyperthyroidism, depression, mania, malignancy, alcoholism, poorly controlled/undiagnosed diabetes mellitus, chronic infection (TB, endocarditis, HIV, parasitic infections), Addison disease, cystic fibrosis, Parkinson’s disease, dementia, connective tissue diseases, iatrogenic (eg ACE [angiotensin-converting enzyme] inhibitors, amiodarone, amphetamines, metformin, levodopa, calcitriol, bicalutamide, clonazepam, clonidine, thyroxine, digoxin, donepezil, SSRIs [selective serotonin reuptake inhibitors], leflunomide, NSAIDs [non-steroidal anti-inflammatory drugs], topiramate, zidovudine).

FURTHER READING